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MENS SANA IN CORPORE SANO.

BY DAVID W. CHEEVER, M.D., LL.D., BOSTON.

The mind cannot exist in our present world without the body; and no healthy mind without a healthy body. This I consider an axiom.

The one exception is a bright intellect surviving in a sick body. This is a hectic fire, flaming uncertainly, and often consuming the crucible. But this is not a healthy mind, for the latter is even, tempered, uniform. The eccentricity of genius is like an electric light, brilliant, dazzling, but unnatural.

The healthy mind corresponds to its surroundings, burns evenly, repairs its waste, lasts as long as the healthy body.

One hardly needs to reflect to realize the constant influence of the organic functions of the body on the moods of the mind.

A sick man, a morbid mind: melancholy distils black bile.

As the old observers pointed out, all maladies situated below the diaphragm depress the spirits. The vagaries of dyspepsia influence the mind equally with the body. A good digestion means good nature, cheerfulness and calmness.

The clogging of any excretion dulls the mind. Free excretion, whether of skin, kidneys or bowels, clarifies the mind; every thought and every emotion. Fasting, even, purifies and sharpens the mental action.

It is especially requisite that the physician should possess the healthy mind. If otherwise, he is no fit adviser for the sick. In all sickness the mind of the patient is shrunken and changed.

But he who tries to administer solace, relief, cure, must be healthy, or he fails lamentably. What more depressing than a half-sick doctor? Pessimism is his natural bent, but optimism is his one essential need to cheer the sick man. The physician must be hopeful, or the patient sinks under his load of fears and morbid imaginations.

If then the body rules the mind so largely, it is doubly important that the doctor consult and preserve his health. Does he?

It is a common observation that physicians share the habits of their fellow-beings.

The first great law of health is regularity, periodicity, in everything. The hours of meals, of rest, of work, if uniform, are the best of preservatives. But the doctor is sometimes unavoidably, and sometimes needlessly, more irregular than other men. He cannot avoid loss of sleep; he cannot always be punctual at his meals. This is true of all our hard-worked profession, in country or in town. Perhaps it is most especially true of the hospital doctor.

Health demands that the interval between meals should not exceed five hours. And that all meals be taken within twelve hours, leaving twelve hours for rest, and assimilation in sleep. For instance, a breakfast at eight o'clock means a luncheon at one and a dinner at six.

One hour of variation, on either side, may be safely allowed, but no more.

Every employé of a hospital is given a nooning and a lunch. The doctor, whether chief or house-officer, is not. Luncheon is made a movable feast; and exhaustion finally secures this meal at two and a half, three, three and a half, o'clock. After the proper five-hour interval is passed hunger ceases; but waste and exhaustion increase. When one is tired he cannot digest.

Our surgeon, or his house-surgeon, is laboring in responsible and wearying work after seven hours of fasting. Then he swallows food and has indigestion. It is true that the great elasticity of youth will bear this for a while; but after thirty-five or forty years of age trouble comes.

But the physician's harvest time of labor is from forty to sixty years. At forty, perhaps, dyspepsia, flatulence, dilatation of the stomach, delayed peristalsis, pave the way for gastric ulcer, for pyloric obstruction; and possibly, later, for organic diseaee.

If now one seeks to brace up for delay and to take the support of alcohol, or to narcotize the hunger with tobacco, the cocktail passes directly to the liver and thickens Glisson's capsule; and the nicotine is expended on the nervous centers.

What a common history! Alas! too common.

There is nothing which breaks the health so certainly as irregularity in time (not quality) of eating, except the use of hard spirits in an empty stomach.

Wine, or beer, with meals is harmless, if in moderation; and tobacco after eating does a very minimum of harm; it narcotizes and conceals indigestion; but if used continuously it may functionally weaken the heart;

These are axioms; platitudes you will say: how much do they cost? Health, happiness, equanimity. Finally there is a break-down. The physician at fifty is tired out, and needs a rest; not always from hard work, however, but from the insidious waste of irregular hours.

It is true that responsibility, anxiety also wear him; but they cannot wear out the healthy body.

Firm health and vigor shake off anxieties and responsibilities; health resists; health insures longevity.

But if the physician is so unfortunate as to take his cares to bed with him, he has mistaken his calling.

Wakefulness is fatal to equaminity. If the doctor cannot sleep after any night call he is sure to break down. The occasional loss of sleep from night work need, however, cause no anxiety. For sleep is so imperious a need, that all finally get it, if reasonably healthy. Forty-eight hours without sleep is followed by enforced sleep; nature takes care of that. People sleep standing up, and on horseback.

Next to regular food the physician needs open air. This he gets more than in other callings. He rides and rests as he rides, and even sleeps, if he does not drive himself. He had better not smoke as he rides.

Now bodily exercise is much talked off. It is a relative term; for all do not need the same amount. I have sometimes thought and often felt, during my active period of work, that rest and not exercise was my first need. Hospital work, or private practice, four hours of the one, or ten visits of the other, are exercise enough. One is tired all over. While a little exercise in the open air will freshen up the exhausted feeling, much exercise fatigues too far.

As time goes on, and age increases and practice decreases, now is the period for systematic, determined exercise; in a gymnasium, walking, bicycling, riding a horse, rowing, playing light out-of-door games. Stiffening joints, sagging vertebræ, hardening arterial coats are all loosened and their changes postponed by bodily exercise. Obesity should be discouraged; a lighter diet followed; exercise be increased.

The practce of medicine and surgery is a healthy occupation, compared with the legal or the mercantile life. There is constant mental preoccupation; there is much to interest one; there is endless novelty and variety. It is all right for happiness and longevity provided some simple rules are strenuously observed.

Such are regular meals, sleep enough, out-of-door exercise, occasional vacations. None of these can be absolute rules; but we must try for them.

Next to bodily health is peace of mind. Do not cry over spilt milk. Dismiss the inevitable past. You know you did the best you could. Say to yourself, "With the light I then had could I have done better?" No, you could not. Let it go; remember it only to guide the future.

The doctor shares his patient's sufferings; true; be sympathetic, but do not let it go too far.

The healthy body now comes in again.

Phagocytes of worry-germs depend on good health for their vigor.

Health sheds all minor ills; is a tonic to brace up resolution; makes you a better doctor, and one more likely to cure your patient. For no one who has experienced a fit of sickness in his own person can forget how soon the mind sickens with the body. Courage fails; forebodings grow; judgment is annihilated. It is also a familiar remembrance that whenever we sleep, and the co-ordination of consciousness is lost, we dream, and a dream is an insanity: real in imagination; unreal in fact; pleasant if we digest well; fearful if the solar plexus is compressed by a flatulant and dilated stomach.

Temperament governs our lives also. It is an inheritance; but it can be regulated and disciplined. Let us learn to do that, and remember that he who masters himself is greater than he who taketh a city.

Self-control, immovability, calmness, resolution, cheerfulness, health of mind, based, however, on health of body.

If there is one quality in our profession essential to success it is endurance or "staying power."

Many persons achieve a temporary success, but are unable to retain it. It is the long-winded man who wins the race.

This quality, even if inherited, must be cultivated; and this can only be done by physical training in youth.

Fortunate the young physician who starts in his profession with a deep chest and hardy limbs. In this way, sometimes, a country boy surpasses one city-bred, just as the fisherman outlasts the college oarsman. The one is tough all over, the other is strong in spots.

Early manual training may be regarded as an essential to success, as much as a technical education to cultivate the observing faculties.

Tact is a gift of the gods. It is invaluable as an asset in life. And in our calling so much depends on personality and making a good impression, that tact is almost sure to out-speed other rivals.

Finally, we may truly say that calmness, good-humor, pertinacity, staying-power all lean on good health. The body is the ally and the indispensable backer of the mind.

SOME MEDICAL PROBLEMS IN THE STATE'S SERVICE.*

BY C. A. DREW, M.D.,
Medical Director, State Asylum for Insane Criminals, Bridgewater, Mass.

On June 22, 1905, M. F., an intelligent-looking mulatto, twenty-six years old, was admitted to the Massachusetts State Asylum for Insane Criminals from the State Prison at Charlestown, where he was serving a sentence of from eighteen to twenty-five years for assault with intent to rape.

The medical certificate upon which his commitment was based was signed by two experts appointed by the State Board of Insanity to examine as to the mental condition of prisoners suspected of being insane, also by the prison physician who wrote an independent certificate which did not differ essentially from that of his expert associates. The certificate of the experts reads as follows:

"To His Excellency, William L. Douglas, Governor of the Commonwealth:"

"We have made two examinations of M. F., an habitual criminal committed (for the third time) to the State Prison May 31, 1904, on a sentence of eighteen to twenty-five years for assault with intent to rape. He is twenty-six years of age and married. In our opinion his condition is such as to require his confinement in an insane asylum for observation and care, although the symptoms of actual insanity are obscure and feigning possible.

"For the last twelve days he has refused all food furnished from the prison kitchen and gives as his reason that another prisoner puts powdered glass into it. He takes in consequence nothing but water, with the result that he has emaciated considerably. This glass 'cuts his throat and stomach.' He has made an attempt to hang himself with his suspenders and to bleed to death by opening a vein in his hand and the bend of an elbow. He insists that his child is brought to him at night, and that a detective comes and threatens him also at night. He also says that he sees wheels spinning about his room. The man who (he thinks) poisons his food also visits him at night. People in the kitchen are 'trying to do him up.' His wife says that his uncle is in an insane asylum.

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* Read before the Plymouth District Medical Society at Brockton, Oct 17, 1906.

"On the other hand certain circumstances seem to show that his attempts at suicide are not genuine ones. He has told us and written his wife that as there is no longer any chance for him to secure a new trial he is determined to take his life, indicating a sane reason for such attempts.

"In view, therefore, of the possibility of danger from the prisoner's suicide and his persistent refusal of food, we believe it to be essential that he should be confined in the asylum for criminal insane at Bridgewater, where the facilities for thorough observation are complete and where forced administration of food can be employed if necessary."

This medical certificate seemed to us to be written with much care, after careful consideration of all the evidence, and with a full appreciation of the possibility of the prisoner being a clever malingerer. Indeed, we are inclined to think that this medical certificate was so well considered as to reflect credit, even on the eminent physicians whose signatures it bears. If the final judgment be that the prisoner was not insane, the light thrown on some phases of medical problems in the state's service will not be at all lessened.

We note that this was the prisoner's third commitment to the Massachusetts State Prison. From his mother we learned that an uncle had been an inmate of a hospital for insane in Massachusetts, and from the patient's own story, supported by some known data, we learn that our hero was born in Nova Scotia; that his sailor father, who was a hard drinker, died of tuberculosis at the age of forty-four. According to patient's story, his father had killed his man in Texas, but escaped to his shiip and avoided arrest. His paternal grandfather was insane and confined in an asylum in Nova Scotia. One J. H., a demented epileptic, and an inmate of the Massachusetts Asylum for Insane Criminals, is alleged to be a first cousin of M. F.

The patient came to the United States from Nova Scotia at the age of seven, and attended school for the following three years. Was sent to the State Primary School at Monson when he was ten years old, thus early becoming a beneficiary of the Commonwealth of Massachusetts. After two years at Monson he was put on a farm in Springfield where he staid one year and then returned to Lynn, which has been his home much of the time since, — when not serving time. It may be due to the environments of this prosperous city of the Commonwealth quite as much as to the refining influences of those public institutions where M. F. served time so long that he seems to have taken polish readily. There was very little of the rustic about him. His manners and English were good, with little to suggest a street waif or a common tough. The prison physician testified that "M. F. had learned 'shorthand' in prison and wrote English in a superior manner for one of his race." Patient belonged to two races and seemed to have mastered some of the accomplishments and vices of each.

It seems that M. F. narrowly missed being a blacksmith, as he worked at that trade for nearly five years. As near as patient could remember, he had been arrested about ten or twelve times. Several of his arrests were for assault, but horse stealing, breaking and entering and attempt to rape were among the counts.

On examination, patient was neither excited nor depressed. Talked in a quiet and agreeable manner. Said he was locked up frequently at prison but most always for fighting. Said one of the prisoners in the kitchen put poison in his food to make him drowsy so that he would tell who wrote a certain letter of complaint to the Governor. At first it was ground glass, later it was some other form of poison. It was the warden's order that his food be poisoned. Said he tried to hang himself because he did not believe he could live under such conditions. He saw his child run around his room at night and thought his wife visited him and the officers sent the child up to his room to see him.

A month after admission it is recorded: "Patient complains that 'the warden of the state prison is down here and comes to my room every evening to try to get me worked up but I don't notice him.' He reports to doctors and night attendants that the warden knocks on his door at night and keeps him awake, but still patient gets his usual amount of sleep and his belief does not interfere with the routine of his daily life, such as card playing, playing violin, ball games, etc."

Two months after admission it is recorded: "Patient was transferred from E-2 to F. Has been a disturbing element on the different wards where he has been. Has threatened to make trouble several times and tries to gather about him a following of the more vicious and weak-minded."

A week later he promised to use his influence for good if permitted to go into the large recreation court again and continued perfectly well behaved for two weeks when he made a rather sensational escape with the aid of another patient, F. W., by climbing up the face of the building on to the roof, allowing himself to be used as a ladder by his associate from the third window to the roof of the hospital building, after which F. W. pulled our hero up after him. They assaulted an officer who was on the roof with a helper from the prison department, passed to another building outside the walled enclosure, went down the outer face of that four-story building by way of the windows, and off into some woods with several officers in close pursuit. It was already dark in the woods, so that it was not difficult for men so clever to elude pursuers for the time being. As it proved, the patients became separated in the darkness and the white man has not been heard from since.

The story of that man-hunt would do for a chapter in a New York *Ledger* serial. There was a meeting with a village sheriff late on the following night, an exchange of confidences, — the sheriff feigning the part of a rural crook, — in which M. F. told of his long sentence, how he had played insane in the hope of escaping, and of his determination not to be taken alive. The fictitious crook volunteered to get some food, of which the other stood in sore need. When M. F. lay down his big stick to take the food, the sheriff drew his gun and ordered "hands up." The hands went up but the head went down to find the sheriff's solar plexus. When the sheriff recovered from the shock, his prospective prisoner had vanished. Later still that night there was a horse missing, — "a hurry of hoofs in the village street, a shape in the moonlight, a bulk in the dark," and a riderless horse cropping the grass on his way leisurely to find his stable early the next morning. This closed the second act.

If M. F. had had leisure to read the morning papers, he might well have been proud or frightened had he recognized himself. The graceful, rather light-skinned mulatto, weighing 180 pounds and standing 5 ft. 10 in., had grown to be a giant negro, with almost superhuman strength and monstrous appetite for lust and blood. When the shades of night came on again, fair cheeks grew pale and strong men hastened to get home before dark. The telephone lines were kept busy. M. F. was located north, east, south and west almost in the same hour. Many men and some boys were hot on the trail of M. F., who usually managed to reach the woods just as the pursuer was about to seize him.

The next scene was laid in the village of Acushnet, a few miles from New Bedford. A dead-tired mulatto lay sleeping under an apple-tree surrounded by four farmers armed with pitchforks. These farmers had read the papers and had noted that a reward of $100 was offered for the apprehension of a desperate mulatto who had escaped from an asylum for insane criminals. This sleeping man " favored " the pictures in the city papers. After a consultation, they decided to wake the sleeper. It was not so easily done, but after some prodding he opened his eyes, yawned, stretched, sat up, blinked in a stupid way, lay back, curled up, and apparently went to sleep again. More prodding brought him to a sitting position again and loosed his tongue. " Let me alone," he said, " the woman told me to come out here and sleep it off." But the suspicious farmers would not desist. The thick articulation and manner were those of a drunken man, but the features were clearly like those of the much-wanted M. F. Finally, they got it out of him that he had been working for Mr. Blank of New Bedford, had been off on a drinking bout, had called at a house in sight for some breakfast, and the woman had advised him to go out in the field and sleep off his booze. His story fitted so well his appearance that it was finally accepted at its face value. No sooner had each farmer gone about his work than the apparant drunk became possessed of all his wits. When alone again he recovered so quickly that one might have supposed the farmers had given him a Keely or Oppenheimer treatment. Without an invitation he entered the house of a newly-married couple, who were absent for the day, and appropriated the young husband's wedding suit. When next seen, M. F. was walking towards New Bedford rather elegantly dressed, in patent leather shoes and other garments to match, carrying a light overcoat over his arm. The young husband found a roll of clothing under his bed that night, on which was stamped with indelible ink, " Asylum State Farm."

The next chapter opens after a period of three months and the scene is laid " way down in Maine." The government post-office at Red Beach had been entered and a watchman shot. Two men had crossed the St. Johns River in a boat which they abandoned on the New Brunswick side. The police of St. John were notified and had John Ashton, a light mulatto, and William Phelps, a white man, in custody when the Maine officers reached the Canadian city. John Ashton proved to be our much-wanted M. F. He was willing to return to the United States and was promptly tried in the United States District Court and sentenced for sixteen years in the Maine State Prison. We understand that no plea of insanity was made at the trial, and, if we may trust the newspaper reports, the court informed the defending attorney that his plea for clemency on the ground of mental derangement would receive no consideration. So it came to pass that M. F. brought up safely in a penal institution of a sister state.

The newspapers said that M. F. made a frantic dash for liberty, attacked the warden, claimed his food was poisoned, and persisted in acting strangely after being sent to the Maine state prison, till the warden took him across his knee and applied a piece of rubber hose, when M. F. cried, — " Enough, I won't be insane any more; it's no use to try to fool you." We have reliable information that the newspapers exaggerated, as M. F. had not attacked the warden up to May 1 last, but he did " commence to play insane soon after his arrival and was 'cured' of that very quickly, since which time he has given no trouble in any way." This information was dated April 30, 1906, and reaffirmed Oct. 13, 1906.[*] We are assured that the Maine prison officials consider M. F. perfectly sane. We omit the moral and refrain from discussing the " insanity of degenerates." It is doubtless true that M. F. has a bad heredity. That he may some day be truly insane is very likely. That he was malingering at state prison as the committing physician suspected, and after his admission to the Massachusetts Asylum for insane Criminals is almost certain.

Prior to four years ago malingering of this sort, so far as we know, was not an important medical problem in Massachusetts. Of late it seems as if the guild of crooks had endowed a chair of psychiatry in the school of crime. At least it is a fact that more malingerers have been admitted to the State Asylum for Insane Criminals during the past two years than for eight years prior to 1904.

Medical men have grown more and more to accept the view that incorrigibility means mental defect, and clever criminals have been quick to note that vicious conduct leads from prison to an asylum, where there is greater liberty and better opportunities to escape. So it is that progress in one direction has created new difficulties which we are bound to face. Every clever malingerer sent to an asylum for the insane becomes an expert in feigning. He quickly qualifies as a teacher that his profession may keep abreast of the times.

The genuine incorrigible is usually defective mentally and this complicates the situation. The instinctive criminal may be perfectly able to adjust himself to his environments and may not violate prison rules unless he wishes to be thought insane. The bad influence of the incorrigible imbecile on prison discipline is so well-known as to need only mention in passing.

The desperate criminal, possessed of all his cunning and accomplished in the arts of his craft, has an almost unlimited opportunity for mischief in a hospital for the insane and very many opportunities for escape, unless the aim of the hospital as a curative agent be surrendered for prison regulations.

Not a few clever criminals in Massachusetts could give points to medical men concerning symptoms of insanity, and those who plan hospitals for the criminal insane in future should understand with what they must reckon. This we believe is one of the problems created by medical and humanitarian progress.

To the physician interested in penology and psychiatry two great interests overshadow other interests: To prevent disease in penal institutions and provide adequate hospital accommodations for the physically and mentally ill when untoward conditions make preventive medicine unavailing. Tuberculosis and insanity are so closely related, and so easily foremost among the foes we must fight that it seems fortunate that in throwing our forces against the one we do much to discourage and prevent the development of the other. We have reason to think that the condition of penal institutions in Massachusetts are comparatively favorable. The death-rate from tuberculosis is very low at the State Prison and State Reformatory and in some of the county institutions where the men serve long sentences.

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[*] The daily papers of Nov. 13, 1906, report the escape of M. F. from the Maine State Prison on the 12th, in a manner simular to his escape from the Massachusetts State Asylum for Insane Criminals, and the papers of Nov. 15 report him still at large and that part of of the state militia have been called out to aid in his apprehension.

A great many insane men are arrested and sent to the prison department of the State Farm as vagrants, seemingly because it is less trouble and less expense than to test their mental integrity by due process of law.

We had a hope in 1905 of a new state prison for Massachusetts, on an island not too far from the main land and a trunk railroad line to be fairly accessible and of sufficient area for elbow room and out-door employment for a large percentage of the inmates. We understand the water supply was tested and found good and sufficient. We dreamed of a prison so constructed that every sleeping-room would be flooded by sunlight and freshened daily by an abundance of the purest air. Because of nature's provision against escapes we hoped the narrow windows could be broadened and the heavy gratings of the conventional prison made much less conspicuous. We believed that every workshop and schoolroom could be as light and airy as the best of similar structures for children and laborers of the non-criminal class. We had heard something of the ideals of the prison commissioners and had reason to believe that Massachusetts would have a state prison unique in some respects but especially designed in its construction and location for the prevention of physical and mental disease. Why and how the plans of the prison commissioners, supported by the governor, were for a time at least defeated is another story, of which I am not sufficiently informed to write.

While there is much to be said in favor of an island site for a penal institution, I do not think this would be the best location for a hospital for the criminal insane. To meet all the needs of such an institution we must plan for as many sub-classes as we would in building for the non-criminal insane. The professional house breaker and safe breaker cleverly feigning insanity must be reckoned with. The dare-devil imbecile with a genius for crime, who knows no fear, and holds his own life almost as lightly as he does the life of another, must be carefully detained for society's sake. The demented vagrant with delusions more or less systematized, the insane epileptic, and the general paralytic, possibly sentenced for crimes which they may not remember to have committed, the well-bred man mildly demented, supposed to have recovered from a psychosis in his youth, who repeatedly tries to to cash forged checks and wonders why people should make so much fuss about so small a thing, — all these classes are much in evidence. Then there is the old man of good family and honored service, whose name never bore a stain until he was past sixty, arrested for indecent abuse of female children. Men of his class should be provided for, — not according to the crime. Many of these are technical criminals only, but the courts sometime fail to understand how the finest mental machinery may be responsible for the most immoral conduct when nerve cells degenerate and cerebral blood vessels become diseased. Again, most important from the physician's viewpoint are those acute cases, evolutionary and unpromising they often are, manic-depressive, confusional or toxic, and hopeful they sometimes are.

The State Asylum for Insane Criminals in Massachusetts, which aims to be a hospital in fact, although it has not asked for a change of name, was not designed to securely hold clever malingerers. It has been an evolution from what was intended as an asylum for harmless chronic insane who might help out in the fields when the regular winter boarders at the State Farm were having a summer vacation. But the ever watchful superintendents of the asylums and hospitals for the insane in Massachusetts — they were mostly asylums then — thought the rough acres of the State Farm just the place to which their most turbulent charges might advantageously migrate. It is a familiar story. Medfield Asylum had not then been created. There was not so great a contrast from those "harmless good workers," selected by the faithful assistant physicians and indorsed by the several superintendents of the hospitals for insane of Massachusetts, to the inmates of the State Asylum for Insane Criminals in its earlier years.

Simplicity and economy have been watchwords of the superintendent of the State Farm from before the beginning of the State Asylum for Insane Criminals. Good ventilation and good light for day rooms and sleeping rooms have been secured with forced ventilation throughout the cold weather.

More than 70% of the patients sleep in single rooms. All the buildings occupied by patients are practically fireproof and have been built at less than $650.00 per bed, including furnishings.

We believe these buildings are good enough and suitable for the great majority of our patients, and we do not feel like apologizing for or boasting of what we have. A large use of the labor of prisoners and an exceptionally competent foreman of construction have been important aids in building substantially for ourselves at a very low per capita cost. It is almost certain that the asylum buildings at the State Farm could not be duplicated in brick and stone for the same price to-day. If we were to build again, with the advantage of our experience, we would probably not build a hospital for insane criminals directly on to a prison for disdemeanor cases, lest the graft should grow to be a troublesome burden to the parent stock and suffer in turn like an over-coddled child for lack of opportunity to work out its own salvation. It is an unquestionable advantage all round to use prison labor in building for the insane criminal class. It is surely a disadvantage to have the different classes so closely related that intercommunication is difficult to prevent. It is also a positive disadvantage to have the nerve trying duties of an attendant upon the dangerous insane daily compared with the less onerous duties of those who guard sane men serving short sentences for drunkenness or vagrancy. These and other intercurrent influences make against the *morale* of nurses and attendants who care for the criminal insane.

If we were facing the problem of providing for the convict and criminal insane, with no money invested in a plant, we would like to select a hundred acres of rough, high land adjacent to some railroad and abundantly supplied with water. To build economically the prison population of the state ought to be employed, and this means that the work must be done under the auspices of the prison commissioners, or of the State Board of Charity which has jurisdiction over the prison department of the State Farm. But we can build " castles in Spain " and hospitals for the criminal insane, in imagination, without an appropriation or the consent of any one.

We appreciate and sympathize with the sentiment which has torn down the walls of the airing courts which formerly offended the eye in connection with many hospitals and asylums, but in building for six hundred or more criminal insane I would advise inclosing fifty acres or more with a stone wall that could be depended on to keep the public out and the patients in except by suitably guarded exits and entrances. These walls would be so far distant from the buildings as not to suggest the conventional airing court of the old-time asylum at all. If the buildings stood on the highest elevation the top of the walls might be below the level of the foundations of the buildings and still be effective. If the whole surrounding wall was well lighted at night and adequately patrolled there would be little incentive for patients — truly insane or malingerers — scheming with friends outside for saws, or making keys to lead them to liberty. In other words, our outer defenses should be of the most complete prison construction to safeguard the public, while within the gates our construction should be simple and of the most approved hospital designs for the progress of science and the cure of disease.

One hospital building proper, thoroughly equipped after the manner of a complete general hospital, should be within the gates, yet some distance from the asylum buildings. It might have four open wards of fifteen beds each, with fifteen single rooms additional for selected cases. It should have its own kitchen and dining-room, as well as sun room and reading room, and have a trained woman nurse in charge, assisted by the necessary number of men nurses. As an adjunct to this acute hospital building there should be an extensive hydriatic plant with a competent physical instructor in charge who should teach the whole attendant body the art of the masseur and the principles and practice of hydrotherapy and physical training. Not only the acute cases should here be treated, but a considerable percentage of chronic cases capable of physical improvement should be sent here daily as " outpatients " for their own good and for the good of the student body receiving instruction in this department. So thoroughly convinced are we of the value of the so-called physiological therapy that we would count money well spent in developing this line of treatment to its highest plane.

Another specially constructed building, with its own kitchen, sun rooms and broad porches, where patients could be moved on wheeled chairs and beds to sit or sleep in the open air, and wheeled into a warmed room for change of clothing or bedding, would be needed for the tuberculous. Shacks and tents might well help out in summer for selected cases, but there is usually a reason why a man with a sentence should be provided with substantial accommodations.

For other buildings within the gates we would not ask better than duplicates of the more recently constructed asylum buildings at State Farm, except a detached building for the convalescing and the quiet men of good conduct and honorable previous record, who are only technically criminals. This should be apart and have its own dining-room, walks, flower beds in summer and sheltering grove.

Outside the gates, beside accommodations for the superintendent and other medical officers, we would have modest cottages built by the state and rented to married nurses and attendants at a price just covering interest on investment and cost of repairs. A comfortable nurses' home, with reading room and rooms for recreation for those who have not come to their birthright, would be an essential part of the plan. The scheme includes such wages for competent nurses and attendants as will enable a man to marry and live in modest comfort and be retained for years, if competent, as a professional nurse and attendant on the insane.

Such are some of the essential features of the hospital for insane criminals we have built without an appropriation from the stuff of which dreams are made.

GENERAL PERITONITIS. PROLONGED IRRIGATION OF THE ABDOMINAL CAVITY.

BY L. R. G. CRANDON, M.D., AND DAVID D. SCANNELL, M.D.,
Assistant Visiting Surgeons, Boston City Hospital.

PRELIMINARY REPORT.

1. The rôle of drainage of the whole abdominal cavity is limited, because of:

(*a*) The relative infrequency of universal infection of the abdominal cavity.

(*b*) The chance, by all present methods of drainage, of carrying infection to a part as yet uncontaminated.

(*c*) The insufficiency of present methods of drainage.

2. If drainage has to be established it should be such that:

(*a*) The maximum drainage should take place.

(*b*) The least disturbance to intestines and other viscera should be suffered.

(*c*) The drainage should be continuous, or at least be continual.

(*d*) The drainage apparatus should be removable with the least disturbance.

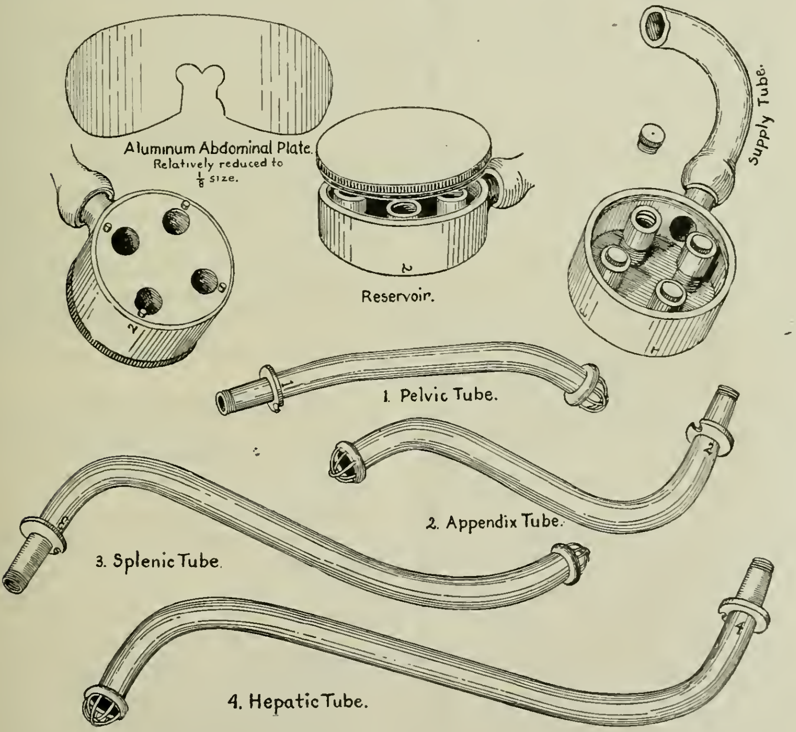
3. The apparatus devised and used.

4. Conclusions on the present status of abdominal drainage.

THE APPARATUS.

Having the intention to wash and drain thoroughly the infected abdominal cavity, with the least injury to, and disturbance of, the abdominal contents, we have devised and used this apparatus.

It consists of a small reservoir (capacity 1 oz.) of nickeled brass supported on an aluminum plate, in its turn resting on the anterior iliac spines. From the bottom of this reservoir emerge four nickeled tubes, 1 cm. in diameter, easily removable and self-retaining.



The tube first to be inserted (the hepatic tube) runs along under the abdominal wall, curves slightly, and ends hanging over the hepatic fossa near the hepatic flexure of the large gut.

The second tube (the splenic tube) runs along beneath the abdominal wall to end over the splenic region.

The third tube (the pelvic tube) runs from the reservoir down into the pouch of Douglas in the female, or between the bladder and rectum in the male.

The fourth tube (the appendix tube) extends along the abdominal wall to end over the cecum.

Each tube, at its exit, is protected by two crossed pieces of nickeled wire to prevent the intestine being sucked into the tube when siphonage is established. From the side of the reservoir runs a rubber tube three or more feet long. The top of the reservoir is a screw-top cap. Into the opening of each tube, at the bottom of the reservoir, may be screwed a brass plug to close one or several of the tubes if needs be. The instrument can be perfectly sterilized, there being no complicated parts.

Use of the apparatus. — The primary cause of the peritonitis is found and repaired or removed if possible. Through a median suprapubic incision, three inches long, the hepatic and splenic tubes are inserted and pushed gently along, lifting the abdominal wall, toward their respective fossæ. The pelvic tube is guided by the finger in its proper direction; and the appendix tube in a similar manner. Each tube as it is put into place is snapped into its proper hole in the bottom of the reservoir.

The bottle of salt solution is now connected with the distal end of the rubber supply-tube of the reservoir, the fluid passes down through the reservoir out through each of the four tubes, and is allowed to run in until the abdomen is distended and fluid begins to leak through the wound about the reservoir. The supply-tube is detached from the water bottle, pinched at the end at the same time to keep it full of fluid, and is then lowered to below the level of the patient. This column of water in the supply-tube at once establishes siphon-drainage and the abdomen is drained at least till the end of one inner tube is above the level of the remaining fluid.

This alternate flooding and draining of the abdominal cavity can be done as often as one pleases without disturbing the patient, the amount of pressure-influx being regulated by the height of the supply bottle.

Dressings are now applied; the whole apparatus is supported by the aluminum plate which rests on the pelvis, and the patient is moved to bed. Here the abdominal cavity may be flushed out every fifteen minutes, or every hour, or at any interval which may seem best and quite without discomfort to the patient.

This apparatus is mechanically successful, and on the cadaver succeeds in reaching and flushing the most remote parts of the abdominal cavity, and draining them. The proper curves and lengths of these four tubes were determined by measurements and experiments on many cadavers placed at our disposition by the kindness of Professor Dwight of the Harvard Medical School.

We have had opportunity to use it in only one case clinically. This was in a case of general purulent peritonitis with marked distention following a neglected appendicitis. The appendix stump was hastily tied off through the median incision, the apparatus was inserted in a minute and one half, the cavity flushed until the fluid ran clear, and the patient put to bed with the apparatus still in position. The pulse rose during the operation, which in all took twelve minutes, from 124 to 130; about an hour after the operation it was 110. Siphonage was carried out every hour for three times, omitted six hours, and then repeated every two hours for three times. The first fluid returned turbid from several washings, but on the next day came clear as if the distended coils of the paralyzed gut had occluded the tubes. The case was thoroughly septic, practically without hope from any treatment, and died.

It has been clearly shown by Yates,[1] in a careful and exhaustive research, that the total value of general peritoneal drainage, if there be any, is in the first twelve to forty-eight hours, be it with gauze, rubber-dam or other form of wick to promote capillary drainage, or with tubes even though favored by gravitation as through the vagina. General drainage is efficient only for a short time. Whatever the form of drainage used, the foreign body is quickly encapsulated by adhesions of the omentum or intestines. Moreover, the material drained by whatever means employed is not pus or blood, but rather as Coe[2] remarks: " Of course, there is always a considerable discharge of fluid, but this is not the septic material we wish to remove." The free discharge of serous fluid which comes during the first hours of drainage (1) comes not from the general peritoneal cavity, but only from the region drained, and (2) the amount of this drainage seems to be in proportion to the number of wicks. In short, some of the drainage, without question, is excited by the foreign body. In other words, the evidence of the literature and experimental work, such as that done by Yates, seems to show that drainage of the general cavity, excluding thereby localized abscesses, is, on account of the constantly appearing plastic reaction of the peritoneum, mechanically and clinically impossible. The present method of establishing drainage from localized peritonitis, as in the cigarette drain (gauze wrapped in rubber-tissue), is a sign of recognition by surgeons that the main function of the gauze "drain" is to excite adhesion, and thus isolate a septic process from the general cavity.

Yates sums up the objections to attempts at drainage thus: " The most insurmountable objections to general drainage is, however, noteworthy. From the time that Chassargnac's tubes were found plugged with fibrin, in the unconscious admission of Koeberlé that all serous surfaces applied themselves tightly to his tubes, when he made the apertures small enough to prevent herniæ, and by proof that Hegar's theory of capillary drainage by gauze was erroneous, and from clinical experience down to the present time, there has accumulated an array of facts that justify this main objection to general peritoneal drainage; it does not drain the general peritoneum."

Yates's conclusions seem to us mainly sound and we feel it important to quote them in full:

" Drainage of the general peritoneal cavity is physically and physiologically impossible.

" The relative encapsulation of the drain is immediate.

" The absolute encapsulation occurs early (less than six days in dogs), and can be retarded, but not prevented.

" The serous external discharge is an exudate due to the irritation of contiguous peritoneum by the drain.

" There is a similar inward current from the potential into the general cavity.

" This external exudate diminishes remarkably with the formation of encapsulating adhesions.

" These adhesions, under approximately normal conditions, form about any foreign body.

" Their extent and density depend on the degree and the duration of the irritation of this body.

" Primarily fibrinous, these adhesions become organized in a few days (three days in dogs).

" If the irritation persists, they become progressively more mature fibrous tissue.

" After irritation ceases, their disappearance depends principally upon a mechanical factor, — the ability of the involved surfaces to pull themselves or to be pulled loose.

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[1] Yates, J. L.: An Experimental Study of the Local Effects of Peritoneal Drainage. Surgery, Gynecology and Obstetrics, Chicago, 1905, i, p. 477.

[2] New York Polyclinic, 1894, iv, p. 86, quoted by Yates.

“ Drains should be the least irritating, and should be gradually but finally removed as soon as possible.

“ Irrigation through drains is futile to prevent adhesions, and dangerous.

“ After a drain is inserted, all intra-abdominal movements should be reduced to a minimum.

“ As soon as the drain is removed, intra-abdominal activity should be stimulated, to aid in the disappearance of the remaining adhesions.

“ Peritonitis, if not too severe, possibly aids in the rapidity of the encapsulation of the drain.

“ A drain in the presence of infection is deleterious to peritoneal resistance, and should only be introduced to exclude more malign influences.

“ Postural methods, unless destined to facilitate encapsulation, are both futile and harmful, as far as drainage is concerned.

“ Peritoneal drainage must be local, and unless there is something to be gained by rendering an area extraperitoneal, or making from such an area a safe path of least resistance leading outside the body, there is, aside from hemostasis, no justification for its use.”

Being convinced of the general soundness of these conclusions, particularly so far as they bear on the matter of general drainage of the whole peritoneal cavity, we have attempted by our apparatus to prepare a means (1) to irrigate thoroughly the infected cavity, and (2) to supply through the lymphatics of the peritoneum to the toxic blood a large supply of salt solution, to aid the body to fight and to eliminate toxins.

Clinical Department.

A CASE OF DERMOID CYST OF THE ANTERIOR MEDIASTINUM.

BY WALTER A. GRIFFIN, M.D., SHARON, MASS.

The following case is interesting because of the rarity of the condition, Morris, of Ann Arbor, being able to find accounts of but 57 cases in the literature.[1]

The patient, a boy of fifteen years, was first seen by me Aug. 14, 1905, on recommendation of Dr. Clarice J. Parsons, of Springfield. The following history was obtained. Family history: Father's father died of accident. Father's mother died of cancer of the stomach after an illness which lasted more than a year, and which was characterized by sharp pain in the epigastrium. What other symptoms were present could not be ascertained. Mother's father and mother alive and well. Father and mother of patient also well. Personal history: The patient was never very rugged. When three years old he had “ catarrh of the bowels,” with attacks of constipation alternating with the passage of much mucus and blood. This condition lasted, off and on, for two or three years. This was the only sickness that had ever amounted to anything. Five years ago there was a little hacking cough lasting for a short time, and in last two or three years there have been occasional attacks of coughing, but never any sputa. There has never been any fever so far as known and never any pain except about eight months ago, when complaint was made of pain in the chest, but neither patient nor mother could remember which side was affected. It could not have been very severe since the boy's mother had always taken full care of him and had evidently kept close watch of all symptoms. At about the same time that the pain was noticed the patient began to be somewhat short of breath and to have huskiness of the voice. Some two months ago the patient's mother began to notice that the right side of the chest was fuller in appearance than the left, but she had never spoken of this to any one.

The patient looked pale and rather thin. The general musculature was decidedly below par, and when walking there was well-marked stooping. Physical examination was negative except for the chest. There was dullness on the right side beginning at the second rib, the note rapidly becoming flat on going downward and merging with the flatness of the liver. The dullness extended upward under the sternum to the level of the first interspace and merged to the left with the heart dullness. The respiratory sounds were much diminished over this area and tactile fremitus could not be felt. In back, on the contrary, there was good percussion note throughout on the right side except for slight dullness below the angle of the scapula. Here respiration was broncho-vesicular and tactile fremitus was a little increased. A few fine râles could be heard here (the only ones anywhere to be made out). At the top of the chest on both sides the respiratory murmur was exaggerated. The left border of the heart could be made out two fingerbreadths outside the nipple line, and the lower border of the liver was just below the costal margin. In the right axilla there was a gland the size of an almond, and in the right side of the neck there were one or two the size of a pea. Urine and blood examinations were negative. At this time the case seemed to be one of encapsulated pleuritic effusion, or else a malignant growth.

A large-sized aspirating needle was introduced in the fifth interspace in the anterior axillary line and with considerable difficulty about two ounces of thick, glairy, dark-green fluid was obtained. This fluid showed nothing characteristic under the microscope and was sterile on culture after twenty-four hours. On the next day the pleural cavity was opened by removal of a portion of the sixth rib in the mid-axilla. By this means a small amount of the same viscid fluid was obtained. On looking into the wound a tense tumor mass was seen on a level with the incision. Into this a trocar was introduced and more fluid was obtained, together with a number of bright yellowish masses varying in size from a pin head to a pea. By enlarging the opening into the cyst the wall was explored with the finger. It was found to be about a quarter inch in thickness and firm of structure. On that part of the wall which was nearest the diaphragm three or four sessile projections could be felt. This was the only wall of the cyst to be made out. A drainage tube was introduced and the operation was terminated.

It did not occur to me or my assistants at this time that we were dealing with a dermoid cyst. Rather it appeared that the case was one of streptothricosis, this idea being suggested by the yellow granules in the discharge. Some of these were crushed under a coverglass, but no definite structure could be made out. Bacterial examination of the discharge also proved negative. Finally some of the discharge was sent to Dr. Henry A. Christian, who suggested the possibility of a dermoid cyst, basing the hypothesis on the finding of two or three short hairs. To prove definitely that these could not come from the surface of the body a little envelope was made by cementing the edges of a piece of rubber dam. This was fitted tightly about the drainage tube by making a small hole in one side of the envelope. After twenty-four hours there were found five small finely tapered hairs in the discharge, one about 2 cm. in length, the others 1 cm. or less. The diagnosis of dermoid cyst was therefore established.

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[1] Med. News, Aug. 26, 1905.

For a while the patient gained in strength, but following a railway journey to his home in Springfield he began to lose ground and after about a month he became greatly emaciated, and so weak that he could hardly walk. Cough proved very troublesome, but there was no expectoration. Fever was also absent. Finally consent was given for further operation, and this was undertaken, although the prospect of getting the patient off the table alive was none too good.

At the second operation a flap was made beginning at the third rib about an inch and a half from the right edge of the sternum and extending downward to the line of incision of first operation (sixth rib), then outward for about four inches and thence upward parallel to first line of incision. All the tissue down to the ribs was thus turned up. The ribs underlying were resected and the pleural cavity was fully opened. Numerous adhesions were found between the pleura and wall of the cyst. In the latter an opening was made large enough to admit the hand. Much pus and broken down caseous material and numerous yellow granules such as were found at the first operation and in subsequent dressings were expelled. By introducing the hand into the cyst it was found to extend from second rib to diaphragm and across median line under sternum at level of about third rib, practically filling the right half of thorax and part of the left. It was filled with irregular grape-like masses, to which grew sparse long hairs and which were attached to the wall by short pedicles and bands of connective tissue. By separating the latter with the hand the masses were drawn outside the cyst, and the pedicles were transfixed and ligated. Two large masses were thus evacuated and several small ones, the total quantity amounting to the size of a small head. No large hemorrhage resulted. Owing to the poor condition of the patient the operation had to be terminated, although there were several small masses still firmly attached to the wall of the cyst, especially high up under the sternum. The cavity was firmly packed and the patient put to bed in what seemed to be a moribund condition. He slowly rallied, however. The temperature never went over 100°, although the pulse ran high. Eleven days after the operation the following note was made:

" Boy has gained steadily since operation of Dec. 8, but is still very weak. Able to walk a little and sits up all day. Is carried down stairs to dinner and supper. Still very much emaciated, but has more flesh than at time of the operation. Has suffered no inconvenience from the wound.

"There is dullness over front of chest from second rib down and extending to left one finger breadth outside the left nipple, and on right gradually down and out into the axilla. Respiration absent over this area, and exaggerated at top of right where there are fine râles. In back resonance and respiration good to base with very fine râles low down.

"The wound presents an opening at its lowest point about two inches in diameter; from this running forward is a large triangular area of granulations, and back of it a smaller triangular area both merging into the united edges of the line of incision. The opening is sunken about one inch from the skin surface, and presents numerous granulating looking masses, and on the lower aspect two knob-like masses apparently covered with epithelium. The finger introduced into the wound found its way upward under the chest wall in a rather tight sinus. Its introduction caused a small amount of pain. Amount of discharge not great and mostly serosanguineous. Temperature 99°. Pulse 120.

" There has been apparently a rapid recurrence of the tumor."

From this time the patient failed very rapidly and died two and a half months after the second operation, the tumor causing great bulging of the chest. No autopsy was allowed. Following is the pathological report of the tumor mass made by Dr. H. A. Christian.

PATHOLOGICAL EXAMINATION.

Specimen from right thorax and mediastinum. Patient of Dr. W. A. Griffin. Operation Dec. 8, 1905, at Springfield.

Specimen consists of two large and two small masses. One large mass measures 16 x 8 x 7 cm., and is coarsely lobulated, and from its surface project masses rounded, slightly pedunculated and measuring 2 to 4 cm. in diameter. The general surface is smooth, except for numerous small tags of tissue, as if the mass had been torn from a connective tissue capsule. There is no evidence of any epithelial covering. The color is gray, flecked with small areas of pink to red. Consistence is tough and elastic. Different parts present no differences in consistence. The cut surface is grayish white, covered by a viscid, glairy, colorless fluid which exudes from numerous small irregular cyst spaces. After the removal of this the structure is seen to be a grayish semitranslucent edematous-looking connective tissue, with here and there coarser bands more opaque and whitish. This tissue surrounds innumerable cysts 3 mm. to 15 mm. in diameter, irregular in shape, free from ingrowths, with smooth, shiny lining. Cysts closely set together. No blood vessels evident in gross, and structure is of uniform appearance throughout.

The other large mass measures 8 x 8 x 6 cm., and has attached to it at one side a projecting mass of tissue 7 cm. long, 3 cm. wide and 2 cm. thick, resembling the main mass, which in turn is like the first mass in external appearance. Attached to the other side of the main mass is a thin bit of tissue 3 cm. wide, 2 to 3 mm. thick and 6.5 cm. long at whose end is attached a rounded nipple or fingerlike bit of tissue covered with skinlike epithelium and studded with numerous tapering blond hairs 2 to 4 cm. in length. From this on the under surface of the connecting tissue the skinlike covering extends for 4 cm. toward the larger mass. The cut surface of this second mass has the general appearance of the first, but the cysts are not so numerous and are slightly larger.

Of the smaller masses one 2 x 2 x 3 cm. resembles the larger. The other is a bit of tissue about 2 cm. in greatest diameter covered by skinlike epithelium.

Microscopic. — Pieces from six different parts of the tumor hardened in Zenker's fluid were selected for histologic study. These were embedded in paraffin, sectioned and stained with eosin and methylene blue and with phosphotungstic acid-hematoxylin.

Section from the nipplelike process described above showed a structure resembling corium with subcutaneous adipose tissue and a covering of epidermis with hair follicles, sebaceous glands and sweat ducts. Sections from other parts of the tumor show many closely packed cysts of small and medium size. The cysts are lined by cuboidal epithelium, by cylindrical epithelium containing many goblet (mucus) cells and by ciliated cylindrical epithelium, all one layer thick. Other cysts have a lining of transitional epithelium or stratified ciliated epithelium several layers deep. Some cysts show varying types of epithelium in their lining. Most cysts contain a colloid or mucoid content with a few desquamated epithelial cells. A few solid masses of squamous epithelial cells were found. Between the cysts lie connective tissue, smooth muscle and neuroglia. A very few small islands of cartilage occur. In places there is lymphoid infiltration. The neuroglia in part is very abundant, constituting the bulk of the stroma. Various types of neuroglia occur. Some is made up of wavy parallel fibrils of moderate coarseness. These parts are relatively cell poor.

In other places similar fibrils interlace. Most, however, is composed of more cellular tissue, with poorly defined interlacing fine fibrils, this tissue having a general finely granular appearance. The neuroglia cells have round or oval vesicular nuclei and little or no distinguishable cytoplasm. No multi-nucleated cells are present and no cells of ganglion cell type. Tissue from one part of the tumor is distinctly more embryonal in type. Here cysts are small and stroma more abundant. Most of this tissue resembles the central nervous system of a fetus with small round vesicular nuclei closely packed. Cytoplasmic body of cells not to be made out. Between the nuclei is a granular material staining bluish with phosphotutungstic acid, hematoxylin and only in places revealing distinct fibrils.

Here in places the nuclei become closely packed together and surround an irregularly shaped small lumen presenting a close resemblance to the formation about the fetal ventricles and spinal canal. Here mitotic figures are not infrequent. In places there are areas of cellular connective tissue of fetal type resembling somewhat spindle-cell sarcoma. Cells lining spaces frequently show at their ends dots staining blue or blue black with phosphotungstic acid hematoxylin. At the base of each cilium a distinct dot also occurs.

Diagnosis. — Terato-dermoid. Though in parts embryonal in type and very cellular with evidence of rapid proliferation, it is probably not very malignant and will not metastasize.

Medical Progress.

REPORT ON PEDIATRICS.

BY THOMAS MORGAN ROTCH, M.D., AND JOHN LOVETT MORSE, M.D.

THE SPINAL FLUID IN ANTERIOR POLIOMYELITIS.

Ellermann[1] found twice in the cerebrospinal fluid of a patient with acute poliomyelitis ameboid, homogeneous cells, 15 to 25 micromm. in diameter, with numerous long, fine flagellæ. He thinks they are protozoa. Further investigations must show whether these cells occur constantly in anterior poliomyelitis or whether only accidentally.

Geirsvold[2] found the same bacteria in eleven patients with acute poliomyelitis and one with polioencephalitis. The organism corresponded in every way with those found by Looft and Dethloff in two cases of poliomyelitis.[3] The organism is a bean-shaped diplo- or tetracoccus with the flat sides opposite each other, which in fluid media often forms short chains. It grows well on the ordinary culture media. It is stained by Gram as well as by the ordinary aniline stains. Subcutaneous injections either killed white mice after twenty-four to thirty-six hours, or after being sick some days they apparently recovered only to become suddenly paralyzed after three or four weeks. The paralysis was most frequent in the hind legs. The paralyses increased and at the time of death were accompanied by marked atrophy. Pathological examinations have not yet been made. The virulence of the organism is increased by the passage through mice. Similar paralyses developed in rabbits and pigeons after intravenous injections. They cultivated the same microbe from the pharynx of patients with poliomyelitis. This organism was also pathogenic for mice.

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[1] Ellerman: Mitteil. aus Blegdamshospital zu Kopenhagen. Hospitalstidende, 1905, 4 R., Bd. xiii, No. 47 s. 1134. Abstract in Jahrbuch für Kinderheilkunde, 1906, vol. 64, p. 254.

[2] Geirsvold: Norsk Magazin for Laegevidenskaben, 1905, s. 1280. Abstract in Jahrbuch für Kinderheilkunde, 1906, vol. 64, p. 254.

[3] Medicinsk Revue, 1901, Bergen.

THE BLOOD CHANGES IN MUMPS.

As the result of examination of the blood in twenty consecutive cases of mumps, Wile[4] arrives at the following conclusions:

Lymphocytosis is a constant symptom in mumps.

The lymphocytosis is relative and absolute.

Lymphocytosis is noted on the first day, no matter how small the tumor may be, and continues until all swelling has disappeared.

Lymphocytosis is more marked relatively with bilateral involvement than with unilateral mumps.

Lymphocytosis in mumps is most marked in children at puberty.

Lymphocytosis is present in mumps of adults, but is less accentuated.

The polynuclear neurophiles vary relatively inversely with the lymphocytes.

With orchitic complications, the polynuclear neutrophiles tend to increase relatively, though there may be no absolute leukocytosis.

Hyperleukocytosis does occur in mumps, but is not of high degree.

Lymphocytosis is a diagnostic feature of mumps.

Lymphocytosis differentiates mumps from adenitis.

THE DIGESTION OF FAT IN THE INFANT STOMACH.

Sedgwick,[5] partly as the result of experiments in vitro with the gastric juice of infants and partly as result of experiments on rabbits, draws the following conclusions:

1. There is a fat-splitting ferment present in the infant's stomach.
2. The ferment could be demonstrated very early in life, in the first hours in the rabbit and at least in the second week in the infant.
3. In the infant's stomach itself the milk fat is partially split; in these experiments from 2.9% to 10.6%.
4. After the first half hour the fat-splitting increases slowly but steadily.
5. The acids produced are mostly higher members of the fatty acid series and are derived, in the greater part, from the fat.

QUALITY OF MILK AFFECTED BY COMMON DAIRY PRACTICES.

Speaking of the quality of milk, as affected by common daily practices, W. A. Stocking, Jr.,[6] shows most convincingly that certain procedures fairly common to farmers materially increase the bacterial count in milk. These practices can be easily corrected and the grade of milk improved along inexpensive lines.

The paper deals with methods of feeding cattle, care of the animal at milking time (wiping the flanks and udders off with a damp cloth), brushing the cow prior to milking, rejecting the fore-milk, stripping the cow, and lastly, the advantage of carefully trained milkers over the ordinary men usually seen.

The first experiment showed that animals fed on dry food (grain or hay) at milking time gave higher counts of putrefactive and liquifying bacteria than when they were milked before feeding. The total bacterial count was increased by the average of 1,400, when milked at feeding.

In a second test, animals fed with stover, which is drier and more dusty than hay or grain, showed a total average increase of 2,423 bacteria in the milk as compared with the milk of the same cows milked prior to feeding. Wiping off the flanks and udder of the cows before milking was next found to lower the count by an average of 6,242. No antiseptics were used here, but merely clean water. For this experiment ten animals were used, two lots of five each. One lot was wiped, while the other was not. These two sets were then changed for the next experiment. The animals were extraordinarily clean.

In speaking of the habit of brushing the cows at milking time, the fourth experiment proved the fact that such brushing increased the total average of bacteria by 1,079. The same method was used as in the wiping test. Two lots of animals were alternately brushed each day at milking time, so that the difference of the individual element could be ruled out.

The fore-milk is known to contain great numbers of bacteria, and therefore is rejected by those dairies which are most careful in the milking. Mr. Stocking asserts that this requires a great waste of milk. At least the first six streams from each quarter of the udder have to be thrown out, seeing that they contain from 10,143 bacteria in the first to 2,347 bacteria in the sixth stream. He further shows that this foremilk, in spite of its high count, when mixed with the milk shows an average increase of only twenty-three over milk of the same animals when the foremilk is rejected. The author considers, therefore, that this procedure is not an essential one, and besides causes much waste of good material.

Stripping the cow dry Mr. Stocking asserts is an excellent practice. It markedly lowers the bacteria in number, when compared with milk from the same animals not so treated (that is, when some milk is left in the udder at the end of the previous milking). Those cows that were stripped gave lower counts by an average of 4,779. By stripping, more bacteria are dislodged from the udder, thus less were left behind and so fewer were given a chance to grow than would otherwise happen.

The individual milker has a marked influence on the number of bacteria in cow's milk. It was found that the same animal milked under the same conditions gave a wide difference in bacterial count. The milk collected by five carefully trained men, as compared with that of regular men, showed a difference of 1,932 in favor of the former. This difference can only be explained by the individual care in the process of milking, for the same directions were given and practised by both men. This same fact is again shown in a more striking way by contrasting the milk collected by an expert and graduate of the dairy college, and the regular men at work. In nineteen tests the milk of the expert gave an average of 2,455 as against 17,105 found in that collected by the regular men, a difference of 14,680.

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[4] Wile: Arch. of Pediatrics, vol. xxiii, no. 9, Sept., 1906.

[5] Sedgwick, J. P.: Arch. of Pediatrics, 1906, vol. xxiii, p. 414.

[6] Stocking, W. A., Jr.: Bull. No. 42, June, 1906, of Storrs Agricultural Experiment Station.

From these tests the author considers that the feeding at milking time of hay, grain or stover is bad, as well as brushing the animals, while wiping with a damp cloth, stripping the animals, and the use of expert men for milkers he strongly advocates.

DIAGNOSIS AND PATHOGENESIS OF ADHERENT PERICARDITIS IN CHILDHOOD.

Flesch and Schossberger[7] studied the relics of adhesive pericarditis in children and conducted a series of experiments on dogs to investigate the causes of the symptoms observed. They found that adhesion of the visceral and parietal pericardium always brought on isolated ascites in the dogs. They think that this shows that the adhesion in itself produces a pure portal stasis of cardiac origin, and believe that this harmonizes with what is observed clinically in childhood. They conclude that adhesion of the pericardium in children is often characterized by a special symptom complex. The most striking symptom is the excessive isolated ascites. In addition, there is slight edema of the face, pallor, cyanosis of the lips and ears and enlargement of the liver. None of the symptoms point to the heart except a small, rather rapid, pulse. On account of the constancy of these symptoms, this form of adherent pericardium presents an easily recognizable clinical picture. The cyanosis does not subside after tapping. The ascites precedes edema in the extremities. Adhesive pericarditis does not always cause this clinical picture, but when this picture is observed, an adherent pericarditis can be safely diagnosed.

A STUDY OF INFANTILE ATROPHY.

Bloch[8] first properly defines infantile atrophy and distinguishes it from wasting secondary to other diseases. He then refers to his investigation of three other cases[9] in which pathological changes were found in Paneth's cells in Lieberkuhn's glands. In this article he reports three new cases in which the same methods of formalin fixation were employed. In one of these cases changes were found only in Paneth's cells. In the other two these cells were normal. In both cases there was a slight round-cell infiltration of the gastric mucosa, in one a slight loss of substance near the pylorus and in the other slight traces of catarrh about the cecum. These changes were, however, so slight as to be unimportant. Marked changes were found in the pancreas, however. Granulations were almost entirely absent from the gland cells which were otherwise normal. There were no evidences of degeneration or inflammation.

He quotes the literature of the subject and also some experiments which he made with calves at different stages of digestion, which show that this condition is an abnormal one and is never found at any special stage of digestion. The absence of this condition in other cases of atrophy shows that it is not a result of the diseased condition but its cause. This condition of the cells shows that the pancreas was not in a condition to functionate. Previous examinations of the feces showed that the pancreas was not secreting and had not been for some time.

He has now investigated 6 cases of infantile atrophy. In 4 evidences of intestinal hypochylia and in 2 of pancreatic achylia or hypochylia were found. These conditions most evidently cause a faulty utilization of the food and in this way cause atrophy.

His cases were all young infants. They were all born normal but received either insufficient or indigestible food. Besides this they had had repeated attacks of intestinal catarrh. It is easy to understand how these conditions, which acted partly by weakening the organism and partly by weakening the intestinal and pancreatic glands, brought on an insufficiency of the glands which ended in achylia. In older children, in whom the gland secretion is better established and richer, it is easy to see that such changes develop with much greater difficulty.

The course of infantile atrophy may be divided into three stages: the first in which there is an intestinal catarrh with frequent, thin mucous stools and in which there is fever and severe constitutional symptoms; in the second stage the intestinal catarrh diminishes, the stools are of better character, the temperature is normal and the child can again take milk. Dyspeptic symptoms, however, persist. These dyspeptic symptoms are more or less evident throughout the whole course of the disease. They gradually change over into the atrophic, in which the child loses weight more and more rapidly and in which the atrophic appearance develops. On the basis of the mortality and course of the disease it is certain that this insufficiency of the glands of digestion is present not only in the atrophic but also in the dyspeptic stage, only in less degree. It is evident, therefore, that on the basis of clinical and anatomical investigations certain forms of chronic dyspepsia or intestinal catarrh are due to the same cause as infantile atrophy, namely, a faulty functioning of the serous digestive glands.

FOOD FEVER IN CHILDREN.

Smith[10] describes a series of cases of sudden pyrexia accompanied by more or less disturbance of digestion. The fever may last from a few days to a few months, recurring frequently and thus producing an injurious effect on the nutrition. The patients are usually neurotic and from three to twelve years old. They have frequent headaches, with or without vomiting, associated with occasional looseness of the bowels. They almost always have some disturbance of digestion. The tongue is frequently coated; they are listless and the fever runs between 101° F. and 105° F., the stomach tympany reaches higher than normal and the liver is palpable one to two fingers' breadth below the costal border. The urine is febrile in character. When the condition is untreated, or is improperly treated, the fever persists for several days, irregularly elevated and falls either by lysis or crisis. It falls directly after calomel but usually remains slightly above normal for several days. The fever is higher after meals than in the evening. The patients are usually irritable by day and restless by night. The appetite is poor. Those having rare attacks usually recover their customary health in a short time. When the attacks recur every six weeks or so the nutrition suffers, and the children become pale and thin and suffer from poor circulation. Convulsions may appear in neurotic patients, and persistent vomiting simulating periodic or recurrent vomiting may be a persistent symptom and may or may not be associated with epigastric or umbilical pain. That pain may be very intense. Occasionally symptoms of intestinal catarrh are seen and mucus and blood are found in the movements. Tuberculosis is often considered by the physician. The diagnosis depends on the history, the irregular course of the fever with intervals of comparative health and the presence of undoubted signs of gastro-intestinal indigestion.

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[7] Flesch and Schossberger: Zeitschr. für klin. Medizin, 1906, vol. lix, no. 1.

[8] Bloch: Jahrb. für Kinderh, 1906, vol. lxiii, p. 420.

[9] See Boston Medical and Surgical Journal, 1804, vol. cl, p. 44.

[10] Eustace Smith: Brit. Med. Jour., Feb. 10, 1906.

The author advises a careful diet, especially as regards carbohydrates, for the prevention or cutting short of the attacks. Food causing fermentation should be withheld. Starches and sweets must be given with care. Milk should be restricted or cut off for a time. Acids in the form of fruits are bad. He favors mutton, poultry, fish, green vegetables, butter, bread, toast and cereals, also salty foods and bacon. He also advises careful hygiene, much fresh air and proper clothing.

(The condition described above apparently corresponds pretty closely to what is known as sub-acute or chronic duodenal indigestion.)

THE WEIGHTS OF THE VISCERA IN INFANCY AND CHILDHOOD, WITH SPECIAL REFERENCE TO THE WEIGHT OF THE THYMUS GLAND.

Boviard and Nicoll[11] made autopsies on 571 cases at the New York Foundling Asylum, 438 being under two years, the rest from two to five years.

In 495 consecutive cases they made careful examinations of the thymus. The most striking thing in this connection was the remarkable variations in the weights of the thymus. Such wide fluctuations were not seen in any other organ of the body. The average weight was 5.9 gm. It is evident from the regularity of the averages at the different ages that there is no decrease in weight during the first five years of life, that is, there is no true atrophy of the gland. There does, however, take place an involution or gradual change in both the appearance and structure of the gland during this period. While this involution is the rule with increasing years, the thymus may persist in the infantile state or even continue to grow, maintaining the infantile characters. This gives rise to the condition spoken of as "persistent thymus," a condition which is regularly a part of the dyscrasia now known as status lymphaticus. Section of the thymus in these cases shows no distinct difference except in size from the normal conditions in infancy. The involution which occurs with increase in age cannot be distinguished from that caused by wasting diseases. The wasting disease seems to cause actual absorption of the thymic tissue. Though more marked in diarrheal diseases and marasmus, this involution with loss of weight is not peculiar to those conditions but occurs in any disease accompanied by exhaustion and reduction of the body weight. Their data shows clearly that the old statement that the thymus continues to grow or increase up to the end of the second year and then atrophies, is not correct. They draw the following conclusions:

1. The study of the average weights of the viscera in infants and children up to the age of five years shows that there is a constant relation between the weights of the more important viscera, thus:

(*a*) The weight of the liver will average seven times that of the heart.

(*b*) The weight of the spleen will average 1–10 that of the liver.

(*c*) The weight of the kidney will average 1–9 that of the liver.

2. That the weight of the thymus gland as commonly given is excessive, owing to the acceptance of pathological glands as the standard for normal conditions.

3. That the average weight of the thymus at autopsy is approximately 6.0 gm.

4. That there is no evidence of a growth of the thymus after birth under ordinary conditions, but that under special conditions the gland does grow and even hypertrophy enormously.

DIAGNOSTIC VALUE OF THE LEUCOCYTE FORMULA IN PERTUSSIS.

Churchill[12] draws the following conclusions:

1. A general leucocytosis is present in almost all cases of whooping-cough.

2. A lymphocytosis, *i.e.*, an increase in the number of lymphocytes is found in about 85% of cases at some time during the course of the disease.

3. A lymphocytosis is found even more constantly during the early or cartarrhal stage, over 90% showing the phenomenon at this time.

4. A lymphocytosis is found usually in those conditions difficult to distinguish from whooping-cough.

5. Therefore, the presence of a lymphocytosis in a child with a hard persistent cough is a factor

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[11] Boviard and Nicoll: Arch. of Pediatrics, vol. xxiii, Sept., 1906, no. 9.

[12] Churchill: Jour. Am. Med. Asso., May 19, 1906.

of great diagnostic value. It is also of prophylactic importance, inasmuch as it can be utilized to prevent the spread of the disease by leading to the prompt isolation of the patent.

6. The child's age must be taken into account in estimating the importance of the lymphocyte percentage.

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Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

Thirty-second Annual Meeting, Held at Hot Springs, Ark., Nov. 6, 7 and 8, 1906.

(Concluded from No. 26, p. 781.)

RETROVERSIO-FLEXIONS, IN THEIR RELATION TO PREGNANCY.

Dr. Channing W. Barrett, of Chicago, said the accompanying diseases of retrodisplacement might cause sterility, but this was by no means constant. What might be expected from those cases in which pregnancy took place or in which retrodisplacement followed pregnancy? There was apt to be an increased displacement, with aggravation of symptoms, and then one of four things might occur: 1. The uterus might return to normal position and the symptoms be relieved or disappear. 2. Abortion might and frequently did follow. 3. Incarceration might take place, causing abortion, retention of urine, sloughing of portions of the bladder, peritonitis, etc. 4. Pregnancy might continue to term, with the uterus still retroflexed, causing only moderate, mild, or almost no symptoms. This condition might become a complication of labor.

The treatment to be advised should be based upon the present conception of the value of different methods of treatment for retrodisplacement; of the danger or absence of danger of radical cure; of the tolerance of pregnant women for an operation; of the value of the life of the child, and, lastly, the method of operation. It must not be based upon a conception of these matters fifteen, ten or even five years ago. If we could make a laparotomy fairly safe, if this danger was only slightly increased in the pregnant woman, if the rights of the child were recognized, and an operation could be performed which prevented the possibility or probability of a return of the displacement after delivery, then would cases of beginning incarceration or threatened abortion be operated upon early. Last resort, surgery, in this as in other conditions, would be less popular.

The writer called attention to the early replacement of the uterus in cases of retroversion, retroflexion, and the holding of the uterus with a pessary, if necessary; to the value of an anesthetic; to the knee-chest position, etc. In cases of beginning incarceration he condemned the practice of producing abortion in the interests of the child, and likewise condemned the method of puncturing through the posterior cul-de-sac in the interests of the mother, saying that the puncture might be so located as to be equivalent to rupture of the uterus into the peritoneal cavity.

In the light of our present-day aseptic technique, tolerance of pregnant women to operation, and our present methods of permanently curing retrodisplacement without creating new pathology, he entered a plea for more early and efficient treatment of these cases.

Ventro-suspensio-fixation was condemned. To operate upon these cases when most advantageous to the mother and child, the operation must offer the following safeguards and advantages: 1. It must be safe for the mother. 2. It must decrease the fetal mortality. 3. It must insure or promise a permanent cure for the retrodisplacement. If these conditions were secured, instead of pregnancy being a bar to an operation, it might at times furnish an urgent argument for an operation.

The writer briefly reviewed his method of operating for retrodisplacement as giving the above advantages. Two cases were described illustrating the necessity for operation, one of which was a case of extreme incarceration, and one of early pregnancy manifesting symptoms of abortion in which there were adhesions and an ovarian cyst.

The paper summed up the writer's position in the following conclusions: "1. Retroversio-flexion is a pathological condition worthy of appropriate treatment, operative or non-operative. 2. Pregnancy may be the means of cure of retroversio-flexion, but may, on the other hand, seriously complicate the condition. 3. The retrodisplaced pregnant uterus should be replaced as soon as possible, and, if necessary, held in position by means of a pessary. 4. A retrodisplacement during the early weeks of pregnancy that cannot immediately be replaced should be supervised and efforts made to assist its return to a normal position as growth advances. 5. An irreducible retrodisplaced pregnant uterus that shows beginning signs of intolerance or incarceration should have a radical operation for the retrodisplacement rather than be emptied or punctured. 6. In cases of inevitable abortion, the uterus should be emptied and the retrodisplacement corrected, if possible, the radical operation following later, if necessary. 7. Cases of marked incarceration should have the benefit of abdominal section unless abortion is inevitable. 8. Cases operated upon should have the radical operation for the retrodisplacement if the conditions are such as to warrant its performance. 9. Should a retrodisplacement correct itself, or be corrected during pregnancy without operation, it should be carefully supervised after confinement with a view of permanently correcting the malposition."

TOXEMIA OF PREGNANCY.

Dr. D. M. Hall, of Memphis, reported a case of toxemia of pregnancy and in reviewing it said there were several unusual features about it. There was a clear history of an attack of uremia with the usual symptoms of edema of the lower extremities, suppression of urine, albuminuria, headache, blindness and convulsions. Several years later a similar attack occurred during the eighth month of pregnancy, but whether this was uremic or eclamptic was questionable. Later on an attack came on suddenly during the second month of pregnancy. This attack was accompanied by nausea, vomiting, headache, intense aching and restlessness, suppression of urine, albuminuria, diminution of urea and acute splenitis, but no edema, blindness or convulsions. During the eighth month of this pregnancy there was a sudden attack of nausea, attended by vomiting, intense aching and restlessness; pain and tenderness over the liver; lessened quantity of urea and urine; but no splenitis, headache, blindness, albuminuria, or convulsions.

BLUNT DISSECTION IN PLASTIC GYNECOLOGICAL OPERATIONS.

Dr. T. J. Watkins, of Chicago, said the advantages usually claimed for blunt dissection with scissors over the method heretofore in use of denuding in strips were, first, that very much time was saved; second, raw surfaces were made which would give firmer union. The operator got down into muscular and connective tissue much better than by denudation; third, there was less hemorrhage.

PUBIOTOMY AND ITS RELATIVE INDICATIONS.

Dr. E. B. Montgomery, of Quincy, Ill., said that his interest in this operation had its beginning from the fact that he was obliged to do it in 1903, to enable him to deliver a child which was impacted in the pelvis in a mento-posterior position. Examination of the literature of the subject showed him that no such procedure had ever been resorted to in this country for such a condition, nor had a lateral section of the pubis for any condition before been made on this side of the Atlantic. Satisfied with the outcome in this case, he began a thorough investigation of the literature of the operation of Gigli, and presented this in a paper before the obstetrical section of the Fifteenth International Medical Congress, held in Lisbon, in April of this year. The results in the 134 cases collected by him from 35 different operators were uniformly favorable, in that there were no deaths in cases not previously infected, and all patients recovered with perfect union of the bone and with perfect gait.

An indication other than contracted pelvis for the performance of pubiotomy was the occurrence of an impacted mento-posterior face presentation in which a change of position could not be effected by the Volland or other procedure. In the case reported by the essayist a lateral section of the pubis was done, and labor terminated by delivery of a living child with forceps. The mother made an excellent recovery.

OPERATIVE WORK FOR HYPERTROPHIED PROSTATE.

Drs. Bransford Lewis and C. E. Burford, of St. Louis, Mo., contributed a joint paper on this subject, cited illustrative cases and exhibited a number of interesting specimens. They presented the following conclusions: "1. Prostatic cases, if correctly estimated and judiciously treated, are now among the most satisfactory that seek the aid of the surgeon. 2. Diagnosis, both accurate and comprehensive, is essential to the attainment of such success and satisfaction. 3. Not all cases of enlarged prostate produce obstruction. 4. Not all cases, even though producing obstruction, require operation. 5. Not all cases that are producing obstruction and do require operation demand the same operation. 6. Not all cases of prostatic obstruction are produced by enlargement or outgrowth; some are produced by definite contraction of the vesical neck, no hypertrophy being present. It is impossible to determine such conditions by palpating per rectum only. 7. The retrograde cystoscope is the most serviceable aid attainable in determining these questions, in respective cases; hence its value in this work is inestimable. 8. Experience proves that neither advanced age, depression of health nor disease of the heart or kidneys debars the patient from the hope of operative relief. Operation reclaims many, even after they have suffered uremic attack. 9. The longer required operative measures are postponed, the greater the likelihood of establishing spreading infections and renal involvement, conditions much less amenable to surgical relief than simple obstruction at the vesical neck. 10. Three weeks should be sufficient to demonstrate how much may be expected from palliative treatment, after which any operative treatment necessary should be carried out as soon as possible. Delays are dangerous."

CLINICAL PSYCHOLOGY.

This was the title of the address in medicine, which was delivered by Dr. Frank Parsons Norbury, of Jacksonville, Ill.

In all ages man had sought to solve the mysteries of his own ruling mind. The researches of to-day had translated the science of mind from terms of the metaphysician with its confusing verbiage to words that signified something by defining the facts of physiological psychology, psychophysics and clinical psychology. Mind to-day was studied from the basis of the general law laid down by James, namely, that no mental modification ever occurred which was not accompanied or followed by a bodily change. The brain itself did not act (it is a passive organ), but reacted to stimuli through the peripheral sense organs, thus creating a reflex either in the sensory, motor, or higher psychical cells. Psychology endeavored to study these reactions. Herbert Spencer, in his "Synthetical Psychology," laid the foundation for these studies both normal and morbid. Drs. Hughlings Jackson, Charcot, Mercier, Janet, Wundt, Maudsley, Wernicke, Krapelin and others had applied these principles to clinical medicine.

Speculative psychology had no place in the modern new psychology. Physiological psychology, aided by the co-ordinate science of physics had overcome the dissatisfaction growing out of introspective psychology. It had raised the physiological unit, as stated by Mercier, namely, "That a nervous process which, when transmitted to muscles, issues in a movement, and is accompanied by a mental state," to the higher power, as shown in conduct. Conduct was the criterion of soundness or unsoundness of mind. It was the product of innate character, of environment, of experience and numerous other modifying conditions.

Refined methods of analysis applied in the study of sensation, of perception, of memory, of thought, of feeling; and of the disorders of the will revealed mind in its constitution. In analytical study it was necessary to note negative as well as positive results.

These methods applied to the borderline anomalous mental states, viz., the neurasthenic, the psychasthenic, the hysteric, the epileptic, enabled us to define their full clinical significance. We should follow the clinical methods of Janet in studying these very varied mental anomalies.

A clinical résumé of these states was given, emphasizing Janet's dictum, that we must know well the patient, his life, his education, his disposition, his ideas. We must study his acts, his words, written and spoken, in formulating a basis for diagnosis. Heredity was not considered in these studies with the same degree of insistence as that advocated by Morel.

Therapeutic methods resolved themselves into the personality of the physician, his consideration, patience and earnestness; his ability to take a broad educational view of the whole subject and apply wholesome, helpful methods both in the physical and mental considerations. In no place in our therapeutic art did we find a greater call for the highest application of educational means and methods than in the treatment of nervous disorders, as found in the psychoneuroses. The educational growth of character was imperative. Moral education preceded mastership in every act, because the training which mastery involved reacted upon character, gave it steadiness and solidity.

Educational methods alone would not give the results; we must build up, overcome the fatigue bodily, intellectual and emotional. This required fat and blood, strength and equipoise. The connection between sane living and sound work was a psychological and physiological necessity.

SURGICAL PRINCIPLES AND THEORIES.

This was the title of the address on surgery, delivered by Dr. F. F. Lawrence, of Columbus, Ohio. He said that surgery was either an art founded upon exact science, or it was a gigantic fake founded upon empiricism. Every science was and must be founded upon principles which were as enduring as truth. Every principle, every truth, must be preceded by theory, which was only another word for ideal. To make our theories or ideals conform to truth, and exemplify a scientific proposition, was to convert that theory or ideal into a fact. To sacrifice on the altar of personal vanity or ambition one jot or tittle of truth or science was to sacrifice the entire principle. Empiricism had been the foundation of quackery from the earliest days, and to encourage, practice or teach any of our surgical methods empirically was to justify and father quackery. It was unreasonable, therefore, to expect that any man could put into practice a scientific principle if he knew not a thing about any of those sciences upon which surgery rested, namely, philosophy, anatomy, physiology, pathology, psychology, embryology and biology, together with those collateral branches, — chemistry, histology, bacteriology and therapeutics.

The human body should be viewed as a machine. Its surgical or medical repair should be based upon the idea of the province of a thorough mechanism. There was no part of the body which was not constructed on a true philosophy, and its repair required a knowledge of natural philosophy. All the other ologies and osophies were useful only in determining the need and character of repair, hence any surgical effort not philosophical was unsurgical. Teaching of the principles upon which the treatment of a surgical case was based should be the most attractive as well as the most important part of the physician's efforts. To accomplish this methods of teaching and practice should be consistent, and both could be revised with benefit. Traumatism should be given the consideration due its importance as a factor in infection. Fads and fancies should not command the respect of the profession, and non-essentials should not be given prominence in teachings. Surgery should be taught as an art which rested upon exact or scientific principles; hence one in which philosophy was equally important with pathology, and anatomy of greater import than the microscope, although the latter was a necessary adjunct. A man might be a good physician but a poor surgeon. The converse, however, was not true, for a man could not be a surgeon who was not a good physician; hence a special qualification might be advantageous. Hospital construction and hospital management should be consistent with the teachings of hygiene, segregation of patients, isolation of infected cases, space per bed, and all minor details should be worked out by men trained in sanitary science instead of by architects and other laymen. Endowments for the working out and proving surgical principles and honors to the workers might be worthy of serious consideration. The one great principle, that a surgical condition was always surgical, should be constantly emphasized to the end that *dernier ressort* operations might cease to be the bane of the profession and the boon of the undertaker.

PRESENT OPERATIVE NECESSITIES FOR CURE IN TUBERCULAR ORCHITIS.

Dr. Charles E. Barnett, of Fort Wayne, Ind., in summing up, said: "(1) To be sure of a cure, all that is infected with tuberculosis must be removed. (2) Primary invasion statistics are so variable that the operator should consider his testicular tuberculosis as primary unless other foci are found that disprove the supposition. (3) The modes of infection are so many that the surgeon should be on his guard constantly. This is especially true in infection during the act of cohabitation. (4) The desexation bugbear should be entirely removed from the patient's mind, and instead hope should be given him for a continuation of his copulative power. (5) Injections of paraffin in producing artificial testes are good from a cosmetic standpoint, and good also from the great satisfaction they give the patient. It is entirely devoid of danger when properly done. (6) Operations, when indicated, should be immediate, followed by prophylactic and hygienic treatment until the maximum improvement is gained."

The author gave the operative technique used by him in double orcho-vasectomy, and showed how comparatively easy it was to extract the vas deferens from along its course even down to the ejaculatory duct region. He reported two cases to illustrate the post-operative benefit gained. One of them was injected with paraffin, according to the Gersuny method of small quantities at a time, with frequent sittings. The artificial testes were, from the standpoint of size, location and permanency, all that could be desired.

HEAD INJURIES.

Dr. William Britt Burns, of Memphis, Tenn., reported three cases of head injuries which had a bearing especially on injuries of the middle meningeal artery.

NON-LITHOGENOUS OBSTRUCTION OF BILIARY DUCTS.

Dr. A. H. Cordier, of Kansas City, Mo., said that for years gallstones were the only condition that received much attention from the pathologist and surgeons. Further clinical study, operative and post-mortem findings, had demonstrated beyond doubt that gallstones were the result of a pre-existing disease of the ducts and gall bladder, and that in the great majority of instances this disease was of bacterial origin. It was claimed that those of sedentary habits, and insane patients were especially prone to the formation of gallstones, and that at post-mortems a large number of gallstones were often found in patients who had died of other diseases, and who during life had not manifested any symptoms of gallstones. This later statement was used by some even to-day as an argument against the surgical management of these cases. Gallstones did not form in a few days; they were late manifestations of a pre-existing disease. The gallstone cases with which the profession was familiar presented typical histories.

The author spoke of stricture of the common duct, saying that it might have its origin in the long incarceration of a stone, the stone later passing into the duodenum or ulcerating into the bowel. In that event no stone would be found at the time of operating. Numerous instances of this kind had been reported.

Drainage of the gall bladder externally would become less and less a procedure resorted to as surgeons appreciated more that the gall bladder, like the appendix, when full of strictures, was best taken care of in a specimen bottle filled with a good preservative.

There was a class of cases presenting an obscure train of symptoms pointing to the vicinity of gall bladder and biliary ducts as their source. For instance, a vague sense of uneasiness; occasionally painful spells lasting a few minutes, with attacks of indigestion and painful flatulency. At the operation no stones were found; no stricture of the ducts was discovered; no visible changes in the gall bladder were discernible; in fact, nothing was detected except a few adhesions between the cystic duct and common duct or duodenum. A separation of these adhesions, with a liberation of the bound-down ducts and viscus from the constantly nagging, distended stomach and intestines, would, as a rule, bring relief to the patient.

If an obstruction was located in the cystic duct, and the gall bladder escaped, the usual contraction due to the presence of a cholecystitis, this viscus might continue to manufacture mucus, and if infected, as it usually was, a muco-purulent distention took place, and a pyriform retention cyst was produced, usually detectable below the border of the liver in emaciated patients. In this condition jaundice was absent, and the patient would have fever and stomach and intestinal digestive disturbances. These cases were especially liable to recurring attacks of fever, as the absence of bile in the gall bladder robbed nature of one of the most efficient inhibiting bactericidal fluids. These were fit cases for a cholecystectomy, as drainage of the gall bladder was too uncertain in its curative effects, the opening either refusing to close, or if it did close, the symptoms were renewed.

Where the complete obstruction of the duct was the outcome of a long impacted stone resulting in a cancer, the diagnosis of the latter was extremely difficult before operation. Cancerous obstruction occurred most frequently in the lower portion of the common duct. This was likewise the location of most lithogenous obstructions. In determining the existence of an obstruction, its location, extent, character and time of operating, he had for fourteen years resorted to hydrostatic pressure, by introducing through an aspirating needle into the gall bladder a saline solution from a moderate height, or if this viscus had been opened, the nozzle of an irrigating syringe, or if the common duct had been opened, by irrigating directly into the duct. In cases where the duct was embedded in a mass of adhesions and had lost its identity, it could be made to stand out distinctly by water pressure introduced through the gall bladder, provided the cystic duct was patent. By this same process the patency of the duct, after removal of one or more stones, could be determined, as he had on several occasions run rather a large quantity of saline solution directly into the duodenum through the gall bladder, cystic and common ducts. As a means of determining the security of the duct stitching, where the opening in this canal was closed by suture, this method was invaluable, as disappearing stones and other débris could thus be washed out of the biliary tract.

The following papers were read and discussed: "Gallstones, Report of Two Cases," by Dr. J. H. Barnett, of Pikeville, Tenn. "Pruritus of the Anal Region," by Dr. Bernard Asman, of Louisville, Ky. "Diagnosis and Treatment of Brain Traumatism," by Dr. John N. Sluss, of Indianapolis, Ind. "Asthma with Mixed Infection Following Repeated Attacks of La Grippe," by Dr. Wm. F. Waugh, of Chicago. "Some Medical Notes on Frontal Sinusitis," by Dr. A. E. Prince, of Springfield, Ill. "The True Cause of Functional Neuroses," by Dr. G. G. Buford, of Memphis, Tenn. "A Possible Explanation of the Formation of Drug Habits," by Dr. H. A. Rodebaugh, of Columbus, Ohio. "Specific Treatment of Tuberculosis Pulmonalis," by Dr. E. G. Epler, of Fort Smith, Ark. "Report of Cases of Probable Maternal Impressions," by Dr. J. Madison Walton, of Memphis, Tenn. "Some Clinical Observations in Tuberculosis," by Dr. Wm. Porter, of St. Louis, Mo. "Eye Findings in Arteriosclerosis," by Dr. Geo. F. Suker, of Chicago. "Remarks on Combined Degeneration of the Spinal Cord," by Dr. Hugh T. Patrick, of Chicago. "The Entoning of the Psychic Neurons in Neurotherapy and in General Therapeutics," by Dr. C. H. Hughes, of St. Louis, Mo. "Yellow Fever and Mosquitoes in New Orleans in 1905," by Dr. Quitman Kohnke, of New Orleans, La. "Operations for Pyothorax," by Dr. Spencer Graves, of St. Louis, Mo. "What to do in the Presence of Obscure and Persistent Abdominal Symptoms," by Dr. H. H. Grant, of Louisville, Ky. "Etiology, Pathology and Operative Treatment of Deformities of the Face and Mouth due to Malrelations of the Face and Jaws," by Dr. V. P. Blair, of St. Louis, Mo. "Successful Obliteration of Hemangioma Cavernosum of the Upper Lip," by Dr. Francis Reder, of St. Louis, Mo.

DRS. MARTIN F. ENGMAN and W. H. MOOK, of St. Louis, Mo., gave lantern slide demonstrations of the spirocheta pallida in various sphilitic lesions.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. H. H. Grant, of Louisville, Ky.; vice-presidents, Dr. Barr, of Hot Springs, Ark., and Dr. T. C. Witherspoon, of St. Louis, Mo.; secretary, Dr. Henry Enos Tuley, of Louisville, Ky., re-elected; treasurer, Dr. Samuel C. Stanton, of Chicago, Ill., re-elected.

Columbus, Ohio, was selected as the place for holding the next annual meeting; time, October, 1907.

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Book Reviews.

The Subconscious. By JOSEPH JASTROW, Professor of Psychology in the University of Wisconsin. Boston and New York: Houghton, Mifflin & Co. The Riverside Press, Cambridge. 1906.

In this volume of 549 pages Professor Jastrow offers to the public an easily understood and semi-popular account of that range of phenomena which are included in the general term, "subconscious." In undertaking this task he divides his subject matter into normal, abnormal, and theoretical. Under the normal section he discusses the function of consciousness in the nervous system, and various matters pertaining to the subconscious activities. Under the section relating to abnormal conditions he goes over the modern theories of dissociated consciousness, the genesis of altered personality, and the disintegrating lapses of personality. Finally, under the theoretical heading, he discusses the conception of the sub-conscious, and the sub-conscious as abnormal.

The book is a useful one for students of psychology, and may well find a place in the library of the physician who desires, as he should, to be informed of a certain very significant trend of psychological study having a distinct bearing upon pathological mental conditions, as met with in the ordinary practice of medicine. The book is somewhat verbosely written, but requires no special psychological training.

Etudes sur le Traitement des Fractures des Membres. Par FR. GUERMONPREZ (de Lille). Notes recueillies et mises en ordre par les Docteurs J. GAILLOUX, L. EISSENDECK, J. FAIDHERBE, A. DAVID, L. MERVEILLE et AD. PLATEL, et revues par le Professeur. J. ROUSSET, Editeur. 235 illustrations. Paris. 1906.

This volume of 1644 pages is a treatise on the treatment of fractures of the upper and lower extremities. The chief points presented are the mechanical features in the treatment of fractures, such as massage, passive motion, thermo-, electro- and mechano-therapeutics. It is not a manual or résumé of current ideas. The fundamental idea of the work is to harmonize its treatment with the anatomical conditions of a fractured limb. The chapters are written by different authors and express in different ways the same principle of treatment. Some of the chapters are short and treat subjects on which there is little difference of opinion. Others are more extended, especially those devoted to the employment of massage and early passive motion. The author criticizes routine immobilization. He contrasts "mobilization" as he terms it, and immobilization, massage and fixed apparatus. The chapters which attract most attention in the work are those which describe the subject of thermo- and mechano-therapeutics, factors of treatment which are presented as having great importance in cases of fracture in civil life. The last two chapters are devoted to the consideration of the education of movements and the restriction of gait to the lame and crippled. The arrangement of the work briefly is as follows: First appears the general considerations of the condition of reduction of fractures and of massage, "mobilization," electro-therapeutics, etc., with a chapter by Fr. Guermonprez on the history of massage. Also, "mobilization" is discussed and the place that massage occupies in the treatment of recent and of old fractures. Next, these principles are considered in the treatment of special fractures of the bones of the upper extremity, each bone and joint being discussed separately. How massage acts and the contra-indications for its use are the subjects of two chapters. Joint changes occurring in joints adjacent to fractured bones, conditions termed arthropathies are next treated and their anatomical character and symptomatology presented. The remainder of the work is devoted to application of the methods of mobilization, — retention apparatus, mobilization *versus* immobilization in the treatment of fractures of the forearm, wrist and knee, the care of fractures during convalescence, including mechano-therapeutics and the use of gymnastics.

The volume is an exhaustive treatise and presents at length that part of the treatment of fractures which is often summarized in the casual surgical textbook. It is a part of the treatment very important to the patient since it influences the time required for complete restoration of function, *i.e.*, motion. It, therefore, justly merits careful study and consideration.

A Textbook of Human Physiology. By Robert Tigerstedt. Translated from the German and edited by John R. Murlin. 751 pages. New York and London: D. Appleton & Co. 1906.

Professor Tigerstedt's admirable textbook of Physiology, since its first publication in 1897 the standard textbook of German medical students, has in this translation been made available to English-speaking students as well. The thorough acquaintance of the author with two great divisions of physiology, the circulation and metabolism, in which he has conducted important research, leads one to expect an excellent treatment of these subjects. But the scholarliness seen in these parts of the book is to be seen also in all other parts. Statements are based throughout on reports of the original investigators, and the summary of the literature includes the most recent discoveries of the science.

One unusual feature of the book deserving commendation is the part devoted to general physiology, the vital phenomena of cells.

Another excellent new feature is the occasional paragraph or section devoted to the consideration of the inter-relation of the activities of different organs — the organism as an integer is not lost sight of in the consideration of the separate systems and their special functions. The book is very well illustrated.

Large full-face types make clear the titles of the larger sub-divisions of each chapter, and italics are used for emphasis, and for indicating the key-word, phrase, or clause of a paragraph. Such devices are specially valuable for easy reading and quick review.

This book can be very highly recommended to students, and to physicians who wish to renew their acquaintance with physiology.

A Textbook of Materia Medica, Therapeutics and Pharmacology. By George F. Butler, Ph.G., M.D., Associate Professor of Therapeutics in the College of Physicians and Surgeons, Chicago. Fifth edition, thoroughly revised by Smith Ely Jelliffe, M.D., Ph.D., Professor of Pharmacognosy and Instructor in Materia Medica and Therapeutics in Columbia University, College of Physicians and Surgeons, New York. Octavo of 694 pages, illustrated. Philadelphia and London: W. B. Saunders Company. 1906.

The fifth edition of Butler's textbook has been entirely remodeled, rewritten and reset. The general arrangement of the book is changed so that drugs with predominant action on one system are grouped together. The use of a more compact type and the elimination of material from the chapter on Serum Therapy has reduced the size of the book. It is well written and carefully indexed and will prove of assistance to both student and practitioner. Dr. Jelliffe's name on the titlepage is a guaranty of faithful revision.

Diseases of the Stomach. A textbook for Practitioners and Students. By Max Einhorn, M.D., Professor of Clinical Medicine at the New York Post-Graduate Medical School and Hospital; Visiting Physician to the German Hospital. Fourth revised edition. New York: William Wood & Co. 1906.

The present edition shows considerable revision, and there are comparatively few omissions of important facts. The volume would be greatly improved, however, by a more careful discussion of dietetic treatment of the individual disease. The use of fats in hyperacidity should be emphasized, and the growing tendency to feed patients with gastric ulcer more freely should be considered, even if Lenhartz's views are not adopted.

Rhythmotherapy. A discussion of the Physiologic Basis and a Therapeutic Potency of Mechano-Vital Vibration, to which is added a Dictionary of Diseases with Suggestions as to the Technic or Vibratory Therapeutics. By SAMUEL S. WALLIAN, A.M., M.D., President American Medico-Pharmaceutical League. Illustrated. Pp. 210. Chicago: The Ouellette Press. 1906.

This volume attempts to place on a scientific basis the much vaunted recent treatment of various ills by vibration. It is doubtful whether all can be accomplished which is claimed, but exaggeration is to be expected in the exploiting of any single method of treatment. No doubt vibration has its uses, but they are somewhat sharply circumscribed as our increasing experience serves to demonstrate. The list of diseases, according to the writer, treatable by means of vibration is long and unreasonable. It is, for example, a waste of time to discuss the treatment of dementia or of diabetes mellitus or of epilepsy by this means.

Nature and Health. A Popular Treatise on the Hygiene of the Person and the Home. By EDWARD CURTIS, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, Columbia University, New York. Pp. 313. New York: Henry Holt & Co. 1906.

Dr. Curtis has written this book, as he says, under the open sky, and it is offered to the public not as learning but as a lure to wiser living. It is, in fact, an attractive and somewhat popular presentation of hygiene in the broad sense of the term and should appeal to readers beyond the medical profession. In spite of the popular form in which it is written it is full of excellent common sense and many practical facts which we are inclined to think make a deeper impression upon the ordinary reader when presented in this way than when offered in the guise of pure science. We commend the book to our readers, both lay and professional.

Dissecting Manual Based on Cunningham's Anatomy. By W. H. ROCKWELL, Jr., M.D., Formerly Assistant Demonstrator of Anatomy in the College of Physicians and Surgeons, Columbia University, New York. Pp. 306. New York: William Wood & Co. 1905.

This is a manual intended for dissecting-room use and based on the classical work of Cunningham. The book is not illustrated, the author no doubt regarding the actual process of dissection as a sufficient substitute. The book makes no claims to originality and is, in fact, simply a description of structures which may be discovered by dissection. Like many other books of this character, it will, no doubt, be of more use in the laboratory where the writer was formerly active than in others.

The Treatment of Syphilis. By ALFRED FOURNIER, Professor at the Faculty of Medicine, Member of the Academy of Medicine, Physician to the St. Louis Hospital, Paris. English translation of the second edition, revised and enlarged. By C. F. MARSHALL, M.D., F.R.C.S., Late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London, etc. Pp. 528. London: Rebman, Limited. New York: Rebman Company. 1906.

Fournier has for many years been recognized as one of the leading syphilographers in the world, and much of his work has sifted into other languages through textbooks and by other such indirect means. Few, however, of his notable works on the general subject of syphilis have been translated into English. It is, therefore, a satisfaction to call attention to this volume in which the translation of Fournier's works on "The Treatment of Syphilis" and "The Prophylaxis of Syphilis" has been made by Dr. C. F. Marshall, of London. Although French is a somewhat widely read language, it is certainly true that any book in a foreign language is cut off from a large number of readers who might otherwise profit by it. In this instance it is peculiarly fortunate that at last a translation has appeared of one of Fournier's leading publications. The importance of the disease and the widespread interest from a social standpoint, as well as from a purely medical one, which it is arousing, makes the publication of this book in English peculiarly opportune.

The discussion of the treatment is extremely comprehensive and gives in detail the various methods which have from time to time been in use in administering the iodides and mercury. The chapters on the hypodermic method will, no doubt, be read with particular interest. The second part of this volume, on the prevention of syphilis, discusses more particularly the social side of the question and should find many readers among those who are conscientiously attempting to minimize a widespread danger to communities in all parts of the world. The book needs no further commendation than to say that it is a careful translation of an authoritative discussion of the subject.

Notes on Surgery for Nurses. By JOSEPH BELL, M.D., F.R.C.S. (Edin.), Consulting Surgeon to the Royal Infirmary, and to the Royal Edinburgh Hospital for Sick Children. Sixth edition, thoroughly revised. New York: William Wood & Co. 1906.

This is the sixth edition of this little book. It is an admirable presentation of the information that is adapted to a nurse's needs on the subjects of infection and repair, of fractures and dislocations, of tumors and of some special operations.

The lecture in the Appendix to the trained nurse and to the medical profession in its different subdivisions, and finally to the public, we wish might be read by every one.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, JANUARY 3, 1907.

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MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

DURING the past week some fifteen hundred members of the American Association for the Advancement of Science have been attending the fifty-seventh annual meeting of the society at Columbia University. At the first session, on Dec. 27, an address of welcome was made by President Nicholas Murray Butler, of Columbia, and in the evening the presidential address, on "Science in Education," was delivered by the retiring president of the Association, Dr. C. M. Woodward, of Washington University, St. Louis. Dr. William H. Welch, of Johns Hopkins University, is the president of the year. Under the auspices of the association, twenty of the leading scientific societies of the country held their meetings. On Dec. 28 an interesting series of papers was read before the American Society of Naturalists on "The Biological Significance and Control of Sex." Most of these dealt with plants and low forms of animal life, but Prof. T. H. Morgan, in his paper, discussed the question in relation to man, and expressed the positive conviction that up to the present time the scientific world was completely at sea in regard to what conditions control the sex of offspring. In the course of his remarks he said: "In recent years we find that one external factor above all others has been supposed to have an intimate relation to sex determination, namely, nutrition. An experiment of Landor's in 1867 furnished the first erroneous evidence in favor of this view. He claimed that he could produce at will males or females of the butterfly Vanessa by regulating the amount of food. Dusing applied the statistical method of study to the proportion of males and females in the human race, and also reached the conclusion that the nutrition of the parents is an important factor in sex determination. But his conclusions may be seriously questioned, because other statistics yield contradictory results, and because it is apparent that so many other external factors than food may be involved to account for the differences he noticed. Moreover, if nutrition were a factor in sex determination in man we should expect to find, I think, a far greater disproportion of males to females than Dusing's statements show. If further evidence is needed, it is furnished by the recent experiments of Cuenot with rats and of Schultze with mice. Even extreme conditions of starvation and of feeding produced no effects upon the birth-rate of males to females."

In the section on zoölogy, Prof. Burt G. Wilder, of Cornell, read a valuable paper on the brain of the shark. The brain of this fish, he said, was of special value for scientific study because it illustrates in an admirable manner the unity underlying the whole animal creation. More primitive species of the shark have survived than of any other animal, and while in some of them the brain has become very considerably developed, it is still possible to trace in the different varieties the complete evolution of the cerebral apparatus. Closely related to the shark is the dogfish, and in it can be demonstrated every part of the human brain. In this connection Dr. Wilder remarked that he looked forward to the time when no one would be esteemed a liberally educated man until he had dissected the brain of a dogfish. By this means he would have laid the foundation of an understanding of the brain of man.

Among the subjects of papers in the anthropological section were: "Heredity in Head Form," "Certain Aspects of Human Heredity," and "The Negro Brain." In the last-named paper Dr. Robert Bean stated that the difference between the white and black races in mental capacity could be absolutely determined by comparative measurement and weight of the brain of each. The Negro brain is decidedly smaller, while the nerves originating in it are much heavier than in the case of the white, in which respect it more closely resembles the brain of the white. The average weight of the brain of the American Negro is greater than that of other Negroes. This greater weight the speaker attributes to the presence of white blood, though one of those who discussed the paper was inclined to believe that this was due to national circumstances.

One of the special features of the recent meeting of the Association for the Advancement of Science was the presentation to the American Museum of Natural History, on Saturday afternoon, Dec. 29, of ten marble busts of noted scientists and pioneers of science in America. These were admirable works of art, executed by the sculptor, William Cowper, and were the gift of Morris K. Jessup, president of the museum. The busts were those of Benjamin Franklin, Alexander von Humboldt, John James Audubon, John Torrey, Joseph Henry, Louis Agassiz, James Dwight Dana, Spencer F. Baird, Joseph Leidy and Edward Dunbar Cope. Prof. Henry Fairfield Osborne presided on this occasion. Dr. Herman C. Bumpus, director of the museum, presented the busts on behalf of Mr. Jessup, and the Hon. Joseph H. Choate accepted them on behalf of the truestes. As each of the busts was unveiled a short eulogistic address on the work of the distinguished original was made. Among those who were thus heard were the following: Dr. S. Weir Mitchell, of Philadelphia, spoke on Franklin; Dr. C. Hart Merriam, of Washington, on Audubon; Dr. Robert S. Woodward, of the Carnegie Institution, Washington, on Henry; President Arthur Hadley of Yale, on Dana; Dr. Hugh M. Smith, deputy United States Fish Commissioner, on Baird; Dr. Nathaniel L. Britton, director of the New York Botanical Garden, on Torrey, by whom the garden was founded; Dr. William Keith Brooks, of Johns Hopkins University, on Leidy; Professor Osborne, of the American Museum's Department of Paleontology, on Cope; and Prof. Addison E. Verrill, of Yale, an old pupil of his, on Agassiz. Letters from the Rev. Dr. Edward Everett Hale and Professor Putnam, of Harvard, were also read when the Agassiz bust was unveiled.

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THE SCIENCE OF EDUCATION.

The American Association for the Advancement of Science is coming to have a closer and closer relation to the medical profession, as a natural consequence of the position which medical science is taking in relation to other branches of learning. The somewhat recent establishment of a section in medicine is significant of this fact, and is but another indication of a general recognition that medicine, apart from its utility, has taken its place among the departments of abstract science.

In this connection the address of the president, Prof. Calvin M. Woodward, of Washington University, is of more than passing interest. Professor Woodward chose as his topic, "The Science of Education." He urged that another section be added to those already in existence, which should concern itself solely with education as a science. He is of the opinion that sufficient data and experience have been collected to formulate certain principles of universal applicability which may properly be regarded as a foundation for a new department of science. He was naturally speaking from the broad point of view, and was including in his remarks the vast range of subjects which come under the notice of this association. Nevertheless, the application of his ideas to certain matters which are attracting much attention in medical education is worthy of comment. For example, in one place he says: "I agree heartily with Huxley and others that there is no valid distinction between pure science and applied science. The final test of the value of what is called science is its applicability, and it is one of the signal triumphs of the last few years that much of what was rated as 'pure science,' and 'pure' because useless, has proved to be invaluable either in widening the boundaries of scientific attainment or in the development of the useful arts."

For the past few years, since the development of the scientific method as applied to medical problems, medicine has been exposed to peculiar difficulties and misunderstandings. Medicine certainly is and must continue to be regarded as a utilitarian science, but it should not be supposed for this reason that purely abstract knowledge, as derived from laboratory study and experimentation, is therefore useless. Experience has again and again shown, as Professor Woodward suggests in the paragraph here quoted, that enormous benefits of a purely practical sort have come to medicine, as to other departments of knowledge, from wholly unexpected sources. There is no danger that the future will see a reversal of our friendly frame of mind toward abstract research in the medical sciences. The problem which will unquestionably come into prominence in the immediate future is rather the relation of the so-called practical branches of medicine to those which are followed primarily in the laboratories. The connection between so-called pure science and applied science is evident enough, but we are too apt to overlook the benefits which are likely to accrue to pure science, so-called, from the practical observations of every-day medical progress.

The time fortunately has passed when we may without expectation of correction speak of scientific medicine as opposed to, or at least contrasted with, clinical medicine. The time is coming, if it is not already here, when all the methods of so-called scientific research will be applied to the apparently commonplace phenomena of disease as manifested in the wards of our hospitals, and when that time fully comes, medical men may likewise say with Huxley that there is no valid distinction between pure science and applied science.

These somewhat commonplace observations regarding the present status of medicine Professor Woodward in an illuminating way applies to the whole range of education. The significance of his address lies essentially in the fact that he sees clearly the alliance of various types of training in the education of the future. Medicine undoubtedly may draw its special lesson from the general principles which Professor Woodward has skilfully and rationally evolved. It is, for example, eminently desirable that as soon as possible experimental methods in medical education give place to those which have stood the test of time and have not been found wanting. It is also desirable that our medical students should realize fully that whether their time be spent in the laboratory or in the hospital ward, precisely the same methods of education are applicable, and, finally, it should be impressed upon medical teachers, and through them upon medical students, that work in the laboratory has an immediate relation to the practical prosecution of their profession later. What we especially need at this time is that the clinical side of medicine be brought into connection with and influence the early laboratory training, and this, we maintain, is fully as great a necessity as that the abstract training in science should later find a place on the practical side of instruction. By the student of educational problems Professor Woodward's address may be read with much profit.

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APPOINTMENT OF DR. SIMON F. COX AS SUPERINTENDENT OF BOSTON TUBERCULOSIS HOSPITAL.

The appointment of Dr. Simon F. Cox as superintendent of the tuberculosis hospital recently established in this city has been confirmed by the mayor. The appointment is a peculiarly fitting one from every point of view. Dr. Cox's experience, both as a physician and as an administrator, is of a high order. After graduating from the Harvard Medical School he served as house officer at the Long Island Hospital in Boston Harbor.. At the time of the epidemic of smallpox in this city, some years ago, he had charge of the hospital at Gallup's Island. He then served in an official capacity in connection with the hospital on Deer Island, a position which he resigned to accept the place of assistant resident physician at the Long Island institution. He later became resident physician, and during the investigation of the institution which took place recently, showed a knowledge of the details of management which proved of the greatest value and did much toward establishing the falsity of the charges made. Until the appointment of Mr. English, the present superintendent of the institution, he served as acting superintendent with unusual capacity and tact. After the appointment of Mr. English he retained his position of physician and assistant superintendent for about a year, in the face of many difficulties, and finally resigned to accept the superintendency of the Albany, N. Y., hospital. He comes directly from this hospital to take charge of the Boston institution. The trustees and the city alike are to be congratulated upon having secured so competent a man to inaugurate the new undertaking in the treatment of tuberculosis.

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A CYCLOPEDIA OF AMERICAN MEDICAL BIOGRAPHY.

Dr. Howard A. Kelly, of Baltimore, is preparing a cyclopedia of American medical biography to be issued in several volumes with illustrations, to include biographical notices of all the worthies who have passed away in this country and in Canada from the earliest times down to the present, including such living practitioners as have retired from active service.

It is the purpose to give in this ambitious work a full account of the lives, something of the personalities, of the medical or surgical activities and of the writings of all our leading men. Not only this, but the work plans to include brief sketches of the lives of men who have been very prominent in their own localities without, however, having been widely known as writers or original investigators.

The scope of this labor of love for the history of medicine is broader than anything heretofore published. During the two or three years necessary to accumulate the data, the cordial co-operation of the medical profession is solicited. Dr. Kelly asks that physicians and laymen having lists of names, biographies, photographs or photographs of pictures of eminent medical men that they can spare communicate with him at 1418 Eutaw Place, Baltimore. The New England States, except Connecticut and Rhode Island, have been assigned to Dr. W. L. Burrage,

MEDICAL NOTES.

X-RAYS. — "Let your x-rays so shine that they may see your bad works." — "Cynic's Calendar of Revised Wisdom," 1907.

GIFT FOR CANCER RESEARCH. — A gift of $200,000 for cancer research in England is announced from Mr. and Mrs. Bischoffesheim. This money goes to the Imperial Cancer Research Fund in which King Edward has a particular interest.

ENGLISH A NECESSITY IN THE HAWAIIAN ISLANDS. — It is reported that the Hawaiian Medical Association has suggested legislation which will require applicants for licenses to practise medicine, to pass an examination in English. The Japanese have heretofore insisted that their examinations be conducted in Japanese.

THE MILITARY SURGEON: JOURNAL OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES. — The name of the journal of the Association for Military Surgeons is changed with the issue for January, 1907, to *The Military Surgeon*, retaining the old name as a subsidiary title. We call attention with pleasure to the successful career of this journal during the past six years, since, as the pioneer military medical journal in the English language, it entered upon a field hitherto unoccupied and unexplored. Its success in creating a reliable body of military medical literature has been, perhaps, not unexpected, although it has certainly been striking.

QUINCENTENARY OF THE UNIVERSITY OF TURIN. — The University of Turin should have celebrated the five hundredth anniversary of its foundation two years ago, but, owing to the disastrous fire which destroyed its magnificent library and wrecked part of the buildings, the ceremony was postponed. This was held on Oct. 27 last. The rector, Prof. Giampietro Chironi, delivered an address; Prof. Arturo Graf discoursed on the university of the future, and a tablet with a commemorative inscription in Latin by Prof. Ettore Stampini was unveiled. A collection of the most important documents relating to the history of the university, edited by Professors Stampini and Cipolla, has been published in honor of the occasion. — *British Medical Journal.*

THE WEBER-PARKES PRIZE AND MEDALS. ROYAL COLLEGE OF PHYSICIANS. — The next award under this foundation will be made in 1909, and the adjudicators have selected as the subject of the essay for that occasion: "The value of bacterial products in protecting against or in curing tuberculous diseases, with special reference to pulmonary tuberculosis in man." All essays, together with any preparations made in illustration of them, must be transmitted to the registrar of the Royal College of Physicians, London, during the last week of May, 1909, in accordance with the regulations relating thereto, copies of which will be forwarded from the college on application. The award will be made at some time previous to the 18th of October in that year, on which day the prize and medals will be presented to the winners.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 26, 1906, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 42, scarlatina 37, typhoid fever 12, measles 12, tuberculosis 22, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 26, 1906, was 18.70.

BOSTON MORTALITY STATISTICS. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 29, 1906, was 219, against 213 the corresponding week of last year, showing an increase of 6 deaths and making the death-rate for the week 18.96. Of this number 119 were males and 100 were females; 213 were white and 6 colored; 132 were born in the United States, 85 in foreign countries and 2 unknown; 47 were of American parentage, 148 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 50 cases and 5 deaths; scarlatina, 38 cases and 1 death; typhoid fever, 9 cases and 0 deaths; measles, 8 cases and 0 deaths; tuberculosis, 34 cases and 22 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 39, whooping cough 0, heart disease 24, bronchitis 6 and marasmus 1. There were 12 deaths from violent causes. The number of children who died under one year was 32; the number under five years 46. The number of persons who died over sixty years of age was 55. The deaths in public institutions were 58.

There were 4 cases and 3 deaths reported from cerebrospinal meningitis during the week.

Appointment of Dr. George A. Stickney. — Dr. George A. Stickney, of Beverly, Mass., has been appointed by Governor Guild medical examiner of the seventh Essex district. Dr. Charles W. Haddock, who formerly held this position, has resigned. Dr. Stickney brings the experience which he had as associate medical examiner to his new office.

Gift to the Lawrence, Mass., Hospital. — As the result of a decision by Justice Morton of the Supreme Court, the Lawrence City Hospital received $25,000 under the will of the late Helen G. Coburn, of Boston. A question as to the disposition of the money arose from the fact that the name of the hospital was incorrectly stated in the will; it appeared, however, on investigation that there was no doubt which institution was intended to be the beneficiary.

Lectures by Dr. Wilfred T. Grenfell. — Dr. Wilfred T. Grenfell, who has charge of the mission along the coast of Labrador, is now in Boston and is giving a number of lectures and talks relative to his work among the fishermen of that region. He has already spoken at Trinity Church, and is expected also to be heard at the Twentieth Century Club as well as at various churches, both in the city and in the suburbs. His work among the deep sea fishermen commends itself, not only on account of its religious aspect, but also as a medical work of much import.

Hydrotherapeutic Department at the Massachusetts General Hospital. — A new hydrotherapeutic room in the out-patient department of the Massachusetts General Hospital was opened Jan. 1. The primary purpose of this room is to provide treatment by hydrotherapeutic measures for the patients of the hospital, and secondarily to advance the knowledge of physical therapeutics which is coming to assume an important place in general treatment. Dr. J. H. Pratt and Dr. M. Böhm will act as medical advisers in the hydrotherapeutic treatment, and Dr. Pratt will give lectures twice a week through January and February on the general subject for the staff of the hospital. It is not to be questioned that this new department will find an ample field of usefulness.

The Muzzling of Dogs. — Dr. Austin Peters, chief of the Massachusetts cattle bureau, is reported as being in favor of the general muzzling or quarantine of all dogs in this state. The difficulties in accomplishing this lie in the belief which some persons apparently have that rabies as a disease does not exist and who would oppose either the muzzling or confining of their dogs. Certain animal lovers likewise take the position that such restraint is a cruelty and opposition may be expected from them. It is, therefore, a difficult matter to enforce a serviceable quarantine in this state. If it could be done, however, there is every probability that the disease could be stamped out.

NEW YORK.

Bequests. — By the will of the late John Harsen Rhoades, of New York, $10,000 is bequeathed to the New York Eye and Ear Infirmary and $5,000 to the Northern Dispensary.

Lecture by Dr. Grenfell. — The first public lecture of the season before the New York Academy of Medicine was delivered by Dr. Wilfred T. Grenfell, on "The Work of a Labrador Doctor." The lecture was illustrated by numerous lantern slides.

Classification of Radium under the Dingley Tariff. — The classification of radium under the Dingley tariff has proved a source of considerable perplexity to the local customs officers. The present tariff law, enacted in 1897, makes no specific mention of this article, as it was unknown at that time. The general appraisers having finally concluded that radium was a chemical salt, and dutiable at 25% *ad valorem*, a protest was made by the importing firm of H. Lieber & Co., who claimed that radium is a crude mineral and, as such, entitled to free entry. This protest has now been overruled. General Appraiser Lunt wrote the opinion of the board, after consulting many authorities, and in the decision it is stated that "the merchandise is radium bromide, which we find to be a chemical salt, and correctly assessed as such."

Dedication of the De Witt Clinton High School. — The De Witt Clinton High School, on Tenth Avenue, Fifty-eighth and Fifty-ninth streets, opposite Roosevelt Hospital, was formally dedicated on Dec. 18, the principal address on the occasion being made by President Nicholas Murray Butler of Columbia University. This is said to be probably the most finely equipped public school building devoted to secondary education in the country, and it represents an expenditure of $1,500,000. Among its features are over one hundred recitation rooms, ten physics laboratories, two chemical laboratories, an auditorium seating 2,000, two lecture rooms, a music room, a library, a luncheon room capable of seating 800 boys, and two gymnasiums. The equipment of the laboratories is scarcely second to that found in the best scientific schools. Of the two gymnasiums, one is a large one for general work, with all the usual apparatus and an excellent running track, while shower baths and individual lockers give the pupils all the advantages of a private gymnasium. The other gymnasium, smaller in size and special in character, is designed for abnormal cases and boys lacking in physical vigor.

Bequest to St. Luke's Hospital. — By the will of Mrs. Anna P. Burgess, of New York, $5,000 is left to St. Luke's Hospital, to establish and furnish a room to be known as the Anna Shippen Young Bogart Memorial, and $10,000 each to Columbia University and Barnard College for the establishment of four scholarships. The two Columbia scholarships are to be known as the Dr. Daniel M. Burgess and the Anna P. Burgess Scholarships. On the death of her husband, Dr. D. M. Burgess, the entire residuary estate, which is said to be a large one, is to be divided in equal parts between Columbia University and Barnard and Hamilton Colleges.

Obituary.

HENRY, W. DUDLEY, M.D.

Dr. Henry W. Dudley, one of the oldest and best known physicians in eastern Massachusetts, died of heart disease at his home in Abington, Mass., Dec. 30, aged seventy-five. Dr. Dudley was able to attend to professional duties up to the day before his death. He was a graduate of the Harvard Medical School in 1864, a member of the Massachusetts Medical Society and of the Massachusetts Medico-Legal Society. He had been a professor of pathology and lecturer on legal medicine at the Tufts Medical School, and also a medical examiner. He was an excellent practitioner and much respected in his neighborhood.

Current Literature.

The American Journal of the Medical Sciences.
December, 1906.

1. *Harrington, C. *Infantile Mortality and Its Principal Cause — Dirty Milk.*
2. *Thompson, W. G. *A Clinical Study of Eighty Cases of Exophthalmic Goitre.*
3. Deaver, J. B. *A Year's Experience in Intestinal Surgery.*
4. *Sears, G. G. *Accidents Following Thoracentesis.*
5. *Nathan, W. P. *The Differential Diagnosis of the Diseases Hitherto Grouped Together as Rheumatoid Arthritis, Etc.*
6. Herrick, J. B. *Exophthalmos in Leukemia.*
7. *McCrae, T. *Typhoid and Paratyphoid Spondylitis.*
8. *Sondern, F. E. *The Value of the Differential Leukocyte Count in Diagnosis.*
9. *Brown, S. *The Early Diagnostic Signs of Insular Sclerosis.*
10. *Preble, R. B. *The Principles of Treatment of Renal Insufficiency.*
11. *Pottenger, F. M. *The Treatment of Tuberculous Laryngitis with Culture Products.*

1. Harrington, from statistics reported in America and in Europe, finds that the infantile death-rate of the communities studied varies roughly from 100 to 300 per 1,000 births. Diarrheal diseases are by far the largest single cause of this mortality, causing 20 to 80% of the deaths. The diarrheal death-rate varies widely according to season, being much higher in the months of July and August than in other months, whereas deaths from other causes are fairly constant throughout the year. The infants that died of diarrheas were in 90% of the cases bottle fed. These deaths occur mainly among the poorer classes and especially where female labor prevails. The handling and care of milk, in dairies, during transportation, and in distribution is almost everywhere done with insufficient precautions. Bacteria enter with dirt, and in the hot months, as the milk stands without proper cooling, multiply so enormously that a city's milk supply is often richer in bacteria than its sewage. These bacteria are of numerous kinds. Some are harmless; some only cause souring and coagulation; some produce poisonous products. Pasteurization destroys many bacteria, but some of the dangerous forms are spore-bearing and survive. One of the commonest and most numerous organisms is the streptococcus. To diminish infantile mortality, first of all, breast feeding should be insisted upon wherever possible. To this end the industrial employment of married women should be discouraged. Secondly, the public should be educated to demand clean milk, and to pay a fair price for it. The increase in cost of milk to poor families would be slight beside the present undertakers' bills. The middleman's profit should be regulated, and the producer given enough for his milk to enable him to keep ice and use proper precautions. It should be possible to reduce the infant mortality by 40%.

2. Thompson mentions, in addition to the well-known symptoms of Graves's disease, three facts which demand emphasis: (1) the frequency of acute febrile exacerbations with dilatation of the heart; (2) the very common association of these attacks with tonsillitis; (3) the possibility of mistaking such acute attacks with fever for malignant endocarditis or other forms of acute general septicemia. He reports one severe case which was promptly relieved and finally completely cured by the Rogers-Beebe serum. The symptoms of the disease noted in the series of eighty cases are described according to the frequency of their occurrence.

4. Sears describes the accidents following thoracentesis, especially pneumothorax, and sudden death of unknown cause. Of the latter he reports one case; there are ten reported cases in literature. Pneumothorax occurs more commonly and is, as a rule, not fatal. Sears adds four cases to the fifty previously reported. He mentions the appearance of albuminous expectoration recently discussed by Riesman; also the condition of subcutaneous emphysema, reporting one case. To avoid these accidents slow evacuation of small amounts at a time is advised.

5. Nathan divides diseases hitherto grouped under the name of rheumatoid arthritis into two classes: (1) those which begin acutely, the inflammatory or infectious forms; and (2) those of insidious onset, the trophic forms. Of the first class he describes four types of cases: (1) mild cases, which, however, may lead to some permanent disability; (2) similar cases with more fever and more severe joint symptoms, some with glandular enlargement, described as Still's disease; (3) cases simulating rheumatism, with high fever and often endocardial and renal complications, leaving permanent joint disability; and (4) cases associated with other infectious diseases, such as

typhoid and gonorrhea. Cases of the third and fourth types in their later stages show one of two forms of lesion, either thickening of the capsule and soft parts, or changes in the bones with tendency to spur formation or ankylosis. Of the second main class of diseases, the trophic forms, of insidious onset, three types are distinguished: (1) the gradually progressive cases occurring at any age, usually beginning in peripheral joints and finally involving every joint in the body, producing either synovial or osseous change; (2) senile osteo-arthritis, often monarticular, slower in progress, never showing marked bone absorption but characterized by pseudohypertrophy with lipping, showing as Heberden's nodes in the fingers; (3) the trophic osteo-arthritis of organic nervous disease, as in tabes dorsalis.

7. McCrae reports a case of typhoid fever and a case of paratyphoid, both followed by spondylitis in which the radiograph showed definite bony changes in the vertebræ. No previously reported cases have shown bone lesions demonstrable in this way. McCrae believes, however, from the symptoms, that some organic change in the spine is usually present in typhoid spondylitis.

8. Sondern believes that increase in the relative number of polynuclear cells in the blood is an indication of the severity of the toxic absorption, and that the degree of leukocytosis is an evidence of the body resistance toward the infection. He maintains from a study of eight thousand cases that purulent exudates are rarely if ever present with low polynuclear percentages, irrespective of the height of the leukocyte count; while very high polynuclear percentages almost invariably indicate the presence of purulent exudates, even if the total leukocyte count is low.

9. Brown calls attention to the fact that the cardinal symptoms, as usually taught, of insular sclerosis — intention tremor, nystagmus, optic atrophy and scanning speech — are commonly present only in the late stages of the disease, and only in a small minority of all cases. He quotes a tabulation by MacIntosh of Aberdeen, of the earliest symptoms noted in a series of 80 cases. Of these, motor paresis occurred first in 45 cases, disturbances of sensation in 29, ataxia or tremor in 20, sphincter troubles in 5, apoplectiform attack in 3, and various cerebral symptoms, such as amblyopia (12), vertigo (4) and nystagmus (2) in 19. Four cases are reported.

10. Preble considers mainly the renal insufficiency which leads to uremia. The deficient excretion in heart disease is to be treated by rest with digitalis and limitation of chlorides; in that of fevers, large amounts of water are to be given. In uremia, however, it is believed that certain unknown substances which should be excreted by the kidneys have accumulated in the body. To limit their production a diet of milk, cream and cereals is advised. Gastro-intestinal fermentation is to be reduced by drugs not irritant to the kidneys. Purgation by vegetable cathartics aids in this and also accomplishes something in excretion. Sweating merely causes removal of water. Much more efficient are venesection and withdrawal of fluids from thorax and abdomen.

11. Pottenger quotes numerous authors, most of whom regard the prognosis of tuberculous laryngitis as absolutely bad. Lake, however, reports 20% of cures and von Ruck 82% of 426 cases. Pottenger has treated 15 cases (all at first showing tubercle bacilli in the sputum) with von Ruck's watery extract of tubercle bacilli, and reports apparently complete cures in 11 cases or 73%.

The Journal of the American Medical Association.
Dec. 15, 1906.

1. Mitchell, S. W. *Sudden Paralysis of Pharynx. Artificial Feeding for Four Years.*
2. *Riggs, E. E. *Myasthenia Gravis.*
3. Lloyd, J. H. *Faradization of the Motor Cortex in the Human Brain.*
4. Johnson, F. M. *Addenda to Therapeutic Measures in Nephritis.*
5. McDonald, E. *Mensuration of the Child in the Uterus.*
6. Rochester, D. L. *The Treatment of Asthma.*
7. Fullerton, E. B. *The Quinin Treatment of Cholera.*
8. Wilbert, M. I. *Revision of the United States Pharmacopeia.*
9. *Brem, W. V. *Malarial Hemoglobinuria.* (Concluded.)
10. Noble, C. P. *Fibroid Tumors of the Uterus.* (Continued.)
11. Wiggin, F. H. *Case of Multiple Fibrosarcoma of the Tongue.*

2. Three cases of this comparatively rare affection are reported by Riggs, illustrating the bulbar and the ophthalmoplegic types of the disease. Although there were antecedent pathologic conditions in two of the cases, Riggs considers the etiology of the disorder as still unknown. In two of his cases there was externalo phthalmoplegia, and the "nasal smile," noted by Gowers, was marked in all three. The myasthenic reaction — the tetanizing of the muscle by faradism — was present in all three cases, and while not pathognomonic, its occurrence is significant and valuable for diagnosis. The greatest danger in diagnosis is that of mistaking the condition for hysteria, especially if the color reversal and other symptoms of hysteria are present, as in a case reported by Burr. Riggs thinks that the condition is best explained by assuming a a toxin in the blood affecting the lower motor neuron, and refers to Taylor's suggestion, based on a not infrequent pathologic finding, that this toxin is due to a diseased thymus or to an abnormal lymphoid tissue infiltration throughout the body and muscles. Treatment has been usually ineffective. He found the most efficient agents to be strychnia, gentle massage and galvanism.

9. Fourteen cases of malarial hemoglobinuria, occurring in the Canal Zone, are reported and discussed in detail by Brem. The general results of the study of these cases are summarized, in substance, as follows: (1) A febrile affection resembling the estivo-autumnal type of malarial fever was the only etiologic factor discoverable. Previous attacks of malaria seemed to furnish a favorable ground. Quinin was not an etiologic factor, either predisposing or exciting. The evidence favors the estivo-autumnal parasite and not a special organism as the cause. (2) The symptoms and signs may be very mild and the grave condition be revealed only by the urinary examination. A history of dark or bloody urine can almost invariably be obtained. (3) The degree of fever bears no relation to the hemoglobinuria or albuminuria. A posthemoglobinuric fever of a peculiar type occurred in four cases; it did not yield to quinin. (4) Blood examinations show that the primary event is destruction of the red blood corpuscles, with hemoglobinemia and subsequent hemoglobinuria. Anemia is exceedingly rapid, as is likewise recovery. (5) In well-defined cases an absolute diagnosis can be made by macroscopic examination of the urine, combined with the test for albumen. In border-line cases the hemoglobin test is necessary for an absolute diagnosis, but a probable diagnosis can be made from a brownish urine with 20% albumen (by volume!) or more. (6) The mortality was 2 in 14 cases (14.3%). (7) A correct prognosis in individual cases is very difficult. (8) Intramuscular injections of quinin seem to act specifically. The best method is thought to be the injection of 10 gr. every four hours for the first forty-eight hours (15 gr. may be given for the first three or four doses), and then smaller doses may be given by the mouth unless vomiting prevents. Quinin bihydrochlorid in an excess of acid is more suitable than quinin bimuriate with urea for intramuscular injection. The article is illustrated by a number of charts showing conditions in different cases of the disease.

The Lancet.
Dec. 8, 1906.

1. Makins, G. H. *Clinical Lecture on a Case of Lingual Goitre.*
2. *McGarrison, R. *Further Observations on Endemic Goitre.*
3. Glaister, J. *Water Gas, Carburetted Water Gas and Carbon Monoxide Poisoning.*
4. Latham, P. W. *On a New Synthesis of Tyrosin.*
5. Dobson, Margaret B. *A Case of Epileptic Idiocy Associated with Tuberose Sclerosis of the Brain.*
6. Cahill, J., Bennett, W. H. *A Case in which Acute Appendicitis and a Twisted Ovarian Pedicle Existed at the Same Time.*
7. Watson, D. C. *The Influence of an Excessive Meat Diet on the Osseous System.*

2. McGarrison believes that goitre is an infectious disease and that water is the chief but not the only vehicle of infection. His conclusions are based on observations carried on in Gilgit, Kashmir. Goitre exhibits a distinct "seasonal prevalence." The large number of new cases he sees develop early in the spring. Grief, mental or physical depression may be the exciting cause of the disease, as well as puberty, childbirth and the menopause. In this region all races except the white are susceptible to the disease, although the higher classes are much less frequently affected. Animals are not affected; in a village where 45% of the inhabitants were goitrous, no animal showed any sign of the disease. As far as water is concerned it cannot be from any dissolved ingredient that the disease arises; it is some extraneous matter in suspension. Many soldiers lose their goitres while off on leave of absence and on their return as regularly are again affected. The fact that as long as men live in an infected site no amount of care as to boiling the water will prevent them from having goitres, shows that water is not the only infective agent. Close contact with damp soil is a strong predisposing factor. Blood examination, except for a moderate eosinophilia, was negative; examination of feces has as yet given no definite results, but the administration of intestinal antiseptics, particularly thymol, was markedly beneficial. The writer believes goitre to be due to an infection from the intestinal tract.

BRITISH MEDICAL JOURNAL.
DEC. 8, 1906.

1. *Gowers, W. R. *The Borderland of Epilepsy: Migraine.*
2. *Semon, F. *Remarks on the Therapeutic Value of Complete Vocal Rest during the Sanatorium Treatment of Laryngeal Tuberculosis.*
3. *Marsh, H. *Present Views on Diseases of the Joints.*
4. Bennett, W. *On Sprains and Their Consequences Mainly in Relation to Treatment.*
5. Clements, C. *Errors of Vision as a Factor in Motor Car Accidents.*

1. The term migraine is now used for all forms of paroxysmal headache, not for the unilateral "hemicrania" as it was originally intended. It is closely connected with epilepsy; one may alternate with the other, instances often occurring where epilepsy sets in as migraine ceases. The most characteristic premonitory symptom of migraine is visual; this lasts fifteen to thirty minutes and is not to be confused with the aura preceding epilepsy; there may be vertigo and other sensory disturbances before an attack. Gowers cites several cases showing how migraine has gradually given place to true epilepsy, but emphasizes the fact that though there is a connection between the two diseases, they are nevertheless usually very distinct clinically, having a different course and requiring different treatment.

2. Semon advises complete vocal rest in all cases of laryngeal tuberculosis; he thinks that without this sanatorium and hygienic treatment are of little avail and local treatment is greatly aided by this procedure. He describes seven cases where the silence-cure has been markedly beneficial,

3. Marsh classifies diseases of joints as follows: (1) Those familiar cases easy of diagnosis and treatment following wounds, or in the course of acute infectious diseases, such as osteomyelitis or pyemia. (2) Those met with in specific fevers — acute rheumatism, scarlet fever, typhoid, influenza, dysentery, etc. These are usually simple and get well of themselves. (3) A group, common, but important because easily overlooked, where joint disease is due to infection from strepto- or staphylo- or gonococcus, but in which the symptoms are widely different from those usually connected with these several infections. He dwells particularly on this last class. He describes joint disease occurring in chronic gleet which resembles tuberculosis more than anything else; also cases where the source of infection was from carious teeth, with complete disappearance of symptoms on their removal. Chronic bronchiectasis may be the source of infection, or a septic condition of the uterus. The treatment consists in the removal of the source of infection, and in local measures.

THE PRACTITIONER.
DECEMBER, 1906.

1. White, W. H. *Cancer of the Stomach.*
2. Cheatle, G. L. *The Distribution and Treatment of Cancer at the Angle of the Mouth.*
3. *Chaplin, A. *The Treatment of Bronchiectasis.*
4. Bainbridge, F. A. *Urinary Excretion in Bright's Disease.*
5. Emery, W. E. *Serum-Therapy.*
6. *Fagge, C. H. *Intussusception in Infants.*
7. Bennett, A. G. *Physical Methods of Treating Heart Disease.*
8. Ker, C. B. *Recent Work on Typhoid Fever.*
9. Nash, J. T. C. *A Contribution to the Etiology of Typhoid Fever.*
10. Sheill, S. *The Immediate Suture of Ruptured Perineum. A Criticism.*
11. Upcott, H. *The Diagnosis and Treatment of Renal Colic.*

3. Chaplin classifies bronchiectasis into two types, the chronic and the more acute type. The first is never a primary disease but follows some other non-resolving inflammation of the lungs; it is also a progressive type finally resulting in a mass of dilated tubes and fibroid tissue, Corrigan's cirrhosis. Sixty per cent of the writer's cases followed some acute lung inflammation of childhood, while the disease is usually met with during early life, under twenty-five years. The "more acute" type is only relatively acute. It is met with later in life and there is no long period between the attack from which it starts and the establishment of the bronchiectasis; from the first the symptoms are constitutional, and grave and metastatic phenomena, such as abscess of the brain, are liable to occur. Fetid sputum means cavity formation and retention of sputum within these cavities The aim of treatment should be preventive — to prevent the accumulation of sputum in lifeless and non-resilient tubes and to render the contents of these tubes aseptic. Three methods are employed to empty cavities: (1) posture; (2) drugs; (3) surgery. (1) The foot of the bed should be raised six inches and the patient should lean over the edge of the bed every morning and while in that position try to expel the sputum. As to drugs, emetics and stimulating expectorants are of but little avail. Inhalations of thymol and eucalyptus are not of much lasting benefit. The writer for eleven years has used inhalations of creosote vapor with remarkably good results. The conditions are trying and too often the treatment is given up without a fair trial. The patient sits in a small room in which a pan of 6 oz. of creosote is vaporized with an alcohol lamp, bi-weekly, for one half to one hour over a period of six weeks to three months. This method not only removes the fetor when present but also prevents its formation. No untoward results have been recorded where the eyes were well protected and the nostrils plugged.

6. Intussusception usually occurs in strong fat babies under one year, of whom the majority have been breast fed and without a history of frequent attacks of enteritis. The fact that the disease is so common in infants and rare in adults is as yet unexplained; it is probably due to some anatomical peculiarity. The sudden onset of the symptoms is characteristic; diarrhea and the passing of blood is a late sign. A few hours after the intussusception the aspect of the child is distinctly "abdominal." A tumor is often present; rectal examination is very important, especially if done under an anesthetic. Inflation, the writer believes, is rarely of value and should only be tried when the laparotomy is necessarily delayed. Out of 19 cases operated on by the writer, 15 recovered from the operation and were discharged well. Of the 4 cases that died, 2 had irreducible conditions, where an excision was necessary.

SURGERY, GYNECOLOGY AND OBSTETRICS.
DECEMBER, 1906.

1. *Bloodgood, J. C. *Senile Parenchymatous Hypertrophy of the Female Breast; Its Relation to Cyst Formation and Carcinoma.*

2. *Mayo, C. H. *Peripheral Versus Intracranial Operations for Tic Douloureux.*
3. *Senn, N. *Tendon Tissue Versus Catgut Ligatures.*
4. *Hollister, J. C. *Vaccine Therapy and Passive Hyperemia in Surgery.*
5. Lewis, H. F. *The Bloodless Methods of Artificial Dilatation of the Cervix Uteri at Full Term.*
6. Holmes, R. W. *Bloody Methods of Rapid Dilatation.*
7. *Magan, A. *A Review of Over Fourteen Thousand Surgical Anesthesias.*
8. Leischner, H. *The Plastic Surgery of the Eyelids by the Use of Pedunculated Doubled Skin Flaps.*

1. Senile parenchymatous hypertrophy of the breast is most frequently seen in women between forty and fifty, the usual period of the climacteric. The pathological process is chiefly one of epithelial activity, therefore parenchymatous, and it resembles the pathological process — hypertrophy — much more than an inflammation or a neoplasm. It may be considered a pathological hypertrophy, like diffuse hypertrophy of the virginal breast, and not a physiological process like lactation hypertrophy. Bloodgood emphasizes the important fact that the process has both a benign and a malignant stage. There are found two types: (1) the *cystic* in which in one or both breasts one or more smooth-walled cysts are present. In this type carcinoma is rarely observed and excision of the cyst wall suffices. (2) In the second form, the *adenocystic* type, large cysts are never present. The disease consists of a localized enlargement of part of one or both breasts due to a parenchymatous hypertrophy. In this form carcinoma is so frequent that Bloodgood advises removal of the entire breast in every instance.

2. Mayo reviews the various methods of operating for trifacial neuralgia and reports good results following closure of the various foramina by means of a silver screw.

3. Senn advises the use of tendon from the narwhal, walrus and whale, on account of its superior tensile strength and ease of sterilization.

4. Hollister contributes an admirable article, fully illustrated, on the method of determining the opsonic index and its use in the treatment of infections. The article should be consulted in the original by those interested in the subject.

7. From her very extended experience in anesthesia Miss Magan advises ether by the open drop method without the preliminary use of any other drug, such as nitrous oxide, or chloroform mixtures. The ether is started on the operating table at the same time as the aseptic preparation of the patient. It is her opinion that nurses are best fitted for the administration of an anesthetic. "To give an anesthetic properly is all one person can do, and he who undertakes to learn surgery at the same time makes a serious mistake."

Deutsche Medizinische Wochenschrift; No. 49.
Dec. 6, 1906.

1. Ehrmann, S. *The Treatment of Acute and Chronic Cystitis.*
2. *Weber, A. *The Infection of Man with the Bovine Tubercle Bacillus.*
3. *Vannod, T. *Agglutinins and Specific Immune Bodies in Gonococcus Serum.*
4. *Bab, H. *Remarks on the Article of Wassermann and Plaut on Syphilitic Anti-bodies in the Cerebrospinal Fluid of Paretics.*
5. Friedberger, E., and Moreschi, C. *Active Immunization against Typhoid Fever.*
6. Saalfeld, E. *The Internal Treatment of Gonorrhea.*
7. Hess, O. *Eventration of the Diaphragm.*
8. Heinzelmann. *A Case of Lymphangioma of the Omentum.*

2. Weber reports some interesting and important observations on tuberculosis from the Berlin Board of Health (*Gesundheitsamt*). In 20 cases the bovine variety of the tubercle bacillus was found, 15 times in the mesenteric glands, 5 times in the cervical glands. The bovine type of infection is found almost exclusively among children, and is usually a primary infection of the intestine or mesenteric glands, never giving rise to the anatomical picture of phthisis, and possessing a marked tendency towards spontaneous cure. Infection seldom occurs during the first year of life, during which the milk is usually boiled; 90% of the cases were in children under seven. No instances have been observed in which infection with the bovine variety was transmitted from one human being to another. Only a single case has been reported among adults. Weber concludes that the danger of infection of man with bovine tuberculosis is a real one, though insignificant compared with that from the human variety.

3. Vannod has obtained a gonococcus serum in rabbits, which is rich in immune bodies (amboceptors) and agglutinins. It also gave agglutination with the meningococcus, but not with so high dilutions, and gonococci were also agglutinated by a specific meningococcus serum. This "group agglutination" shows how closely the two organisms are related. Further experiments with Wassermann's method (*Komplementablenkung*) showed, however, that the gonococcus serum contained amboceptors for the gonococcus only, not for the meningococcus, and the same held good, *mutatis mutandis*, for the meningococcus serum.

4. Bab made histological examinations of the material used by Wassermann and Plaut in their experimental work reported in No. 44 of this journal (abstracted in Boston Medical and Surgical Journal, Nov. 29, 1906, p. 664), and found spirochetes present in the organs of syphilitic feti in every case, in which the above named authors demonstrated the presence of "antigen." In one infant spirochetes and antigen were absent in the liver, but a few of the former were found in the pancreas. These observations offer further confirmation of the etiological significance of the spirocheta pallida, in that syphilitic products and spirochetes were found always in association with one another.

Münchener Medizinische Wochenschrift, No. 49.
Dec. 4, 1906.

1. *Cristiani and Kummer. *Functional Hypertrophy of the Transplanted Thyroid in Man.*
2. *Neubauer and Staübli. *Intestinal Diseases with Eosinophilia.*
3. *Moro, E. *Further Investigations Concerning a Precipitin for Cow's Milk in the Blood of Infants.*
4. *Bruck, A. W. *Tuberculosis in Infancy.*
5. *Conradi, H. *The Early Bacteriological Diagnosis of Typhoid Fever.*
6. *Lardelli. *The Influence of Arsenic in Metabolism.*
7. Paschen, E. *The Cause of Vaccinia.*
8. Wederhake. *Suture Material.* (Continued article.)
9. *Wassermann, A., and Bruck, C. *The Presence of Antituberculin in Tuberculous Tissue.*
10. *Lengfellner, K. *The Treatment of Anthrax.*
11. Sondermann, R. *Tamponing the Nose in Ozena.*

1. Cristiani and Kummer, after alluding to their successful transplantations of thyroid tissues in man and animals, report a case in which such a bit of thyroid showed a marked hypertrophy three years after transplantation. The tissue was derived from a goitre excised from the same patient, and showed a return to the normal histological appearances when cut out for examination three years later. The authors consider this method a valuable one in the treatment of myxedema and in total extirpation of the thyroid.

2. In cases of acute gastro-enteritis, chronic intestinal catarrh, and proctitis, Neubauer and Staübli found in the stools either eosinophiles or their equivalent, Charcot-Leyden crystals. Eosinophilia of the blood was present in a few of them, in one case up to 15%, and a parasitic origin of the eosinophilia could be excluded. Many of the patients were of a nervous temperament, and the eosinophilia is regarded as analogous to that found in bronchial asthma.

3. A precipitin for cow's milk was found by Moro in the blood of 2 infants out of 22 examined. He was also able to demonstrate in a few instances the presence in the blood of the precipitable substance.

4. As shown by Bruck's case, tuberculosis of the lungs in

the infant may run a course without fever and without marked disturbances of nutrition.

5. It has been found that when the blood of a typhoid patient clots, all the bacilli which may be present are included within the clot. Conradi has taken advantage of this to make cultivations from the clot of specimens sent him for the Widal test, using his special culture medium consisting of 5 cc. ox-gall with 10% peptone and 10% glycerine. The clot from 1 to 4 drops of blood gave positive results in 50% of the cases in the first two weeks of the disease. In the case of a young girl he obtained positive cultures from the blood three weeks after she had returned to school. [Such improved methods of cultivating the typhoid bacillus from the blood are much more accurate than the Widal reaction, for they enable the diagnosis to be made in the first week, and yield positive results in those cases where the Widal reaction is absent throughout the course of the disease, owing to the lack of the formation of agglutinins.]

6. Lardelli's experiments on rabbits with Val Sinestra water, which contains arsenious acid, showed that arsenic in small doses given over a long period (four months) produces an increase in metabolism with a marked deposition of fat and also an increase in proteid. The increased fat is not due to a pathological process, for the arsenic animals were all more frisky than the controls, and showed more rapid growth of the bones. The effect on the blood was to cause a diminution of the number of leucocytes, while the red cells, which were already normal, showed no changes.

9. By means of their method (see Neisser: *Deutsch. Med. Woch.*, No. 48, abstracted in the Boston Medical and Surgical Journal, Dec. 27, p. 789) Wassermann and Bruck have shown that both tuberculin and antituberculin are present in tuberculous tissues. They regard the existence of hypersusceptibility in these tissues, as shown by the tuberculin reaction, to be due to the fact that the antituberculin there present attracts the tuberculin out of the circulating blood, and enters into combination with it.

10. Lengfellner reports the results from conservative treatment of external anthrax, as practised in v. Bergmann's clinic, fifteen cases without a death. The primary pustule is left entirely undisturbed, a bandage is applied and the affected member is suspended.

Ischemic Muscular Paralysis and Contractions. This important condition, often known as Volkmann's paralysis, has been investigated by **Hildebrand** (*Volkmann's Vortrage*, November, 1906), both clinically and experimentally. The clinical picture is well marked and consists of a shrunken forearm with atrophic, tightly stretched skin. The flexor muscles are wasted and feel hard to the touch. The hand is immovable on the forearm in a slightly flexed position, while the first phalanges are extended and the distal two flexed. The hand and arm are cooler than normal, and on the bluish-red fingers are frequently found ulcerated spots. Disturbances of sensation are present of varying severity. This condition is caused by fracture either at the elbow-joint or in the middle of the forearm; rarely by dislocation. Of the cases collected by Hildebrand, in 35 the fracture was at the elbow-joint, in 18 near the mid-forearm, while in 1 the shaft of the radius and in 1 its styloid process were involved. In 3 cases trauma without fracture was found. The treatment had usually been by plaster cast, and the history showed that after its application there occurred marked pain, with blue fingers and the formation of blisters. After removal of the cast the arm and hand swelled markedly, then became cooler than normal, the arm gradually wasting with ensuing contractures. Examination of the muscles in the acute condition finds them pale and swollen, looking almost as if cooked. The nerves often have areas where their caliber is much reduced, and they do not shine but are of a grayish color with spots of red. Later the muscles are found much reduced in volume, hard, stiff, having lost much of their power of contractility and being of a yellowish brown color, bleeding but little on section. The cause of this condition is considered by Hildebrand to be a consequence of vessel injury at the time of the original accident. In all probability an artery is bruised or its interior lacerated by a bony spicule, with either total or partial occlusion of its lumen. Collateral circulation is prevented by the tight compression bandage used to hold the fracture in place. Thus the blood-supply to the muscles is so impeded that atrophy and its sequels follow. The nerve involvement can be due to injury at the time of the accident, but is more usually due to steady, long-continued compression by the swelling of the muscles during the acute stage. This view is upheld by the fact that disturbances of sensation, as a rule, first make their appearance several days after the injury.

It is not true that the condition is due wholly to too tight application of cast or splints, for a few cases have been found where this condition came on though no splints of any sort had been used. In these cases the pressure was caused by large extravasation of blood underneath the fascia. The previous experimental work on the question of muscle viability in general is reviewed, followed by the results of those made by Hildebrand, in which he was able to cause a similar paralysis in animals by ligation of the femoral artery and injuring the nerve, followed by a pressure bandage. In six days complete muscular atrophy with fatty degeneration had occurred. The treatment of the condition is not very satisfactory in many cases. Forcible stretching, vibratory massage and like measures have been employed. The cases from the literature, together with new ones added by Hildebrand, are reported in brief.

Miscellany.

SURGICAL TREATMENT OF GOITER BASED UPON 300 PERSONAL OBSERVATIONS.

Dr. C. H. Mayo, of Rochester, Minn., read a paper before the Southern Surgical Association, Dec. 11, 1906, of which the following is a brief abstract from the author:

The medical profession of America is taking a progressive position in recommending operation as the cure for goiter, including, also, that serious affection, exophthalmic goiter. The simple goiters in girls at puberty are not included in this rule.

Excepting operations for malignancy and Graves's disease, the great majority of operations are those of expediency and not of necessity. Therefore, a low operative risk is imperative.

In uncomplicated cases, the mortality following operation is almost an accidental one. There were 110 cases of Graves's disease with nine deaths and but two of these were in the last 61 operations.

In 2 sarcomas and 6 carcinomas there was one operative death which occurred on the third day. Aside from these recorded, there was one death from pneumonia on the eighth day.

Pathologically, there is a change in the gland which is essential to Graves's disease or hyperthyroidism. This is in the greater number, size and shape of the cells and in the lack of normal colloid.

Preparation. — Patients are prepared with reference to lung complications, and the rhythm and tension of the pulse, which should be carefully investigated, as they are the danger signals.

Anesthetic. — Very rarely is local anesthesia employed, the preference being for the open drop method of giving ether. The patients receive from 1-120 to 1-150 gr. of atropine and ¼ gr. of morphine twenty to thirty minutes before the giving of the anesthetic.

Operation. — The position of the patient is head up (reverse Trendelenberg) with a roll of gauze under the neck to elevate small tumors. A transverse collar incision is made through the skin and platysma muscles, the sterno-hyoid muscles separated in the mid-line.

In exophthalmic goiter and complicated cases, the anterior muscles on one side at least are severed as high as possible over the thyroid to preserve the nerve supply and break the scar effect.

Cysts and encapsulated growths are enucleated; other goiters are extirpated, care being exercised in preserving the parathyroids to prevent tetany and in protecting the recurrent laryngeal nerves. In this we are aided by leaving the posterior capsule of the gland in the extirpation. Sufficient gland substance should be preserved to prevent myxedema, and as it depends upon the character of the gland, no definite rule can be given as to what constitutes the proper amount.

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MEMORIAL TO W. K. OTIS.

At the regular meeting of the Second Section of the American Urological Association, held in New York on Wednesday, Oct. 24, 1906, the president, Winfield Ayres, M.D., officially announced the death of the vice-president of the Second Section, William K. Otis, and called for a report by the committee appointed for the purpose to present a memorial on the association's bereavement. In presenting the report, a member of the committee said:

" The ties of life-long intimacy which bound most of us to Dr. Otis make his death a subject of grief to each individual. The usual set form of preamble and resolutions, therefore, were deemed inadequate by your committee to express our sorrow. 'Billy's' demise is, to the older members of the association, as if a much loved brother had gone from us. Your committee begs to submit:

" William Kelly Otis's earthly career ended on Sept. 22, 1906:

" To the members of the American Urological Association his death is a threefold blow.

" Most of us knew him intimately from his childhood; by his decease we lose a consistent friend, a charming companion, a most estimable colleague.

" To the science of urology his death means an irreparable loss. Cut off in the midst of his career, his inventive genius is stopped; the new and useful instruments he was continually devising must now be perfected by other hands. The advances in our work he can no longer aid in developing.

" The American Urological Association loses one of its founders, one of its most active coadjutors, one of its truest adherents.

" Our association shares with the family of William K. Otis, with the profession at large, and with that world in which true manhood is understood and appreciated, that deep grief which the death of so noble a character inspires.

Ramon Guiteras,
A. Ernest Gallant,
Ferd. C. Valentine,
Committee."

Follen Cabot, M.D., moved and G. K. Swinburne seconded that the report be accepted and the committee discharged. Carried.

Augustin H. Goelet, M.D., moved and George M. Muren, M.D., seconded that the introductory remarks with which the memorial was presented, together with the memorial, be spread upon the minutes, published in the medical journals, and a copy furnished the family of the deceased. Carried.

The president appointed Ferd. C. Valentine a committee with full powers to execute the behests of the above resolutions.

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Correspondence.

THE CURATIVE ACTION OF ATOXYL IN THE TREATMENT OF TRYPANOSOMIASIS.

Liverpool School of Tropical Medicine,
Liverpool, Dec. 21, 1906.

Mr. Editor: Reports have of late been repeatedly published which ascribe to Dr. Koch the discovery of a drug, atoxyl, which has a curative action in the treatment of human trypanosomiasis. The London *Times* has copied an article to this effect from the Cologne *Gazette* and the London *Standard* has printed a similar article from its Berlin correspondent. These articles have been widely circulated and they lead the public to believe that Dr. Koch was the first to use this remedy in trypanosomiasis. It may be of interest to your readers to know that the beneficial action of atoxyl in experimental trypanosomiasis was discovered by the Liverpool School of Tropical Medicine and that its use has been steadily and publicly advocated by its staff for the past year and a half. The first work of Dr. Thomas on this use of atoxyl was received by the Royal Society in April, 1905, and was published in their proceedings in November of the same year. Dr. Thomas's next article was published in the *British Medical Journal* in May, 1905. An account of the experiments carried on by Thomas and Breinl in regard to the action of the drug in trypanosomiasis can be found in " Memoir XVI " of the Liverpool School of Tropical Medicine, 1905.

The use of atoxyl as a practical remedy in conjunction with the use of gland palpation and puncture as a diagnostic method was advocated by Todd in his official report (unpublished) to the government of the Congo Free State. These recommendations were adopted and are incorporated in the " *Mesures coordonnées concernant la maladie du sommeil* " drawn up by Dr. Van Campenhout for the use of medical and other officers of the Congo Free State.

The use of atoxyl in " sleeping sickness " was again recommended by members of the staff of the Liverpool School of Tropical Medicine in the following publications: Dutton and Todd, " Memoir XVIII," Liverpool School of Tropical Medicine, and Todd, *British Medical Journal*, May 5, 1906.

It will, therefore, be seen that the whole credit for the introduction of atoxyl in the treatment of trypanosomiasis belongs to the Liverpool School of Tropical Medicine.

Sincerely yours,
E. N. Tobey, A.M., M.D. (Harvard).

[This letter reached us through Dr. Harold C. Ernst, in whose laboratory at the Harvard Medical School the writer was formerly a worker. Dr. Tobey is now Research Fellow at the Liverpool School of Tropical Medicine. — Ed.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 22, 1906.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,381	365	Quincy	15	6
Chicago	618	195	Waltham	4	—
Philadelphia	—	—	Gloucester	6	2
St. Louis	—	—	Pittsfield	11	—
Baltimore	229	62	Brookline	4	3
Cleveland	—	—	North Adams	3	2
Buffalo	—	—	Chicopee	8	6
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	8	1
Milwaukee	—	—	Beverly	7	—
Washington	—	—	Hyde Park	2	1
Providence	85	23	Newburyport	—	—
Boston	216	52	Leominster	3	—
Worcester	45	10	Melrose	5	0
Fall River	51	23	Woburn	4	1
Cambridge	25	7	Marlborough	4	2
Lowell	34	12	Westfield	4	—
Lynn	23	5	Peabody	—	—
New Bedford	20	5	Revere	3	—
Springfield	19	4	Clinton	0	—
Lawrence	27	10	Attleboro	6	1
Somerville	24	4	Adams	3	1
Holyoke	22	6	Gardner	—	—
Brockton	14	—	Milford	3	1
Malden	8	3	Weymouth	3	—
Salem	16	3	Framingham	5	1
Chelsea	11	3	Watertown	3	1
Haverhill	16	3	Plymouth	1	—
Newton	10	1	Southbridge	1	—
Fitchburg	13	5	Wakefield	—	—
Taunton	15	2	Webster	—	—
Everett	4	2			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DEC. 19, 1906.

ROSENAU, M. J., passed assistant surgeon. Granted leave of absence for nine days from Dec. 21, 1906. Dec. 18, 1906.

OAKLEY, J. H., passed assistant surgeon. Granted leave of absence for three days. Dec. 13, 1906.

COFER, L. E., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Cofer for one month and eight days from Nov. 21, 1906, amended to read eighteen days. Dec. 15, 1906.

GRUBBS, S. B., passed assistant surgeon. Granted leave of absence for three days from Dec. 25, 1906. Dec. 19, 1906.

AMESSE, J. W., passed assistant surgeon. Granted leave of absence for seven days from Dec. 10, 1906. Dec. 13, 1906.

RANSOM, S. A., acting assistant surgeon. Granted twenty-two days' extension of annual leave on account of sickness from Nov. 20, 1906. Dec. 14, 1906.

TROXLER, R. F., pharmacist. Leave of absence granted Pharmacist Troxler for twenty-two days from Dec. 10, 1906, amended to read eighteen days. Dec. 13, 1906.

PROMOTIONS.

PHARMACIST C. R. MCBRIDE promoted from pharmacist of the third class to pharmacist of the second class, effective Aug. 15, 1906. Nov. 28, 1906.

PHARMACIST GEORGE NEVES promoted from pharmacist of the third class to pharmacist of the] second class, effective Nov. 17, 1906. Dec. 18, 1906.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING DEC. 29, 1906.

G. P. LUMSDEN, medical inspector. Commissioned medical inspector, with rank of commander from Sept. 6, 1906.

W. S. PUGH, passed assistant surgeon. Commissioned passed assistant surgeon, with rank of lieutenant, from Sept. 23, 1906.

E. C. TAYLOR, F. E. CAMPBELL, J. E. GILL, I. S. K. REEVES, Jr., passed assistant surgeons. Commissioned passed assistant surgeons, with rank of lieutenant, from Oct. 12, 1906.

V. C. B. MEANS, surgeon. Detached from the Navy Yard, Mare Island, Cal., and discharged from treatment at the Naval Hospital at that Yard, and ordered to the Army and Navy General Hospital, Hot Springs, Ark., for treatment.

J. M. MOORE, surgeon. Detached from the "Indiana" and ordered home.

D. N. BERTOLETTE, medical director. Detached from duty in command of the Naval Medical Supply Depot, New York, N. Y., Jan. 8, and discharged from treatment at the Naval Hospital at that place, and ordered home to wait orders.

P. FITZSIMONS, medical director. Detached from the Navy Yard, Washington, D. C., and ordered to command the Naval Medical Supply Depot, Navy Yard, N. Y., Jan. 8, 1907.

H. T. PERCY, surgeon. Ordered to the Navy Yard, Washington, D. C., Jan. 3.

APPOINTMENT.

DR. **SIMON F. COX** has been appointed superintendent of the new tuberculosis hospital to be erected in Boston.

RECENT DEATHS.

DR. **CYRUS K. BARTLETT**, a pioneer physician of Minneapolis, died recently. He was seventy-seven years of age. Dr. Bartlett was a native of Boxford, Mass. After graduating from the Harvard Medical School he practised in Boston six years. In 1868 he was appointed first superintendent of the insane asylum at St. Peter, Minn. After twenty-five years of service he resigned and went to Minneapolis.

DR. **TIMOTHY H. BISHOP** died last week in New Haven, Conn., where he had been prominent as a physician for almost half a century. He was graduated at Yale and the period of his active life was spent in New Haven.

HENRY WATSON DUDLEY, M.D., M.M.S.S., died in Abington, Dec. 29, 1906, aged seventy-five years.

DR. **FRANK E. BECKWITH**, who died in New Haven on Dec. 27, was well known and highly esteemed in New York, where a large portion of his professional career was passed. For a number of years he was the resident physician-in-chief at the Nursery and Child's Hospital, which position he resigned in order to accept the professorship of obstetrics in the Yale medical school.

BOOKS AND PAMPHLETS RECEIVED.

The Practical Medicine Series. Under the general editorial charge of Gustavus P. Head. M.D. Vol. viii. Series 1906. Chicago: The Year Book Publishers.

The Practitioner's Visiting List. Philadelphia and New York: Lea Brothers & Co. 1907.

Pulmonary Tuberculosis, Its Modern and Specialized Treatment. With a Brief Account of the Methods of Study and Treatment at the Henry Phipps Institude of Philadelphia. By Albert Philip Francine, A.M. (Harv.), M.D. (U. of P.). Illustrated. Philadelphia and London: J. B. Lippincott Co. 1906.

Midwifery for Nurses. By Henry Russell Andrews, M.D., B.S. Lond., M.R.C.P. Lond. Illustrated. New York: Longmans, Green & Co. 1906.

Text Book on Diseases of the Heart. By Graham Steell, M.D., F.R.C.P. With an Appendix on The Volume of Blood in Relation to Heart Disease. By J. Lorrain Smith, M.A., M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1906.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of Gustavus P. Head, M.D. Vol. ix. Series 1906. Chicago: The Year Book Publishers.

Helouan, An Egyptian Health Resort and How to Reach It. By H. Overton Hobson, M.D. (Edinb.). Illustrated. London, New York and Bombay: Longmans, Green & Co. 1906.

Report of the Surgeon-General U. S. Navy, Chief of the Bureau of Medicine and Surgery, to the Secretary of the Navy. 1906. Washington.

Transactions of the Maine Medical Association, 1906. Vol. xv, Part 3. Portland, Me.

Iodophilia: A Pathological and Clinical Study of the Iodine Reaction in One Hundred Cases. By John C. Da Costa, Jr. Reprint.

Surdité and Infection Eczémateuse. Par le Dr. Marcel Natier. Reprint.

A Guide to Diseases of the Nose and Throat and Their Treatment. By Charles A. Parker, F.R.C.S. Edinb. Illustrated. New York: Longmans, Green & Co. London: Edward Arnold. 1906.

Tumours, Innocent and Malignant, Their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton; F.R.C.S. Fourth edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

Original Articles.

RENAL AND URETERAL HEMATURIA.*

BY ARTHUR L. CHUTE, M.D., BOSTON.

Hematuria, or the appearance in the urine of a sufficient number of red blood corpuscles to change its color, may be of renal origin in a considerable number of conditions. Though one often speaks of a "hematuria" much as if this constituted a disease in itself, it should be remembered that it is only a symptom.

Some of the renal hematurias are the local manifestation of a general disease or condition, as is the case in the hematuria of malaria, scurvy and hemophilia; they have sometimes been termed secondary hematurias; more are the sign of a local diseased condition, as is the case in the hematuria of nephritis, calculus, cancer and tuberculosis; they are termed primary. I shall consider only such of the primary hematurias as indicate local diseased conditions that are amenable to surgical treatment.

In any case presenting the symptom "hematuria" we have two problems that must be settled before we can apply intelligent treatment. The first is the determination of the source of the bleeding; the second the determination of the nature of the lesion that produces the bleeding.

While renal and ureteral hematurias differ from those of urethral origin, in that they are always "total," that is the blood is intimately mixed through all the urine, there is nothing in their appearance that can be relied upon to distinguish them from hematurias of bladder origin. Before the advent of cystoscopy many rules were formulated to differentiate the renal hematurias from those arising in other parts of the urinary tract. The more careful study that this subject has received since the introduction of cystoscopy has taught us that practically none of these rules can be depended upon; that all are subject to frequent exceptions.

Thus one of the things that was commonly held to be a distinguishing point between renal and bladder hematurias was the color of the bloody urine. It was considered that the hemorrhage was from the kidney when it was dark and from the bladder when it was bright. It is true that renal bleeding is more likely to be dark than bright, but there are so many exceptions to this that one is never safe in concluding from the color alone that a given hematuria is, or is not, of renal origin. Cases of bright bleeding are not infrequently found to be of renal or ureteral origin as happened in one of the cases I shall refer to later.

Another point that was supposed to distinguish a renal hematuria from one of bladder origin was the condition of the blood corpuscles. It was assumed that the so-called "abnormal blood" was renal in origin. This does not apply at all in cases where the amount of kidney bleeding is very considerable, and only to a limited degree when it is small.

There are two things, however, that if present have considerable value in determining the probable site of the bleeding. When the urine contains any considerable number of cylindrical clots one may assume with a fair degree of certainty that the bleeding is from above the bladder, though occasionally one sees clots from a bladder hemorrhage that are longish and have some resemblance to ureteral casts. The presence of renal casts in a bloody urine is highly suggestive that the bleeding is from a kidney; the probability is much strengthened if there are numerous casts with blood corpuscles adherent. While the presence of either of these signs has considerable positive value, their absence is not in the least against a hematuria being of renal origin.

Not only must one be very cautious how he draws conclusions as to the origin of a hematuria from its gross or microscopic appearance, but he must also bear in mind that subjective and objective symptoms may lead him astray. Perhaps I cannot give a better illustration of this last fact than to quote a case that has been reported by Mr. Swan of London.

> A woman, thirty, began to have pain in the left costovertebral angle two years before she was seen by Mr. Swan. Six months after the beginning of her pain, hematuria appeared and she had recurring attacks for a year. Six months before operation the hematuria became constant and the pain in her left loin more severe. Her left kidney could be palpated and it was tender though not apparently enlarged. The natural inference was that the bleeding came from her left kidney. Cystoscopy, however, showed a pedunculated papilloma that was attached just at the outside of the left ureteric orifice. The growth was removed with relief of her symptoms. The hematuria was from the growth, the pain and tenderness in her left kidney was due to a partial occlusion of the ureteric orifice by the dragging of the growth.

Such cases emphasize the fact that cystoscopy is the only accurate means that we have of distinguishing between a vesical hematuria and one of renal origin. The use of any of the various segregators would, in a case like that just cited, have led to faulty conclusions.

Cystoscopy allows us not only to determine whether the bleeding arises from the bladder or further up the tract, but also in the latter instance to determine from which side it is; or if it is from both, as occasionally happens, to recognize this fact. Fortunately, in conditions that are confined to the upper urinary tract, cystoscopy is relatively easy since we do not have to contend with an intolerant or light-absorbing bladder. When the hematuria is considerable the colored urine will be seen issuing from the ureteral orifice in little puffs, that look not unlike little puffs of smoke as the bloody urine is pumped from the ureter into the clear bladder medium. When the blood is small in amount it may be impossible to determine by inspection alone which side is bleeding, and one may have to add to simple cystoscopic examination catheterization of the ureters.

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*Read at Hartford, Conn., Oct. 22, 1906, at a joint meeting of the Hartford Medical Society and the New England Urological Society.

The assumption that blood seen issuing from a ureteric orifice has its origin in the kidney of the same side is in the main justified, but it does not hold absolutely; the bleeding may exceptionally arise in the ureter itself. The following case is one that I think of considerable interest in this connection and I shall therefore report it in some detail.

The patient, a man fifty-two, was sent to me for examination in April, 1906, by Dr. E. H. Stevens, of Cambridge. He had had no previous urinary disease; neither his family nor personal history threw any light on his trouble. One year before his urine had been bloody for a week; with this hematuria, he had a little uneasiness in the small of his back. Three months before he was seen he began again to pass bloody urine. Treatment had no effect. When seen he had the semi-cachectic pallor seen in long continued hemorrhages. Neither kidney was tender or palpable. His urine was usually dark but on several occasions it was bright red. He had passed no clots. His urine allowed to settle in a cylindrical glass for twenty-four hours gave a compact deposit of blood that was 5% the height of the column of urine. Repeated examinations showed a urine containing normal and abnormal blood cells with an occasional leucocyte. There were no casts and practically no epithelial cells. Two cystoscopic examinations showed a normal bladder with bloody urine coming from the left ureter. There was no localizing symptom other than a dull backache. I suspected cancer, or a focus of chronic nephritis in his left kidney, and advised operation. He was unwilling to submit to operation until May 31, at which time he was so weak that he could not continue at work. The kidney which was high up was not enlarged as a whole, but had on its anterior surface a small nodule that seemed to extend deeply into the kidney tissue, and which both Dr. Stevens and I thought to be a cancerous mass. The kidney was therefore removed. No blood was found in the pelvis and the mass on the anterior surface extended but a short distance into the kidney substance. Microscopical examination by Dr. Leary showed that this nodule was a bit of misplaced adrenal tissue that was not proliferating, and that the kidney itself was in every other respect normal. The man bled for the first few days following operation much as he had before it. The bleeding then grew less and ceased on the sixteenth day. He remains well and there has been no recurrence of his bleeding.

I believe this an instance of bleeding of ureteral origin that ceased only with the atrophy of the ureter that followed its disease. Had I catheterized his ureter, collecting specimens from different levels along its course, it is probable that I should have gotten bloody urine from the lower part of the ureter and clear urine from the kidney pelvis. This catheterization of the ureter by sections is probably the only way of distinguishing the rare cases of hematuria of ureteral origin from those of renal origin. The recognition of similar cases is, perhaps, of more theoretical interest than practical importance, since it is questionable whether anything less than nephrectomy would stop the hemorrhage; though temporarily putting the ureter at rest by means of a nephrotomy might suffice and would be worth trying. So much for the localization of the source of the bleeding in hematurias arising in the upper urinary tract.

Having localized a hematuria as being of renal origin and recognizing that it is only a symptom of some local diseased condition it is necessary to determine if possible its underlying cause. For this purpose it is insufficient in most instances to confine one's attention to the hematuria alone; one must consider all the other symptoms that the disease presents and all evidence that can be brought out by different methods of examinations. In a large proportion of renal hematurias it will be found that the bleeding depends upon one of four conditions: malignant disease, calculus, tuberculosis, or chronic nephritis. The relative frequency of these makes their recognition particularly important and I shall consider them before taking up any of the less well-known causes of renal hematuria.

Malignant disease usually occurs in persons over forty, and a very large proportion bleed at some time during the course of the disease. The hematuria is often sudden and profuse: exercise may increase it, but rest on the other hand has little effect in diminishing it. The urine itself shows little other than blood; occasionally when the growth is of the renal pelvis masses of cancer cells may be found, but this is unusual. As a rule the kidney will not be enlarged or nodular in the early stages, the time when it is especially important from the therapeutic standpoint to recognize the disease. Naturally malignant disease of the pelvis will show bleeding much sooner than growths that begin deeper in the substance of the organ. As a result, in malignant disease of the pelvis, it will be unusual to find an enlarged kidney at the beginning of the hematuria, while in cancer that originates in the kidney tissue the organ may be enlarged when the bleeding first appears. The hematuria is at first usually painless; later there may be colicky pain due to clots passing the ureter. There is no involvement of the ureteric orifice, so often seen in renal tuberculosis. Cachexia is not a very early sign and may be closely simulated by any long continued renal bleeding. I have seen a moderate evening temperature in a patient with cancer of the kidney. The points upon which one must depend principally for early diagnosis are: A painless hematuria, usually rather profuse, that is, uninfluenced by rest, coming on without cause in a person of forty or more; a urine that shows little beside blood; a non-sensitive kidney that may or may not be enlarged. A nodular, firmly adherent kidney belongs to the stage when the disease is practically inoperable. Sarcoma, the malignant disease of the kidney that is seen more particularly in children, though not restricted to them, bleeds less often than carcinoma. It grows rapidly and the size of the kidney mass will usually leave little doubt as to the diagnosis.

Renal calculus may be seen at a much earlier stage than cancer; many of the patients are young adults. There is often the history of the previous passage of renal stones or gravel. The hematuria may or may not be attended with pain. In the aseptic cases it may be quite painless and in these same cases there may be no enlargement of the kidney and little or no tenderness on pressure. In the infected cases there will usually be pain, increase in size of the kidney and tenderness on pressure. When pain is present it is, of course, not the colicky type seen during the passage of a small stone along the ureter. Profuse hematuria is less common than in cases of malignant disease. The increase of bleeding brought on by exercise or jolting is a long recognized sign that is of considerable value, especially when absolute rest in bed will bring about the practical disappearance of microscopic blood. The most accurate means of diagnosis is by radiography, which will give a shadow in a large proportion of cases, but may not in the case of pure uric acid stones. Beside the blood one always finds in the urine a considerable amount of mucus and usually an excess of leucocytes and epithelial cells; crystals may or may not be present; one often sees a few hyaline casts. In the infected cases there will be evidence of an inflammatory process of the kidney pelvis.

In the case of a young man who has recently been under my care, and in whom the x-ray shows a shadow in the left kidney, though the presence of a calculus has not yet been verified by operation, there has been practically no symptom other than hematuria. This has existed now for nearly six months. There has been no pain at any time, the kidney has not been enlarged or tender, and until he was cystoscoped there was nothing to point to which kidney was bleeding. The bleeding has always been increased by exercise, while on one occasion macroscopic evidence of bleeding wholly disappeared after a period of rest in bed. The urine is sterile and the inoculation test has failed to show tubercle bacilli. In non-infected primary renal calculi the absolute lack of all symptoms other than a slight hematuria may render it difficult to convince the patient of the importance of radical treatment at the time when it is most easily and safely carried out.

Renal tuberculosis is most commonly seen in early adult life, though it is by no means restricted to this period. The hematuria in these cases is usually small in amount and intermittent in character, though it may be occasionally profuse and continuous. Thus Trautenroth removed a tuberculous kidney, that was threatening life from hemorrhage, on the sixteenth day after the appearance of the first symptom, which was, in this case, hematuria. In tuberculosis the kidney is likely to be enlarged and is usually tender. There is commonly pain in the renal region. The urine will show beside the blood a greater or lesser amount of pus and pelvic epithelium. The presence of a thickened ureter on the bleeding side is highly suggestive of tuberculosis, as are ulcerations or a localized area of cystitis about the ureteric orifice of the same side. The real test as to the tuberculous nature of the hematuria is the finding of tubercle bacilli in the urinary sediment or the production of tuberculosis in guinea pigs by inoculations of this sediment. In rare instances there may be small well-walled foci of tuberculosis deep in the sustance of a pyramid that have no connection with the renal pelvis. These may cause hematuria by congestion or interference with the renal circulation and yet no tubercle bacilli may be found in the urine until such time as there is a connection between the focus and the renal pelvis. Cases of this sort are most confusing.

Our knowledge that a *chronic* nephritis may give rise to a hematuria is relatively recent. These hematurias differ from the bleedings occasionally seen in acute nephritis in that they last much longer and are often profuse. They may occur in a nephritis of the medical type or in one due to an infection. The hematuria is usually intermittent and may extend over a very long period as in a case reported by Keersmaecker, where the bleeding lasted two years and a half. The hematuria may, however, be continuous and moderately profuse, as in a case I reported before the American Urological Association in June, 1906, where the patient was reduced to marked feebleness after a month of hematuria. The hematuria is usually painless, but may be attended with uneasiness or actual pain in the flanks. The kidney may be enlarged or not; it may be tender or non-sensitive. While excessive exercise and exposure to cold will usually increase the amount of bleeding, rest in bed, even for a month, may not have any effect in diminishing it. This is one of the conditions in which a bilateral hematuria has occasionally been noted as in the cases reported by Legueu and Nicolich. The urine may at times show only blood, but a large proportion of the cases will show in addition to blood a few casts. When the hematuria depends upon a localized focus of nephritis the casts may be found only when there is no bleeding or when it is relatively small in amount. At other times the blood passes the tubules too quickly to allow of clot formation. In some of the hematurias of the toxic type other signs of a toxic nephritis may be present. The urine is sterile in the cases that are purely toxic in type, while it contains organisms in a considerable proportion of the cases of infectious origin. In the type due to infection the bladder may show changes about the ureter; if present they will be much less marked than in the tuberculous cases, and the ureter itself will not be appreciably thickened. It may be very difficult at times to differentiate between the hematuria of chronic nephritis and that of malignant disease.

There are beside the above mentioned causes of renal hematuria others that are less common. Hydronephroses have been found in which the sac was filled with bloody urine as noted by Albarran. Should this occur in an open hydronephrosis as in Rovsing's Obs. IV, one would have a one-sided hematuria, which should be easy to recognize because of the elastic mass and the fact that a ureter catheter passed to the renal pelvis would drain off a large amount of bloody urine. No case of this sort has come under my own observation. A movable kidney may produce hematuria as has been pointed out by Albarran. The bleeding is, as a rule, slight. Unless there is a pelvic retention that becomes infected the urine shows practically nothing but blood. There will be a palpable and movable kidney. I have seen but one case of this kind.

Cysts of the kidney may occasionally give rise to hematuria. Debaisieu cites a case in which a cyst as large as an orange situated in the lower pole of a kidney led to a long continued and profuse hematuria. I have recorded the case of a patient in whom the rupture of a small retention cyst in the upper pole of the kidney on the eleventh day after a prostatectomy led to death from hemorrhage, on the twenty-third day. In my patient an open-mouthed vessel was found in the edge of the ruptured septum between the cyst and the kidney pelvis.

The invasion of the kidney by certain parasites, such as the tenia echinococcus and distoma hematobium, may give rise to hematuria. In this country we see only cases that have acquired the disease elsewhere. The diagnosis will be evident from the finding of the cysts and hooklets in the one and the *ova* in the other. Rovsing records an interesting case of hematuria due to a supernumerary renal vessel bow-stringing the kidney pelvis. There is in fact no injury, no disease, no abnormality of the kidney that may not under certain conditions give rise to hematuria. In a considerable proportion of these hematurias a diagnosis can be made; in some I believe a diagnosis is impossible without an exploratory operation.

Although the instances in which a hematuria has been actually proven to be of ureteral origin are relatively few, some things suggest that they are more frequent than we have supposed. There are some reported cases where a kidney that has been removed for hemorrhage has shown no lesion and yet the hematuria has not stopped at once, but as in the case I have cited, the bleeding has continued for a time, then diminished and finally ceased. These cases are very suggestive of a ureteral origin.

While we know that the ureter is subject to primary malignant growths, to kinks and strictures, all these are occluding in nature and not likely to cause bleeding from the ureter itself. On the other hand there seems no good reason to doubt the possibility of a papillomatous condition of the ureter, as occurs in other parts of the urinary tract; this, or varicosities, or ulcers due to infarctions, I should expect would be much more likely to give rise to hemorrhages. My own experience with hematurias of ureteral origin has been limited to the reported case and to instances of hematuria accompanying the passage of renal calculi; the latter are too characteristic to require comment. In my case had the hemorrhage been due to a stricture or kink the upper portion of the ureter would have been dilated. It was not. The lapse of time since operation is an argument against malignancy. Primary malignant disease of the ureter is rare and in the reports of the few cases with which I am familiar bleeding has not been a prominent symptom. This was the case in the instances reported by Adler, Metcalf and Vorpahl. Impacted calculus also seems improbable as there was no history of colic. The most probable cause seems to me to be either a papillomatous or varicose condition of the ureter or an ulcer.

With the exception of the cases of calculi, our present knowledge of the causes of ureteral hematurias and the different symptoms that they produce is so small that we are unable to distinguish one from another. The most that we can expect to do is to recognize that a given hematuria is ureteral in origin.

To recapitulate: We have but one way to definitely distinguish between a hematuria of the upper urinary tract and one of bladder origin. That is by means of cystoscopy, — simple inspection of the ureteral orifices in some cases, combined with catheterization of the ureters in others. We can distinguish between a hematuria of ureteral origin and one of renal origin by passing a ureteral catheter and noting if the urine from the kidney pelvis is bloody as well as that from low in the ureter. In a large proportion of the cases of renal hematuria we can arrive at an accurate diagnosis of the cause of the bleeding by means of a careful consideration of the symptoms combined with an accurate examination of the patient and study of his urine. Our knowledge of ureteral hematurias is so small that we can, at present, do little in the way of determining their underlying causes.

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REPORT OF A CASE OF CANCER OF THE UTERUS ALIVE AND WELL SIX YEARS AFTER PANHYSTERECTOMY. FIVE YEARS AFTER THE HYSTERECTOMY SYMPTOMS OF GASTRIC CANCER CAUSED BY HERNIA OF THE STOMACH WITH ADHESIONS. OPERATION. RECOVERY.

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A RADICAL and early operation is the only hope of permanent relief in any case of carcinoma, and every case alive and well over five years after operation should be reported. Only by reporting these cases can statistics of value be obtained.

and only in this way can the rank and file of the medical profession be made to realize the importance of the earliest possible recognition of the disease and its thorough removal. Cancer of the uterus so often results fatally, in spite of any form of treatment, that every case cured by operation should be the cause of much satisfaction and encouragement. It is believed that it is proper to use the word " cured " in regard to all cases of malignant disease alive and free from recurrence five years after operation.

There is little doubt but that if all cases, and especially those of squamous cell carcinoma of the cervix, were recognized as such and sent to the surgeon early, and in all of them some sweeping method of removal of the uterus and its environment, as outlined below, were adopted, the percentage of cures in the statistics of operation for this dread disease would be larger. That it is not larger up to the present time is due to several factors: (1) The insidious onset of the disease. (2) The neglect of many medical men in not accurately investigating with the microscope the cause of irregular uterine hemorrhage, which often is the only suspicious sign in the first stages of the disease. (3) The tendency of many surgeons to do palliative or incomplete or vaginal operations when a radical abdominal operation with dissection of the ureters, removal of the broad ligaments, iliac glands and the upper part of the vagina, is the only procedure that can hold out hope of cure.

It is unfortunately true that this tendency among certain surgeons prevails, not only in regard to uterine cancer, but cancer of the breast, jaws and tongue as well, because of an idea that the disease is bound to recur in any event. There can be no more harmful teaching. Eliminating those cases that are so far advanced that only curettage or the removal of a sloughing, foul mass can be done, and omitting also those cases in which demonstrable metastases in the liver or other organs exist, all cases of cancer should be operated upon with the greatest radicalism. The operation for cancer of the breast should include the removal of the pectoral muscles with the lymphatic glands in the axilla and the root of the neck; the operation for cancer of the lip and tongue should include complete dissection of both cervical triangles; the operation for cancer of the uterus should include a thorough dissection of the pelvis with removal of the iliac glands.

Such an operation as described below is a serious one and takes time for its thorough performance, but in the absence of complicating organic disease its immediate mortality should be very low. The majority of the cases operated on by the writer, with the same precautions and attention to every detail, have shown as little reaction from the operation as the case to be described. It should be emphasized that obesity is a strong contra-indication to this form of operation; in very fat women not only the thick abdominal walls, but the infiltration of the subperitoneal tissues with fat give the minimum of space for manipulation and make the dissection of the ureters and glands a very difficult and dangerous procedure. In the opinion of the writer vaginal hysterectomy should always be the operation of choice in such cases.

The importance of the preliminary preparation cannot be exaggerated; nothing is more to be deplored than attempting this operation with a simple overnight preparation. It is important that the period of study and preparation before the operation should cover at least three days, the general condition of the patient should be observed and improved as much as possible, the action of the kidneys should be investigated, the vagina thoroughly cleaned and the intestinal canal emptied.

The writer is well aware that there is a wide difference of opinion in regard to the frequency of early metastasis in the iliac glands as well as in regard to the advisability of taking the extra time to dissect out these glands in every case. It is probable that the opinion of Cullen and Winter, that glandular metastasis does not take place until late in cancer of the cervix, is correct. In the following case although the glands were enlarged and softened, examination failed to show cancerous metastasis. This probability, however, cannot justify the routine leaving of these glands. One can never be sure as to the presence of metastases in them and frequently the condition of the patient will justify the added amount of time needed to remove them. It seems as rational to the writer to do this whenever possible as to remove the neighboring glands when operating for cancer in other localities.

The case reported below was a case of squamous cell cancer in the beginning of the second stage of its growth, the stage of papillary overgrowth with necrosis and foul discharge. The second operation, done five and one-half years after the hysterectomy, for a ventral hernia, furnished an unusual opportunity to prove by inspection and palpation of the peritoneal cavity entire freedom from recurrence of malignant disease.

Mrs. C., thirty-five years old, married, entered the West Surgical Service of the Massachusetts General Hospital, Jan. 1, 1901. Through the kindness of Dr. H. H. A. Beach, the writer, his assistant surgeon, was given charge of the case and permitted to operate.

Family history unimportant. She had been married thirteen years; no children; no miscarriages. Until six months before operation she considered herself perfectly well save that since marriage she has been treated occasionally by physicians for " womb trouble," but in so far as could be ascertained, this treatment was for no very definite symptoms. Catamenia before this present trouble had been regular and normal. Six months before entering the hospital the patient first noticed pain in the pelvic region, especially early in the morning, soon followed by irregular hemorrhage. The pain gradually grew worse, it was of a dragging character and the patient located it in the uterus. She consulted a local physician who told her that the pain was due to some ulceration of the womb and treated her by local applications. There is no evidence that a diagnosis of carcinoma was made at this time, or that any attempt was made to obtain tissue for microscopic examination. For three weeks before entrance a constant, foul smelling discharge was present.

The patient stated that she had lost eighteen pounds in weight in a few weeks.

Examination: A fairly well developed and nourished woman. Heart and lungs normal. A catheter specimen of urine showed no renal disease. On palpation of the abdomen marked tenderness was found in the median line low down above the pubis. On the anterior lip of the cervix of the uterus was an ulcerated area 2½ cm. in diameter, with indurated, elevated edges and with beginning papillomatous elevations in one or two spots. The whole of the anterior lip was enlarged and very firm. The disease did not extend apparently to the mucous membrane of the vagina. The diseased area bled very freely when touched. There was much foul discharge in its neighborhood. Bimanual examination found that the uterus was somewhat enlarged, slightly retroverted and movable. In the left broad ligament there was some thickening and induration without definite outlines. The left ovary was enlarged and prolapsed behind the uterus. Temperature 98.8°, pulse 73, respiration 24.

Physical examination in other respects was negative. A small piece of the disease was removed for microscopic diagnosis; this the pathologist found on examination to be typical squamous cell carcinoma.

After a period of thorough preparation for four days, during which time particular attention was paid to emptying the intestinal tract and to cleansing the vagina, the operation was performed by the writer on Jan. 9, 1901.

The operation corresponded, with slight modifications, to the method suggested and adopted practically simultaneously by Ries, Rumpf and J. G. Clark. The anesthetic used was ether; twenty minutes before anesthesia begun a hypodermic injection of morphine sulphate, gr. $\frac{1}{8}$ and atropin sulphate, gr. 1-510 was given. The operation was divided into a short vaginal stage, and an abdominal stage. With the patient in the dorsal position the vagina was cleansed most carefully with green soap, permanganate of potash and oxalic acid and corrosive sublimate solution 1-3000. The diseased area on the cervix was carefully cauterized with the Pacquelin cautery. The mucous membrane of the posterior cul-de-sac, as high up as possible behind the cervix uteri, was grasped by a pair of long clamp forceps; these forceps were left in position as a guide during the abdominal operation. The bladder was emptied by catheter. With the patient in the Trendelenberg position an incision 5 in. long was made in the median line of the abdomen. After walling off the general abdominal cavity from the pelvis with gauze, the fundus of the uterus was grasped and pulled up by double hooks. After the ovarian vessels had been ligated close to the pelvic brim with chromicized catgut and divided, the peritoneum over the iliac vessels was split until the ureter on each side was found. After the round ligaments had been ligated and divided, the broad ligaments were opened widely and the course of the ureters carefully followed. At this stage of the operation, gauze tapes were put under each ureter so that no mistake in isolating them when ligating the uterine vessels or dissecting the iliac glands and freeing the bladder from the cervix and vagina could be made. The ureter does not tolerate rough handling, but the writer has found that this method of holding them up out of harm's way, if ordinary precautions are taken, does not injure their blood supply. The uterine arteries were ligated on both sides at their point of origin. The bladder with the ureters was pushed forward and dissected free from the upper part of the vagina. With the bladder held well forward and the ureters held up by tape as described, the iliac glands on both sides were carefully removed, together with as much parametric tissue as possible. The three glands lying at the junction of the iliac vessels on the left were markedly enlarged and soft and the tissues around them much infiltrated, insomuch that it was thought at the time that cancerous metastasis had taken place. Subsequent examination, however, showed no metastasis, although so far as known no very thorough serial section examination was made. The upper part of the rectum as well as the bladder was freely separated for a considerable distance from the vagina, which was divided with the thin cutting blade of the Pacquelin cautery two inches below the cervix of the uterus, forming a large cuff. An iodoform gauze drain was placed in the vagina and the peritoneal flaps closed over the amputated vagina and gauze drain by a continuous chromicized catgut suture. The abdominal wound was sewed up without drainage and a pint and a half of normal salt solution was left in the abdominal cavity. The patient was put to bed in good condition and the head of the bed elevated a foot for reasons of reversed postural drainage. The patient made a successful and uneventful recovery. There was but little reaction in the pulse and temperature immediately following the operation. The vaginal gauze was removed on the third day. At the end of a week there was considerable purulent discharge from the vagina which continued for ten or twelve days, but needed no further treatment than sulpho-napthol douches twice a day.

Examination with a speculum at the end of the second week showed a clean granulating area in the vaginal vault with a sinus about one inch long. At no time during the convalescence was there any abdominal tenderness or any trouble with the bowels, kidneys or bladder. The patient's general condition was remarkably good and she was discharged from the hospital on the fifth of February, just one month after entrance.

A pathological examination of the uterus was made by Dr. W. F. Whitney and is as follows:

"A papillary mass 2.5 cm. long from the anterior lip, which was enlarged but not much everted. The infiltrating growth was an opaque, yellowish mass in the region of the internal os.

"Microscopic examination showed large branching solid masses of flat epithelial cells with a tendency to degeneration of the middle portions of the columns, separated by fibrous tissue stroma, rich in small cells, among which are many eosinophiles. Epidermoid cancer."

The writer kept informed of the whereabouts of this patient and has had the opportunity to see and examine her each year. For five years after the operation she remained in perfect health and weighed about forty pounds more than at any time before the hysterectomy. In May, 1906, nearly five and one-half years after the first operation, she was sent to the writer by her family physician, Dr. McGinley, of Ipswich, Mass., with the following history:

Since January, 1906, she has suffered from indigestion and severe abdominal pain varying in intensity, but always situated just to the left and above the umbilicus, near the top of the old scar. For four or five months she had vomited frequently and for the last month had not been able to retain any amount of food on her stomach. The vomitus had sometimes been dark brown and sometimes lighter red in color. She had never vomited large amounts and had never had tarry stools or jaundice. She had lost fifteen pounds since the first of January.

The history strongly suggested cancer of the stomach. Examination was as follows: The woman looked sick but was in good flesh. No masses could be felt in the abdominal cavity. Rectal and vaginal examinations proved negative. The cicatrix of the old incision extended from above the pubis to about one inch above the umbilicus. It was strong with the exception of the upper two inches, where there was some tendency to ventral hernia on coughing and when the patient was in an erect position. Just above the top of the cicatrix was a markedly tender area about the size of a half dollar. Pressure here was always painful and to this spot the patient referred most of her pain. Nothing could be felt underneath this area. Nothing was obtained from a fasting stomach, but after a test meal four ounces of brownish fluid was obtained which showed the slightest possible trace of free hydrochloric acid. Upon inflation the stomach reached to the level of the umbilicus.

Here, then, was a patient whose symptoms suggested strongly malignant disease of the stomach, presumably a recurrence of the cancer removed over five and one-half years before, but the well nourished condition of the woman, the sharply localized tenderness and the suspicion of a beginning ventral hernia near this area of tenderness led one to think that possibly intra-abdominal adhesions binding down or dragging on the stomach might be the cause of the symptoms. It was admitted that the dark-brown vomitus and the almost entire absence of free hydrochloric acid pointed with marked emphasis to gastric carcinoma.

On the 16th of May, 1906, a second operation was done by the writer, and to his relief no malignant disease was found. There was a hernia of about one third of the greater curvature of the stomach, together with a large piece of the great omentum into a peritoneal pouch just above and behind the upper part of the old wound. The stomach and omentum were bound down strongly by adhesions in this peritoneal sac. The stomach was carefully separated and the omentum tied off after which the old scar was completely excised and the rectus muscles brought together throughout the whole length of the wound. Before the incision was closed thorough inspection and palpation of the abdominal cavity was made. There was no evidence of anything abnormal in the pelvis nor in the general abdominal cavity. The stomach was entirely normal in appearance and feeling.

After the operation the patient made an uneventful recovery except for some stitch abscesses in the abdominal wall. She has had no pain or vomiting since the operation and has regained flesh lost. Her appetite and digestion are excellent.

It seemed to the writer that the pathological cause for the symptoms was unusual. It is interesting that the impinging of about one third of the stomach in a moderately tight hernial sac could cause sufficient passive congestion of the mucous membrane of the stomach as to be responsible for coffee-ground vomitus and also to cause sufficient diminution of the glandular activity as to result in the practical absence of hydrochloric acid.

THE SURGICAL ASPECTS OF BRONCHIECTASIS, PARTICULARLY IN CHILDREN AND YOUNG ADULTS.

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Although the study of inflammatory dilatation of the bronchi has been gone into since it was first taken up in 1818 by Laënnec, it was not satisfactorily concluded until the latter part of the last century. This was due to the little amount of interest and attention which had been shown relative to this pathologic condition, the reasons for which were probably due to the fact that the commencement of bronchiectasis usually eludes the attention of the physician, because he is more particularly engrossed in the symptoms of bronchitis, bronchopneumonia, foreign bodies in the air passages and so forth, which generally are the etiological factors of bronchial dilatation and which were present a considerable length of time before the process under consideration makes itself evident. Then, again, another difficulty presents itself in making a diagnosis. It is often very difficult, if not to say impossible, to arrive at a correct diagnosis from one examination or at long intervals. Only an extended and careful watching of the patient, and this from day to day, can put the medical man on the right track. Then, again, the study of this affection was influenced in former days simply because the treatment was the same whether the case was one of chronic bronchitis, putrid bronchitis or bronchiectasis.

Of recent years more attention has been paid to bronchiectasis, and like many other medical affections it has entered into the field of modern surgery, and the lung, which until only recently has been considered as inaccessible to surgery, has finally been placed within its reach. At the present time pulmonary cavities containing purulent fluids are being opened and drained according to the ordinary principles of the treatment for abscess in general, but with more experience it has been found that the prognosis of pneumotomy for various suppurative processes in the lungs varies greatly. But now operative treatment of tuberculous pulmonary cavities has practically been abandoned, and I believe that at the present time it may be said that the only ulcerative processes in the lungs adapted to surgical interference are those of acute and subacute gangrene. Simple abscess formation does not require surgical interference, while in cases of chronic gangrene, bronchiectasis and tuberculous foci the prospects of a recovery by means of pneumotomy are poor, on account of the multiple foci of disease usually present in these cases. The operative results in cases of suppurative processes in the lung having proven to have been so inconsistent, much more judgment is required at the present time in making a differential diagnosis as well as the topography of the lesion. For a long time bronchiectasis was believed to be an affection of the later years of life, but opinions of eminent writers have varied considerably in this respect. Dieulafoy believes that this process is met with in the middle and advanced ages of life, while Grancher, on the other hand, states that, although it is more frequent in adults, bronchial dilatation should be looked for in children, and in them it is not very infrequent. It would probably be found more frequently if autopsies were more complete and an examination of the principal ramifications of the bronchial tubes were made.

At the present time it is generally admitted, I believe, that bronchiectasis is fairly frequent in childhood and that not infrequently this process when met with in adults may have originated in the early years of life. Heubner is of the opinion that bronchiectasis in the adult can be traced back to early childhood, usually the result of bronchial dilatation following upon catarrhal pneumonia. It would appear, however, that bronchiectasis in children is easily overlooked. The process occurs as a circumscribed, chronic bronchitis with exacerbations in the form of recurrent pneumonia always attacking the same pulmonary lobe. According to Lapin, there are two conditions upon which the frequency of bronchiectasis in children depend, namely, the thinness and flexibility of the bronchial tubes as compared to the adult, and the variety of etiological factors. He records a number of necropsies, among which will be found quite a few relating to children. Generally, the reports given are too incomplete, probably because the primary disease of which bronchiectasis is a complication, such as bronchopneumonia, measles, whooping cough and so forth, frequently cause death before the bronchial dilatation has become marked, and consequently is overlooked at autopsy. Besides this, the ectasis may be so gradual that when fully developed the patient has already become an adult. From his researches, Lapin concludes that the principal etiological factor for the development of bronchiectasis is some acute disease of the lungs and bronchi, later on followed by pulmonary sclerosis. He points out that the sclerotic process, whatever may be its cause and which produces dilatation of the bronchial tubes, results in this process on account of a decrease in the elasticity and degeneration of the muscular structures of the latter. A pneumonia alone, without sclerosis, never produces dilatation of the bronchial tubes, while acute bronchopneumonia is accompanied by acute bronchiectasis, the latter subsiding with the disappearance of the former process. If the cough be continued the dilatation continues.

Bronchiectasis may also result from pleural adhesions, empyema and chronic bronchitis from the retention of the secretions set up by these processes. Laceration of the bronchial tubes is thought by some authorities to be a cause of dilatation.

In older subjects, on account of stagnation of the sputum, pulmonary degeneration easily results and then a large cavity may develop.

Before giving the histories of the cases which have been under my personal observation I would like first to discuss those reasons which will lead to a diagnosis of bronchiectasis, particularly in children; and from the very start it should be recalled that the relations of the pleural cavity and lungs differ in children from those in adults and are the cause of the many differences in the symptomatology of the affection in the earlier days of life. The clinical histories frequently offer such important points, more particularly in instances of bronchiectasis of long standing, that if one can ascertain the past pathologic history of the patient, one may not infrequently take for granted that bronchiectasis is present, and this with a considerable amount of certainly. In most cases bronchiectasis develops slowly along with the progress of some pathologic process of the respiratory apparatus; whooping cough appears to play a very important part. In these cases it will usually be learned that the child does not recover properly, and during the further progress of the process he generally suffers from cough and expectoration, these symptoms recurring periodically under the influence of certain causes.

There are also cases where the child has been perfectly healthy, other than for relapses of certain diseases, such, for example, as pneumonia, but in other respects the general health is not impaired, or, if so, to a slight extent only. The appetite will be found good, there is a gain in weight and the child looks perfectly well; in short his general appearance would lead one to assume that he enjoys perfect health.

Now, unfortunately, from these very facts the bronchial process is very frequently overlooked, but to the careful examiner there is one primal symptom which points to the existence of this affection; I refer to a shortness of breath, palpitation upon slight exertion, such as going over the stairs or walking, and possibly a rise of temperature after exercise.

The sputum is of particular importance; it is generally supposed that it is very profuse in this disease, principally containing pus. Microscopically the absence of Koch's bacillus must be proven, as well as the presence of elastic fibres, in order to make a differential diagnosis from ulcerative processes having other origins. The consistency of the sputum is not considered by some as the most important factor in the diagnosis of bronchiectasis, but the manner in which it is expectorated is held to be of importance. The consistency of the matter voided may result in some errors, and it has been pointed out by Gerhardt that in dilatation of the bronchi one should not be too greatly influenced by the physical properties of the sputum. A profuse, purulent, stratified sputum is also encountered in other diseases, such as putrid bronchitis or an intrapulmonary rupture of an empyema.

The amount of sputum also greatly varies in that it is not always stratified, occasionally only little pus is found in it, while, on the other hand, the presence of elastic fibres may be detected when ulcerative processes complicate the bronchitis. Bronchiectasis can only be proven to exist by the sputum when the patient has been watched for a certain length of time and the manner of expectoration noted. Not infrequently there are long intervals of time when the child is free from expectoration; and when this does occur the discharge of profuse purulent expectoration may be relatively short. The bronchial tubes may also empty themselves in an attack of vomiting, but generally speaking there are one or several attacks of expectoration daily. Not infrequently these evacuations have been found in relation to certain circumstances, such as in the morning, when the child was turned in bed, or from some excitement. Von Criegern has related a case of an adult who always had an enormous evacuation when he endeavored to stoop down, while Quincke has noted that in many cases of bronchiectasis cough is slight during the day and the first half of the night, but that toward morning the patients may expectorate a cupful of purulent sputum. It would appear from this that the secretions must accumulate during the night, and on account of this supposition Quinke applied this therapeutically by causing the patient to be placed flat at the end of the coughing spells at about six o'clock in the morning and at eight o'clock in the evening for two hours and then later raised the foot of the bed higher. After this treatment was carried out there was a marked decrease in the secretion at the end of from two to four weeks. In this way the secretion can be better emptied from those portions where the mucous membrane is insensible to irritation and thus congestion and decomposition of the sputum are prevented.

Quincke, in speaking of this procedure, says that it is applicable in cases of sacculated and cylindrical bronchiectasis, particularly so during exacerbations of the process; whereas in diffuse bronchitis there is nothing which is of any help when the general secretion is uniform and pus cavities are present communicating completely or incompletely with the bronchial system. Thus in perforated pleural empyema or similar conditions where the secretion, on account of its irritating properties, results in a continuous and profuse catarrhal secretion from the bronchial mucosa.

This process, to a certain degree, may aid in verifying the diagnosis if the latter is doubtful. Von Criegern resorted to the Quincke position successfully as an aid to diagnosis, and he considers that, with the exception of discovering the local condition by means of the x-ray, it is the most important advance in the diagnosis of bronchiectasis. I would point out, however, that this only holds good when large cavities are present.

As to what these physical examinations accomplish it may be said that Strümpel holds that the entire portion of the thorax in the neighborhood of an extensive bronchiectasis is retracted and shrunken. Percussion sound is usually dull or it may be replaced by a dull tympanitic note, while the respiration may lose its vesicular character, becoming blowing and finally bronchial in nature, while usually many moist, medium and even coarse râles may be heard when the cavities are large and situated near the thoracic wall, and finally evidences of typical symptoms of cavities may result.

In children, however, these signs on auscultation are not to be found, because, generally speaking, large cavities develop very slowly and the seat of the bronchiectasis is usually in the lower lobes, and it is only infrequently that large dilatations arise on account of the flexibility of the neighboring organs, so that the process most frequently represents fissured sacculated dilatations filled with secretions. Otherwise, the physical condition of the patient is far from making evident the presence of several bronchiectasic dilatations.

Reigner has thoroughly recognized the difficulty of diagnosis, from the fact that both auscultation and percussion fail to reveal any particular characteristic evidences of bronchiectasis in children, while other writers have expressed similar views.

It is different, however, when a careful, clinical observation shows great changeableness in the physical condition so that the most acute symptoms are of the greatest value for a local diagnosis. Sonorous and coarse râles may mean cavities, especially when bronchial breathing is sometimes heard where it is not usually to be found. Quite frequently a change in the clinical manifestations occurs spontaneously and is revealed on auscultation. In a cavity which is filled there may be complete dullness and absence of respiratory sounds, but after coughing a dull tympanitic sound is elicited and various modifications of bronchial breathing may be present accompanied by moist, sonorous râles.

Vierordt calls attention to another symptom, namely, that in deep inspiration a sudden change in the character of the breathing may be found; sonorous rhonchi lose their sonorous pitch, while vesicular breathing becomes bronchial in character. Then again the changes taking place between morning and evening, as well as from day to-day, are characteristic of this affection. Of course, the reason for this is naturally to be found in the varying conditions of fullness of the bronchial cavities. One is dealing with a change whereby a greater extension of the peribronchial process is not always the cause, it being due merely to a simple atelectasis and compression of the surrounding tissues.

Inspection of the thorax need not of necessity show a depression or retraction of the affected side, for this is frequently wanting, and on the other hand one may have a barrel chest in those cases where an empyema has developed. The explanation of this is that bronchiectasis, as a purely local disease, is far from being sufficiently injurious to the body, as, for example, pulmonary tuberculosis. X-ray examination has also been resorted to for diagnostic purposes, particularly for the local diagnosis, but it frequently fails, as do other physical methods of examination. Quincke believes that it is of some value in cases where the manifestations are acute, because it will reveal the presence of both superficial and deeply seated foci and will more or less differentiate the parts which contain air from those which do not, and it is especially valuable in bringing to light unrecognized multiple cavities. In the cylindrical bronchiectasis it is apt to prove a failure, but it has been found very valuable in those cases where the dilatations were fairly developed to such an extent that von Criegern found that out of a total of 21 cases it successfully demonstrated the condition in 20.

Curving of the finger nails and drumstick fingers frequent in bronchiectasis and these symptoms should always be looked for.

Now, observation has shown that bronchiectasis is usually unilateral, occurring more frequently on the left than on the right, usually involving the lower lobes, rarely the upper, and much stress has been laid upon this fact by Grancher in making a differential diagnosis between tuberculosis. Von Creigern found that out of a total of 35 cases sacculated bronchiectasis is more frequent in the lower lobe and on the left, he finding 25 instances where the process was seated in the left, in 7 on the right and in 2 it was bilateral in the lower lobes. In 1 case the left lower and upper lobes were involved, while in the cylindrical type of the process the location could not be ascertained.

The treatment of bronchiectasis has been purely symptomatic up to within a short time. Direct action on the diseased structures has been endeavored to be obtained by inhalations of ol. terebinth or eucalyptus, carbolic acid and so forth, but at the best only the foul odor of the sputum has been removed, otherwise there is no curative effect.

Operative treatment by injections or incision and drainage prove to be dangerous. Elevation of the pelvis, placing the patient on the healthy side and so forth, have not been successful in obtaining the desired result.

Operative treatment was attempted a few years ago, its object being to give exit to the pus and allow the cavities to close up by granulation. The operation is radical in its results and consists in resection of one or several ribs after which the pus cavity or cavities are opened and drained. The result, however, cannot be called exactly brilliant and those who have resorted to this method have usually found that their patients recovered with a permanent fistula. The two principal dangers of this operation are, firstly, the development of a pneumothorax after the lungs have been opened, and secondly, the danger of infecting the pleural cavity from the pus. If, however, the pleural layers are adherent these two dangers are naturally avoided, but pleural adhesions cannot always be diagnosed with certainty before the operation.

The operation has also been carried out in two stages. After the thorax was opened iodine was injected between the pleural layers which, after several days, resulted in adhesions, and then the purulent cavities were opened, but leaving aside the unpleasantness of performing two operations it frequently happened that no adhesions formed after the injection.

In 1897, Bayer was successful in immediately relieving a sudden pneumothorax giving rise to severe collapse, by grasping the collapsed lung with tooth forceps and suturing the pulmonary tissue to the costal periosteum. This procedure was resorted to upon several occasions and in 1903 Garré formulated the conclusions that with proper precautions even a complete pneumothorax is not a complication dangerous to life, while infection of the pleural cavity can be avoided by suturing the lung to the parietal pleura and packing. Personally, I have never seen any reason to fear operative pneumothorax, a point that I have insisted upon at some length in a paper on pulmonary surgery which was published last year in the St. Paul *Medical Journal.*

D'Azincourt found that out of a total of 38 instances of bronchiectasis surgically treated there were 28 recoveries and 10 deaths. Borchert operated on 5 cases of bronchiectic cavities which had arrived at the stage of softening and ulceration, only one of these patients recovering, while Eisendraht found 50% of cures, 15.3% improvements and 37.7% mortality. Garré reports 67 operations, and of these 21 died immediately after the interference or during the first few weeks. Forty-six cases, or 60%, are reported as cured, but among these unfortunately hardly more than 50% may be considered as cured, because the remaining were discharged with either a fistula, chronic bronchitis or some remaining evidence of bronchiectasis. Krecke considers operative interference permissible only when a bronchiectic cavity has been surely diagnosed, but a case of this description operated on by him died. Lenhartz performed 4 pneumotomies; 1, a girl, died shortly after the operation, while the remaining 3 were considerably improved, only 1 presenting a fistula. Lichtenauer has reported 5 cases of simple bronchiectasis and 10 the possessors of a putrid bronchiectasis. None of these were cured by operation. Hermann has had a partial recovery in 1 operation, while of 38 cases operated on by Tuffier 20 died; Schwalbe out of a total of 15 cases operated upon obtained an improvement in 8; only 1 was cured, while 6 died. Soulignac performed 45 pneumotomies, 13 resulting fatally, 25 were improved with fistulæ, while only 7 were completely cured. One successful case in a boy has been reported by Treupel. Out of a total of 211 pneumotomies for bronchiectasis 73 patients died, in other words more than 33%.

A comparison with the above results and those obtained by simple resection of the ribs is an impossibility because as yet there have been too few cases of the latter recorded. It may, however, be said that Lenhartz has reported two cases where the lungs were not incised and on Quincke's advice only a few ribs were resected with the result that one patient was cured, while in the second the amount of sputum was greatly diminished.

The reasons why I believe that pneumotomy is a poor procedure in bronchiectasis are, firstly, there are ordinarily multiple foci of suppuration, the lesions being diffuse and not localized, so that the mere opening of one pus pocket followed by drainage is simply an incomplete procedure. Then again, when a single focus exists it is often a difficult diagnostic matter to make an exact localization of the lesion. Secondly, this operation is of absolutely no avail in those cases where the pus has a tendency to be discharged by way of the bronchial tubes. Thirdly, after the thoracic cavity has been exposed the pulmonary lesion is often very difficult to reach on account of retraction of the lung. And lastly, after incision the expansion of the organ and its elasticity in the rigid thoracic wall interferes with the process of repair. It may be said, however, that under certain conditions the surrounding healthy pulmonary parenchyma will, by its elasticity, follow the cicatricial contraction, while if the incision has been made in the lower portion of the lung, the diaphragm frequently aids repair by upward pressure. The condition of affairs is quite different however in the upper lobe, because the ribs at this point offer considerable resistance to retraction and consequently the conditions for wound repair are poor. In the lower lobe the expiratory force of coughing acts more markedly, but even then the secretions can be expressed from the bronchii of the lower lobe only when the ribs are flexible and yielding, the muscular power good and the pulmonary parenchyma itself normal; otherwise the secretions are retained in the chronically inflamed and indurated tissues, and this residual secretion acts as an inflammatory irritant. Naturally, if the patient be placed in the proper position a counteraction to the hypostasis is possible, but nevertheless the hypostatic congestion in the lower lobes is the main obstacle to a reparative process. In the upper lobes the principal obstacle is due to costal rigidity, while in the lower lobe it is, as I have said, hypostatic congestion.

From the above results Quincke came to the conclusion that in the operative treatment of bronchiectasis opening the cavity or cavities when present in the upper lobes was of minor importance, but that mobilizing the structures surrounding the lung by extensive resection of the ribs was the essential, while in the case of cavities in the lower lobes their incision and drainage is the most important point. Vierordt is of the opinion that this differentiation is impossible to strictly carry out, for physical reasons; and again he also takes into consideration the rather unsuccessful results obtained by drainage of pulmonary cavities. For this reason he decided to try extensive mobilization of the thoracic wall in all instances where the diagnosis of bronchiectasis of the lower lobes was made. The object to be obtained by this operation is to produce a very marked retraction of the lung by means of extensive costal resection over the diseased area. By this means the walls of the bronchiectic cavity are brought closely together, while the secretions contained within it are driven to the bronchi and are then expelled by coughing. This favorable action is increased if constant pressure by properly applied bandages and Quincke's position are also employed.

The results of this treatment have been satisfactory on the whole. Immediately after the operation there has always been noted a rapid decrease in the amount of expectoration, while the pus also soon diminishes, the children increased in weight and strength, while a physical examination has invariably shown a great improvement at the time of their discharge.

I would point out, however, that there are two difficulties in the operation which should be considered. If the parietal pleura is of delicate structure and not adherent, it is very easily lacerated and then arises the danger of infection and pneumothorax. The dangers of pneumothorax are, I believe, greatly exaggerated by certain operators and where small tears in the pleura have occurred in the conditions under consideration I am aware of no ill result accruing. Furthermore, in the case of children the ribs regenerate very rapidly when one has taken care to leave the periosteum, and therefore it is necessary either to resort to compression over the area of resection immediately at the time of the operation or eventually to remove the periosteum. I would say, however, that Vierordt did not take the latter fact into consideration.

The advantages of this extensive mobilization of the thoracic walls are, in the first place, the comparative safety of the operation, from the fact that the lung remains protected and also the possibility of draining the purulent secretions by way of the natural passages; and last, but not least, the very short time required for the process of repair to be accomplished.

Whether the results obtained are complete and permanent can only be ascertained after a more extended and vast experience; but at any rate the results so far obtained are certainly sufficiently encouraging to continue to resort to this operation in the future, more particularly so on account of its safety as compared with that of pneumotomy. If ordinary medical treatment, carefully applied and continued for some time, remains ineffectual, then resection of the ribs should be seriously considered. My experience in resection of the ribs for bronchiectasis in children is limited to two instances, but, on account of the excellent results obtained, I feel that the cases are worthy of record.

Case I. A boy, eleven and one-half years of age, was referred to me by the late Dr. Allen M. Sumner, of Boston, who, at the same time, gave me the following notes:

The child had always been well until the age of five, when he had scarlet fever. This was followed by a bronchitis, which was rather tenacious and lasted for several months. At the age of eight, he contracted whooping cough, since which time he has had a persistent cough accompanied by profuse expectoration of a thick, greenish sputum, although odorless. Appetite good and the child apparently has kept his average weight. Occasional night sweats.

Examination revealed a fairly well developed child, of healthy appearance. Weight 74 pounds. Some dyspnea upon exercising. The right side of the thorax drags on respiration and over the entire lower lobe there is diminished resonance. Breath sounds diminished, although they are more marked in the posterior axillary line just below the angle of the scapula. Numerous coarse, moist râles. Slight displacement of the heart towards the right. There is continued cough and expectoration of thick greenish sputum. Careful search for the tubercle bacillus upon several occasions was negative and no elastic fibers could be detected.

On account of the tenacity of the cough, in spite of a carefully directed medical treatment, operative interference was decided upon and on April 13, 1901, under ether narcosis subperiosteal resection of 5 cm. of the seventh and eighth ribs in the posterior axillary line was done.

The after events were simple. The wound healed by first intention. Three weeks after the operation there was still some dullness and many moist râles, but the cough and expectoration had considerably diminished.

In October, 1901, the general condition was excellent and the amount of sputum voided in twenty-four hours would just about fill the bottom of a cup. The right side of the thorax was somewhat depressed, but from careful examination no distinct dullness could be heard, and vesicular murmur was detected, although somewhat weak. The child had gained six and one-half pounds since the operation. The patient has been seen from time to time and has remained in excellent health.

CASE II. Female, seven years of age. No family history of tuberculosis. At the age of three and one-half had measles, followed by bronchitis, which has been present almost constantly ever since and is especially marked in winter. Upon several occasions the child has expectorated blood.

The expectoration is thick and yellow, but contained no tubercle bacilli. Occasional night sweats. The child was sent with a diagnosis of bronchiectasis of the left lower lobe.

Upon examination the child was fairly well nourished and healthy looking. Some bronchitis on the right. On the left posteriorly many coarse râles could be detected and the breathing sounds were bronchitic in character. After exercise the temperature rises a degree.

Under ether 7 cm. of the eighth rib was resected by the subperiosteal method, the operation being rendered somewhat delicate on account of marked adhesion of the parietal pleura with the ribs, but was finally accomplished without perforation of the former.

Two months later the notes read: "Appearance healthy and since operation the severe cough has disappeared, likewise expectoration. Appetite good. The thoracic cavities symmetrical. The left lung is quite movable, dullness has disappeared, likewise the râles."

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CANCER IN HUNGARY.—A national conference on cancer in Hungary was held at Buda-Pesth on Nov. 15 and two following days. It was attended by more than 300 members of the medical profession. Professor Doellinger, to whose initiative the convening of the Congress was due, reported that, according to official statistics, there were on Oct. 15 of the present year 3,650 patients under treatment for cancer in Hungary. It was estimated that the total number of sufferers from cancer in Hungary is about 56,000. At the census of 1900 the population was 19,254,559.—*British Med. Jour.*

Clinical Department.

REPORT OF A CASE OF CARCINOMA OF THE VERMIFORM APPENDIX, PROBABLY PRIMARY.

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AND
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THE three excellent articles which have appeared recently upon carcinoma of the vermiform appendix make a further repetition of the literature on the subject out of place at the present time. These articles are: The section on "Malignant Tumors" in the chapter on "Neoplasms" in the work of Howard A. Kelly and E. Hurdon on the "Vermiform Appendix and Its Diseases," in the edition for 1905; the monograph of Leon K. Baldauf on "Primary Carcinoma of the Vermiform Appendix, with a Report of Three Cases," in the Albany *Medical Annals*, for December, 1905; and the monograph of H. D. Rolleston and Lawrence Jones on "Primary Malignant Disease of the Vermiform Appendix," in the *American Journal of Medical Sciences*, for June, 1906. The papers by Baldauf and Rolleston and Jones contain a most comprehensive and exhaustive review of the bibliography of the subject up to date. It is believed, however, because of the importance and rarity of malignant disease of the vermiform appendix, that the report of a single case is of value.

The patient whose case is here reported is a housewife, born in Germany, twenty years of age, and married two years.

Family history. — Does not know the cause of death of parents. One brother died at the age of twelve of an unknown disease.

Previous history. — Mumps in childhood. Indefinite history of convulsions in early life. No other illness up to 1903 when she had gonorrhea and salpingitis, and was operated upon Nov. 10, 1903, by Dr. Lund in the Boston City Hospital. Cyst of a size of small acorn attached to right ovary removed. Both tubes found inflamed, but nothing to warrant removal of either. Uneventful convalescence and discharged on the seventeenth day. Patient continued to have occasional pain in lower abdomen, which became constant in July, 1905, when she again entered hospital and had a second laparotomy on Aug. 8, 1905, by Dr. Newell. Left tube found to be the seat of a hydrosalpinx and removed. Left ovary normal. Right tube showed a condition of chronic salpingitis and outer one-third resected. Right ovary cystic and resected. Uneventful convalescence and discharged on the eighteenth day.

Menstrual history. — Catamenia began at sixteen years of age. Regular every twenty-eight days up to February, 1906. Duration, five days. Amount, two to six napkins during entire period. No pain. Never confined to bed. No catamenia from February, 1906, to June 16, when she flowed five days, using three to four napkins daily.

Denies obstetric history.

Present illness. — Well after the second laparotomy up to July 17, 1906, with the exception of a month following the operation, when she had occasional dull pain in the right lower quadrant of the abdomen which gradually ceased. On July 17, she commenced to flow, and later in the day without warning she had a convulsion; generalized in character, bit tongue, grated teeth, frothed at mouth and talked. Did not have incontinence of sphincters. Unconscious for about two hours and then recovered consciousness, complaining of sharp and constant pain in left lower abdominal quadrant. Had a similar convulsion on following day lasting same length of time. After this second convulsion patient was seen by writer, in consultation with attending physician, and sent to the hospital.

Physical examination. — Well developed and well nourished woman. Neurotic and inclined to be hysterical. Weight 150 pounds. Temperature 99.5°. Pulse 80. No glandular enlargement. Chest negative. Abdomen showed considerable tenderness over whole right lower quadrant, but no spasm. No distention. Tympanitic throughout. Firm median laparotomy scar two and a half inches long below umbilicus, containing small keloid. Vaginal examination elicited exquisite pelvic tenderness, more marked on the right side, and nothing definite could be learned about the pelvis. Moderate bloody vaginal flow. Urine examination: Color high. Reaction acid. Specific gravity, 1014. Albumin, slight trace. Sugar absent. Microscopical examination of sediment showed few crystals of calcic oxalate and few pus cells. Leucocyte count, 20,000.

The pain which appeared July 17, in the left lower abdominal quadrant disappeared from there the next day after the second convulsion, shifting to the right lower quadrant and persisted there up to the time of operation, but decreased constantly in severity under rest in bed and cold applications. Flowing continued three days and then ceased. Temperature ranged between 98° and 99.5° and pulse between 70 and 80. On July 21, a vaginal examination was again attempted but the patient became so hysterical and complained of such excruciating pain on palpation of the right cul-de-sac that nothing could be ascertained. On July 23, an examination was made under ether. Uterus was found to be of normal size, in good position and freely movable. Left ovary felt prolapsed and enlarged to about three times its normal size. Right cul-de-sac free. Laparotomy decided upon for purpose of resecting cystic left ovary.

The following operations were performed July 25, 1906, under my supervision by Dr. John T. Williams, gynecological house physician. In lithotomy position, uterus was curetted of considerable endometrium. Patient transferred to Trendelenburg position. Incision to either side of old laparotomy scar, excising keloid growth. Omentum found lightly adherent to under surface of scar and adhesions separated. Left ovary cystic and enlarged to size of a horse chestnut. Left tube absent. Ovary resected to about one-half normal size. Right tube found amputated at outer one-third. Right appendages otherwise normal. Appendix found to inner side of cecum, not adherent, 5 cm. long, and normal to sight and touch. Mesentery apparently normal. Meso-appendix tied off. Peritoneal cuff dissected back. Appendix tied and cut. Stump cauterized with 95% carbolic acid. Peritoneum closed over stump. Uterus suspended. Abdomen closed in layers.

Convalescence. — Patient made a normal convalescence, running temperature of 99° to 100°, pulse 70 to 80, up to afternoon of eighth day, when she had a chill, elevation of temperature to 104° and pulse to 120. Complained of pain over right lower chest where a slight friction rub was heard. Leucocyte count 11,600. Following morning temperature and pulse were normal and friction rub had disappeared, but pain continued for several days. Temperature and pulse ran practically normal during rest of convalescence. Stitches out on tenth day; wound healed by first intention. Out of bed on fifteenth, and discharged on twentieth day, Aug. 14.

Patient was seen on Sept. 25, and was in excellent condition. General appearance better than before operation. Weight 140 pounds. Stated that she had felt first rate and had been free from all pain up to nineteen days before, since which time she had been bothered by constant sharp pain in the left abdomen, low down during the day and high up during night. Abdominal examination revealed no cause for this pain which apparently was of neurotic origin. No glandular enlargement. Vaginal examination showed slight resistance in left cul-de-sac with moderate tenderness. Right pelvis negative.

In this case the appendix on inspection and palpation was apparently normal, but as the abdomen had been opened for another reason, it was removed to insure the patient, if possible, against a fourth laparotomy. It was not suspected that the appendix was in any way abnormal until the report of scirrhous carcinoma of the tip of that organ was returned from the pathological department.

In view of the fact that in most of the cases of carcinoma of the appendix discovered up to the present time, the condition has been revealed by chance, it would seem rational and expedient to make it a routine procedure to remove the appendix in every case where the abdomen is opened, in order to guard against the extension of malignant disease from a possible primary focus in the appendix.

I am indebted to Dr. Lawrence J. Rhea, senior pathological interne, for the following report of the specimens examined by him, and also for the microphotographs.

PATHOLOGICAL REPORT.

The specimens are three in number; curettings of the uterus, an ovary and the vermiform appendix.

The curettings consist of a few fragments of soft reddish gray tissue.

The ovary measures 2.5 cm. x 2.5 cm. x 1 cm. It contains several small cysts filled with thin, clear, straw-colored fluid.

The vermiform appendix measures 5 cm. in length. Externally it appears normal except that the distal end is quite firm and bears the imprint of a hemostat. The lumen is patent to within 6 mm. of its distal end where it is obliterated by firm yellowish tissue.

Microscopically the curettings are negative and the ovary shows simple follicular cysts. Sections made through the appendix at various points show the following conditions:

In sections from the cecal and central parts the lumen contains a few desquamated epithelial cells, lymphocytes and plasma cells. In places the lining epithelium is missing from the surface with no inflammatory reaction beneath (post-mortem desquamation or abrasion by scissors).

The glands of the mucosa are normal. The lymphatic tissue which is abundant is negative.

The general picture presented by sections at different points through the distal 6 mm. of the appendix is as follows: The lumen is partially to completely obliterated by compact connective tissue in which are nests of epithelial cells and in places small masses of lymphoid tissue and epithelial glands. The size of the epithelial nests varies from a few cells to groups of considerable size. The larger groups are most numerous within the newly formed connective tissue and the longitudinal muscle coat near the proximal end of the obliterated lumen. In some of the epithelial nests there is a distinct tubular arrangement, but for the most part the nests are made up of closely packed irregularly shaped groups of cells.

The individual epithelial cells have a light staining nucleus with a small amount of pink staining cytoplasm. There are few mitotic figures. In some sections the epithelial nests have infiltrated both muscle coats of the appendix and in places have extended to the serous coat. Within the muscle coats the epithelial cells tend to follow the course of the fibers.

The following is a specific description of individual sections through the obliterated end of the appendix:

Near the tip the lumen is obliterated by dense connective tissue in which are groups of epithelial cells. The muscle coats are infiltrated. About 3 mm. from the tip the same general picture is seen together with small masses of lymphoid tissue centrally located.

About 5 mm. from the tip the nests of epithelial cells are present on one side only of the appendix. They lie chiefly in the mucous and submucous tissue and form a mass which bulges out so as almost to obliterate the lumen, which is adjoined in places by a few mucous glands and considerable lymphatic tissue. At one point only have the epithelial cells invaded the muscle coats.

Unquestionably the lesion is a scirrhous carcinoma originating either from the epithelium at the tip of the vermiform appendix or as a metastasis from a primary growth somewhere else in the body.

The following reasons may be urged for considering this a primary tumor of the vermiform appendix.

(1) Evidently the tumor arose from epithelial cells which have spread peripherally and longitudinally and infiltrated the muscle coats of the appendix.

(2) The new growth is sharply limited by the serous coat of the appendix.

(3) Clinically there is no evidence of a tumor elsewhere in the body.

(4) The tumor is of the slow growing scirrhous type which has been demonstrated to be primary in the appendix.

(5) The appendix is an unusual place for metastases to take place.

Anatomical Diagnoses. — Negative curettings. Simple follicular cyst of the ovary. Scirrhous carcinoma of the vermiform appendix.

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Reports of Societies.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY.

Twelfth Annual Meeting, Kansas City, Mo., June 11, 12, 13, 1906.

Monday, June 11, 1906, Morning Session.

Reports of the Section Meetings were read by Dr. T. H. Halsted, Chairman of the Eastern Section; Dr. W. L. Ballenger, of the Middle Section; H. Bert Ellis, M.D., of the Western Section, and Dr. H. L. Myers, of the Southern Section.

ENDOTHELIOMA OF THE THROAT.

The President, Dr. J. A. Logan, of Kansas City, Mo., exhibited a case showing an endothelioma of the throat. He had had the case under observation for about twenty-four days. The patient had been tested for specific infection. A number of slides had been made showing a perfect specimen. At the beginning his tonsil was the size of an English walnut filled with débris and foci. The x-rays were used and the growth had been reduced at least quarter its size during the past four weeks. There were periods when necrosed tissue was not distinguishable; the disease has not yet overtaken the soft palate. He had been given iodides up to 240 gr. a day to the point of iodism. A few of the anterior cervical glands were affected but they had disappeared. At the present time the patient is not receiving iodides; the x-rays are being used inside and outside also.

Dr. R. Levy, of Denver, thought the growth seemed to be fairly well circumscribed without involving the surrounding glands. He thought that a radical procedure was indicated at once, the patient being in good physical condition. He had no faith in the curative properties of the x-rays.

Dr. E. W. Day, Pittsburg, Pa., agreed with Dr. Levy that a radical operation should be performed at once. He cited three cases of sarcoma of the tonsil which had remained cured, one twelve years, the other six years and the third thirteen months. Every gland was removed in these cases, also a considerable portion of the tongue. The case had not reached the stage of softening.

Dr. J. Beck, of Chicago, thought that the differential diagnosis histologically between endothelioma, a syphilitic growth and a small sarcoma was exceptional, endarteritis obliterans being present in the syphilitic condition. The slow growth of endothelioma was characteristic and diagnostic. He had operated a year ago on a similar case and there was at the present time but a slight recurrence. He thought radical treatment the only solution in these cases.

Dr. H. W. Loeb, of St. Louis, had obtained good results with a special x-ray tube described in the *Archives*, in which the rays are more directly applied on the growth than by any other tube.

Dr. M. A. Goldstein, of St. Louis, wanted to know if the posterior pharyngeal wall was involved. He had had two cases, one of endothelioma of the fauces and the other sarcoma of the tonsil both of which seemed to react nicely to the x-rays in daily treatments, and then the treatment was applied on alternate days for a month. He uses a small tube connected with a large cone-shaped part fitting over the x-ray lamp, and in that way was applied directly to the part involved. For a short time there was considerable reaction, but both patients died.

Dr. F. E. Miller, of New York, wished to know if the monopolar had been tried, or if radium had been used.

Dr. J. E. Logan, of Kansas City, in closing the discussion said that the patient had hardly gotten under the influence of the x-ray; that he had had 17 or 18 applications, but the growth showed so little tendency to gummatous deposit or of breaking down that it and the potassium iodide treatment had been stopped. Radium and the monopolar had not been tried

SWIVEL KNIFE FOR RESECTION OF THE SEPTUM.

Dr. W. L. Ballenger, of Chicago, exhibited the swivel knife which he thought of much use in resection of the septum (submucous), and in turbinectomies.

Dr. J. Beck, of Chicago, thought the knife a very practical one especially where there is much polypoid degeneration leaving a ragged edge after removal of the turbinate. The bleeding is very slight owing to the ragged edge of the wound which acts as a hemostat.

Dr. J. A. Stucky, of Lexington, Ky., presented a pathological specimen which was an alveolar sarcoma.

Dr. E. B. Dench, of New York, cited a similar case in which he had removed the entire temporal bone with good results.

Dr. E. W. Day, of Pittsburg, said that he had chiseled away two thirds of the petrous portion of the temporal for a brain abscess, and the only effect was to make one side of the face sink, but the patient is living. In this case the internal carotid had been exposed.

Dr. E. B. Dench, of New York, said the internal carotid in these cases had never given the least trouble. His growth was not quite as large as Dr. Stucky's specimen. He had exposed the dura, but it was not involved.

OCULAR SYMPTOMS OF NASAL ORIGIN. REPORT OF A CASE OF RETRO-BULBAR NEURITIS AND OTHER ILLUSTRATIVE CASES.

Dr. Hill Hastings, of Los Angeles, wrote this paper, but was not present, and on motion it was decided that the secretary read this paper. He reported five cases and all of them were relieved.

The Secretary, Dr. Phillips, said he would like to emphasize what every one believed, that the sinus very apt to give rise to severe ocular symptoms is the sphenoidal sinus. When deep-seated ocular headaches are present, one must be certain that the sphenoid is free from disease, and the ordinary washing or syringing is not the procedure that should be followed, but the anterior wall should be removed, thus making it impossible for the gelatinous masses to form.

Dr. W. L. Ballenger, of Chicago, said the sphenoidal sinus was often divided into septa, and irrigation on that account was not always successful, and in chronic or severe acute cases the columnar and ciliated epithelia has lost its cilia, and the epithelium may be broken down; hence the action of the cilia are responsible for carrying the secretion up to the estea. This, he further said, was true of the sphenoidal sinus; hence drainage of this sinus was imperfect on account of loss of motion of the ciliated columnar epithelia. In the paper the expression had been used that the ethmoidal labyrinth had been curetted; he thought it could be removed only in certain cases.

MIDDLE EAR SUPPURATION AS AN ETIOLOGICAL FACTOR IN RETRO-PHARYNGEAL ABSCESS.

Dr. Edgar M. Holmes, of Boston, read this paper and thought that retro-pharyngeal abscess in the adult from any cause is rare; that middle ear disease rarely advances forward, but is occasionally the cause of retro-pharyngeal abscess; that when it has occurred thorough removal of granular and necrotic material is indicated, and a free incision through the pharyngeal wall, index finger placed in cavity to act as guide in using small aural curette. This proceeding was followed by permanent recovery. The external routes of attack are available, but all of them with the exception of removing the condyle of the jaw, offer little opportunity to inspect or attack the bone which is diseased.

Dr. C. W. Richardson, of Washington, D. C., had never seen any cases of this sort which did not have their origin in an ear condition.

Dr. E. B. Dench, of New York, reported a case in which a fourteen-year old girl had been operated on for chronic middle ear suppuration, and after the operation she developed a rise in temperature. Nothing was found in the throat. She was again etherized and on dissecting out the grafts and auditory canal and a tube passed to the Gasserian fissure and packed but the case died on the table on account of cerebellar abscess which had not been diagnosed.

Dr. F. E. Miller, of New York, reported two cases in infants, where quinsy and retropharyngeal abscess was present. The children almost succumbed after the lancing. A probe was later passed to where the tonsil had been. The ears had been examined but had proved negative.

Dr. J. F. Barnhill, of Indianapolis, did not understand clearly whether the infection had travelled through the middle ear outside or through the Eustachean tube. He thought ligation of the jugular would have proven beneficial.

Dr. E. H. Holmes, in closing the discussion said that the first case was seen so late it would have been unusual to have it hold without a mastoid operation, although the abscess was far down the neck. In the second case the woman made a good recovery without mastoid operation. There was no tubercular history in any of the cases.

Afternoon Session, Monday, June 11, 1906.

REPORT OF A CASE OF INFECTIVE THROMBOSIS OF THE SIGMOID SINUS.

Dr. H. Bert Ellis, of Los Angeles, read this paper in which he had resected the internal jugular with the resultant recovery of the patient.

Dr. E. B. Dench, of New York, thought it a very interesting case and showed the good results that could be secured by prompt interference. He had seen a similar case in which there was a sudden rise in temperature; the entire drum membrane had been destroyed, and upon opening a thrombus extending to the jugular was found. Iodoform packing was put in to prevent infection from the broken down thrombus. The patient was placed upon the table with a temperature of 106°, yet she healed by primary union.

Dr. E. M. Holmes, of Boston, reported a case of a boy who had had headache for two days; he had had ringing in the ears for eleven years; temperature was normal. The ear had discharged a small amount of pus; but there was no tenderness of glands anywhere. The only marked thing was a subnormal pulse ranging from 42 to 50. When the mastoid was opened the cells were filled with granular tissue and the lateral sinus wall was of a darkish blue color and filled with pus. Before opening the sinus the jugular was tied and the upper portion dissected out, but there was still a dark appearance of the inner wall of the sinus. Incision was made and pus followed; when immediately cyanosis ensued and artificial respiration was resorted to. The patient at the present time is doing well.

SYMPOSIUM: RESULTS OF OPERATIVE PROCEDURES UPON THE NASAL SEPTUM.

"Sub-Mucous Resection" was advocated by Dr. Joseph Beck, of Chicago.

"By Means of Various Incisions" was brought forward by J. F. Barnhill, of Indianapolis.

"The Correction and Closure of Perforations of the Nasal Septum" was read by Dr. M. A. Goldstein, of St. Louis.

Second Day.

Morning Session, Tuesday, June 12, 1906.

The discussion of the Symposium was taken up and opened by Dr. William L. Ballenger, of Chicago, who said that he did not defend the submucous operation; there are a great many things to be said in favor of this operation. He has used the Ash, Gleason and Watson operations as well as the Kyle method; he has sawn off spurs, bridges and has done modifications of all of the above operations. Before that he had used the Sajous or steel punch but has abandoned it. He still finds cases in which to-day the Ash operation is indicated. These old operations can very frequently be made use of with good results. He has performed in the last year and a half 117 submucous resections of the septum. From this operation he has gotten good results and also some that he has been sorry for. The chief difficulty with this operation seemed to be the separating or elevating the mucous perichondrium. He thought that whenever this difficulty was experienced just after making the Hyatt or Killian incision he is sure he is between the mucous membrane and the perichondrium, and it is possible to elevate it considerably without tearing. If it is resistant, he would advise taking a free elevator and start the mucous perichondrium and lift it from the cartilage; then introduce a dull Hyatt elevator and the balance is readily accomplished. He emphasizes the fact that one must be certain he is under the perichondrium. The operation can be done in a truly surgical way. Submucous resection can be done with the nicest technique and should appeal to all. He is also of the impression that some instrument should be devised that will cause many of those at present in use to be abolished, as he thinks the fewer number of instruments used the better.

Dr. F. E. Miller, of New York, said he had done the operation several times but he had had great trouble in securing efficient local anesthesia. He takes three strips of gauze after cocainizing the nose and the strips of gauze, these he inserts deeply into the nose with small triangular forceps with parallel blades and allows it to remain *in situ* for at least fifteen minutes, and the anesthesia is complete. He has usually used a solution of 2% resorcin and 4% cocaine and sprayed the nose, thus relieving the psychic effect of the cocaine; then he uses 10 gr. each of bromid of sodium, ammonium and potassium with aromatic spirits of ammonia, and he has no one faint, and the local anesthesia is profound. If the anesthesia is to be prolonged he uses a cocaine crystal locally and has continued anesthesia for one and three-quarter hours with the above procedure. He removes bone with the McCoy forceps. He always tries to avoid the anterior ethmoidal artery on account of having had two awful results from hemorrhage.

Dr. C. W. Richardson, of Washington, said that many who had gotten good results with the older operations were loath to give them up. He finds the perichondrium will loosen easily if before anything is done the septum is straightened with the finger. To bring the flaps in apposition nicely he uses a narrow spatula and after bringing the edges together covers it with collodion. It adheres perfectly. He has operated exclusively in the last few cases under general anesthesia thus getting a good result and having no faints or perforations or any other untoward effects.

Dr. Kaspar Pischel, of San Francisco, thought that it was a serious matter to operate under general anesthesia. He suggested the use of hypodermic injection of ¼ gr. morphia half hour before operation, thus quieting the patient and lessening the quantity of cocaine to be used. He was also of the impression that collodion dressings covered the wound satisfactorily and prevented outside infection.

AN ORIGINAL RESEARCH ON THE CAUSE OF VOCAL NODULES.

This paper was read by Dr. Frank E. Miller, of New York, who thought these nodules could be produced by means of infection of the tonsils and perverting the action of the thyro-arytenoideus externus muscle. He thought that by combining the efforts of all the throat specialists in the world a synthetic method of cure could be accomplished, thus helping the singers of the world to be entirely freed and to cast aside empirical methods.

Dr. D. Braden Kyle, of Philadelphia, said that the singers' node was a tumor but not a neoplasm; there was a cellular change occurring in the swelling. He thought as did the author that the principal cause was an inflammatory process.

Dr. J. A. Stucky, of Lexington, Ky., said that he had seen a good many singers' nodules and his experience had taught him that the less he treated the larynx the better for the patient. The cord should be given rest and the nodule will disappear. He relies on diet in connection with rest and no local treatment.

Dr. G. Hudson Makuen, of Philadelphia, thought that singers' nodes was not a good name as they occurred in people who do not sing, but also in speakers and in coughing. He had seen it occur in a man who constantly used the 'phone and spoke to persons at long distances.

Dr. F. E. Miller, of New York, said in closing the discussion that the main object was to get some simple remedy in curing the condition and to help the multitude who are trying to get a correct vocal education.

A STUDY OF THE ANATOMY OF THE ACCESSORY CAVITIES OF THE NOSE, BY TOPOGRAPHIC PROJECTIONS.

Dr. H. W. Loeb, of St. Louis, read this paper. [No abstract.]

THE FUNCTION OF THE ACCESSORY CAVITIES OF THE NOSE.

Dr. J. M. Ingersoll, of Cleveland, read this paper and said that the accessory sinuses of the nose in the lower animals are developed in connection with the olfactory portion of the nose. In animals which have an acute sense of smell, the olfactory (ethmoidal) turbinals exhibit a tremendously intricate development and the accessory sinuses are correspondingly more highly developed and all of them contain olfactory turbinal tissue. Their function is to conduct inspired air more directly over a large surface of the olfactory turbinals, which would not be otherwise exposed to air except by diffusion, and thus the accessory sinuses increase the acuteness of the sense of smell. In those animals in which the sense of smell is not acute, the olfactory turbinals have degenerated and receded from the accessory cavities. The cavities are left with comparatively smooth walls, their openings into the nasal fossæ contract and their functional activity is lost. In man the accessory cavities are almost completely shut off from the nose, their functional activity ceases, and they remain as rudimentary structures.

No discussion.

Second Day.

Afternoon Session, Tuesday, June 12, 1906.

THREE CASES OF LARYNGEAL NEOPLASM.

Dr. C. W. Richardson, of Washington, read this paper, one a case of neoplasm in the larynx noted from six months to the ninth year of life, and now disappearing. The other a multiple recurrent papilloma in an adult; and the third case one of laryngeal carcinoma, in which he had performed laryngectomy and showed the specimen. The patient who was seventy-two died on the morning of the fifth day of collapse. The speaker thought the most important thing was to ascertain whether these cases were operable or not. In this case the growth seemed to be localized and the outlook seemed very promising, yet the outcome was not favorable. Complete laryngectomy did not offer a very favorable result in the aged. The violence is great and it requires strong middle life to withstand the shock. To the author it seemed as though the operation narrated by J. Solis-Cohn would be indicated in these cases of stripping the perichondrium from the inner surface of the chondrium and thus removing the perichondrium, mucous membrane and growth *en masse.*

Dr. R. Levy, of Denver, said his experience had been limited to papilloma of the larynx in children.

Dr. F. E. Miller, of New York, thought that in papilloma of children a continuous spray of Thiersch solution four or five times daily and increasing its strength would improve the condition. He thought all these cases would finally come to tracheotomy and thyrotomy.

Dr. H. W. Loeb, of St. Louis, had seen seven cases of carcinoma of the larynx which had been operated upon. One is living. In another case the patient had been comfortable for a year, a second operation was performed and that patient died. Another case was operated upon two and one-half years ago and five weeks later went to work again as a bricklayer and has been well since. His trachea is stitched to his skin. The next case was operated upon and proved to be atypically tubercular, and died two weeks after operation. The next case had a large carcinoma for which he had been treated five months. All structures were dissected from the larynx and the tracheal wound was attached to the neck wound, and one week later he had a slight hemorrhage. He had an embolism which probably originated in the jugular. The doctor thought it wise in considering carcinoma to look at the statistics of Szenziac. It seems that carcinoma remains intrinsic a long time and does not affect glands external to the larynx. He thought if the patient could be brought through the operation without serious results, he had a fair chance for recovery.

Dr. C. W. Richardson, in closing the discussion, said regarding thyrotomy in recurrent papilloma cases, it did not offer the best results. The preferable one in children was tracheotomy.

THE RESULTS OBTAINED FROM THE RADICAL OPERATION FOR CHRONIC PURULENT OTITIS MEDIA.

Mr. Edward B. Dench, of New York, read this paper and said that certain questions had arisen regarding the technique of the operation. First, the advisability of primary grafting; second, the advisability of secondary grafting at the end of five to ten days after the primary operation; third, the advisability of the introduction of grafts through the canal; and fourth, anomalous methods of healing after skin grafting. He thought grafting advisable at all times; that convalescence is shortened if it is employed.

Dr. Norval H. Pierce, of Chicago, thought the tests for change in audition ought to be carried out; first the whisper test, then low sounds, then bone conduction and lateralization, and then Renne test to see if the stapes is ankylosed. Then the condition of the auditory nerves should be ascertained. When no ankylosis of the stapes is found and there is no nerve involvement, audition has been improved. It is necessary to insist on the exact test being made before operation, then one can ascertain if the operation increases or decreases audition.

Dr. W. C. Phillips, of New York, spoke of the fatalities attending the radical operation for chronic suppuration of the middle ear. Dench relates six fatal cases, and he wished to emphasize the fact that while the fatalities are few they have no special connection with the disease but they do occur.

Dr. Kaspar Pischel, of San Francisco, remarked that the author had said the patients return complaining of the occurrence of suppuration. They think or say the operation did them no good. It seems to be the breakdown of the poorly nourished integument. The doctor has devised a flap which furnishes a good skin and permits of the immediate closure of the wound. The original cut is made behind the lobe, and the skin from the posterior wound as far as the high line of the flap is turned in to cover the upper wall and the upper part of the posterior wall. The lower part is covered by the flap, and the ridge of the facial nerve is covered by skin flap. In order to make it heal the superficial layers are removed with a cataract knife; this is closed up and the upper part covered with healthy skin.

Dr. E. B. Dench, closing, said that he had operated and exposed the facial nerve three-quarters inch and when it was picked up there was no response to mechanical stimulation, but two years later there was perfect control. Provided there is no division, there is no limit, according to the speaker, as to the time when the function may be restored.

A CASE OF STAMMERING ILLUSTRATING THE IMPORTANCE OF EARLY TREATMENT.

Dr. G. Hudson Makuen, of Philadelphia, reported two cases in which phonetics were largely used and dietary restrictions were imposed, and the children carefully watched. This treatment resulted eventually in recovery.

A MODIFIED BLOOD CLOT IN AURAL SURGERY.

Dr. Wm. Sohier Bryant, of New York, read this paper.

Third Day.

Morning Session, Wednesday, June 13, 1906.

The first order was the discussion on the paper of Dr. Bryant which was opened by **Dr. Wendell C. Phillips**, of New York, who said that in New York all attempts at rapid healing by means of a blood clot in any form had met with almost invariable failure. He expressed surprise at the good results that were obtained outside the metropolis. Whether it was due to faulty technique or not he could not say. He thought probably the patients were not physically strong or had less resisting power. He does not think it possible to absolutely sterilize the field and keep it so. The wound communicates with the middle ear. He was extremely skeptical and hardly thought the plan could be adopted.

Dr. E. M. Holmes, of Boston, was much discouraged with the use of this operation. A modification of it with a cigarette drain might be used. If there was any method by which convalescence could be shortened he would be very glad to avail himself of it.

Dr. W. C. Bane, of Denver, also had had unsatisfactory results with the operation. The wound had become infected and had to be cleaned out. He thought nothing could be gained by it.

Dr. W. S. Bryant, in closing, said the chief points in the technique were to watch the convalescence and fairly good results were to be obtained. The reason of so many failures in New York was due, no doubt, to the fact that operators frequently allowed internes to apply the dressings and thus ran a greater chance for infection. The drainage was to be removed in from twenty-four to forty-eight hours, and if suppuration did occur to make a free opening. First intention healing was the usual rule even with a drain.

HERPES ZOSTER AURIS.

Dr. Derrick T. Vail, of Cincinnati, reported a case in which this rare condition occurred and in which the very terrific pain which nothing was able to relieve seemed diagnostic. The blebs formed behind the ear in the mastoid region. He came to the conclusion that herpes zoster auris was like true zoster elsewhere, — a definite disease usually running an acute course; that it was very rare, but had been observed by a number of noted authorities; that it may involve the membrana tympani, as well as deeper parts of the auditory canal; that it was an acute infectious disease, causing neuritis, the storm center being in the ganglion of a sensory nerve; that lymphadenitis was almost invariably present and probably preceded the attack; that the treatment was of little avail; the disease usually running a rapid course and healing spontaneously.

Dr. E. M. Holmes, of Boston, saw a case eight or nine years ago, being called out at night to see a woman thirty years of age with a perfect past history. The pain had been intense for over two hours, of a neurotic and spasmodic character. Examination of the ear showed nothing abnormal, as did the nose and throat. He was at first inclined to think he had a reflex from a tooth. Morphia was administered in large doses, but the pain persisted. Heat and cold was tried but nothing relieved it. In thirty-six hours blebs began to form; the pains subsided in a few days and then began again. Three months later she showed a general herpes extending over several intercostal nerves. He failed to find a cause, and thought the ganglion theory rather hard to prove.

Dr. W. C. Phillips, of New York, thought that herpes appearing about the ears as common as the same affection appearing in other parts of the body. It was seen with comparative frequency in the clinics over which he presided.

THE PATHOLOGICAL PROCESSES ACCOMPANYING INFECTIONS INVOLVING THE ACCESSORY SINUSES OF THE NOSE.

Dr. D. Braden Kyle read this paper. [No abstract.]

Dr. Derrick T. Vail, of Cincinnati, offered a suggestion that instead of plugging up the nose tightly with pledgets of cotton which on removal allowed sudden influx of air and possible infection, the lamb's wool be substituted. This does not so easily become saturated.

H. W. Loeb, of St. Louis, said that with reference to the physiology of the sinuses, particularly the sphenoidal, ethmoidal and frontal, he had much inclined to consider that extensions of the respiratory portions of the nose as diverticula of the olfactory region. The nose after all was more largely olfactory than respiratory. It had been found in man and herbivora that this was so. It was important in removing so much of the outer walls of the sinuses; that the olfactory portions are placed in too close relation to the air, and he wished to emphatically emphasize this point.

Dr. Jos. Beck, of Chicago, wished to speak of the diagnostic feature of radiography in these cases; that when there is intense distention and possibly the antrum filled with pus, transillumination will cause a darkness and shadow on that side. He has introduced films into the nose and has obtained the shadow on the affected side.

SYMPOSIUM. THE TREATMENT OF TUBERCULOSIS OF THE UPPER AIR PASSAGES AND THE EAR.

"Medicinal." This paper was read by **Dr. W. C. Bane**, of Denver, who divided the treatment under constitutional and local. He placed great importance on rich blood as the destroyer of the tubercle bacill and hence the importance of a full nourishing diet. Forced feeding with rest, and guaiacol and creosote and calcium chloride he thought were the best aids. For the local treatment of tubercular laryngitis he thought a 4% solution of resorcin very beneficial, also a 1 to 1,000 solution of alphozone. The most efficient remedy at the present time he thought was formalin. Its administration should be preceded by an application of a 5% or 10% solution of cocaine or beta eucaine. As a local anesthetic orthoform locally, inhaled or as an insufflation had much benefit.

"Surgical." This was read by **Dr. Robert Levy**, of Denver, who thought the views of the majority of laryngologists had been unified; that surgical measures were controlled by the character of the lesion, their nature, extent and other complications, whether primary or secondary, and by the limitations placed upon the possibility of early diagnosis; that all cases of chronic suppuration of the middle ear in tuberculous individuals are not necessarily tuberculous; that the objects of surgical measures in tuberculosis of the ear are the removal of all available foci of disease, the removal of diseased bone and the establishment of drainage; that tuberculosis of the nose responded readily to surgical treatment, the methods used being curettement and excision by cold wire or galvanic cautery snare; that pharyngeal tuberculosis was a manifestation of the most asthenic form of the disease, presenting all conditions which contra-indicated surgical intervention; that operative intervention in pharyngeal tuberculosis was only palliative; that in laryngeal tuberculosis, deep incisions were valuable in edema and in uniform firm infiltration, their usefulness being increased by rubbing with lactic acid; that excision of tuberculous deposits was limited to those cases in which there was a certainty of completely removing the entire disease focus; that the extent of the involvement was often greater than could be determined by laryngoscopic or macroscopic examination; that curetting was valuable in ulcerations and soft excrescences, the character of the ulceration, however, modifying its applicability; that repeated and extensive operations could be performed provided the lesions developed progressively; that the galvanic cautery was useful in small easily accessible tuberculous ulcerations; that tracheotomy might prove of value in children and was always indicated for the relief of dyspnea; and that laryngectomy was probably never indicated.

"Climatic." This paper was read by **Dr. Levy** in the absence of **Dr. Wolff Freudenthal**, of New York, who emphasized strongly the necessity of giving tubercular patients the benefit not only of medicinal and surgical, but also of climatic treatment. That if, after thorough trial, the patient did not do well in one climate, he should be sent to another. He did not think it wise to become pessimistic after having tried one specific kind of climate or treatment without success; that whatever be the method of treatment, the physician should constantly maintain a spirit of optimism which would be an inspiration to both himself and his patient.

Dr. J. E. Logan, of Kansas City, in opening the discussion on the symposium emphasized the point that tuberculosis generally or of the air passages varies so greatly in different parts of the country that it was hard to make a separate division of treatment. He thought the cardinal principle was to maintain the general systemic condition.

Dr. W. C. Phillips, of New York, had no doubt that the greater percentage of chronic purulent affections of the ear were of tubercular origin. He had experienced great difficulty in making the diagnosis of tubercular conditions of the ear; that the microscopic discharges on examination did not reveal the presence of the tubercle bacillus. It could never be positively made except by pure cultures.

Dr. H. Bert Ellis, of Los Angeles, thought that if the diagnosis was made early the local, surgical or climatic treatment would result favorably.

Dr. H. W. Loeb, of St. Louis, had operated on cases of tuberculosis of the larynx with slight abatement of the symptoms and slightly increased length of life, but came to the conclusion that he would not interfere surgically in these cases, and one case treated this way lived seven years and died later of tuberculosis of the lungs. He thought, however, that the patient stood a better chance by being sent to the proper climate and then operated upon when the competent laryngologist, to whom he had been sent for the proper treatment, thought ripe.

Dr. Kaspar Pischel, of San Francisco, wished to call the attention of the society to the paper of Dr. Max Rothschild, of San Francisco, who uses Koch's tuberculin by subcutaneous injection with good results.

ETHER NARCOSIS BY RECTUM. REPORT OF CASES.

Dr. J. A. Stucky, of Lexington, Ky., read this paper and thought this method was of great advantage in surgery of the nose, throat and accessory cavities, where the gravity and annoyance of the anesthetic by inhalations is well known. He reports four cases in which this method was used. The patient passes under the influence of the drug rapidly and with no sense of suffocation; less ether is used not only in producing the narcosis but in maintaining it; the stage of excitement is lessened or absent; the ether recovery is more rapid, and the disagreeable after effects of ether inhalation are diminished or absent. The use of this method in diseases of the lungs, especially tuberculosis, abscess and pneumonia, immediately suggests itself; also in empyema, mediastinal and new growths. The greater part of the ether is also eliminated through the lungs, the direct irritation of the concentrated vapor is overcome and post-operative pneumonia should be lessened. The absence of bronchial secretions and vomiting has been a striking feature. In the cases reported by the author there was no diarrhea, bloody stools or rectal irritation that required any special attention. A slight tendency to constipation was observed. It was suggested that the absence of rectal irritation is due to more thorough preparation of the patient; to better quality of the ether used; improved method of administration. The bowels should be thoroughly cleaned out for forty-eight hours, the patient being kept upon a restricted diet, largely liquids. Five grains each of calomel, soda and salol were given, followed in eight hours by half ounce castor oil. The night before the operation two ounces of saturated solution of magnesium sulphate are given, followed in the morning by a large suds enema. Immediately prior to going to the operating table, another similar enema was given. These preparations and a breakfast of two ounces of beef tea were the only preparations. The patient was allowed all the water desired to within two hours of beginning the ether. The apparatus used was suggested by Cunningham and consists of a bottle, the body of which is 7½ inches in height, 5 inches being used for ether space, 2½ inches and the neck for vapor space; the diameter is 4 inches and the capacity in the ether space 29 ounces, so that a large amount of ether may be used without materially lowering the ether column. The afferent tube which leads to the bottom of the ether column ends in a bulb with several small perforations so that air ascends in several small bubbles. The stopper and connections should be tight. The bottle is placed in a water bath at a temperature between 80° and 90° F. Ether boils at 98.6° F. The efferent tube should be long enough to allow moving the wash bottle away in case the operator desires to change his position. A stiff rectal tube with a single eye at the end is used. The patient is placed upon his back with legs in slight flexion, and tube is inserted for a distance from 10 to 14 inches. Efferent tube is connected with rectal tube and vapor forced in until considerable gas is pressed around rectal tube. Keeping the forefinger in the rectum, unless it causes pain, hastens the expulsion of rectal gases. It is essential that the rectum be distended to the point of emptying itself around the tube, for without removing the gas normally in the bowels the patient absorbs the ether much more slowly. After the gas has been expelled, the ether should be forced in by a few squeezes of the bulb every five or ten seconds, or until it is expelled about the tube. The breath becomes ether laden in from one to five minutes, and the patient becomes drowsy, the breathing stertorous and he passes into complete surgical narcosis without a stage of excitement. After narcosis is complete two or three squeezes of the bulb a minute will keep it so, and the position of the tongue should be looked after and watched. If the patient becomes too profoundly anesthetized the efferent tube should be disconnected and such ether as is in the bowel forced out through the rectal tube by abdominal massage. An oxygen tank should be connected with the rectal tube and this gas made to distend the bowel. The first case was an empyema of the right maxillary and frontal sinus with polypoid degeneration of middle turbinate and anterior ethmoid cells. The second case one of empyema of the left maxillary and frontal sinus; left nares filled with polypi springing from ethmoid and middle turbinate. The third case was one of polypoid degeneration of both middle turbinate and ethmoid, and empyema of frontal sinus. The fourth case was one of empyema of the right maxillary, antrum and frontal sinuses, with polypoid degeneration of both middle turbinate and ethmoid cells. The method under discussion was used with success in all four cases.

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Book Reviews.

Surgery: Its Principles and Practice. By Various Authors. Edited by William Williams Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. (Five volumes.) Vol. I. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

In opening the first volume of this new work, one cannot help wondering whether the encyclopedic form is the ideal for the surgical textbook. It is obvious that it possesses great advantages, and equally certain that its drawbacks have been in this instance diminished to an irreducible minimum by one who both personally and professionally is regarded with sincere affection and respect by the entire medical world. If anything were needed to prove Dr. Keen's fitness for the great task he has undertaken, it is furnished in his admirable preface, which is a model that might well be followed by many editors. " It has been our aim to record the very latest well-established knowledge so that the work should be thoroughly ' up to date,' yet with few, if any, passing surgical novelties." Certainly an admirable aim, and one undoubtedly attained in this first volume.

There are sixty-six contributors to the complete work, six of whom are foreigners. The subjects have been allotted to these various writers with excellent judgment. The names of the contributors are, as the editor says, among " the brightest, most ardent, and earnest surgical scholars and experts of Europe and America."

The book as a whole excites practically unqualified praise; it is not unnecessarily large or heavy; the paper is good in spite of the high gloss; the type, though small, is clean cut and distinct, and the illustrations most admirable. All the pictures are sharp and clear in the smallest details, and many of them justify superlative commendation.

The first volume, evidently planned for eight hundred pages, contains practically one thousand. Sixty of these are allotted to an historical sketch of the subject. One leaves this article with but a single regret — that of its brevity. One hundred of the four or five thousand pages of the completed work would be none too much to assign to the historical aspects, personal and material, of surgery. We may quote one half line from it, " Alas, for our lack of space," with equal sympathy for both readers and writer! To tell history with truth, with a sense of proportion, with a fascinating style and in a compelling manner, is a gift which the writer of this article shares with but few in the profession.

The following monographs include Surgical Physiology, Blood Examination, Immunity, Inflammation, Suppuration Abscess and Fistula, Ulceration, Gangrene, Repair, Thrombosis and Embolism, Erysipelas, Tetanus, Special Infections, Diseases Derived from Animals, Traumatic Fevers, Scurvy, Rickets, Surgical Tuberculosis, Chancroid, Syphilis, Tumors and Wounds. An examination of these articles shows a minimum of duplication, and on the other hand, few gaps or omissions between them. The difficult and interesting subject of immunity is admirably treated and reduced to terms which should render it intelligible to a medical student as well as a general practitioner, an end not easily accomplished amid the confusing cloud of new and appalling names. Surgical physiology and inflammation are also unusually concise and convincing. Repair is one of the very best articles in the volume, and the writer on Traumatic Fevers deserves our particular gratitude for the bold manner in which he has simplified the subject and excised from it many inaccurate names and incorrect traditions. Besides being admirable in itself, the article on Scurvy contains some illustrations of histological specimens which may be described as absolutely perfect; one does not know which to admire the more, the original drawing or its remarkable reproduction. The longest article of the volume is on Tumors, and it is also one of the very best. A simple provisional classification is adopted which appeals very strongly to the general surgeon, and avoids complicated and involved divisions, which, after all, as the author says, could not be completely satisfactory to all authorities. The article on Wounds completes the volume and seems to cover concisely and most satisfactorily a subject which, though comparatively simple, is too often confused and unsystematic in its treatment. Shock and Collapse, which are included in this chapter, are illuminated by the results of the great amount of work which has universally associated the author's name with this most interesting subject.

The bibliography appended to each monograph is extensive, and gives immediate access to original sources upon each quotation. The practical application of researches, the therapeutic indications, whether operative or non-operative, the description of new methods and new apparatus are all ample and adequate. A satisfactory index follows the last monograph.

If this volume is the standard to which the four succeeding volumes shall attain, it is unquestionably true that the work will fulfill the highest hopes and wishes of the editor; it will be of value to students, graduates, operators and teachers, a standard authority upon all surgical topics, and a work which it will be a pleasure as well as a profit to consult.

Nursing in the Acute Infectious Fevers. By George E. Paul, M.D., Assistant Visiting Physician and Adjunct Radiographer to the Samaritan Hospital at Troy, N. Y. Illustrated. Pp. 200. Philadelphia and London: W. B. Saunders Company. 1906.

Dr. Paul has written a book primarily for nurses which has of late not always been accomplished in spite of professed intention on the part of the author. We have frequently found occasion to criticise books for nurses on the ground that they were in reality books for students of medicine. Dr. Paul has avoided this defect in great measure. Although giving a brief description of the symptomatology of a disease, his essential object is to tell the nurse how to treat the conditions which the disease produces. The scope of the book is limited to fever and its treatment. Fever is, therefore, discussed in general, together with appropriate diets and sick-room hygiene. This section is followed by a description of the individual febrile disorders, and finally certain chemical and bacteriological knowledge is inserted which an experienced nurse might make of practical value.

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AMATEUR OPERATING.

Last year a Boston surgeon had occasion to operate on a simple case of cystic goitre in a neighboring country town. On his arriving, with his assistants, at the patient's house, his local consultant, an admirable general practitioner, informed him that he should like to assist at the wound. The surgeon allowed this, with some misgiving. The operation was done with considerable difficulty owing to the inexpertness of the strange assistant, and three days later the patient developed a marked sepsis. Eventually he recovered, but after a tedious convalescence. This familiar story illustrates a number of facts which we place seriously before the profession, — before surgeons as well as before general practitioners. In the high technical development of present-day operating it is becoming increasingly apparent that special training on the part of assistants is essential for satisfactory results. The skilled surgical assistant of to-day is a product of long, special training, and skilled surgical assistance is demanded by modern surgery. We have no intention of asserting that under special circumstances, in remote districts or in emergencies, it may not be proper and necessary for any man not especially trained to be called upon to assist at or to perform capital operations even, but such circumstances should be rare near any great surgical center. The average general practitioner, with his press of work and his lack of time and opportunity for special study, cannot be expected properly to take part in the conduct of serious modern surgical operations. It is not that he may not be familiar with the theory of operating and have a fair general knowledge of technique, but no amount of theory can make good a lack of practice, and the community has a right to expect and demand competent work when such special procedures are called for. The plea of poverty on the part of patients cannot excuse the furnishing of inexpert service. The poorest patient generally can be sent to a well equipped hospital, and when this is not possible, the service of a proper surgeon can always be secured for little or nothing. Surgeons in large practice are constantly giving their services, and every large city swarms with well-drilled young surgeons who are waiting for practice, and are glad to answer calls of any sort.

There is another side of this question, however, which concerns more particularly the work and reputation of busy operators. In the development of our technique, we have learned that *one* guiding and experienced hand at the operating table is not enough. In the language of sport, good operating is a matter of team play. If you will watch the work of a rapid and skillful surgeon with his two or more familiar assistants, you will be impressed with the interdependence upon each other of all those hands. The assistants seem to know and to anticipate as though by instinct the every move of their chief. Instruments are handled, retractors are placed, sponges are applied, ligatures are tied and sutures are passed with a regularity and quick machine-like precision which implies and demands a long practice of the whole team. Such co-ordination in operating has become a commonplace of good surgery and is demanded by an intelligent community. When it is not demanded it should be given as a matter of course, and any lapse into amateurish, slovenly, or incompetent work by a properly qualified surgeon, owing to his neglect to supply a proper team, should not be tolerated, except when such neglect appears unavoidable. It has come about that competent and perfected team-work is regarded as much a part of finished surgery to-day as is the essential, commonplace routine of asepsis and good nursing.

We are led to make these remarks because of two lamentable conventions inherent in the medical community. One convention, maintained often by the general practitioner, is that he has a right to take a hand in the operation upon his own patient. Another convention inheres in the fear of surgeons that they may slight or offend their medical consultants. Such conventions were proper and inevitable ten or fifteen years ago when new operations were being developed and matters of technique were experimental; but within the last decade surgery has been employed in perfecting operations and the technique of operating. Neither general practitioners nor surgeons should be bound to-day by conventions which must inevitably jeopardize the health and lives of patients and damage seriously the success and the reputation of surgeons.

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MODERN PYSCHOLOGY.

Psychology is concerned with consciousness, just as the study of anatomy has to do with the material and tangible organism. The former is therefore a branch of science well entitled to the physician's consideration. It is not now, although its name would imply as much, given up exclusively to metaphysical speculation, to philosophic inquiry concerning the nature of the soul, the future life, spiritual states and the like. These matters are of very legitimate interest, an interest lying, however, rather in the department of *belles-lettres;* they have but an indirect and not an essential relation to modern psychology.

Psychology in the present-day sense had its origin in the work of Weber and Fechner in the first half of the last century; but it had no independent standing as a science until Wundt, in 1878, established his laboratory in Leipzic, where so many "experimentalists," both European and American, have been trained. Presently Müller, Martius and Ebbinghaus followed his example in Göttingen, Bonn and Berlin, respectively; within fifteen years no less than sixteen experimental laboratories were established in America, all directed by Americans, except that at Harvard, to which Münsterberg came from Germany. And here it was that William James prepared his authoritative treatise. Psychology has now developed to the extent that it is in its turn divided into branches — or shall we call them distinct sciences? There are those psychologists who devote themselves exclusively to work upon the anatomy, histology and physiology of the brain, the organ by means of which mind manifests itself; these are the physiological psychologists, who occupy themselves with the study of the correspondence between psychic processes and functions of the brain. The method here is primarily objective, which is, indeed, the method generally pursued in modern psychology.

The "experimental psychologists" made up a very large percentage of the members of the American Psychological Association, which is now happily affiliated with the American Association for the Advancement of Science; and at the recent meeting of the greater organization in New York City made an excellent exhibition of the newer methods employed and of the results achieved in many laboratories throughout our country.

The experimentalists get their data originally from the self-conscious subject. They seek to correct the irregularities and errors of individual observation by objective tests. They are not satisfied with single observations; their investigations are concerned with the "group," and so their work is largely statistical. They eliminate, so far as possible, the personal equation by testing these data through the use of accurate instruments. They consider varieties of sex, age and race; they compare the psychic processes of man with those of the lower animals. They deal with a very wide range of problems, as may be judged from the subjects discussed at their recent meetings — language, esthetics, religion; the differential perception of colors in the spectrum; geometrical illusions; the influence of rhythm on the circulation; the influence of tea and of hashish on psychic processes; the psychology of the telegraph operator; respiration in relation to attention; the development of voluntary motion in the child; the mental faculty and sensation measurements in school children and university students; variations in the nests of a spider; measurements of the variability of instinct; the psychology of the ant queen; the sense and intelligence of the Japanese dancing mouse.

We must confess that thus far the fruits of the modern psychology have not been proportionate to the wide range of subjects chosen and the zeal displayed in their investigation; it would seem now to remain for some scientific geniuses to educe important truths from the vast mass of statistical and experimental material which has been accumulated. But we must be patient; modern psychology is still a very youthful science, and geniuses are very rare, painfully rare.

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THE TREATMENT OF CANCER WITH TRYPANROTH.

Something has recently been said relative to the use of trypanroth in cancer, a name which designates a coloring matter belonging to the benzopurpuric series, and which until recently has been used only for staining anatomical preparations. In a recent article, Dr. Schoull, of Tunis, states that trypanroth has been successfully employed in the treatment of trypanosomiasis by Laveran, Ehrlich and Shiga, and it has again been experimented with by Horand and Jaboulay of Lyons in the treatment of cancer, and on account of the apparently favorable results obtained Schoull and Vullien have continued researches along these lines.

Trypanroth is met with in the form of an odorless, tasteless, brownish-red powder, soluble in water. Horand and Jaboulay, in the first place, gave it in the form of cachets and afterwards in hypodermic injections, using as a vehicle normal salt solution in the proportion of 50 cg. of trypanroth dissolved in 40 cc. of salt solution. Given by mouth no appreciable result appears to have been obtained, but the same cannot be said when the drug is introduced subcutaneously. After a varying lapse of time the integuments take on a rose color, occasionally reaching a bright red. This coloring, which ordinarily arises within a few hours and also stains the urine, is one of the inconveniences of the method.

The injections of trypanroth are rather painful and even when slowly injected the solution gives rise to a very acute pain, extending quite a distance beyond the point of injection. The pain subsides in about an hour, but may return somewhat violently ten or twelve hours later. One may safely add 3 or 4 cg. of cocaine. The injections are given in the external aspect of the thigh or in the hypochondriac region, the liquid always being tepid. In spite of every aseptic precaution and sterilization of the injection fluid local inflammatory reactions have been occasionally met with. In the majority of cases the injection was followed by a rise in temperature, the mercury rising to 100° to 102° within from six to eight hours. This rise in temperature does not appear to have any relation to the nature of the affection under treatment, and subsides without any treatment in from twelve to thirty-six hours. A slight oliguria has sometimes been noted.

The injection should be given every two or three days, but in some instances only every eight or ten days. However this may be, from four to six generally are sufficient to obtain a result which is frequently said to be astonishing. One should be guided by the reaction presented by the patient and the results obtained. In two cases of carcinoma of the stomach, Schoull and Vullien obtained in one case a complete disappearance of the tumor, which had been distinctly detected, and a great improvement in the general condition after four injections had been given. In the other case the improvement of the general phenomena was remarkable; the drug seemed to act quickly, but its action appeared to diminish very rapidly. There was no accident other than a marked rose color of the integuments. In another instance, the patient was a lad nineteen years of age presenting a very marked involvement of the lymphatic glands which had appeared five months previously and presented an enormous hypertrophy of the lymph-nodes in the neck and tonsils. His condition was extremely serious and appeared hopeless. However, in ten days he received five injections, each containing 50 cg. of trypanroth dissolved in 40 cc. of salt solution, and after the second injection the tumors diminished in size so rapidly that after two more injections given during the ten days which followed the first series, the tumors in the neck, which originally were the size of a closed fist, were no larger than a walnut. The other lymphatic tumors had almost disappeared, the spleen had returned to its normal size, while the patient's general health was almost perfect.

Such results are interesting, and it is, of course, possible that we have here a new and curious drug with which to experiment. At any rate, in apparently hopeless cases it is sometimes justifiable to try methods devoid of altogether satisfactory credentials. The future alone will demonstrate what may be accomplished, and results so few in number must be received with much skepticism; nevertheless, let no man say that hope shall not spring eternal.

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ADJOURNMENT OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The American Association for the Advancement of Science adjourned on Jan. 1, after voting to hold its next annual meeting in Chicago. Among the work of the closing session were the establishment of an additional section on Scientific Education, which was proposed by Prof. E. G. Dexter of the University of Illinois, and the adoption of a memorial to Congress, to be presented by a committee of five. In this, attention is called to the increasing seriousness of the results of the rapid and reckless destruction of forests about the headwaters of important interstate rivers, and the House of Representatives is urged to pass the bill now before it providing for the establishment of national forest reserves in the White Mountains and Southern Appalachians. The meeting was the most successful and largely attended in the history of the Association, and in his address at its close the president, Dr. Welch, expresed the opinion that the work presented had been of an exceptionally high quality, and that a marked increase had been evinced in the general interest in scientific knowledge.

MEDICAL NOTES.

Typhoid Fever in Scranton, Penn. — Recent reports from Scranton, Penn., show that the epidemic of typhoid fever in that city has reached somewhat alarming proportions. Recently a total of a thousand cases have been reported, with seventy deaths. There is need of nurses, not only because of the increasing number of cases, but also because some of the nurses are themselves ill.

The Treatment of Sciatica. — The prize essay on this subject awarded by the New York *Medical Journal* was won by Dr. E. S. McKee, Cincinnati. The essay appeared in the *Journal* of Dec. 29 ult., of which the following is a brief abstract: " Rheumatic cases are generally benefited by the salicylates, syphilitic cases by the iodides and gouty cases by colchicum and the salines. One of the best combinations of drugs for the acute stage is the following, which should be preceded by calomel and the salines: ℞. Aspirini (acetyl salicylic acid), dr. L, or 4.00 gm.; phenacetini (acetphenitidin), gr. L or 3.33 gm.; quininæ salicylatis, gr. xx, or 1.33 gm.; codeinæ sulphatis, gr. iiss to v, or 0.15 to 0.33 gm. M. Fiant capsulæ No. x. S. Take one every two or three hours. Hypodermics, sterilized air injections, rest, cure, massage, electricity and the surgical treatment were discussed. Great stress was laid on having a thorough knowledge of the individual patient on hand. If he has failed in a cure he has failed somewhere in his study of the case and something has been overlooked. An exact diagnosis of the condition is one of the first and last means of cure. *Qui bene diagnoscit, bene curabit.*

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Jan. 9, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 56, scarlatina 46, typhoid fever 5, measles 24, tuberculosis 43, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 9, 1907, was 22.51.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 5, 1907, was 273, against 234 the corresponding week of last year, showing an increase of 39 deaths and making the death-rate for the week 23.64. Of this number 132 were males and 141 were females; 269 were white and 4 colored; 160 were born in the United States, 103 in foreign countries and 10 unknown; 70 were of American parentage, 168 of foreign parentage and 35 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 54 cases and 8 deaths; scarlatina, 16 cases and 2 deaths; typhoid fever, 9 cases and 3 deaths; measles, 22 cases and 0 deaths; tuberculosis, 46 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 48, whooping cough 1, heart disease 33, bronchitis 6 and marasmus 3. There were 20 deaths from violent causes. The number of children who died under one year was 45; the number under five years 56. The number of persons who died over sixty years of age was 71. The deaths in public institutions were 76.

There was 1 case of cerebrospinal meningitis reported during the week. No deaths.

Cremation in Massachusetts. — The Massachusetts Cremation Society reports for the year past the largest number of cremations of any single year hitherto. There were 238, eight more than the previous highest number in 1899. The Rev. Paul Revere Frothingham, president of the society, spoke at the annual meeting, which has just been held.

A Verdict for Jostling. — A decision of interest and importance has recently been rendered by the full bench of the Massachusetts Supreme Court. Suit was brought against a suburban railway company for an injury sustained in one of the subway stations because of being thrown down through the jostling and pushing of the crowd. The higher court maintains that the railroad company is liable under these conditions and, therefore, sustains the lower court in its verdict of a judgment for the plaintiff.

Increased Authority Given Dr. Austin J. Peters. — In view of the prevalence of rabies in certain portions of Massachusetts, Dr. Austin J. Peters, of the State Cattle Bureau, has been given increased authority in relation to the muzzling of dogs. This will no doubt have a salutary effect upon the people at large in allaying anxiety and upon the spread of the disease through the adoption of more vigorous prophylactic measures.

Brigham Annuities. — Under the will of the late Robert B. Brigham the annual payment of annuities to various organizations has just been made. Among these the Massachusetts Eye and Ear Infirmary, the Channing Home for Consumptive Women, the Children's Hospital, the Massachusetts Infant Asylum, the Boston Home for Incurables, Perkins Institution for the Blind, New England Hospital for Women and Children and the Boston Lying-In Hospital receive one thousand dollars each.

Tuberculosis in Brockton, Mass. — An active campaign is to be begun in Brockton, Mass., against the spread of tuberculosis. Ex-Governor Douglas has contributed one thousand dollars to the cause, and an organization has been formed which it is hoped will develop into a definite means of combating the disease. An effort will be made to provide the treatment now demanded, and especial care will be taken in the treatment of tuberculosis at the homes of the patients.

Dr. Frederick L. Hills, Superintendent of Rutland, Mass., Sanatorium. — Dr. Frederick L. Hills, of Concord, N. H., has been appointed medical resident superintendent of the Rutland Sanatorium for tuberculosis. As a result of the hearing held before the Governor's Council about a year ago, it was voted that hereafter the position of visiting physician for this institution be given up and that the responsibility of the cases devolve wholly upon a resident medical superintendent. Dr. E. O. Otis recently resigned his position as visiting physician to the sanatorium, and the appointment of Dr. Hills has met with very general approval. Dr. Hills has had wide experience in administrative work at various institutions and is regarded as a most efficient man to carry on and develop the important work for which the Rutland institution stands.

Stillman Infirmary. — The Stillman Infirmary in Cambridge, connected with Harvard College, is each year proving of great service to those to whom it ministers. This plan to provide adequate medical treatment for students at the university, who may for various reasons not be able to be treated at their own homes, has proved a decided success, and there is rarely a time when there is not a considerable number of patients at the hospital. For example, during the month of December just passed, 36 were treated, the largest number at any one time being 16. During the academic year of 1905-6, 432 patients were admitted, which was a large increase over the preceding years. Naturally most of these persons are suffering from minor ailments, and therefore remain at the infirmary but a short time. Last year a new ward for contagious diseases was opened, but fortunately it has been called into requisition only twice during the year. The staff of the infirmary at present consists of a matron and five nurses, but this number, of course, may be increased to meet emergencies. It is a noticeable feature of the work of the infirmary that the general ward is being used rather than the private rooms.

NEW YORK.

Memorial Meeting of the Late Dr. Mary Putnam Jacobi. — A memorial meeting in honor of the late Dr. Mary Putnam Jacobi, was held at the Academy of Medicine on Jan. 4, under the auspices of the Woman's Medical Association of New York, and a movement was inaugurated to raise $25,000 for the establishment, as a tribute to her memory, of a post-graduate course for women physicians. Among those who spoke on this occasion were Drs. William Osler and Charles L. Dana.

A Practical Study of Posture. — At a meeting of the society of the Alumni of Bellevue Hospital held on Jan. 2, a paper of great interest and practical value to the general practitioner was read by Dr. Reginald H. Sayre, on "A Study of Posture with Reference to the Early Diagnosis of Bone Disease." It was profusely illustrated by lantern slides.

A New Jewish Hospital. — Through the efforts of the Federation of Galician and Bucovinean Jews in America a new hospital is shortly to be established on the lower east side of the city. Arrangements have been completed for the purchase, for $50,000, of two four-story brick dwelling-houses on Second Street, and in these, after suitable alterations have been made, accommodations for between thirty and forty indoor patients will be provided. The new institution is to be known as the Mount Merijah Hospital.

Tuberculosis Exhibition. — The committee on the prevention of tuberculosis of the Charity Organization Society is holding a two-weeks "tuberculosis exhibition" at the 23d Street branch of the Young Men's Christian Association, and on certain evenings free lectures illustrated with stereopticon views are being given by Health Commissioner Darlington and

Drs. S. A. Knopf, Charlton Wallace, Livingston Farrand and Linsly R. Williams.

New Building for Beth Israel Hospital. — The seventeenth annual meeting of the directors of the Beth Israel Hospital was held on Dec. 26. The president announced that six checks, aggregating $27,500, had been received for the erection of a new building, and that during the year $49,000 in addition to this amount had been subscribed for the same purpose. The annual report showed that 1,535 free patients were treated, out of a total of 2,377. More than 1,000 applicants had to be refused admission because of lack of facilities. The total expenses of the year were $114,000, of which $30,000 was spent for improvements.

St. Bartholomew's Parish House and Clinic. — The year book of St. Bartholomew's Protestant Episcopal Church, just issued, shows that during the year ending Nov. 1 the large sum of $224,493 was raised; more than one third of this amount was expended in the work conducted at St. Bartholomew's Parish House and Clinic on East 42d Street; $17,725 was paid for the maintenance of the clinic, the various departments of which are regularly attended by a large corps of physicians and surgeons; among the 249 salaried workers in the parish are six nurses.

Expert Fees. — On the evening of Dec. 28, the New York Chemical Society entertained the visiting chemists of the association with a banquet at the Waldorf-Astoria. Among the speakers was Controller Herman A. Metz, who is himself a chemist by profession, and he took occasion to say in the course of his remarks that he thought the city was paying too much to experts, chemical and otherwise. Thus he had just had to pay out $43,000 for experts in the Patrick case. Lawyers, however, got more out of his office than any other class of people. Mr. Innis, who was a candidate for mayor at the last municipal election, served as an expert for three weeks, and sent in a bill for $12,000; while if he had been elected mayor, he would have had to serve the city for a whole year for only $15,000.

Dr. John A. Wyeth, President of New York Academy of Medicine. — At the annual meeting of the New York Academy of Medicine, held Jan. 3, the president-elect, Dr. John A. Wyeth, assumed the duties of his position. The retiring president, Dr. Charles L. Dana, delivered an address on the history, work and needs of the Academy, and in it he expressed the opinion that $200,000 was required for the purpose of enlarging the library, and $200,000 more for a monthly publication of the work of the Academy.

Child Labor. — In his first message to the Legislature, Governor Hughes recommends that careful consideration be paid to the important subject of child labor. Children under sixteen, he says, should have an eight-hour day. Such a provision would not only furnish protection from excessive strain, but would also aid the administrative officers in their enforcement of the law. He also recommends that in order to protect children against dangerous employments there should be a more precise prohibition, specifying the occupations in which children under sixteen should not be employed, since general prohibitions as to such matters are apt to be found inoperative. With reference to pure food laws the Governor states that as at present the legislation regarding adulterations and impurities is partly found in the Public Health law and partly in the Agricultural law; it is desirable that the laws should be codified and presented in a single comprehensive statute, suitably defining the duties of the department which may be charged with its execution. He thinks that frequent bulletins or reports should be issued, serving as a vehicle of useful information and also as an indication of the effectiveness of the State's supervision. Furthermore, as Congress has recently legislated upon the general subject, with reference to inter-state commerce, that efforts should be made to promote harmony between the work of the Federal and state authorities.

Mortality Statistics. — The weekly reports of the Health Department show that the mortality in the city in the month of December represented an annual death-rate of 17.81, as against 16.61 in November and 17.35 in December, 1905. The corrected death-rate, excluding non-residents and infants under one week old, was 16.64. Among the diseases in which there was an augmented fatality were the following: The weekly average of deaths from measles increased from 4.25 in November to 6.25 in December; the weekly average from scarlet fever, from 4.25 to 11; from whooping cough, from 5.75 to 10; from diphtheria and croup, from 37.5 to 39; from influenza, from 3.25 to 8.75; from pulmonary tuberculosis, from 164.75 to 171; from acute bronchitis, from 20.25 to 30; from pneumonia, from 112.5 to 142.5; from bronchopneumonia, from 91.25 to 98.5; from apoplexy, congestion and softening of the brain, from 56 to 60.5; from organic heart diseases, from 113 to 125.25; from Bright's disease and nephritis, from 114.75 to 125.75; and from malarial diseases from 1 to 2. Among the few diseases which showed a diminished mortality were the following: The weekly average of deaths from typhoid fever deceased from 18.5 to 13.25; from diarrheal diseases, from 43.5 to 36.75; from diarrheals under five years, from 37.75 to 29.25; and from cirrhosis of the liver, from 20.5 to 18.75.

During the year 1906, the number of births reported in the city was 111,772, an increase over 1905 of 8,000. This is the highest number of births ever recorded by the Health Department. The number of deaths was 76,206, an increase of 2,492. This increase in mortality is naturally accounted for by the increase in population. There was an increase in the deaths from pneumonia (including bronchopneumonia) of 1,084, and this is attributed largely to the prevalence of measles, in the deaths from which there was an increase of 625. Among the other diseases in which there was an augmented mortality were the following: Organic heart diseases, increase in deaths over 1905, 424; tuberculosis, increase, 420; diphtheria and croup, increase, 343; Bright's disease and nephritis, increase, 171; cancer, increase, 130; scarlet fever, increase, 107. Among the affections in which there was a decrease in the number of deaths were typhoid fever, malarial diseases, whooping cough, cerebrospinal meningitis, influenza, bronchitis and gastrointestinal troubles in young children.

Current Literature.

The Journal of the American Medical Association.
Dec. 22, 1906.

1. *Freeman, L. *Treatment of Tuberculosis of the Kidney and Bladder.*
2. Ryerson, G. S. *Keratosis Obturans.*
3. *Welty, C. F. *Acute and Chronic Suppuration of the Ear and Nose the Direct Cause of Facial Erysipelas.*
4. *Baldwin, W. H. *Influence of a Tuberculosis Sanatorium on the Value of Surrounding Property.*
5. Hatcher, R. A. *The Pharmacology of Digitalis.*
6. Wood, H. C., Jr. *The Pharmacology of Veratrum.*
7. *Noble, C. P. *Fibroid Tumors of the Uterus.* (Concluded.)
8. Weiss, L. *The Prostitution Problem.*
9. Chassaignac, C. *Etiology of the Social Evil.*
10. Harwood, W. E. *A Practical Lesson in Réglementation.*
11. *Donoghue, F. D. *Retroperitoneal Cysts Developing from the Wolffian Body.*
12. *Anders, J. M., and Morgan, A. C. *Tetanus Neonatorum.*

1. Freeman remarks that the old notion that renal tuberculosis was secondary to that of the bladder is now exploded and its hematogenous origin is very generally recognized. This view, supported by clinical experience, is also supported by the experimental findings of Baumgarten that tuberculous infection in the genito-urinary system follows the flow of the secretions, from the testicles to the prostate and from the kidneys to the bladder. Renal tuberculosis is generally at first unilateral, and in spite of the fact that it may occasionally be latent for longer or shorter periods, its usual course is progressive, and experience has demonstrated that early nephrectomy, before involvement of the bladder occurs, is the best treatment for unilateral renal tuberculosis, provided the general condition of the patient permits. The existence of tuberculosis elsewhere, if not too far advanced, is not a contra-indication; even bad cases of vesical tuberculosis may improve or recover after operation, as has frequently occurred in Freeman's experience. It should be remembered, too, that the tuberculous disease of the bladder is often only apparent, as a reflex from the kidney or the result of irritating discharges. The one essential to be kept in view is that the other kidney must be sound, both as to function and tuberculosis, and an occasional exploratory lumbar incision may be required, though as a rule this is ascertainable by other well-known methods. The weight of authority is against partial nephrectomy, and nephrotomy is never indicated except to relieve suffering in case nephrectomy is impossible. It cannot cure, and almost always leaves a troublesome urinary sinus. The removal of the ureter is not ordinarily indicated. If sinuses result they usually heal after nephrectomy. Fourteen cases are reported and discussed.

3. Welty accounts for the special frequency of erysipelas in the face by its nearness to the source of infection in the nose or ear. The pus secretion produces an abrasion of the skin or mucosa and inoculation follows. This may also be conveyed by the handkerchief, or more frequently, he thinks, by the finger. The reason for the so frequent recurrence of facial erysipelas is, he says, because the infection is always present and is practically never eliminated without operation. When streptococci can be determined in the secretion of the ear or nose it should be considered as an established fact that the erysipelas is dependent on them. The reason why 82% of facial erysipelas starts from the angle of the nose is thus explained. The reason that erysipelas does not occur in every case in which streptococci exist in the secretions is best given by assuming immunity or modified virulence: not every case of exposure to other infections is followed by the outbreak of the disease. These opinions are supported by the results of the examination of some 60 cases of erysipelas in the City and County hospitals at San Francisco. Idiopathic facial erysipelas, Welty says, is a misnomer.

4. Baldwin has studied the effect of tuberculosis sanatoria upon the value of property in the neighborhood by correspondence with 59 of the principal sanatoria of this country. In 58% the adjoining values have increased since the establishment of the institutions, in 17% there has been no change, and in 7% a depreciation has occurred. In 19 of the 59 opposition to the establishment of these institutions on the part of the community was encountered, this being the case more frequently in recent years. Such opposition should be overcome by bringing the public to understand the fact that there is absolutely no danger in a well conducted sanatorium, and that such an institution is, on the contrary, a direct benefit to the community.

7. Noble has analyzed the complications and their results in over 2,000 cases of fibroid of the uterus. These complications are tabulated according to the frequency of their occurrence. Cancer of the body of the uterus is more frequent in women with fibroids than in other women. Sarcoma also occurs. Necrosis and other degenerations are frequent. Anemia and pressure effects are also mentioned. Spontaneous disappearance of the tumor after pregnancy or after the menopause is rare. Fibroids are a frequent cause of sterility and where pregnancy occurs often seriously complicate it. The mortality from neglected fibroids Noble estimates as 30%, whereas the operative mortality is 3%. Thus even in the absence of symptoms expectant treatment is to be avoided.

11. Donoghue has collected a number of cases of retroperitoneal cysts, believed to have developed from the embryonic Wolffian body, including cases which he believes to belong to this class but which were reported by other authors as pancreatic cysts. Cysts of the Wolffian body, he maintains, are not uncommon in women, whereas true cysts of the pancreas are rare, especially in women. Cysts of the Wolffian body may also be mistaken for hydronephrosis or for ovarian cysts.

12. Anders and Morgan have gathered statistics including 1,307 cases of tetanus neonatorum in the United States. The disease is especially frequent among the negroes of the southern states, and occurs largely in local epidemics. For its prevention asepsis in the care of the umbilical cord should be insisted upon. Cases attended by midwives are especially liable to tetanus; state boards of health should take steps to require registration of midwives and see to it that proper asepsis is maintained.

The Lancet.

Dec. 15, 1906.

1. Owen, E. *Cancer, its Treatment by Modern Methods.*
2. *Warrington, W. B., Jones, R. *Some Observations on Paralyses of the Brachial Plexus.*
3. Glaister, J. *Water Gas, Carburetted Water Gas, and Carbon Monoxide Poisoning.*
4. *Bailey, L. D. *Some Cases of Acute Leukemia admitted into St. George's Hospital between 1895 and 1905.*
5. Squire, M. F. *A Case of Sprue Treated by Strawberries.*

2. In this paper palsies of the upper extremity due to indirect violence either at birth or in adults, and the rarer cases of neuritis are considered. The writers have had 30 cases with 11 complete recoveries, a larger percentage than usual. Cases due to spontaneous neuritis are rare; 4 of their cases were of this type with 3 recoveries. The pathology of the lesion may be one of two types; (1) immediate tearing and rupturing of nerve sheath and nerve fibers; (2) a late result due to cicatricial contraction. From the symptoms it is practically impossible to make any accurate statement as to the extent of the lesion, though the prognosis of a partial lesion is better than that of a complete one. Absence of sensory disturbance is generally the rule although exactly why this is so, is hard to tell. The prognosis in those cases showing pupillary disturbances is very bad; it generally means an intravertebral lesion. Birth palsies give worse results than corresponding ones in adults. In adults if spontaneous recovery is to take place, signs of it should come inside seven months; in birth palsies such improvement may be longer delayed. Mechanical treatment is important; the muscles should be kept absolutely relaxed even if operative interference is needed to do this. Nerve anastomosis is of service especially in children, and nerve transplantation in other cases. Massage and mechano-therapy after operation is important.

4. Bailey reports in detail 5 cases of acute leukemia. The various symptoms that these patients first noticed is of interest. The first had been short of breath and weak for some time, and had had large hemorrhages from lungs or stomach previous to admission; the second complained of weakness; the third, weakness and pain in the back; the fourth came in on account of sore mouth and throat, while the last complained of great loss of weight and shortness of breath.

British Medical Journal.

Dec. 15, 1906.

1. Owen, E. *Cancer, Its Treatment by Modern Methods.*
2. *Bond, C. J. *A Discussion on Acute Septic Peritonitis.*
3. Bruce, H. A. *Appendicitis: Some Points in Diagnosis and Treatment based on over 600 Operations.*
4. *Turner, G. G. *Intestinal Obstruction in Association with the Vermiform Appendix.*
5. McMurrich, J. P. *The Valves of the Iliac Vein.*
6. Huber, G. C. *The Arteriolæ Rectæ of the Mammalian Kidney.*
7. Huber, G. C. *The Morphology of the Uriniferous Tubules of the Reptilian Kidney.*
8. Paterson, A. M. *The Mechanical Supports of the Pelvic Viscera.*
9. Waterston, D. *Preliminary Communication on Some Features of the Brain and Skull in Mongolism.*
10. Jenkins, G. J. *The Morphology of the Hip-Joint.*
11. Streeter, G. L. *Experiments on the Developing Ear Vesicle of the Tadpole.*
12. Bardeen, C. B. *The Development of Ova of the Toad, Fertilized by Spermatazoa which have been exposed to the Rontgen Rays.*
13. Harrison, R. G. *The Development of the Nerve Elements in Vertebrates.*
14. Lee, T. G. *The Early Development of Gomys Bursarius.*
15. Shambaugh, C. E. *The Development of the Stria Vascularis.*
16. Harvey, B. C. H. *The Chromaffine Characters of Certain Parietal Cells of the Stomach.*
17. Goettsch, E., and Harvey, B. C. H. *An Unusual Peritoneal Anomaly Simulating Retroperitoneal Hernia.*
18. Gladstone, R. J. *A Symelian Monster* (Sympus dipus).
19. Harvey, B. C. H. *A Case of Innervation of the Nervus Lateralis Oculi, by the Nervus Oculomotorius, with Absence of the Nervus Abducens.*
20. *Helme, T. A *A Discussion on the Appendix Vermiformis in Relation to Pelvic Inflammation.*
21. *Cameron, M. *Antistreptococcus Serum in Puerperal Fever.*
22. *Vipond, A. E. *The Early Diagnosis of Infectious Diseases by the Recognition of the General Involvement of the Lymphatic Glandular System.*
23. Atkinson, J. M. *Plague Procedure in Hong Kong.*
24. Dixon, S. G. *The Prevention of Tuberculosis.*

2. Bond lays stress on the diaphragmatic peritoneum as the most powerful seat of the resisting forces of the abdomen against bacterial invasion, as well as the place where most absorption takes place; the peritoneum covering the small intestine is next in importance. The safety of the patient depends on the integrity of the endothelial and phagocytic defence. He dwells on the bacteriology of acute septic peritonitis, especially of the so-called idiopathic form, that due to the bacillus coli and to the streptococcus. He speaks of the greatly lessened resistence of the intestinal walls to the transmigration of bacteria when distended by gas and feces. He does not believe in morphine, but thinks that saline cathartics are a valuable adjunct; the serum treatment is still in its infancy but much is to be expected of it later. In operating, speed and delicacy of handling, as shown by Cannon and Murphy are of supreme importance.

4. Turner classifies cases of intestinal obstruction in association with the appendix as follows: (1) Obstruction due to appendicitis or its results, during the acute attack, during convalescence or after operation, or in recurrent cases, and (2) obstruction produced by the appendix, but without appendicitis. He has had under observation examples of all these classes. he believes that appendicitis is as frequent a cause of obstruction as is tuberculosis. The two chief causes of obstruction are adhesions and bands, the former leading to mechanical obstruction, the latter to strangulation. He cites in detail numerous illustrative cases. Obstruction due to the appendix but without appendicitis is less common than with or after appendicitis, but is by no means rare. The treatment is surgical in every case and success depends largely on making an early diagnosis.

20. The appendix in woman has an importance which in man it does not possess, in that disease of this structure may seriously influence the functions of the generative organs. The normal position of the appendix, pointing downward, puts it in close contact with the generative organs. It is claimed by some that there is a definite blood and lymphatic connection between the appendix and the right ovary and tube; with this opinion the writer does not concur; when the seat of disease is in the appendix, inflammation of the tubes often follows from direct contact, and vice versa, when the tubes are primarily affected, the appendix is often involved, directly or indirectly, by a passive congestion. In many cases after a pelvic operation there is a post-operative inflammation of the appendix, or again there may be disease of both organs occurring simultaneously. Appendicitis occurring during pregnancy or puerperium is no contra-indication to immediate operation. He does not think that the systematic removal of the appendix during laparotomy for pelvic disease in the absence of evident disease is justifiable.

21. Cameron describes two cases of puerperal sepsis, which he believes were saved solely by the use of antistreptococcus serum.

22. Vipond believes that enlargement of the lymph-nodes is an important early sign in diagnosis of any acute infectious disease in children, especially in measles, the enlargement coming on several days before Koplik's spots appear. He gives the characteristics of this enlargement in different diseases.

Deutsche Medizinische Wochenschrift, No. 50.
Dec. 13, 1906.

1. *von Eiselsberg. *The Treatment of Acutely Perforated Gastric and Duodenal Ulcers.*
2. *Payr, E. *The Treatment of Tuberculosis of the Atlas.*
3. von Bergman, A. *Intestinal Obstruction as a Late Result of Appendicitis.*
4. Riedel. *Suture of Fracture of the Patella with Catgut.*
5. Sprengel. *The Treatment of Gunshot Wounds.*
6. *Pozzi, S. *Recent Experience in the Suture of the Completely Divided Ureter.*
7. Durante, F. *The Surgery of the Arabs.*

1. Eiselsberg reports the details of 12 cases of perforated gastric or duodenal ulcer operated on by him. Five of the cases recovered, seven died. Of the first group 2 were operated within twelve hours of the perforation; in 2 it was twenty-four hours old, and in 1, two days old. Of the fatal results, 2 were operated on the first day, 3 on the second, and 1 each on the third and fourth days. The cavity was always thoroughly washed with salt solution after suture of the perforation. Eiselsberg advocates strongly the performance of a rapid jejunostomy with a catheter, after the method of Witzel, at the time of the original operation, claiming that the patient can thus be easily and best nourished during the first days, when feeding by mouth is impossible.

2. Payr has contributed a most interesting paper on the surgical treatment of tuberculosis involving the atlas. The disease was reached from the rear, after section of the neck muscles and ligature of the vertebral artery on one side. Though his case made a complete recovery, the operator feels that cases in which the disease can be localized early and thus successfully treated will be rare. The indications for and against such radical treatment of the condition are the following:

(1) Any involvement of the cord and its membranes or of the brain is an absolute contra-indication; (2) involvement of the odontoid process makes any operative treatment impossible; (3) the vertebral disease must be in an early stage and confined to one side; (4) communication of the disease-focus with the pharynx (pharyngeal abscess), thus causing a mixed infection, is to be regarded as a dangerous complication; (5) whenever possible, the location of the disease must be accurately defined by x-ray, and the symptoms should also be such as to make it possible to locate the trouble; the presence of a cold abscess is no contra-indication to operation; (6) there should be no marked tubercular involvement of any other region or organ.

6. Pozzi reports the successful suture of a ureter by a method of invagination and turning in of the ends. For the details of the method the reader is referred to the original article.

Münchener Medizinische Wochenschrift, No. 50.
Dec. 11, 1906.

1. *Selter. *Bacteriological Investigations with Autan, a New Formalin Disinfectant.*
2. Henking, R. *The Use of Novocain in Lumbar Anesthesia.*
3. Dietze, M. *The Technic of Local Anesthesia, with Especial Reference to the Combined Use of Novocain and Suprarenin.*
4. Steim, O. *Experience with the use of Novocain.*
5. *Levy and Kayser. *Bacteriological Findings at the Autopsy of a Carrier of Typhoid Bacilli (Typhus bazillenträger).*
6. *Tomarkin, E. *The Danger of the Spreading of Disease by the Telephone, and Prophylaxis.*
7. Vierordt, O. *The Use of Physical Methods of Treatment in General Practice.* (Continued article.)
8. *Burkhardt, L. *Symptoms referable to the Left Side of the Abdomen in Appendicitis.*
9. Hornung. *Electrical Treatment of Cardiac Diseases.*
10. Vollert. *A New Principle in the Operative Treatment of Glaucoma (Iridencleisis Antiglaucomatosa Holth).*
11. Sachs-Müke. *An Improved Method of Sedimentation of Sputum.*
12. Wederhake. *Remarks on Suture Material.* (Concluded.)

1. Autan is a powder recommended for the disinfection of rooms, clothing etc., and consists of a mixture of formaldehyde and metallic superoxides. When mixed with water, it gives off immediately large volumes of formalin; its advantages are that it requires no apparatus, nor even that the room be made air-tight. Selter's experiments show that its disinfecting power is very satisfactory and equal to that of any disinfectant now in use.

5. Levy and Kayser report the interesting case of a woman who, two years after an attack of typhoid, was found to have typhoid bacilli constantly in the stools and was probably the source of a hospital epidemic. A year later she died of an acute infection, the nature of which remained uncertain during life. The autopsy showed the presence of typhoid bacilli in enormous numbers in the gall bladder and within a gall stone; the same organisms were also recovered from the spleen and liver. They conclude that the gall bladder was the abiding place of the typhoid bacilli, from which the stools were infected. They regard the terminal disease as an auto-infection with typhoid bacilli, starting from the gall bladder.

6. The danger of contracting disease from telephone transmitters has been much exaggerated, but undoubtedly exists to a limited degree. Tomarkin performed experiments with Simund's telephone disinfector and found it very effective. It consists of tablets containing formalin and aromatic substances. Telephonin, an American patent device for this purpose, was found to be inert.

8. Burkhardt reports 3 cases of appendicitis in which the clinical picture from the first was that of abscess formation in the left iliac fossa. This complication may be due to an abnormal position of the appendix, so that its tip reaches nearly to the middle line, to lymphangitis, or a transmission of infectious material within the peritoneum, or very rarely to transposition of viscera, with the appendix situated in the left iliac fossa.

Therapie der Gegenwart.
December, 1906.

1. *Westenhoeffer, M. *Predisposition in Phthisis in its Relation to Treatment.*
2. *Geronne and Marcuse. *The Therapeutic Use of Sajodin.*
3. *Loewy, A. *Remarks on the Action of Yohimbin.*
4. Blumenthal, A. *The Use of Formamint.*
5. *Fellner, O. *Shall Pregnancy be interrupted before Operation for Appendicitis?*

1. Westenhoeffer discusses the favorable effect on phthisis of pneumothorax, and of passive hyperemia, with autopsy findings. In the case of a man dying of pyopneumothorax, the corresponding lung showed two cavities with collapsed walls, surrounded by evident signs of healing. The curative influence of pneumothorax is ascribed to three factors, viz.: complete rest of the lung, the prevention of aspiration, and the slowing of the circulation in the affected parts, which hinders the spreading of the process by the lymphatics. In a woman dying from mitral stenosis of six years' standing, lesions of tuberculosis were found in the lungs, with marked tendency to organization; but in spite of the long duration of passive hyperemia, the cure was not yet complete. It would appear, therefore, that passive hyperemia of the lungs exercises a restraining influence on tuberculosis, but not equal to that of pneumothorax. Lastly, Westenhoeffer describes a case of miliary tuberculosis in which, contrary to the usual rule, the tubercles were much more numerous in the lower than in the upper lobe; this was accounted for by the presence of dense adhesions over the lower lobe. The *impairment* of function, he concludes, predisposes to tuberculosis, the *abolition* of function (as in pneumothorax) acts in the opposite direction.

2. Sajodin, introduced by v. Mering and Emil Fischer, is an organic preparation containing 26% iodine. The dose is 1.5 to 6 gm. per day. Géronne and Marcuse find

it equal to potassium iodide in its therapeutic action, and without the toxic effects of the latter; no cases showed acne, coryza or other symptoms of iodism.

3. Loewy describes the remarkable effects obtained with yohimbin in veterinary practice, and recommends a cautious trial of the drug on man. According to Müller's experiments yohimbin increases the reflex irritability of the sacral cord without affecting the general reflex irritability, and causes also an increased blood supply to the abdominal organs (spleen excepted) and external genitals. In cattle and horses it has a marked aphrodisiac action, arousing sexual desire in " frigid " animals of both sexes, inducing potentia coëundi, and also the occurrence of heat in cows who had hitherto shown complete absence of this phenomenon. It is greatly superior to cantharides and other drugs recommended for such purposes.

5. Fellner concludes that by reason of the greater severity of appendicitis among the pregnant, that operation should be performed earlier. The uterus should be emptied previous to the operation for appendicitis only in those cases where the fetus is dead, or pains have already set in.

Fournier's Recent Modification of his Treatment of Syphilis. SAINGERY (*Internat. Clinics*, series 16, no. 3) discusses the value of Fournier's new method. Fournier formerly treated each case of syphilis, except in intervals of rest, for a period of four years. He now advocates energetic treatment for the first two years, then a rest of two years, then two periods of resumed treatment covering respectively the fifth and the seventh or eighth years. The reason for this system is the fact that paresis begins to be frequent in the sixth year, increasing in its occurrence from then until the tenth year. Fournier believes that paresis is of a syphilitic nature, and is therefore trying to prevent it by anti-syphilitic treatment. Saingery, on the other hand, does not believe that paresis is a result of syphilis. He maintains, therefore, that these late periods of treatment are unnecessary. [It is now pretty generally accepted that syphilis is the most important factor in the production of paresis.]

The Irregular Heart, Its Causes and Treatment. ABRAHAMS (*Internat. Clinics*, series 16, no. 3) discusses clinical forms of irregular heart, from the temporary irregularities due to nervous influences, toxic and reflex causes, and personal peculiarity, to those of organic heart disease. Primary irregularity of the heart is always due to the heart's inability to do its work properly, whether from excessive demands upon it, as in arteriosclerosis, or from weakening of the heart itself, as in intoxications, inflammations of the heart, fatty or fibrous degeneration, or old valvular disease. Secondary irregularities occur in diseases of the nervous system, as in meningitis, or of other organs, particularly those of the stomach. In determining whether the cause is in the heart or not the quality of the first sound is the most reliable guide. A point to be remembered is that with organic heart disease may be associated an irregularity that is functional. In prognosis, those cases in which the patient discovers the irregularity before the physician are the most favorable. In treatment, for functional cases, bromides and occasionally veronal or chloralamid are of service. In organic cases the best remedy is digitalis; the reaction to this is a good test as to whether the patient is likely to improve or not. It must, however, be given with caution since some cases are made worse by it. Strophanthus is safer. Diuretin is of value both as a diuretic and as a stimulant. Nitrites and iodides are used to diminish peripheral resistance.

The Treatment of Dilatation of the Heart. KATZENBACH (*Internat. Clinics*, series 16 no. 3) holds that the prognosis and results of treatment in dilatation of the heart are better than is commonly taught. He speaks especially of the acute dilatation which occurs after middle life in persons who for some time have had some shortness of breath, palpitation or feeling of fullness in the chest, and after some over-exertion are suddenly attacked with acute symptoms of broken compensation. Examination shows the heart to be dilated, rapid, perhaps irregular in action, with a soft systolic murmur (never harsh unless there is a lesion of the mitral valve) transmitted to the axilla; there may be crepitant râles in the lungs or edema of extremities. The treatment is, first of all rest in bed twelve hours of the day and reclining position most of the remainder. A few small doses of morphine may be necesnecessary at first to quiet cough. Fresh air should be insisted upon as much as in respiratory diseases. Diet is to be regulated so as to avoid distention of stomach and intestines; regular action of the bowels must be obtained. To stimulate the heart Katzenbach uses a mixture of the tinctures of digitalis, strophanthus and nux vomica in equal parts, gtt xx. t. i. d., a. c.; as soon as the pulse rate becomes normal, the digatalis in this is to be omitted. In convalescence, a simple tonic replaces the above prescription and carefully graduated exercise is begun. The Nauheim baths may be of service, taken at home.

Leukemia and Sarcomatosis. BANTI (*Internat. Clinics*, series 16, no. 3), in reviewing the theories held with regard to the nature of leukemias, finds that most writers agree that the disease is due to a hyperplasia of the lymphopoietic and hemopoietic tissues, with increased power of forming lymphocytes and granular leukocytes, the excess of white cells in the blood being regarded as either normal white corpuscles, or normal corpuscles in immature stages. Banti, however, finds important differences between conditions existing in leukemias (both lymphatic and myelogenous) and in conditions of simple hyperplasia. The hyperplasia in leukemic tissues does not follow the normal structures of the tissues in which it occurs, but grows atypically and may break through walls into surrounding tissues or into veins; true metastases may be formed; in myelogenous leukemia the myelocytes are often very large as compared with the myelocytes of bone marrow. These facts, with others fully described, lead Banti to the opinion that leukemias belong to the class of sarcomas, the blood condition arising from the escape of tumor cells into the blood, there developing but retaining the features of the original tumor cells.

Trypsin for the Cure of Cancer. MORTON (*Med. Rec.*, Dec. 8, 1906) has used trypsin in treatment of 30 cases of cancer, mostly advanced, since April, 1906. Two cases of quite extensive face cancer are cured to date. In one breast cancer, a remarkable atrophy of the growth has ensued. In many cases the progress of the disease has come to a standstill. This method of treatment, originated by Beard of Edinburgh, is based upon the theory that the cancer cells, supposed to be of embryonic character, may be destroyed by pancreatic enzymes, especially trypsin, given hypodermically; amylopsin also is used. Brief reports of cases are given. Further evidence is demanded before the results of this treatment can be accepted.

Intestinal Origin of Pulmonary Anthracosis. GEORGE PETIT, interne at the Lille Hospital, on the advice of Calmette has made some interesting experiments on the subject of the intestinal origin of pulmonary anthracosis. (*Presse Médicale*, Oct. 13, 1906.) Vansteenberghe and Grysez have already shown that animal charcoal, when swallowed by adult guinea pigs, will be found finally in the lungs. It is well known that, although in adults and in old age a condition of anthracosis is quite normal, that in infants' lungs it is never found. Going on this basis, Petit took a series of six infants under one year, suffering from pulmonary tuberculosis, enteritis and infantile atrophy. These infants, some time before death, were given by means of a stomach tube 15-20 cc. of water containing powdered charcoal in suspension. This procedure seemed to do no harm to the infants and did not affect the course of the disease. At autopsy, the lungs, intestinal villi, mesenteric glands, and bronchial glands of the cases of infantile atrophy showed no evidence of anthracosis while the lungs, glands etc., of the cases of tuberculosis in every instance showed marked deposit of pigment.

He concludes: (1) The intestinal origin of pulmonary anthracosis is a definite fact in some cases. (2) Absorption of pigment is rendered much easier by the presence of tuberculosis, where "the mesenteric barrier is broken." (3) Anthracosis in man depends, (1) on the amount of pigment swallowed, and (2) on the permeability or nonpermeability of the glands, particularly those of the mesentery.

The Value of Rectal and Colon Irrigation in Nephritis. KEMP (*Am. Medicine*, November, 1906) describes the action upon the kidneys of irrigation of the colon with hot salt solution, studied by him experimentally upon animals and clinically in human beings. Even in uremic conditions hot irrigations produce marked diuresis. They also relieve acute renal congestion, the relief being proved by the diminution of abnormal constituents in the urine. He gives irrigations of 3 to 12 gallons of normal saline solution (.6%) at 115° to 120° F., through a recurrent irrigator, sometimes as often as every two or three hours.

Miscellany.

PURIFICATION OF SEWAGE.

A valuable contribution to the literature on the disposal and purification of sewage has just been issued by the United States Geological Survey as "Water Supply and Irrigation Paper No. 185. Investigations on the purification of Boston sewage with a history of the sewage-disposal problem, by C.-E. A. Winslow and E. B. Phelps." The volume of sewage discharged by modern communities is so large and the character of all kinds of sewage is always so objectionable that the so-called sewage-disposal problem becomes, from the economic as well as the sanitary point of view, one of the most serious with which American cities have to deal. It is of vital importance to every community to secure such a disposal of obnoxious sewage as will avoid the creation of any insanitary focus or foci in the environment, or any infringement of the laws of hygiene and sanitation.

The investigations described in this publication were made at the Sanitary Research Laboratory and Sewage Experiment Station of the Massachusetts Institute of Technology, under the direction of Prof. William T. Sedgwick. The station at which the work was carried on is situated on the line of the main trunk sewer of the south metropolitan district of Boston, at a point where it contains the sewage of about half a million people. At this station pumps were installed and tanks were constructed for tests of the various methods of sewage purification. The results of this work and the practical conclusions that have been drawn are given in "Water Supply Paper No. 185," which may be obtained on application to the director of the United States Geological Survey, Washington, D. C. These results are by no means applicable merely to large cities, but contain lessons of practical value to all communities having to deal with the ever present sewage-disposal problem. The description of the experiments is preceded by a careful and elaborate historical review of the whole sewage-disposal problem from its origin in the wide adoption of the water-carriage system up to the present time, when that system has become practically universal. This interesting review cannot fail to be of the highest value to expert engineers, sewage commissioners and cities all over the United States, especially those numerous small communities that are confronted, perhaps for the first time, with a problem that means so much for the health as well as the finances of the citizens.

Correspondence.

HYPERACIDITY NOT THE RULE IN GASTRIC ULCER.

Boston, Jan. 5, 1907.

Mr. Editor: The following statement by Professor Ewald, in Billings's "Diseases of the Digestive System," 1906, page 171, seems of sufficient interest to warrant more general attention than it will probably receive from the comparatively few readers of the publication in which it appears. Ewald says: "The early view that an increased production of HCl is a necessary, or, at least an almost invariable, accompaniment of gastric ulcer, can no longer be maintained, being contrary to the comprehensive observations of the last few years." This view of the subject, is, of course, contrary to all past teachings, even to those of our most modern text-books. It is contradictory to Ewald's own statement in his "Diseases of the Stomach" that "in cases of ulcer, the gastric juice always contains HCl and usually an excess of it."

It is evident, then, that Ewald has changed his view, but he offers no further explanation for the same than is contained in his later statement. He further says, however, that he was surprised to find that in his own cases of ulcer only 34% showed hyperacidity. Personally, I am pleased to note Ewald's later view of the subject, because for the past several years, I have taught in lectures to the students of Tufts College Medical School, that in my experience hyperchlorhydria is not the rule in gastric ulcer.

Of late, I have occasionally seen it stated by various writers, that there are many cases of ulcer which do not show hyperchlorhydria, but in so far as I know Ewald is the first to flatly deny that hyperchlorhydria is the rule. The source from which this statement comes naturally lends much weight, yet there may be some who require further explanation as to why this old established rule should be controverted.

I offer the following as a partial explanation. Formerly the normal total acidity of the gastric contents, one hour after an Ewald test breakfast, was considered as 40–60 per 100, and an acidity exceeding 60 was considered as hyperchlorhydria if due to HCl, or a hyperacidity if due to other acids. Of late, here in America, it has been shown by Hewes (Boston Medical and Surgical Journal, 1897) and later by myself (*Philadelphia Medical Journal*, June 14, 1902) and very likely by others, that the average total acidity in healthy persons (medical students) under the above conditions, is about 70 per 100. In 15 of my 35 cases the total acidity exceeded 70. So that at the present time, many are inclined to place the normal total acidity at 40–70 per 100 instead of 40–60, as formerly. By thus raising the maximum limit of total acidity from 60 to 70, we have, of course, cut down that number of cases which were formerly considered as hyperchlorhydria, having an acidity between 60 and 70 per 100.

Moreover, the number of cases upon which our present statistics are based is far greater than formerly.

Another change, which seems consistent with the present one, has occurred in the past few years in the amount of gastric contents one hour after an Ewald test breakfast. Formerly the figures were given as 40–60 cc. by the Germans, but now we know that 100 cc. is nearer the average normal amount.

Conceding that hyperchlorhydria is not the rule in gastric ulcer, the fact has considerable bearing on diagnosis and treatment of this disease.

Hyperchlorhydria loses much of its value as a diagnostic symptom, and the assumed or determined condition will less often require treatment.

I venture to say that the correctness of Ewald's late view will ere long be confirmed by numerous other writers on the subject.

Very truly yours,
Richard F. Chase, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 29, 1906.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,558	367	Quincy	10	1
Chicago	575	183	Waltham	7	—
Philadelphia	532	136	Gloucester	2	—
St. Louis	—	—	Pittsfield	14	4
Baltimore	221	57	Brookline	15	5
Cleveland	—	—	North Adams	6	2
Buffalo	—	—	Chicopee	8	1
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	2	1
Washington	—	—	Hyde Park	2	—
Providence	68	22	Newburyport	—	1
Boston	219	46	Leominster	—	—
Worcester	38	6	Melrose	—	—
Fall River	39	15	Woburn	8	2
Cambridge	33	7	Marlborough	4	0
Lowell	40	8	Westfield	7	—
Lynn	26	3	Peabody	—	—
New Bedford	31	8	Revere	4	2
Springfield	23	4	Clinton	1	1
Lawrence	18	9	Attleboro	3	1
Somerville	14	0	Adams	1	—
Holyoke	25	7	Gardner	—	—
Brockton	13	1	Milford	1	1
Malden	10	1	Weymouth	2	0
Salem	18	3	Framingham	3	1
Chelsea	18	2	Watertown	1	1
Haverhill	11	1	Plymouth	—	—
Newton	16	4	Southbridge	—	—
Fitchburg	11	2	Wakefield	—	—
Taunton	12	3	Webster	—	—
Everett	8	1			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING DEC. 26, 1906.

PETTUS, W. J., assistant surgeon-general. Granted leave of absence for 1 day, Dec. 26, 1906. Dec. 26, 1906.

WERTENBAKER, C. P., surgeon. Relieved from duty at St. John, N. B., effective Dec. 31, 1906, and directed to assume command of the service at Norfolk, Va. Dec. 21, 1906.

WERTENBAKER, C. P., surgeon. Leave of absence for 3 months from Dec. 1, 1906, amended to read for 1 month. Dec. 26, 1906.

BLUE, RUPERT, passed assistant surgeon. Relieved from duty at Norfolk, Va., to take effect Dec. 31, 1906. Dec. 21, 1906.

BILLINGS, W. C., passed assistant surgeon. Granted leave of absence for 2 days, Dec. 28 and 29, 1906. Dec. 24, 1906.

EARLE, B. H., passed assistant surgeon. Granted leave of absence for 10 days from Dec. 24, 1906. Dec. 21, 1906.

LLOYD, B. J., passed assistant surgeon. Granted leave of absence for 10 days. Dec. 24, 1906.

BOGGESS, J. S., assistant surgeon. Granted leave of absence for 3 days from Dec. 21, 1906, under paragraph 191 of the regulations.

ASHFORD, F. A., assistant surgeon. Directed to rejoin his station at Ellis Island, N. Y. Dec. 21, 1906.

KEATLEY, H. W., acting assistant surgeon. Granted leave of absence for 30 days on account of sickness, beginning Nov. 19, 1906. Dec. 26, 1906.

SCHWARTZ, L., acting assistant surgeon. Granted leave of absence for 7 days from Dec. 17, 1906, under paragraph 210 of the regulations.

HALL, L. P., pharmacist. Granted leave of absence for 7 days from Dec. 21, 1906, under paragraph 210 of the regulations.

APPOINTMENTS.

DR. M. CLAUDE TERRY, appointed an acting assistant surgeon in the Public Health and Marine-Hospital Service for duty at San Francisco Quarantine Station. Dec. 26, 1906.

DR. JOHN O. RUSH, appointed a temporary acting assistant surgeon in the Public Health and Marine-Hospital Service for duty at Mobile, Ala. Dec. 26, 1906.

BOARD CONVENED.

A board of officers was convened at Portland, Me., on Jan. 21, 1907, for the purpose of examining Pharmacist C. H. Bierman to determine his fitness for promotion to the grade of Pharmacist of the Second Class. Detail for the Board: Surgeon W. P. McIntosh, chairman; Acting Assistant Surgeon A. F. Stuart, recorder. Dec. 20, 1906.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JAN. 5, 1907.

B. L. WRIGHT, surgeon. When discharged from treatment at the Naval Hospital, New York, N. Y., ordered to treatment at the Naval Hospital, New Fort Lyon, Colo.

J. G. FIELD, surgeon. Detached from duty at the Naval Hospital, New Fort Lyon, Colo., and ordered to duty with Marine Recruiting Party, Dallas, Texas.

G. G. HART, acting assistant surgeon. Detached from duty with Marine Recruiting Party, Dallas, Texas, and ordered to the Naval Training Station, San Francisco, Cal.

E. R. MARSHALL, assistant surgeon. Detached from the Naval Station, Guantanamo, Cuba, and from duty on the "Monongahela," and resignation accepted, to take effect Jan. 11, 1907.

SOCIETY NOTICES.

NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — The annual meeting of the New England Hospital Medical Society will be held at Hotel Oxford, 40 Huntington Ave., Boston, Thursday, Jan. 17, 1907. Speakers: Miss Alice M. Higgins of the Associated Charities, Boston, Mass., "The relief work done in San Francisco, Cal., at the time of the earthquake"; Miss Caroline J. Cook, Councillor at Law, Boston, Mass., "The law governing women wage earners"; Mrs. Kate Denig Tower, Boston, Mass., "A talk about birds."

BLANCHE A. DENIG,
Secretary.

BOSTON MEDICAL LIBRARY AND SUFFOLK DISTRICT MEDICAL SOCIETY. — Meeting Wednesday, Jan. 16, 1907, at 8.15 P.M., in John Ware Hall. Paper by Prof. Theodor Schott, Bad Nauheim, Germany, on "The Treatment of Chronic Diseases of the Heart." Drs. Withington, Vickery, Arnold and others are expected to take part in the discussion. The profession is cordially invited to be present. Refreshments after the meeting.

GEORGE W. GAY, M.D.,
J. C. HUBBARD, M.D.,
R. B. OSGOOD, M.D.,
Committee on Medical and Social Meetings.

RECENT DEATHS.

DR. JOSEPH A. ALDRICH, formerly a surgeon in the United States Army, died in New York at the age of eighty-nine years. While serving in Minnesota during the Indian wars he won distinction.

DR. THEODORE F. MORRIS, who for over forty years was a practitioner in Jersey City, N. J., died on Jan. 3, while visiting relatives in Astoria, Borough of Queens, New York. He retired from active work about five years ago.

BOOKS AND PAMPHLETS RECEIVED.

Kezmarsky's Decapitating Eraseur. By Myron Metzenbaum, B.S., M.D. Reprint.

Specimen of Pseudarthrosis or False Joint of the Ulna. By Myron Metzenbaum, B.S., M.D. Reprint.

Ether-Air Anesthesia or the Drop Method for the Administration of Ether. By Myron Metzenbaum, B.S., M.D. Reprint.

The Vienna Clinics. By Myron Metzenbaum, B.S., M.D. Reprint.

Some Tendencies in Medicine Today. By William Clark, M.D.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. XVIII. For the year 1905. New York: The Greenwich Printing Co. 1906.

Massage in Sprains, Bruises and Dislocations. By Douglas Graham, M.D. Reprint.

Urethral Dilatations with Expansible Instruments. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

The Prevention of Venereal Diseases. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

The Venereal Peril in Its Relation to the State. By Ferd. C. Valentine, M.D. Reprint.

The American Urological Association. By Ferd. C. Valentine, M.D. Reprint.

Education in Sexual Subjects. By Ferdinand C. Valentine, M.D. Reprint.

Text-Book of Medical Jurisprudence and Toxicology. By John J. Reese, M.D. Seventh edition. Revised by Henry Leffmann, A.M., M.D. Philadelphia: P. Blakiston's Son & Co. 1906.

Original Articles.

THE MEDICAL KNOWLEDGE OF SHAKESPEARE.

BY ALBERT C. GETCHELL, M.D., WORCESTER, MASS.

My purpose in this paper is to bring together in groups passages from Shakespeare's plays and poems, to show his knowledge of medical matters. In so doing I have no intention of putting forth the claim that he was a medical man, or that he had paid especial attention to medical science, if such could be said to be in existence in his day.

His genius was universal, beyond that of any writer of modern times. It embraced not only the power of thought and expression, of imagination and fancy, but of observation as well. Nothing escaped him. He saw everything, and he absorbed and retained whatever he saw. He was not a scholarly recluse, but a man of the world. He was at home with the stable boy and the learned Jonson, and both the boy and the wise man contributed to his knowledge. Books, without doubt, served him also, but after the same manner that the market, tavern, theatre or court did. Essentially he was a dramatist and poet. He did not follow after knowledge for its own sake, and was not over particular about his facts. He was a playwriter, not a scientist. So we never find him using his literary thought to enforce or illustrate a scientific fact, but on the contrary his facts are always subordinate to the thought or dramatic situation in hand. One is impressed, therefore, not with the originality of his knowledge, but with the wonderful grasp that he had of the knowledge of his time, and the artistic skill with which he used it.

It will be well, at the outset, to glance at the chronological relation of Shakespeare's life to the important medical men and events of his time.

William Shakespeare was born in 1564, and died in 1616. In 1621, the "Novum Organum" of Sir Francis Bacon, the source and inspiration of modern science, was published. William Harvey lived from 1578 to 1637. His paper on the "Circulation of the Blood" was published in 1628. Ambroise Paré died in 1590. Sydenham, the father of modern medicine, lived from 1624 to 1689.

Shakespeare, therefore, lived just before the birth of modern physical science and modern medicine. The practice of medicine of his day was a compound of the teachings of the great masters of antiquity, Hippocrates and Galen, the medical lore of the Arabians brought in by the crusaders, and the monastic mysticism and superstition of the Middle Ages, modified and leavened by the common sense of the British mind. Attempts had already been made to bring it to a sensible basis, as we would say now, to regulate the practice of medicine. Thus the College of Physicians, incorporated in the reign of Henry VIII, even in Shakespeare's time was an important and influential body, and attempted to direct and protect the community in medical matters.

The play, "All's Well that Ends Well," has an allusion to this college and its purposes. The plot is founded on a medical incident. The king is ill of a trouble that no one of his physicians has been able to successfully treat. His attention is drawn to a young woman, the daughter of a famous physician, who wishes to try a remedy which she has inherited from her father. He grants her an interview (II, 1, 101):

"*King.* Now, fair one, does your business follow us?
Helena. Ay, my good lord.
Gerard de Narbon was my father,
In what he did profess well found.
King. I knew him.
Helena. The rather will I spare my praises toward him;
Knowing him, is enough. On's bed of death
Many receipts he gave me: chiefly one,
Which, as the dearest issue of his practice,
And of his old experience the only darling,
He bade me store up as a triple eye,
Safer than mine own two, more dear. I have so;
And, hearing your high majesty is touch'd
With that malignant cause, wherein the honour
Of my dear Father's gift stands chief in power,
I come to tender it and my appliance,
With all bound humbleness.
King. We thank you, maiden;
But may not be so credulous of cure.
When our most learned doctors leave us, and
The congregated college have concluded
That labouring art can never ransom Nature
From her inaidable estate; I say, we must not
So stain our judgment, or corrupt our hope,
To prostitute our past-cure malady
To empirics, or to dissever so
Our great self and our credit, to esteem
A senseless help, when help past sense we deem."

However, his objections and prejudices were overcome, he put himself under her care and was cured.

Shakespeare appears to have regarded the practice of medicine as an honorable and worthy profession. Curiously enough, however, the one doctor he holds up to ridicule suggests the lives of two distinguished physicians. This is Dr. Caius of the "Merry Wives of Windsor." It will be recalled he was a Frenchman, with insufficient knowledge of English, and was made the butt of many jokes in that merry play. Now there were two physicians in England during the life of the poet, Dr. John Caius,[1] an Englishman, and Sir Theodore Turguet de Mayerne,[2] a Swiss, who attained eminence in their professional careers. Dr. Caius was in his day a successful and distinguished man, president many times of the College of Physicians, and physician to three English sovereigns. He was interested in Gonville College, Cambridge, which by his gifts of money and personal care and oversight was enlarged and took also his name, so that it is known even to this day as Caius College, and contains this laconic memorial to him, "*Fui Caius vivit post funera virtus.*" Sir Theodore came first to England in 1606, six years after the Merry Wives was written. But that he did come, and that he was so well treated in England would indicate that French physicians were not strangers in English life. The dramatist's reason for the character doubtless was that it was what he wanted for the play. Why he called him Dr. Caius can be only a matter of conjecture.

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[1] Biographical History of Gonville and Caius College, John Venn. London, 1901, Vol. 3, p. 30.

[2] Dictionary of National Biography. London, 1894, vol. xxxvii, p. 150.

The study and practice of medicine was not beneath the dignity of a person of noble birth. A fellow of the College of Physicians, a contemporary of Shakespeare's later years, was the Marquis of Dorchester. He esteemed his fellowship in the college an honor second only to that of his peerage, and bequeathed to the college his library valued at £4,000.

Another medical peer was also Shakespeare's contemporary, Edmund, Earle of Derby, who died in Queen Elizabeth's day, and was famous for "chirurgirie, bone-setting and hospitalitie." [3] Such a one did Shakespeare delineate in Cerimon, Lord of Ephesus, a character in the play "Pericles" (III, 2, 26):

"*Cerimon.* I held it ever,
Virtue and cunning were endowments greater
Than nobleness and riches: careless heirs
May the two latter darken and expend;
But immortality attends the former,
Making a man a god. 'Tis known, I ever
Have studied physic, through which secret art,
By turning o'er authorities, I have
(Together with my practice) made familiar
To me and to my aid the blest infusions
That dwell in vegetives, in metals, stones;
And I can speak of the disturbances
That nature works, and of her cures; which doth give me
A more content in course of true delight,
Than to be thirsty after tottering honour,
Or tie my treasure up in silken bags,
To please the fool and death."

The physicians of the plays are Dr. Caius, of "The Merry Wives of Windsor," already alluded to; Cornelius of "Cymbeline"; Dr. Butts, of "King Henry VIII" and those of "Macbeth" and "King Lear," who have no other names than doctor.

Dr. Butts was introduced to serve a purpose of the play, defeating for a time the machinations of Gardiner, and no allusion is made to his character as a physician. But the three others, Cornelius of "Cymbeline" and the doctors of "Macbeth" and "King Lear," figure in their medical capacity. Cornelius appears to be a discreet and shrewd man who divines the purposes of the crafty queen, and defeats them. The doctor of "Macbeth" is a careful, rather timid, man, evidently overpowered by the horrors he sees enacted about him. He can but note the condition of the unhappy queen, and acknowledge himself powerless to help her. When Macbeth asks (V, 3, 40),

"Canst thou not minister to a mind diseas'd,
Pluck from the memory a rooted sorrow,
Raze out the written troubles of the brain,
And with some sweet oblivious antidote
Cleanse the stuff'd bosom of that perilous stuff
Which weighs upon the heart?"

he replies:

"Therein the patient
Must minister to himself."

And later he shows his inadequacy to cope with the situation, when he says (*Ibid.*, line 61):

"*Doctor.* Were I from Dunsinane away and clear,
Profit again should hardly draw me here."

On the other hand, the doctor in "Lear" is a resourceful man, and his treatment of the insane old king is humane and wise. This is somewhat remarkable, as the treatment of insanity at that time and for a long time afterward was, as Rosalind says in "As You Like It" (III, 2, 393), "a dark house and a whip." Cordelia sends out searchers for her father, and says (King Lear, IV, 4, 8):

"*Cordelia.* What can man's wisdom
In the restoring his bereaved sense?
He that helps him, take all my outward worth.
Physician. There is means, madam;
Our foster-nurse of nature is repose,
The which he lacks; that to provoke in him,
Are many simples operative, whose power
Will close the eye of anguish."

Acting on this idea, when the old king is found, he is treated kindly and put to sleep, and later allowed to waken by the sound of music under the direction of the doctor.

It is interesting in this connection to recall the fact that Shakespeare's daughter Susanna was married in 1607, June 5, to John Hall, a physician of Stratford, whom, from the cordial relations that existed between the two, Shakespeare must have known well. This Dr. Hall was a reputable man, as is shown by the registration of his burial, "1635, Nov. 26; Johannes Hall, Medicus peritissimus."

Dr. Hall wrote a book in Latin, which was of enough value to be later translated. The title is as follows:

"Select Observations on English Bodies, or Cures Empirical and Historical, Performed on very Eminent Persons in Desperate Disorders. First written in Latin by Mr. John Hall, Physician, of Stratford, where he was very famous, as also in counties adjacent. Now put into English for common benefit by James Cook, Practitioner in Physick and Chirurgery. London: Printed by John Shirley, at the Golden Pelican in Little Brittain 1657."

The monkish physic of the Middle Ages was practiced by religious orders of both sexes. Thus, the Abbess, in "The Comedy of Errors" (V, i, 102), replies to the importunate Adriana, who demands of her her husband:

"*Abbess.* Be patient; for I will not let him stirr,
Till I have us'd the approved means I have,
With wholesome syrups, drugs, and holy prayers,
To make of him a formal man again.
It is a branch and parcel of mine oath,
A charitable duty of my order;
Therefore depart, and leave him here with me."

In general, Shakespeare spoke of physicians and of medical matters with respect. But he had his flings at the doctors, as the following passages show:

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[3] The Medical Knowledge of Shakespeare. John Charles Bucknill, M.D., London, 1866, p. 276.

“ *Sempronius.* Must I be his last refuge? His friends, like physicians,
Thrice give him over! Must I take the cure upon me? ”
(Timon of Athens, III, 3, 11.)

“ *Pericles.* Thou speakest like a physician, Helicanus,
That minister'st a potion unto me,
That thou would'st tremble to receive yourself.”
(Pericles, I, 2, 66.)

“ *Cornelius.* Hail, great king!
To sour your happiness, I must report
The Queen is dead.
Cymbeline. Who worse than a physician
Would this report become? But I consider
By medicine life may be prolong'd, yet death
Will seize the doctor too.”
(Cymbeline, V, 5, 26.)

Macbeth's exclamation, “ Throw physic to the dogs. I'll none of it ” (Macbeth, V, 3, 47), does not mean so much contempt of medicine, as his impatience at the doctor who stands irresolute at his task, when Macbeth is all for action, although dangers are thickening about him. That he did not hold medicine in contempt may be shown by many passages — to quote only one:

“ Give physic to the sick, ease to the pained.”
(Rape of Lucrece, 901.)

CIRCULATION OF THE BLOOD.

William Harvey was a contemporary of Shakespeare, and it is not improbable that they may have known each other, as Shakespeare knew many of the foremost men of his day. But there is no ground for the belief that he had learned of Harvey anything of the circulation of the blood. It is true that Harvey conceived his great idea several years before he finally published his investigations. It is known that the doctrine of the circulation of the blood had taken definite shape in his mind as early as 1613, since soon after that time he began to make it known through his lectures, but he did not publish the results of his researches until 1628, after submitting them to fifteen years of proofs and counter proofs of every kind. So bitter was the opposition to the new doctrine, that his first publication, “ Concerning the Motions of the Heart and the Blood,” was unable to pass censorship in England, and, therefore, appeared in Frankfort in 1628.[4]

Now, Shakespeare's literary activity ceased about 1613. So that, while certain passages seem to indicate a sort of advance knowledge of the circulation of the blood, he could not have had this knowledge. A more careful examination shows that his ideas were those current at the time, and that they shared the knowledge as well as the ignorance of his contemporaries.

In “ Measure for Measure,” Angelo, as he contemplates the seduction of Isabel, exclaims:

“ *Angelo.* O heavens!
Why does my blood thus muster to my heart,
Making both it unable for itself,
And dispossessing all my other parts
Of necessary fitness? ”
(Measure for Measure, II, 4, 20.)

When Portia expostulates with Brutus for not taking her into his confidence, he replies:

“ *Brutus.* You are my true and honourable wife;
As dear to me as are the ruddy drops
That visit my sad heart.” (Julius Cæsar, II, 1, 288.)

Malvolio refers to the anatomical fact of the return of the blood from the extremities along the surface through the veins, when he says:

“ *Malvolio.* Sad, lady? I could be sad. This does make some obstruction in the blood, this cross-gartering.”
(Twelfth Night, III, 4, 20.)

The vital and healthful or unhealthful qualities of the blood are alluded to in the following quotations:

“ *King Philip.* And this is Geffrey's. In the name of God,
How comes it then, that thou art call'd a king,
When living blood doth in these temples beat.”
(King John, II, 1, 106.)

Pandulph also speaks of the life of the blood:

“ That whiles warm life plays in that infant's veins.”
(King John, III, 4, 131.)

Again:

“ *King John.* Or if that surly spirit, melancholy,
Had bak'd thy blood, and made it heavy-thick,
(Which, else, runs tickling up and down the veins . . .) ”
(King John, II, 3, 42.)

showing the supposed effect of mental states upon the blood. There were many curious notions as to the function of the arteries. Their name designates them as air carriers; related to that was their supposed function as conveyers and distributers of the vital spirit.

“ *Biron.* Why, universal plodding prisons up
The nimble spirits in the arteries,
As motion, and long-during action, tires
The sinewy vigour of the traveller.”
(Love's Labour's Lost, IV, 3, 302.)

When Hamlet breaks away from Horatio to follow the ghost, he exclaims:

“ My fate cries out,
And makes each petty artery in this body
As hardy as the Nemean lion's nerve.”
(Hamlet, I, 4, 81.)

An organ so large and vascular as the liver was necessarily supposed to have an intimate and important relation to the blood. The absence of blood from the liver was thought to be a mark of pusillanimity and cowardice. Thus Sir John Falstaff discourses on the virtues of sack:

“ The second property of your excellent sherris is the warming of the blood; which, before cold and settled, left the liver white and pale, which is the badge of pusillanimity and cowardice; but the sherris warms it . . . and then the vital commoners, and inland petty spirits, muster me all to their captain, the heart, who, great, and puffed up with this retinue, doth any deed of courage.”
(King Henry IV, Part II, IV, 3, 104.)

Sir Tobey Belch also makes sage remarks to the same effect:

“ For, Sir Andrew, if he were opened, and you find so much blood in his liver, as will clog the foot of a flea, I'll eat the rest of the anatomy.”
(Twelfth Night, III, 2, 59.)

The following quotation is a pretty good description of the function of the blood in the process of nutrition:

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[4] Roswell Park: Epitome of the History of Medicine, Philadelphia, 1893, p. 156.

"*Menenius.* Note me this, good friend;
Your most grave belly was deliberate,
Not rash like his accusers, and thus answer'd: —
'True is it, my incorporate friends,' quoth he,
'That I receive the general food at first,
Which you do live upon; and fit it is,
Because I am the storehouse, and the shop
Of the whole body; but, if you do remember,
I send it through the rivers of your blood,
Even to the court, the heart, to the seat o' the brain;
And, through the cranks and offices of man,
The strongest nerves, and small inferior veins,
From me receive that natural competency
Whereby they live.'" (Coriolanus, I, 1, 127.)

Shakespeare makes frequent reference to the heart as the seat of the emotions, as do other poets. But in one place he gives an accurate description of cardiac disturbance attending nervous excitement,— so accurate, indeed, that Da Costa in his work on "Diagnosis" (seventh edition, page 700) quotes the passage:

"His hand, that yet remains upon her breast
(Rude ram to batter such an ivory wall!),
May feel her heart (poor citizen!) distressed,
Wounding itself to death, rise up and fall,
Beating her bulk, that his hand shakes withal."
(Rape of Lucrece, 463.)

MATERIA MEDICA.

It would be a mistake to take the poor starved apothecary of Mantua, who sold the poison to Romeo, as a type of the apothecaries of London of the sixteenth century. If we are to believe the writers of the time who commented on the coach-keeping apothecaries and their lucrative business, they were a prosperous set, and, therefore, must have sold many drugs. The agents used in the treatment of disease were not the refined products of the laboratory of our day, but the herbs themselves, or the direct extracts from them.

Falstaff, in his coarse love-making to Mistress Ford, makes a reference, not only to the herbalism of those days, but to the place where the herbs were sold:

"Come; I cannot cog, and say thou art this and that, like a many of these lisping hawthorn-buds, that come like women in men's apparel, and smell like Bucklersbury in simple-time." (Merry Wives of Windsor, III, 3, 67.)

Shakespeare speaks of many drugs by name, thus:

"*Macbeth.* What rhubarb, senna, or what purgative drug
Would scour these English hence?"
(Macbeth, V, 3, 55.)

The drug mentioned in "Much Ado about Nothing" (III, 4, 70),

"Get you some of this distilled Carduus Benedictus, and lay it to your heart; it is the only thing for a qualm,"

we do not know of now. But Salmon (A.D. 1693) in his "Seplasium or Druggist Shop Opened," page 1905, records fifteen preparations of carduus benedictus or holy thistle in use among medical men, and reports that "it is excellent against pleurisie, obstructions, malign humors, vertigo, worms, agues, plagues, cures green wounds and is good against the biting of mad dogs or any other venomous creatures." In truth, it was a medicine in great repute in Shakespeare's time and long afterwards.[5]

Mandragora we find spoken of in "Anthony and Cleopatra" (I, 5, 3):

"*Cleopatra.* Ha, Ha! —
Give me to drink mandragora.
Charmian. Why, madam?
Cleopatra. That I might sleep out this great gap of time,
My Antony is away."

Shakespeare refers to this drug again in the same sense:

"*Iago.* . . . Not poppy, nor mandragora,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou ow'dst yesterday."
(Othello, III, 3, 332.)

Mandragora was extensively used by the ancients, and according to Salmon was a wonderful narcotic and soporific. The popular name was mandrake, and the curious tradition was attached to it, that when pulled from the earth it uttered a groan:

"Would curses kill, as doth the mandrake's groan."
(Henry VI, Part II, III, 2, 310.)

"And shrieks like mandrakes torn out of the earth,
That living mortals, hearing them, run mad."
(Romeo and Juliet, IV, 3, 47.)

Opium, although it is not so stated, is doubtless the drug alluded to in the following quotations:

"*Archidamus.* . . . We will give you sleepy drinks, that your senses, unintelligent of our insufficience, may, though they cannot praise us, as little accuse us."
(Winter's Tale, I, 1, 15.)

"*Lady Macbeth.* . . . I have drugged their possets,
That death and nature do contend about them,
Whether they live or die." (Macbeth, II, 2, 5.)

So also the drug which Pisanio gave to Imogen in the wilderness near Milford-Haven:

"*Pisanio.* . . . My noble mistress,
Here is a box; I had it from the queen:
What's in't is precious; if you are sick at sea,
Or stomach-qualm'd at land, a dram of this
Will drive away distemper." (Cymbeline, III, 4, 190.)

He gave it to her for sea-sickness or stomach qualms, but from the effects it had when she later took it, putting her into a death-seeming sleep, from which she awakened to see the headless trunk of the despised Cloten in the dress of her Posthumus, it probably was opium.

It is cannabis indica that Sir Tobey refers to, speaking of Maria, "That wittiest piece of Eve's flesh in all Illyria," when he says:

"*Sir Tobey.* Here comes the little villain. How now, my metal of India?" (Twelfth Night, II, 5, 14.)

References are made in the plays to certain poisons, so far as we know, impossible poisons. Thus allusion is made to poisons that work at a certain time:

"All three of them are desperate: their great guilt
Like poison given to work a great time after
Now 'gins to bite the spirit."
(Tempest, III, 3, 106.)

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[5] Bucknill, p. 115.

So, too, the poison that the Friar gave to Juliet would produce complete cessation of all the vital functions, and at a given time, like a clock in a bank vault, would allow life to return:

" *Friar Laurence.* Take thou this phial being then in bed
And this distilled liquor drink thou off:
When presently through all thy veins shall run
A cold and drowsy humor, which shall seize
Each vital spirit: for no pulse shall keep
His natural progress, but surcease to beat;
No warmth, no breath shall testify thou liv'st;
The roses in thy lips and cheeks shall fade
To paly ashes; thy eyes' windows fall,
Like death when he shuts up the day of life:
Each part depriv'd of supple government
Shall stiff and stark, and cold, appear like death:
And in the borrowed likeness of shrunk death
Thou shalt remain full two and forty hours,
And then awake as from a pleasant sleep."
(Romeo and Juliet, IV, 1, 93.)

That the drug worked as the Friar said it would, is evidenced from Capulet's words when he sees her:

" *Capulet.* Ha! let me see her: but alas! She's cold;
Her blood is settled and her joints are stiff.
Life and her lips have long been separated."
(Romeo and Juliet, IV, 5, 24.)

But at the appointed time, according to the Friar's calculations, Juliet wakens at once into the full possession of her faculties.

Ambroise Paré's third chapter on poisons is on the subject, " Whether there be any such Poysons as will kill at a set time? " which after much argument and quoting of authorities he answers in the negative. This shows that this peculiar belief about certain poisons was prevalent in Shakespeare's time. Also there was the belief in the slow action of a poison:

" *Cornelius.* She did confess she had
For you a mortal mineral; which, being took,
Should by the minute feed on life, and ling'ring
By inches waste you." (Cymbeline, V, 5, 50.)

The manner of Hamlet's father's death as narrated by the ghost seems to us strange. But there is reason to believe that the juice of hebenon or henbane was thought to be a poison. According to Pliny, the oil of henbane dropped into the ears disturbed the brain. So also in Anton's Satires, 1606, " The poisoned henbane, whose cold juice doth kill." [6]

" *Ghost.* Sleeping within mine orchard,
My custom always in the afternoon,
Upon my secure hour thy uncle stole,
With juice of cursed hebenon in a vial,
And in the porches of mine ear did pour
The leperous distilment; whose effect
Holds such an enmity with blood of man,
That, swift as quicksilver, it courses through
The natural gates and alleys of the body;
And with a sudden vigour it doth posset
And curd, like eager droppings into milk,
The thin and wholesome blood: so did mine;
And a most instant tetter bark'd about,
Most lazar-like, with vile and loathsome crust,
All my smooth body." (Hamlet, I, 5, 59.)

The old herbalists attributed peculiar virtues to plants gathered in the night and during particular phases of the moon:

" *Jessica.* In such a night
Medea gathered the enchanted herbs
That did renew old Aeson."
(Merchant of Venice, V, 1, 13.)

" *Friar Laurence.* Now ere the sun advance his burning eye,
The day to cheer, and night's dank dew to dry,
I must upfill this osier cage of ours,
With baleful weeds, and precious-juiced flowers."
(Romeo and Juliet, II, 3, 5.)

And

" Root of hemlock digged in the dark."
(Macbeth, IV, 1, 25.)

Also,

" I bought an unction of a mountebank
So mortal, that but dip a knife in it,
Where it draws blood, no cataplasm so rare,
Collected from all simples that have virtue
Under the moon, can save the thing from death."
(Hamlet, IV, 7, 140.)

Witchcraft, too, was invoked to give efficacy to drugs. So Brabantio can explain Desdemona falling in love with Othello only on such a supposition:

" *Brabantio.* Judge me the world, if 'tis not gross in sense,
That thou hast practis'd on her with foul charms;
Abus'd her delicate youth with drugs, or minerals,
That weaken motion." (Othello, I, 2, 72.)

Again,

" *Brabantio.* She is abus'd, stol'n from me, and corrupted
By spells and medicines bought of mountebanks."
(Othello, I, 3, 61.)

The following remark of Banquo we cannot classify. It serves to illustrate the way which Shakespeare adapted every thing that came in his way to the dramatic necessities of the play:

" *Banquo.* Were such things here, as we do speak about,
Or have we eaten on the insane root,
That takes the reason prisoner? " (Macbeth, I, 3, 84.)

We know that Shakespeare used North's translation of Plutarch in the construction of his plays, and must have been familiar with it. One of his contemporaries, Sir Thomas Browne, quotes from Plutarch's " Life of Antonius," in which he speaks of men compelled by hunger to eat roots and herbs, and among was them one that made them lose their wits and do such strange things as the whole camp dig stones and cast them from place to place, until as he says, " They cast up a great deal of choler, and died suddenly because they lacked wine, which was the only sudden remedy to cure that disease."

PRACTICE OF MEDICINE.

Internal medicine was not a specialty in Shakespeare's time, nor was surgery. For the sake of clearness, I have grouped observations on these subjects under one heading, which we may call the practice of medicine. First, a few passages relating to the causation of disease:

" Sickness is catching: O, were favour so."
(Midsummer Night's Dream, I, 1, 187.)

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[6] Note in Hudson's edition, p. 83.

"*Marcius.* All the contagion of the south light on you." (Coriolanus, I, 4, 30.)

Again,

"*Olivia.* . . . How now?
Even so quickly may one catch the plague?
Methinks, I feel this youth's perfections
With an invisible and subtle stealth
To creep in at mine eyes." (Twelfth Night, I, 5, 292.)

"Oh, when mine eyes did see Olivia
Methought she purg'd the air of pestilence."
(Twelfth Night, I, 1, 18.)

"Suppose
Devouring pestilence hangs in our air,
And thou art flying to a fresher clime."
(King Richard II, I, 3, 283.)

"*Portia.* What! is Brutus sick;
And will he steal out of his wholesome bed,
To dare the vile contagion of the night,
And tempt the rheumy and impurged air
To add unto his sickness?" (Julius Cæsar, II, 1, 263.)

As the supernatural was invoked in the working of drugs, so also was it in the causation of disease, and in particular the heavenly bodies exercised a controlling influence.

"*Timon.* . . . Be as a planetary plague, when Jove
Will o'er some high-vic'd city hang his poison
In the sick air; let not thy sword skip one."
(Timon of Athens, IV, 3, 107.)

"And therefore is the glorious planet, Sol,
In noble eminence enthron'd and spher'd
Amidst the other; whose med'cinable eye
Corrects the ill aspects of planets evil,
And posts, like the commandment of a king,
Sans check, to good and bad; but when the planets,
In evil mixture, to disorder wander,
What plagues, and what portents."
(Troilus and Cressida, I, 3, 89.)

Of late, I believe reference has been made to the efficient health regulations of Italian cities in early time. Such regulations existed. Thus the apothecary sells the poison to Romeo at peril of his life.

"*Apothecary.* Such mortal drugs I have; but Mantua's law
Is death to any he that utters them."
(Romeo and Juliet, V, 1, 66.)

And this passage shows how careful they were about infectious diseases:

"*Friar John.* The searchers of the town
Suspecting that we both were in a house
Where the infectious pestilence did reign,
Seal'd up the doors, and would not let us forth."
(Romeo and Juliet, V, 2, 8.)

The action of the mind on the body and the action of the body on the mind are suggested in these two passages:

"*Agamemnon.* Princes,
What grief hath set the jaundice on your cheeks?"
(Troilus and Cressida, I, 3, 1.)

"*Constance.* . . . For I am sick, and capable of fears."
(King John, III, 1, 12.)

And the two following are selected from many similar ones, which show a considerable knowledge of the physiology of digestion:

"Things sweet to taste prove in digestion sour."
(Richard II, I, 3, 236.)

"Now good digestion wait on appetite,
And health on both." (Macbeth, III, 1, 38.)

(To be continued.)

ANEURISM OF THE AORTA.*

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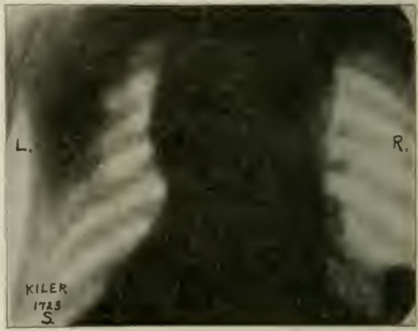
The recent presence at the same time in the wards of the Denver City and County Hospital of four cases of aneurism of the transverse portion of the aorta led us to give a joint clinic upon them that the laryngeal and radiographic features of this interesting disease might be brought out as well as the usual clinical signs.

The cases were as follows:

Case I. Kiler, sixty-six, male, engineer. No history of syphilis. Complains of pain in upper chest, dyspnea, expectoration, choking sensation upon trying to sleep, with occasional vomiting. He is aphonic.



The notes made upon his admission state that the apex beat is one inch to left of left nipple, in fifth space. Heart sounds negative, excepting moderate aortic accentuation. There was marked pulsation to be felt by placing one hand in front and one behind the chest. Marked tracheal tug. A systolic souffle is heard over the upper sternal region and to the left under the clavicle. This area is dull. A diastolic murmur is heard over the aortic region. No pulse can be felt in the left radial artery. There is moderate atheroma, lungs practically negative. Pupils equal and respond to light. The systolic pressure on the right as taken by Dr. Sewall and Dr. Hall was 117 mm., diastolic 80 mm.

The urine was negative. As Dr. Levy will mention, the left vocal cord remains in the cadaveric position. There has been no severe pain and no interference by pressure with any internal organ manifested excepting the left recurrent laryngeal nerve. A pulsating tumor may be seen by the fluoroscope in the dull region mentioned.

The aneurism is, we believe, in the transverse portion of the arch of the aorta, and of quite moderate size, and not growing materially.

This patient was examined again March 9, 1906, by Dr. Hall. The left pulse could be felt very slightly at the wrist, showing that a collateral circulation or lessened pressure on the subclavian had permitted the current to become re-established. The heart had retreated a little toward its normal position. The aneurism, with the long rest in bed and the iodide, had become somewhat quiescent and the patient was very comfortable. Within two weeks, however, the lungs became obstructed and doubtless edematous, and he died rather quickly.

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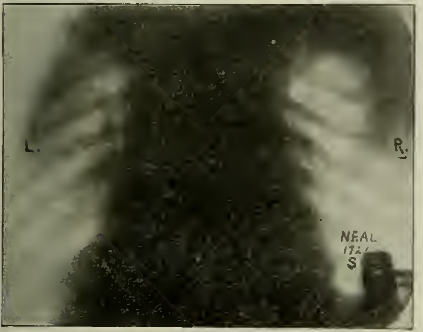
* A clinic at the Denver City and County Hospital, at which four cases of aneurism of the transverse portion of the arch of the aorta were shown.

In the accompanying Rœntgenogram by Dr. G. H. Stover (Kiler 1723), the shadow of the aneurism may be seen bulging to the left. At the time of the displacement of the heart to the left, the latter organ was carried over by the development of the aneurism in this direction.

Case II. Neal, colored, male, thirty-five years of age, coachman. Has probably had syphilis.

Two months ago he began to complain of weakness and dyspnea, compelling him to stop work.



He had, upon admission, the following signs: slight edema of ankles. Cardiac beat very diffuse, to be seen in area extending from second space to right of sternum to seventh space two inches to left of nipple. A systolic thrill is felt over most of this area. A loud systolic murmur is heard at the apex, transmitted to the axilla. In the remaining area a continuous whirring murmur of different timbre is heard, loudest in systole, and over the pulmonic region, and transmitted to both subclavian arteries. The arteries of the neck pulsate visibly. Bulging and marked dullness exist over the manubrium. Pulsation can be felt through and through the chest, and with the tip of the finger in the suprasternal notch. Marked tracheal tug and tracheal diastolic shock. Corrigan pulse. Pupils negative. Lungs apparently normal. Abdomen negative.

With the fluoroscope a pulsating tumor may be seen to the left of the manubrium.

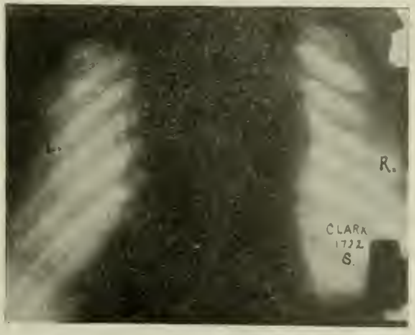
The radial pulses were equal. Blood-pressure, systolic 142 mm.; diastolic 120 mm. The urine was negative. The patient has, we believe, an aneurism of practically the same character and location as the last one, excepting that it does not involve the recurrent nerve. The continuous murmur is generally thought to indicate a communication between the sac of the aneurism and the pulmonary artery.

This patient died seven or eight months later, and, at the post mortem examination, a communication one-fourth inch in diameter was found between the large aneurism of the aorta and a small aneurismal bulging of the root of the pulmonic artery. Apparently during this interval the aortic aneurism had invaded the ascending portion of the arch as well. The cardiac valves were all thickened, but apparently competent, the heart much enlarged, dilatation predominating in the right ventricle, and hypertrophy with dilatation in the left. Much edema of the lower part of the body and legs existed. The whirring murmur was doubtless due to the communication between the two great arteries and the edema to the involvement of the right side of the heart. The immense area of shadow in Dr. Stover's Rœntgenogram (Neal, 1721) shows the extent of the aneurismal sac.

Case III. Clark, male, fifty-six years of age, storekeeper.

No history of syphilis. For one year has been too feeble to work. He complains chiefly of dyspnea, weakness and swelling of legs and feet.

Upon stripping the patient one is immediately struck with the dilatation of the veins over the left upper quadrant of the chest and along the margin of the ribs. An enormous tortuous vein carries blood from the anterior surface of the upper left arm to the inner end of the left clavicle, and a net-work of veins in the area mentioned help to do the work of the obliterated left subclavian vein. The left arm is easily seen to be larger than the right, and it is cyanotic. Measurement shows it to be three-fourths inch greater in circumference than the right arm.



Arteries atheromatous. The heart area is slightly enlarged downward and to the left. A double souffle is heard at the aortic region. Corrigan pulse is present. No tracheal signs. Left eye is lost. Right pupil normal. The right radial pulsation occurs a little before the left one. Quite marked pulsation of whole left side, but not localized. No dullness made out. Lungs negative except for wheezing râles in back. Voice normal.

Blood-pressure, Stanton instrument, by Drs. Sewall and Hall. Right arm, systolic 200 mm.: diastolic 130 mm. Left arm systolic 190 mm.; diastolic 130 mm.

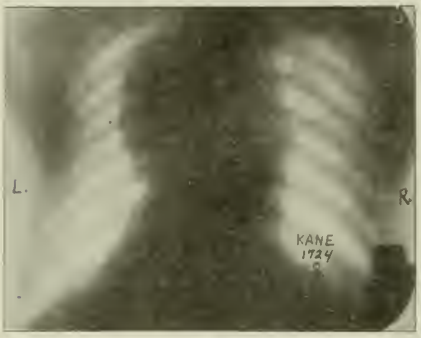
With the fluoroscope Dr. Stover finds a pulsating tumor, similar to that noted in the preceding cases. The diagnosis is practically the same, excepting that the only injurious pressure is apparently upon the left subclavian vein.

March 9, 1906. This patient is still around the streets and in fairly comfortable condition. Rœntgenogram (Clark, 1772) shows the shadow of the aneurism to the right and left of the central line.

Case IV. Kane, male, waiter, fifty years of age. Syphilis at twenty-two years. Formerly worked hard and was rather a heavy drinker.

Two and a half years ago he became aphonic after a debauch. Since then dyspnea, cough, loss of flesh, weakness and inability to work have been noted.

Moderate dilatation of the left pupil has existed much of the time since I have had him under observation, now nearly two years. The left vocal cord has been in a cadaveric position during all this time. The arteries are quite atheromatous.



Dullness exists over a space two and a half inches across below inner end of left clavicle, and slight pulsation is felt through and through the chest at this point. No auscultatory phenomena. Heart slightly displaced to left, aortic second sound accentuated. Respiration is feeble on the left side and voice diminished. Marked tracheal tug and diastolic tracheal shock. Radical pulses equal and synchronous.

With the fluoroscope Dr. Stover finds a pulsating tumor in the region mentioned. The aneurism is probably like the others, situated in the transverse portion of the aortic arch. It has been almost quiescent for eighteen months past, and the patient has done light work during a part of this time. The sac is probably largely filled with fibrin, since the pulsation is much less marked than a year ago. The patient has been upon iodide treatment much of the time.

It is striking that he has had comparatively little pain during the whole course of the trouble. His blood pressure was below normal, but the exact figures have been mislaid. The urine was negative.

This patient lived in comparative comfort for about a year longer and died instantly from rupture of the aneurism. It was located, as mentioned, in the transverse portion of the arch, was about the size of the fist and was half filled with fibrin. It had ruptured into the very beginning of the left primary brochus. Extensive atheroma of the aorta was present. In Rœntgenogram, Kane, 1724, the very marked bulging of the aneurism to the left is well shown.

Aneurism is frequently overlooked because the signs and symptoms present such extreme variability, yet fortunately there are several manifestations of great weight to diagnosis, any one of which may excite our suspicions at once, and a careful search is likely to bring out confirmation in some form. We will study some of the prominent features of these four cases.

Pain was marked in one case, moderate in one, and little complained of in the remaining two. Even if bone be eroded it may be of little moment, or may cease after a pressure; neuritis gives way to complete destruction before the advancing tumor. It is more common in aneurism of the anterior and posterior portions of the arch, since bone is more often eroded in these varieties. Yet in a recent case in this hospital in which a large aneurism projected through the ribs and sternum there was no call for relief from pain.

Dyspnea was present in all the cases, and severe in two. It may depend upon laryngeal trouble, which Dr. Levy will describe more fully; upon pressure upon the trachea; upon one or both primary bronchi; or upon the pulmonary artery obstructing the flow of blood to the lungs, and consequently impeding aëration of the venous blood; or upon the general obstruction to respiration from the size of the tumor. Destruction of the lung after pressure upon the primary bronchus, so common upon the left in aneurism of the transverse arch, with the paroxysmal cough so often seen in these cases, and the necessity of expectoration under such disadvantageous circumstances, may make the dyspnea more severe than it otherwise would be.

Cough was a feature of the two cases in which aphonia from paralysis of the left recurrent laryngeal nerve was present, the usual "goose-cough" of laryngeal paralysis. Choking spells were noted in these two patients.

The left pupil was dilated in Case IV, from irritation of the sympathetic upon that side. We should expect this symptom to be relatively more frequent in a large number of cases.

Weakness was complained of by all four patients, being the chief feature in two histories.

Edema of the feet and legs was notable in one case and slight in one, without recognizable kidney disease. It was probably accounted for in Case II by the communication of the aneurismal sac with the pulmonary artery and embarrassment of the venous return. In Case III, no cause beyond general weakness was found. It did not seem in either case that the inferior cava could have been pressed upon, as in certain cases of aneurism.

The heart was displaced to the left in every case, slightly in Cases III and IV; one inch to left of nipple in Case I, and two inches to the left in Case II. The latter patient had a marked systolic murmur at the apex, well transmitted to the left, and the apex beat was in the seventh space. Systolic thrill, common when the pulmonic artery is perforated, was noted all over the heart, obscuring other sounds greatly. The presence of marked pulsation in the neck and notable Corrigan pulse with the increased perpendicular area of the heart dullness led me to consider aortic leakage almost a certainty in spite of the absence of an audible diastolic murmur. The postmortem evidence would indicate the leakage to have been due to relative incompetency. Aortic diastolic murmurs were found in Cases I and III, but Corrigan pulse was present only in the latter. The frequency of aortic leakage in aneurism is generally recognized.

The aortic second sound was accentuated in Cases I and IV, in spite of the fact that regurgitation existed in the former case. The leakage here was presumably insignificant. Systolic souffle over the region of the aneurism was present in Case II, already mentioned, in most marked degree, and in Case I, in lesser degree. In Case III, over the aortic area, a diastolic murmur was also present, as noted above, and enlargement downward and slightly to the left was noted.

Through-and-through pulsation, a most conclusive sign when found, was present in all four cases. The absence of an external pulsating tumor in all of these cases made this sign the more valuable. In certain cases the movement of the anterior hand seems to be more easily seen than felt. I have never found this sign present in mediastinal tumor.

Marked tracheal tug was noted in all but Case III. If at all marked it is of great value. It is probably never present in marked degree in mediastinal tumor, though in its lesser degrees it is frequently found in full inspiration in those with pleural adhesions or even in normal subjects. It must be decided to be decisive, and when well marked must be regarded as of much value even by those who present many reasons against regarding it as pathognomonic.

Diastolic shock, felt over the tumor, has long been regarded as one of the most certain signs, especially in deciding between aneurism and solid tumor. When an external tumor exists, and notably in aneurism of the ascending arch, it is frequently one of the two or three most valuable signs. In an article in the *American Journal of the Medical Sciences*, January, 1900, Dr. Hall called attention to the value of tracheal diastolic shock as manifested in the trachea, and particularly in aneurisms of the transverse portion of the arch. The downward pressure of the expanding sac upon the left bronchus here frequently gives the tug mentioned above, and in at least half the cases we may perceive, as in Cases II and IV, the transmission of the shock of closure of the aortic valves, as a distinct diastolic shock transmitted to the cricoid cartilage, and felt by the finger instantly after the tug. It has been present in some of my cases when the tug was so indistinct as to be of no value. I have never found it present, excepting when the signs and symptoms pointed to aneurism. In at least four cases of solid tumor it was notably absent. So far as my experience of seven years goes I must regard it, when decided, as a certain sign of aneurism. I have long believed that, with a knowledge of this sign and of the tracheal tug, an agreement as to diagnosis might have been reached by Skoda and Oppolzer over their long-fought case.

The left radial pulse was absent in Case I, and slightly delayed in Case III. In this latter case the systolic pressure on the left was 10 mm. less (190) than on the right (200), though the diastolic pressure, as taken by Dr. Sewall, was (130) on each side. In the other cases the blood pressures, systolic and diastolic, were normal or but little below normal, and equal upon both sides.

Dullness was present in Case I over the manubrium and inner end of left clavicle, in Case II over upper sternal region only, in Case IV over inner end of the left clavicle only, and none was made out in Case III. It is a notable fact that even in large aneurisms no dullness is found in a certain number, for the sac is so centrally situated that the wall of the chest is not affected. O. A. Browne has analyzed 35 cases of aneurism of the transverse portion, in only four of which did the tumor show to the left of the center, so that our cases are probably rather exceptional in showing the dullness to the left in two cases out of four.

In Case IV only were the respiratory passages notably involved, the left bronchus being pretty well shut off in this one. Death resulted, as noted above, from rupture into this bronchus, as so frequently happens in these cases.

Pulsation was felt in the notch of the sternum only in Case II.

Dysphagia was conspicuously absent. It is more common in aneurism of the descending portion. A pulsating tumor was found by Dr. Stover in every case. The x-ray is of immense value for diagnosis in this disease. Dr. Stover recently showed a case at the Staff Meeting of the Denver City and County Hospital in which an aortic aneurism was found in a case about to be operated for prostatic hypertrophy, and which had been sent to his department entirely by mistake. (See Sherman, 2198.) No other sign or symptom could be found by any of the staff, yet the shadow to the left was unmistakable. This diagnosis has since been confirmed.

Syphilis was admitted in Case IV, was almost certain in Case II, and was denied in Cases I and III. Palpable atheroma was present in all but Case II, and no note was made in his case.

Notable venous obstruction was present only in Case III, in which the left subclavian vein was obliterated by pressure. No especial trophic changes were noted in the left hand, such as thickening of the skin of the palm and of the nails, as in a recent case of mine, though they may yet develop.

No one of these patients showed the enormously thick neck, scarcely mentioned in the literature, yet so characteristic of certain types of aneurism, notably of the ascending aorta, from obstruction of the superior vena cava. In a recent case seen with Dr. Matt R. Root, of Denver, presenting this sign, the eyes were so swollen as to become closed, the right arm was visibly larger than the left, and the trophic changes in the hand were present. The dilated veins over the chest and abdomen shown in the accompanying illustration (No. 1) finally established so good a collateral circulation that the patient was able to resume work for about two years, eventually dying of rupture of the sac. The entire venous blood normally flowing through the vena cava superior was apparently carried to the heart by the inferior vein in this case.

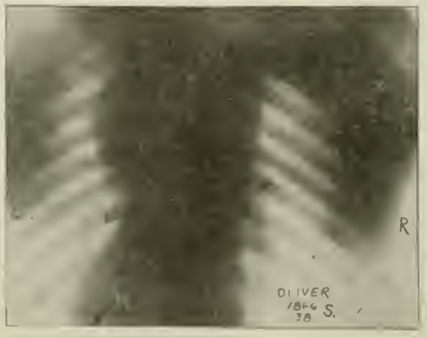
Neither pallor from irritation of the sympathetic nor flushing from paralysis was noted in these cases. Both may be present in the same case, upon opposite sides at the same time, as in a case seen by me with Dr. H. W. Rover, of Denver, in which the right ear and side of face were extremely red with contracted pupil, the tumor having presumably destroyed the last cervical or first dorsal sympathetic ganglia or both, or the cilio-spinal branches, by pressure, while the left ear and cheek were very pale, extreme sympathetic irritation upon that side being the cause.

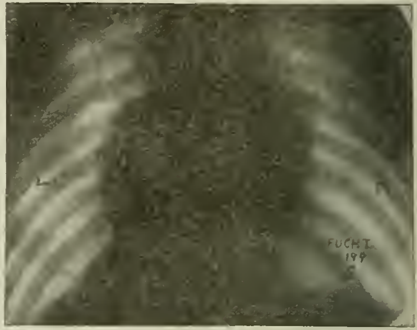
There was no evidence of involvement of the thoracic duct in any of these cases.

It is possible to have the pressure of the sac so distributed as to cause the most puzzling combinations of signs and symptoms. Thus in a case now in the service of Dr. Chas. A. Graham, at this hospital, the left vocal cord is paralyzed, the right radial pulse is obliterated, the veins of the left arm obstructed as in Case III, and the lumen of the left bronchus is apparently almost obliterated by pressure. The heart is displaced two inches to the left. Tubercle bacilli are found in small numbers in the sputum, though there are no known tuberculous antecedents. The Roentgenogram (Peel, 2277) shows the shadow of an aneurism on the right side, according to the rule as found by Browne, above quoted. The pressure of the aneurism is distributed in a most unusual manner. The left bronchus may possibly be pressed upon by a tuberculous gland and not by the aneurism.

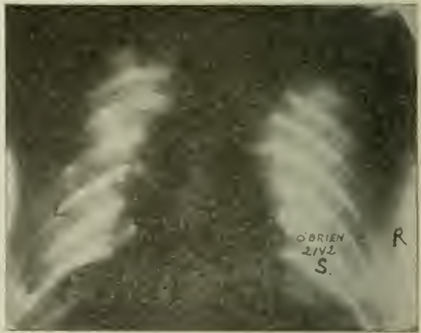
In Case IV, the first symptom was the aphonia, coming on as he recovered from a spree. The onset was gradual in all of the others. In a case seen some years ago with Dr. C. P. Conroy, the aneurism of the transverse arch developed in a few hours after a violent lift, in a man of thirty-eight years. Rupture of the media was found at the post-mortem, doubtless caused by the sudden strain.

In a case recently seen with Dr. Hershey, we were long in suspense as to the diagnosis between aneurism and enlarged bronchial glands following an attack of pneumonia. Profuse expectoration containing many pneumococci, and terrible suffocative attacks, were prominent features. The latter were explained at the post-mortem by the presence of a perforation of the trachea by an aneurism of the transverse and descending portions of the arch of the aorta. A mass of large, firm, black bronchial glands, some of them over an inch long, was found anterior to the sac, while a condition of aneurismal phthisis existed in the left lung. In similar manner I have seen aneurism of the aorta and cancer of the esophagus present in the same case, giving rise to the utmost confusion of symptoms. We should remember the possibility always of two separate conditions in such cases.





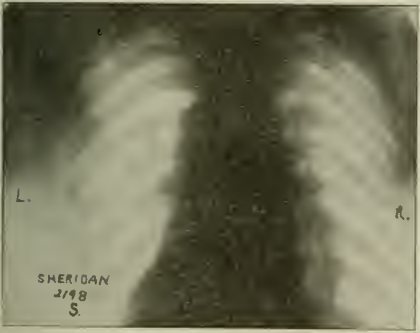
In addition to the illustrations of the cases cited, Dr. Stover presents several other Roentgenograms: that of "Oliver, 1866," showing a large aneurism of the more common type. "Fucht, 2199" is shown on account of the very large size of the tumor. That of "O'Brien, 2142" shows the shadow high up and to the right.

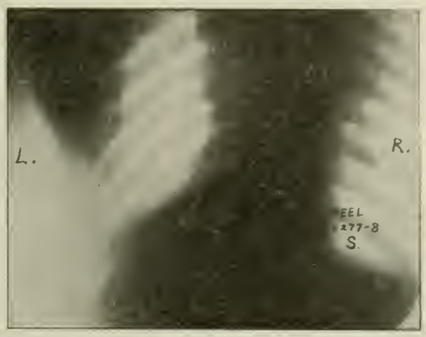


The treatment in all these cases has been by rest, low diet and the giving of iodide of potash over long periods. None was suitable for wiring, electrolysis or other surgical measures.

BY DR. LEVY.

As you may have gathered from what Dr. Hall has stated, the diagnosis of aneurism of the aorta is not always easy. Careful examination of the larnyx will frequently clear up the diagnosis, and in any event will be of decided value. Certain points in the anatomy and physiology of the larynx must be carefully borne in mind. Its two important functions are those of respiration and phonation. The respiratory function of the larynx is made possible by the action of the posterior thyro-arytenoid muscles, which abduct the vocal bands, while the function of phonation is made possible by the lateral thyro-arytenoids, which adduct the vocal bands assisted by other less important adductors and tensors. The nerve supply of the larynx is principally the superior laryngeal and the inferior or recurrent laryngeal branches of the pneumogastric. The latter concerns us more especially in this connection. An anatomical feature of great importance is the course that the pneumogastric and the recurrent laryngeal take upon the two sides of the neck. Upon the right side the vagus passes in front of the subclavian and the recurrent given off upon this side passes the subclavian artery, returning upwards in a groove between the esophagus and trachea to its laryngeal distribution, which included all of the intrinsic muscles of the larynx upon that side except the thyro-arytenoid. Upon the left side the pneumogastric passes in front of the transverse arch of the aorta, at which point the recurrent laryngeal is given off to pass beneath the arch and upwards in a groove corresponding to that upon the right side, to its ultimate distribution in the larynx, namely, all the intrinsic muscles of that side, except the thyro-arytenoid. It is apparent from the course of these nerves and their distribution, that an aneurism of the arch of the aorta would produce pressure upon the left pneumogastric, the left recurrent laryngeal or both, while pressure upon the right pneumogastric or recurrent laryngeal will be produced by an aneurism of the subclavian. These are not the only conditions which may produce disturbance of the recurrent nerves, for tumors of various kinds situated in the course of the pneumogastric, in the neck or of the recurrent laryngeal will also give rise to disturbance in the function of these nerves.





The first laryngeal symptom of aneurism refers to the respiratory function of the larynx. There is a moderate amount of dyspnea, marked, however, upon exertion. During rest and tranquil respiration there may be detected a slightly noisy inspiration. This symptom is due to a paralysis of the respiratory muscles of the larynx, namely, the posterior crico-arytenoids. These muscles abduct the vocal bands, thus enlarging the chink of the glottis and permitting the air to pass freely through the larynx. When these muscles are paralyzed upon one side, the adductors having no antagonist in their action hold the vocal band of that side in the median line. This fact accounts for the almost normal voice in the early stage of recurrent paralysis. The reason that the abductors are first affected is a much mooted question, but the majority of laryngologists have accepted the explanation of Sir Felix Semon, which he formulated a few years ago in what is known as Semon's law. This author believes that there is a "difference in the biological composition of the laryngeal muscles and nerves," which makes the abductors more susceptible and causes the symptoms of slight pressure to manifest themselves in the nature of interference with the respiratory function.

In a certain proportion of cases the stage during which the abductors alone are involved is extremely short or does not exist at all. This is particularly true of cases in which the enlargement of the aorta occurs itself suddenly or is principally in the anterior wall of the aorta. Here the pressure is made almost complete at once and involves the pneumogastric as well as its branch, the inferior laryngeal. The symptoms of increased pressure are those of complete paralysis of the recurrent laryngeal, namely, the loss of motion of all of the intrinsic muscles of the larnyx except the thyro-arytenoid. These muscles include the adductors, the principal of which are the lateral crico-arytenoid, the internal thyro-arytenoid, the tensors, and the arytenoid. It is obvious, therefore, that when the nerve is completely paralyzed and both abductors and adductors fail to act, that the vocal bands be neither abducted nor adducted, nor will they be made tense, but will rest in a position midway between abduction and adduction and be lax. This position of the vocal bands is what is known as the cadaveric position.

The dyspnea in the case of Kiler may be explained either by pressure on the trachea or bronchi, or it may be due to so pronounced a pressure upon the pneumogastric that the irritation is transmitted to the center in the medulla, then to the opposite side, causing spasm of the opposite abductors. In this way pressure upon one pneumogastric will cause marked bilateral manifestations, especially giving rise to laryngeal dyspnea.

It is important to recognize whether that dyspnea be due to this cause or to pressure upon the trachea or bronchi. If due to the former, tracheotomy will relieve the urgent distress, and if due to the latter, opening into the trachea will be of no avail.

As has been seen in the case of the man Kane, the voice while aphonic from the beginning has gradually improved. This is not an uncommon manifestation, but should not be construed to mean improvement in the actual condition. One vocal band may be completely paralyzed, remaining midway between abduction and adduction, while the other in course of time takes on compensatory action and passes beyond the median line to closely approximate the paralyzed band. When this exaggeration of the unparalyzed vocal band takes place, the voice begins to return, and while the patient will never have a normal voice, he will nevertheless be able to phonate better than early in the affection. There is marked distress during prolonged phonation due to what might be called respiratory loss. The chink of the glottis being larger than normal every act of phonation permits an increased loss of breath and the patient becomes rapidly exhausted in an attempt to use his voice.

AN ANALYSIS OF TWENTY-ONE CASES OF PELVIC ABSCESS TREATED BY VAGINAL SECTION.

BY ERNEST BOYEN YOUNG, M.D.,

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THE following article has for its object the consideration of 21 cases of vaginal section for pelvic abscess in which the end results are known. They have been collected from the cases treated at the Boston City Hospital and from private practice. Hospital records show the immediate results of operation; but as a rule our patients disappear at once on leaving the wards or after a few visits to the Out-Patient Department. For this reason the end results are seldom apparent.

The responses to our requests for information from hospital patients have been few, as out of about 100 inquiries. only 13 replies have been received. All have been examined personally; but in speaking of the end results, four are mentioned from whom reports have been received. It must be borne in mind that the impression conveyed by such a series of hospital cases is often really worse than the actual truth, as many are traced after discharge, only from the fact that they have improved slowly. The greater number of those making good recoveries disappear.

The " end results " we have considered as the condition of patients at the time when the maximum benefit from the operation was apparently attained. In one or two instances it may be considered a little doubtful whether they have quite reached this stage; but in general, we believe this period has been reached.

General Considerations. — Vaginal section for the evacuation of collections of pus in the pelvis has long been recognized as an operative procedure having less danger in acute stages than ordinary abdominal section; but at the same time, opinions have varied as to the lasting results obtained by this method alone.

The bacteriology of the pelvic abscess is often unsatisfactory, as there are numerous accidental means by which a swab may be contaminated, and, furthermore, many are reported sterile. Any classification on a purely bacteriological basis seems impracticable.

In a clinical sense, these abscesses may be divided into three classes: first, those arising shortly after gonorrheal infection; second, those which appear at some more or less distant period after gonorrheal infection; third, those following puerperal sepsis. Regarding the second class, we must allow that such abscesses may be due to the lighting up of old quiescent foci or a new infection by a different organism, regulated more or less by the resistance of the individual and started, perhaps, by some traumatism. The rare infections from the appendix and tuberculosis are not considered. Certain of the acute gonorrheal cases progress at once to abscess; but many do not go so far, and leave in their wake lasting discomfort, pain and repeated attacks of pelvic peritonitis. Often the amount of pus present is small. After more or less frequent disturbances or a long period of seeming immunity, suddenly an abscess develops, either confined to tube and ovary, or to a limited part of the pelvis. This is the type in which we believe a secondary infection occurs, often with a different organism, even if as yet we are unable to prove it to our satisfaction bacteriologically.

In the third class, the infection (often streptococcus) comes as the result of miscarriage or childbirth and travels to the peritoneum by way of lymphatics or tubes, or both. Frequently in these cases we find the tubes have suffered comparatively little injury, and the collection of pus is localized in the broad ligament, or, very often, is apparently an infected peritoneal secretion which has gathered in Douglas' pouch. If seen early, the serum poured out may have undergone no change, and on vaginal section, we find perhaps a pint of clear or slightly turbid fluid. After a time it has the ordinary appearance of pus. These patients do well when such fluid collections are drained, and the temperature will promptly fall. They also recover with very slight signs of any previous trouble; although the exudate may be considerable.

Another contrast exists as regards adhesions. In the third class they are light and friable, while in the first two they are more firm, especially in the second class.

This seems due to something more than chronicity; as in a number of abdominal sections, where the infection was known to be from the common pus organisms, the adhesions have been light and entirely different from those of known gonorrheal infections of apparently the same duration. It is also very noticeable that in the third class, the abscess may increase rapidly in size, and occasionally ruptures, with disastrous results, from this want of adhesions. It follows, therefore, that masses in the pelvis, after childbirth or miscarriage, should receive very careful attention. The second class runs a more chronic or subacute course and, in the main, gives abundant warning before rupture takes place.

Age.— Most pelvic infection occurs during the child, bearing period, but in the one case, which was over fifty years, the abscess healed promptly, although the general condition was poor.

Probable cause. — The probable cause of the infection was: Puerperal sepsis, 8; gonorrhea, 9; unknown, 4.

Puerperal sepsis, especially after induced abortion, and gonorrhea, are the principal causative factors of pelvic abscess; although in certain instances, neither of these seems to blame. The writer has seen one large pelvic abscess arise from a tubercular tube. We know that abscesses of Bartholin's glands occasionally develop in uncleanly persons, and some German writers have claimed the sepsis after labor is due oftentimes to coitus shortly before delivery. In some hospitals the subject is always inquired into at entrance. The fact that pelvic adhesions are occasionally formed in individuals where there seems to have been no previous coitus, may allow us to grant that very rarely such an abscess may develop "idiopathically."

One of our own cases, who underwent two vaginal sections for pelvic abscess, never had any symptoms of gonorrhea and was never pregnant. The culture from the abscess at the first operation showed staphylococcus pyogenes albus; that of the second was sterile. A second case of similar nature gave a negative result.

Puerperal sepsis and gonorrhea appear from our returns to give rise to pelvic abscess in equal proportion. In 6 cases, the infection was undoubtedly gonorrheal in character and probably so in three others.

There is only one reported culture from these 9 cases and that was sterile. Of the eight abscesses which resulted from puerperal sepsis, four were reported as streptococcus infections, and three sterile.

Duration of symptoms. — In the gonorrheal cases, the symptoms may be roughly divided into two stages: premonitory and acute.

The premonitory stage consists of the period during which there is discomfort or pain, either continuously or at intervals. This period is usually well marked and of variable time.

The bulk of the gonorrheal have had symptoms from one to two months before acute attacks set in.

Two of these cases have had abscesses form after a considerable period of time had elapsed since the venereal disease was contracted. One case, in which the time of infection is definitely known, was in very good health for two years before the acute symptoms appeared. Another enjoyed fair health for many years before the abscess formed. It seems to me reasonable to suppose that such accidents may be due, as has been stated before, to the reinfection of damaged tissue through blood or lymphatics. This might be brought about by any traumatism in tissues whose resistance is already weakened by previous inflammation. Of course the health of the individual would also have a marked influence. The new infection with a different organism seems more plausible than an old quiescent focus, as the virulence of most pus-producing organisms becomes much attenuated and the organisms often disappear altogether.

After puerperal infections, in many of which we know the exact date of induced abortions, there is often the same premonitory stage. Among those on our list it has varied from four days to ten years, but is usually of two to three weeks' duration. The longer period mentioned would seem to indicate a second infection.

The acute stage in the gonorrheal has varied from five days to five weeks, averaging about two weeks before operation became necessary.

With the puerperal cases, nearly all of which were streptococcus infections, the time elapsing from the acute onset to the time of operation varies from four to twenty-one days, with an average of about ten days. This is a much more rapid development than in the gonorrheal infections. It is in the puerperal cases that adhesions form slowly and are very frail, while the abscesses increase very rapidly. In the case in which operation became necessary on the fourth day after miscarriage, a large amount of serum was evacuated.

Condition of pelvis at time of operation. — It is difficult to summarize the condition of the pelvis, as in most instances the structures were so obliterated by adhesions and exudate that it was impossible to tell whether the pus came from an enlarged tube alone, an abscess cavity with which the tube connected, a collection of pus in Douglas' pouch, or an abscess in the broad ligament.

As a general statement it can be said that the amount of pus evacuated from the abscesses forming after puerperal sepsis was about equal in amount to that from those women known to have been infected with gonorrhea within a short time.

The connective tissue of the pelvis was filled with exudate in all cases, and it seems impossible to tell to just what extent the appendages were involved; but from the findings at other laparotomies, it would seem probable that both sides were more or less involved, although the abscess may have been more directly connected with one or the other. In one case with no apparent cause of infection two sections were performed, two years apart, for abscesses which formed first in one tube and then in the other. The writer has also operated upon one gonorrheal case in which the sections were separated by an interval of about two weeks.

Five acute abscesses after fresh gonorrhea appear to have been confined principally to one tube. The abdomen was opened in one of these, after the acute symptoms had subsided, and the damaged tube removed. The abscesses have pointed behind the cervix with one exception. Two of the cases have been treated by laparatomy after the initial operation, — the case mentioned above, and one other, — which developed an abscess between the peritoneum and abdominal wall, above the bladder. In two, the anterior wall of the rectum sloughed.

End results. — The sinuses have healed quite promptly in most instances, especially in the acute gonorrheal abscesses. The shortest time recorded is six days, and the longest, five weeks. The puerperal infections have not shown quite equal speed. One has discharged for four months and perhaps this case can hardly be considered an end result. Of the two patients with sloughing of the rectal wall, and both having recto-vaginal fistulæ, one sinus persisted two and one half years, until death caused by an operation for its closure; and one healed inside a month.

The time elapsed since operation in the cases seen and examined is: Less than six months, 4; between one to two years, 8; between two to three years, 6; between three to four years, 2; between four and five years, 1.

Of patients examined under six months from date of operation: One was seen five months; 2 at four months; and 1 three months after section. All were of puerperal origin. The case operated five months ago, still has some mild attacks of peritonitis from time to time, and there is exudate in the pelvis on one side. This woman, on account of home conditions, has been unable to give herself proper care. She has some pain with menses; but has gained twenty pounds since leaving the hospital, although she was extremely sick while there, losing sixty-five pounds.

The two cases seen four months after operation have painless catamenia and suffer none. In one, there is a retroverted uterus with two small tubo-ovarian masses adherent. The whole is movable. In the other, there is a retroverted uterus with a small mass at one side. Both uterus and mass are free.

In the single case observed at three months, there is still an indurated mass in the left broad ligament. The uterus is in good position, freely movable, with no tenderness.

Of the cases seen between one and two years after section, two, with abscesses of unknown origin, are in good health. One of these has slight pain at times, and examination is negative; the other has no discomfort, but a slight thickening behind the uterus.

Of the probable gonorrheal infections, four in number, three report slight pain occasionally. One of these has a small mass on one side; two have adherent retroversions of second degree; and one has a slight thickening on both sides, but the pelvis otherwise negative. The two cases with second degree retroversion have pain with the catamenia.

The cases (2) of puerperal sepsis have no pain, and the pelves seem practically normal.

Six women have been examined from two to three years after discharge. One, origin of abscess unknown, has slight pain at times, an adherent tube in the pouch of Douglas, and slight pain at the monthly period.

One severe case of pelvic infection has gained sixty pounds, has no pain at any time, and it is possible to find but a slight thickening of the broad ligaments.

Of four probable gonorrheal infections, one has slight pain at catamenial period; one, no pain since the operation; one, pain until the appendages on left side were removed by laparatomy, since which time she has had perfect health.

The fourth case in this group is the only one resulting unfortunately. This has been mentioned previously. About a week after the vaginal section, the anterior wall of the rectum sloughed and a recto-vaginal sinus appeared which also connected with the large abscess cavity. Later a laparotomy was performed to drain a pus cavity between peritoneum and abdominal wall above the bladder. She was in poor condition at the time of each operation, thoroughly septic, and barely lived.

The second abscess cavity finally connected with the one in the pelvis and a sinus formed in the abdominal wound. Both sinuses refused to heal, although all means were tried. She was finally operated upon two and one-half years later, and died from shock. During the interval between her discharge from the hospital and the final operation, she enjoyed very fair health. The outlook was desperate from the start.

Two women reported between three and four years after operation. The first is perfectly well and the pelvic examination is negative. This infection was undoubtedly gonorrheal. The second was again admitted to our wards a short time ago, with a large exudate behind the uterus; but by rest and depletion, operation was avoided. She considered herself as perfectly well until three weeks previous to entrance. The original septic process started from a miscarriage, and it seems rather probable that the second infection was of a different nature.

Only one patient has reported after four years, a probable gonorrheal infection. She declares herself comfortable. At the time of leaving the ward, her weight was 86 pounds. It is now 140 pounds. The uterus is quite firmly fixed in the pelvis, and in good position. There is a slightly movable tubo-ovarian mass on one side, an old vaginal scar on the other.

In none of our cases has pregnancy occurred since the operation.

Four report themselves as in good health after periods of from six months to two years; but the data concerning them are insufficient.

Conclusion. — Our cases, few in number, show this operation gives what appear to be good results. One has died, not as the result of the operation itself, but because of an effort to correct the consequences of an operation upon a metastatic abscess.

Two other unfavorable results are reported: one finally cured of pain by removal of one tube and ovary; the other still with some pain and exudate, owing principally to lack of proper care.

Thirteen on our list are free from pain, and four others, reporting by letter, claim to be well. The remainder have some pain at times, but the discomfort is apparently slight, even if some exudate, thickening, or tubo-ovarian masses remain. It will be noticed, also, that with exudate there is not always pain or even tenderness. If we could compel our patients to follow after-treatment with care and enable them to accept the opportunities offered for rest, the results would be far better.*

A NEW OPERATION FOR CORRECTION OF THE NASAL SEPTUM.

BY ROCKWELL A. COFFIN, M.D.,

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PERHAPS the most objectionable feature of the present submucous "window operation" is the length of time it requires to perform it, together with the strain on both patient and operator. Both of these disagreeable features are overcome by the operation herein described.

In the usual operation, after separating the mucous membrane and perichondrium from one side of the septum, it is often very difficult to free the opposite mucous membrane through the septum without causing a perforation. This part of the operation is also most fatiguing for both patient and surgeon.

The author's operation is divided into two short sittings, which many patients are able to tolerate, rather than one long one which is exceedingly nerve racking and even quite impossible for the more sensitive.

Fig. 1.

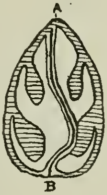


Fig. 2.

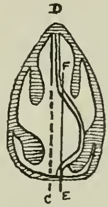
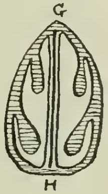


Fig. 3.



It is not suggested that this operation take the place of other "window operations," but rather it is one to be used when the conditions are unfavorable for prolonged surgical procedures. The author can, perhaps, best explain the technique by describing the first case operated on, as it was typical of those cases for which this operation is especially adapted.

On examination of the nose, the septum was found deviated as in Fig. 1, that is, the cartilaginous septum was in contact with the lower left turbinate. Only a small piece of the bony septum was involved. A more or less perpendicular incision was made in the right nostril anterior to the deviation, after first applying cocain and adrenalin, and sterilizing the cavity with a weak solution of corrosive sublimate.

The periosteum elevator was then introduced through the incision beneath the periosteum and perichondrium and worked backward, upward and downward, until they were free from the septum as far as the edges of the deviation. The space thus made was injected with sterilized vaseline, and the nose allowed to heal for one week. It may be seen that the mucous membrane and perichondrium, instead of following the line of the septum as in Fig. 1, were held away from the septum by the vaseline and took the line C D, as in Fig. 2.

After one week the opposite side was prepared for operation in the same way as the first, and an incision similar to the one on the right side, only somewhat more anterior, was made. This last incision was made more anterior in order that it would not come opposite the other and increase the liability to perforation in case the first was not entirely healed. In the same way as before the perichondrium and mucous membrane were separated from the septum. With the mucous membrane and perichondrium on the right, taking the direction C D (Fig. 2), we had the simple problem of removing a submucous spur. This was accomplished by the use of a straight, blunt knife, and the author's submucous gouge. A light pledget of antiseptic cotton was then introduced into the left nostril and drawn forward in order to hold the perichondrium and mucous membrane in the median line. Fig. 3 represents approximately the position of the septum at the end of the second half of the operation.

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*The writer is indebted to Dr. D. D. Scannell for details of some private cases.

This was allowed to remain about twenty-four hours, when it was removed, and the nasal cavity irrigated with a very mild antiseptic solution. The patient was given a wash of Dobell's solution and mild citrine ointment to use twice daily.

Where the deviation is long and narrow the author has obtained excellent results by treating the second part of the operation as a simple spur, and has removed it with the saw. This not only saves time, but the result, in most cases, is quite as satisfactory.

It is the author's opinion that in doing this operation, one is more likely to obtain true cartilage in the new septum than in the usual "window operation," for the reason that both cartilage cells and perichondrium are present during the time intervening between the first and second operations. Time alone can demonstrate if this is a fact.

◆

New Instrument.

GASTRO-ENTEROSTOMY IN INFANTS. A NEW INSTRUMENT.

BY CHARLES L. SCUDDER, M.D., BOSTON.

In those cases of stenosis of the pylorus in infancy, which come to the surgeon for operation, it is important that technical difficulties be eliminated so far as possible from the chosen procedure. The operation to be successful must be performed with speed, the handling of the gut must be reduced to a minimum. A gastro-enterostomy (posterior) is the operation of choice in these cases.

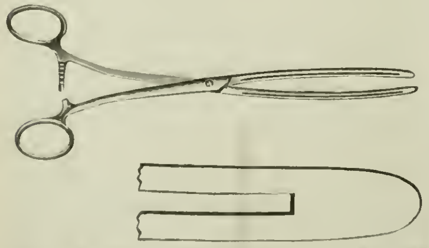

Fig. 1. Baby clamp for gastro-enterostomy Rubber covered when in use.

I have had made for me, by Codman and Shurtleff, a clamp similar to the gastro-enterostomy clamp for adults, but much smaller. (See Fig. 1.) This "baby clamp" is slender and very light, it is well adapted to facilitate the technique of the rather delicate operation of gastro-enterostomy in young babies.

GASTRECTOMY. A NEW INSTRUMENT.

In the operation of partial gastrectomy following the most satisfactory technique, perfected by Hartmann and Mayo, Kocher's crushing stomach clamp is applied to the portion of the stomach to be excised. In order to control the portion of the stomach left behind, a clamp to compress without crushing is needed. Kocher's clamp, covered with rubber tubing, is sometimes used for this purpose, but the bite of this instrument is too powerful. I have had made an instrument similar in shape to Kocher's which, when rubber covered, very effectually compresses the stomach walls without damaging them. (See Fig. 2.) A straight pattern of this instrument has also been made. (See Fig. 3.)

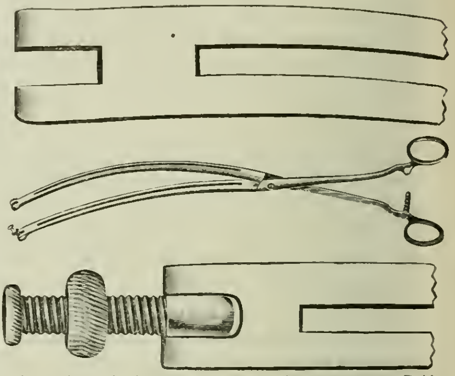

Fig. 2. Stomach clamp for compression in gastrectomy. Rubber covered when in use.

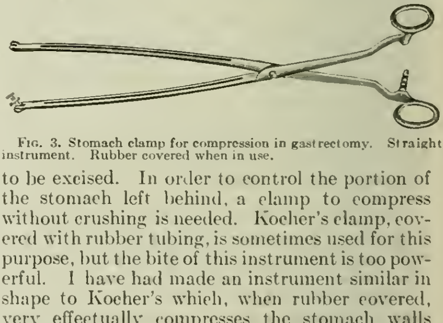

Fig. 3. Stomach clamp for compression in gastrectomy. Straight instrument. Rubber covered when in use.

The clamp is simply constructed, the appearance of the lock at the tip of the two blades is accurately shown in the accompanying drawings. (See Fig. 2.)

In order to prevent any retraction or slipping of the compressed stomach walls from between the rubber covered blades of the clamp it is wise to catch the projecting edges at two or three points with ordinary hemostatic forceps. The application of these forceps precludes the possibility of slipping of the stomach before the occluding sutures are placed. The employment of this clamp adds much to the ease of gastrectomy.

◆

The Philadelphia Polyclinic and College for Graduates in Medicine is at present engaged in extending its plant by the erection of a building to the east of the present property, which will be devoted entirely to the out-patient department. — *New York Med. Jour.*

Reports of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, Wednesday, Dec. 5, 1906, at 8 p.m.

The President, Dr. Arthur V. Meigs, in the chair.

CASES ALLIED TO AMAUROTIC FAMILY IDIOCY APROPOS OF TWO PATIENTS, ONE OF WHOM PRESENTS AMONG OTHER STIGMATA POLYDACTYLISM OF FOUR EXTREMITIES.

Dr. A. Gordon exhibited two patients who presented the following peculiarities: Blindness dating from infancy and mental weakness; both are Hebrews of Russian extraction and are brother and sister. The eye examination shows optic atrophy with unusual redness in one of them, suggesting the findings in Fay-Sachs' disease. The clinical manifestations of both cases are highly suggestive of amaurotic family idiocy. These two cases, also others reported by various authors, especially by Spielmeyer, lead logically to this view, that amaurotic family idiocy presents varieties and subvarieties. As to their pathogenesis, Dr. Gordon expresses the opinion that the ductless glands are probably inherently deficient and produce the cell changes found in all cases of this affection. Both patients presented also a number of stigmata of degeneracy, among which polydactylism of the four extremities in the brother was the most curious and unusual.

Dr. F. X. Dercum was in accord with Dr. Gordon that in the disease of amaurotic family idiocy there were at work a morphological factor with all the signs of arrested development, and a process of chronic autointoxication. Regarding the studies which have been made and in which it has been stated that the behavior of the nerve cells suggests the action of a poison, he thought a very plausible explanation was that this poison is produced in the body and has resulted in some grossly defective metabolism or faulty action of persistently abnormal ductless glands.

Dr. Howard F. Hansell, in speaking of the eye examination, said there was presented the appearance of an absorption of the choroid in places and in addition some typical signs of high myopia. The condition of myopia, however, he believed secondary to the more marked eye condition. The cases seen by Dr. Hansell prior to the ones exhibited had terminated fatally at an earlier age.

Dr. Walter L. Pyle, from his examination of the records of such cases, said there were very few in which there was such perfect specimens of polydactylism as in the case presenting the six fingers and six toes of the four extremities.

SYMPTOMS AND SIGNS IN URINARY LITHIASIS.

Dr. Charles Lester Leonard said that as the result of the study of 352 cases of suspected urinary lithiasis calculi had been detected in 71 cases in which the accuracy of the Rœntgen method had been confirmed by the recovery of the calculi. Of these cases 42 were ureteral calculi, and in 28 of these cases the calculi had been passed on expectant medical treatment based upon the accurate Roentgen diagnosis and the study of the symptoms and signs.

His study of the symptoms and signs showed that it was impossible to differentiate calculus disease from other intra- or extra-ureteral and renal conditions without the Rœntgen method; that this method should be employed in every case, since it cleared the field by detecting or excluding calculi; that the symptoms and signs were of particular value in studying the question of treatment; that the indications were dependent upon the size of the calculus and the symptom complex; that the detection of a calculus by the Roentgen method did not always form an indication for operation; that a differentiation can be approximately made between ureteral and renal colic, and also between involvement of that portion of the ureter above and that part below the uretero-iliac junction. Ureteral calculus in the juxta-vesical portion of the ureter produces symptoms very closely resembling vesical calculus. While the presence of an undetected calculus may be a grave danger and a menace to the integrity of the kidney, as soon as its exact size and location are known that menace ceases, unless there are symptoms present indicating progressive impairment of the function of the kidney. In every case, therefore, presenting suspicious symptoms he believes it essential to the preservation of the integrity of the kidney to determine whether a calculus is present or not; if present, whether it is occlusive, or if it has passed into or out of the bladder. Without the accurate knowledge obtainable in such cases by the Rœntgen method he showed that the patient is in grave danger, as all symptoms may subside and yet most serious injury result by complete occlusion of the ureter and the consequent atrophy of the kidney. In none of the cases with diseased kidneys has any symptom ever arisen indicating a systemic injury as the result of the Rœntgen examination.

Dr. John H. Gibbon referred to five recent operations for ureteral calculi and of their difficulty of diagnosis.

Dr. James Tyson spoke of the cases simulating stone in the kidney. In such cases had been found adhesion of the capsule of the kidney to the substance of the organ and to the neighboring fat and tissues. Relief usually followed the stripping up and pushing back of the capsule of the kidney.

Dr. Robert N. Willson referred to a case which Dr. John B. Roberts had seen with him in which the question arising was whether there was stone in the kidney or a floating kidney. This question had not yet been determined. The x-ray had showed entire absence of any concretion in either ureter or kidney. There were periodic attacks of pain typical of renal colic. Pus and blood would appear and disappear. An explanation of such cases suggested by German writers was the transmission of a nervous condition, probably through the splanchnic plexus to the bowel. Dr. Roberts' opinion had been that the case was one of pure and simple neurasthenia. Further reference was made to a case in which two x-ray plates had failed to show stone, but in which operation had revealed stone in the kidney.

Dr. John B. Roberts thought that in women Kelly's method of passing a small ureteral bougie covered with wax up into the ureter, and seeing on withdrawal if it is scratched by a stone, might at times be of great service. This, however, required great dexterity which many do not possess.

Dr. Leonard in closing said he had had a number of cases in which he had been able to detect the presence of pus in the pelvis of the kidney. The pus had been withdrawn and the kidney washed out with subsequent cure. In a number of cases of suspected stone relief of symptoms had followed the x-ray exposure, showing, of course, a mental cure rather than physical. In the 350 odd cases he had examined for suspected stone in which the kidney was the seat of the disease, there had been no evidence of deleterious effect from the exposure of the patient to the x-ray.

A CASE OF EXTENSIVE LEUCOPLAKIA BEGINNING IN CHILDHOOD, ACCOMPANIED IN THE EARLY STAGES BY FOLLICULAR KERATOSIS, AND FOLLOWED BY CARCINOMA OF THE TONGUE.

DR. M. B. HARTZELL read this paper, reporting an extensive leucoplakia, involving the entire buccal mucous membrane, occurring in a girl of eleven years, associated with keratosis of the follicles of the skin. After a duration of fifteen years, cancer of the tongue developed, necessitating excision of half this organ. The association of keratosis of the skin and mucous membranes was said to indicate, in exceptional cases, that the disease may be due to some constitutional fault, rather than to local cause.

Weak ointments of salicylic acid and the x-ray have been found by the author curative in some cases of leucoplakia.

Book Reviews.

Operative Gynecology. By HOWARD A. KELLY, A.B., M.D., LL.D., F.R.C.S. (Hon. Edinb.), Professor of Gynecological Surgery in the Johns Hopkins University, and Gynecologist to the Johns Hopkins Hospital, Baltimore; Fellow of the American Gynecological Society, etc., etc. With eleven plates and 703 original illustrations, for the most part by MAX BRODEL, Associate Professor of Art Applied to Medicine in the Johns Hopkins University. Second edition, revised and enlarged. Two volumes. New York and London: D. Appleton & Co. 1906.

The medical profession welcomes with joy this new edition of Dr. Kelly's book embodying the results of his unique experience in operative gynecology.

A careful comparison of the new edition with the old, published nine years ago, shows that the revision has been painstaking and thorough. Although something over two hundred and fifty pages have been added to the two volumes together, they are a trifle smaller than the volumes of the first edition, due to the use of slightly thinner paper, to a narrower margin about the printed pages and to the omission of thirteen of the twenty-four plates. Many of the old plates appear as inserts in the text of the new book; the obsolete plates and figures are left out.

Max Brödel has quite outdone himself in the new drawings. As a whole the illustrations are more effectively placed and show better printing.

There are forty-three chapters in the new as against thirty-eight in the old. The sequence of the chapters has been changed in places and some have been consolidated and rewritten.

Of the new chapters on local and palliative treatments, on displacements and pessaries, and on menstruation and its anomalies added, as the preface says, for the benefit of the general practitioner, the observation is forced from us that they are not particularly well done and, moreover, do not properly belong in a book with the title "Operative Gynecology." In view of the fact that this is not a complete treatise on gynecology these chapters were better omitted.

Not so with the new chapters on bacteriology, anesthesia, and the use of the x-ray in diagnosis. Here there is much new matter quite in accordance with the most modern ideas. The recent work of T. S. Cullen is followed closely in the rewritten sections on vaginal cysts and Bartholin's glands.

Other new features of this edition are: a recast chapter on diseases of the hymen, the technique of digital exploration of the uterine cavity, the removal of a uterine polypus through a cystoscopic speculum without injury to the hymen, a chapter on gynecological affections in children, Killian's operation for shortening the round ligaments, Mayo's operation for umbilical hernia, a short section on chorio-epithelioma, and a chapter from the work of John A. Sampson on abdominal extirpation of the cancerous uterus with fifty-six new and beautifully executed illustrations.

Altogether old text and old pictures have been omitted freely and their places taken by new, improving materially an already noteworthy book.

Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By WALTER M. BRICKNER, M.D., Chief of Surgical Department, Mount Sinai Hospital Dispensary; Editor-in-Chief, *American Journal of Surgery*, New York, and ELI MOSCHCOWITZ, M.D., Assistant Physician, Mount Sinai Hospital Dispensary; Editorial Associate, *American Journal of Surgery*, New York. New York: Surgery Publishing Company, 92 William Street. 1906.

This little book is a compilation of surgical suggestions that have been published in the *American Journal of Surgery* during the past year. They are arranged in a convenient form and serve to give the reader some practical points in surgery. The suggestions regarding instruments are really very clever; for example, "A spoon-shaped potato cutter may be used, in an emergency, as a wound curette." We do not doubt that the two hundred and fifty suggestions, which are grouped under appropriate headings and carefully indexed, will be of much interest to the general practitioner. Therapeutic hints and diagnostic points are of value if one recognizes that they are simply hints and points, and that is all that this book pretends to be.

Recent Advances in the Physiology of Digestion. By ERNEST H. STARLING, M.D., F.R.S. 156 pages. Chicago: W. T. Keener & Co. 1906.

Like Pawlow's volume on the "Work of the Digestive Glands," Professor Starling's book is a summary, to a large extent, of his own work and work done in his laboratory. He considers in a very interesting and stimulating manner the mode of action of ferments, the secretion of saliva, gastric digestion, the fundamental discovery of "secretin" as a stimulus of pancreatic secretion, the properties of pancreatic juice, bile, and the succus entericus. He also has a chapter on the movements of the alimentary tract. To one who knows only the conventional descriptions of these functions as found in general physiological treatises, Professor Starling's exposition of his results will prove illuminating and suggestive.

Minor Maladies and Their Treatment. By Leonard Williams, M.D., M.R.C.P., Physician to the French Hospital, etc. Pp. 383. New York: William Wood & Co. 1906.

In writing of "Minor Maladies and Their Treatment" the author of this book takes up matters which, as he rightly suggests, finds small place in our ordinary textbooks. From a practical standpoint minor maladies demand intelligent treatment to the same degree as more important ones, and the difficulty of intelligent treatment is often very much greater. In this small book the writer brings home to his readers such commonplace affections as coughs, colds, digestive disturbances, headache, rheumatism, neuralgia and similar conditions of disorder. He gives prescriptions and advice which are certainly suggestive, even though we may not always agree with them. A chapter is given on change of air, another on some common drugs and their uses, and finally the practical care of insanity is discussed. Naturally, the book is cursory, but it thereby gains in force, at least for the purpose for which it was written. It is altogether desirable that we should have wider discussion of the commonplace ailments.

American Practice of Surgery: A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors: Joseph D. Bryant, M.D., and Albert H. Buck, M.D. Vol. I, pp. 818. New York: William Wood & Co. 1906.

The first volume of this extensive work is before us, and seven more volumes are promised. The appearance of Bryant and Buck's System of Surgery has been anticipated with interest by surgeons; but even surgeons, we believe, will be impressed and surprised by the unusual extent of the publication. Systems of surgery have appeared frequently in recent years, and doubtless this multiplicity of works is necessitated by the importance of the theme, and is essential to its proper exposition, but one wonders often where this making of many books is to have an end. We are informed by the editors that a careful study of the problem led them to the conclusion that a composite work, such as they contemplated, would present a picture more true to life and one more perfect in detail, if the different writers were not confined within boundary lines too strictly drawn. This proposition may be true. We have never edited an eight-volume System of Surgery, and doubtless are unfamiliar with the difficulties of the undertaking; but we cannot fail to be impressed, at the outset, with the great bulk of this first volume and its multiplication of topics. A composite literary production, to which numerous writers, without co-ordination, contribute, must contain a deal of repetition and necessitate able editing. We have read through, with interest, the volume before us, and have been impressed with the ambition and magnitude of the task and the labor of the contributors. The fifteen writers have done their work exhaustively; they have searched the literature; they have presented us with a great fund of information; they have told us the latest facts; they have supplied us with fifteen elaborate essays which deal completely and finally, so far as present finality is possible, with the topics in hand. It is a question whether a book thus written can be edited so successfully as to present to the reader a properly co-ordinated and consecutive treatise. In spite of the apology of the editors we cannot but feel that Volume I is too large. It is a heavy book to handle and the writings frequently overlap and duplicate each other in a fashion which might have been avoided to the greater comfort and edification of the reader. There is too much in the book; and though we feel, on finishing it, that we have acquired a great deal, we feel at the same time that our information is incommensurate with our labor.

In his capacity as a reviewer of scientific literature, the writer is impelled to iterate and re-iterate his observation on certain common and serious technical faults which appear constantly in this book, as they do in so many other scientific writings of the day, a lack of lucidity, an incompleteness in style, an irritating redundancy, a mixing of metaphors, an indifference to plain, straightforward, forceful English. Three years ago, T. Clifford Allbutt, the distinguished Regius professor of physic at Cambridge, told us of these faults, and published a valuable little book, "Notes on the Composition of Scientific Papers." We commend Allbutt's book to the contributors to "American Practice of Surgery." It is not that the essays under discussion fail to present facts in abundance, but the facts are so presented often that the machinery beclouds the action of the narrative. One puzzles over the construction of phrases, while their significance passes him by. This fault is lamentable, especially in the writing of elaborate and complete monographs, the perusal of which entails continuous and concentrated effort on the part of the reader. The fault is less apparent or less grievous when committed by the writers of brief journal-papers which strike a note quickly and forcibly, leaving the reader time to dwell upon it. It would be invidious here, and hypercritical, doubtless, to cite numerous instances of the redundant and confused writing which appears in this volume, but as an example of the difficulty to which we refer we quote the following phrases, and challenge the reader to elucidate them; the writer is describing methods of physical examination: "In instances of special examinations of female patients of instrumental or of oral kind, the near-to-hand presence of a third person of responsible station should be had." A recent reviewer criticised the style of a book on surgery as "simple," because the style did not distract the reviewer's attention from the meaning of the writer. We approve of such simplicity. Volume I of "American Practice of Surgery" is abundantly and admirably illustrated, especially with microphotographs, which for their part tell their story lucidly; though the character of the illustrations does not always reach that high standard which we have come to look for among the rare best specimens of modern scientific book-making.

We have dealt thus extensively with the general aspects of the volume before us with no wish to detract from its incontestable value, but with a feeling of regret that the good should not have been the best. When we come to an inspection of the individual essays we find much that is admirable, and we feel that this work when completed will be a permanent and important addition to surgical literature.

Volume I opens with an essay on the " Evolution of American Surgery," by Dr. Stephen Smith, of New York, an essay of sixty-seven pages. Dr. Smith has collected from well-known sources, apparently relying largely on " A Century of American Medicine," published in 1876, by S. D. Gross and his associates, a considerable mass of information in regard to the achievements of American surgeons; and he gives us in concentrated form a series of brief statistical biographies, accentuating the fact that American surgery in the past has been clinical surgery, that the best American surgeons have been great clinicians, and that with the exception of the introduction of ether anesthesia, their accomplishments have been in the field of practice rather than in laboratory research, original investigation and novel exploitation.

The remaining fourteen articles deal with " Surgical Pathology " (344 pages); " Complications and Sequelæ " (86 pages); " General Surgical Diagnosis " (190 pages); " General Surgical Treatment " (80 pages); and "General Surgical Prognosis " (26 pages), and are divided into five parts, the most important of which contain the articles on pathology and diagnosis.

In Part I the article on " Inflammation " is written by Dr. Alfred S. Warthin, of Ann Arbor, who gives us an admirable and satisfactory summary of present knowledge. He has been allowed abundance of space for his theme, and we recommend this section to every student of surgery. Dr. Albert G. Nicholls, of Montreal, contributes an article on " Disturbances of Nutrition," and, later in the volume, a comprehensive and satisfactory discussion of " Tumors and Tumor Formation." The latter article is especially notable for its classification of tumors, and the succinct, convincing manner of the author's presentation. " Processes of Repair " is a brilliant essay by Dr. Edward H. Nichols, of Boston, and abundantly sustains the author's reputation for clear-sighted investigation and sound statement. Dr. Theodore A. McGraw contributes a chapter on " Theories of Tumor Formation." Few men are better qualified to discuss this fascinating theme. Dr. McGraw gives us an interesting, philosophical essay which one reads with delight. Note his final sentence: " The riddle is not solved by these statements, but is differently presented. We have still to learn the nature of that physiological bond which makes the existence of complex organisms possible, the bond which is broken whenever and wherever a tumor exists." Under the caption, " Parasitical Relations of Cancer," Dr. Harvey R. Gaylord, of Buffalo, advances in his felicitous fashion the various arguments in support of the parasitical nature of cancer. Unfortunately, considerable portions of his essay strike the reader as confused, and as hastily and obscurely written. " Infections which sometimes occur in Various Surgical Diseases and Conditions," by Dr. Paul M. Pilcher, of New York, should have been included under the chapter contributed by Dr. Warthin. Dr. Joseph C. Bloodgood, of Baltimore, writes entertainingly of " Surgical Shock," and incidentally pays his respects to Crile, of Cleveland, and Wainwright, of Scranton, Pa. Dr. Joseph D. Bryant, the veteran editor of the work, supplies a long, exhaustive and extremely valuable article on " General Surgical Diagnosis "; while Dr. Harlow Brooks, of New York, writes of the " Diagnostic Value of the Body Fluids," and Dr. Preston M. Hickey, of Detroit, supplies a suggestive article on the " Epiphyses and their Radiographic Interpretation." This contribution of Dr. Hickey seems somewhat superfluous, for it is followed by the elaborate and masterly article on " Radiographic Work " by Mr. Walter J. Dodd and Dr. Robert B. Osgood, of Boston. Then follow two excellent essays with which the volume closes: " General Surgical Treatment," by Dr. James E. Moore, of Minneapolis, and " General Surgical Prognosis," by Dr. Leonard W. Bacon, Jr., of New Haven, Conn.

From such a mass of interesting and important writing it is impossible to extract and present in the allotted space here more than this brief synopsis. The volume contains a great deal of information; the personalities of the writers appear constantly; there is a refreshing freedom from dry statistical comment, and one feels on finishing the book that he has been touching hands with men actively and enthusiastically concerned with the subjects of which they write.

Helouan: An Egyptian Health Resort and How to Reach it. By H. OVERTON HOBSON, M.D. (Edin.), Egyptian Government Medical Director of the Baths, Helouan, etc. London, New York and Bombay: Longmans, Green & Co. 1906.

Helouan, sixteen miles south of Cairo by rail, three miles from the Nile, at an elevation of 150 feet from the river level and entirely surrounded by desert is a now well-known health resort. It has a dry, fairly equable climate, a good system of baths, a golf links and races, thus offering inducements to individuals or to families of varying degrees of health. This little book of less than 100 pages with 35 illustrations and two maps gives all necessary information in detail. Its author, Dr. Hobson, is the official successor of Dr. W. Page May, who was well known to many Americans, and from his office and experience is well qualified to do justice to Helouan.

On Tabes Dorsalis. The Lumleian Lectures delivered before the Royal College of Physicians, London, March, 1906. By David Ferrier, M.D., LL.D., F.R.S. 8vo. Pp. iv, 122. With 46 illustrations. New York: William Wood & Co. 1906.

In these lectures the author has preferred to deal somewhat exhaustively with a few matters pertaining to tabes, rather than to give a general but superficial survey of the whole subject. The first two lectures, therefore, are devoted solely to the pathology and pathogenesis of the disease. After a careful consideration of the subject, he rejects Marie's hypothesis that there is in tabes a posterior meningitis of a syphilitic character, although he admits that the posterior roots and columns are especially exposed to injury from noxious substances or toxins ascending in the cord, and he inclines to the belief that the "essential lesion of tabes is a dystrophy, similar to that induced by certain noxious agents, affecting the sensory protoneurone as a whole, and manifesting itself in degeneration of the peripheral and cerebral terminations, of which the intramedullary are the more vulnerable, and are usually the earliest to exhibit anatomical change." There is no hypothesis, however, " which is not open to several more or less serious objections." He believes, furthermore, that it would conduce to a truer conception of pathology to call both tabes and general paralysis by the one name of tabes, with the divisions of cerebral tabes (general paralysis), spinal tabes (locomotor ataxia), and cerebro-spinal tabes (tabo-paralysis). He rejects Ford Robinson's hypothesis of a *bacillus paralyticans* akin to the Klebs-Loeffler bacillus as the specific cause of these two affections, and thinks Strümpell's hypothesis more probable, " that the syphilitic virus under certain conditions so affects some viscus or gland that in time it develops and continues to elaborate some toxic internal secretion which exerts its noxious influence on the nervous system." The last lecture considers very fully the physiological pathology of tabes, especially with reference to ataxia, " which depends on impairment or loss of centripetal impressions of all kinds, conscious as well as unconscious, and, of these, those from the deeper structures (muscles, tendons, joints) are more important than the superficial." The other symptom considered is the tabetic pupil, which may be due to degenerative changes in the ciliary ganglion and ciliary nerves, which cannot transmit the reflex impulse of light, but can allow the more powerful stimulus from accommodation to pass through. The lectures are of decided interest and are more than a review of recent literature upon tabes, but are also the product of much original investigation. They cannot be neglected by any student of neurology.

Medical Guides and Monograph Series. Golden Rules of Pediatrics. Aphorisms, Observations and Precepts on the Science and Art of Pediatrics: Giving Practical Rules for Diagnosis and Prognosis, the Essentials of Infant Feeding and the Principles of Scientific Treatment. By John Zahorsky, A.B., M.D., Clinical Professor of Pediatrics, Washington University Medical Department, St. Louis. Pp. 362. St. Louis: The C. V. Mosby Medical Book Company. 1906.

This work is a collection of disconnected paragraphs which are, as stated in the title, aphorisms, observations and precepts on the science and art of pediatrics. They amount merely to the propositions which, as the author states in his preface, appear to him to be the most valuable. No pretension is made to completeness, consequently no criticism as to omissions are allowable. Little exception can be taken to most of the author's statements. We cannot agree with him, however, in preferring the naked ear to the stethoscope, and feel that he is too much inclined to give opium to children and that he puts too much syrup in his mixtures.

The book is not as large as would appear from the number of pages, as the print is very large and the margins wide. It in no way takes the place of a text-book but may prove of some use in emphasizing some of the more important points in pediatrics.

Polypus of the Nose. By Eugene S. Yonge, M.D. (Edin.), Honorary Assistant Physician, Manchester Hospital for Consumption and Diseases of the Throat. Manchester and London: Sherratt and Hughes. 1906.

This is a small book of one hundred and fifty pages, which deals with the whole subject of nasal polypus in a clear and instructive manner, but to the specialist is especially interesting from the author's studies of the etiology of the disease. After describing the ancient view of polypi, and discussing the theories of Woakes and of later authors, especially of Lack, in which disease of the underlying bone plays a prominent part, the author concludes from his own researches that polypi are edematous hypertrophies of the nasal mucous membrane, the indirect result of certain mechanical changes in the glands. These changes consist in partial closure of the excretory ducts accompanied by hypersecretion of the glands. By artificially producing these conditions in cats, he succeeded in causing the growth of polypi and polypoid degeneration in the cat's nose. The plausibility of the author's position calls attention to our ignorance of the uature of polypi and its associated conditions. The relation between polypoid degeneration and asthma and other vaso-motor disturbances has never been satisfactorily explained, but would seem to come in line with the author's theories of etiology as well as with previous ones. In addition to the excellent chapters on etiology, the book also contains chapters on pathology, diagnosis and treatment of polypi, so that it may be used as a student's manual of the disease. For cases in which more is required in the way of treatment than simple removal with a snare, the author advocates and describes the radical methods of Luc.

THE BOSTON

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OPERATIONS ON THE CENTRAL NERVOUS SYSTEM.

ONE of the most notable papers read at the recent meeting of the British Medical Association at Toronto was that of Sir Victor Horsley on "The Technique of Operations on the Central Nervous System."[1] Horsley unquestionably stands as the leading exponent of the surgery of the nervous system, and whatever he may say is as authoritative as is possible in a subject of this character. For many years Horsley has been operating with a considerable measure of success on the brain and spinal cord, and during that time has given out little of his experience and results for reasons best known to himself. It is, therefore, with particular satisfaction that we finally have from him a statement of his present position in matters of vital interest to surgeons and physicians alike. At the opening of his address he stated that exactly twenty years had elapsed since he had demonstrated before the association the first three patients upon whom he had operated for intracranial disease. The cases which he had observed during those years formed the basis of his communication.

We cannot in the space at our disposal do more than call attention to a few of the conclusions to which the study of these cases has led. It is insisted that the study of neurology should be advanced by every possible means to the end that tumors of the brain may be diagnosticated at the earliest possible moment. Much of the vital pathology and true anatomical nature of brain disease cannot be learned from post-mortem investigations, but must be studied in the living at every opportunity. The responsibility of the surgeon in the treatment of diseases of the central nervous system must be fully recognized. So long as our powers of diagnosis remain imperfect, the vulgar error of regarding operation as the last resort will continue to be committed. Correct diagnosis and rational operation should take the place of empirical medical treatment and delay. Operation when undertaken should be done for a definite purpose, either of palliation or cure.

Perhaps one of the most significant portions of the entire address is the insistence which Horsley lays upon operation for the relief of symptoms, notably optic neuritis. He maintains that it is now possible to be dogmatic on this question and that in no case of optic neuritis, due to intracranial disease, should the process be allowed to continue after it has once been diagnosticated, and that if operation is neglected, with blindness as a result, the responsibility lies heavy on the delinquent physician or surgeon. To accomplish the subsidence of an optic neuritis it is desirable to make a free opening in the dura mater rather than be satisfied with merely opening the skull. Horsley does not hesitate to say that blindness may with certainty be averted by opening the subdural space early in cases of intracranial disease. This statement, coming from such a source, should be most seriously pondered by those into whose hands cases of intracranial disease may fall. The so-called decompression operation, advocated by Cushing, Frazier and others in this country, is naturally designed to carry out this idea of reducing the optic neuritis as well as of relieving the other distressing symptoms of brain pressure.

In considering curative surgical procedures certain generalizations may also with justice be made. Special motor functions cannot be restored if the whole of their cortical representation is removed. This is also true, presumably, of the special senses. Compensation can, therefore, not be regarded as possible after the destruction of so-called middle level centers, whereas the higher sensory representations and the intellectual functions are not permanently abrogated by the destruction of any one part of the hemisphere. A warning is nevertheless given that as little injury be done the brain as possible and no more than is absolutely necessary removed. In regard to the cerebellum it appears that it may be bruised and injured to a considerable degree without permanent disturbance of function. In spite of this fact, Horsley is not inclined to go so far as Frazier in advocating the possible extirpation of a lateral cerebellar lobe in the removal of deep-seated tumors. Here, again, his experience has shown that it is desirable to preserve as much as possible of every portion of the encephalon.

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[1] Brit. Med. Jour., Aug. 25, 1906.

It will be of interest to American readers, and yet not altogether surprising, that ether is regarded as an inadmissible anesthetic in operations on the central nervous system. The danger of ether lies in the facts that it causes a rise of blood pressure, an increase of the blood venosity, and hence additional and troublesome hemorrhage. Chloroform, on the other hand, leads to a fall of blood pressure with less blood venosity, and consequently does not aggravate the bleeding. Chloroform, however, it is admitted, remains the more dangerous anesthetic.

The details of surgical technique, the reports of cases illustrative of various points in the discussion, the treatment of shock, consideration of sepsis, and many other matters should be read in detail by those interested. A careful reading of the paper leaves one with a feeling of great hopefulness regarding the future of this difficult branch of surgery. It also serves to impress the fact that what success is attained can only be after much experience and painstaking study both of neurological diagnosis and of surgical technique. It serves finally to impress the conviction that progress must be attained through specialism and that many cases must fall into the hands of one man if the requisite skill in operative procedure is to be attained. Horsley's accomplishments should certainly serve as a stimulus to neurologists and surgeons the world over.

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EXPERIMENTAL ANEMIAS.

The development of methods for counting and staining blood cells and estimating hemoglobin, especially the simplification of these methods so as to render them easily applicable to clinical work, has resulted, first, in the diagnosis of very many cases hitherto overlooked, and secondly, in a vast increase in our knowledge of the earlier stages of the anemias and of the pathology of the circulating blood in these and other conditions. Already the blood picture of pernicious anemia in its varying modifications is quite well understood. Post-mortem studies of the body tissues have taught us many facts with regard to the end stages of the disease, but much remains unknown as to the earlier stages, and as yet the important question of etiology is unanswered.

In the study of most diseases the clinical method and post-mortem study must eventually reach their end in results. New methods may, from time to time, extend the limits of possible discovery, but without the experimental method a complete understanding of the disease is probably unattainable. A great contribution of recent years to medical science has been the extension of the experimental method into the study of many diseases. While it must be remembered that there are many limitations in the application of results obtained in animal experiments to the explanation of human disease, yet it cannot be denied that many facts learned from animals do throw great light on the genesis and course of disease in man.

In pernicious anemia at first it was a question as to whether the condition was essentially different from that seen in a very severe secondary anemia. A study of the blood shows in most cases a picture different from that of cases known to result from severe or long continued slighter hemorrhages, and in animals bleeding never produces a condition very analogous to that seen in pernicious anemia. Recently Bunting [1] has succeeded in producing in rabbits a condition in which the circulating blood and the bone marrow showed conditions almost identical with those found in pernicious anemia in man. These were produced by injections of ricin or saponin, both vegetable poisons. Study of these animals at various stages of the disease compared with the study of animals in which an anemia was produced by repeated bleeding convinced Bunting that there is an essential difference between a primary and a secondary anemia. In the primary anemia there is a lesion, destructive in nature, of the hematopoietic tissues, not merely a continued destruction of blood cells. If we can reason by analogy to man, the future study of cases of pernicious anemia should reveal some toxin as yet undiscovered, the action of which is mainly on the bone marrow, producing injury of its tissues and perversion of its function. Some such toxic action had already been inferred from the results of clinical and post-mortem studies, and its formation associated with intestinal disturbances. Herter [2] concludes from his studies of the subject that the anemias are often closely connected with a toxic putrefactive process in the intestine initiated by a gas-forming organism of wide distribution,—the B. aërogenes capsulatus, — an hypothesis which at present does not seem sufficiently established to justify unreserved acceptance. If future work shows that a toxic substance is so formed, especially one whose action harmonizes with the results of Bunting's experimental work then a stronger claim may be made for this as the cause of pernicious anemia.

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[1] Jour. of Exp. Med., 1906, viii, 625.

[2] Trans. of Assoc. of Am. Phys., 1906, xxi, 725.

APPOINTMENT OF DR. GEORGE B. MAGRATH AS MEDICAL EXAMINER.

Announcement is made of the appointment of Dr. George B. Magrath as medical examiner for Suffolk County to succeed Dr. Francis H. Harris. This appointment will meet with universal commendation. Dr. Magrath, both by training and temperament, is peculiarly fitted for the arduous and at times difficult duties which this office entails. He was born in 1870 and for the greater part of his life has been a resident of Massachusetts. After graduating from the Roxbury Latin School, he entered Harvard College, and was graduated with distinction in 1894. His course at the Harvard Medical School, where he received his degree in 1898, was equally creditable. He was given the degree of Master of Arts by the university the subsequent year. Up to within something over a year he has been identified with pathological anatomy at the Harvard Medical School and at various hospitals in Boston and vicinity. He was for many years pathologist to Long Island Hospital in Boston Harbor, and did much toward establishing the department of pathology in that institution on a stable basis and thereby toward advancing the thoroughness of the hospital work and its wider usefulness. Since September, 1905, he has been identified with the work of the State Board of Health as assistant to its secretary, Dr. Charles Harrington.

On the purely technical side of his work Dr. Magrath comes well prepared, since he has personally performed between nine hundred and one thousand autopsies. This has made him one of the best gross pathological anatomists in the city. Such knowledge, combined with great capacity for work and a judicial attitude of mind, should peculiarly fit him for the responsible position which he is about to assume. The city we believe is to be congratulated upon his selection for this important post.

MEDICAL NOTES.

The Bender Hygienic Laboratory. — The third volume of studies from the Bender Hygienic Laboratory of Albany, N. Y., has recently appeared. The papers on various subjects connected especially with recent problems of pathology show a commendable activity in research under the general supervision of the director, Dr. Richard M. Pearce.

Resignation of Dr. William W. Keen. — Dr. William W. Keen has resigned the professorship of surgery in the Jefferson Medical College of Philadelphia and has been elected professor emeritus of surgery. Dr. Keen has been connected with the Jefferson Medical College for twenty-seven years.

A Smallpox Epidemic. — A smallpox epidemic of somewhat wide extent, which has recently visited Springhill, N. S., and adjoining parts of the country, has been traced to certain bedding and furniture stolen from a hospital occupied a year before by smallpox patients. The persons suspected of having stolen the bedding are said to have moved to Springhill previous to the outbreak.

The Future of College Athletes. — According to the conclusions of Dr. W. G. Anderson, director of the gymnasium of Yale University, college athletics tend to prolong life and to insure health. This conclusion is based on a statistical study of the mortality among members of Yale teams as compared with others who did not take part in athletics during their college course. The investigation extended over a period of fifty years. The conclusion is reached that athletes have a somewhat better chance for life than others. It is, however, evident that a very much larger statistical inquiry should be undertaken before any dogmatic assertion can be made in the matter.

Snow in Paris Streets. — The unusual occurrence of four inches of snow in Paris, which fell the day after Christmas, seems to have almost paralyzed the street cleaning department. The free use of salt is the usual adjuvant for dealing with the customary light falls of snow. It is reported that 37,000 francs' worth of coarse salt was used on this last occasion. The health authorities are now beginning to protest against this practice as dangerous to men and horses.

Sixth International Dermatological Congress. — The sixth International Dermatological Congress will be held in New York beginning the 9th of September, and continuing for one week. The first congress met in Paris in 1889, and since then at intervals of about three years there have been meetings in Vienna, London, Paris and Berlin. At the last meeting, held in 1904 in Berlin, Dr. James C. White, of Boston, was elected to preside over the forthcoming congress. The meetings will be open to the public. Physicians may become members of the congress by registering with the secretary-general, Dr. John A. Fordyce, of New York. Papers may be read in English, French, German, Spanish and Italian. Among the subjects selected for formal consideration are: The etiological relationship of organisms found in the skin in exanthemata; tropical diseases of the skin; immunization against syphilis, and the parasitology of syphilis.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Jan. 16, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 57, scarlatina 288, typhoid fever 7, measles 20, tuberculosis 62, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 16, 1907, was 21.30.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 12, 1907, was 266, against 198 the corresponding week of last year, showing an increase of 68 deaths and making the death-rate for the week 23.03. Of this number 144 were males and 122 were females; 262 were white and 4 colored; 162 were born in the United States, 98 in foreign countries and 6 unknown; 59 were of American parentage, 176 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 52 cases and 4 deaths; scarlatina, 203 cases and 0 deaths; typhoid fever, 2 cases and 3 deaths; measles, 18 cases and 1 death; tuberculosis, 42 cases and 22 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 46, whooping cough 0, heart disease 29, bronchitis 10 and marasmus 2. There were 9 deaths from violent causes. The number of children who died under one year was 42; the number under five years 55. The number of persons who died over sixty years of age was 72. The deaths in public institutions were 98.

There were 5 cases and 5 deaths reported from cerebrospinal meningitis during the week.

The Free Public Lectures at the Harvard Medical School. — The attendance at the first two lectures of the new public course at the Harvard Medical School was very satisfactory and gratifying, and much interest was manifested. On Saturday night, a stormy night, Dr. R. W. Lovett lectured to an audience of eighty people, and on Sunday afternoon Dr. E. H. Bradford lectured to one hundred and eighty. The attendance was about of the same character as that seen at a Lowell lecture.

Harvard Dental School. — Plans are perfected for the new building of the Harvard Dental School to be built on land immediately adjoining that on which the new medical buildings stand. Two hundred and fifty thousand dollars are required for purposes of construction and it is also desirable that an equal amount should be provided as an endowment fund. Only a small part of this money is now in hand, but it is hoped and expected that the friends and graduates of the school will combine to make it feasible to carry out the project which is necessary if the school is to continue its useful work in the community.

Bequest to Aid Medical Research. — By the will of the late Charles F. Harrington, a Boston merchant, Harvard College receives $50,000 under the provision that the income of this amount be employed to further investigations relating to the knowledge of infectious, communicable or kindred diseases. The fund may be invested separately or otherwise as the President and fellows may deem fit.

Two hundred thousand dollars is also left as a perpetual memorial to his father and mother, the income of which is to be particularly directed toward the health and happiness of children.

Mayor Fitzgerald's Attitude toward Tuberculosis. — At the recently held inauguration of the Boston city government for 1907, Mayor Fitzgerald spoke at considerable length on the question of tuberculosis in the city. Since assuming office, one year ago, the mayor has been urgent in the establishment of a hospital with the fund provided under a previous administration. This has now been done under the immediate supervision of a board of seven unpaid trustees. In this address he urges further provision for this class of patients and calls attention to the crowded condition of the hospitals where they are now received. He urges the immediate need of a special clinic for consumptives and for a wider dissemination of knowledge relating to the prevention of the disease. To this latter end he has had distributed, under the supervision of the trustees, a pamphlet on the nature of tuberculosis its means of prevention and advice both to the well and sick. The mayor's order is printed in this pamphlet together with a list of regulations to prevent the spread of the disease in municipal buildings, offices and work shops.

NEW YORK.

A Centenarian. — Mrs. Mary Richardson died at Stapleton, Borough of Richmond, New York City, on Jan. 9, at the apparently well authenticated age of one hundred and ten years. She is stated to have been born in Donegal, Ireland, in January, 1797, and she had resided on Staten Island for the past seventy years.

Association for Improving Condition of the Poor. — In the sixty-third annual report of the New York Association for Improving the Condition of the Poor it is stated that among the expenditures of the year was $965 which was devoted to obtaining the data necessary to convince the Board of Estimate and Apportionment that an extra appropriation should be made to the Health Department for the examination of school children for the removal of physical defects, and that the sum of $123, used with discrimination, resulted in the passage of the Sea Beach Park bill, through which the city is enabled to expend $2,500,000 for a great ocean park for the poor "To have spent money in homes of cripples," the report says, "would never have taught millions of parents that crippled children were unnecessary, that their condition is caused by neglect and can often be cured at the seashore. Nor would it have raised $250,000 for a new hospital for crippled children suffering from bone tuberculosis, and interested a score of communities in giving their cripples a chance of life and cure by out-of-door treatment. The association's contributors are told over and over again, in letters and by reports, that it is doing its utmost to exterminate itself, to make itself unnecessary, by removing conditions which breed dependence. It emphasizes the educational use of its experience in relief work to secure pure milk, enforce school laws and the proper use of school children's time, and to wipe out consumption. We started sixty years ago to do educational work, and will not admit that the educational work done by this association last year was not as important as that done by Columbia University."

American Chemical Society. — At a meeting of the New York Section of the American Chemical Society held Jan. 11, the new Pure Food and Drug Act formed the topic of discussion, and the general opinion was expressed that although the law went into effect only on Jan. 1, its moral effect was already widespread. Among those who spoke were Dr. Nellis B. Foster, of the medical department of Columbia University; R. Z. Doolittle, of the United States Food Laboratory in New York, and Dr. Virgil Coblentz, of the New York College of Pharmacy. In the course of his remarks, the last-named said that one of the benefits of the act which would be felt earliest was its operation against the sale of cocaine, the use of which had become alarmingly prevalent. It was being largely employed in the manufacture of catarrhal snuffs, and was more dangerous and injurious than morphine, because of its more extensive use. The chief address of the evening was to have been made by Dr. H. W. Wiley, of Washington, but, as he was prevented from attending, he sent a paper which was read by the chairman of the meeting. In it Dr. Wiley stated that new laboratories were to be established in Buffalo, Charleston, Jacksonville, Galveston, St. Paul, St. Louis, Detroit, Denver, and Seattle or Portland, Ore. He expressed the opinion that the law would be enforced in a spirit of fairness towards business interests, and said that an important part of the work of the government would be the regulation of added substances, used to preserve and to color foods. As regards meats, the added substances would be limited to salt and other harmless condiments, sugar, vinegar, wood smoke, and, pending investigation, saltpetre. The researches carried on in the Bureau of Chemistry had shown the injuriousness of sulphites, and these would be placed on the forbidden list.

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Obituary.

WALTER A. LECOMPTE, M.D.

Dr. Walter A. Lecompte died at a private hospital in Boston, Jan. 13, at the age of thirty-six. The immediate cause of death was peritonitis, following an operation for appendicitis, which, although undertaken shortly after the onset of the attack, proved unsuccessful because of an antecedent perforation of the appendix. For several days preceding his death little hope was entertained of his recovery.

Dr. Lecompte was born in 1870 in Syracuse, N. Y., was graduated from Harvard University in 1893 and from the Harvard Medical School in 1897. He served thereafter as surgical house officer at the Massachusetts General Hospital, and after a year's study abroad returned to Boston and established himself in practice as an aurist. He was soon appointed on the staff of the Eye and Ear Infirmary and for several years had been visiting aurist to the Long Island Hospital. He was also an assistant in otology, at the time of his death, in the Harvard Medical School, and was a popular and enthusiastic teacher.

During the comparatively few years of his active medical practice he had shown himself a man of great industry and capacity. His interests extended beyond the actual practice of his profession, and at the time he was taken ill he was engaged in original work of importance. He was regarded with much affection by a wide circle of friends and his loss will be felt not only by those with whom he came into intimate professional contact, but by many others who knew him as a man of sterling character and unusual accomplishments. Dr. Lecompte was not married.

Current Literature.

The Journal of the American Medical Association.
Dec. 29, 1906.

1. *Musser, J. H. *The Management of Tuberculosis.*
2. *Carstens, J. H. *The Stem Pessary for Amenorrhea and Dysmenorrhea.*
3. Marcy, H. O. *The Best Method of Closing Aseptic Wounds.*
4. *Morrell, J. *Cases of Meningitis with Isolation of the Diphtheria Bacillus.*
5. *Butler, W. J. *Etiology of Cerebral Palsies in Children.*
6. *Cook, J. C. *Bacteriologic and Blood Findings in Bowel Infection of Infants.*
7. *Einhorn, M. *The Dietetic Treatment of Diabetes Mellitus.*
8. Robinson, W. J. *Strychnin and Hydrastin in Sexual and Vescical Weakness.*
9. *Halsted, W. S. *Results of Occlusion of the Abdominal and Thoracic Aorta by Metal Bands.*
10. *Pillsbury, H. C. *Reduplication of Heart Sounds.*
11. Novy, F. G.; Knapp, R. E. *Cultivation of Spirillum Obermeieri.*
12. *Otis, E. O. *The Tuberculosis Dispensary.*

1. Musser calls attention to the number of forms of treatment of tuberculosis which have held a fleeting popularity, only to be discarded. Perhaps some have been of value, but the moral which history points out is that we should be conservative in accepting new methods. Certain tendencies to-day need correction. The public are dangerously educated as to the curability of tuberculosis; all that we can say is that tuberculosis is *sometimes* curable. The sanatorium treatment is placed on too high a pedestal. Sanatorium treatment and methods are only a fraction in the great struggle. The premature statements of Koch, Behring and others should warn scientific workers against hasty conclusions. The danger of political control of institutions is to be guarded against, so that sanatoria may be conducted by competent physicians, and with definite principles of administration. In the management of cases, no patient should be cleared of suspicion or condemned on one examination, if there is the slightest doubt; but once the diagnosis is made, with certain exceptions, the patient should be told at once the nature of his illness. Notification of the public authorities should be universal. In treatment rely upon rest, fresh air and food. Drugs are of service only to influence digestion, circulation or the blood. Climate is of positive value, but only if obtainable without too great sacrifice.

2. Carstens advocates the use of the stem pessary in cases of amenorrhea with infantile or atrophied uterus, believing that while the pessary is worn the irritation causes muscular contraction from which muscular development results. He prefers the stem pessary to dilatation in cases of dysmenorrhea due to stenosis, or to the fibrous atrophy of the cervix which is met with in unmarried women. The uterus is dilated and curetted under an anesthetic, and the Hodge-Thomas pessary inserted, to be worn from three months to a year. One absolute contra-indication to this procedure is the existence of active or latent pelvic inflammations.

4. Morrell reports a case of general tuberculosis in which the bacillus or diphtheria was isolated from the cerebrospinal fluid.

5. Butler classifies the cerebral palsies of children, according to the period of the appearance of lesions, as antenatal, natal and postnatal. Those of the first class are most commonly due to embolism or thrombosis of vessels, resulting from infections of the mother or the fetus. Birth palsies are due to meningeal hemorrhage from trauma or prolonged labor or prolonged asphyxia. Postnatal hemiplegias may occur from hemorrhages induced by the intense congestion in convulsions or other conditions; they occur also from thrombosis or embolism or rarely from brain tumor, as in adult life. A cause of disputed but probably great importance is acute encephalitis.

6. Cook publishes a table of blood examinations in thirty-six cases of bowel infection in infants. No bacteriological examinations appear.

7. Einhorn summarizes the dietetic treatment of diabetes, giving the diet list which he habitually prescribes. He mentions the oatmeal cure of von Noorden, recommended especially in grave cases, in which 250 gm. of oatmeal, 100 of vegetable albumin and 300 of butter, combined in a soup are given as a daily ration. He considers the treatment of cases complicated by stomach disorders. For hyperacidity, the diabetic diet is not changed. For achylia gastrica, a modified diet is described in full. In acute digestive disturbances the diet must be planned without considering diabetic restrictions until improvement occurs.

9. Halsted has occluded the aorta, partially or completely, in a large number of dogs. The blood pressure in the distal portion was at first lowered in proportion to the degree of occlusion, but rapidly returned to approximately normal. Some partial occlusions later spontaneously became complete. A remarkable result noted about three months later, in a number of cases, was a deposit of extradural fat about the spinal cord below the site of the aortic band, seemingly under considerable tension. In the human subject Halsted has partially occluded the innominate artery once, and the common carotid four times.

10. Pillsbury concludes that persons with thin chest walls normally show reduplication of heart sounds, whereas those with thick chest walls do not. In these latter, the occurrence of reduplications is significant. Reduplication of the first sound means that the heart is not working properly, whether from nervous interference, the disturbing influence of abnormalities of neighboring organs, or inefficiency of the heart muscle itself. Reduplication of the second sound as well means only a more advanced degree of the same conditions. Reduplication of the second sound alone means an alteration in the relative blood pressures of the systemic and the pulmonary circulations.

12. Otis describes the methods and experience of the Boston Tuberculosis. Dispensary The patient is studied both socially and medically, every fact of his history and environment that can bear on this disease is looked up at the clinic or by the visitor or nurse at the home, and he is thoroughly educated in the hygiene of tuberculosis so that others may not suffer from his ignorance. Of course, this requires the co-operation of the patient, which is not always thoroughly given, and in crowded tenement districts a suitable environment is not always possible. A fairly full history is taken and an examination is made at the dispensary, the patient is weighed, pulse and respiration are taken, graphic diagrams are given as to the lung conditions, and the sputum is examined if obtainable; if not, the patient is requested to bring a sample at the next visit. In case of doubt, recourse is had to the tuberculin test or the x-ray, though the latter is only of limited value. If the diagnosis is positive the case is reported to the board of health and the name and address put on the visiting nurse's card, on which are questions relating to domiciliary hygiene, etc. When filled, this card is filed with the history and examination papers, and the data from subse-

quent visits are likewise kept on file. The patient is instructed as to his condition and what he is to do, and in most cases some medical treatment, as indicated, is given. A tuberculosis dispensary is extremely valuable, Otis states, for teaching purposes, and offers a favorable field for research work and the study of all questions relating to the disease. It requires but little and simple equipment; a microscope, two rooms if more are not available, staining reagents, a stethoscope and an enthusiastic physician to use them, and a visitor, who may be a volunteer layman, with an altruistic spirit, tact and common sense are the essentials.

Bulletin of the Johns Hopkins Hospital.

January, 1907.

1. Meyer, A. W. *Some Characteristics of the Medicine in Shakespeare.*
2. *Sampson, J. A. *The Various Types of Carcinoma Cervicis Uteri.*
3. *Carrel, A. *The Surgery of Blood Vessels.*
4. Emerson, C. P. *The Blood of Normal Young Adults.*

2. Sampson describes the various forms of cancer of the cervix uteri, with many excellent illustrations. Cases of cancer of the uterus give a history of a bloody discharge in 93%. Women should be educated as to the importance of heeding this warning. Following the types of epithelium of the cervix, the carcinoma may be of squamous cell or of cylindrical cell type (adenocarcinoma). These growths may occur either upon the vaginal portion of the cervix or within the cervical canal. Both may be vegetative (cauliflower) or infiltrative (ulcerative) in form. The squamous cell vegetative growth arising from the vaginal surface of the cervix is the most easily diagnosed and the least malignant. The difficulty of diagnosis and the malignancy is greater in the infiltrative forms. Most malignant of all is the adeno-, or cylindrical cell, carcinoma of the cervical canal.

3. Carrel describes the technic of operations upon blood vessels, such as diminishing the size of the lumen, anastomoses and transplantations. He has performed many such operations upon animals for various purposes, such as the modification of circulation of a limb by reversing the blood current, through implantation of artery upon vein and vein upon artery. By similar methods he has attempted to increase the circulation of the brain. Replantations and transplantations of limbs and of organs have been performed with considerable success. Hope is expressed that in the future these methods may find clinical application.

The Lancet.

Dec. 22, 1906.

1. Mark, L. *Art and Medicine.*
2. *Green, T. A. *Heart Massage as a Means of Restoration in Cases of Apparent Sudden Death with a Synopsis of Forty Cases.*
3. Berry, J. *Large Arterio-venous Aneurysm of the Neck Treated by Excision.*
4. White, R. G. *Note on Three Interesting Heart Cases.*
5. *Bonney, V. *The Treatment of Ovarian Prolapse by Shortening the Ovarian Ligament.*
6. *Newman, D. *An Operation for the Cure of Prolapsus Ani and Internal Hemorrhoids.*
7. Ware, E. E., and Glover, L. G. *A Case of Intussusception and Volvulus Occurring at Intervals in the same Patient; with Operation and Recovery.*
8. Crendiropoulo, M., and Amos, C. B. S. *Further Observations on the Influence of Calcium Chloride on the Agglutination of Vibrios.*

2. Green gives an interesting and clear discussion of the subject of heart massage, presenting two cases of his own in detail and a brief synopsis of forty other cases collected from the literature. Heart massage is based on animal experiments commenced by Schiff in 1874. Green's first case was a boy of nine who after a few whiffs of chloroform for a small operation, stopped breathing and soon became pulseless and apparently dead. Ordinary measures proving of no avail, the abdomen was opened and direct massage on the heart commenced. In about three minutes the heart began to beat again, and, although the boy did not regain consciousness, continued to beat for twenty hours till death took place. The second case was one of diphtheria in a child of three years, who suddenly had an attack of syncope and stopped breathing. As in the first case, the abdomen was opened and the heart massaged. In five minutes it resumed beating and kept it up for one and one-half hours longer, when it finally stopped. The great majority of cases in which this has been tried is in syncope following chloroform anesthesia. There are four methods which the writer describes to gain access to the heart: (1) The thoracic method; (2) the transdiaphragmatic method; (3) the subdiaphragmatic route and (4) Crile's method by indirect massage through the chest wall, a rubber suit compressing abdomen and extremities. A table giving the particulars of nine successful cases is presented. The writer believes that to be successful, heart massage must be accompanied by artificial respiration and its adjuncts. He believes that in suitable cases this method of resuscitation is of distinct value. His method of procedure in a given case would be: (1) Immediate lowering of the head and artificial respiration; (2) if the abdomen is open, pressure on the abdominal aorta to confine circulation to the upper part of the body, and if it is not open, intravenous injection of adrenalin solution and a Crile rubber suit; (3) normal saline injections; (4) if the above methods have not been successful, direct massage on the heart by the subdiaphragmatic route.

5. Bonney describes a simple operation by which he shortens the ovarian ligament in cases of ovarian prolapse. When symptoms are due to displacement of the ovary alone he does nothing else; where the uterus is also out of its normal position both ovary and uterus must be put back into position. In chronic disease of the tube and ovary he first frees the ovary from the tube and then shortens the ovarian ligament.

6. Newman records very satisfactory results in prolapsus ani and internal hemorrhoids from cauterizing, by means of a fenestrated speculum, six narrow strips of rectal mucous membrane, 4 in. long and ¼ in. wide. The sensitive area of the anus is not touched so the patient suffers no shock and little pain afterwards. The adhesions formed being in longitudinal bands and not transverse rings, never tend to form strictures. The sphincter is uninjured and acts normally after operation.

British Medical Journal.

Dec. 22, 1906.

1. *MacCombie, J. *An Address on the Exanthem of Scarlet Fever and Some of Its Counterfeits, and the Clinical Significance of Skin Hemorrhages in Diphtheria.*
2. Adami, J. G. *A Discussion on the Physiology and Pathology of the Nucleus.*
3. *Klotz, Oskar. *A Discussion on the Classification and Experimental Classification of Arteriosclerosis.*
4. Mott, F. W. *Changes in the Nervous System Produced in Chronic Trypanosome Infections.*
5. Nicolle, M., and Mesnil, F. *Treatment of Trypanosomiasis by the "Colours of Benzidine."*
6. Ballah, J. R. *Notes upon Experiments with Vaccine Lymph.*
7. *Beattie, J. M. *A Contribution to the Bacteriology of Rheumatic Fever.*
8. Muir, R., and Martin, W. B. M. *On the Cambining Properties of Opsonins of Normal Serum.*
9. *Delezenne, E. *The Acceleration of the Action of the Pancreatic Juice by the Salts of Calcium.*
10. Beebe, S. P. *Nucleoproteid Immunity.*
11. Folin, O. *The Metabolism of Creatin and Creatinin.*
12. Mendel, L. B. *Chemical Studies on Growth.*
13. Moore, B., Roaf, H. E., and Whitley, E. *The Effect of Iron on Growth and Cell Division.*
14. Hunt, R., and Taveau, R. de M. *On the Physiological Action of Certain Cholin Derivatives and New Methods for Detecting Cholin.*
15. Scott, F. H. *On the Liberation of Phosphorus from Nuclein Compounds.*
16. Barger, G., Carr, F. H., and Dale, H. H. *An Active Alkaloid from Ergot.*
17. Nicloux, M. *Estimation of the Quantity of Chloroform in Blood and Tissues.*

18. Kemp, G. T., Harris, C.E., and Calhoun, H. *Some Observations on the Microchemistry of the Blood Plates.*
19. Carrel, A., and Guthrie, C. C. *Transplantation of Blood Vessels and Organs.*
20. Hodge, C. F., Dellinger, O. P., and Duncan, F. W. *Evolution of Elementary Tissues in Relation to Physiological Function.*
21. Herring, P. T., and Simpson, S. *The Lymphatics of the Liver.*
22. Macleod, J. J. R. *Experimental Glycosuria.*
23. Henderson, V. E. *On the Excretion of Urine.*
24. Clarke, R. H., and Horsley, V. *On a Method of Investigating the Deep Ganglia and Tracts of the Central Nervous System (Cerebellum).*
25. Lapicque, L. *The Electrical Excitation of Nerves and Muscles.*
26. Mott, F. W. *The Physiological Significance of the Convolutional Pattern in the Primates.*
27. Simpson, S., and Herring, P. T. *The Conduction of Sensory Impressions in the Spinal Cord.*
28. Roaf, H. E., and Sherrington, C. S. *The Mechanism of "Locked Jaw" Produced by Tetanus Toxine.*
29. Lee, F. S. *The Causes of Fatigue in Certain Pathological States.*
30. Meltzer, S. J., and Aner, J. *Vagus Reflexes upon Œsophagus and Cardia.*
31. Dixon, W. E. *Vagus Inhibition.*
32. *Morrow, W. S. *The Various Forms of the Negative or Physiological Venous Pulse.*
33. Henderson, Y. *Acopnia as a Factor in Shock.*
34. Tooke, F. T. *Chronic Suppurative Dacryocystitis and Its Radical Treatment.*

1. MacCombie describes the twofold character of the rash in scarlet fever, a finely punctate papular portion and an erythematous portion. The first is the more important for diagnosis. He then speaks of the various erythemata which may simulate this scarlet fever rash, as found in measles, smallpox, chickenpox, enteric fever, scalds and in diphtheria after antitoxin. He describes skin hemorrhages as seen in diphtheria and emphasizes the extremely bad prognosis in these cases. In two hundred cases with hemorrhages in his own experience, death resulted in nearly all.

3. Klotz does not agree with Sores' narrow limitation of the term "arteriosclerosis," but takes it in its broader sense, including all varieties of scleroses or hardenings of the arteries. There may be two or more processes in this disease of the vessel walls. Early experiments on artificial arteriosclerosis have merely shown that all the coats of the arteries take part in an inflammatory process by direct extension from without. Despite many attempts very little advance was made in the experimental production of this condition until 1903, when Josué injected adrenalin into the veins of rabbits and produced definite pathological changes in the vessels. Klotz has confirmed these experiments, using adrenalin and barium chloride, with similar arterial changes with each drug. In no instance did he note a primary change in the intima. When drugs are given to lower blood pressure, along with the adrenalin, the arteries are still affected. The part most severely affected is the thoracic aorta. He produced an infective arteriosclerosis by using cultures of B. typhosus and streptococcus. With injections of these organisms he found thickenings of the intima, but no calcification, thus differing entirely from the lesions produced by adrenalin and barium chloride. Lesions were found in the pulmonary artery, while when adrenalin was used the aorta and its branches alone were involved; the changes were purely of a proliferative nature. When diphtheria toxin was used only a degenerative type of sclerosis was found similar to that from adrenalin. He concludes: (1) That drugs causing high pressure produce degenerative changes. (2) The muscle cells of the media are first attacked. (3) This is followed by fatty changes, then calcification. (4) Secondary changes in the intima are of a proliferative nature.

7. Beattie believes that the bacterial origin of rheumatic fever needs no defense; it is only as to the nature of the specific organism that there is room for discussion. He deals chiefly with various objections which have been raised to the view that the diplococcus of Wassermann is the causal agent. The fact that this diplococcus is found early in the disease in special localities and not in the blood stream would show that it is not merely a terminal infection. That this organism is not merely a variety of the streptococcus pyogenes he considers well proved. In its morphological characteristics and staining reactions it is indistinguishable from streptococcus pyogenes; culturally it is quite distinct. He summarizes his results in inoculation experiments using the micrococcus rheumaticus in one series and the streptococcus in another, showing the marked differences in results obtained from these two organisms. He thinks it is proved beyond a doubt that the micrococcus rheumaticus is a distinct organism.

9. Delezenne has shown by experiment that a small amount of lime salts mixed with pancreatic juice has a remarkable action, which he believes to be specific, in accelerating the digestive power.

32. Morrow gives a full exposition on physiological venous pulse. Thus was first described by Morgagni in 1762 and ever since has been a subject of dispute. In a pulse tracing over a vein there are found six distinct waves to every beat. The cause of each of these waves, positive or negative, he discusses in detail, illustrating with many tracings. He concludes that a so-called auricular venous pulse is a normal occurrence in man. He used the Baltimore kymograph and Hürthle's large kymograph with a membrane manometer.

Deutsche Medizinische Wochenschrift, No. 51.
Dec. 20, 1906.

1. *Barth, A. *The Differential Diagnosis of Peritonitis.*
2. Haberern, J. P. *The Diagnosis of Incarcerated Femoral Hernia.*
3. Franck, O. *Intubation Stenosis of the Larynx Following Secondary Tracheotomy.*
4. Opitz, E. *Vaginal Douches and Disinfection of the Hands.*
5. * Offergeld. *A Case of Sciatica Due to Retroflexion of the Uterus.*
6. Gomperz, B. *An Artificial Membrana Tympani of Paraffin and Silver.*
7. Schindler, C. *The Treatment of Gonorrheal Epididymitis.*
8. *Klug. *Viscolan., a New Basis for Ointments.*
9. Uhlenhuth, P. *Diversion of the Complement and Differentiation of the Albumins of the Blood.*
10. Klose, H. *The Hemorrhagic Diathysis in Scarlet Fever, with Remarks on the Gelatine Treatment.* (Continued article.)
11. Feilchenfeld, W. *Are "Orthocentric" Eye Glasses to be Recommended?*
12. Durante, F. *Surgery among the Arabs.* (Concluded.)

1. Barth points out that the symptoms of the early stages of septic peritonitis are different from those usually given in the text-books. Fever is practically always present at the outset, but may be lacking in the later stages. The pulse is at first full and not over 100; it is only in the last stages that the Hyppocratic facies and rapid thready pulse are observed. Vomiting is constant in those cases that start from the appendix. Spasm of the abdominal wall is always present in cases of appendicial origin, and its extent shows how much of the peritoneum is involved. Spasm is lacking, however, in those cases in which the appendix is walled off and the abdomen is filled with a sterile serous exudate. Meteorism is another symptom given in the text-books, but not present in the early stages, when the abdomen is usually retracted. The gonorrheal pelvic peritonitis on the other hand shows a rapid pulse and meteorism from the beginning, but spasm is lacking. The diagnosis can be made from the marked tenderness on palpation of the posterior cul-le-sac and on movement of the uterus. The distinction between these two forms of peritonitis is usually possible from the criteria above mentioned, and is important because the appendicial form demands immediate operation, while the gonorrheal usually subsides in a few days, if let alone. Puerperal peritonitis resembles that due to the gonococcus in the presence of meteorism and the absence of spasm.

5. Offergeld's case of sciatica was due to pressure on the right sciatic nerve from a retroverted adherent uterus.

Neuritis was probably present, for there were sensory disturbances and loss of the Achilles tendon reflex. An operation for the correction of the uterine displacement resulted in complete cure.

8. Viscolan is a new salve containing viscin, a sticky substance derived from the bark of certain plants. It owes its virtue to ability to absorb secretions, and is excellent in the treatment of chronic ulcers of the leg.

Münchener Medizinische Wochenschrift, No. 51. Dec. 18, 1906.

1. *Schöne, G. *The Production of Immunity against Cancer in Mice.*
2. Schwab, M. *Venous Thombosis and Coagulability of the Blood.*
3. Martin, M. *Studies on the Influence of the Tropical Sun on Pathogenic Bacteria.*
4. Franke, E. *The Surgical Treatment of Appendicitis and Its Sequels.*
5. Herz, M. *The Surgical Treatment of Paralytic Flail Joints.*
6. Pribram, E. *The Behavior of Agglutinins in Passive Immunization.*
7. Hoeflmayr, L. *Three Cases of Neuralgia of the Tongue.*
8. Reichert, C. *A New Condensor Designed to Render Ultramicroscopic Bodies Visible.*
9. Kuhn, F. *The Use of Net Lace (Tüll) in Skin Grafting.*
10. Wrzosek, A. *Remarks on the Aërobic Cultivation of an Anaërobic Bacteria.*
11. Kossmann, B. *Statistics on Gonorrhea.*
12. *Hoffmann and Fränkel. *Infantile Scorbutus.*
13. *Vierordt, O. *The Value of Physical Methods of Treatment in General Practice.* (Concluded.)
14. Knauer, G. *Negative Diagnosis.*

1. Schöne reports, from Ehrlich's institute, results of work on the production of artificial immunity against cancer in mice. It was shown by Jenson, Ehrlich and others that immunity against the form of cancer found in mice can be produced in these animals by injections of emulsion formed from these tumors. This immunity protects not only against cancer, but against sarcoma and to a slighter degree against chondroma. Schöne was able to produce a similar immunity by the injection of emulsion of normal mouse embryos. Injections from various organs of mice showed only a slight immunizing power, possibly due to the blood they contained, for Bashford has shown that the injection of mouse blood may produce immunity. The author leaves it open whether this form of immunity is identical with that obtained by the injection of tumor emulsion.

12. Polemic between Hoffmann and Fränkel on priority.

13. Vierordt emphasizes the importance of individualizing in the use of physical methods of treatment (balneo-, climato- and hydro-therapy, etc.). Such treatment is best carried out by specialists, but should be under the general direction of the practitioner, for the former's point of view is necessarily limited and he cannot direct general treatment as well as the family physician. Explicit directions should be given in writing in every case as to the duration, grade and form of therapy to be administered. The general practitioner should make himself acquainted with the different forms and indications for the use of the physical methods.

Zeitschrift f. Klin. Medizin. Bd. 60, Hft. 5 and 6.

1. *Senator. *Erythrocytosis (Polycythemia Rubra) Megalosplenica.*
2. Mosse. *Changes in the Liver Cells of Nephrectomized and Fasting Animals, a Contribution to the Knowledge of Acidosis.*
3. *Géronne. *A Contribution to the Knowledge of Alternatingly Dilated (springenden) Pupils.*
4. Géronne. *Erythema Nodosum Hemorrhagicum and the Relation of Erythema Nodosum to Purpura.*
5. *Bibergeil. *Experimental Investigations on the Presence of Sugar in Nephritic Hydrops.*
6. *Brodzki. *The Secretion in Nephritic Urine of Proteids Which Alter the Coagulation Time of Blood Plasma.*
7. *Georgopulos. *An Experimental Contribution to the Study of Renal Edema.*
8. *Blanck. *An Experimental Contribution to the Pathogenesis of Renal Edema.*
9. *Leopold. *Hemolysis in Nephritis.*
10. *Leopold. *The Action of Salts on the Kidneys (in Animals).*
11. Strauss. *Observations on the Water Content of the Blood Serum in Cardiac and Renal Edema. A Contribution to the Question of the Origin of Hydrops.*

All of the papers in this number come from the clinic of Professor Senator in Berlin. Most of them concern the problem of nephritis.

1. Senator reports two cases of polycythemia with careful studies of the blood, nitrogen metabolism and respiratory gases. He believes that in this disease there is an increased formation rather than a decreased destruction of red blood cells.

3. Géronne describes a case in which at times the right pupil was dilated, at other times the left. This change followed change in the patient's posture, the pupil on the side on which the patient had been lying was the one dilated. Autopsy revealed a high grade mitral stenosis with considerable enlargement of the left auricle. The writer believes the phenomenon was due either to the pressure on the cardiac branches of the sympathetic nerves of an enlarged abnormally movable heart, or to intracranial pressure changes, resulting from obstruction produced by the heart and in the region of the superior vena cava, the degree varying with changes in the heart's position. The causative relation of the enlarged heart seemed undoubted and is noted for the first time in this case.

5. Richter has shown that the injection of uranium nitrate in animals results in the production of a nephritic hydrops. Bibergeil found in rabbits that the fluid of such a hydrops regularly contained glucose, but that this could not be increased in amount by the simultaneous ingestion of sugar or the use of phloridzin.

6. Brodzki by salting and dialyzing obtained from the urine of nephritics a proteid substance which decreased the coagulation time of blood plasma.

7. Georgopulos discusses the very extensive literature of renal edema and especially that bearing on the question of the causative relation of salt retention. In the experimental nephritis of rabbits he has studied carefully the urine, blood, hydropic fluid and body tissues with reference to their chloride and water content, freezing point and refraction index. As a result of this he concludes that there is no constant relation between the water and chloride excretion of the kidney. In cantharides and uranium nitrate nephritis there is no evidence that the water retention is due to a chloride retention; on the contrary, there appears to be a primary disturbance of the water secreting power of the kidney. In these animals there is a hydremic plethora, but that alone is not sufficient to produce edema since it can exist without there being edema. In addition to the hydremia some toxic substance must be present to act on the blood vessels and cause a transudation. This substance is present in uranium nephritis, but not in some other forms of experimental nephritis. Georgopulos thinks that the therapeutic reduction of water taken by a nephritic patient is not justifiable in cases in which the water secreting power of the kidney is not reduced, since the increased fluid may serve to dilute toxic substances in the body and prevent edema. Moreover, a certain amount of edema may be considered a conservative process for this same reason.

8. Blanck shows that in experimental nephritis without hydrops, hydrops can usually be obtained by injections of the serum obtained from animals in which nephritis has been produced by uranium nitrate. The substance contained in the serum has a lymphagogic action.

9. Leopold shows that the urine of both natural and experimental nephritis has an increased hemolytic action. Ascitic fluid is also hemolytic.

10. Rabbits given small doses of sodium chloride by mouth show a distinct albuminuria in four days, with hyperemia and cloudy swelling of the kidneys. Later, the

changes are more marked, with granular degeneration, and, in some cases, intracapsular exudate. The feeding of sodium phosphate produces fatty degeneration in three days and the renal changes following the ingestion of phosphates are more severe than those following chlorides. Both these substances exert an injurious influence on the kidneys and in the dietary of nephritics should be avoided as much as possible.

Miscellany.

CREMATION IN GREAT BRITAIN.

Cremation continues to make steady if somewhat slow progress in Great Britain. Mr. Herbert T. Herring, medical referee of the Cremation Society of England, has obligingly supplied us with the following figures: The total number of cremations in Great Britain during the year 1906 was 742, being an increase of 138 on the number for the previous year. The total number of crematories now at work is 13. Of these the oldest is at Woking, which was opened in 1885; next in order of foundation come Manchester (1892), Glasgow (1895), Liverpool (1896), Hull and Darlington (1901), Golder's Green and Leicester (1902), Birmingham (1903) and Ilford (City of London Corporation), Leeds (Municipal), Bradford and Sheffield (1905). The cremations were distributed among these various places as follows: Golder's Green, Hampstead, 298; Woking, 140; Manchester, 90; Liverpool, 46; Glasgow, 44; Birmingham, 25; Ilford, 23; Leeds, 15; Hull, 17; Darlington and Bradford, each 13; Leicester, 12; Sheffield, 6. It will be seen that Golder's Green still heads the list. There were 42 more cremations in 1906 than in the previous year, and the total number since its opening in 1902 is 933. Woking shows a somewhat larger increase (45) during the past year; the total number of cremations carried out there since 1885 is 2,888. Manchester shows a slight falling off (7) as compared with 1905; the total number since 1892 is 1,028. Of the other places, Ilford shows an increase during last year of 14, Bradford of 12, Liverpool of 11, Glasgow and Darlington of 9, Birmingham of 3; on the other hand, cremations have fallen off at Leicester by 4 and at Leeds and Sheffield by 1. The total number of cremations carried out in this country since 1885 is 5,763. From the facts here stated we think it may fairly be deduced that the public mind is gradually becoming habituated to the idea of cremation; appreciation of the advantages of that mode of disposing of the bodies of the dead can scarcely fail to follow a wider diffusion of hygienic knowledge.

We respect the difficulty felt by many on religious grounds, though we cannot say we understand it; for, as Bishop Fraser has well said: "The omnipotence of God is not limited, and he would raise the dead whether he had to raise our bodies out of churchyards, or whether he had to call our remains, like the remains of some ancient Romans, out of an urn in which they were deposited two thousand years ago." Another objection is the supposed costliness of cremation as compared with burial. There seems to be no solid ground for this belief; some figures before us show that at Golder's Green the average cost of cremation, together with a niche in the columbarium and a memorial tablet, is thirteen guineas. An estimate of the cost of burial, with a memorial stone, based on the average cost of interment in the ordinary ground at six London cemeteries, is eighteen guineas. — *British Medical Journal.*

Correspondence.

THE RUTLAND SANATORIUM: CORRECTIONS.

Pittsfield, Mass., Jan. 15, 1907.

Mr. Editor: Permit me to explain a little more fully the changes at the Massachusetts State Sanatorium at Rutland, which were mentioned in the Journal of Jan. 10, under the head of "Medical Notes." The new superintendent, Dr. Frederick L. Hills, who is to take charge Feb. 1, will assume the duties, both of the present superintendent, Dr. W. J. Marcley, and of the two visiting physicians, Dr. E. O. Otis and H. C. Clapp. Dr. Marcley has been appointed Superintendent of the new State Sanatorium, of Minnesota, and has tendered his resignation, to take effect Feb. 1. Drs. Otis and Clapp have also placed their resignations in the hands of the trustees, but these have not yet been accepted, as it seems best that all the changes should not be made simultaneously.

Yours very truly,
J. F. A. Adams, M.D.,
Chairman, Board of Trustees,
Massachusetts State Sanatorium.

Worcester, Mass., Jan. 14, 1907.

Mr. Editor: In your recent report (Jan. 10) of the Rutland Sanatorium, you state that Dr. Frederick L. Hills, of Concord, N. H., had been appointed as medical resident superintendent of the institution and that Dr. Edward O. Otis had resigned his position as visiting physician. The name of the senior visiting physician, Dr. H. C. Clapp, was not mentioned at all. Whether your informant was ignorant of, or purposely ignored, the relation of Dr. Clapp to the institution and the action of the board at our last meeting, I do not know, but in justice to all concerned I wish to say that while the resignations of both visiting physicians to take effect upon the appointment of an "expert on tuberculosis" as resident superintendent, have been in the hands of the board for some time, as yet they have not been accepted and, at the last meeting in which Dr. Hills was elected to succeed Dr. Marcley as superintendent, it was unanimously voted "to request the visiting physicians, Dr. H. C. Clapp and Dr. Edward O. Otis, to continue their services as heretofore until further notice."

Trusting the above statement may correct any erroneous impressions produced by your previous article, I am respectfully yours,

J. P. Rand,
Secretary Board of Trustees,
Massachusetts State Sanatorium.

OPPOSED TO LODGE OR CORPORATION WORK BY CONTRACT.

Medford, Mass., Jan. 14, 1907.

Mr. Editor: At a meeting of the Medford Medical Society, Nov. 27, 1906, the following was adopted:

"*Resolved,* That the Medford Medical Society does not countenance or approve of lodge or corporation work by contract; and we, physicians of Medford, hereby pledge ourselves not to engage in such service. And it is further

"*Resolved,* That this Society will not hereafter accept nor continue as a member any physician who may take up this work."

To this all the resident physicians of Medford, twenty-three in number, have subscribed their names.

Very truly yours,
Frank S. Smith, M.D., *Secretary.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 5, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,721	417	Quincy	7	—
Chicago	673	190	Waltham	9	2
Philadelphia	—	—	Gloucester	5	1
St. Louis	—	—	Pittsfield	14	—
Baltimore	230	51	Brookline	11	—
Cleveland	—	—	North Adams	—	—
Buffalo	—	—	Chicopee	8	1
Pittsburg	—	—	Northampton	9	0
Cincinnati	—	—	Medford	4	2
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Hyde Park	5	1
Providence	81	32	Newburyport	—	—
Boston	273	56	Leominster	8	4
Worcester	37	12	Melrose	6	1
Fall River	42	21	Woburn	2	—
Cambridge	31	10	Marlborough	5	0
Lowell	38	12	Westfield	10	3
Lynn	18	3	Peabody	—	—
New Bedford	34	10	Revere	3	1
Springfield	24	—	Clinton	5	1
Lawrence	29	15	Attleboro	1	0
Somerville	19	3	Adams	4	—
Holyoke	26	7	Gardner	—	—
Brockton	12	3	Milford	4	3
Malden	8	3	Weymouth	—	—
Salem	12	1	Framingham	3	1
Chelsea	16	5	Watertown	2	—
Haverhill	9	1	Plymouth	—	—
Newton	12	—	Southbridge	4	—
Fitchburg	9	2	Wakefield	—	—
Taunton	9	2	Webster	—	—
Everett	13	5			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JAN. 12, 1907.

J. T. KENNEDY, passed assistant surgeon. To duty on the U. S. R. S. "Hancock."

E. M. BLACKWELL, passed assistant surgeon. To duty at the Naval Academy, Annapolis, Md., as the relief of Assistant Surgeon R. E. Hoyt.

A. M. MOORE, surgeon. Retired. Detached from duty at the Naval Recruiting Station, Memphis, Tenn., and ordered home.

W. B. GROVE, surgeon. To duty at the Naval Medical Supply Depot, Brooklyn, N. Y., and additional duty under instructions from the Bureau of Medicine and Surgery.

R. E. HOYT, passed assistant surgeon. Detached from duty at the Naval Academy, Annapolis, Md., and to duty at the Naval Hospital, Canacao, P. I., as the relief of Assistant Surgeon H. W. Smith.

H. W. SMITH, assistant surgeon. On the reporting of his relief detached from duty at the Naval Hospital, Canacao, P. I., and to home by the way of Europe, with permission to delay two months in Europe.

E. C. TAYLOR, passed assistant surgeon. Detached from duty at the Naval Hospital, New York, N. Y., and to duty at the Naval Recruiting Station, Memphis, Tenn., in place of Surgeon C. J. Decker, whose orders for this duty the Bureau recommends revoked.

J. H. HOLLOWAY, passed assistant surgeon. Detached from duty at the Navy Yard, Norfolk, Va., and such other duty as may have been assigned him, and to duty with the Navy Recruiting Party No. 4.

APPOINTMENTS.

TUFTS COLLEGE MEDICAL SCHOOL.

DR. JOHN J. THOMAS, assistant professor of neurology.

DR. DAVID N. BLAKELEY and **DR. LEANDER M. FARRINGTON**, assistants in clinical medicine.

DR. JOSEPH A. MEHAN, assistant in general chemistry.

BOSTON CITY HOSPITAL.

DR. J. J. THOMAS, physician for diseases of the nervous system, to fill the vacancy caused by the resignation of **DR. W. N. BULLARD**.

DR. ISADOR CORIAT, assistant to the physicians for diseases of the nervous system.

DR. ROCKWELL A. COFFIN, surgeon for diseases of the throat, in place of **DR. JOHN W. FARLOW** resigned.

DR. J. H. BLODGETT, assistant to the surgeons for diseases of the throat.

DR. HERMAN M. ADLER, assistant in clinical pathology.

HARVARD MEDICAL SCHOOL.

DR. JAMES HOMER WRIGHT, assistant professor of pathology. Dr. Wright has been instructor in pathology from 1896 to the present time.

The following assistants in the Clinical Laboratory: DRS. **H. M. ADLER**, **G. W. HALL**, **C. L. OVERLANDER** and **W. B. ROBBINS**.

MASSACHUSETTS GENERAL HOSPITAL.

DR. WM. A. BROOKS, JR., visiting surgeon.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A meeting of the society will be held in Sprague Hall, Medical Library Building, on Monday, Jan. 21, 1907, at 8. The papers of the evening will be on Empyema. Its Medical Aspects, Dr. H. F. Vickery. Its Surgical Aspects, Dr. F. B. Lund.

DANIEL FISKE JONES, M.D., *Secretary.*

RECENT DEATHS.

BENJAMIN HUBBARD, M.D., M.M.S.S., died in Plymouth, Jan. 12, 1907, aged eighty-nine years.

WALTER AUGUSTUS LECOMPTE, M.D., M.M.S.S., died in Boston, Jan. 13, 1907, aged thirty-six years.

DR. DANIEL S. ADAMS died at Manchester, N. H., Jan. 12, at the age of sixty years. He was born in Lockport, N. Y., graduated from the College of Physicians and Surgeons (Columbia) and almost immediately took up practice in Manchester. He was prominent and successful as a surgeon, and was an ex-president of the New Hampshire State Medical Society.

DR. EDWARD GILMAN BRYANT, of New York, died in Bellevue Hospital on Jan. 7, from chronic Bright's disease. He was graduated from the Harvard Medical School in 1892. For some years he was resident physician at the Willard Parker Hospital and later at the Health Department's hospital for contagious diseases on North Brothers Island. More recently he was engaged in private practice at Washington Heights, where he devoted his attention more especially to diseases of the throat.

DR. ALFONS MULLER, of New York, died on Jan. 9 from pneumonia, at the age of forty-five years. He was a native of Germany, and was graduated from the University of Halle in 1886.

DR. ALFRED STARR, of New York, died on Jan. 11. He was graduated from the College of Physicians and Surgeons, New York, in 1880.

BOOKS AND PAMPHLETS RECEIVED.

Jahresbericht über die Fortschritte in der Lehre von den Pathogenen Mikro-organismen umfassend Bakterien, Pilze und Protozoën Unter Mitwirkung von Fachgenossen bearbeitet und herausgegeben. Von Dr. med. P. von Baumgarten und Dr. med. F. Tangl. Zwanzigster Jahrgang. 1904. Leipzig: Verlag von S. Hirzel. 1906.

Unilateral Ascending Paralysis and Unilateral Descending Paralysis, Their Clinical Varieties and Their Pathologic Causes. By Charles K. Mills, M.D. Reprint.

A Case of Rhizomelic Spondylosis. Service of Dr. Charles K. Mills. Reported by Dr. Ralph Pemberton, Resident Physician. Reprint.

The Subdivision of the Representation of Cutaneous and Muscular Sensibility and of Stereognosis in the Cerebral Cortex. By Charles K. Mills, M.D., and T. H. Weisenburg, M.D. Reprint.

Manual of Clinical Chemistry. By A. E. Austin, A.B., M.D. Boston: D. C. Heath & Co. 1907.

Transactions of the American Dermatological Association at its Twenty-ninth Annual Meeting Held in New York, Dec. 28, 29 and 30, 1905.

Tumors of the Cerebrum, Their Focal Diagnosis and Surgical Treatment. By Charles K. Mills, M.D., Charles H. Frazier, M.D., William G. Spiller, M.D., George E. DeSchweinitz, M.D., Theodore H. Weisenburg, M.D. Illustrated. Philadelphia: Edward Pennock. 1906.

Physical Chemistry in the Service of Medicine. Seven Addresses. By Dr. Wolfgang Pauli. Authorized translation by Dr. Martin H. Fischer. London: Chapman & Hall, Ltd. New York: John Wiley & Sons. 1907.

Original Articles.

ACUTE HEMATOGENOUS INFECTION OF ONE KIDNEY IN PERSONS APPARENTLY WELL. REPORT OF A CASE AND A STUDY OF THE SUBJECT.

BY FARRAR COBB, M.D., BOSTON.
Surgeon to Out-Patients at the Massachusetts General Hospital.

It is well understood that in the presence of a septic focus elsewhere, metastatic or embolic abscesses may occur in one or both kidneys, but what is not so much a matter of common knowledge is that occasionally in an individual apparently well, and in whom no septic focus can be demonstrated, an infection of one kidney by bacteria circulating in the blood may take place with the formation of one or more septic infarcts. Clinically such infections may simulate one of the acute abdominal emergencies; especially is this true of infections of the right kidney where the onset and course can correspond with great exactness to the symptoms of acute appendicitis or acute cholecystitis. Comparatively few such cases have been reported and it is only recently that they have begun to be studied carefully. Several of the cases have been diagnosed and operated upon incorrectly. The pathology and the reason for the localization of the bacteria in one kidney in an apparently healthy individual is not understood perfectly as yet. For the above reasons I desire to report the following case and afterward discuss the subject from a pathological as well as a clinical standpoint.

Mrs. M. C. D., forty-five years old, married, was brought to the accident room of the Massachusetts General Hospital on the evening of Oct. 19, 1903. The following history was obtained: She had always been a well woman. She had had three children, the youngest eight years old. Catamenia had always been regular, the last, two weeks before. For two days before admission she had felt somewhat tired, but had noticed no other bad symptoms. Twenty-four hours before, she was suddenly taken with severe pain in the right iliac region just inside the iliac crest; the pain ran upward into the back at its onset and the patient noticed that at this time she was obliged to pass water frequently and that micturition caused some pain, although nothing peculiar about the urine was noticed. A chill occurred at the onset. The pain persisted in the right iliac region, but had become less since the beginning of the attack; there was some pain in the right back on moving. The frequency of micturition soon stopped. After a dose of epsom salts twelve hours before entrance there was some vomiting, but not until then. The bowels moved well six hours before entrance. Upon examination the patient was found to be a well developed and nourished woman, somewhat pale, apparently having much pain. Pressure in the right iliac region and over the right kidney and up toward the gall bladder caused some muscle spasm and developed some tenderness. The right kidney could not be palpated. Nothing abnormal was found in the chest, nothing of importance upon vaginal examination. Pain in the right side of the abdomen with some muscle spasm and tenderness, most marked over the region midway between the appendix and liver, were the only important signs. The blood count showed 22,600 leucocytes; the temperature was 101.6° and rose later in the evening to 103°; the pulse was 130. Urine examination at this time showed a slight trace of albumin, a specific gravity of 1023, normal color and acid reaction, sediment, much pus and a few abnormal blood globules and an occasional cast with blood cells adherent.

Were it not for the fact that the onset of the attack had been associated with pain radiating into the right lumbar region associated with frequent micturition and that the urine examination showed a little blood and a few blood casts, the symptoms and signs, especially the high leucocyte count and the spasm anp tenderness on the right side, would have led me to operate soon after the patient entered the hospital under a diagnosis of appendicitis or acute cholecystitis, but for these reasons operation was deferred and the patient sent to the ward. Renal calculus, it seemed to me, would have caused more intense colicky pain and could not account for the abdominal signs or the leucocytosis. During the next two days there was considerable pain at times. Twenty-four hours after admission the pain seemed to be localized more in the region of the right kidney, where it was possible to palpate a mass. The leucocyte count remained approximately the same on each day preceding the operation. There was no change in the urine examination. The patient's temperature and pulse were somewhat lower than at first. Operation was determined upon because of the localization of the pain and tenderness in the region of the kidney and the possibility of an enlargement of the kidney, associated with the continued high leucocyte count. It should be said also that the patient looked like a very sick woman. A correct diagnosis was not made before operation. The possibility of an infected kidney associated with stone or with blocking of the ureter from some cause was considered, but certainly no consideration was given to acute infection of the kidney through the blood.

On the third day ofter admission, through the kindness of Dr. H. H. A. Beach, the senior surgeon of the South Service, the patient was operated upon by me. With the patient on the left side, an incision was made over the right kidney from the twelfth rib downward to and along the crest of the ileum. The kidney was found enlarged to about twice the normal size; it was dark colored and on its surface were four areas about one half of an inch in diameter, dark in appearance, looking like spots of infarction. All of these areas were soft and seemed to contain old blood clot with some broken-down kidney tissue, but in none of them was there any gross appearance of pus. One of these areas reached well into the cortical substance of the kidney toward the pelvis, the remainder were superficial. With the exception of these areas of infarction, the kidney appeared normal except for the dark congested look. Cultures from the areas gave a pure growth of colon bacilli. A small bit of tissue from one of the softened spots was removed for microscopic examination.

The capsule of the kidney was split posteriorly and small gauze wicking drains were pushed well down into each softened spot. The ends of these wicks were led out of the external wound. A large gauze drain surrounded by rubber tissue was led down to the kidney itself and the external wound in the flank closed up to the drains. It is interesting to note that the operation made no change in the condition of the urine, which remained the same until one week before the patient was discharged from the hospital when all appearances of blood and almost all pus had disappeared. The amount of urine continued between thirty-five and forty ounces each day after the operation. The leucocyte count two days after the operation was still as high as previously, 22,000; but four days after the operation it dropped to 7,000. The gauze drains were removed within five days and the wound irrigated. There was an entire cessation of pain and convalescence was rapid. On the 26th of November, about a month after her operation, the patient left the hospital with the wound entirely healed and in good physical condition. Microscopic examination of the small bit of tissue removed showed marked engorgement of all the vessels with considerable hemorrhage throughout the cortical substance.

I have heard from this patient once or twice since the operation and she reports herself as perfectly well.

In this case, blood and renal elements in the urine, with pain in the back at the onset of the attack, associated with frequency of micturition, prevented immediate operation as for an acute peritoneal emergency. As will be seen later, cases have occurred in which the urine and symptoms in no way pointed to the kidney, which cases have been operated on under the mistaken diagnosis of appendicitis or cholecystitis.

Infection of the kidneys may be an ascending infection from the lower urinary tract, the so-called urogenous type, or an infection through the blood, the hematogenous type; infection may take place also by direct extension from abscesses in the neighborhood or through wounds. In any condition of the human organism where bacteria are abundant in the blood stream, as in general infectious diseases, or where local septic foci exist, hematogenous infection can occur, provided the conditions favor it. This infection may be mechanical, that is, actual minute bits of infected tissue are carried by the blood to the kidney and lodge in some of the terminal vessels. This is the commonest form of hematogenous infection and is to be expected in extensive suppuration elsewhere, in septicemia, pyemia, ulcerative endocarditis and the like. In the pre-antiseptic days, when septicemia and pyemia were common, these true embolic infections, usually of both kidneys, were a not infrequent cause of death.

On the other hand, the infection may be by micro-organisms themselves which are circulating in the blood and which for some reason are arrested in the kidney vessels. This is the rarest form, and although it may occur in any of the septic conditions mentioned or in general infectious diseases, as typhoid, scarlet fever and measles, it is of great importance to know that it can occur in persons previously in perfect health. This infection usually involves only one kidney.

The gross and minute pathology of the two forms varies somewhat. In the embolic abscesses in the majority of cases, actual plugs of infected tissue lodge in the vessels, and the condition of the kidney previous to the arrival of these septic plugs has nothing to do with the issue. The plugging of the terminal vessels causes an infarct and this infarct becomes infected by the bacteria in the plug itself.

The acute hematogenous infections due to the lodgment of bacteria circulating in the blood, which, as I have said, usually involve only one kidney, are more interesting pathologically because some abnormality in the kidney or ureter is the probable cause of the arrest of the bacteria. These infections are of intense interest from a clinical and practical point of view and also from a bacteriological standpoint; especially is this true in those cases occurring in persons previously in good health. The questions of the kind of bacteria causing the infections and where these bacteria come from in persons apparently perfectly well and why they infect one kidney have been a subject of some speculation and experimental study.

In the existence of septic conditions or general infectious disease it is easier to suspect an infection of the kidney as a complication in the presence of the symptoms as outlined in my own case than when such symptoms come out of a clear sky. Very few cases have been reported. It is interesting to note that in practically all the cases the infections involve the right kidney, but no explanation for this has been offered. The onset is acute and in well persons comes without any warning. The course of the disease may be rapid with progressively increasing toxic symptoms; or after the acute onset, the patient may go for weeks or months in a chronic septic condition. The very acute cases are the ones that simulate most closely abdominal emergencies. On the other hand, in a small number of cases the infection may manifest itself by a slight pain in the back and a long continued pyrexia with or without pyuria which may never lead to a suspicion of the kidney as a cause.

In the reported cases the bacterial infections through the blood in persons previously in good health have caused acute symptoms. It is not difficult to understand, however, that in any condition of health or disease bacterial localization may take place in one or more of the terminal vessels of the kidney causing at the time but slight symptoms; that such cases may go on to more or less extensive abscess formation with breaking of the abscess or abscesses into the pelvis of the kidney or through the capsule into the perirenal tissue. In advanced stages of renal abscess it is always difficult, if not impossible, to decide whether the infection came through the blood or from the lower urinary tract. Acute infections as described in this paper are undoubtedly rare. Johnson analyzed all the cases of kidney surgery in the Roosevelt Hospital for eight years previous to Oct. 1, 1898, and in this time he found operations upon only twelve cases for renal abscess, and the majority of these had their origin undoubtedly in ascending infection and pyelitis. Johnson's series included but three cases in which it was probable that acute hematogenous infection of one kidney had occurred.

A careful search through the records of the Massachusetts General Hospital since 1883 has discovered only 18 cases of operation for abscess of the kidney, exclusive of the operations for cases of hydro- and pyelo-nephrosis. Of this number but four were cases of undoubted hematogenous infection. The majority of the cases were complicated by stone, tuberculosis or long standing infection of the lower urinary tract.

Infection in one of the four cases occurred two months after a severe contusion of the lumbar region; in the other three cases, however, there was no contributing cause, infection occurring in a condition of apparent good health. In all four cases the infection had progressed to the stage of true abscess formation. One case was diagnosed and operated upon as a case of appendicitis, the other three were diagnosed as probable infections of the kidney on account of the existence of a palpable tumor in the kidney region. In two cases cultures were taken and both showed a pure growth of staphylococci. In two cases a leucocyte count was made; in one case the leucocytosis was 22,000 and in the other case 10,800. Urine examinations in three cases showed pus and blood; in two cases hyalin and granular casts were found in addition to the pus and blood. In two cases the onset was acute, while in the other two it was more moderate, from four to eight weeks elapsing between the first symptoms and operation.

It should be emphasized that in the course of some other disease bacterial infection of one kidney may not be recognized. Lilienthal lays great stress upon the fact that many of the large lumbar abscesses following typhoid and other infectious diseases may originate in abscesses in the cortex of the kidney with late perforation into the perirenal tissue.

The case just reported, from the time it came under my observation, was an acutely sick woman, although it is impossible to say how long she might have gone without fatal toxemia. At the operation the infarcts were still in a hemorrhagic stage and presented no gross signs of pus. The case reported by McCosh, following an attack of measles, was a fulminating case where the symptoms simulated acute appendicitis. The case reported by A. T. Cabot had a sudden onset and ran a very septic course with chills and high fever for two weeks before operation. In this case the pains were located in the back and ran into the groin and testicle. The case reported by C. H. Peck had a sudden onset with marked tenderness and rigidity in the right side of the abdomen, no symptoms or signs pointing to the kidney. Leucocytosis of 30,000. Operation done in sixty hours after the onset of the attack under a diagnosis of appendicitis.

Brewer has reported thirteen cases. In several a complete history was not obtained, yet it is fair to assume that the majority were cases of unilateral hematogenous infection, although one case at autopsy showed that both kidneys were affected. Five cases resembled, in the onset and symptoms, my own case very closely. In two cases an anterior abdominal incision was first made under a diagnosis of appendicitis or cholecystitis. Eleven of Brewer's cases occurred in women and the right kidney was involved in eleven cases. In twelve cases abdominal pain was the chief complaint during most of the attack, although in many cases at the beginning the chief point of pain was referred to the flank. In three cases the pain was located in the right iliac region. The kidney could rarely be palpated. In three cases there was complaint of frequent and painful micturition. The blood count was taken in 8 cases and was always high, the lowest 12,000, the highest 35,000. The percentage of polynuclear cells was 79 and above.

The infection is usually of the right kidney, and more cases have occurred in women than in men. In some of the cases the pain may be referred entirely to the region of the appendix or the gall bladder. Leucocytosis is always high, 18,000 to 30,000. There is some difference of opinion as to the evidence to be obtained from the urine examinations in these cases. Lilienthal is of the opinion that no positive help can be obtained in this way; on the other hand, Brewer, in the light of his large experience, states that in all but two of his thirteen cases the urine contained albumin, pus and blood; that the blood was only detected by the microscope except in one case in which there was enough to color the urine. In three cases urine from the separate ureters was obtained and that from the affected side showed albumin, pus and blood. In my own case blood casts were found in addition to pus and a small amount of blood cells. The reason, to my mind, for urine examinations giving no great aid to diagnosis in acute cases is because the infection usually involves the terminal arterial branches in the cortical substance of the kidney; and only in the advanced cases, when the infarcts have become abscesses and have broken into the pelvis of the kidney can pus and renal cellular elements in sufficient amounts be obtained by urinary examination. The presence of albumin, pus and blood, with or without blood casts, in the urine of a person previously in good health should lead to a strong suspicion of the kidney as a cause of the symptoms, but it is perfectly possible that the condition of the urine may be due to other causes.

The examination of the abdomen may give all degrees of tenderness and muscle spasm. The pain and tenderness may be referred to the gall bladder or appendix regions and the abdominal muscles guarding them may or may not be rigid. In those very acute cases simulating intra-abdominal disease there is muscle spasm in the regions mentioned, — in my own case the muscle spasm was not very marked. It has been possible to palpate an enlarged kidney in some of the cases, but not until the second or third day after the onset of the infection. Tenderness in the costovertebral angle is mentioned as a constant sign by Brewer.

It is plain that the differential diagnosis in these cases will be difficult unless the pain is referred distinctly to the kidney; the cases most exactly simulating appendicitis or acute cholecystitis cannot be accurately diagnosed. The presence of pus, blood and blood casts in the urine may justify a suspicion of the seat of the infection. It can be fairly stated that in septic conditions elsewhere, or in general infectious diseases, such an acute picture should lead to consideration of an acute infection of the kidney.

The treatment should always be by operation even when the infection occurs as a complication of severe sepsis elsewhere. Witness the case reported by Lilienthal, in which embolic abscesses of the kidney followed severe facial erysipelas. In the reported cases the operations done have been about equally divided between nephrectomy and incision and drainage of the septic areas in the kidney, with or without splitting of the capsule. In my opinion nephrectomy can be necessary only when the septic areas are very numerous and extensive. But little of the secreting substance of the kidney is involved usually and at the operation one does not know about the integrity of the other kidney; it must be wise to preserve all the kidney secreting surface possible. My own case and that of A. T. Cabot's, also that of McCosh and one of Brewer's did perfectly well with drainage. In one case rubber drainage tubes were carried down into the infected parts of the kidney. It may be questioned whether the pressure of such substantial material as rubber tubing might not tend to cause progressive tissue necrosis. Not a sufficient number of comparatively similar cases have been reported to furnish grounds for a positive opinion as to the best form of operation. The degree of infection varies in each case as well as the condition of the patient in regard to the amount of toxemia and probable resistance to continued sepsis. The method of operation should be determined upon in each case at the time. In the very toxic cases in which the areas of infection are very numerous so that the function of the kidney is probably seriously interfered with, nephrectomy will be the operation of choice. In cases where the areas are limited in number and the resistance of the individual is still fairly good, drainage generally will bring about recovery.

As I have said, the interesting question is why bacteria circulating in the blood are arrested in sufficient numbers in the kidney to cause infection. The kidney can be infected through the blood by a number of organisms. Obviously, an infection carried by small emboli will be the same infection as the septic focus from which the emboli started. The common micro-organisms of pus, the streptococcus and staphylococcus, the typhoid bacillus, Friedländer's diplococcus, the bacillus of diphtheria, the bacillus pyocyaneus and the pneumococcus have all been isolated from renal abscesses. The most frequent infections are undoubtedly due to the colon bacillus and to pus organisms. It is to be emphasized that the colon bacillus causes by far the greatest number of infections and that these infections are usually pure infections; this is true, no matter whether the source is the blood or the urinary channels. (Herszky, Albarran, McWilliams.)

No mention will be made in this paper of infection of the kidney through the blood by tubercle bacilli. The subject of tuberculosis of the kidney is one that demands special consideration. Infection by the gonococcus is seldom, if ever, a pure infection and so far as is known is always the ascending form and not an infection through the blood. Herszky, however, states that while gonococcus infection of the kidney is an ascending infection and usually mixed, he can refer to a few cases of renal abscess in which the specific organisms of gonorrhea were found which probably originated through the blood. Le Fur has reported a case of probable hematogenous infection by the gonococcus.

Until recently it was thought that when large numbers of bacteria were in the blood, whether through general septicemia or in some diseases, as diphtheria, or experimentally by injection into the veins or the peritoneal cavity, that most of the bacteria passed through the kidneys and were eliminated by the urine, and that the chance of disturbing the functions of the kidneys was great. Recent experimental research, however, seems to prove that the majority of the organisms introduced into the circulation are destroyed before reaching the kidneys, and that while many bacteria are eliminated by the urine it is unusual for bacteria to lodge in the kidney, if the kidney and ureter are normal. The researches of Buxton and Torrey in the laboratory of experimental pathology of Cornell University, recently published, as well as the work of Metchnikoff and Canon, seem to prove this absolutely. It is, doubtless, true that one of the functions of the kidney is to excrete bacteria which have gained access to the circulating blood and have not become destroyed before reaching the kidney. Micro-organisms may be excreted by the kidneys without injuring the kidneys in any way. The finding of bacteria in the urine, as in typhoid fever, does not necessarily mean renal infection, only that certain of the bacteria from the general disease or from distant septic foci have passed through the kidneys.

Sampson, of Johns Hopkins, performed a series of experiments on dogs in which he tied the ureter of one kidney and injected pure cultures of staphylococcus into the jugular vein. He found that bacteria were eliminated to a certain extent by the urine, but only in those cases in which he tied the ureter did the kidney become infected. Brewer later, in a series of experiments on dogs, found that not only obstructing the ureter, but bruising the kidney caused infection.

The colon bacillus is the most frequent form of urinary infection, whether of the kidney or of the bladder. It is now well known that the colon bacillus, under certain conditions, has virulent pathogenic properties, that it is a true pyogenic organism. The intestinal canal, particularly the lower intestine, swarms with different varieties of this bacillus. Under normal conditions of the intestinal mucous membrane the intestines do not absorb the bacillus or its toxins, but it is known that when a break in the intestinal mucous membrane occurs and also in severe and long continued constipation the bacteria pass through the intestinal walls in large numbers. Therefore, as an explanation of the source of infection in persons in previous good health, it may be fairly stated that not infrequently in the life of an individual the blood is infected by quantities of colon bacilli which have been taken up because of some slight defect in the lining epithelium of the intestinal canal or during an attack of obstinate constipation. Whether these infections result in pathologic conditions elsewhere will depend largely upon the general good health of the individual and upon the condition of the various organs in the body.

The bladder, prostate gland and the uterus and its adnexæ are additional possible sources of bacterial infection of the kidney through the blood. The blood vessels of the kidney communicate with those of the bladder, aside from the general circulation, through two other channels, — the utero-ovarian and the vessels of the ureter itself. By injection experiments Sampson demonstrated that free arterial anastomosis exists between the branches of the renal artery supplying the capsule of the kidney about its lower pole, the kidney and the branches of the ovarian artery. The ovarian artery anastomoses freely with the uterine and with the vesical. There is both venous and arterial communication. Attention should also be called to the fact that the lymphatics, especially the glands, may act as intermediary channels between the primary focus in the bladder and the general circulation. The lymphatic communication through the bladder to the kidney is not direct, but indirect through the local glands of the bladder. It is, therefore, an anatomical possibility for an ulceration or septic focus in the bladder, uterus or its adnexæ to infect the kidney by way of the general circulation or through anastomotic channels directly. It is doubtful whether direct infection through the blood vessels of the ureter ever occurs. In the published cases where bacteriological cultures have been taken the colon bacillus has most often been the infecting organism; it was so in my own case and also in the cases of Cabot and Peck.

The infection so far as is known may come from the intestinal canal and from the reproductive organs and lower urinary tract in the female, especially in cases where long standing pelvic disease with intestinal adhesions is present. In the male the infection may come from the intestinal canal or from the prostate gland or the bladder; that is to say, these organs are the most probable sources of infection.

The experiments of Sampson, Brewer, Buxton and Torrey seem to prove conclusively that in normal conditions of health and in normal kidneys, bacteria circulating in the blood will pass through the kidney without causing harm. In those cases apparently in good health where infection occurs there is probably some cause in the kidney itself for localization of the bacteria. The kidney may have been injured, it may be prolapsed and rotated on its axis so that its circulation is interfered with. There may have been the obstruction and traumatism of renal calculi. It has been shown experimentally that obstruction of the ureter will most readily cause lodgment of the bacteria, and in all probability the most frequent cause of this form of renal abscess is some abnormality in the ureter due to stricture, the result of inflammation or calculi. In women deformities in the ureters caused by pregnancy and childbirth may be the provocative cause. It cannot be stated, however, that such infections will not take place in lowered general vitality and resistance with or without abnormalities of the kidney and its ureter.

The infecting bacteria are almost always arrested in the terminal vessels in the cortex of the kidney close to the fibrous capsule and the clogged blood vessels are seen filled with microorganisms. Blood passes into the interstitial tissues and in this stage of infiltration, the earliest stage, the infected areas resemble hemorrhagic infarcts. As the infection goes on a true abscess is formed, separated from the sound tissue by a hemorrhagic margin.

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An unusual instance of the untimely inset of senility is reported from Minneapolis, Minn. A boy of eleven years who has just died in the City Hospital is stated to have had organs corresponding in their condition to those ordinarily seen at an advanced age. It is alleged that when the child was six years old his hair began to turn gray, his eyesight began to fail, and he walked with the deliberate care of a person well advanced in years. As a very young child he was exceptionally bright. — *Med. Record.*

TWO CASES OF CIRRHOSIS OF THE LIVER IN INFANCY IN CONNECTION WITH CONGENITAL OBSTRUCTION OF THE BILE DUCTS.

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AND
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CASE I. Martha R. was born Nov. 22, 1905. The parents and one other child were well. There had been no miscarriages and no history of syphilis. She was apparently normal at birth, although the abdomen was a little and the umbilical cord unusually large. Her weight was not known. She never passed any colored meconium, the movements from the first being whitish in color. The skin was not yellow at birth, but became so when she was ten or twelve days old. The parents were not sure as to the color of the urine in the beginning, but a few days later it was greenish, and so continued. She was breast-fed from the beginning, being given from the time she was two weeks old until the first of February a mixture of one part of milk and two parts of water in addition. She had seemed pretty well on the whole, but had vomited occasionally, and had had two loose, white movements daily. The urine stained the napkins green. The parents thought that she had had a little fever from time to time. She entered the Infants' Hospital, March 8, 1906, when three and one-half months old.

PHYSICAL EXAMINATION.

She was fairly developed and nourished. There was pretty marked jaundice of the skin, mucous membranes and conjunctivæ. The fontanelle was 4 cm. in diameter and level. She was perfectly intelligent. Her tongue was covered with thrush but the rest of the mouth was clean. There was no rosary or other evidences of rickets. The heart area and sounds were normal, the action slightly irregular, the rate 120. The lungs were normal. The upper border of the liver flatness was at the upper border of the fifth rib in the nipple line. The lower border of the liver ran from the right anterior superior spine to the left costal border in the nipple line. The notch was indistinctly palpable in the median line. The surface was smooth and the edge a little rounded especially in the left lobe. The gall bladder was not felt. The spleen was palpable, running out from beneath the costal border in the anterior axillary line, downward to the level of the navel, and backward and upward under the ribs in the post-axillary line. The greatest width was 6 cm., and it extended 4 cm. below the costal border. There was no fluid in the abdomen and no masses were felt. There was a moderate sized umbilical hernia. The cervical glands were slightly enlarged; the inguinal and axillary were not. There was a slight intertrigo about the buttocks and genitals. There were no mucous patches about the mouth or anus. There were no lesions of scratching and no scars of any old eruption. The bones were normal. Rectal examination was negative.

She ran a perfectly normal temperature during her stay in the hospital. The pulse ranged between 100 and 140, usually being about 120, while the respiration ranged between 25 and 50, usually being about 35. She was fed partly on the breast and partly on pasteurized buttermilk. She took the breast well, but the buttermilk only fairly. She did not vomit. She had one or two movements daily, white or grayish-white in color but smooth and homogeneous; occasionally they contained a very little mucus. Her weight at entrance was 4410 gm. and on March 19, 5270 gm. She was contented, comfortable and happy.

Blood. — Hemoglobin, 100%; red corpuscles, 4,816,000; white corpuscles, 18,900. On March 17, fibrin shreds appeared in the blood as soon as in the drop taken from a normal infant for comparison.

Urine. — Slightly green; 1009; acid; no albumin; considerable bile.

Feces. — Chemical examination showed no bile in the feces.

OPERATION.

March 19, under ether. The abdomen was opened by an incision about 3½ inches long through the right rectus muscle. There was a considerable quantity of serous fluid in the abdomen. The liver presented in the operation wound with the lower border a finger's breadth above the navel. The enlargement was uniform, the color a greenish-bronze, the consistency elastic. The surface was dimpled in places but was not roughened to the touch. The edge was rounded and the notch at the fissure unusually deep. The gall bladder was about the size of the distal phalanx of a child's finger and lay where the cystic duct would normally be found. The under surface of the liver showed no evidence of a gall bladder having developed in the normal position. The common bile duct was isolated and followed up through the hepatic duct to the under surface of the liver, but nowhere was there any evidence of a dilatation from obstruction to the flow of bile. Several small glands were found about the common duct in the gastro-hepatic omentum but they were not causing pressure. The spleen was markedly enlarged and elastic. The stomach and intestines were normal. The kidneys were normal to palpation. The abdomen was closed with catgut in the peritoneum and silkworm gut through the skin, muscle and fascia, and a dry dressing applied.

The baby stood the exploration very badly. It was pale and practically pulseless when put to bed, but the pulse improved after 2 oz. of salt solution had been given subpectorally. The color improved and food was taken two hours after the operation. The baby continued to take its food, both breast and bottle, but its condition did not become satisfactory. Stimulation improved the character of the pulse, but toward midnight it became restless, and died suddenly, just after its 2 A.M. feeding.

AUTOPSY.

Unfortunately, the only examination which could be made was through the wound of operation. The peritoneal cavity was found filled with bloody fluid and blood clots and the hemorrhage had evidently been sufficient to cause death. The same sero-sanguineous fluid was also found between the edges of the incision. The liver was markedly enlarged, running across the abdomen just above the level of the anterior superior spine of the ileum to a finger's breadth above the navel. The dimpled surface, the greenish color, the deep notch and the marked elasticity of the tissue were the same as noted at the operation.

The gall bladder, the size of a bean, lay at the base of the normal fissure. From this small gall bladder ran a minute cystic duct which connected with the common duct. The common bile duct was isolated and traced from the duodenum up to the liver. In no place was there any evidence of obstruction. Both the common and hepatic ducts were normal in size and appearance. Unfortunately, no effort was made to pass a probe through the duct, as it was assumed from its appearance that it was patent.

The spleen was enlarged to three or four times its normal size.

Further examination of the abdominal contents merely confirmed the normal findings at the operation.

PATHOLOGICAL REPORT.*

Liver. — The liver showed a moderate and irregular increase of connective tissue, most marked in the region of the portal vessels, but occurring also to some extent diffusely within the lobules. In some areas involving several lobules nearly every liver cell was surrounded by newly formed connective tissue, and the limits of the lobules could not be made out. In other areas the increase of connective tissue was slight or absent and the lobules were distinctly recognizable.

In the more normal areas the liver cells were arranged in orderly trabeculæ and the bile capillaries, often a little dilated, could be made out distinctly between them. Occasionally the bile capillaries were much distended and contained masses of greenish yellow inspissated bile. Sometimes masses of bile pigment lay in vacuoles in more or less enlarged liver cells.

In the areas where the connective tissue was increased in amount, the orderly arrangement of the liver trabeculæ was partly or completely lost, and many of the liver cells were apparently much increased in size and contained many nuclei, often a dozen or more. The protoplasm of these cells usually contained many small masses and granules of bile pigment. The nuclei in these giant gells varied in their location but were most often grouped in the center. These large multinucleated cells seemed to be due to fusion of liver cells; traces of cell membrane and of the bile capillaries could often be made out in them after certain stains. The many nuclei were apparently due, in part, at least, to direct division of the liver cell nuclei.

In the areas where the connective tissue was increased, branching double rows of cells resembling bile ducts were numerous. All gradations between them and normal rows of liver cells could be found.

The connective tissue showed a moderate infiltration with lymphocytes. (Fig. 1.)

Spleen. — The spleen was somewhat congested. The reticulum seemed to be slightly increased in amount. The lymph nodules contained numerous large pale cells scattered fairly evenly throughout. These cells were the endothelial cells of the reticulum, increased in number and showing marked phagocytic properties. They contained numerous more or less digested fragments of cells. A few contained yellow pigment and red blood corpuscles.

The blood sinuses of the pulp contained a few phagocytic cells. (Fig. 2.)

ANATOMICAL DIAGNOSIS.

Cirrhosis of the liver (biliary cirrhosis?). Retention and inspissation of bile pigment and dilatation of bile capillaries. Chronic splenitis (slight).

Case II. Mildred M. was born Jan. 2, 1906. The parents and one other child were well. There had been no other children or miscarriages and there was no history of syphilis. She was normal at birth and weighed nine pounds. The first movements from the bowels consisted of meconium. The history as to the movements was very unsatisfactory, but the mother was certain that the baby had green movements when it was eleven days old, and thought that they did not begin to be white until she was ten weeks old. (The findings at the operation and the autopsy make this history very improbable.) The mother said that the urine stained the napkins green from the first. Deep jaundice was noted at six weeks. It is certain, however, that the baby had been yellow for some time before. It was breast-fed for two months, after which it was given condensed milk. It did not vomit, but there was a slight tendency to constipation. It had lost weight steadily since birth. It entered the Infants' Hospital April 9, 1906, when fourteen weeks old.

PHYSICAL EXAMINATION.

It was small and poorly nourished. The skin was in good condition and there were no lesions of scratching. There was deep jaundice of the conjunctivæ, skin and mucous membranes. It was perfectly intelligent. The anterior fontanelle was 2 cm. in diameter and slightly depressed. There was a slight tendency of the bones of the skull to overlap. The head was long and narrow. The mouth was clean and the throat normal. The heart and lungs were normal. The abdomen was full but not tense. There were no evidences of fluid and no masses were felt. The upper border of the liver flatness was at the upper border of the fifth rib. The surface was smooth. The lower border was palpable 1½ cm. below the costal border in the right nipple line and half the distance from the ensiform cartilage to the navel in the median line. The surface was smooth, the edge sharp. The notch was felt distinctly in the right parasternal line. The gall bladder was not made out. The spleen was not palpable. There were no evidences of rickets. There was a slight general enlargement of the peripheral lymph nodes. The weight was 7½ pounds.

Blood. — White corpuscles 17,900. The coagulation time of the blood, estimated by the Brodie-Russell apparatus, on May 11, was six minutes. The baby was given 10 cc. of a gelatin solution at each feeding, and 2 gr. of calcium chloride four times a day up to the time of operation, three days later, when the coagulation time, estimated with the same apparatus, was one minute.

Urine. — High colored; cloudy; 1022; acid; no albumin or sugar; much bile.

Feces. — The movements from the bowels were about the color of white lead, formed and perfectly smooth. Chemical examination showed no bile.

The baby was put on pasteurized buttermilk, which it took readily. In the beginning it vomited after about half of the feedings, but later vomited much less. The movements continued to be white in color. They were sometimes loose and sometimes constipated, but always smooth and rarely contained either mucus or curds. The odor was at times foul, at others not. The weight increased slowly for about a week, but then gradually diminished, at the time of operation being somewhat less than at entrance. The temperature was normal or subnormal. The jaundice did not increase. The liver increased in size for about a week and then returned to its original condition. The spleen was never palpable. The general condition grew slowly worse.

OPERATION.

The operation was performed under ether May 14. The abdomen was opened by an incision at the outer border of the right rectus muscle, extending from the costal margin to the level of the navel. There was no fluid in the peritoneal cavity. The liver extended about 1 cm. below the costal border in the right nipple line and 4 cm. below the ensiform in the median line. It was dark in color and elastic and resistant to the touch. The surface appeared granular and was very slightly roughened. The fissures were normal. The gall bladder could not be found. No attempt was made to dissect out the common duct as there was no evidence of pressure or obstruction at any point. The spleen was not enlarged. The other abdominal organs were normal. The abdomen was closed with through-and-through sutures of silkworm gut and a dry dressing applied. There was no evidence of delayed coagulation during the operation.

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* We are indebted to Dr. F. B. Mallory of the Department of Pathology of the Harvard Medical School for the report of the microscopical findings in these cases.

There was but slight shock from the operation. Food was taken and retained during the following day and night. The temperature became subnormal the next day. Stimulation was without effect and the child died without, however, showing any symptoms of hemorrhage.

AUTOPSY.

Unfortunately, in this case also, the only examination which could be made was through the wound of operation. The size of the liver and the character of the surface were as noted at the operation. The other abdominal organs were normal. A very careful dissection of the gastro-hepatic omentum was made, but no common bile duct could be found. The duodenum was opened and the papilla identified, but a probe could not be made to pass into a duct. The gall bladder was represented by a pea-sized cyst at the base of the normal fissure. It had no demonstrable connection with a bile duct.

PATHOLOGICAL REPORT.

Liver. — The liver showed an older cirrhotic process than the first case. There was considerable increase of connective tissue, chiefly in the region of the portal vessels. It was old and dense, and showed almost no infiltration with lymphocytes. In places it had cut the liver tissue up into small islands. In the connective tissue were atrophied trabeculæ of liver cells.

In places the bile capillaries were much distended by homogeneous inspissated greenish masses of bile pigment. Some of the atrophied columns of liver cells in the areas of increased connective tissue also contained masses of inspissated bile. (Fig. 3.)

Spleen. — The spleen showed a slight general increase of connective tissue. In the blood sinuses were occasional phagocytic cells, some of which contained yellowish pigment.

The endothelial cells in the centers of the lymph nodules were a little more prominent than normally and were often phagocytic.

ANATOMICAL DIAGNOSES.

Cirrhosis of liver (biliary cirrhosis?). Retention and inspissation of bile pigment and dilatation of bile capillaries. Chronic splenitis (slight).

These cases are reported both because of the rarity of the condition, only about eighty cases being on record, and because of the still greater rarity of pathological and microscopical examinations. The findings in our cases agree pretty well with those in other cases, among the more recent of which are those of Griffith, Hobhouse, Cattaneo, Hédert, Parker and Wollstein. As is always the case, no evidences of syphilis were found. The changes in the liver are not such as to warrant any conclusions as to whether the principal or earliest cause was an irritant reaching the liver through the circulation or biliary retention from obstruction to the large ducts. They are certainly different, however, from those generally described as occurring after sudden obstruction to the flow of bile. The liver and spleen were enlarged in the first case, but not in the second, in which the pathological process was apparently of longer duration. Neither organ is enlarged in uncomplicated biliary obstruction in later life. The apparent patency of the common and hepatic ducts (probe unfortunately not passed) in Case I also goes to show, as is now generally believed, that the primary condition in these cases is certainly not always, and perhaps almost never, obstruction to or absence of the larger ducts.

There was a moderate leucocytosis, as in the other cases in which the blood has been examined. It was surprising how well the general condition was retained in the first case, which not only did not lose, but gained in weight during its stay in the hospital. Another interesting point was the absence of itching in both cases in spite of the marked jaundice.

The hemorrhage which followed the operation in Case I emphasizes the fact that the determination of the coagulation time of the blood by a crude method in which the blood is exposed to the air is not accurate. On account of the apparent normal coagulability of the blood as judged by the time of the appearane of the fibrin shreds no calcium chloride or gelatin was given, and without doubt hemorrhage was the immediate cause of death. In Case II the coagulation time of six minutes measured with the Brodie-Russell apparatus indicated a slight delay, and this delay was efficiently overcome by the use of calcium chloride and gelatin.

Although the diagnosis was almost certain in these cases, the absolutely hopeless prognosis, no patient having lived longer than eight months, seemed to us to justify exploration on the chances that the diagnosis might be wrong and that some remediable condition, such as obstruction of the larger ducts from pressure of glands or by inspissated bile, or a congenital stricture, might be found. The lesions found were, of course, of the sort expected and irremediable in character, and the exploration undoubtedly shortened the life of both babies. We feel, nevertheless, that in all similar cases exploration should be performed on the chance of occasionally finding some remediable condition.

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THE PROFESSIONAL TRAINER'S THEORY OF TRAINING.*

BY EDWARD H. NICHOLS, M.D., BOSTON.

DURING the past summer it became my duty to examine and talk with a number of professional trainers, with a view to engaging a man to train the members of the Harvard football and baseball teams. A large number of trainers came up for consideration, and of that number I personally interviewed ten. A series of general questions was asked, in order to determine, as far as possible, the candidates' fitness for the task. The answers to the questions were interesting as displaying the point of view and the lack of accurate basis for training, and it is for that reason that I ven-

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* Read at the semi-annual meeting of Suffolk District Medical Society, Oct. 27, 1906.

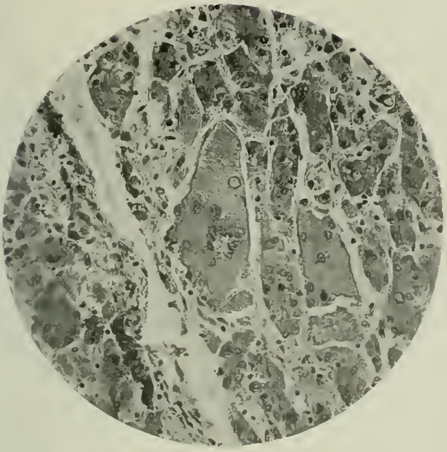

FIG. 1. To show the character of the large multinuclear cells in the liver of Case I.

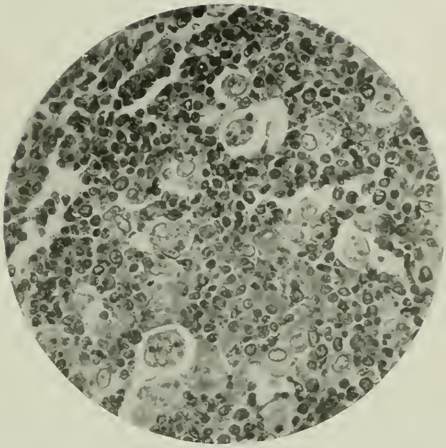

FIG. 2. To show the endothelial cells seen in the spleen of Case I.

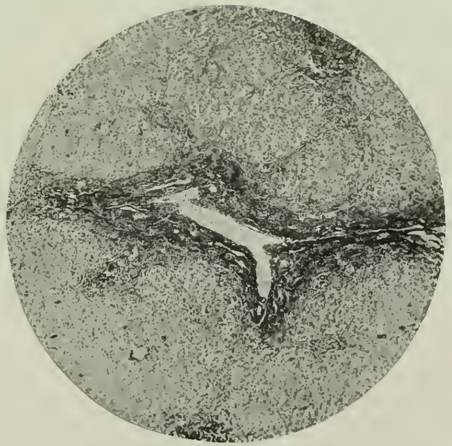

FIG. 3. To show the increase of the connective tissue in the region of the portal vessels seen in the liver of Case II.

ture to report very briefly, and in a general way, the character of the answers.

Since the first duty of a trainer is to present a man for a competitive contest in the condition of highest possible physical efficiency, the first question asked, naturally, was by what means the trainer determined whether a man was or was not in such a state of efficiency, — that is, how the trainer determined whether a man was "fit." To that question the answers were practically unanimous, the answer being that the condition was determined by the "appearance" of the man. Some of the trainers were unable to specify any further what that "appearance" meant. Others said, that if a man's eye was bright, if his color was good, and his lips were red, he was in good condition. Others added, that if the man "felt well" much stress was to be laid upon that fact. On the other hand, a man was unfit or "over-trained" if his eye was dull, if he was sleepless and if his color was poor. One man specified that poor color meant a "blue look." The value of the evidence of a man's feeling well seems to me, from a considerable experience with young men in training, to be very slight, as athletes are very loath to acknowledge that they do not feel up to their very best, since complaints of unfitness may be taken as evidence of a lack of courage.

When asked what was the best single indication of a man's condition, some of the trainers replied that the best index of all was a man's weight. They all agreed that a continuous loss of weight was practically always a definite sign that a man had "gone stale." They also all agreed that a considerable loss of weight after daily exercise should be replaced by the next day, and that if the loss was not immediately replaced at the end of twenty-four hours, and if the loss continued, that it was very strong evidence of over-training. They also all agreed, however, that most men beginning training should, for a time at least, lose weight and then either hold their own or slowly add weight; but no one of them was able to give any accurate information as to the percentage of the total weight that should be lost in training. About a third of the men stated that the reduction in weight should cease at the end of about three weeks, and after that there should be no marked depreciation in weight, or a slight increase should begin.

The amount of daily work required to bring men to their best physical condition was another question. The answers to this question were very varied: One man, for instance, thought that a daily scrimmage of forty-five minutes on the football field was not an excessive amount of work; other men thought that fifteen minutes' scrimmage daily was sufficient. It must be borne in mind that besides the scrimmage work there is also a very considerable amount of running through signals and other routine work which must be done daily, which of course very greatly increases the amount of time during which men are exercising. From my own experience, I believe that forty-five minutes' scrimmage in addition to the other routine football work is very greatly in excess of the amount of work that the ordinary individual can stand.

The question also arose as to how long men could be kept at the very tiptop of physical condition. The important athletic games, of course, ordinarily come at the end of the season. If only one important game is played, the question of condition is relatively simple. If, however, for instance, two important games are to be played, the question arises whether it is possible to have men at their very tiptop for both games; and it is also important to know whether the two important games should be played within a few days of eachother, or whether it is better to have those important games separated by a longer interval of time. The answers to the question as to how long men could be kept at tiptop condition were very variable, some trainers claiming that men could be brought to their maximum and kept at that maximum for a period of about three weeks. In that case the best way to arrange the important games, would be to have them separated by a period of two weeks. Other men claimed that physical condition of men in training was either constantly improving or constantly deteriorating; one man claimed, for instance, that it is not possible to keep men at their very top form for a period longer than three days. If that were the case, it would be necessary to have the men a little bit short of work for their first important game and to bring them to their maximum for the second game, to be not more than a week later. None of the men were able to give any really clear or distinct idea as to how they would judge when a man was at his absolute maximum.

The question as to what to do with men who had reached their maximum and had begun to go off again, that is, with the men who were over-trained, also was brought up. The important question was, how long it took to get men who had been over-trained into good condition again. The answers to that question were very variable, some trainers claiming that men who had "gone stale" could be brought into condition again by a rest of two or three days. Others said that men who had been over-trained could be brought into condition only by a rest extending over several weeks; and one man said that an athlete who had really "gone fine" could not be brought into the pink of condition again during a competitive season.

The question as to how athletes in training should be fed brought out a general indefiniteness. It was obvious that none of the trainers had the faintest idea of any scientific method of feeding; the general answer as to the question of feeding being that the men should be fed "upon digestible food which agreed with them." Some men apparently proposed to carry out a very strict regimen; others believed that it was unnecessary to interfere with the usual feeding of the men to any great extent. They all agreed that pastry and fried food were undesirable. Several claimed that milk to any great extent was an undesirable food because it "affected the wind"; although they were unable to give any reason for their statement. They nearly all agreed in excluding fats as far as possible. In this connection it may be worth while to mention an incident seen at one of the Harvard training tables, and observed in a less degree often. I have seen a man come up from the football field, and before soup was served eat a half a pound of butter on less than a whole slice of bread, and this remarkable desire for fats, which are very largely excluded from regular training diet, is common and notable.

In connection with the food, the question was asked as to the value of alcohol in any form to men in training. The trainers were almost, without exception, themselves abstainers, and very few of them smoked. Their ideas as to the value of alcohol were very variable. They practically all agreed that spirits in any form were undesirable, and they were also almost unanimous that some of the malt liquors were desirable and valuable, especially towards the latter end of training. Bass's ale was considered the best of all the alcoholic stimulants. The reason for that none of them was able to give, although my own impression has been, that it is due to the fact that men in training, daily fatigued by the great amount of exercise they take, are much more easily affected by alcohol than under ordinary conditions, and that Bass's ale quickly going to their heads gives them a feeling of comfort, and in that way, perhaps, may induce sleep and lessen the feeling of fatigue. Why the same thing should not be just as well brought about by either wine or spirits is not clear.

To sum up, then, there was no practical agreement upon the amount of work, the length of time during which men could be kept in top condition, or the character of the food to be given to men in training. There was practically complete agreement that weight was the one accurate index of condition. None of the men had had any medical education, and their judgment was based entirely upon experience and "rule of thumb."

The whole thing, then, comes down to a very indefinite general impression, plus the indication shown accurately by weighing scales, and all this seems to show that the science of training is a very indefinite and crude one, and that the most valuable trainer is, in all probability, the man who knows human nature, especially the nature of young men, best.

MEDICAL ASPECTS OF ATHLETICS IN PREPARATORY SCHOOLS.*

BY JOHN BAPST BLAKE, M.D., BOSTON.

DURING the past five or six years the writer has had the opportunity of examining with considerable care a large number of boys who have gone into athletics in the preparatory schools, and of inspecting and to some extent supervising an additional number who were not necessarily schoolboys, but were amateurs between the ages of fourteen and twenty years.

The opinions and conclusions here expressed are based therefore on observations covering several years, made upon a large number of boys, who were taking part in many different sports; they are free from those fallacies and illogical inferences which have been known to arise from observing a single sport in a single year.

The examinations include: Candidates for the interscholastic crews; candidates for interscholastic track teams; individual members of interscholastic football, baseball and basketball teams; long distance runners; contestants in sparring at the Boston Athletic Association.

It may be stated at the outset, that the writer is a firm believer in athletics and sports both for the boy, the youth of both sexes and the adult. It would be most unfortunate if interscholastic games and similar contests were prohibited; nevertheless, no fair-minded observer can fail to recognize serious defects in and objections to many of the methods which now obtain. If most of these objectionable features are not eliminated, the advisability of continuing these sports must be considered. It is because I believe that they can and will be eliminated that I desire to bring them forward for consideration.

As a premise which all will accept, it is obvious that anything which continually damages a boy's health, morals or capacity for acquiring knowledge, must be eradicated from any educational system. It is primarily with the boy's health that we are concerned to-night.

There are some undesirable elements common to all competitive athletics; common at least in this country at the present time; and there are others peculiar to certain sports which may be worth considering in detail.

Among objections of a general nature may be placed first the final contest or competition itself. That the physical and mental exertion involved in any serious contest is a good thing in itself, few would claim, though the writer believes that the physical strain is often in these conditions the least serious element. To prepare for this physical strain, and to minimize any of its undesirable results, are the aims of "training" so-called, while practice and instruction aim at perfection in the execution of the sport itself. Is the strain in the interscholastic contests disproportionate to the strength of the boys, if properly trained? And are the methods of training for these contests the best that can be devised?

I believe the strains involved are not too great for properly selected and properly trained boys, but there are too frequent cases of poor judgment, both in the selection of individuals and in the character of their preparation.

The first and one of the most serious objections in selection consists in permitting and at times compelling a boy of exceptional skill to compete in two, three or even four sports. This requires more or less continuous training throughout the entire school year, sometimes beginning before the school opens and occasionally continuing through the vacation periods. For this continuous, unrelenting physical exertion, the boy's growing organism is not so well adapted as that of a more mature age; and an accompaniment of the physical is, of course, the mental strain. The general rule, to which individual exceptions could be made, should be that no boy should represent his school in more than two sports, and that these should be separated by considerable periods of time.

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* Read at the semi-annual meeting of Suffolk District Medical Society, Oct. 27, 1906.

Another *general* objection is the enormous and still growing publicity of school contests. They now occupy a position in the eyes of the public almost greater than that of college contests of fifteen or twenty years ago; and of course out of all proportion to their actual importance. This unfortunate publicity is not diminished by the daily press, and the long stories, pictures and photographs of games and players increase the nervous strain on many of the boys, at times to a serious degree.

Bad as this condition is in the college world, it is still worse for the schoolboy, as he is in the time of life when such false impressions easily take root and often become most difficult to eradicate.

A third general objection is the fact that competition has an inevitable tendency to diminish the number of the candidates to such as have a good chance for final positions on the larger teams. This again is more serious in schools than in colleges, because obviously the very boys who most need the early formation of the habits of out-of-door exercise, the benefit of discipline and the development of a good physique are not, as a rule, good material for the best teams, as will be pointed out. This objection may be easily diminished almost to zero.

Finally, the major games have grown apparently so important that coaches, and occasionally the masters themselves, become too anxious to win. It is obvious that not a few preparatory schools have in the past used as their chief asset the attraction of a powerful eleven or track team. The individual, purchasable interscholastic star has even appeared as the direct result of such conditions.

As another result the individual boy may be so persistently over-worked as to make serious inroads upon his stamina, sacrificing the individual for the sake of team victory which in turn redounds to the credit of the coach. The frequency with which coaches are changed in school teams allows a careless man to take measures for a single victory which might result in unnecessary personal injuries to his own or to opposing players, or to leave to his successor undeveloped secondary athletes unable to stand the stress of important games.

I hesitate to speak of the rowdyism among the boy spectators which has lately characterized and followed some school contests. It does not obviously enter into the medical aspects of the subject. A continuance of such disturbances would warrant the abolition of all interscholastic games in which it occurred. It is due, however, as much to indifference of parents and masters as to the boys themselves, and it could be easily and entirely eradicated.

Having thus briefly considered general objections, the characteristics of particular sports may be examined.

Of these, rowing is unquestionably the best: it possesses the fewest unpleasant, and the greatest number of desirable, characteristics. It is in the first place firmly controlled by a committee of a large association, whose members are mature men of judgment, whose interest in rowing is keen, but who are awake to the importance of supervision and regulation. The coaches are carefully selected, the exercise is not too severe, the actual rowing takes place but three times a week and extends over a long period, and the medical examination is a pre-requisite to competition. Its only disadvantage is that the actual race is always a hard physical effort; at times conditions of distinct temporary collapse have occurred at the finish line, but I have never known of any lasting effect.

Baseball is second as a beneficial sport. It lacks the grueling contests of rowing, but in its practice, its coaching and the circumstances of its games, it is distinctly inferior. It is, however, an admirable exercise for the light, skillful boy, and, unlike many other sports, does not put too great a premium on simple muscular strength.

Football is third, and distinctly better than track games; this, of course, is in direct opposition to the judgment of many, and particularly to those who share the exaggerated and prejudiced views against the game, which are at present so widespread.

Football suffers in common with all the rougher sports, those which President Roosevelt so well described as the "personal contact games," — sparring, wrestling, lacrosse, hockey, etc., from the bugbear of minor and at times major injuries. The real objections to football — and the writer believes that they *are* real though not insuperable — lie not in physical but in moral conditions. As an all-round game, it is still the best we know, and its physical disadvantages could be easily reduced three fourths by the simple expedient — particularly desirable in preparatory schools — of having teams with a weight restriction as has, from time immemorial, been the custom in the allied sports of wrestling and sparring: feather weight, light weight, middle weight and heavy weight teams would do more to diminish the casualties and increase the attractiveness of football than a long list of other complicated and cumbersome reforms.

Football comes at a season of the year when the boys are best prepared for hard exercise, and the weather best adapted for it. Its season is short. The writer believes that the training should be less severe; there should be little or no running as an adjunct to the practice, and the practice itself, now of daily occurrance, should be limited to three times a week. The supervision both of contestants and spectators should be infinitely more thorough, more persistent and more effective than it now is.

Track games are fourth in order of desirability. The reasons are that many of the contests are extremely severe physical tests, fully as exhausting as the rowing races. Much of the practice and training is indoor work, and occurs in the winter; at least one of the meetings is an indoor contest; and many who have played football, and are later to row, are permitted to participate; the writer considers the indoor mile run and the indoor relay race as the two most severe physical strains to which schoolboys are to-day submitted, with the possible exception of the Marathon run.

The indoor meeting might be omitted without serious consequences; seldom if ever should a boy competing in football and rowing be permitted to go on the track team; practically never should a boy be allowed to run either the mile or the relay indoors, and to enter any other event in the same meeting,

Basketball is the least desirable of the major school sports. The physical and moral risks are alike serious. The contest takes place indoors and on hard floors. The game at present possesses little claim to peculiar advantages not possessed in equal or greater degree by other and in other respects more desirable sports.

The correction and eradication of these faults and dangers, which at first glance may appear formidable, depends, the writer is convinced, upon the recognition of the great importance and the proper position of athletics in the preparatory school curriculum. Exercise, in the form of sports, games, etc., that is, organized exercise of the non-gymnastic type, has become, and will remain, a permanent element in American schools (as happened a couple of generations earlier in most English schools). The recognition of this fact by parents, masters and instructors, including athletic instructors, means that far more careful thought and personal supervision shall be expended upon this side of the school work; far more attention shall be paid to the selection of coaches, whose general fitness shall be examined in a manner now infrequent, and who should preferably be a graduate of the school, and far more personal interest manifested by the parents of the contesting boys; the parents have in the past been particularly indifferent.

In those sports and games in which a paid instructor, commonly called a coach, seems necessary, the selection of this instructor is of the utmost importance and should be determined only after careful consideration by the head master, assisted by his teachers, and not too greatly influenced by the wishes of the boys. The work and methods of the coach should be constantly inspected by instructors of the school, and it should be demonstrated that he earns his often too large salary by rendering really acceptable service in his special branch of work, and by setting a good example to his boys, both on and off the practice field.

The coach should be assisted by a doctor who has had some experience in the examination of young athletes, and who does not hesitate to use his common sense in tactfully preventing boys from competing, as much from general causes as from specific conditions. Altogether too frequently in the past has a doctor, often the family doctor, waited for an actual murmur in the heart before taking a boy out of a major sport; much more frequently should boys have been requested to give up competition, not for a single definite cause, but from a general estimate of physique, age, previous illness, nervousness or disproportion of height to weight, etc. It is seldom that a doctor must prohibit competition on account of true organic disease of heart or any other organ. If such disease existed, the boy would not be able to do his part; care should be taken that a report of " heart disease " does not spread in case a boy is stopped for other reason. A rigorous enforcement should be made of the rule against continuous training, and steady pressure brought to bear against representing the school in more than two events. The training itself, besides of course proscribing alcohol and tobacco, should be varied and as free from irksomeness as possible. Instead of running, as a daily supplement of all practice, walking should be recommended, and cross country walking on Sundays and holidays throughout the year should be encouraged to the utmost. The social side of such walks should be maintained by a lunch or dinner at the finish, with a talk or some singing afterwards; or the walks may be combined with geological excursions and practical study of trees and plants and animals. For this purpose a kodak is invaluable. In short, every effort should be made towards developing physique, strength, staying power and resistance by methods which are pleasant and as little machine-like as possible. On all these things doctor and coach should confer.

Food. — Almost without exception, boy athletes come under Professor Chittenden's characterizations when he said, as a result of a long series of careful experiments, " We eat too much, we eat too fast and we eat too much meat." Meat twice a day with plenty of fruit and vegetables, and a generous allowance of fats should be the school boy's regimen. To eat slowly and chew thoroughly are still more important.

The boy needs nine hours' sleep as a rule, and ten hours' occasionally; it is not wasted time during the growing years.

The regulation and management of sports in each school should be not in the hands of the boys, but vested in a committee composed of the head master, an instructor, the coach, if possible the doctor, and the captain and manager of each particular sport under consideration. In other words the boys should have only a minority voice in the arrangement of games, duration of practice, etc. Unless the head master can and will give some time to these things, school athletics will continue to be full of unnecessary dangers; unless the parents take pains to understand sympathetically their boys' participation in these games, physical conditions, otherwise difficult to detect, will be overlooked to the boys' detriment. Unless coach and doctor use common sense as well as technical knowledge, athletics in boys will result in some harm.

Hockey, tennis, golf, squash and similar games are excellent and should be consistently encouraged; they need but little regulation. Each new game or sport developed, means that a larger number of boys who take exercise. In the establishment of these subsidiary sports, in the far more strict supervision of the older sports, in the introduction of walking in its various forms, and in the personal interest of the parent, the teacher, the doctor and the coach in the schoolboy's play, as in his work, lies, the restoration of school athletics to its proper position, — a position of great importance, a source of much pleasure and more health, a potential moral influence and an essential educational factor.

◆

THE MEDICAL KNOWLEDGE OF SHAKESPEARE.

BY ALBERT C. GETCHELL, M.D., WORCESTER, MASS.

(Concluded from No. 3, p. 70.)

The practice of inspecting urine for the determination of disease is of a very remote date. It doubtless arose from the interdictions of the clergy, which forbade priests and monks from visiting their patients. Richardus Angelicus, one of the earliest of English physicians, who lived about the year 1230, left two works on the subject, "A Tractate of Urines" and "On the Rules of Urines." That the practice was widely in vogue and continued during Shakespeare's time is shown by the fact that Dr. Harris, the founder of the College of Physicians, strongly inveighed against it: "There have been as bad a race of defenders, both men and women, who will, or have, undertaken to tell all things from the urine."[7] Shakespeare, in several places, alludes to this practice. Speed thus discourses:

> "But you are so without these follies, that these follies are within you, and shine through you like the water in an urinal, that not an eye that sees you, but is a physician to commenton your malady."
>
> (The Two Gentlemen of Verona, II, I, 35.)

To heap ridicule upon Dr. Caius, in "The Merry Wives of Windsor," the host thus accosts him:

> "Thou art a Castilian, King Urinal."
>
> (The Merry Wives of Windsor, II, 3, 33.)

And soon after:

> "*Host.* A word, Monsieur Mock-water."
>
> (*Ibid.*, line 56.)

Again:

> "*Evans.* I will knog his urinals about his knave's costards." (*Ibid.*, III, 1, 15.)

These epithets are applied in coarse jest, and probably indicate that Shakespeare intended to throw ridicule on the practice of urine casting, as it was called, seeing what a shallow pretense it was. However, he makes more or less frequent reference to it, thus:

> "*Falstaff.* Sirrah, you giant, what says the doctor to my water?
>
> *Page.* He said, sir, the water itself was a good healthy water; but, for the party that owed it, he might have more diseases than he knew for."
>
> (King Henry IV, Part II, I, 2, 1.)

And

> "*Macbeth.* If thou could'st, doctor, cast
> The water of my land, find her disease,
> And purge it to a sound and pristine health,
> I would applaud thee to the very echo."
>
> (Macbeth, V, 3, 50.)

When Malvolio is definitely pronounced to be mad, Fabian says:

> "Carry this water to the wise woman."
>
> (Twelfth Night, III, 4, 104.)

The explanation of this passage may be found in Heywood's play, "The Wise Woman of Hogsdon": "You have heard of mother Nottingham, who for her time was prettily well skilled in casting waters; and after her mother Bombye." The several occupations of these imposters are thus described in this play by Heywood: "Let me see how many trades I have to live by: First, I am a wise woman, and a fortune teller, and under that I deale in physicke and forespeaking, in palmistry and recovery of things lost. Next I undertake to cure madd folks," etc.[8]

That our bodies consist of four elements, — fire, air, earth and water, — and that disease was due to a derangement of these elements was an old and well accepted dictum of pathology, dating from Plato. It was substantially adopted by Galen, and embraced on his authority by the Middle Age schoolmen.

Sir Tobey Belch gives expression to this idea when he says:

> "Does not our life consist of the four elements?
>
> *Sir Andrew Ague-Cheek.* Faith, so they say; but I think it rather consists of eating and drinking."
>
> (Twelfth Night, II, 3, 9.)

So in "Julius Cæsar" (V, 5, 73), Antony, speaking of Brutus, says:

> "His life was gentle; and the elements
> So mix'd in him that nature might stand up,
> And say to all the world, 'This was a man.'"

Falstaff, to whom we are indebted for many wise sayings, when he exclaims against fighting on a hot day, wishes he may

> "Never spit white again"
>
> (King Henry IV, Part II, I, 2, 210.)

should it so happen. The color of the spittle was with the medical men of olden times an important point of diagnosis, especially of temperaments.

The medical doctrine of crisis was universally prevalent, and it is to this undoubtedly that the following passage refers:

> "*Pandulph.* Before the curing of a strong disease,
> Even in the instant of repair and health,
> The fit is strongest: evils that take leave,
> On their departure most of all show evil."
>
> (King John, III, 4, 112.)

The terms "choler" and "imposthumes" were of frequent use in the old pathology. Choler referred to the bile, and irascibility of which the bile was supposed to be the seat and cause. In this passage it was used in both senses:

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[7] Bucknill, p. 62.

[8] Furness: The Variorum Shakespeare, "Twelfth Night," p. 224.

> "*Guildenstern.* The king, sir, —
> *Hamlet.* Ay, sir, what of him?
> *Guildenstern.* Is, in his retirement, marvellous distempered.
> *Hamlet.* With drink, sir?
> *Guildenstern.* No, my lord, rather with choler.
> *Hamlet.* Your wisdom should show itself more richer, to signify this to his doctor; for, for me to put him to his purgation, would, perhaps, plunge him into far more choler." (Hamlet, III, 2, 299.)

"Imposthumes," or "aposthumes," — for the word is written by the older surgical writers both ways indifferently, — had a wide meaning; indeed, according to Ambroise Paré's classification of them into five species, the name appears to have included everything that could have been called a swelling "against nature," for instance, an abscess of the liver, which might grow and burst into the lung, without giving any external evidence of what it was, as in this passage:

> "*Hamlet.* This is the imposthume of much wealth and peace,
> That inward breaks, and shows no cause without
> Why the man dies." (Hamlet, IV, 4, 27.)

Chlorosis, or green sickness, an affection of the blood to which young women are peculiarly liable, is spoken of several times, thus:

> "*Viola.* She never told her love, —
> But let concealment, like a worm i' the bud,
> Feed on her damask cheek; she pin'd in thought;
> And, with a green and yellow melancholy,
> She sat like Patience on a monument,
> Smiling at grief." (Twelfth Night, II, 4, 110.)

That Shakespeare knew it to be a disease peculiar to women is shown by these passages, where he speaks of it as a kind of male green-sickness:

> "*Falstaff.* Good faith, this same young sober-blooded boy doth not love me, nor a man cannot make him laugh; but that's no marvel, he drinks no wine. There's never any of these demure boys come to any proof; for thin drink doth so over-cool their blood, and making many fish-meals, that they fall into a kind of male green-sickness; and then, when they marry, they get wenches." (King Henry IV, Part II, IV, 3, 90.)

So also:

> "Cæsar is sad; and Lepidus,
> Since Pompey's feast, as Menas says, is troubled
> With the green sickness." (Antony and Cleopatra, III, 2, 4.)

Blood letting was an important and often practiced therapeutic measure, and there are many allusions to it, thus:

> "*Rosaline.* Is the fool sick?
> *Biron.* Sick at the heart.
> *Rosaline.* Alack! let it blood.
> *Biron.* Would that do it good?
> *Rosaline.* My physic says, ay.
> *Biron.* Will you prick't with your eye?
> *Rosaline.* *No point*, with my knife." (Love's Labour's Lost, II, 1, 182.)

Again, in the same play, he expresses, not only the humoral pathology of fever, and prescribes its antiphlogistic treatment, but alludes to the custom of the phlebotomists of the time:

> "*Dumain.* I would forget her; but a fever she
> Reigns in my blood, and will remember'd be.
> *Biron.* A fever in your blood? Why, then incision
> Would let her out in saucers: sweet misprision!" (Love's Labour's Lost, IV, 3, 93.)

The following refers also to the old notion of a particular time of the year being better than other times for blood letting. The forty-seventh aphorism of Hippocrates, section 6, is that, "Persons who are benefited by venesection or purging should be bled or purged in the spring."

> "*King Richard.* Wrath-kindled gentlemen, be rul'd by me,
> Let's purge this choler without letting blood.
> This we prescribe, though no physician;
> Deep malice makes too deep incision;
> Forget, forgive; conclude, and be agreed.
> Our doctors say this is the month to bleed." (King Richard II, I, 1, 152.)

The word *consumption* is used at least twice in its modern sense:

> "*Beatrice.* I would not deny you: — but, by this good day, I yield upon great persuasion; and, partly, to save your life, for I was told you were in consumption." (Much Ado about Nothing, V, 4, 96.)

She evidently thinks the disease curable; not so Falstaff:

> "*Falstaff.* I can get no remedy against this consumption of the purse: borrowing only lingers and lingers it out, but the disease is incurable." (King Henry IV, Part II, I, 2, 235.)

"Hectic" we find used in its modern sense of a persistent cause of irritation and fever. After the king has sent off Hamlet to England, where he expects he will be murdered, he says:

> "*King.* Do it, England;
> For like the hectic in my blood he rages,
> And thou must cure me." (Hamlet, IV, 3, 67.)

The king's evil was probably a form of tuberculosis. Its cure is thus described:

> "*Malcolm.* Comes the king forth, I pray you?
> *Doctor.* Ay, sir; there are a crew of wretched souls,
> That stay his cure: their malady convinces
> The great assay of art; but at his touch,
> Such sanctity hath heaven given his hands,
> They presently amend.
> *Malcolm.* I thank you, doctor.
> *Macduff.* What's the disease he means?
> *Malcolm.* 'Tis call'd the evil;
> A most miraculous work in this good king,
> Which often, since my here-remain in England,
> I have seen him do. How he solicits Heaven,
> Himself best knows; but strangely-visited people,
> All swoln and ulcerous, pitiful to the eye,
> The mere despair of surgery, he cures;
> Hanging a golden stamp about their necks,
> Put on with holy prayers: and 'tis spoken,
> To the succeeding royalty he leaves
> The healing benediction." (Macbeth, IV, 3, 140.)

We find allusions to some curious therapeutic agencies. Bottom the weaver, when Cobweb was presented to him, said:

> "*Bottom.* I shall desire more of your acquaintance, good master Cobweb. If I cut my finger, I shall make bold with you." (Midsummer Night's Dream, III, 1, 184.)

Plantain water was a remedy then in common use.

> "*Moth.* A wonder, master! here's a Costard broken in a shin.
> *Armado.* Some enigma, some riddle: come, — thy l'envoy; — begin.

Costard. No enigma, no riddle, no l'envoy! no salve in them all, sir. O, sir, plantain, a plain plantain! no l'envoy, no l'envoy: no salve, sir, but a plaintain."
(Love's Labour's Lost, III, 1, 72.)

So also:

"*Romeo.* Your plantain-leaf is excellent for that.
Benvolio. For what, I pray thee?
Romeo. For your broken shin."
(Romeo and Juliet, I, 2, 51.)

After Gloster's eyes have been cruelly ground out, in pity the servant who was told to thrust him out of his own house, says:

"*Third Servant.* Go, thou; I'll fetch some flax, and whites of eggs,
To apply to his bleeding face. Now, heaven help him!"
(King Lear, III, 7, 106.)

Apropos of eyes, the term, "pin and web" seems to have been an expression for the condition we understand as cataract. Florio, in his new "World of Words," thus interprets the Italian *cataratta* — "a dimness of sight occasioned by humours hardened in the eyes, called a cataract or a pin and web." We find this term in "Winter's Tale" (I, 2 290):

"*Leontes.* All eyes
Blind with the pin and web, but theirs, theirs only
That would unseen be wicked?"

And in "King Lear" (III, 4, 116):

"*Edgar.* This is the foul fiend Flibbertigibbet: . . . he gives the web and the pin, squints the eye, and makes the hare-lip."

Although we are not to suppose that Shakespeare had in mind the remedial function of sleep, yet in these days, when rest of the body and mind is recognized as such an important factor in the treatment of disease, Macbeth's apostrophe to sleep is interesting:

"*Macbeth.* Sleep, that knits up the ravell'd sleave of care,
The death of each day's life, sore labour's bath,
Balm of hurt minds, great nature's second course,
Chief nourisher in life's feast." (Macbeth, II, 2, 35.)

SURGERY.

There are comparatively few passages in Shakespeare that have a surgical significance. Surgery was very little cultivated and applied mainly to the relief of injuries accidental or otherwise. The two following quotations evidently borrow their figure from the formation of an abscess:

"The time will come that foul sin, gathering head,
Shall break into corruption."
(King Henry IV, Part II, III, 1, 76.)

And:

"*Salisbury.* His passion is so ripe, it needs must break.
Pembroke. And when it breaks, I fear, will issue thence
The foul corruption of a sweet child's death."
(King John, IV, 2, 79.)

And this to the necessity of removing a diseased member to save the rest of the body:

"This fester'd joint cut off, the rest rests sound;
This let alone, will all the rest confound."
(King Richard II, V, 3, 85.)

And this to the difference between a clean cut and a ragged one:

"Fell sorrow's tooth doth never rankle more,
Than when it bites, but lanceth not the sore."
(*Ibid.*, I, 3, 302.)

And another:

"*Archbishop.* 'Tis very true;
And therefore be assur'd, my good lord marshal,
If we do now make our atonement well,
Our peace will, like a broken limb united,
Grown stronger for the breaking."
(King Henry IV, Part II, IV, 1, 220.)

The tent, frequently mentioned, was a substance made of lint or flax which in the rough surgery of the time was thrust into wounds. There are several allusions to it:

"*Marcius.* I have some wounds upon me, and they smart
To hear themselves remember'd.
Cominius. Should they not,
Well might they fester 'gainst ingratitude,
And tent themselves with death." (Coriolanus, I, 9, 28.)

"*Hector.* Modest doubt is call'd
The beacon of the wise, the tent that searches
To the bottom of the worst."
(Troilus and Cressida, II, 2, 15.)

"*Patroclus.* Who keeps the tent now?
Thersites. The surgeon's box, or the patient's wound."
(*Ibid.*, V, 1, 12.)

But sometimes it meant to probe as well. When Hamlet has arranged the play to prove the king's guilt, he says:

"I'll tent him to the quick: if he but blench. I know my course." (Hamlet, II, 2, 607.)

And:

"*Imogen.* Talk thy tongue weary; speak:
I have heard I am a strumpet; and mine ear,
Therein false struck, can take no greater wound,
Nor tent, to bottom that. But speak."
(Cymbeline, III, 4, 115.)

Among certain peoples tooth-ache has been ascribed to a worm. With the Chinese even to the present time quacks pretend to cure it by extracting a worm. In a book of John of Gatisden, an Italian medical authority of the fourteenth century, the decay of the teeth is ascribed to a humor or aworm. So that Shakespeare had authority for this passage:

"*Benedick.* I have the tooth-ache.
Don Pedro. Draw it.
Benedick. Hang it!
Claudio. You must hang it first, and draw it afterwards.
Don Pedro. What! sigh for the tooth-ache?
Leonato. Where is but a humour, or a worm?"
(Much Ado about Nothing, III, 2, 20.)

I will close this part of my paper with a sage remark of Sir John Falstaff, on reducing his weight, and also a description of oncoming age:

"If I do grow great, I'll grow less; for I'll purge, and leave sack, and live cleanly, as a noble man should do."
(King Henry IV, Part I, V, 4, 163.)

"*Chief Justice.* Do you set down your name in the scroll of youth, that are written down old with all the characters of age? Have you not a moist eye, a dry hand, a yellow cheek, a white beard, a decreasing leg, an increasing belly? Is not your voice broken, your wind

short, your chin double, your wit single, and every part about you blasted with antiquity, and will you yet call yourself young? Fie, fie, fie, Sir John!"
(King Henry IV, Part II, I, 2, 177.)

SYPHILIS.

Shakespeare appears to have had a very considerable knowledge of syphilis, which in his time was attracting a large share of public and professional attention, both because of its novelty and its ravages:

"*Duke Senior.* Most mischievous foul sin, in chiding sin:
For thou thyself hast been a libertine,
As sensual as the brutish sting itself;
And all the embossed sores, and headed evils,
That thou with license of free foot hast caught,
Wouldst thou disgorge into the general world. . . ."
(As You Like It, II, 7, 64.)

And:

"*Lucio.* Behold, behold, where Madam Mitigation comes!
First Gent. I have purchased as many diseases under her roof, as come to —
Second Gent. To what, I pray?
Lucio. Judge.
Second Gent. To three thousand dollars a year.
First Gent. Ay, and more.
Lucio. A French crown more."
(Measure for Measure, I, 2, 43.)

The French crown was the common venereal rupia, a particular form of which was called "*le chapelet*," since the tubercles were to be found about the forehead, temples and behind the ears, forming the figure of a crown. This French crown is spoken of again also with the loss of hair:

"*Quince.* Some of your French crowns have no hair at all, and then you play bare-faced."
(Midsummer Night's Dream, I, 2, 92.)

Also:

"*Clown.* As fit as ten groats is for the hand of an attorney, as your French crown for your taffeta punk."
(All's Well that Ends Well, II, 2, 21.)

And:

"*Pistol.* News have I, that my Nell is dead i' the spittal
Of malady of France."
(King Henry V, V, 1, 83.)

It also had another name:

"*Thersites.* After this, the vengeance on the whole camp! or rather, the Neapolitan bone-ache; for that, methinks, is the curse dependant on those that war for a placket."
(Troilus and Cressida, II, 3, 17.)

And still we find another name:

"Now the rotten diseases of the south."
(*Ibid*, V, 1, 19.)

It is evidently this disease that the grave digger refers to:

"*Hamlet.* How long will a man lie i' the earth ere he rot?
First Clown. 'Faith, if he be not rotten before he die (as we have many pocky corses now-a-days, that will scarce hold the laying in), he will last you some eight year, or nine year: a tanner will last you nine year."
(Hamlet, V, 1, 169.)

That the disease was considered disgraceful is evident from these passages:

"O hound of Crete, think'st thou my spouse to get?
No; to the spittal go,
And from the powdering tub of infamy
Fetch forth the lazar kite of Cressid's kind,
Doll Tear-sheet she by name, and her espouse."
(King Henry V, II, 1, 75.)

Also:

"*King.* But like the owner of a foul disease,
To keep it from divulging, let it feed
Even on the pith of life." (Hamlet, IV, 1, 21.)

The powdering-tub as also the allusions to follow referred to the treatment by sweating and the use of mercury by fumigation, as well as the treatment by diet:

"*Timon.* Art thou Timandra?
Timandra. Yes.
Timon. Be a whore still! they love not that use thee:
Give them disease, leaving with thee their lust.
Make use of thy salt hours; season the slaves
For tubs and baths; bring down rose-cheeked youth
To the tub-fast and the diet."
(Timon of Athens, IV, 3, 80.)

And

"She, whom the spittal-house and ulcerous sores
Would cast the gorge at, this embalms and spices"
(*Ibid.*, IV, 3, 39.)

alludes to the secondary symptoms, while the following passage, also from "Timon of Athens," is a remarkably true and complete description of the tertiary manifestations of the disease:

"*Timon.* Consumptions sow
In hollow bones of man! strike their sharp shins,
And mar men's spurring. Crack the lawyer's voice,
That he may never more false title plead,
Nor sound his quillets shrilly: hoar the flamen,
That scolds against the quality of flesh,
And not believes himself: down with the nose,
Down with it flat; take the bridge quite away
Of him, that, this particular to foresee,
Smells from the general weal: make curl'd-pate ruffians bald;
And let the unscarr'd braggarts of the war
Derive some pain from you. Plague all,
That your activity may defeat and quell
The source of all erection, — there's more gold:
Do you damn others, and let this damn you,
And ditches grave you all."
(Timon of Athens, IV, 3, 150.)

OBSTETRICS.

There is no warrant for a suggestion that gynecology or obstetrics existed as a separate branch of the practice of medicine, yet there are several allusions to the conditions and diseases peculiar to women:

"*Capulet.* My child is yet a stranger in the world,
She hath not seen the change of fourteen years;
Let two more summers wither in their pride,
Ere we may think her ripe to be a bride.
Paris. Younger than she are happy mothers made.
Capulet. And too soon marr'd are those so early made." (Romeo and Juliet, I, 2, 8.)

We can only surmise whether in the following passage Ægeon refers to the faintness which attends the period of quickening, or the exhaustion of parturition:

"Drew me from kind embracements of my spouse:
From whom my absence was not six months old,
Before herself (almost at fainting under
The pleasing punishment that women bear)
Had made provision for her following me,

And soon, and safe, arrived where I was,
There had she not been long, but she became
A joyful mother of two goodly sons."
(The Comedy of Errors, I, 1, 43.)

A charm against sterility is spoken of by Plutarch, who describes the feast of Lupercalia, in which noble young men run naked through the streets, striking in sport whom they meet with leather thongs:

"*Cæsar.* Caliphurnia!
Caliphurnia. Here, my lord.
Cæsar. Stand you directly in Antonius' way,
When he doth run his course. Antonius!
Antonius. Cæsar, my lord.
Cæsar. Forget not, in your speed, Antonius,
To touch Caliphurnia; for our elders say,
The barren, touched in this holy chase,
Shake off their sterile curse."
(Julius Cæsar, I, 2, 3.)

The following is half medical, half legal, and expresses the merciful theory of the English practice, I believe not of English law, that an unborn child is innocent of the guilt of its mother. When Hermione has been brought to bed in prison, Paulina thus speaks:

"You need not fear it, sir:
The child was prisoner to the womb, and is,
By law and process of great nature, thence
Freed and enfranchis'd; not a party to
The anger of the king, nor guilty of,
If any be, the trespass of the queen."
(Winter's Tale, II, 2, 59.)

When Joan of Arc is condemned to the stake as a sorceress, she claims the privilege of reprieve on this ground:

"*Pucelle.* Will nothing turn your unrelenting hearts?
Then, Joan, discover thine infirmity,
That warranteth by law to be thy privilege.
I am with child, ye bloody homicides:
Murder not then the fruit within my womb,
Although ye hale me to a violent death."
(King Henry VI, Part I, V, 4, 59.)

Here are some pathological observations:

"*Gloster.* Indeed, 'tis true, that Henry told me of;
For I have often heard my mother say,
I came into the world with my legs forward.
. . . .
The midwife wonder'd; and the women cried,
'O, Jesus bless us, he is born with teeth!'"
(King Henry VI, Part III, V, 6, 69.)

And,

"*King Richard.* Who intercepts me in my expedition?
Duchess. Oh! she that might have intercepted thee,
By strangling thee in her accursed womb."
(King Richard III, IV, 4, 135.)

Also,

"Finger of birth-strangled babe" (Macbeth, IV, 1, 30.)

indicating a knowledge of the accident of strangulation with the umbilical cord. There are two allusions to Cæsarean section — one in "Macbeth," the child being delivered while the mother was yet alive; the other in "Cymbeline," where the child was taken after the mother's death — hence his name, Posthumus.

"*Macbeth.* I bear a charmed life; which must not yield
To one of woman born.
Macduff. Despair thy charm;
And let the angel, whom thou still hast serv'd,
Tell thee, Macduff was from his mother's womb
Untimely ripped." (Macbeth, V, 7, 41.)

"*Mother.* Lucina lent not me her aid,
But took me in my throes;
That from me was Posthumus ript,
Came crying 'mongst his foes,
A thing of pity."
(Cymbeline, V, 4, 43.)

NERVOUS DISEASES.

A discussion of Shakespeare's delineations of insanity and kindred mental and nervous conditions would extend this already long paper beyond reasonable limits. They are many, and they are truthfully drawn. They cover the whole range of mental perversion, from the foolish imbecility of Simple, Shallow and Speed to the downright madness of Lear. Let it suffice to enumerate only some of the characters:

Bottom, the weaver, Sir Andrew Ague-Cheek, Malvolio, Launcelot Gobbo, Touchstone and Caliban; Othello, racked with jealousy until his senses almost gave way, but though it did not drive him to madness, it did to suicide.

Then there is the melancholy of Jaques, the somnambulism of Lady Macbeth, the hallucinations of the dagger and Banquo's ghost in the character of Macbeth, the senile dementia of Lear,— all portrayed, as the alienists tell us, with depth of insight and accuracy.

Whether or not Hamlet was insane is a question which has given rise to much speculation among the critics and experts, and so far as I am able to see, it is not settled yet. This fact emphasizes the fidelity to truth with which the character is drawn. Certain alienists tell us it is that type of insanity which labors to impress on the observer the feeling that the victim of it is not insane. So skillfully is the character developed, that those coming to the study of it from different points of view find there a complete expression of their own conceptions.

In this connection, one matter should be touched upon, and that is Shakespeare's thoughts on the treatment of insanity. Allusion has already been made to the skillful and humane treatment of King Lear by the doctor. Now this treatment was entirely at variance with the practice of the time. Insanity was uniformly regarded as an infliction of the devil. To cure it St. Vitus was invoked, spells were resorted to, and amulets were worn. Such profound philosophers as Lord Bacon believed in them. The insane were subjected to the harshest treatment. Thus, in "As you Like It" (III. 2, 393) Rosalind says:

> "Love is merely a madness; and, I tell you, deserves as well a dark house and a whip as madmen do; and the reason why they are not so punished and cured, is, that the lunacy is so ordinary, that the whippers are in love too."

In view of this, Cordelia's care of her poor old father under the direction of the good doctor seems like the harking forward even to the best of our times.

While we cannot discuss these interesting questions, it will be well to pass rapidly in review some passages, showing Shakespeare's ideas of the relation of the brain to mental states, and also some observations upon certain nervous diseases. Falstaff, reciting his adventures in the clothesbasket, says:

"Have I lived to be carried in a basket, like a barrow of butcher's offal, and to be thrown in the Thames? Well, if I be served such another trick, I'll have my brains ta'en out, and buttered, and give them to a dog for a new year's gift." (Merry Wives of Windsor, III, 5, 3.)

Again:

"Have I laid my brain in the sun, and dried it, that it wants matter to prevent so gross o'er-reaching as this?" (*Ibid.*, III, 5, 4.)

Laertes, on seeing Ophelia deranged, says:

"O heat, dry up my brains!" (Hamlet IV, 5, 154.)

Othello, when racked by jealousy and goaded by the insinuations of Iago, was supposed to be to be insane. Hence Lodovico says:

"Are his wits safe? is he not light of brain?" (Othello, IV, 1, 275.)

Again:

"*Jaques*. . . . . And in his brain,
Which is as dry as the remainder biscuit
After a voyage, he hath strange places cramm'd
With observation, the which he vents
In mangled forms." (As You Like It, II, 7, 38.)

And:

"*Clown*. Thou hast spoken for us, madonna, as if thy eldest son should be a fool, whose skull Jove cram with brains; for here he comes, one of thy kin, has a most weak *pia mater*." (Twelfth Night, I, 5, 111.)

When Malvolio argues with the clown that he is not mad, the latter replies with pathological point:

"Nay, I'll ne'er believe a madman, till I see his brains." (*Ibid.* IV, 2, 119.)

The following touch upon the relation of the body and soul:

"*Prince Henry*. It is too late: the life of all his blood
Is touch'd corruptibly; and his pure brain
(Which some suppose the soul's frail dwelling-house)
Doth, by the idle comments that it makes,
Foretell the ending of mortality." (King John, V, 7, 1.)

And:

"*King Richard*. My brain I'll prove the female to my soul;
My soul, the father; and these two beget
A generation of still-breeding thoughts." (King Richard, II V, 5, 6.)

Epilepsy is thus alluded to in (Julius Cæsar, I, 2, 242.)

"*Casca*. He fell down in the market-place, and foamed at mouth, and was speechless.
Brutus. 'Tis very like: he hath the falling-sickness."

And:

"*Iago*. My lord is fall'n into an epilepsy:
This is his second fit; he had one yesterday.
Cassio. Rub him about the temples.
Iago. No, forbear,
The lethargy must have his quiet course;
If not, he foams at mouth; and, by-and-by,
Breaks out to savage madness. Look, he stirs." (Othello, IV, 1, 50.)

And here are old John Falstaff's remarks on apoplexy:

"*Falstaff*. And I hear, moreover, his highness is fallen into this same whoreson apoplexy. . . . This apoplexy is, as I take it, a kind of lethargy, an't please your lordship; a kind of sleeping in the blood, a whoreson tingling. . . . It hath its original from much grief; from study, and perturbation of the brain. I have read the cause of his effects in Galen; it is a kind of deafness." (King Henry IV, Part II, I, 2, 107.)

In Othello the Luna theory of insanity is alluded to:

"*Othello*. It is the very error of the moon;
She comes more nearer earth than she was wont,
And makes men mad." (Othello, V, 2, 112.)

DEATH.

Finally, let us glance at a few passages touching upon what may properly be called the medical aspects of death.

The words of Cerimon in Pericles have troubled the commentators:

"Death may usurp on nature many hours,
And yet the fire of life kindle again
The o'erpress'd spirits. I heard
Of an Egyptian that had nine hours lien dead,
Who was by good appliance recovered." (Pericles, III, 2, 82.)

Some say that the text is corrupt, others that Shakespeare was napping, as even Homer nods. But the best texts have it so, and we must conclude that this is what he wrote. In Wilkins (Rolfe's note), a contemporary of Shakespeare, is this passage: "I have read of some Egyptians, who after hours of death (if a man may call it so) have raised impoverished bodies, like to this unto their former health." Probably the belief expressed here was more or less common, and without inquiring into the authenticity for the notion, Shakespeare used the thought.

So also we have to accept this passage without adequate explanation:

"And dead men's cries do fill the empty air." (King Henry VI, Part II, V, 2, 4.)

But he also spoke of death with insight and accuracy, as in this description of violent death:

"But see, his face is black, and full of blood;
His eye-balls further out than when he liv'd;
Staring full ghastly like a strangled man;
His hair uprear'd, his nostrils stretch'd with struggling;
His hands abroad display'd, as one that grasp'd
And tugg'd for life, and was by strength subdued.
Look, on the sheets, his hair, you see, is sticking;
His well-proportion'd beard made rough and rugged,
Like to the summer's corn by tempest lodg'd." (King Henry VI, Part II, III, 2, 168.)

I believe an opinion has long been prevalent that there is a lightning of the faculties just before death; so Romeo in the tomb says:

"*Romeo*. How oft, when men are at the point of death,
Have they been merry! which their keepers call
A lightning before death." (Romeo and Juliet, V, 3, 88.)

The description of old John Falstaff's death, on the other hand, is circumstantial and definite:

"*Quickly*. Nay, sure, he's not in hell: he's in Arthur's bosom, if ever man went to Arthur's bosom. 'A made a finer end, and went away, an it had been any Christolb child; 'a parted even just between twelve and one, even at the turning o' the tide: for after I saw him fumem with the sheets, and play with flowers, and smile upon his fingers' ends, I knew there was but one way; for his nose was as sharp as a pen, and a table of green fields. 'How now, Sir John?' quoth I: 'what, man! be of good cheer.' So 'a cried out — 'God, God, God!' three or four times: now I, to comfort him, bid him, 'a should not think of God; I hoped, there was no need to trouble himself with any such thoughts yet. So, 'a bade me lay more clothes on his feet: I put my hand into the bed and felt them, and they were as cold as any stone; then I felt to his knees, and so upward, and upward, and all was as cold as any stone." (King Henry V, II, 3, 9.)

Note. — The references are to the text of the Leopold Shakespeare.

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Clinical Department.

INJURY TO THE SPINAL CORD. OPERATION FOR CORRECTION OF SUBSEQUENT DEFORMITY.*

BY CHARLES F. PAINTER, M.D., BOSTON.

In September, 1905, I saw, at the suggestion of Dr. W. E. Fay, a Swede who had been injured in an elevator accident four years before and sustained a fracture of the spine. Immediately after the accident there was complete loss of power and sensation from the waist down, with a paralysis of both sphincters.

He was sent to the Boston City Hospital, and after a short time a laminectomy was performed by Dr. G. H. Monks. Following this operation improvement in sensation and muscular power took place. Control over the rectal sphincter was re-established. Through the past four years there had been so much improvement that the right leg is capable of normal function both as regards motion and sensation. The left thigh muscles are quite strong, but all of the muscles in the left lower leg except the tibialis anticus are paralyzed. The foot is in a position of pronounced talipes equino varus, and the toes, particularly the great toe and the next one to it, are flexed at the juncture of the first and second phalanges. A pressure ulcer had formed over the end of the great toe. The foot could not be flexed to a right angle with the leg, and the patient had to use crutches in order to get about at all. He was obliged to wear a rubber urinal because of the inability to control his bladder sphincter. Sensation in the paralyzed leg was very good.

Early in November, 1905, the patient was operated upon at the Carney Hospital. A tenotomy of the tendo-achilles was first performed and the foot brought into a position of dorsi-flexion. This also permitted the correction of the varus. The tibialis anticus tendon was then divided close to its insertion and passed through longitudinal slits in the three inner fasciculi of the common extensor tendon and fastened there by silk mattress sutures. A sheath was made for the transmission of the newly attached tendon by closing contiguous fasciæ over it with silk sutures, and the wound was sutured with silkworm gut. The flexor tendons of the great and second toes were tenotomized, the adhesions broken up, and the toes straightened. These toes were fastened to plantar splints made of wooden tongue depressors, and after the sterile dressings were applied a plaster of Paris splint was put on from the toes to the knee, with the foot in the position of dorsal flexion and valgus. Convalescence was uneventful. The wounds closed by first intention and the plaster was kept on for twelve weeks. At the end of that time the patient was allowed to bear weight on the foot unsupported by any splint. He had been allowed to walk on the plaster splint. When the plaster was permanently removed it was possible for the patient to dorsi-flex the foot about 15–20°, and this amount has been improved upon since. He is now (May, 1906) able to walk freely about the house without the aid of cane or crutch, and uses a cane only when walking on the street. He is able to walk a mile in this way over the city pavements. There has been no improvement in the control of his bladder sphincter.

The case is of interest because of the rather unusual distribution of the paralysis for a traumatic case of such gravity making possible the employment of a surgical procedure which is commonly reserved for the paralyses resulting from anterior poliomyelitis.

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Reports of Societies.

THE PHILADELPHIA SOCIETY FOR THE STUDY AND PREVENTION OF SOCIAL DISEASE.

Stated Meeting, Thursday Evening, Dec. 20, 1906.
The President, Hon. A. M. Beitler, in the Chair.

VENEREAL DISEASE AMONG CHILDREN.

Dr. Thomas Morgan Rotch, of Boston, emphasized the important fact that the laity as well as physicians should understand thoroughly the dangers of syphilis and gonorrhea in young children. A more exact and extended knowledge of these diseases should be acquired by physicians in order that they not only should recognize obscure cases, but also that they should not brand innocent people with the suspicion that they have acquired this disease when they really have not. He claimed that the public should be protected from the stigmata of syphilis and gonorrhea as well as from the diseases themselves. Lantern slides were shown illustrating some phases of syphilis in early life.

CRIMINAL ASPECTS OF VENEREAL INFECTION AMONG CHILDREN (BASED UPON 900 CASES).

Dr. W. Travis Gibb, of New York City, presented this paper, stating that sexual crimes against young children are much more common than is supposed. These conditions were largely attributed to the moral and sanitary environments in which the people of the tenements are huddled together without decent privacy. In his association with the New York Society for Prevention of Cruelty to Children for fifteen years he has examined over 800 girls ranging in age from eight months to sixteen years upon whom rape and other crimes had been committed. Almost 13% of all the children suffered from venereal disease and of these 81% had gonorrheal vaginitis; 2½% had chancroids. A very small number of cases of syphilis were noted in the number examined. This rarity was attributed to the fact that the cases were examined in a short time after the crime had been committed when not sufficient time had elapsed for the development of the characteristic evidence of the disease, In spite of the large number of cases brought to the attention of the society Dr. Gibb is of the opinion that it is but a small proportion of the actual number of such crimes that actually occur, stating that the great majority of children never tell what has happened to them.

THE SOCIAL ECONOMICS OF VENEREAL DISEASE.

Prof. C. W. A. Veditz, of Washington, D. C., said that the increase in the number of deaths due to venereal disease is startling compared with the increase in deaths due to other diseases. This increase for the registration area is from 3.4% per hundred thousand in 1900 to 4.8% per hundred thousand in 1904. Admitting the difficulty of securing accurate data concerning venereal disease in other countries, he quoted one authority as stating that there are four million persons in France who have syphilis and who have it in a contagious form. Other estimates exceed this, while not a few are less.

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* From the Orthopedic Clinic of the Carney Hospital.

He thinks that the attitude of the public toward venereal disease is apt to undergo much the same change that it has undergone with regard to tuberculosis; from the general tendency to keep the disease secret, with the knowledge of its great extent and danger there came open attention to the subject. This was succeeded by scientific examination, naturally resulting in a more manifold and determined effort to root out the disease. In regard to syphilis Professor Veditz feels that the public is emerging from the first of these stages and entering upon the second. The social economist of to-day, it was said, is interested in raising to the highest level the mental ability and physical efficiency of a community. The importance, therefore, is obvious, of the removal of disease of all kinds, and particularly of those which are hidden away from the public gaze. He believes it exceedingly important that the factor in economic supremacy of the possession of a population which is vigorous physically and mentally should be taken care of, and feels that to the extent to which these are pushed in the background will depend the position of the United States among the nations. From the social economist's point of view he called attention to the necessity that the dangers of venereal disease be carefully studied and movements set on foot looking to the restriction of the disease along with the other two great plagues of mankind, — alcoholism and tuberculosis.

THE LAITY AND VENEREAL DISEASE.

TALCOTT WILLIAMS, Esq., speaking as a journalist, declared that the laity of America would never either register prostitution or insist upon its compulsory examination; neither would it segregate prostitution. He called attention to the fact that segregation is a state nearly always existing in frontier and rudimentary conditions, and that as life becomes more complex segregation disappears. His own personal judgment is that registration, compulsory examination and segregation belong to a less developed state of society and are the remains of a subconscious attempt on the part of society to segregate and brand the social evil. The problem of venereal disease he, therefore, believes must be met without the possible application of these artificial restrictions. He believes that within the next forty years society will suppress the outward manifestations of prostitution. Instances were cited showing that this suppression had already been evidenced. He does not know, however, that this means a suppression of the evil.

That the laity will raise the age of consent he also expressed his confident belief. The rising curve of the age of consent, which in the memory of many had begun in many of the states and in many European countries at twelve, will soon reach eighteen or twenty. The chief advantage of this would be not in a checking of crime, but in the conviction of the criminals.

Furthermore, the laity, in his opinion, is certain to increase the matter of personal prophylaxis against the spread of the disease. From his investigations he has already observed marked evidence of this. This, however, while decreasing the danger of infection, does not remove it.

He deprecated the fact that editorial discussion in the newspaper of the social evil is unpopular, and he believes that the laity can do much to correct this mistaken idea, feeling that more light is always destructive of evil.

THE CLERGY AND VENEREAL DISEASE.

REV. FLOYD W. TOMKINS, S.T.D., referred in this connection to the minister's duty in exhortation, teaching and practice. He should exhort first of all that his people should know their danger from the spread of the disease; and, with a realization of the unspeakable evil, he should urge his people to work against the segregation or licensing of the vice which largely creates the disease. He should further exhort to a method of education in the public schools by which the boys and girls should be clearly taught the dangers of the disease. The minister should also exhort to a higher civilization by the marriage of only those persons who are fit to enter into marriage.

In regard to teaching, the men and boys, the women and girls, should be taught the danger of the disease and of the safeguards against it. There should be taught fearlessly and frankly the dual evil, that the fallen man is just as bad as the fallen woman. He is utterly disgusted with the judgment which welcomes in the social circle the man who has defiled himself, while the woman — sinning, perhaps, from love — is damned forever. There should be taught also the terrible consequences of this sin, not only physically and mentally, but morally and spiritually.

Concerning the subject in connection with practice, he decried the indiscriminate way in which ministers perform marriages, and believes the minister's influence should tend to make it impossible that marriages should be performed without some previous knowledge of the parties. In his own practice he feels that the minister must come near to the physician in making in a certain degree public the results of this disease. He asks whether it is not the duty of the physician, with knowledge that a man about to be married is diseased, to so advise the minister. The minister may then say to the man that he is unwilling to marry him unless he can give a certificate showing that he is free from the disease. He deplores the fact that the publicity which marks dwellings with smallpox and signs of other diseases should do nothing whatsoever about this disease, and declares that society is simply stagnant at this point. He believes it the minister's business to do something concerning it, to plead and pray that the terrors of the disease may be made known, and its dangers guarded against. In closing, he desired that it be known by the members of the medical profession and of the laity that the ministers are ready to work, heart and soul, in this matter.

Book Reviews.

Enlargement of the Prostate, with a Description of the Author's Operation of Total Enucleation of the Organ. By P. J. FREYER, M.A., M.D., M.Ch.; Surgeon to King Edward VII's Hospital for Officers and to St. Peter's Hospital; Late Examiner in Surgery at the Durham University; Lieutenant-Colonel, Indian Medical Service (retired). Third edition. New York: William Wood & Co. 1906.

This volume gives to us Mr. Freyer's personal experience of total suprapubic prostatectomy, which consists in the performance of 312 operations with an operative mortality of 7% and complete success with all of the patients not included in that 7%.

This record is much the best and includes a much larger number of suprapubic prostatectomies, or for that matter of prostatectomies by any method thus far recorded by a single operator; the next largest, so far as we know, being that of Young, of Baltimore, who has published the reports of 150 total perineal prostatectomies performed by him.

The information acquired by Mr. Freyer in so large a personal experience could not fail to be instructive and valuable. And so it is. His descriptions of the anatomy of the normal gland, of the capsula vera, of the outer fibrous sheath, their mutual relations and the practical bearing which they have upon the operation of total prostatectomy, while in no respect new, are clearly and concisely expressed, and on this account to be commended. The views which he presents with regard to etiology of the enlarged prostate are those with which we are in sympathy, and are to the effect that none of the theories yet advanced are adequate to explain the occurrence of this condition.

Two points in the course of the lectures we note with satisfaction and are in accord with them. They are with reference to the dangers, difficulties, and impossibility in some instances, connected with the catheter treatment, and the fact that Mr. Freyer does not counsel turning patients out of bed within one or two days after the performance of prostatectomy, a custom which is so emphatically insisted upon as being desirable by a number of those surgeons who have recently entered this surgical field.

Another interesting feature of one of the lectures is the manner in which Mr. Freyer determines in any given case whether or not the enlarged prostate can be readily enucleated. This fact he states that he can determine with great probability, by means of rectal and bimanual palpation.

Ninety-seven of the 154 pages composing the lectures are devoted to the description of his so-called new operation and to detailed reports of the operations done by the author and comments upon them, 38 deal with such aspects of the subject as anatomy, pathology, symptoms, catheter treatment, etc., and the remaining 16 pages are devoted to the egotistical reiteration of his pretensions to have been the discoverer of total enucleation of the enlarged prostate and to a regrettable continuance of his controversy with Dr. Fuller of New York.

It is unfortunate that Mr. Freyer's wide and successful experience, and his admirable record of suprapubic prostatectomy, which is in itself so creditable to him, should be marred by his pretentious claim to be the discoverer of the operation, and that he should have discredited himself thus in the eyes of the many surgeons who are familiar with the history of the evolution of the operative treatment of the enlarged prostate, a good many of whom had done, and some of whom had clearly described, total enucleation of the enlarged prostate at various times varying from two to ten years previous to Mr. Freyer's first operation.

So much space in the volume before us is devoted to a renewed effort on the part of Mr. Freyer to substantiate his assertions with regard to this matter that we cannot very well review the otherwise excellent work without giving some heed to them, nor is it just to the surgeons who have been for greater or less time — some of them ten years — his predecessors in the field, and who have been more interested in establishing the truth and in showing the value of total prostatectomy than in sounding their own praises, to pass over in silence in a formal review so flagrant an example of misrepresentation of facts or ignoring of them, as is shown by Mr. Freyer in parts of the present publication. A few quotations from it will show just what Mr. Freyer's view of his own work and position in connection with operative treatment of the enlarged prostate is:

Page 35: "Shortly after these lectures were delivered, on Dec. 1, 1900, I performed *a new*, and what at first sight seemed a very formidable, operation for radical cure of the disease, namely, total enucleation of the prostate." He then refers to his first published reference and description of the operation, which was in the *British Medical Journal*, July 20, 1901. It will be noticed that he does not even limit the scope of the claim to having introduced a new operation, by the use of the word "suprapubic" in connection with it. Total enucleation of the prostate through a median perineal urethral incision and enucleation of the lateral lobes with the finger tip through an incision on either side of the prostatic urethra and by the snaring off of the middle lobe when present, was described and urged by Dr. Gouley, of New York, in 1873 ("Diseases of the Urinary Organs," New York, 1873 and 1879).

Leisrink (*Arch. für klin. Chir.*, 1883, Berlin. xxviii, p. 578) reported a total extirpation done by him of the prostate in one mass through a perineal dissection in a case of malignant disease of the gland. In this case there was an operative recovery.

Pyle describes an operation for total enucleation of the prostate through a median perineal incision without injury to the urethra (*N. Y. Med. Rec.*, 1892, vol. xlii).

In 1896 Alexander (*N. Y. Med. Jour.*, lxiii, p. 171, also *Trans. N. Y Acad. Med.*, Dec. 15, 1898) described total finger enucleation of the enlarged prostate by a combined operation.

Nicoll (April 14, 1894, London *Lancet*) described total finger enucleation through the perineum, aided by downward pressure by the fingers upon the prostate through a suprapubic cystotomy incision.

Fuller (1895, June, *Jour. of Cutan. and Gen.-Urin. Dis.*, also, 1900, "Diseases of the Genito-Urinary System," New York, the Macmillan Company, 1900, p. 414, etc.) described his manner of doing suprapubic total prostatectomy in language so clear as to be absolutely unmistakable in its meaning to any fair-minded reader; the only difference in this operation and that of Mr. Freyer, published respectively six years and one year subsequent to Fuller's publications, consists in the trivial fact that Freyer reaches the gland by tearing through the floor of the bladder with the finger nail as was recommended twelve years previously by McGill, whereas Fuller accomplished the same purpose by the use of a pair of serrated scissors. Fuller's description of the operation as practised by him leaves no room for doubt that total removal of the prostate is accomplished by it and by finger enucleation (except in the few cases in which the gland cannot be enucleated), and he expressly states that the prostate is to be taken out either *in one mass* or lobe by lobe according to circumstances.

Any one who wishes to verify the above statements may do so by reading the articles to which we have given the references. No one who takes the trouble to do this can for a moment believe that Mr. Freyer has the least right to claim that he is the first surgeon to have performed total enucleation of the gland by the suprapubic route or perineal route, or even that he is the first person to have removed it in one mass. Mr. Freyer not only ignores the earlier cases of total enucleation by the perineal route, but utterly disregards as well the very large number of such cases that have been reported between 1900 and the present time, December, 1906, the latter period being that in which all Mr. Freyer's operations have been performed. A number of reported cases in which total enucleation has been done by the perineal methods of one kind or another is at least 1500. The operations by this route present a much smaller mortality than is shown in the series of Mr. Freyer and the results of the operations have certainly been quite as good as those obtained by him. In the face of such facts as these that we have given, it requires a quality of egotism which we are happy to say but few persons possess who have the standing in the profession of Mr. Freyer to allow such assertions as that which we have already quoted and the following one of Mr. Freyer to be made: "I submit that the results of this operation, so subversive of all preconceived ideas regarding the enlarged prostate, so revolutionary in its effects, so complete and permanent in its cure, are truly remarkable. . . . I believe that I shall not be accused of exaggeration when I state that all previous so-called methods of radical cure of enlarged prostate were utterly unsatisfactory," etc.

It is hardly probable that any array of facts, no matter how conclusively they might disprove Mr. Freyer's claim to being the discoverer of the operation of total enucleation of the enlarged prostate, would be convincing to that gentleman himself, nor is it especially important that they should be so. It is somewhat important that the general mass of the profession who, as sometimes happens, might in this matter also make the mistake of doing an injustice to some surgeons who are not given to loudly acclaiming their works, by believing the assertions of Mr. Freyer, should have the opportunity of knowing at least some of the facts of the case.

Aids to Surgery. By Joseph Cunning, M.B., B.S., F.R.C.S. Eng., Senior Resident Medical Officer, Royal Free Hospital. New York: William Wood & Co. 1906.

This book of 394 pages, one of the "Students' Aids Series" volumes, is of small size and attractive appearance. It is intended to serve as an aid to students preparing for examination, *i.e.*, an epitome of the important facts of the subject. The writer has tried to follow closely the arrangement of the "Manual of Surgery" by Rose and Carless; also the book of Cheyne and Burghard, and Bland-Sutton's Tumors, Innocent and Malignant.

The book is of convenient size, is well arranged with the usual table of contents and appended index. This plan, with the system of paragraphing, enables the reader to readily find a desired subject. The subject matter of the text seems to show that the plan of the author has been carried out and that the essential facts have been concisely presented. The book represents the English practice of surgery as regards detail of treatment.

A Primer of Psychology and Mental Disease. For Use in Training Schools for Attendants and Nurses and in Medical Classes, and as a Ready Reference for the Practitioner. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital (Flint, Mich.) for Mental and Nervous Diseases. Third edition thoroughly revised with illustrations. Pp. viii, 183. 12mo. Philadelphia: F. A. Davis Company. 1906.

There is little to add to our former notices of this small but useful manual of instruction for nurses in hospitals for the insane for whom the "primer" has such an abundance of sound and practical advice as to make it a valuable book for this purpose. The recent additions, however, which relate chiefly to the classification and medical treatment of insanity, strike us as too meagre to be of real benefit to the medical student for whom they are especially designed and, for the most part, out of place in a course of instruction for nurses.

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The Raising of Fees in Germany. — On Dec. 18, 1906, a meeting of the medical profession was held in Berlin at which representatives of 34 medical associations with a collective membership of 2,647 were present. It was unanimously agreed that from Jan. 1 the fees in private practice should be raised. The decision applies equally to single fees and to payment for longer or shorter periods of attendance, as in the case of family doctors. — *British Medical Journal.*

THE BOSTON
Medical and Surgical Journal.

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REPORT OF THE SURGEON-GENERAL OF THE UNITED STATES NAVY.

The report of the Surgeon-General of the Navy for the fiscal year ending June 30, 1906, is of special interest on account of the progress which has been made in various departments of the service and also because of certain statements regarding the situation in Panama. It appears from the report that malaria was unavoidably contracted by certain marines of a detachment sent to the Isthmian Canal Zone during the early part of last summer. Mosquitoes were numerous at the point where the camps were pitched, and in spite of the fact that each man was provided with a mosquito net and other precautions were taken, it was impossible to avoid bites. Prophylactic doses of quinine were given, but about a month after the arrival of the men in Panama 135, or about 34%, of the total strength of the battalion had malarial attacks. A little later as many as 72% suffered from acute malarial paroxysms, and it is stated as probable that the entire battalion was infected. No deaths occurred and the combination of a free administration of quinine and return to a northern climate rapidly reduced the percentage of cases.

This situation would appear not altogether encouraging in view of our supposed capacity to prevent infection. A daily contemporary, commenting on the foregoing official statements, draws attention to the apparent conflict of reports coming from the canal zone. We quote a paragraph:

"At present, alas, the public mind is constantly disturbed and the people's emotions constantly harrowed by conflicting allegations. From the Canal Commission we hear that the long wait in respect of actual dirt flinging has been utilized to the perfection of a sanitary system such as the world has never dreamed of in its most optimistic moments. Assurances reach us to the effect that the Americans on the Isthmus are now well housed, well fed, furnished with every appliance of modern civilization, immersed in an atmosphere of applied and organized hygiene, and altogether lifted to the very dizziest pinnacles of Olympian luxury. The mosquitoes have been exterminated, therefore yellow fever is impossible. The living quarters are, as the President once said about something else, absolutely 'flawless.' On this showing none but a determined and malignantly insubordinate malcontent could get sick or fight a mosquito or exhibit the smallest symptom of genuine physical indisposition."

It must be acknowledged that the situation is somewhat disturbing, if malaria in so short a time can gain such a foothold among troops who are presumably given the benefit of the most complete prophylaxis known. It is also unfortunate, and in this we agree with our contemporary, that the exact facts should not be known regarding the possibility of infection among those who enter the canal zone from northern climates. It is certainly possible that the particular spot at which this battalion camped was especially infested by malaria-carrying mosquitoes. In that case, it would have been well to have made the camp elsewhere. If it were not the case, the supposition is forced upon us that the danger of malarial infection in the canal zone is a very real one and that the authorities have not yet found a way to cope with it satisfactorily. However this may be, it is illuminating to have so definite a statement on the part of the Surgeon-General of the Navy to contrast with the optimistic reports regarding the control of infectious diseases which are continually reaching the public from other sources.

The report contains many other matters of interest, suggestive particularly of the remote regions to which our navy is penetrating and of the difficulties encountered in this often arduous service.

LECTURES ON THE PROBLEMS OF INSANITY.

We publish in another column an announcement of lectures on the problems of insanity to be given at the Academy of Medicine in New York. This action on the part of the Psychiatrical Society is significant of the general tendency to popularize various branches of medical science. The situation is such at the present time that the progressive work of one department of medicine is often not known in detail to persons interested in other departments, and naturally much less by the laity. It is, therefore, advisable that at stated intervals lectures should be given by men who stand in the forefront of investigation in certain specialized fields to others of the profession and such of the laity as may be interested to attend. This is peculiarly true of psychiatry. Regarded from a broad point of view there are few branches which are more important or more essential to a general medical education, and certainly it will be admitted that, in this country, at least, a knowledge of the real problems of psychiatry is lacking to an extraordinary degree among the rank and file of the profession. It is, therefore, a wise move on the part of the Psychiatrical Society of New York to attempt to inform the profession regarding the significance of modern psychiatric methods and their bearings upon the field of general medicine. It will not be questioned that those who have been selected to give these lectures are men who may speak with authority.

In announcing the course the society states as its object that a public discussion of the facts of insanity is of fundamental importance for a natural development of public and personal hygiene. It is also altogether desirable to replace the traditional horror and consequent disregard of these facts by an interest on the part of the public in matters which should not be longer neglected. Furthermore, co-operation is needed now as perhaps never before to bring together and consider intelligently the many interests which now work independently in social reform, schools, hospitals, courts and institutions.

In this connection it is noticeable that in the long list of lectures announced by the faculty of the Harvard Medical School to be given to the laity during the winter no one of the subjects chosen bears upon the great problem of insanity. It may, perhaps, justly be said that the subject is too subtle and, perhaps, in too indeterminate a condition to permit of profitable lectures to the people at large. With this point of view we should in a measure agree, but not wholly. A lecture, or several lectures, might well be given in this course which should have for their main object a removal of the prejudice against hospitals for the insane and an insistence on the fact that mental disease has many analogies with physical disease, that the two often cannot be sharply separated and that the popular attitude toward mental aberration should be as reasonable as toward other types of disease. A skilful lecturer could certainly do something toward impressing such conceptions even upon the popular mind. We hope, therefore, that another year, if such a general public course of lectures is given, this subject in its important bearings may receive the consideration which it deserves.

Quite apart, however, from the people at large, it would be well could the example which New York is setting in this matter be adopted elsewhere. There is no question that such lectures, addressed primarily to an audience of physicians and others interested in social and economic problems, would be well attended, and that thereby a beginning at least would be made toward a fairer recognition of the claims of psychiatry in the modern medical curriculum. We stand far behind our European *confrères* in this respect.

THE RESIGNATION OF DR. WILLIAM L. RICHARDSON FROM THE BOSTON LYING-IN HOSPITAL.

THE resignation of Dr. William L. Richardson as visiting physician of the Boston Lying-In Hospital, because, as he felt, " that the time has come for younger men to do the work," marks an epoch in one of our leading institutions. A short statement of what has been accomplished since Dr. Richardson re-established the practically defunct institution will be of interest.

The hospital was incorporated in 1832, with a building on Washington Street, near Waltham, to care for poor and deserving mothers during childbirth. In 1853 it bought land and erected a building on Springfield Street. The hospital was no longer free and every patient was charged a weekly price for board, but the income was insufficient for its support. At the end of a year it had more than exhausted its income, consequently it was closed and its building was sold in 1857. In 1871 and 1872, active measures were taken by Dr. Richardson to revive the work upon its original basis as a free hospital. The house, 24 McLean Street, was purchased and on Jan. 1, 1873, the hospital was re-opened with eighteen beds. Dr. William L. Richardson and Dr. Henry Tuck were the visiting physicians. Mrs. E. J. A. Higgins was placed in charge where she still remains, well known and remembered by all the doctors and nurses who have attended the hospital during the last thirty-four years.

Since that beginning the hospital has continually grown and constantly enlarged and extended its work. Every one who has known the institution and its work realizes that its growth and its efficiency, both in the work which it has accomplished and in the education it has furnished, are largely due to Dr. Richardson, who, since 1890, has been the sole visiting physician in charge.

A few words as to the growth and work of the hospital will be of interest. In 1877 a second house on McLean Street was added. In 1887 two more houses were purchased. In 1890 the adjoining building, 16 McLean Street, was purchased and in 1891 a fund of over one hundred thousand dollars was raised by subscription, and the old buildings were remodelled and the present hospital erected. The work accomplished has increased equally with the buildings. An out-patient department was established in 1881 to care for mothers in their homes; in 1888 a training school for nurses was established.

The hospital not only cares for the poor and deserving during childbirth, but even more important, perhaps, it furnishes education and experience to doctors, medical students and nurses whose knowledge, experience and skill are invaluable, not only to this community, but wherever they may go to practise their profession. Most appreciative recognition is due Dr. Richardson for the systematic development of the practical teaching of obstetrics through the elaborate organization of an obstetrical service in the homes of the poorer classes. One hundred and seventy-eight doctors have there served as house physicians up to Jan. 1, 1906. Prior to the establishment of the training school for nurses in 1888, 77 nurses had performed a satisfactory service. Since the establishment, 326 nurses have graduated and received diplomas. The work done by the hospital has constantly increased. Starting in 1873 with 160 patients, in 1883, 242 were treated; in 1893, 501; in 1903, 654, and in 1906, 785. The total number of patients treated in the hospital is 14,913. The out-patient department opened in 1881 and cared for 20 patients in 1882, 191 in 1887, 1,079 in 1892, 1,829 in 1902 and 1864 in 1906. The total number of out-patients cared for has been 27,482.

The small number of deaths has been remarkable. With 14,913 patients (mothers) treated in the hospital, only 242 have died from any cause, and but 88 of these deaths have been due to septicemia. This is truly a remarkable record when one considers how many emergency cases, many of them nearly moribund, are taken to this hospital and the class of patients it has to treat. The record of deaths in the out-patient department is equally remarkable, — from its inception to Jan. 1, 1906, with 25,618 mothers attended, and only 54 deaths, while in the year 1906, 1,864 patients were cared for with no deaths.

This hospital, under Dr. Richardson's leadership, was one of the first in the world to adopt the antiseptic treatment in confinement cases. What the adoption of this treatment, in 1884, has accomplished is strikingly shown by the figures. From 1872 to 1907, 14,913 patients in all have been treated with only 88 deaths from septicemia, a little over one half of 1%.

The figures by years are interesting:

	1879	1880	1881	1882	1883	1884
Patients,	212	218	259	228	242	310
Deaths from septicemia,	10	11	6	16	11	5

	1885	1886	1887	1888	1889	1890
Patients,	308	373	388	446	456	509
Deaths from septicemia,	2	0	1	1	1	0

In 1884, when 2,661 patients (mothers) had been cared for, there had been 64 deaths from septicemia, or about 1%. From 1884 to 1907, 12,252 patients were cared for with only 24 deaths from septicemia, or about one fifth of 1%. Many of these cases were brought into the hospital as emergency cases, and too late for any successful treatment.

The credit for this result should in large measure be given to Dr. Richardson, as should that for much of the work that the hospital has accomplished during the thirty-four years he has served as its physician since he helped to re-establish it in 1872. We print elsewhere the resolutions which were adopted at the annual meeting of the corporation and which were spread upon its records in recognition of his able and efficient services to the institution.

THE TOXIC ACTION OF DIGITALIS.

The pulse characteristic of overdoses of digitalis is well recognized and its occurrence serves as a danger signal in digitalis therapy. However, there is another manifestation of digitalis poisoning not so common, which may escape attention. This is a condition of auriculo-ventricular arrythmia or heart block, due to a decreased conductivity in the auriculo-ventricular conduction fibers and caused by the action of digitalis on them. This phenomenon can be produced in animals by larger doses of digitalis and has been studied in man by Mackenzie and others. Hewlett[1] has recently reported a case in which this condition followed the use of 15 minims of the normal solution of digitalis taken three times a day, for ten days. In most cases auriculo-ventricular arrythmia can be recognized without the use of pulse tracings, by noting the discrepancy between the number of venous pulsators visible in the neck and the number of ventricular beats palpable at the apex. However, if cardiac cases are studied by means of tracings taken from the jugular vein, a group can be separated in which it may be anticipated that digitalis will be borne badly. These are cases in which the time between the wave of the auricular contraction and that of the transmitted carotid pulse is greater than 0.2 seconds. Such cases have a decreased conductivity between auricle and ventricle, and digitalis is likely to further decrease it and cause auriculo-ventricular arythmia. The use of digitalis in these cases may lead to serious consequences. It is important, therefore, to recognize the condition early and stop the use of digitalis.

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[1] Jour. of Am. Med. Asso., Jan. 5, 1907. See abstract on p. 124 of this Journal.

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MEDICAL NOTES.

Pasteur a Hero of France. — It is announced that a national vote on the favorite heroes of France resulted in Pasteur receiving 634,280 votes, the largest number cast for any one person.

Lectures on Problems of Insanity. — The Psychiatrical Society of New York has arranged for a series of four lectures on problems of insanity, to be held under the auspices of the Academy of Medicine, at 17 West 43d Street, on Saturdays, Jan. 19, Feb. 2, Feb. 16 and March 2, 1907, at 8.30 p.m. The purpose of these lectures is to put within the reach of the medical profession and also of the non-professional leaders of sociological interests a program of work and facts for orientation, with a view to the organization of a movement towards prophylaxis and the development of sound interests in this eminently important topic. The first lecture will be given by Dr. Adolf Meyer, on "Modern Psychiatry, Its Possibilities and Opportunities"; the second lecture, by Dr. August Hoch, "The Manageable Causes of Insanity, exclusive of Heredity;" the third lecture, by Dr. C. L. Dana, "The Data of Heredity and Their Application in Psychiatry"; and the fourth lecture, by Dr. Allen McLane Hamilton, "The Development of the Legal Regulations Concerning the Insane."

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Jan. 23, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 73, scarlatina 90, typhoid fever 5, measles 12, tuberculosis 47, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 23, 1907, was 23.38.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 19, 1907, was 244, against 243 the corresponding week of last year, showing an increase of 1 death and making the death-rate for the week 21.13. Of this number 126 were males and 118 were females; 238 were white and 6 colored; 138 were born in the United States, 103 in foreign countries and 3 unknown; 57 were of American parentage, 155 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 76 cases and 2 deaths; scarlatina, 160 cases and 1 death; typhoid fever, 9 cases and 2 deaths; measles, 13 cases and 0 deaths; tuberculosis, 59 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 40, whooping cough 1, heart disease 26, bronchitis 7 and marasmus 4. There were 18 deaths from violent causes. The number of children who died under one year was 39; the number under five years 48. The number of persons who died over sixty years of age was 67. The deaths in public institutions were 80.

There was 1 case of cerebrospinal meningitis reported during the week. No deaths.

Bequest to the Quincy, Mass., Hospital. — By the will of Caroline M. Beale $5,000 is left to establish a permanent free bed at the Quincy Hospital in memory of the father and sister of the testator.

A Tuberculosis Exhibition. — A tuberculosis exhibition was held at the Roxbury, Mass., Court House from Jan. 17 to Jan. 23. Addresses on the general subject were delivered each evening by various physicians.

A Centenarian. — It is stated that Mrs. Tobey Rosenburg, of Burlington, Vt., has died at the reputed age of one hundred and three years. She is said to have been the oldest woman in Vermont.

The Death of Mr. George F. Fabyan. — In the death of Mr. George F. Fabyan, which occurred Jan. 18, in Brookline, Mass., the Harvard

Medical School loses a benefactor. Some years ago as a memorial to his father, Dr. George Fabyan, Mr. Fabyan endowed the chair of comparative pathology at the medical school, the incumbent of which from its foundation has been Dr. Theobald Smith.

Avenue Louis Pasteur. — The order authorizing the construction of the new Avenue Louis Pasteur leading up to the Harvard Medical School buildings has been signed by those in authority. Certain restrictions regarding the height of buildings and their character are established together with the usual park restrictions.

The Boston Children's Hospital. — At a recent meeting of the managers of the Children's Hospital the necessity of a new hospital building was strongly urged. The present building is regarded as inadequate for the demands now being made upon it, and it is hoped that funds may speedily be raised to erect a more suitable building on the ground which the hospital has acquired in immediate proximity to the new Harvard Medical School buildings.

Lectures on the Relation of the Medical Profession to the Law and the Courts. — A course of lectures will be given by Ezra R. Thayer, LL.B., on "The Relation of the Medical Profession to the Law and the Courts," on successive Monday evenings, beginning Feb. 4, in Lecture Room 205 of the Administration Building of the Harvard Medical School, at eight o'clock. These lectures are open to all members of the medical profession.

Prevalence of Rabies in Massachusetts. — According to recently compiled statistics at least six persons have died in this state as a result of dog bites during the eleven months ending Dec. 1. During this time it is stated that more than a thousand dogs were reported as having the disease exclusive of those in Boston. As a result of Dr. Langdon Frothingham's examinations of the heads of animals suspected of the disease he found that out of 151, 110 dogs, 7 cows and 2 horses had the disease. He was also able to demonstrate the disease post-mortem in a boy who died of the disease.

NEW YORK.

Deaths by Violence. — In the Borough of Manhattan last year 5,890 deaths were certified to in the coroners' offices. This is a little more than 7% of the total number of deaths in New York City. Two thousand, one hundred and sixty of the coroners' cases were deaths by violence: 97 persons were killed by surface cars, 32 by the steam railways, 24 by automobiles, 17 by subway trains, 14 by elevated trains and 125 by other vehicles. There were 398 suicides, 97 murders by shooting and stabbing, and 3,730 deaths from natural causes. A striking feature of the coroners' report is the number of tunnel casualties. Sixty-eight men were killed in the various tunnels under process of construction between Manhattan and Long Island and New Jersey. As the blasting methods employed in these tunnels have been freely criticised, and it is asserted that by proper care caisson disease, fatal to many workers in compressed air, can be entirely prevented, it would seem that closer official attention to both these matters is called for.

Current Literature.

The Journal of the American Medical Association.
Jan. 5, 1907.

1. Novy, F. G. *Trypanosomes.* (To be continued.)
2. *Ravogli, A. *Lupus Vulgaris of the Ear in Relation to Its Late Results.*
3. *Gaylord, H. R., and Clowes, G. H. A. *Evidences of Infected Cages as the Source of Spontaneous Cancer Developing among Small Caged Animals.*
4. *Capps, J. A. *The Effect on the Blood Pressure of the Withdrawal of Fluid from the Thorax and Abdomen.*
5. *Musser, J. H. *Acute Infections of the Thoracic Cavity.*
6. *Forchheimer, F. *The Treatment of Pleurisy with Effusion.*
7. *Burr, C. W. *Trauma of the Head as a Cause of Insanity.*
8. *Gordon, A. *Migrainic Psychoses.*
9. Richards, G. L. *Atrophic Rhinitis: A Reproach to Rhinology.*
10. *Hewlett, W. A. *Digitalis Heart Block.* (Clinical Note.)

2. Ravogli reports two cases of lupus of the ear, in both of which tubercle bacilli were present, both producing great destruction of tissue, one proving fatal. The deeper structures composed of connective tissues show less resistance to the disease than the derma, so that when these are attacked serious results may follow. In treatment touching the ulcus with pure lysol is advocated. Finsen light and x-rays have not been uniformly beneficial.

3. Gaylord and Clowes report that of 7 rats, kept for a year in a cage previously occupied by Dr. Loeb's rats which were implanted with sarcoma, 3 developed sarcoma. Control animals in cages sterilized after containing sarcomatous rats in no case developed sarcoma. The rarity of sarcoma in rats is shown by the fact that of 57 dealers in small animals who had handled approximately 20,000 rats in the past three years, only one or two had seen such tumors. Another instance of similar development of tumors in a single cage, this time of cancers especially of the breast in mice, has also come to the notice of the authors. In this cage containing about 100 mice at a time, during three years 60 spontaneous tumors have developed. A standing offer of $25 for any small animal affected with cancer, sent to 325 dealers, has brought in only 23 such animals in a year. These observations are taken as evidence that the infectious theory of malignant tumors cannot be discarded.

4. Capps has measured the blood pressure before, during and after the withdrawal of fluid from the chest in 15 cases. In all the blood pressure fell during the aspiration, rising somewhat within an hour afterward. This fall in blood pressure was greatest in cases where the amount of fluid removed was large, or where it was drawn off rapidly. When the effusion was of long duration, the fall of pressure was more marked than in cases of recent development. Senile changes in blood vessels and heart favored a rapid and deep fall of blood pressure. Abdominal paracentesis in 9 cases also resulted in a fall of blood pressure. Further observations are to be made with regard to cases where siphonage and not aspiration is used, and as to the results to be obtained from measures to prevent and relieve untoward circulatory symptoms appearing during the withdrawal of fluid.

5. Musser urges the importance of detecting empyema in its earliest stages before any large accumulation has occurred. The disease is at first local, whether beneath the chest wall, between the lobes, or between lung and diaphragm. It is always secondary to some antecedent condition, such as serous pleurisy or pneumonia. The symptoms are those of an infection additional to the primary condition. As local symptoms pain and *tenderness* are mentioned with great emphasis. When the collections of pus are small and between lobes the physical signs will be slight. Diminution of expansion on the affected side may be the first sign noted, to be tested by the method of Litten. Dullness on percussion, often changing during respiration or change of position, often deep dullness along the septa between lobes, and Skoda's resonance occur. Breath sounds may be diminished and friction may be present. The x-ray may be of assistance. Exploratory puncture is to be avoided; exploratory operation is preferable. Pulmonary tuberculosis is to be distinguished by difference in its clinical course, absence of leukocytosis, pulse and respiration increased out of proportion to physical signs, and multiple foci of disease, with perhaps bacilli in the sputum. Multiple abscesses are to be excluded; they occur usually after bronchopneumonia and give signs of small foci of consolidation rather than of pleural lesions. The character of the sputum will suggest their presence. The treatment of empyema when the diagnosis is made is operation as soon as possible.

6. Forchheimer discusses the method of spontaneous absorption of pleuritic effusions. Whether such absorption occurs by lymphatics alone or by blood vessels as well cannot be decided. It is known, however, that in exudative processes the absorption by the pleura is diminished, and that this depends upon the amount as well as the character of the exudate; the greater the effusion the less the absorption, the more fibrin the less absorption. In treatment of acute serous effusions many methods have been used from the internal use of salicylates to catharsis, dieuresis, etc., with restriction of the intake of fluids, and other dietetic methods. All, however, are unnecessary if the fluid is removed by thoracentesis. The withdrawal of even a little fluid will often suffice to start natural absorption. Aspiration should be slow, and only a part of the effusion is to be removed at a time. The patient should be as nearly as possible in the recumbent position. Chronic serous effusions sometimes occur, which return repeatedly after aspiration. In these obstinate cases injections of iodin have been tried but discarded. Injections of salt solution are of little use. In such cases surgical treatment with freeing of adhesion. may be considered. Empyema must be regarded as an abscess, and treated accordingly. Where adhesions prevent the expansion of a compressed lung, decortication of the lung and discission of the pleura have been of benefit.

7. Burr believes that although trauma is accepted as an immediate exciting cause of insanity, predisposition of the patient to insanity is necessary to its appearance. He asserts with confidence that there is no characteristic type of post-traumatic insanity.

8. Gordon reports twelve cases of migraine associated with mental symptoms, observed within the last four years, and all presenting similar types of derangement, namely, confusion, delirium, usually with hallucinations and stupor. The hallucinations were usually visual, though gustatory and auditory hallucinations were also observed. The confusional stage predominated in all, and was frequently accompanied with illusions of identity, incoherence and disturbance of orientation. Some of the cases suggested psychic epilepsy or procursive epilepsy. In the majority of cases the mental symptoms occurred during the attacks, and in some they continued twenty-four hours after the subsidence of the migraine. In some cases, however, they occurred either before or after and they lasted in some cases for twenty-four hours after the subsidence. He does not think that he can explain these conditions as epileptic or hysterical, though in some cases they suggested it. The special point is their association with an autotoxic condition, which is the basis of migraine.

10. Hewlett gives the history of a case in which the use of digitalis is followed by slow and irregular pulse, the irregularity consisting in a dropping of the beats accompanied with precordial distress. Auscultation showed that the dropping was not due to the occurrence of extra systoles, but that during the intermission, there was either absolute silence or at most only a faint and indefinite soft sound over the base of the heart. Simultaneous tracings from the veins of the neck and the apical region showed two forms of irregularity, the first due to a blocking of the cardiac contraction wave passing from the auricles to the ventricles, while in the second form the beat was also dropped out, but there was no auricular pulsation in the pause of the ventricular rhythm. He discusses the mechanism and causes of these phenomena and assumes the probability of a block occurring above the auricles as well as at the auricular ventricular septum. The article is illustrated by tracings.

Annals of Surgery.

January, 1907.

1. *Lilienthal, H. *End-to-End Arteriovenous Angeiorrhaphy.*
2. *Corner, E. M. *Rotary Dislocations of the Atlas.*
3. Walker, G. *Occlusion of the Portal Vein Due to Surrounding Inflammatory Adhesions.*
4. Bullitt, J. B. *Obliteration of the Stomach as a Result of Gastric Ulcer.*
5. *Kiliani, O. G. T. *Typhoid with Double Perforation of Ileum and Perforation of Gall Bladder.*
6. Coffey, R. C. *Intestinal Intussusception.*
7. Staehlin, E. *Resection of Ten Feet Two Inches of Small Intestine.*
8. Cabot, H., and Binney, H. *Fractures of the Os Calcis and Astragalus.*
9. Ely, L. W. *Old Fracture of the Tarsus.*
10. Brownlee, H. F. *Colossal Dermoid Cyst of over Fifty Years' Growth.*
11. Cheesman, W. S. *Extirpation of a Hypernephroma Weighing Four and a Quarter Pounds, from an Infant Twenty Months of Age.*
12. *Quick, E. *Intraperitoneal Rupture of the Urinary Bladder.*
13. Belfield, W. T. *Drainage of the Prevesical Space Through the Perineum in Supra-pubic Cystotomy.*
14. *Lusk, W. C. *Drainage of Prostatic Abscesses through the Ischio-Rectal Fossa.*
15. Blake, J. E. *Silverized Catgut: A Study of the Method of Crédé for Sterilizing Catgut without Heat.*
16. Cupler, R. C. *Note on Gonorrheal Osteomyelitis.*

1. Lilienthal reports an unsuccessful attempt to avoid gangrene of the leg in an arteriosclerotic patient by reversal of the circulation after the method of Carrel and Guthrie.

2. Dislocation of the atlas may be recognized clinically by the following points: (1) A history of accident in which the violence is commonly applied to the front and top of the head; (2) symptoms of paralysis or anesthesia are absent; (3) the neck is painful to touch and to move, and motion is restricted; (4) the characteristic position of the head is slightly flexed and turned to one side; (5) examination of the pharynx shows two prominences,— the one due to the forwardly displaced transverse process, the other to the axis; (6) lateral x-ray examination shows a forward displacement of one side of the atlas. There is usually nothing which will absolutely exclude fracture

of the odontoid process. In the treatment of this lesion, unless the integrity of the odontoid process can be fairly well established, steps should be taken to immobilize the head and neck by a plaster of Paris collar. With an intact odontoid process, however, the dislocation should be reduced under ether and the head then immobilized.

5. Kiliani reports a case of a man of forty, suffering from typhoid fever, on whom laparotomy was performed for symptoms of perforation. Operation revealed double perforation of the ileum near the ileo-cecal valve, and a perforation of the gall bladder as well. The intestine was sutured and the gall bladder removed. The typhoid fever and peritonitis were overcome, but death occurred twenty-one days later of empyema and gangrene of the lungs due to tuberculosis.

12. Quick gives the details of a very interesting case of rupture of the bladder, in which recovery followed operation done two hundred and fifty-four hours after the injury. Though the abdomen was found filled with urine, peritonitis was absent.

14. Abscesses of the prostate which have neither penetrated the rectum nor bladder are best evacuated, in the opinion of Lusk, by way of the ischio-rectal fossa. The anatomy of the region is well illustrated.

The Lancet.

Dec. 29, 1906.

1. *Robson, A. W. M. *The Treatment of General Peritonitis.*
2. *Oliver, T. *Cyanosis, General and Local.*
3. Cameron, S. J. *Some Pathological Considerations of Extra-Uterine Pregnancy.*

1. By general peritonitis Robson means a diffuse peritonitis involving the whole cavity of the peritoneum not limited by adhesions; by a spreading peritonitis he means one in which there are no lymph barriers but in which the peritonitis has not as yet involved the whole cavity of the peritoneum. Formerly the only treatment was opium, starvation and hot poultices, and occasionally a case recovered; after this the purgative treatment was introduced with or without removal of the cause. Lawson Tait did a great service in pointing out the evils of morphine in these cases. Though useful in post-operative treatment in peritonitis after the cause has been removed, the routine use of purgatives can only be disastrous. Next came operative treatment advocated by the writer in 1888, at first limited to removal of the cause alone. Six cases are reported. The essentials of this treatment are: (1) Removal of the cause; (2) thorough drainage; (3) rapidity of operation; (4) avoidance of unnecessary handling or exposure; (5) prevention of shock; (6) saline solution by rectum; (7) rectal feeding; (8) avoidance of opium and repeated small doses of calomel after operation. More radical treatment, — evisceration, sponging of intestines, etc., — though theoretically perhaps good, practically meets with bad results. Ochsner of Chicago has returned to the older, more conservative treatment of spreading or general peritonitis with the idea of getting the disease localized for operation later. In all early cases he advises immediate operation, if efficient surgical help and nursing are at hand. Robson believes that delay for any reason is bad policy. Murphy of Chicago is an advocate of the Conservative operation for acute perforative peritonitis, avoiding handling of intestines, using large amounts of salines by rectum and pelvic drainage with the reclining posture.

2. Oliver gives an interesting discussion on cyanosis. He first considers that due to congenital heart disease; next cyanosis and blood findings in poisoning with acetanilid and other aniline derivatives; then cyanosis recently studied of intestinal origin, usually associated with gastro-intestinal disturbances, diarrhea, etc. The cause is supposed to be the presence of micro-organisms in the intestine of the nitrite forming group, together with an abnormal condition of the mucous membrane leading to the absorption of the nitrites into the blood. Experiments have shown that nitrites act as a reducing agent in the blood, forming methemoglobin. Several illustrative cases are given. He speaks of the prevalence of cyanosis in workers in aniline factories, and lastly considers local cyanosis or Raynaud's disease.

British Medical Journal.

Dec. 29, 1906.

1. Lawson, A. *Conditions of Eyesight Required for Military Service.*
2. Williams, C. H. *Visual Tests for Railway and Marine Service.*
3. Lawford, J. B., and Bull, C. S. *A Discussion on Rare Forms of Choroiditis.*
4. Wood, C. A. *Some Recent Cases of Death and Blindness from Wood Alcohol Poisoning.*
5. Burnham, G. H., Lawson, A., Oliver, C. A. *A Discussion on Sympathetic Ophthalmia.*
6. Fergus, A. F. *Sympathetic Degeneration.*
7. Byers, W. G. M. *A Case of Sympathetic Ophthalmia, which Followed a Mule's Operation, and Ended in Recovery.*
8. Roy, D. *Phlegmon of the Orbit, Simulating a Malignant Growth.*
9. Fergus, A. F. *Eyesight in Relation to Compensation.*
10. Würdemann, H. V. *Diaphanoscopy of the Eye.*
11. Killen, W. M. *Treatment of Unripe Cataract.*
12. Knapp, H. *Dependence of Accommodation and Motility on the Refraction of the Eye.*
13. Duane, A. *Tenotomy of Inferior Oblique and Consideration of the Conditions that May Call for the Operation.*
14. Jackson. *Accommodation after Middle Life.*
15. Ryerson, G. S. *Surgical Treatment of Trachoma.*
16. Fergus, A. F. *Binocular Vision.*
17. Howe, L. *On the Secondary Insertions of the Recti Muscles and their Clinical Importance.*
18. Osborne, A. B., Risley, S. D., Theobald, S., and Weeks, J. E. *A Discussion on Affections of the Lachrymal Passages.*

Münchener Medizinische Wochenschrift, No. 52.

Dec. 15, 1906.

1. Hofmann, C. *The Dosage and Mode of Administration in Lumbar Anesthesia.*
2. Erben, F. *The Proteolytic Ferment of Leucocytes and Autolysis of Normal Blood.*
3. Kraus, A. *The Technic of Staining for Spirochetes.*
4. Stoffel, A. *Pseudarthrosis of the Styloid Process of the Ulna.*
5. *Mennacher, T. *Perforation of the Duodenum by a Hair Pin.*
6. Mayer, M. *A Medico-Legal Case.*
7. Lücke. *Congenital Ankylosis of the Fingers.*
8. Jehle, L. *The Role Played by the Infection of Mines in Epidemics of Cerebrospinal Meningitis.*
9. Elkan. *The Graphic Representation of Physical Signs in the Lungs.*
10. Siegel, J. *What Do We Know about the Organism of Vaccinia?*

5. In Mennacher's case a hair pin swallowed four months previously caused a perforation of the duodenum. Death resulted from general peritonitis in spite of operation. The first violent symptoms were followed by a deceptive amelioration, which led to a postponement of the operation. This latent period in general peritonitis is seen also in perforation of duodenal ulcers; pulse and temperature may be normal and spasm and tenderness of the abdomen may be lacking.

Deutsche Medizinische Wochenschrift, No. 52.

Dec. 27, 1906.

1. Sittmann, G. *The Treatment of Anemia.*
2. *Albu, A. *The Early Diagnosis of Cancer of the Stomach.*
3. Vogel, K. *A Simple Contrivance to Supplement the Bardenheuer Extension Treatment of Fractures.*
4. Barth, E. *A New Tonsillotome.*
5. Martin, J. *The Technic of the Suction Treatment of Diseases of the Nose.*
6. *Klose, H. *Hemorrhagic Diathesis Complicating Scarlatina, with Remarks on the Use of Gelatin.* (Concluded.)

2. In the early diagnosis of cancer of the stomach, Albu lays much stress on a progressive loss of weight which occurs in spite of an abundant and suitable diet. This sign, when found in connection with such symptoms as progressive diminution or absence of hydrochloric

acid, or the presence of impaired motility, is sufficient to justify an exploratory laparotomy.

6. Hemorrhagic manifestations in scarlet fever may be due directly to the disease itself, and then occur either in the form of small petechiæ corresponding to the situation of the rash or as the hemorrhagic form with bleeding under the skin and from the mucous membranes. There is also a septicemic form due to infection with the streptococcus. Distinct from these varieties a hemorrhagic diathesis sometimes occurs as a complication of scarlatina. It may appear as a simple purpura, as hemorrhagic purpura, or as the fulminating type. Klose reports a remarkable case in which the hemorrhagic diathesis set in during the convalescence from scarlet fever, and after a duration of two years ended fatally. There were four distinct attacks, separated by intermissions during which the child was apparently well. Gelatin given subcutaneously had a very striking effect in that the hemorrhages ceased promptly and did not recur for long periods. He used Merck's sterilized gelatin, 20 cc. of the 10% solution. This is a thoroughly reliable preparation, comes ready for use and does not contain tetanus germs, which are not infrequently present in commercial gelatin. He refers to the marked reduction in the mortality of melena neonatorum since the introduction of this method. Gelatin may be effective when given by the mouth or rectum, but is much more so when administered subcutaneously.

The Value of Tuberculin in Diagnosis and Treatment (*Annales de Médecine et Chirurgie Infantiles*, Sept. 1, 1906). L. **Giuenard** considers the practical value of tuberculin in diagnosis and treatment. Its value in animal diagnosis is undoubted. Why the great difference when tuberculin is applied to humans? The writer does not believe there should be this difference, and thinks it an exact method of diagnosis when carefully used in moderate dosage in early cases. In France the check which this remedy received shortly after Koch's discovery still keeps it from general usage. Especially in Germany tuberculin is used as a routine measure both for treatment and diagnosis. More than 10,000 observations have been published in Germany proving its value and harmlessness. The writer does not believe in the view held by many that some normal healthy individuals have a hypersensitiveness to tuberculin; in healthy subjects it will produce no results; if, when given according to prescribed rules, it causes a reaction, there must be tuberculosis somewhere. In the cases where there has been no reaction to known tuberculous processes, the writer thinks it is because the lesion is old, arrested or walled off. Such cases, he thinks, are very rare. As regards syphilis, dermatoses, and other conditions in which there is a positive tuberculin reaction, it is well to be quite sure that there is no tuberculosis before claiming that the test has given wrong results. Other substances, organic toxins, urinary toxins, etc., it is said, will give reactions, but these are in no way comparable to the real tuberculin reaction. Any rise in temperature above normal and above that the patient has had before and after injection constitutes a reaction. He gives the technique as recommended by Möller, Löwenstein and Ostrowsky, and as taught by Rumpf at Friedrichsheim. Koch's old tuberculin diluted with ½% carbolic acid is used. One-half milligram is first given; if no reaction results, 2 mgm., then if no reaction, 5 mgm. For infants or weak adults 1–20 or 1–10 of a milligram. The patients should be in bed, the temperature taken every two hours. A positive reaction will show itself by elevation of temperature, malaise, headache, etc., and a less constant local reaction with exaggerated signs in the lungs. This local reaction, described by Turban in 1890, is of the greatest importance. Ostrowsky uses a slightly different method, injecting 2-10 mgm. of tuberculin every three to four days taking the temperature carefully and looking for any rise in temperature or local or constitutional signs after the second or third dose. This method avoids all violent reactions.

Acute Myelogenous Leukemia. While acute leukemia of the lymphatic type is not very uncommon, acute myelogenous leukemia is exceedingly rare, as shown by the fact that there are only 12 cases in the literature. **Mager** and **Sternberg** (*Wien. Klin. Woch.*, no. 49, 1906) report a case in a woman of thirty-four years. The duration was four weeks from the onset of the first symptoms, the course was that of an acute infectious disease with marked enlargement of the spleen and lymph nodes. The blood three days before death showed only anemia and a relative increase of polynuclear neutrophiles, without myelocytes. At the autopsy, however, the blood showed 20% of myelocytes and the typical appearances of myelogenous leukemia were present; it is worthy of note that in the lymph nodes and liver, giant cells were seen similar to those found in bone-marrow.

Chvostek's Facial Phenomenon in Enteroptosis. The facial phenomenon (twitching of the facial muscles on tapping the facial nerve in front of the ear) was considered by Chvostek to be diagnostic of tetany. Later observations have shown that it occurs also in neurasthenia, tuberculosis, gastro-intestinal and other affections. **Mager** (*Wien. Klin. Woch.*, no. 51, 1906) reports its occurrence in 40 selected cases of enteroptosis. All of these patients suffered from marked constipation; an investigation of the stools showed the presence of marked fermentation in 22 out of 24. Under treatment directed to the intestinal condition, the facial phenomenon disappeared. Three cases of tetany all showed marked fermentation. Mager concludes that the facial phenomenon is due to auto-intoxication from the absorption of the products of abnormal fermentation in the intestine; for the production of tetany something else is necessary, possibly an insufficiency of the parathyroid glands. (*Cf.* The occurrence of tetany after operative removal of the parathyroids.)

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Miscellany.

RESOLUTIONS ON THE RESIGNATION OF DR. WILLIAM L. RICHARDSON FROM THE BOSTON LYING-IN HOSPITAL.

At the annual meeting of the Boston Lying-In Hospital Corporation held at the hospital, Jan. 16, 1907, the following vote was passed:

"*Voted*, That the members of the corporation regretfully accept the resignation of Dr. William L. Richardson as visiting physician of the hospital, and that the secretary be requested to spread upon the records that portion of the report of the Executive Committee which relates to his resignation and service, and to transmit a copy thereof to him as the unanimous expression of the corporation in testimony and appreciation of his faithful and devoted work for the hospital during the last thirty-four years."

In accordance with the above vote, the following extract from the report of the Executive Committee and of the Trustees was spread upon the records of the corporation. It reads as follows:

"It is with great regret that the committee is compelled to report the resignation of Dr. William L. Richardson as visiting physician of the hospital.

"It was chiefly through the initiative and the efforts of Dr. Richardson, in the years 1871 and 1872, that the hospital, whose work had been suspended for many years, was re-opened for the reception of lying-in patients. Recognizing the need of such an institution in this city, he vigorously and enthusiastically set about the task of re-establishing the Boston Lying-In Hospital to do the work which was so much needed for the community. He secured the co-operation of Dr. Henry Tuck and the two became the first physicians. The hospital began its work modestly in a single dwelling house with eighteen beds. Its success under the new auspices was assured from the start.

"The hospital building has been increased in space more than fivefold; the number of house patients for the year has grown to nearly 800; the visiting physician has been seconded by an experienced and devoted staff, and by the first matron, who still remains efficiently at her post as superintendent, but reinforced with a large and zealous corps of assistants. The hospital has gone on from year to year not only constantly increasing the number of patients whom it has received to its wards, but extending to their homes its treatment of women in childbirth, making of its nurses a training school for fitting pupils for efficient service in the household, teaching students in obstetrics and endowing young physicians with skill as experts in practice, introducing the beneficence of antiseptics, and inaugurating skillful operations for the saving of life — all making the hospital not simply a refuge and home for the thousands of patients who have been directly treated, but by its training of men and women and by introducing scientific results and methods bringing comfort and security to the homes of all.

" To this work and to the attainment of these results, Dr. Richardson, associated for the earlier years with Dr. Tuck, later with Dr. Sinclair and Dr. Boardman, and during the past seventeen years as the sole visiting physician, has given untiringly his time, his thought and his skill, and has imbued and inspired with his spirit and zeal and knowledge his associates and assistants, who have ably and faithfully aided in all the work which has been accomplished.

" While the committee trusts that in other capacities Dr. Richardson will continue to labor and promote the interests and to extend still further the usefulness of the hospital, it now desires to express the deep and lasting obligation due to him, in the larger measure, for the great success which has been achieved in the thirty-four years of his leadership."

Wm. D. Sohier,
Secretary.

THE MEDICINE IN SHAKESPEARE.

The January issue of the *Johns Hopkins Bulletin* has, as a leading article, a paper by Dr. Meyer, instructor in anatomy at the university, on " Some Characteristics of the Medicine in Shakespeare." By a curious coincidence, the Journal gives in last week's and this week's issues a paper by Dr. Getchell, of Worcester, on the " Medical Knowledge of Shakespeare." For both writers there was evidently a real Shakespeare, and not a Bacon or any one else. Both articles will repay reading. Dr. Meyer's article is summed up in the following closing paragraphs:

" I am fully aware that there are those who have magnified Shakespeare's insight until they have claimed that he foresaw advancements in science which only the great scientists of the twentieth century have achieved. Such assertions, however, are interesting mainly as an index to a large part of the literature on this subject. It would be doing a great wrong to the truly learned physicians and surgeons of the sixteenth century and to their illustrious predecessors, to claim that the characteristics of the medicine of the plays of Shakespeare are those of the medicine of Woodall, Riolan, Botal, Harvey, Caius, Banester, Linacre, Paré and many others. There are, it is true, some points of similarity, yet little can be found in the medicine of the dramas of Shakespeare indicative of the learning of these men. It is the popular and the general, rather than the special and minute, that is found in Shakespeare The picture we obtain is, in the main, that which could easily be obtained from the life of that time by a layman of *such extraordinary genius* as Shakespeare's. The wonderfully accurate descriptions of death and old age are eloquent testimonials of his powers of observation, expression and portrayal. It would be useless to try to find parallels to them in the professional treatises of that time or of any other time. Be their professional attainments what they might, lacking Shakespeare's genius, physicians were, and must remain, unable to write as wrote the great master of English. To be sure, there are certain internal evidences tending to show that the medicine of the plays of Shakespeare is, in some things at least, fully abreast of that of the professional treatises of the times. But they are too few and inadequate to characterize it as a medicine based on clinical experience and anatomical knowledge. In short, the medicine of the plays of Shakespeare is Hippocratic medicine modified by Galenism, with a touch of Paracelsus. These elements are all represented in the best treatises on medicine of the sixteenth century. The characteristics of the medicine of Shakespeare are, in a manner, those of the medicine of the best physicians contemporary with him. It is not, however, a purposeful medicine based on medical training and clinical experience, but incidental, the product of a world genius, and, therefore, a greater tribute to his enduring fame."

Correspondence.

GIFT TO LAWRENCE GENERAL HOSPITAL.

Lawrence, Mass., Jan. 17, 1907.

Mr. Editor: This from the Boston Medical and Surgical Journal of Jan. 3 is incorrect as to name:

" Gift to the Lawrence, Mass., Hospital. — As the result of a decision by Justice Morton of the Supreme Court, the Lawrence City Hospital received $25,000 under the will of the late Helen G. Coburn, of Boston. A question as to the disposition of the money arose from the fact that the name of the hospital was incorrectly stated in the will; it appeared, however, on investigation that there was no doubt which institution was intended to be the beneficiary."

Mrs. Coburn's will incorrectly named the Lawrence City Hospital as above; there is no such institution. A " friendly suit " on the part of the Lawrence General Hospital became necessary to enable the executors to make payment with entire safety to the Lawrence General Hospital, which was most certainly intended. Judge Morton issued a decree to that effect. This illustrates the wisdom of precision in a legator. Our hospital is not the Lawrence, Mass., Hospital, nor the Lawrence City Hospital, as in your item, but the " Lawrence General Hospital."

Truly yours,
O. G. Carleton, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Jan. 12, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,679	476	Quincy	13	2
Chicago	699	193	Waltham	7	1
Philadelphia	646	150	Gloucester	6	1
St. Louis	—	—	Pittsfield	—	—
Baltimore	245	57	Brookline	2	2
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	11	1
Cincinnati	—	—	Medford	11	—
Milwaukee	—	—	Beverly	4	—
Washington	—	—	Hyde Park	3	1
Providence	85	24	Newburyport	—	—
Boston	266	55	Leominster	8	3
Worcester	40	6	Melrose	3	—
Fall River	31	13	Woburn	9	—
Cambridge	32	9	Marlborough	3	0
Lowell	43	6	Westfield	8	2
Lynn	27	4	Peabody	—	—
New Bedford	25	8	Revere	6	3
Springfield	22	5	Clinton	4	1
Lawrence	34	10	Attleboro	4	1
Somerville	14	1	Adams	7	2
Holyoke	22	10	Gardner	—	—
Brockton	17	—	Milford	5	—
Malden	14	4	Weymouth	3	—
Salem	17	3	Framingham	5	—
Chelsea	4	1	Watertown	2	1
Haverhill	11	2	Plymouth	—	—
Newton	7	1	Southbridge	7	1
Fitchburg	8	3	Wakefield	—	—
Taunton	—	—	Webster	—	—
Everett	9	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JAN. 19, 1907.

W. H. Block, acting assistant surgeon. Resignation accepted to take effect from Jan. 13, 1907.

C. H. DeLancy, passed assistant surgeon. Detached from the "Hancock" and granted sick leave for three months.

C. P. Bagg, surgeon. Detached from the Naval Station, Guam, L. I., and ordered home to wait orders.

G. G. Hart, acting assistant surgeon. Detached from the Naval Training Station, San Francisco, Cal., and ordered to the "Albatross."

F. E. McCullough, surgeon. Detached from the "Albatross," and ordered to the Naval Station, Guam, L. I., sailing from San Francisco, Cal., Feb. 5.

O. J. Mink, assistant surgeon. Ordered to the Naval Medical School, Washington, D. C.

ORDERS ISSUED BY COMMANDER-IN-CHIEF OF ASIATIC FLEET.

J. C. Thompson, surgeon. Detached from the "Cincinnati" and ordered to the Naval Station, Olongapo, P. I.

A. E. Peck, passed assistant surgeon. Detached from the "Concord," and ordered to the Naval Station, Olongapo, P. I.

F. E. Sellers, assistant surgeon. Detached from the "Mohican," and ordered to the "Cincinnati."

R. E. Stoops, assistant surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered to the "Concord."

C. T. Hibbett, medical inspector. Detached from the "Franklin" and ordered to the Naval Rendezvous, St. Louis, Mo.

C. E. Riggs, surgeon. Detached from the "Pensacola" and ordered to duty with Marine Legation Guard, Pekin, China, sailing from San Francisco, Cal., Feb. 21.

C. J. Decker, surgeon. Ordered to duty on board the "Franklin."

J. S. Taylor, passed assistant surgeon. Detached from duty with Legation Guard, Pekin, China, and ordered home to wait orders.

F. G. Abekin, passed assistant surgeon. Detached from the Naval Rendezvous, St. Louis, Mo., and ordered to the Naval Training Station. San Francisco, Cal.

R. J. Straeton, **J. C. Dunigg**, assistant surgeons. Appointed Assistant Surgeons, with rank of (lieutenant, junior grade) from Dec. 20, 1906.

APPOINTMENTS.

Leonard Worcester Williams, Ph.D., has been appointed instructor in comparative anatomy at the Harvard Medical School for the remainder of the academic year 1906-7.

Carney Hospital.

Dr. George S. Derby, ophthalmic surgeon.

Dr. Edward K. Ellis, assistant ophthalmic surgeon.

RESIGNATION.

Dr. W. J. Daly as ophthalmic surgeon.

Prize for the Best Essay on the Etiology of Epilepsy.— Dr. W. P. Spratling announces a prize of $500, offered by the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, for the best essay on the etiology of epilepsy. All essays submitted must be in English, written in a clear, legible hand or on the typewriter, on one side of the paper only and they must not contain more than 15,000 words. Essays must be in the possession of Dr. W. P. Spratling, at Sonyea, N. Y., not later than Sept. 1, 1907. The name of the person submitting the essay must not appear on the same, but be put in a sealed envelope on which is written a motto, and which motto must also appear at the top of the first page of the essay. All essays received will be placed in the hands of three physicians to determine their merit. Two of these physicians will be members of this Association; the third a member of the American Neurological Association. Announcement of the award will be made at the November, 1907, meeting of the Association and the prize becomes the property of the Association. The Association will not feel bound to award the prize should no essay submitted be deemed of sufficient value to merit it. Original research work into the etiology of epilepsy will be a leading factor in fixing the award.

RECENT DEATH.

Dr. Henry Kost, of Fort Washington, New York City, died on Jan. 12, in the seventy-sixth year of his age. He was a native of Hildburghausen, Germany, and studied medicine at both Jena and Würzburg. After taking his degree at the latter university, in 1853, he attended a post-graduate course at Vienna. In 1855 he accepted a commission as assistant surgeon, with the rank of lieutenant, in the British-German Legion, and served throughout the Crimean War. Later he held the position of resident physician at the German Hospital in Dalton, England. In 1868 he came to New York, where he practised for thirty-five years.

BOOKS AND PAMPHLETS RECEIVED.

The Toxins and Venoms and Their Antibodies. By Em. Pozzi-Escot. Authorized translation by Alfred I. Cohn, Phar.D. London: Chapman & Hall, Ltd. New York: John Wiley & Sons. 1906.

The Practice of Obstetrics. Designed for the Use of Students and Practitioners of Medicine. By J. Clifton Edgar, M.D. Third edition, revised. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Tropical Medicine, with Special Reference to the West Indies, Central America, Hawaii and the Philippines, including a General Consideration of Tropical Hygiene. By Thomas W. Jackson, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Requirements of the Mosquito Doctrine. Yellow Fever in New Orleans in 1905. By Sidney L. Théard, A.M., M.D. Reprint.

Bulletin of the Massachusetts Institute of Technology. Boston, December, 1906.

Hygromedry. By H. E. Wetherill. Fourth edition revised, enlarged. Illustrated. Philadelphia.

Studies from the Bender Hygienic Laboratory, Albany, N. Y. Reprints. Vol. III. 1906.

Ocular Vertigo of Interest to the General Practitioner. By Benjamin P. Croft, M.D. Reprint.

Trachoma. By Benjamin P. Croft, M.D. Reprint.

The Charity Organization Society of the City of New York, Twenty-fourth Annual Report from Oct. 1, 1905, to Sept. 30. 1906, Inclusive.

Original Articles.

REPORT ON THE TRYPSIN TREATMENT OF CANCER.

BY W. P. GRAVES, M.D., BOSTON,
First Assistant Visiting Surgeon to the Free Hospital for Women; Assistant in Gynecology, Harvard Medical School.

The attractive theory of Dr. John Beard as to the action of trypsin on cancer cells and the widespread interest given it by popular literature led me last September to institute a series of observations in order to form, if possible, an independent judgment on the efficacy of the treatment. Although I have applied the treatment since then to practically all inoperable cancer cases which have been under my care, I shall report in this article only four cases, as in them the treatment was most systematically carried out, and the results are most typical and instructive. The four cases which I shall describe are recurrent cancer of the breast. which had been under my observation since their first application for treatment. Cases I, II, and IV were operated on by me; Case III was operated on by Dr. W. H. Baker.

The cases chosen seemed to be especially valuable to test the efficacy of this remedy, first, because all that was possible to be done in the way of surgery had been done; secondly, because being in comparatively good general health they were not beyond the point where nature could assist artificial remedies; thirdly, because the carcinomatous growths appearing in small nodules immediately beneath the skin offered an excellent opportunity to study in gross the various changes which the injection of trypsin might cause in their size and consistency; fourthly, because on account of the convenient and superficial location of these nodules it might be possible at any time to excise them under cocaine to study their changes microscopically.

With regard to technique, I have used the Injectio Trypsini of Fairchild, which is put up sterilized in glass bulbs that hold 20 mm. of a glycerin solution. I have usually begun with 10 mm. of the undiluted trypsin solution, and after two or three treatments increased this to 40 mm. three times each week. This dosage may be increased to 60 mm. or more, if the injections be given in divided doses, and in different areas. After continued treatment, the tissues acquire a certain amount of tolerance, and the dosage can be much increased. The amount of the injection, and the frequency of treatment must be determined by the amount and severity of the local or constitutional reaction.

After trying various needles, I have adopted a large antitoxin needle with a metal barrel and piston which can be sterilized by boiling. The barrel is provided with a canula through which the glycerin solution can be readily drawn from the narrow neck of the glass bulbs. The usual antiseptic precautions are observed, while local anesthesia necessary for the introduction of the large needle is most conveniently produced by the application of ice for two or three minutes.

The severe constitutional reaction which has been mentioned by other writers, I have noticed only once, notwithstanding the unusually large injections that I have given. The only case where it was observed was the first injection of 10 mm. into a rapidly proliferating squamous-cell carcinoma of the cervix uteri. This injection was followed in two hours by a serious state of collapse, which for a while was alarming. This reaction resembled in general character that which sometimes follows the injection of Coley's serum, but was considerably more severe.

A certain amount of local reaction is more or less constant. This consists of a dense, hard infiltration occurring especially after large doses. There is a red tender swelling, which does not advance to suppuration, and which completely disappears in a few days after cessation of treatment. This swelling is probably due to the great infiltration of small round cells between the fibres of the subcutaneous connective tissue, as is shown in one of the microscopical sections described below.

The claims made by Dr. McKenzie and Dr. W. J. Morton and other writers on this subject, that carcinomatous masses treated with trypsin are made to shrink or diminish in size, are to a certain extent supported by my observations. This seems to be the case when isolated nodules are treated by direct injection. Although a marked and even surprising result can thus be obtained, no particular influence seems to be exerted on neighboring nodules, nor does such a treatment prevent later appearance of a carcinomatous nodule in close proximity to a nodule previously treated and aborted.

The result of injecting trypsin into carcinomatous masses where there is a certain amount of degeneration or where the character of the process is very cellular is most striking in effect. One would naturally expect that in such cases the enzymotic character of the extract would be most apparent. Carcinomatous tissue of this kind rapidly dissolves without sepsis, the process resembling the action of enzymol on sloughing ulcers, where the necrotic tissue is digested and dissolved, and the normal tissue is unaffected.

In one of my cases (Case III) there has been an undoubted relief given to pain. This result is, however, not a constant one, in deep seated cancer, as has been repeatedly demonstrated where I have tried it in cases of advanced carcinoma of the cervix uteri.

I have noticed no special effect on the nutrition of the patient by the use of trypsin alone. The effect, however, of the internal administration of Holadin, a combination of the pancreatic ferments, is unquestionably attended with an increase of appetite and weight, and a general improvement in the well-being of the patient, in cases that are not too far advanced. This result is so evident that I make it a routine to give Holadin at once in all cases of carcinoma.

The microscopical result which I obtained (Case I) from the excision of a nodule which had been apparently cured by the local injection of trypsin is strikingly similar to the report made by Dr. H. T. Brooks of the specimen sent him by Dr. Morton, and described in the New York *Medical Record* of Dec. 8, 1906. Dr. Morton's conclusions that trypsin, when coming into actual contact with the living cancer cells, destroys them, and encourages a dense connective tissue formation in the particular area treated must, however, be modified in my own case. Here the original tumor was a scirrhous cancer, and showed a marked tendency to dense connective tissue formation, both in the tumor and in some portions of the otherwise unaffected breast tissue. I am inclined to ascribe the greater success which I have had in Case I to the scirrhous nature of the original growth, partly because the process is slower than in the more cellular form of cancer and partly because the scirrhous variety is mechanically more favorable for the action of trypsin. As the dense connective tissue fibers are unaffected there is not the same breaking down and solution of tissue that is seen in medullary growths.

My experience with the trypsin treatment practically substantiates that of other writers. There has been nothing in my results to guarantee an expectation as to its ability ever to cure a deep-seated cancer; Case I and Case IV lead me to think that the progress of the disease may in favorable instances be retarded. There is no positive evidence in my experience to show that the local effect of direct injections of trypsin into carcinomatous masses exerts a greater destructive influence than certain other remedies that have been used in times past. I can only say that I have not yet decided that the treatment is entirely without benefit to the patient, and for that reason I consider it not only justifiable, but due the patients under one's care to employ it in all inoperable cases, with the hope that greater experience and improvement in technique may possibly prove its greater usefulness.

Case I. Mrs. T., age forty-six. Operation April 27, 1905. Amputation of the right breast. Removal of both pectorals, and dissection of the axilla. The specimen consisted of a tumor in the outer border of the right breast, about the size of an English walnut. There were no metastases. Microscopical examination showed the tumor to be a scirrhous carcinoma. On May 24, 1906, a small nodule in the scar was removed and showed microscopically that it was a recurrence of the original condition. Several months after another small nodule, perfectly characteristic of recurrent carcinoma, appeared in another part of the breast. It was then decided to try the trypsin treatment. On Sept. 18, 5 mm. of typsin solution were injected into the small nodule above mentioned. Several injections were then made at intervals of two or three days, and though at first there was some inflammatory reaction, on Oct. 8, the original nodule into which the injections had been placed was flatter and smaller, and the skin over it appeared whiter and thicker than the surrounding skin. This appearance has continued up to the present date without any enlargement or increase in that particular nodule. On Oct. 8, another small carcinomatous mass was felt at considerable distance from the first one. Several injections of trypsin into this nodule caused it to diminish. Treatments continued two or three times a week, and the amount given was increased to 40 mm. Other carcinomatous nodes began to appear one by one, but did not grow rapidly. Treatment of these later nodules has shown a similar effect to the first two. On Nov. 5, the amount of trypsin injected was increased to 60 mm., but this was followed by so marked and painful reaction, which consisted of a swelling and redness of the subcutaneous tissues, that the dosage was again reduced to 40 mm. The inflammatory swelling would always subside in a few days, there being no abscess formation nor serious inflammation, and did not appear to be in the nature of an infection. On Dec. 5, Holadin was prescribed, to be given in capsules by mouth. Six capsules were given daily, and have been continued up to the present time. This internal treatment had an immediate beneficial effect on the general nutrition of the patient. Her appetite was markedly increase, and her general sense of well-being improved. Some weight has been gained, and the patient's color is also improved. On Jan. 11, the small nodule first treated, which has been described as having apparently been aborted and become flatter and more cicatricial, was excised under cocaine. At the same time another small nodule characteristically carcinomatous to the feel, which had recently appeared near the first nodule, and into which 20 mm. of trypsin had three days before been injected, was also excised. The first nodule, namely, the one treated on Sept. 18, and apparently aborted, showed under the microscope the following appearance: The tissue immediately beneath the epithelium was very densely fibrous. This tissue became less dense and more of the nature of ordinary connective tissue in the deeper parts of the specimen. In the lowest portions there was considerable round cell infiltration, *but no appearance of cancer cells.*

The second nodule, namely, that into which trypsin had been injected three days before, showed a connective tissue markedly infiltrated with small round cells. In the lower portion were a few gland elements, and scattered in the lymph spaces small collections of carcinomatous cells. These cells were large and faint, and stained poorly with hematoxylin, and were apparently in a state of degeneration, showing a marked contrast to the connective tissue cells and small round cells in the immediate neighborhood. A comparison with the cancer cells of the original tumor showed them to be in an apparent state of degeneration. From a study of these two specimens one is inclined to believe that the statement of Dr. Beard and others who have exploited the trypsin treatment, is true, that the trypsin ferment exerts a digestive action on the cancer cells, leaving unaffected the neighboring normal somatic cells of the individual.

The present condition of this patient is as follows: She has not lost weight, is in fairly good health and strength, and is able to perform her ordinary household duties. She has a good appetite, a good digestion, and sleeps well. The carcinomatous process in her breast is at present showing no progression. Nodules which were apparent a month or six weeks ago have either flattened out or disappeared altogether. My previous experience leads me to believe, however, that though these have apparently been aborted, others will probably appear in time in their immediate vicinity. I am now giving 80 mm. of trypsin in divided injections three times each week.

Case II. Mrs. J., age fifty-one. Operation Feb. 27, 1906. Amputation of left breast. Dissection of axilla. Removal of both pectorals. The microscopical examination showed medullary carcinoma.

This case was a neglected one having extended over four years without operative treatment. The process was very extensive, both in the breast and throughout the axilla, and the prognosis at the time I operated was as bad as possible. Convalescence was attended with sepsis at one end of the wound. The patient presented herself again in September, showing carcinomatous infiltration with numerous small nodules near the lower end of the scar. Trypsin treatment was begun on Sept. 17, 1906, and was directed especially to the largest nodule, which was dark purple in color, and about the size of a walnut. Beginning with 5 mm. the dose was soon increased to 40 mm. all the injections being made at first directly into the prominent nodule. After five treatments the following entry was made on the record: Nodular tumor is now soft and much flatter. There is marked fluctuation, which beneath the skin appears to be a dark bloody fluid. There is no evidence of an abscess. The tense hardness which characterized it before treatment has disappeared. Other portions of the infiltrated area are soft and edematous.

Soon after this, the first nodular mass broke down and discharged a murky, bloody fluid. After the discharge of this fluid the nodular mass dried up and became hard and much flatter than when first treated. On Oct. 12, there seemed to be a slight general improvement in the infiltrated mass which had received injections three times each week. The patient, who lived at a considerable distance from my office, was now obliged to give up the treatment. A letter from her written at my request on Jan. 9, 1907, gave a discouraging report. After ceasing the treatment, the condition of the breast evidently became rapidly worse, and the patient has now given up hope. During the treatment the local condition showed a slight amount of improvement, and the rapid growth of the cancer which followed suggests the possibility that the treatment retarded the process to some extent. The change which could be exerted in the isolated nodule would have encouraged me to continue the injections if it had been possible.

Case III. Mrs. K., age sixty-eight. Operation April 19, 1906. Operated on by Jackson's method for amputation of the breast and dissection of the axilla. Microscopical examination of the specimen showed adeno-carcinoma.

This was a case of advanced cancer which for four years before applying to me had received various forms of treatment, including partial enucleation, x-ray, and electricity. The growth was extensive and reappeared in a few months after operation. There was a deep hard infiltration beneath the quadrangular flap of skin, which is left by Jackson's operation. Systematic treatments were begun on Sept. 26, 1906, and have continued two or three times a week, sometimes at longer intervals, ever since. The dose has varied from 20 to 60 mm.

Occasionally rather severe local reaction has caused the treatment to be interrupted sometimes a week at a time. There has been a slow but sure progress of the disease in this case, the local effect of the trypsin being apparently less than in the other cases.

The important feature of this case is that at first there was severe sharp pain in the field of the disease which had lasted since the first appearance of recurrence. This pain after a few injections entirely disappeared and has not returned. Holadin has been systematically given to this patient, but her general constitutional condition has gradually but surely deteriorated, and she is now able to come for treatment not oftener than once a week. There are some signs of possible metastases, shown chiefly by an extremely severe backache, which nothing appears to alleviate. There is nothing to show in this case that the trypsin treatment has even retarded the progress of the disease.

This case, together with Case II, were extremely advanced, and were probably beyond hope of possible benefit.

Case IV. Mrs. F., age sixty. Operation Dec. 22, 1905. Amputation of breast. Removal of both pectorals. Dissection of axilla. Microscopical examination showed carcinoma simplex. During the summer of 1906, numerous small recurrent nodules appeared, and being fairly well localized, a second operation was done, Oct. 2, 1906, in which all the small nodules which could be felt were removed. As soon as the patient recovered from this second operation and was able to visit my office, a systematic treatment of trypsin was begun and has been carried out with comparative regularity until the present date. After four months of treatment there has been no recurrence which can be felt by careful palpation. Holadin has been given with good results with regard to appetite and general nutrition. The patient is fairly well and suffers only from a certain amount of swelling of the arm, due to the extensive dissection which was carried out during the first operation. Nothing positive can be concluded with regard to this case, excepting that the nonappearance of any recurrence following the second palliative operation which was for an extensive recurrence, is to a certain degree encouraging, considering the lapse of time.

A number of other cases have been treated by me, especially cases of squamous cell carcinoma of the cervix uteri, but the treatment has either been too short or too unsystematic to give out as yet any definite results. A case of cancer of the tongue with extensive ulcerative process on the neck, with rapidly growing and necrosing cancerous masses about the edge, was treated with injections of trypsin. The rapid and extensive dissolution of these nodules was so marked that the treatment was abandoned on account of the great increase of ulcerated area caused thereby.

Conclusions from these cases:

First, a discreet cancerous node systematically attacked by injections of trypsin shrinks and becomes hard and fibrous or disappears.

Second, neighboring nodes are little if at all affected, and are probably influenced only when the trypsin comes into actual contact with the growing cells.

Third, the treatment of a given node causing it to shrink or disappear does not prevent the appearance later of another node in immediate proximity to it.

Fourth, there is no evidence in these cases to show that trypsin affects cancer cells by circulating in the blood, or that it affects them in any way excepting by direct contact.

Fifth, the internal administration of the various ferments of the pancreas is of benefit to cachectic patients; but from my experience there is nothing to show that this benefit is due to anything else than the assistance given to the intestinal digestive secretions of the individual patient.

Sixth, the direct action of trypsin on growing cancer cells as shown clinically and microscopically, is sufficient warrant to continue the treatment in inoperable cases, especially in view of the fact that there are apparently no serious results that can occur from its use.

INSTRUCTION IN THE PHYSIOLOGY AND HYGIENE OF SEX: ITS PRACTICABILITY AS DEMONSTRATED IN SEVERAL PUBLIC SCHOOLS.*

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FOREWORD.

THE following was part of a symposium on Public School Instruction in the Physiology and Hygiene of Sex. It was supplemented by physicians' statistics as to the prevalence of social diseases and their results among the unprotected;[1] by the statements of educators that conditions demand study of the problem and, if possible, a solution, since homes do not perform their plain duty in this or in some other lines already undertaken in the schools; also by the testimony of several teachers as to the need of sex instruction for both their girls and their boys. It is undoubtedly true that a very large amount of youthful vice contributing to the spread of social diseases arises from ignorance and misinformation concerning problems of sex and the sequelæ of immorality.

Mr. President, Members and Guests of the Society:

In entering on any endeavor, particularly if of great importance and of great difficulty, it is wisdom to study the experience of others who have made similar attempts.

It is wise of us to examine what teachers in public schools have already tried in order as a scientific body to know the facts, and as social workers to learn the paths of least resistance, perhaps to take advantage of paths already "blazed" if they lead to desired results.

During the last two years I have searched 20 cities for the teaching of hygiene including the physiology and hygiene of sex. The findings will be outlined, but first certain related facts should be presented.

MEDICAL LECTURERS AND GYMNASIUM DIRECTORS.

One is that neither textbooks nor teachers of physiology and hygiene as such allude to this subject. Three girls' classes in 32 high schools visited had medical women give from 1 to 3 talks on menstruation, pregnancy, childbirth and after-care, and care of the new born; 2 discussed also social diseases and the dangers of alcoholic beverages. I found no corresponding talks in boys' classes.

In high school physical training, where the director of the girls' gymnasium is a woman, 3 directors explained menstruation and the care of the health at that time. In 2 boys' gymnasia medical men gave talks on personal cleanliness, the avoidance of alcohol, tobacco and self-abuse.

In these 5 schools the authorities continued the medical talks because it was the best they could do; but their criticisms were that the instruction was not definite, or not clear, or not enough; or was not always understood, either because of professional phraseology or because of pupils' ignorance of the whole subject which could not be removed in so few lectures.

In 2 schools the subjects had been discussed by physicians in mothers' meetings, home instruction being urged. The earnest interest of some hearers, the prejudices and unfitness of others were brought out.

GENERAL TEACHERS' ATTITUDE.

A second related fact is that the very great majority of 90 general teachers whom I interviewed, in all grades, but especially in grammar, expressed anxiety as to the need of such instruction but did not believe it wise to undertake it personally, although 85 believed qualified teachers of nature study could do it. Three felt sure they could do it through nature study, but were forbidden by principals.

Five had tried giving pamphlets to certain boys and girls, or had talked with them privately with occasional good results; but in one of these schools, although the instructor had acted on the advice of 2 well-known physicians, trouble with parents and principal resulted; and the superintendent instructed her "not to take any notice of such things. It only stirred them up and made bad matters worse." She was obliged to close her eyes to the circulation of obscene pictures, notes, literature, and to even worse actions, except as the usual routine in school required obedience and attention. Five believed it impossible for schools to undertake because of children's talk or actions and of parents' opposition.

NORMAL SCHOOLS' NEGLECT.

A third related fact is that among all these 90 general teachers and among 52 more special teachers I found no knowledge of the scientific facts concerning social diseases, and but crude understanding of results of personal impurity among children; neither had the very great majority received any instruction in the physiology and hygiene of sex for their personal advantage. There was one exception to a part of this statement, — a teacher to whom a medical member of the school committee had loaned Dr. Morrow's "Social Diseases and Marriage."

This shows that most normal schools are seriously lacking in preparing caretakers of youth. In one city whose "schools have an excellent reputation" high school physiology and hygiene (very imperfectly taught) is elective. Its graduates enter the normal school for professional training only, afterwards filling the majority of positions in the city schools. I asked a normal class of 27 how many elected high school physiology and hygiene. Fifteen raised their hands.

PUPILS UNDER TEN.

Turning now to what teachers are doing, we find a large proportion in kindergarten, primary and grammar grades are familiarizing children with germination of seeds and hatching of eggs; with sex in flowers, insects, etc., self pollination, cross pollination, heredity, provision by parents for growing seeds and hatching eggs. They teach nothing of human sex. Perhaps 2 per cent of teachers go as far in this plant and animal origin of life as pupils under ten can understand. Ninety-eight per cent have not had sufficient preparation in biology and physiology to do so.

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* An address given before the American Society of Sanitary and Moral Prophylaxis at the Academy of Medicine, New York, Dec. 13, 1906.

[1] *Cf.* Social Diseases and Marriage. Prince A. Morrow, M.D., Lea Brothers & Co. Syphilis of the Innocent. L. Duncan Bulkley, M.D., Bailey & Fairchild.

PUPILS OVER TEN.

I found none of these general teachers who went further in teaching the physiology and hygiene of sex with children over ten. But this is not the age to stop. The coming years are most critical.

Assuming that all general teachers can be trained to handle this subject well with younger children since a considerable number can do so, then our question is: How can we wisely teach children over ten whose minds are usually prejudiced with ideas of mystery and shame if not of actual evil? In finding the answer there is significance in the fact that these *85 general teachers did not believe it possible for them to do it, but believed special teachers of nature study could.* It is equally significant that in these 20 cities the *only attempts were by 9 specially prepared in biology and by 2 in domestic science.* These two, in high schools, in their 2 weeks' teaching care of the sick at home discussed contagious diseases, enumerating among them syphilis and gonorrhea, indicating briefly their frequent origin in the social evil, their free carriage among the general public, their results in blindness, degeneracy, childlessness, invalidism; the need of their control like other contagions by boards of health and by insisting on the physical integrity of both sexes before marriage. They did not teach the physiology of sex, and only this amount of the hygiene; and they taught something of the care and feeding of infants. If all teachers of domestic science included this much, it would still be very incomplete and would reach only the comparatively few high school girls who elect the study.

Of the biologists two were teaching children from ten to twelve, *i.e.*, the two upper grammar grades. In one course the teacher had a "continued story" through the two years — the "story of the world we live in." It began with exhibiting some attractive chemical experiments illustrating gases, vapors, condensations into solids, cooling, some of the properties of water, light, heat, etc. This year's work was then continued from the simplest forms of plant life to the complex with the frequently repeated text: "The two objects of every living thing are to perfect itself and to reproduce itself." For every plant studied this year and every animal studied the following year these objects, perfection and reproduction, were the lines of study.

For cell life yeast cells (with microscopes) were used, and the children drew the cell reproduction seen. They saw and drew (with the teacher's help) *spirogyra* and reproduction by conjugation of like cells, *vaucheria* and conjugation of unlike cells, all leading to the terms "mother plant" and "father plant" continued through the two years with allied terms in plant and animal "families." Through higher plant forms, spores, seeds, flowers, pollenation by natural and artificial methods, these themes were traced by the children themselves under the teacher's guidance.

The study of various animals along these lines in the eighth grade utilized insects, birds, white mice, tadpoles, kept in vivaria, cages and aquaria, thus showing various forms of development daily. They visited a government fish hatchery in the neighborhood and learned some of the details of artificial propagation, which you will remember may include manual expression of the eggs and of the sperm over the eggs.

In answer to the question, "Do you think you have taught anything of clean living?" the reply came emphatically, "I am sure I have. In one class there were two boys two or three years older than the others. They were precocious and unclean minded. It could be seen in their faces at the beginning. I had no private talk with them, but at certain points I took special pains to have them understand. Before the course was over there was a complete mental revolution, and moral, too, I know from their manner. They are clean, good boys now and twice as bright."

She utilized the fall of a beautiful elm near the school for a lesson, recalling the many years that rain and sunshine, the seasons, soil and dews had helped the little seed to grow into this graceful tree with beautiful leaves, where the birds nested and sang, and which the children loved, "just as you are growing up and we are trying to help you become good men and women. But if in your thoughts or in your life there is hidden somewhere some wrong habit that you would not like to have your mother know nor me — just like the rotten wood in the heart of this tree — then the storms that come in your life, too, will make you fail, and you will grieve all your friends, and all our work will be wasted." The children found this a very impressive demonstration of the value of "goodness all through."

In another school the pupils were shown yeast cells and how they multiply. They saw crickets and grasshoppers deposit eggs, hatch, develop and mate. They followed the life cycle of some moths. They had an observation hive of bees. They saw roe in the fish and ovaries of hens *in situ;* frogs spawning and pigeons laying eggs. They were shown various stages of the embryo chick and it was simply explained. The children were deeply interested and perfectly unembarrassed throughout; and it is to be remembered that reproduction was not given more than its share of attention among the other life phenomena.

These courses were fuller and more definite than in the younger grades concerning details of the origin of life, heredity, physical integrity; but the question is: Do they teach all that boys and girls of twelve to thirteen should know, *tens of thousands of whom leave school now?* Is this the best we can do to guard them from social vice?

BIOLOGY FOR PUPILS THIRTEEN TO FIFTEEN.

Some of the 7 other biologists in high schools help to answer the question. Two simply taught academic biology which necessitates teaching reproduction below man, problems in heredity, environment, modification of species, etc. No special effort was made to correlate with human problems. Four others suggested human parallels throughout but did not discuss the hygiene of sex nor social diseases.

One course touched the subject much more frankly than any other. This was in a small city where the eighth grammar grade had been transferred to the large new high school building that was a gift to the city.

The intellectual starvation of our upper grammar grades seems to me appalling. A few leading educators are concentrating on this problem. It was a delight to see how these children reacted to special teachers, laboratories, gymnasia, and greater responsibilities. It is *just at these ages that their instincts are crying out for knowledge; and our citizenship is suffering for giving them only infant instruction.*

This biologist had boys and girls from thirteen to fifteen in zoölogy. They used microscopes, did their own collecting, kept notes and drawings, and wrote periodic *résumés*. The essential functions of each animal were studied, — digestive, circulatory, respiratory, nervous and reproductive. I have examined their note books in detail and their *résumés* on "Reproduction in Animals," each beginning: "Reproduction is as essential as growth," or "almost as essential" — they were not quite unanimous.

Beginning with protozoa they saw and drew the division of ameba and other unicellular animals; the conjugation of cells before division, tracing variations in multicellular animals until the hydra with spermary and ovary illustrated "division of labor" among cells, and both sexual and asexual reproduction. They traced the evolution of sex through celenterates, echinoderms, vermes; its various modifications of hermaphrodism with self fertilization and cross fertilization, and of egg and sperm borne by different individuals until in *mollusca* the sex of individuals becomes definite, reversions rarely occurring.

They traced the growth of young animals in cup-shaped parents until they escape out of the top of the cup or sac, and the curious ways of laying eggs and providing for their care, until in *arthropoda* they found in the female brood pouches for fertilized eggs or embryo, and other sex characteristics, growing more distinctive through spiders, butterflies, grasshoppers, ants, bees, flies, until in vertebrates they followed the evolution of the reproductive system through fishes, amphibians, reptiles and birds, to mammals, of which they studied the rabbit, as they had a family of rabbits in their laboratory.

It was not intended to have them memorize details, but rather to learn the principles underlying heredity and reproduction of life, *at the same time learning the principles of growth through respiration, nutrition, elimination, all co-ordinated by the nervous system.* It was more fascinating to these boys and girls than any tale of fiction. They frequently begged for the privilege of working overtime or after school. Not one wished to shirk.

A "SEX TALK."

After finishing *mammalia*, but several weeks before the end of the course, the instructor gave them a "sex talk." Mammals were compared with lower orders and then with man. The following are some of the topics: significance and value of the home; dangers from abuse of reproductive function; bacterial diseases peculiar to immoral living; their harm to the innocent, the family, the country; the dangers of alcohol in this connection; statistics of degeneracy, blindness, nervous diseases, invalidism, heredity.

Some school people believe that ideas of heredity do not appeal to these ages; that the argument of personal health for athletics, business and pleasure is stronger. This is true of many older and probably true of the very great majority at thirteen whose interest in all sex problems has ever been thwarted and misled. It was a powerful appeal to these twenty who had intelligently studied biologic phenomena. They were told that much misery springs from idleness and ignorance, leading to impure thoughts and degrading habits, both of which react upon the nervous system and injure the reproductive function; that all functions are equally worthy of serious consideration; that no one lives for himself alone; that every life affects other lives. This sex talk was given in one period out of the 200 of the year, not, therefore, unduly prominent.

The teacher watched closely the impression made and after effects, and believes that every boy and girl with no exception took this frank talk in the same clean-minded way in which the whole course had been followed. This excellent work impresses one as carried out with commendable prudence and understanding of popular prejudices, of children's capacity and of their *instinctive wish at these ages to understand the origin of life and various sex problems.*[2]

ONLY ONE NORMAL COURSE.

In normal schools biology including physiology is occasionally quite good; but it has not been my fortune to find even one giving instruction in the physiology and hygiene of sex. The best course found is in a private normal institute. Here as a part of hygiene the necessary physiology and anatomy are given. By *papier maché* models of pelvic viscera and various stages of impregnated ova human reproduction is taught. This is followed by a week's lectures by a medical woman on sex functions, pregnancy, childbirth, the development of the child; social diseases. The regular instructor takes them to a public institution where infants and other victims illustrating heredity and degeneracy can be seen.

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[2] Details of this and other courses are reported by the committee to investigate the teaching of hygiene in public schools. Section II, The Teaching of Hygiene through Domestic Science and Nature Study. American Academy of Medicine, Easton, Pa. Price, 20 cents.

DEPARTMENTAL TEACHING.

Several significant points deserve our attention: one, the avoidance of sex subjects from the human view point; another, the possibilities demonstrated in the biologic view point by special teachers for pupils over ten and by general teachers for those younger.

Special teachers in other subjects for children of the seventh and eighth grades are increasing yearly in our most progressive cities, such as New York, Boston, Cambridge, Philadelphia, Chicago, Cleveland, Albany and others. The departmental method for pupils over ten has long obtained in Germany and Sweden whose educational results are admittedly ahead of ours. Superintendent Maxwell with numerous followers is vigorously leading our movement, and partial departmental instruction at least is bound to come. *There seems to have been no one sufficiently interested to work for competent teachers of hygiene.*[3] The opportunity is at hand in this present widespread movement for regenerating education. The need is imperative. *Surely it is the physician's special mission in popular education.*

REMOVAL OF MYSTERY.

Again looking for significant features we note that these biologists and very many of those general teachers knowing only a little biology sought to remove all mystery from reproduction by beginning with single cell life; both their scientific sense and pedagogic sense induces them to follow nature's method — progress through cell differentiation to increasingly complex organisms. It suggests that the child's mind like the child's body grows normally along evolutionary steps.

And we come here to another significant feature of these attempts. These biologists stopped short at man. They laid an indispensable foundation requiring only one comparatively easy biologic advance further, and there with few exceptions left the rest to be inferred by analogy. When I asked why, if they did not wish to give this instruction, they did not invite a physician to do so, the essence of their various excuses was that they knew no physicians who could do it satisfactorily, *i. e.*, scientifically, definitely, clearly and wholesomely.

UNPREPAREDNESS OF TEACHERS.

It would be wise to admit at the outset the unadvisability of one course of action. I have heard two leading educators thoroughly in sympathy with our ultimate aims say thoughtfully and positively: " I know no men in the schools in my city and but few women whom I should be willing to have talk on sex matters to my boy and girl." I could quote others. And we have seen that teachers equally object to doing it. On both sides the unpreparedness of our present teachers is understood. Therefore we cannot announce the desirability of introducing into all public schools at present instruction in the physiology and hygiene of sex, or we shall antagonize even those who wish us success.

CO-OPERATION OF SCIENTIFIC TEACHERS.

But there are two things we can begin upon at once: first, secure the active co-operation of all those special teachers already well disposed, pushing the endeavor slowly but persistently from a few schools to more, acquiring wisdom with experience.

Second, we can at once frankly state our facts to the authorities in every normal school, and emphatically urge the proper training of teachers, assuring them of our determination that public education shall offer better protection from the terrible ills with which society surrounds youth. We wish all teachers as a part of their general training in hygiene to be scientifically informed of the elements of the physiology and hygiene of sex, of the nature of social diseases and their results, of the vices to be guarded against among children and of practical methods of doing so; but we do not wish all to teach these subjects.

FACTS *versus* GENERALITIES.

In securing the active co-operation of competent teachers, after numerous discussions with some of our best, I am persuaded of two points. We must offer them, not generalities nor moral suasion; but the same hard facts that have convinced us and therefore will convince the world. *Concealment is the best friend of " the great black plague."* Not until we place it where it belongs, on the same basis with diphtheria, smallpox and tuberculosis, can we succeed. It is time at last to take this scientific and righteous stand, beginning with teachers a few of whom are already classifying social diseases with other contagions, and teaching reproduction along with other functions. One wrote me: " It indicates an unwholesome state of mind to discriminate against either important item in its natural, logical place."

A few weeks ago I discussed this subject and the aims of this society at a round table in connection with a meeting of teachers of science from colleges, universities and public schools. At this private conference there were 12 women biologically trained and of recognized force. They were in favor as they had always been of efforts to check sexual vice, chiefly for moral reasons. None of these well-read women had any but the vaguest knowledge of social diseases, their results and their prevalence. It is this last — their prevalence — that is moving us. Teachers lack this motive power.

They were startled, as we all have been, and deeply impressed by the statistics quoted. Their questions were directed to two chief points: " What are the facts and where can we find them? " and " If we undertake it, how shall we do it? "

After earnest discussion one, with emphatic concurrence of the others, made a comment so wise that I repeat it. "Doctors are not fair to ask all this of us! Why don't they teach the fathers, and have them teach their sons? And why don't they protect society from these contagions by reporting them to health boards?" I replied that many of us cried *peccavi;* that this society and some others were hoping to accomplish the steps suggested; but that *we must have help*, and felt that no more valuable allies could be secured than professional instructors of youth.

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[3] " Laws concerning teaching hygiene " are studied in the *Journal of the American Medical Association*, Dec. 23, 1905.

INSTRUCTION IN EVIL NOT NECESSARY.

It is then needful to give these special teachers suggestions as to methods, and to indicate the facts essential for children to be taught. One point needs emphasis by frequent repetition: *It is not necessary to teach evil in order to teach good.* Some instructors have, and more can, give *the good we want in place of the evil given by others.* And these instructors *show that there is ample time in schools for this. We have but to substitute efficient work for the poor nature study and hygiene now taught.*[4]

Both boys and girls between ten and sixteen should know the names and functions of the chief organs of the body including the reproductive system; should know in a general way of the development of the ovum, of birth, of the principle of heredity, thus understanding the *sacredness of life from the beginning.*

Both should learn the significance of home as the biologic unit of society, and the responsibilities of parents and of children.

Both should briefly, along with other contagious diseases, learn of the tubercle bacillus, *spirocheta pallida* and gonococcus. A few social statistics will aid. Both should learn the importance of clean thoughts, of occupation, of physical exercise, in leading clean lives and in achieving success; and the avoidance of tobacco and alcoholic drinks especially in this connection.

Each sex separately needs further instruction either by a physician, or by a pamphlet, or preferably by the instructor if competent; but in any case with authority, clearness and discrimination: girls on the care of the health during menstruation, the sacredness of motherhood, and the care of infants; boys on the new but normal phenomena of adolescence, the avoidance of advertised remedies and advice from ignorant friends and adults, the value of continence, and avoidance of idleness, unclean thoughts and self abuse.

With this physiologic, hygienic, sociologic instruction as a foundation, the ethical side has much more significance and should be strongly urged; personal honor, justice to others, and love for future children in a home of one's own being effective motives with many.

FIVE METHODS.

We have found paths "blazed" in 5 directions: one by teachers of domestic science discussing syphilis and gonorrhea among other contagions; can teachers of home making do more than this wisely and in lower grades? In a few gymnasia the women directors instructing in care of the health during menstruation; can directors of physical training wisely give more instruction concerning the physiology and hygiene of sex? In 5 cases lectures by physicians, unsatisfactory but better than nothing; can medical lecturers be utilized more extensively in schools and parents' clubs? In 9 schools pamphlets handed to individual pupils with or without personal talks; again unsatisfactory because reaching but a few, giving very limited information, and retaining the impression that this is a subject of concealment unfit for study; should we make further use of pamphlets? In 30 or more primary grades and in 9 high schools the origin of life and significance of sex thoroughly well taught by biologists, up to man; and in 2 of these sexual morality and the dangers of social diseases discussed with a considerable degree of frankness.

We can hardly urge any one of these methods exclusively when all are so experimental. We would do wisely to report them all, asking educators to continue and develop these or such others as seem wise in their particular environments, until a satisfactory solution is attained. It is probable that in the end each will prove useful, in different places, the biologic undoubtedly predominating.

TWO FUNDAMENTAL POLICIES.

Whatever method be chosen, we should be convinced ourselves and should convince others of the importance of two fundamental policies: one, that the ideal method will closely co-ordinate sex instruction, logically, naturally, with other class work and with the school program; the other, that the pupil's mind must be suitably prepared for the sex instruction. These two are almost one. It amounts to saying that harm is liable to follow interjecting sex instruction by itself. Most children would be startled, among some evil talk and possibly actions would follow, parents would properly object. This is the risk taken in asking physicians to give sex talks, and in handing pamphlets to special pupils; their minds have not been prepared. This is the reason the biologic method is quietly extending. The sex instruction comes in so logically as well as thoroughly that neither children, parents nor school committees realize that conventional prejudices are being undermined, and thus far no opposition has resulted.

PREPARATION OF PUPILS' MINDS.

But the keenness with which these few wise biologists realize the importance of preparing the child's mind is illustrated by the reply made by one who ended with a frank sex talk. I asked whether she gave such a talk in her physiology and botany. You will remember that zoölogy extended through the year. She replied: "I did not give sex talks in my botany and physiology. The courses covered only 4 months and I was unable to bring the subjects to the point of development where that would have been natural and practicable. Next fall those students in other classes will be given instruction designed to prepare them for a sex talk."

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[4] The author presents a broader discussion including the financial aspect in the *New York State Journal of Medicine*, November, 1906.

Co-ordination with the school program is also vital. One very able high school principal thoroughly approving such instruction for girls by the fine woman at the head of domestic science refuses to have corresponding instruction for his boys because "they have no courses logically leading to the subject." Another said to me: "I do not think there is any subject so taught as to put teachers in such relations to their pupils that sex matters can be wisely introduced." Neither has biology in his school.

EDUCATIONAL SHORTSIGHTEDNESS.

The difficulties are great; but they lie with adults, not with children, whose minds are open for good or for evil, knowing no embarrassments until false guides soil them.

Recent files of educational journals testify that this one of the two essentials of life is wholly eliminated from public school policy. They urge more strenuous efforts for perfection of the individual for industrial, commercial, cultural ends. But the sacred function of passing on the torch of life entrusted to each for a few years education ignores and society defiles. The right of protection of wifehood and childhood, of the institutions of marriage and home, of helpless citizens education overlooks and the society produced by such education refuses.

As a result of cultivating but one side — the acquisitive and egoistic — society is burdened with monstrosities and degenerates — financial and sensual and physical. No doctor of medicine and no one who hears our statistics of blighted life can escape moral responsibility for the continuance of these wrongs that disgrace and injure civilization more than insurance and trust and political scandals, than tuberculosis and all other reportable contagions.

CONCLUSION.

As physicians and as social workers we will serve our cause best if we are far-seeing enough to bear in mind the whole program of public schools and of teaching hygiene, the recent trend to special instructors above lower grammar grades, the paths already "blazed," and so coordinate our efforts with all this that both ours and the others will gain strength from our recommendations. We could hardly wish for a more opportune time than now when so many institutions including educational are under the searchlight of an aroused public conscience.

CAN A SPECIFIC DISEASE BE ABORTED?*

BY J. M. FRENCH, M.D., MILFORD, MASS.

To be on the safe side in this discussion, let us be sure of our definitions.

"*Specific disease*. a disease which has a determinate course and succession of phenomena, and is due to some distinct and definite cause, as syphilis or itch."

"*Self-limited disease*, one having a somewhat definite course and period of duration."

"*Abort*, to cut short the course or growth of" (Standard Dictionary).

In the light of these definitions, the question for us to consider is practically this·

Is it possible for the physician, by any means at his command, to cut short the course or limit the growth of disease in general; and in particular of such forms of disease as are due to more or less distinct causes, and which, when left to nature, develop according to a determinate course and succession of phenomena, and have a somewhat definite period of duration? To be more specific, can a simple fever be broken up, or a local inflammation be cut short in its early stages? Can you limit the course of inflammatory rheumatism, or abort a typhoid fever, a penumonia, smallpox, gonorrhea, diphtheria, the itch? Can anything be done to limit the ravages of the bacillus tuberculosis, when once it has begun its deadly work?

The answer which shall be given to these questions is of the utmost importance to the physician, as affecting his reputation, his success and the satisfaction with which he practises his chosen profession. It is of even greater moment to the patients whom he treats, and the families under his care, because it helps to determine whether their physician shall be a welcome visitant, bringing hope and added years of life to the sick one, and giving courage to his friends and family, or one whose coming is looked upon with dread, whose presence breathes only despair, who admits himself a failure at the outset, and who practically counts himself out as a factor in the treatment of disease.

It must be admitted that the weight of authority is decidedly against the possibility of aborting a specific disease. It is almost universally assumed that a disease which has once gotten fairly under way must of necessity go on its course uninfluenced by medical treatment. Should a claim be made that a disease has been aborted, the usual answer is, that the diagnosis was incorrect; that a disease is not a specific one unless it goes through a regular course, and if it does this it certainly is not aborted. Hence a specific disease cannot be aborted.

Just here the question suggests itself, Does not nature itself sometimes abort disease? Or to phrase it a little differently, Do not diseases at times abort spontaneously? The answer to this is evident, and the fact is universally recognized by medical authors that such is the case. So well is this understood, that the second answer which is apt to be made to the claim that a disease has been aborted, is that it aborted spontaneously; or that it was an abortive case; or that nature aborts a certain proportion of cases. In each of these forms of reply, the fact of the shortening of the disease from its natural course is admitted, and the only debatable point relates to the possibility of bringing about this result by artificial means, that is to say, by medical treatment.

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* Read before the Worcester District Medical Society, April 12, 1905.

But if it be admitted that nature does actually accomplish this beneficent result in certain instances, then why should it be deemed impossible that art should be able to aid in the process? The law of cause and effect is everywhere the same, and it would certainly seem that where nature accomplishes a given result under certain conditions, it might be within the bounds of human skill to aid in bringing about these conditions, and thereby to assist in the work.

Should it be granted that such a result is within the bounds of possibility, and that it is also desirable, is it not the part of wisdom to seek for the means whereby it can be accomplished, instead of crying out in advance that it is impossible, that it cannot be done, simply because we do not know how to do it, or have not the means now at hand?

The history of medicine shows us that every important progress in our art has consisted in the accomplishment of that which but yesterday was declared impossible. It used to be supposed that conscious suffering was a necessary accompaniment to surgical operations; but Morton, Wells and Simpson brought anesthesia to light, and abolished pain in surgery. Not so long ago as to be beyond my own memory, it was considered that " laudable pus " was not only unavoidable, but desirable in the healing of wounds; but Lister showed the world that it was not necessary, and it is now looked upon as a deep and damning disgrace.

But if the possibility of aborting disease be admitted as an abstract proposition, how about it as an actual fact? Are there not instances to prove that, in some cases at least, specific diseases are unquestionably aborted, and that by strictly therapeutic measures? As for example, diphtheria by antitoxin? What better example than this of the abortion of a specific disease can be asked for? It must be admitted that no better example of a specific disease can be found than this. It corresponds at every point with the definition which has been given. Only a few short years ago, few persons were rash enough to advocate even the possibility of aborting it. To-day the world accepts it as a fact beyond dispute, and the physician who fails to abort a case of diphtheria which comes under his care makes haste to explain that it did not come into his hands until it was too late, or that, for some reason beyond his control, he was unable to administer the proper dose of antitoxin at the proper time. It is true, there are still a few persons who deny the utility of antitoxin, just as there are those who decry vaccination, or who continue to hold that the earth is flat and the sun moves round it once in twenty-four hours.

If it be admitted that diphtheria can be aborted, and if the commonly received theory of the action of antitoxin be accepted, is it not within the bounds of reason that there may be corresponding remedies for some of the other specific diseases, if not for all? That this supposition is true is shown by the eagerness with which the medical world has sought, and is still seeking, for just these things. It is also true that in no other disease has an antitoxin been discovered which is as positive and beneficent in its effect as is that for diphtheria; but this fact only serves as an incentive to more earnest effort on the part of scientific men, and as a stimulant to scientific research from one end of the world to the other.

Once more, if this result has been obtained by antitoxin, which is, after all, only a natural product, is it not conceivable that similar results may be obtained by other means, just as natural. And if it be admitted that medical treatment exerts any influence whatever upon the course of a disease, is it not reasonable to suppose that this effect will be most marked during the formative stage, when it is not yet fully developed?

To come down to specific instances, by what strict rule of science must it be declared an error to suppose that sweating may break up a fever or dissipate a local congestion? If we rightly understand the functions of the vasomotor nervous system, and correctly estimate the rôle of vasomotor spasm and paralysis in the genesis of fever, is it not reasonable to suppose that means tending to restore the proper equilibrium to the circulation would have a tendency to dissipate the febrile paroxysm? And if the febrile condition is removed, is not the fever itself aborted, jugulated, broken up, cut short, made not to be?

Furthermore, what doctor in his practice does not strive, when he is called in the formative stage of a fever, to " break it up "? What one does not encourage the patient and his friends to hope that this result may be obtained? And, should he fail to bring it about, what one does not gently intimate that he might have succeeded, had he been called a little earlier in the case?

Now the question is, Are the doctors frauds in this matter, or do they build better than they know? Is not their practice better than their theory? Do they not, by their practice, confess that the doctrine of the jugulation of fevers is a reasonable one? Does it not, indeed, work well in practice?

If antitoxin can abort diphtheria after it has gotten fairly under way, and if it renders a healthy individual temporarily immune to the toxin of diphtheria, then why should it be considered an absurdity to suppose that it can act upon the disease in the stage of incubation? And if antitoxin can do this, why not other agents? Even if no such agents are now known, may they not sometime be discovered? And if this possibility be admitted to be a reasonable one, why not search high and low for the means until they are found?

If mercury be a specific in syphilis, then why may it not act upon the disease in its incubative and formative stages, as well as after it has fully declared itself? Or if not mercury, then some other remedy? Or why, if we were in possession of the proper remedy, might not the disease be aborted in the interval between the primary chancre and the secondary manifestations? If we possessed a specific in smallpox, why might we not expect to be able to abort the disease in the stage of incubation, as well as to render the subject immune by vaccination, or control the symptoms of the eruptive stage? If diphtheria can be aborted, why not pneumonia, typhoid and malarial fevers, gonorrhea, syphilis, rheumatism and consumption?

Should the answer to this last question be, that we are not yet in possession of the proper remedies and means to enable us to accomplish these results, however much we may desire to do so, I beg to remind you that it is but a few years since we had no organic extracts, no serum therapy, no intestinal antiseptics, no nuclein and almost no alkaloids. Would it not be better to admit the possibility of improvement, and then go to work with all our might to make the possibility a reality, instead of spending our time in crying out, " It is impossible, it is absurd, it cannot be done! "— a cry which has been uttered in the face of all progress since time began.

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ANCIENT AND MODERN IDEAS CONCERNING TUBERCULOUS ADENITIS.*

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There is scarcely another disease which has more of historic interest than scrofula, or tuberculous adenitis. It was in the eleventh century, during the reign of Edward the Confessor, that it received the name of " the King's Evil," as that monarch was the first who wrought cures of this malady by the laying on of hands. The practice was continued by all the sovereigns, with the exception of William III, for seven hundred years. Queen Anne was the last to employ it, and Samuel Johnson was treated by her in his infancy.

It was believed that the malady took its origin in " the vice of the system," and accordingly, careful mothers were wont to counsel their children against marrying one who had shown evidences of " the vice " in early childhood. The operation was most commonly performed on Sunday after the morning prayer, though cases treated on Good Friday seemed to do especially well. It consisted in the laying on of the hands which was followed by tying about the neck of each patient a white ribbon to which was suspended a gold coin worth nearly two dollars. The spirit of graft appears to have been rampant even in those days, for we are told that " very strict precautions had to be adopted to prevent those who valued the gold more than the relief from their infirmities, from making too many calls."

Some are said to have recovered on the first touch, while others did not completely recover from their ailments until a second " touch " was made. We are told that the only cases who received no relief were those whose " little faith and credulity starved their merits." So prevalent did the custom become that Charles II touched nearly one hundred thousand people in twelve years. Small wonder then, that silver was sometimes substituted for gold and that even the silver coin was omitted in some cases.

As ours is an age of progress we would expect to find this method of cure perfected to-day, and we are not disappointed. For while *Mother Eddy* and her followers cure all save those whose " little faith and credulity starve their merits," at the conclusion of the treatment the grateful patient hangs the coin about the healer's neck.

The term " scrofula " was rather loosely used, for, in addition to enlarged glands of the neck, it was applied to phlyctenular ophthalmia, chronic otorrhea, white swellings of joints, bone disease, strumous ulcers, cold abscesses, lupus and hereditary syphilis. Thus we see that the name " scrofula " was applied to about as many ailments as " malaria " is to-day. The association of enlarged glands with tuberculosis had long been noted, and though it was suspected that there was a common etiology, it was not until after the tubercle bacillus was discovered by Koch that their relation was proven.

Tuberculosis of the lymph glands is more common in children between the ages of three and ten than tuberculosis of the lungs, and next to the bronchial glands, the cervicles are most commonly involved. In order to understand clearly the manner in which the infection takes place, we must consider briefly the arrangement of the lymphatic glands of the neck. These glands are divided into a superficial and a deep set. The former being subdivided into submaxillary, suprahyoid and cervical groups. The deep set form a chain which extends from the skull to the thorax. They are numerous, of large size, and lie along the sheath of the carotid artery and jugular vein. They are subdivided into two sets: An upper, situated above the bifurcation of the common carotid, and a lower, clustered about the lower part of the internal jugular vein. They are in communication with the thoracic, the superficial cervicals, and the axillary glands, and with the corresponding chain of the opposite side. It is the upper group of the deep set which concerns us especially, as it is more often first involved because its lymphatics come from the tonsils, palate, pharynx, larynx, orbit, roof of the mouth and nasal fossæ. The process is usually first manifest in the nodes at the angle of the jaw.

The glands may be infected primarily by bacteria in the food or in the inspired air, or secondarily from a tuberculous lung. Lymphatic tuberculosis is more common in children than in adults for a number of reasons. In the first place, the extreme delicacy of the mucous membranes greatly facilitates the passage of bacteria through them. Secondly, the lymphatics are relatively larger and more permeable in children. Thirdly, adenoid vegetations, so common during the early years, narrow the respiratory passage, thus aiding the deposition of bacteria at this particular point, and greatly interfering with their subsequent expulsion. Moreover, the further progression of germs into the deeper tissues is enhanced by the deep clefts upon the surface. In the fourth place, the crypts of hypertrophied tonsils very often furnish a port of entry for the germs. Many investigators have demonstrated tubercle bacilli in adenoid tissue and tonsils removed from apparently healthy individuals. Lartigau[1] found 15% of all adenoids tuberculous, and Robertson[2] demonstrated tuberculous tissue in 8% of all hypertrophied tonsils, taken irrespectively. Baumgarten and Wesner,[3] moreover, have repeatedly noted infection of the glands at the angle of the jaw in their feeding experiments.

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* Read Nov. 26, 1906, before the Surgical Section of the Hartford Medical Society.

The glands enlarge painlessly at first, and no symptoms are present. Later there are often evidences of malnutrition and slight fever and sweats may be observed. The increase in size is not steady; there are periods when they remain stationary and even recede. When first seen they are freely movable, not tender, and their individuality is preserved. Later they tend to become matted together and break down. Treves[4] estimates the time when suppuration most commonly occurs as three and one-half years after their first appearance.

While tuberculosis of the cervical glands is rarely the direct cause of death, there are certain sequelæ that are of much importance. One of the most common is the disintegration of the gland with abcess formation, resulting in disfiguring cicatrices. Volland[5] believes that most of the cases of pulmonary tuberculosis are traceable to an infected cervical gland, while Cornet,[6] on the other hand, says: "The cervical chain is rarely found to be implicated in cases of pulmonary tuberculosis in children. When both sets of glands (bronchial and cervical) are simultaneously involved, it is fair in most cases to assume a secondary focus of infection for the cervical group." Gröber,[7] however, has shown that the enlarged tuberculous glands may occlude the lymphatics by direct pressure, thus causing a reversal of the lymph current which allows tubercle bacilli to be carried to the glands within the thoracic cavity.

Again, acute illnesses, especially the infectious diseases, cause increased swelling of the already diseased and swollen parenchyma, and sometimes the tension is so great that the capsule ruptures, and a dissemination of the bacilli takes place. Very rarely a general miliary tuberculosis has its origin in a tuberculous cervical gland. In many cases, however, the swelling subsides, after persisting for a time, and the child has no recurrence. In adults, the spontaneous disappearance of the glands is less common.

The lymphatic system, as you know, has both a nutritive and a protective function. The germs taken up by the lymphatics are filtered out by the glands and usually destroyed there. When, however, the bacteria are present in overwhelming numbers the glands are destroyed in their vain endeavor to protect the body, and become a menace to their possessor.

The conditions most commonly confused with tuberculous adenitis are (1) simple (that is, non-tuberculous) adenitis; (2) Hodgkin's disease and (3) malignant growths. An adenitis regularly accompanies the acute infectious disease and may persist for some time after recovery. Owing to the vast numbers of bacteria which gain access to the mouth, hypertrophied tonsils are often infected by other germs than tubercle bacilli, and the glands in juxtaposition enlarge. Laser examined 1,216 school children and found glandular enlargement in all but 11.3%. It was traceable in the majority of cases to the infectious diseases. Volland detected enlarged glands in 96% of 2,506 children, whom he examined (von Bergmann's Surgery). The parasitic diseases of the scalp frequently have an accompanying adenitis. The glands involved are the suboccipital, mastoid or parotid groups of the superficial chain. Owing to the frequency with which the cervical nodes are infected secondarily to tuberculosis of the tonsil, it is important that when the tonsil is removed it should be examined for tuberculous changes if an adenitis be present.

Hodgkin's disease is uncommon in children, and the anterior and posterior chains are usually first involved. Then, too, the glands are not prone to suppurate as in tuberculous adenitis. They may reach large size, yet tend to preserve their individuality. At times, however, Hodgkin's does occur in children, and the glands at the angle of the jaw may be the first to be involved. A positive diagnosis can be made by removing a gland and examining it microscopically. A negative local reaction to tuberculin excludes a tuberculous process, but a positive reaction has not as much value since Hodgkin's disease and tuberculosis may co-exist. Malignant growths of the neck are difficult of diagnosis. They tend to become adherent to the underlying tissues, and owing to their deep situation, frequently cause pressure symptoms. Only by the removal and microscopical examination of a gland can one be sure of the diagnosis. In all cases where the diagnosis is in doubt one should refrain from extensive operative interference until he has determined the nature of the condition.

Treatment. — Much can be accomplished by prophylaxis. The teeth should receive careful attention, and adenoids and hypertrophied tonsils should be removed, especially when the cervical glands are enlarged. The air breathed by the children should be as free from dust as is possible, and great precaution should be exercised in procuring pure milk, for not only does infection take place directly through the tonsil, but Schlossman and St. Engle[8] recently demonstrated tubercle bacilli in the lungs of young guinea pigs shortly after tuberculous milk had been introduced into their stomachs, which had been exposed by a laparotomy. Of paramount importance is the placing of the child in a favorable environment. He should be out of doors constantly and his diet should be bountiful. Sometimes the glands appear to subside more rapidly if the post-pharynx and tonsils are painted twice daily with a solution of iodine gr. x, potassium iodide gr. xii, and glycerin ℥i. Pusey,[9] Williams,[10] Feldstein[11] and others have reported cases which were apparently cured by exposure to the x-rays. It would be well if the x-ray treatment were employed in conjunction with the "out-of-door good-food" treatment, especially in those cases where pulmonary tuberculosis is present. Its post-operative use would probably diminish the number of recurrences. When no improvement follows the employment of the above treatment for a number of months, operative interference is indicated, providing the lungs appear to be free from disease or not extensively involved. The complete operation is the one of choice, providing there is no contra-indication to a prolonged operation. C. M. Robertson[12] quotes the rather startling statistics of Gröber, who collected cases from several observers and found that 75% of the cases who were not operated upon subsequently developed pulmonary tuberculosis, while less than 15% of those who had the glands removed developed tuberculosis of the lungs. This percentage is very much higher than is usually given, as the following figures, taken from von Bergmann's Surgery, demonstrate: Mitchell 14%, Fraenkel (Billroth's clinic) 10.2%, Jordan 26%, Blos 19%, Furnrohr 26.4%, Ternino 21%, Vohlgemuth 12%, von Noorden (von Burns' clinic) 20%.

It is well nigh impossible to draw any valuable deductions from these statistics, for, while one reports cases who had pulmonary tuberculosis at the time of operation, another refers to cases which were followed for years, in whom no operation was performed. Then again, the problem is made even more difficult of solution by the fact that the vast majority of the cases, presumably, were not given the treatment that at present is recognized as essential for a recovery from tuberculous disease. Thus Blos[13] observed a spontaneous cure in but 16 of 308 cases which he followed for some years. Yet we can be pardoned if we wonder how many "took the cure" faithfully for a number of months.

Aspiration of broken down glands followed by the injection of iodoform-glycerin solution has not met with the success its advocate hoped for. Better results seem to follow incision, curettage and packing.

We are quite apt to think of the complete extirpation of the glands of the neck as a comparatively recent operation, yet it was advocated many years ago by one John Browne who lived in Norwich, England, in the seventeenth century. When one considers that he lived in an age when the malady was considered as a mark of evil distemper, that he was one of those who assisted the king in the ceremony of "laying on of hands," and that his was a time when surgery was very crude, his words seem truly remarkable. He did not share the prevailing superstitions concerning its origin, for he stated that it was due to "no fictitious distemper or imaginary evil, but rather a proper disease." Concerning the treatment he said, "These tumors do require extirpation and extraction . . . to be so dexterously performed as that no part be left behind. . . . Our greatest advice in the use of the knife is to have a particular and special care to the vessels bordering upon the parts, namely the nerves, veins and arteries, lest they be injured thereby. The glands are to be extracted with great care and caution so as no vessel whatsoever be injured by the operation; and if any flux of blood may happen in this operation, it is presently to be stopped with restrictives, and this method is to be prosecuted till every part of the cystus or bags thereof are perfectly and thoroughly eradicated and extracted the which being done and the part clean, mundifie the ulcer, digest, incarn and then induce a cicatrix."

The ideal method of fixation is the plaster bandage, but unfortunately the surgeon sometimes considers his responsibility ends with the last turn of the bandage. I have repeatedly seen post-operative cases of tuberculosis of the joints, glands and peritoneum, spending their convalescence in the wards of the hospital when they might to advantage have been "taking the cure" on the veranda. Even with the utmost diligence it is always possible that some tuberculous tissue has eluded one, and accordingly we should urge our patients to keep in the best physical condition possible for several years. A person with tuberculous adenitis, like one with pleurisy with effusion, can scarcely be considered out of the danger zone until three or four years have passed.

There can be no doubt but that earlier diagnoses of tuberculous lesions, and a keener appreciation of what can be accomplished by the fresh air treatment, will materially diminish the number of cases in which operative interference is indicated.

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12. Robertson: *Q.v.*
13. Von Bergmann: System of Practical Surgery.

Clinical Department.

CHLORAL DELIRIUM: A CASE REPORT.

BY H. W. MITCHELL, M.D.,
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The following case report illustrates the resemblance between alcohol and chloral delirium.

J. S., admitted to Danvers Insane Hospital, April 14, 1906.

Family history. — Parents, who were of Irish birth, died of tuberculosis soon after coming to this country. An only sister died in childhood. Father was intemperate. No other facts obtainable.

Personal history. — Aged sixty-two; married; shoemaker. One daughter, a healthy adult, living; two children died in early childhood of infectious diseases, and two were still-born. Illiterate, barely able to read and write. Enlisted in the United States army at age of eighteen and served nearly five years. Was in active service during the Civil War. Suffered from malaria while in the South and had "chills" at intervals for some years after the war. For the past ten years has complained of vague rheumatoid pains and has suffered from insomnia. No serious illness, but has not been strong and healthy since army service. Used alcohol very moderately until 1897, since that time has been a total abstainer.

In 1891, following the death of a child for whom he deeply grieved, the use of chloral was begun to relieve insomnia. Previous to this time, he had never shown any nervous or mental disorder, and he was of a cheerful, lively temperament. The chloral habit became fixed and for many years he was in the habit of taking 15–30 gr. nightly.

The family noticed no bad effects until about four years ago, when he began to be unusually restless at night, and had to use more chloral to secure broken sleep. During the night, he would fancy that he heard horns and bands of music, and, finally, began to hear voices. He would be irritable and unreasonable in reaction to hallucinations which would appear irregularly for a time and then he would seem as well as usual for some months, only to have a recurrence. Three years ago, he took a large but unknown amount of chloral with suicidal intent, but was resuscitated. Chloral was gradually increased and the amount used can be estimated as averaging 75 gr. daily. For a time, he had obtained some of his chloral upon a prescription calling for a smaller amount of bromide of sodium. Until nine months before admission, family noted no more serious symptoms than previously mentioned, but after that he formed delusions explanatory of his hallucinations; imagined his neighbors were conspiring against him; bought a revolver to protect himself from incendiaries whom he believed to hover about his house at night. He lost in weight, became very tremulous and feeble, and in October, 1905, had a delirious attack lasting several weeks. At this time, saw strange animals and men about him and heard voices applying abusive epithets. He was restless and disorderly. Confined to his bed. This acute attack subsided rapidly but he soon resumed use of chloral. For some weeks before commitment, he was suspicious, deluded and threatening. Could take but little food, became feeble and very tremulous and even with more frequent doses of chloral got but little sleep.

He was taken to police station April 13 and brought to the hospital on the following day.

Physical condition. — Poorly nourished. Pulse soft, rapid and irregular. Temperature, 98.8°. Tongue heavily furred. Countenance cyanotic. Slight bronchitis. Abdomen and urine negative.

He walked with feeble, unsteady gait. Pronounced Romberg symptom. There was a fine, fibrillary tremor of facial muscles. Speech was tremulous and husky and there was general tremulous inco-ordination. Reflexes generally lively. Vision defective. Pupils reacted to light and accommodation. Considerable blunting of tactile sensibilities.

Mental conditions. — Completely disoriented. Attention could not be held in conversation. He was restless and disorderly when left to himself, moving his bed about, throwing his bedding around the room, trying to climb out the window, keeping constantly in motion. Had auditory and visual hallucinations. Slightly apprehensive. Could be induced to take only liquid nourishment. This delirious confusion and activity gradually subsided and on the fourth day he could converse responsively and attention could be held. He was still disoriented and had no grasp upon surroundings. No longer hallucinated. Practically no memory for recent events. Continually abusing his wife and charging her with immorality and a desire to be rid of him. Able to grasp explanations concerning his surroundings.

During this time, temperature had not risen above 100°, he had taken liquid nourishment in small quantities. Sleep had been very fitful, but restlessness gradually decreased.

From this point, physical and mental improvement were rapid, and at the end of first week he had good insight and had corrected all his delusions concerning family and associates. There was only partial restoration of memory for the period of active disturbance. He was grateful that the chloral habit had been broken. He could sleep from four to six hours nightly without hypnotics, and was cheerful and contented. The tremor persisted for nearly three months. During this time, he gained ten pounds.

He was removed by relatives on Aug. 1, 1906. He was recently seen and stated that he was sleeping better than for years and had not resumed his habit. He appeared to be in even better physical condition than at time of leaving the hospital.

In 1873 Elliot[1] stated that there was no appreciable difference in delirium tremens resulting from use of chloral or alcohol. Only the history made the differentiation possible in this patient. For several years he had suffered from pain and stiffness, which were assumed by the patient to be rheumatic in character. These symptoms disappeared entirely while he was at the hospital.

Griffiths[2] describes the occurrence of pains in joints and muscles following prolonged use of chloral.

Antheaume and Parrot[3] advise the gradual reduction of drug over a period of about twelve days and say that delirium may follow the abrupt withdrawal of chloral as of alcohol.

There was abrupt withdrawal in this case. Stimulants, forced feeding, hydrotherapeutic measures, with a hypnotic for the first three nights in hospital, were the only means used to aid in a gradual and uneventful recovery.

MacKenzie[4] reports delirium following use of 15 gr. of chloral hydrate daily for a period of five weeks.

Da Costa[5] tells of delirium in a man who began to use 20 gr. daily and increased the amount to nearly an ounce during a period of six months. Mental symptoms were not observed in the case until nearly twelve years after habit was formed.

REFERENCES.

[1] Elliot: Delirium Tremens after Chloral Drinking. Lancet, 1873, vol. i.

[2] Griffith: Chloralism and Alcoholism. Practitioner, 1876, vol. xxii.

[3] Antheaume et Parrot: Le Delirium Tremens Chloralique et son Traitement. L'Encéphale, Jan., 1906.

[4] MacKenzie: Jour. of Ment. Sc., 1876, vol. xxii.

[5] Da Costa: Acute and Chronic Chloral Poisoning. Phil., Med. Times, 1882–83, vol. xxiii.

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ACCORDING to the *Medical Record* the College of Physicians of Philadelphia has received from Mr. Andrew Carnegie $100,000 towards the erection of its new building, on condition that a like sum be raised, of which $80,000 has already been subscribed.

Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY F. S. WATSON, M.D., AND PAUL THORNDIKE, M.D.

ACTION OF DIURETIC DRUGS AFTER NEPHRECTOMY.

Weber believes that his experiments on rabbits have proved that the caffein group of diuretics acts not only on the kidneys, but upon the general capillary system as well.

NEW REACTION FOR SPERMATIC FLUID.

Barberio announced some time ago that when a concentrated watery solution of picric acid is added to spermatic fluid, a deposit of yellowish rhombic crystals results. Levinson,[2] after experimenting, has found that these crystals must come from prostatic and seminal secretions, because they were found always where no testicular secretion was present or possible. The medicolegal value of the test is therefore obvious, as by its means, the source of the suspected substance can be definitely proven even in the absence of spermatozoa.

AUTOPSY FINDING AFTER SUPRAPUBIC PROSTATECTOMY, IN A CASE OF TUMOR OF THE PROSTATE.

Moscou's [3] patient died twenty-four hours after the operation. The autopsy showed that the removal of the tumor still left the original prostate perfectly intact, it having been pushed aside as the tumor increased in size. In confirmation of this, the ducts were found intact and permeable.

FILARIASIS.

In a carefully compiled and comprehensive article, with an extensive résumé of the literature of the subject, Cunningham [4] reports a case which he treated surgically, and expresses the belief that more cases should be so treated. He says, in conclusion, " Even though the parent worms are not found, as in the writer's case, they may be retained within the diseased mass and escape detection, the embryos disappearing from the blood, and the individual remaining free from his symptoms. On the other hand, when the parent filariæ are known to be left, alleviation of the symptoms has followed by overcoming the stasis and regurgitation of chyle."

THE IMPORTANCE OF CYSTOSCOPY IN THE DIAGNOSIS OF EARLY RENAL TUBERCULOSIS.

Fenwick [5] has insisted (from 1885) upon the importance of the appearance of the ureteric orifice as an aid in the diagnosis of renal tuberculosis, and believes that what he calls a dragged out or retracted orifice is practically pathognomonic of renal tuberculosis. He explains the reason as follows: "The retracted, displaced ureteric orifice points to a thickened ureter, shortening lengthwise. This involves narrowing and obstruction of the channel of the ureter. This again implies back pressure of urine upon a thickened, unyielding pelvis, and a tough renal parenchyma, which may show, microscopically, the existence of interstitial nephritis."

NEW OPERATIONS.

1. *An operation for the radical cure of cancer of the prostate.*[6] Young's data are derived from a study of about 50 cases. He describes in detail, with several illustrations, an operation for the removal of the whole prostate and the adjacent portions of the bladder, through a perineal incision, He concludes, as a result of his personal experience, that cancer of the prostate is a much more common disease than is popularly believed; that about one out of seven is probably a just estimate of its frequency in cases of prostatic enlargement; that its diagnosis, previous to operation, is possible, and that with such an early diagnosis, the percentage of cures should be large.

2. *An operation for the irrigation and drainage of the seminal vesicle through the vas deferens.*[7] — Belfield has found such irrigation and drainage invaluable in the treatment of suppurating inflammations of the seminal vesicle and vas deferens. He says that by this method these very common ailments are made amenable to treatment without danger to the patients or to the parts involved. He describes his method of operation in detail, and claims that it does not result in occluding the vas, which fact has been demonstrated by experimental observations on dogs as well as by clinical observations on human beings.

3. *Operations for sterility in the male.* — Since Martin of Philadelphia described his operation several years ago, a number of other observers have written on this subject.

Mauclaire [8] describes an operation for grafting together the two testes by freshening their inner surfaces with crescentic incisions and suturing the corresponding wounds on the two organs together. His description is made with some detail and with an illustration. He says that operation is not to be done after epididymectomy for a tuberculosis affection, but is of the greatest use, either alone or associated with the implantation of the vas deferens into the epididymis, in cases of occluding inflammation.

4. *Anastomosis of the vas deferens.* — Lydston [9] describes, with great detail and three illustrations, his method of making an anastomosis of the vas deferens. He describes six cases in his own experience, one of which has resulted in a restoration of function of the vas, and of the other 5, only one, so far as he knows, is a failure.

5. *Operation for sterility in the male.* — Quinby [10] experimented with guinea pigs, and describes an operation for anastomosis between

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[1] Weber, S.: Deut. med. Wochenschr., Berlin and Leipsic, 106, vol. xxxii, No. 30.

[2] Levinson, J. B.: Berl. klin. Wochenschr. 76, vol. xliii, No. 40.

[3] Presse Med., Paris, 21, vol. xiv, No. 35.

[4] Cunningham, Jr., John H.: Ann. of Surg., Oct., 1906.

[5] Fenwick, E. Hurry: Brit. Med. Jour., Jan. 27, 1906.

[6] Young, Hugh H.: Johns Hopkins Bull., Oct., 1905.

[7] Belfield, William T.: Proc. of the Am. Asso. of Gen.-Urin. Surg., June, 1906.

[8] Mauclaire: Ann. des Mal. des Org. Gén.-Urin., Paris, 17, vol. xxiii, No. 20.

[9] Lydston, G. Frank: Jour. of Am. Med. Asso., July 21, 1906.

[10] Quinby, William C.: Boston Medical and Surgical Journal, Nov. 8, 1906.

the vas and the head of the epididymis which he has performed successfully upon those animals. After a most careful and conservative statement of the actual results obtained, he believes it is fair to state that sterility, in a certain number of instances, is due to the constricting effect of a bilateral epididymitis; that when so caused it may be relieved by an anastomosis, and that this fact has been proven by himself upon guinea pigs, and by Martin of Philadelphia on dogs and men; that such an operation offers practically no risk to life; that its performance is not difficult, needing only familiarity with anatomy and pathology, proper suture material and gentleness in manipulation.

NEW INSTRUMENTS.

A new instrument to obtain urine from the kidneys separately.[11] — With this instrument the urine from each kidney separately is obtained by making pressure through the abdominal wall upon the ureter of the other kidney during the process. This compression is made at a point at the side of the fifth lumbar vertebra where the ureter passes over the iliacus muscle.

INTERESTING AND UNUSUAL CASES.

1. *Bilharzia infection of appendix.*[12]— Burfield[12] reports the infection of a post-operative abscess cavity with Bilharzia which gained entrance through the sinus while the patient was in swimming. The eggs were found in the appendix, but there was nothing in the story of the patient to suggest such an infection.

2. *Pneumococcus infection of genital tract.*[13] — Menocal describes three cases of pneumonia complicated by a pneumococcus infection of both spermatic cords in two of the patients and of the testis and epididymis in the third.

3. *Three ureters demonstrated by the cystoscope.*[14] — Lewis demonstrated three ureter openings, two to the left and one in the normal position to the right of the median line. These ureters were proved by passing up into them ureteral catheters with metal wire inside of them. An x-ray picture with the catheters in position was then taken.

4. *Plastic operation upon a kidney pelvis.*[15] — Walker operated upon a young woman with a movable left-sided tumor in the renal region. After incision the kidney was found attached to a large cyst which proved to be an enormously distended renal pelvis. The ureter below was not markedly dilated. Walker's operation consisted in the removal of a large part of the kidney pelvis, in order to reduce its capacity, and a subsequent fixation of the kidney to the body wall.

W. S. Cheesman[16] reports a remarkable case in which recovery followed the removal of a hypernephroma weighing four and a quarter pounds, from an infant twenty months old. The operation was a transperitoneal one and conducted through an incision extending almost the whole length of the right rectus adominis muscle.

The tumor was so large that after it had been exposed, together with the kidney, and both had been freed in one mass, the very generous incision was scarcely wide enough to allow it to be delivered on to the outside of the abdomen. When this had been accomplished, the pedicle was tied with catgut and the kidney and tumor were both removed. The patient made an excellent operative recovery. The time elapsed since the operation is too short to allow any statement to be made with regard to the permanence of the result.

W. C. Lusk[17] contributes an excellent article upon the surgical treatment of prostatic abscess, and advocates the employment of the perineal incision through the space on the outer side of the urethra and between it and the rectum, in order to reach the prostate and to open the abscess within it, without injury to either rectum or urethra. The posterior leaf of the triangular ligament is punctured with the point of the knife and then bored through by the finger until the abscess cavity is reached and opened.

H. Wildbolz[18] *on the results of splitting the kidney open as in surgical exploration or operation.* — Wildbolz as the result of experiments upon rabbits and dogs in which he split the kidneys open and subsequently examined them with reference to the histological pathologico-anatomical conditions, asserts that the amount of injury from this procedure is much less than has been stated by certain other observers (Langemak and Hermann).

In the experiments of Wildbolz the kidneys were exposed in the loins of the animals and split in two by incisions extending deeply into the substance of the middle of the organ.

In some cases the kidney incisions were completely sutured, in others only superficially.

Among the resulting conditions discovered by histological examinations, were the formation of infarctions in the surfaces of the kidney incisions. These however were limited in extent.

As a result of some further experiments in which Wildbolz injected the vessels, he concluded that the part of the kidney which was least supplied with blood vessels was that which would be divided by a longitudinal incision directly through the middle of the organ, this incision consequently would be productive of the smallest degree of parenchymatous destruction.

The incision employed by him was in the long axis of the kidney, whereas in the experiments of the two other observers mentioned above, it was through the transverse diameter. Moreover they employed sutures which were passed deeply into the renal parenchyma. It may be conjectured that the more serious disturbances noted by them were due to this fact.

The comment is made that in cases of moderate renal traumatic lacerations in the human subject, in which autopsies have been made at varying periods, of days, months, or years later, very trifling lesions resulting from such traumatism have been found to exist.

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[11] Heusner: Centralbl. für Chir., Leipsic, 60, vol. xxxiii, No. 7.
[12] Burfield: Lancet, London, Feb. 10, 1906.
[13] Revista de Medicina y Cirugia, Havana, 107, vol. x, No. 2.
[14] Lewis: N. Y. Med. Rec., Oct. 6, 1906.
[15] Walker: Lancet, London, Aug. 11, 1906.
[16] Ann. of Surg., Jan., 1907.
[17] Ann. of Surg., Jan., 1907.
[18] Deut. Zeitschr. für Chir. Bd., vol. lxxxi, p. 34.

Autopsy findings following prostotectomy.[19] — Kuss describes the anatomical conditions found in two cases after the operation of prostatectomy had been performed,— in one by Albarran, a perineal operation, in the other by Hartmann, a suprapubic operation. The clinical histories of the cases were of much interest also. The following points were reported in connection with them.

Case I. Albarran performed a total perineal prostatectomy, removing the gland by morcellement, and taking out of the bladder at the same time a phosphatic calculus of considerable size.

The patient made a somewhat tedious convalescence, but was discharged finally in excellent condition. Two years later he returned with symptoms of vesical calculus, and two calculi of large size were removed by Hartmann by a suprapubic lithotomy operation.

About ten months after this another small calculus was removed, also by a suprapubic operation; a few weeks after leaving the hospital he again returned with complete retention, and a fortnight later died with symptoms of uremia and exhaustion. Autopsy showed that the cause of this retention was not a stricture in the course of the prostatic urethra, but a growth of the glandular tissue of a part of the anterior portion of the prostate lying above the urethra and continuous with the glandular tissue on the lateral aspects of the vesical outlet in such a way as to have formed a transverse bar which prevented the escape of the urine from the viscus.

The significance of this case lies in the fact of the subsequent growth of the glandular tissue of what was left of the prostate, after the first operation, in which it was believed to have been removed totally, and of its thus producing an obstacle to the outflow of the urine from the bladder because of the evident fact that the whole of the enlarged gland was *not* taken away. That this should be the case is not surprising, because of the method of the operation employed, viz., by morcellement.

Case II. In this case in which the operation was also perineal, and done by Hartmann, the post-mortem examination showed that there had been a recurrence of the obstruction to urination because of a subsequent growth of some portion of the gland substance left near the vesical outlet.

Case III. The prostate was totally removed in this instance by a suprapubic operation and enucleation. Death forty-eight hours later.

Autopsy showed that here, too, there existed a bar transversely placed across the neck of the bladder, but not as in the two preceding cases, consisting of prostatic glandular tissue, but of the hypertrophied, thickened bundles of muscle fibres in that part of the bladder.

The volume of the transactions of the last meeting of l'Association Française d'Urologie, held in October, 1906, contains not less than its usual number of valuable and interesting contributions. Among them is the report upon one of the subjects annually chosen for discussion by the members of the association, and which, this year, was that of "The Pathogenesis and Treatment of Hydronephrosis," by M. Pierre Duval and M. Raymond Gregoire. In this article, which is a thorough review and summary of our knowledge of the subject, the reporters adopt the classification of uronephroses of congenital and those of acquired nature. In the former are included such as arise in consequence of anomalies of the ureters viz., their absence, anomalies of number, position, and also abnormalities of the orifices, of caliber, curvatures, and the existence of valves and strictures. The acquired forms are divided into subclasses thus: (1) Due to compression exteriorly. (2) Due to diminution of the calibers of the ureters, (*a*) from the presence of foreign bodies, (*b*) from some lesion of the wall of the canal. (3) Curvatures (kinks) caused by the pressure of an abnormal blood vessel, by a movable kidney, twists, kinks and conditions producing changed relation of the orifice of the ureter to the renal pelvis. (4) Intermittent. (5) Traumatic-hydronephroses.

Each of these subdivisions is dealt with in the most thorough manner and many interesting data and observations are to be found in the course of the text.

Among the conclusions reached with regard to the different etiological factors, are these:

"Hydronephrosis is not produced by the pressure of an abnormally placed blood vessel crossing the ureter unless there exists at the same time a congenital malformation of the ureter."

"Abnormal mobility of the kidney in itself does not seem to be a cause of renal retention. The conclusion arrived at is that when the conditions co-exist, the hydronephrosis is, in fact, developed in a movable kidney, but the two are independent of each other, both result from congenital malformations."

In the discussion that followed the report there are a large number of operative data given, both with regard to conservative and radical measures.

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Reports of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, Wednesday, Jan. 9, 1907, at 8.30 p.m., the President, Dr. Charles K. Mills, in the Chair.

Symposium on Roentgen Diagnosis and Therapy.

ROENTGEN DIAGNOSIS IN GASTRIC AND INTESTINAL DISEASE.

Dr. Henry Hulst, of Grand Rapids, Mich., presented this paper which was illustrated by Roentgenograms. For several reasons, it was stated, the tendency in Roentgen ray diagnosis has been away from the screen and toward the plate. Both methods, however, have their peculiar advantages, the screen for general orientation and motion, the plate for detail and permanent record. Bismuth is needed, but the aim should be to use no more than suffices for the purposes of the examination. Some conclusions drawn from negatives shown by Dr. Hulst were that if respiration does not, position does, exert a marked influence upon the location of the stomach and intestines.

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[19] Kuss, M. G: Ann. des Mal. des Org. Gén.-Urin., Nov. 15, 1906.

The greater the ptosis the more pronounced the effect. The diaphragm is notably higher on the side on which the person examined lies and diaphragmatic breathing is greatly in excess of the other side.

The horizontal position permits the heart, diaphragm, stomach and colon to ascend. The horizontal dorsal position causes the stomach also to gravitate toward the fundus. This position tends to replace the prolapsed stomach.

Examination for gastroptosis in the recumbent dorsal position is, therefore, misleading. To bring out the existing ptosis it is necessary to put the patient in the erect (sitting or standing) position. Pressure against the hypogastrium pushes the stomach upward; to a less extent, the diaphragm and heart also. Voluntary retraction of the lower abdomen produces a like result and is attended, moreover, by a reflex enlargement of the lower thoracic aperture.

This is the exact reverse of what takes place in enteroptosis in which the diaphragm descends together with the other organs and the lower thoracic aperture diminishes in size.

This suggests the existence of a definite relation between the shape of the body and the position of the internal organs. The Becker-Lenhoff index is but one tentative expression of this relation. In proportion as people are well built their stomach approaches a certain type. Dr. Hulst asserts that good figures are rare, especially among women, and that normal stomachs must, therefore, be rare also. The more of a Venus a woman, the more of an Apollo a man, the more perfectly their stomach corresponds with the normal type; but the author feels that the line is instinctively drawn at enteroptotic Venuses and gastroptotic Apollos.

SOME SUGGESTIONS CONCERNING THE USE OF ROENTGEN RAYS IN DIAGNOSIS.

Dr. E. W. Caldwell, of New York City, presented a paper bearing the above title. The statement is made that all Roentgen ray examinations are made by means of shadows which are obtained by interposing the object examined between a source of rays and a fluorescent screen or a photographic plate. Dr. Hickey's definition of a skiagraph was quoted as "A record of density, produced by the Roentgen rays, and made in accord with the laws of projection." It is remarked that it is evident that no one can be safely trusted to interpret a skiagraph until he has learned to regard it not as a view, but as a projection, and to be constantly on his guard against erroneous impressions of perspective. This tendency to consider the skiagraph or so-called x-ray photograph as a photographic view has led to much of the dissatisfaction with the x-ray and sometimes caused its veracity to be called in question. The x-ray, it is claimed, does not lie; but one who incorrectly interprets its shadows may seem to be lying when he is only mistaken. Considering the skiagraph as a projection and not as a view, the absurdity of the requests for side views of shoulders and hip joints, familiar to every Roentgen ray worker, is apparent. Transverse projections of these parts superimpose the shadows of both sides as well as everything between, and the rays must pass through the body in its long diameter. Such projections are, therefore, in most cases, useless.

With all their imperfections, Dr. Caldwell regards stereoscopic Roentgen projections as extremely valuable in many cases; and, in spite of the difficulty of technique he feels that they must come into more general use. Since in Roentgen work nothing is gained by the print, he thinks it better to use the glass plate and avoid the loss of detail incident to the transfer to printing paper. Whether plate or print is used, it must be remembered that the shadows of similar objects are similar in color. Reference was made to the skiagraph of a supposed vesical calculus the shadow of which, however, was dark and due to gas trapped in the rectum. The great importance of having x-ray work done only by those thoroughly skilled was strongly emphasized, and the paper closed with an exhibition of skiagraphs illustrating the value of x-rays in diagnosis.

SOME PECULIARLY VALUABLE ROENTGEN DIAGNOSES.

Dr. E. W. Caldwell, of New York City, without presenting a formal paper upon this subject proceeded at once to the illustration of Roentgen diagnoses by lantern slides.

Dr. Henry K. Pancoast opened the discussion, exhibiting skiagraphs, with explanatory statements, included under the practical application of x-ray examinations by the bismuth method in various conditions of the gastro-intestinal tract and esophagus, diseases of the accessory sinuses, and tumors of the brain and head.

Dr. Charles Lester Leonard, in continuing the discussion, said that the practitioner should demand the employment of the Roentgen method of diagnosis by a Roentgenologist whose ability and experience fit him to make diagnoses by its aid which the practitioner himself cannot make. He should demand not only a technique in handling apparatus and in making an accurate Roentgenogram but also an experience and an education in this particular method of diagnosis above his own that fits the diagnostician to render a more valuable diagnosis than the practitioner can make with the same data. Anatomy viewed from the Roentgenogram is entirely different in its expression from any other view. Pathological anatomy is likewise very different and its interpretation demands an experience and study that can only be secured by those devoting time to it. Dr. Leonard observed that he had seen a sesamoid bone in the flexor longus policis described in the *British Medical Journal* by a prominent London surgeon as an exostosis, and the shadow of the patella called an ossifying ostitis by a member of the American Surgical Association. Such mistakes should now be impossible to a tyro in Roentgenology. In closing Dr. Leonard quoted Sir William Bennett, K.C.V.O., in an article in the *British Medical Journal* of Dec. 8, 1906, as saying that "The first essential in all cases of sprain is to determine whether fracture co-exists, which can readily be done by the x-rays when they are available; it should, indeed, be an accepted practice that, when possible, every sprain, especially those near joints, should be examined by the x-rays. In the event of the x-rays being unobtainable, it is wise to regard any case in which the symptoms of sprain near a joint are unduly exaggerated as being complicated by fracture, especially if the parts concerned be the phalanges of the fingers or the metacarpal region. . . . The frequent overlooking of bone lesions in so-called sprains seems to be greatly due to the fixed idea on the part of many people that crepitus is a necessary symptom of fracture, and that absence of crepitus means absence of fracture, a sadly mistaken belief, inasmuch as it need hardly be said, fracture often occurs in circumstances in which the detection of crepitus is impossible. On the other hand, crepitus after injury, especially if near a joint, may be elicited when no fracture is present. I have seen several cases of injury near joints in which fracture has been either diagnosed or strongly suspected on the strength of crepitus resulting from osteo-arthritis in the adjacent articulation."

Dr. Mihran K. Kassabian, in further discussion, exhibited a very large number of lantern slides. In the vast majority of these cases, diagnosis by the x-rays was the only means of differentiating rare, obscure and simulating conditions, such as fractures, epiphyseal separations and displacements, from dislocations. Other slides depicted osseous diseases, (osteitis and periostitis), tumors of the bones, detachment of the ligaments and muscles, diseases of the joints, congenital dislocation of the hip joint, etc. A number of slides exhibited tumors of the trachea and of the vocal cords; while several more showed pulmonary tuberculosis and aneurisms of the heart and aorta. A slide was shown depicting aneurism of the innominate artery which was confirmed at autopsy. A case of stereptothrix was differentiated from tuberculosis by the skiagraph and later microscopically.

SOME APPLICATIONS OF THE ROENTGEN RAYS IN DERMATOLOGY.

Dr. Russell H. Boggs, of Pittsburg, made a plea for a more conservative use of the Roentgen rays in dermatology. In order to apply the rays successfully he said the operator must be able to decide whether Roentgen treatment is the best method available, and then be able to give the dosage necessary to produce the desired physiological action. He suggests that if every operator would first learn the action of the rays by making radiographs of the more difficult portions of the body, results would be more uniform. As the rays are only indicated in certain lesions and should not be employed in a routine manner, each case should be carefully studied and then the method of treatment decided upon.

In the treatment of chronic eczema, stubborn cases of acne, psoriasis, keloid and lupus vulgaris, Dr. Boggs has found the Roentgen method efficient. As an epilatory agent the method is superior to any other in the treatment of parasitic diseases, such as favus and tinea, sycosis and blepharitis. Considering the large amount of ringworm and favus among school children in the poorer districts and the failure of prophylactic measures to prevent their spread, it seems to the author almost imperative that these cases should have x-ray treatment by an experienced operator. The danger is pointed out of having the rays applied by resident physicians, nurses, or engineers.

RADIOTHERAPY IN THE TREATMENT OF MALIGNANCY.

Dr. George C. Johnston, of Pittsburg, considers malignancy in the abstract as a condition of cell anarchy, expressing thereby, the total disregard of the individual cells for physiological law. This disregard is shown by the invasion of new territory and by remarkable multiplication. These new cell formations possess low resistance and poor reparative power, and when exposed to a dose of x-ray, which in normal tissue would produce but transitory irritation, they undergo tissue death. The author shows that in the treatment of internal growths failure frequently occurs because, in spite of every device, an undesirable surface effect is produced before the deepest portions of the growth have received sufficient x-ray. There is pointed out the constantly successful results of superficial malignant conditions in qualified hands, and here the greatest value of the ray is shown in those conditions less favorable for successful surgical removal, such as epitheliomas in and about the alæ of the nose, on and about the eyelids, and about the eyes. It is stated that the treatment of carcinoma in the hands of certain operators has cast much discredit upon the method, hundreds of absolutely unsuitable cases having been submitted to x-ray by inexperienced physicians. While he claims it as true that many primary circumscribed carcinomas have been successfully treated by x-ray alone, yet he regards the wisdom of such treatment doubtful, believing it better to combine surgery and x-ray, submitting the patient to a series of anti-operative radiations followed by extirpation of all infected tissue, and this again followed by a series of post-operative radiations. The objections that have been advanced to anti-operative radiations, he states, are theoretical only and believes that an experienced surgeon will find no difficulty in operating on a patient who has been exposed to x-ray.

Dr. G. E. Pfahler opened the discussion upon the papers of Drs. Boggs and Johnston, showing rapidly lantern slides of about forty-five cases, the most remarkable among which was a case of very malignant sarcoma involving the soft tissues at the angle of the jaw in a young man of twenty years. The tumor developed to the size of an "apple" in three weeks when it was removed surgically. In three weeks it had again developed to its original size and was again removed surgically. On the fifth day after the second operation a photograph was taken when the tumor had recurred and had reached the size of a hen's egg. He was then placed under very active x-ray treatment and after twenty treatments and two months' time it had entirely disappeared and he is still well, a year later, as was shown by a second photograph. With Dr. Boggs he believes the x-ray to be a most powerful therapeutic agent, but that as much skill is needed in its application as in any other special field of medicine, good results depending upon good technique.

Dr. Jay F. Schamberg, continuing the discussion, said that the effect of the Roentgen rays upon tissues varies according to the intensity of the irradiations. The following effects were detailed:

(1) The earliest effect is local stimulation or an enhancement of the vitality of the tissue. The rays, doubtless, alter cellular chemistry by the influence of electrified ions upon protoplasm. In the treatment of skin diseases, the cutaneous tissues are reinforced against bacterial invasion and are likewise strengthened against pathological influences from within. It is upon such grounds that the favorable action in eczema and certain other inflammatory diseases may be explained.

(2) A further effect of the x-rays is to produce atrophy of the more highly specialized elements of the skin. This action is utilized in the treatment of acne, sycosis, hypertrichosis, excessive sweating, etc. In acne the rays are the most important thera peutic measures. The best results, however, are obtained when no single method of treatment is exclusively relied upon. It was pointed out that some cases require dietary and internal treatment as well as local measures. A most important part of the treatment in many cases was said to be the systematic expression of the blackheads or sebaceous plugs in the follicular ducts.

(3) The x-rays, if used sufficiently long or strong, cause a degeneration of the cells resulting in necrosis.

(4) The x-rays exert an analgesic influence upon the skin and frequently relieve itching.

(5) The x-rays are also valuable in producing depilation and the extrusion of fungus and thereby exert a curative effect in such cases as ringworm and favus of the scalp.

In quite an extensive experience Dr. Schamberg has never observed toxemia to result from x-ray treatment despite the fact that a number of his patients have had gout and others damaged kidneys. It is to be remarked, however, that his treatments have been directed towards superficial conditions and have not, as a rule, been intended to produce tissue necrosis.

Book Reviews.

Manual of the Diseases of the Ear, Nose and Throat. By JOHN JOHNSON KYLE, B.S., M.D., Clinical Professor of Otology, Rhinology and Laryngology in the Medical College of Indiana, etc. With 160 illustrations. Philadelphia: P. Blakiston's Son & Co. 1906.

This book suggests that its origin may have been the lectures in a systematic didactic course to medical students. An instructor who is about to give such a course of lectures would find it useful as a textbook to put into the hands of his class. Much of it is good, some of it superficial. It follows well the development of the last few years, giving it an advantage over some of the older manuals. As a book of reference for graduate students or practitioners it is too condensed.

Collected Studies on Immunity. By PROF. PAUL EHRLICH, Privy Councilor and Director of the Royal Institute for Experimental Therapy, Frankfurt, Germany. Translated by DR. CHARLES BOLDUAN. New York: John Wiley & Sons. London: Chapman & Hall. 1906.

An excellent translation of Ehrlich's collected studies on immunity is now available for English readers. The German edition was published in 1904, but the additional chapters bring the work up to date. One of these chapters, written by Professor Ehrlich expressly for this translation, presents a general review of the recent work in immunity, and adds materially to the value of the American edition. The volume contains forty-one papers. These give the results of the experimental studies prosecuted by Ehrlich and his students from 1898 to 1906 in the Royal Institute for Experimental Therapy at Frankfurt. The first chapters contain the classical communications of Ehrlich and Morgenroth, which were originally printed in the *Berliner klinische Wochenschrift*. Several of the papers appeared in publications not readily available to students in this country, as the *Koch Festschrift*, the *von Leyden Festschrift;* and at least one study, that on the relations between toxin and antitoxin, was issued as a separate monograph. There are a number of papers by Ehrlich's American students, Marshall and Kyes. The value of the work to the students and undergraduates is enhanced by two chapters prepared especially for it, which describe the technical details of hemolytic and bacteriolytic test-tube experiments.

We have found that these original studies are more interesting and less difficult of comprehension than the explanatory articles which have been published from time to time with the object of presenting Ehrlich's theories in a clearer and simpler manner.

Toxicology. The Nature, Effects and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By CASSIUS M. RILEY, M.D., Professor of Chemistry and Toxicology in Barnes University. Third edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1906.

This is a small volume devoted to a large and comprehensive subject. The nature, effects, and detection of poisons, and the diagnosis and treatment of poisoning are all very briefly considered. The book was apparently primarily intended to be used by the students of the author; it is of no real value to the practitioner of medicine.

Chemistry: General, Medical and Pharmaceutical, including the Chemistry of the United States Pharmacopeia. A Manual of the Science of Chemistry and its Applications to Medicine and Pharmacy. By JOHN ATTFIELD, F.R.S., M.A., Ph.D., F.C.S., etc., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc. New (19th) edition, specially revised by the author to accord with the new United States Pharmacopeia, edited by LEONARD DOBBIN, Ph.D., F.I.C., etc., Lecturer on Chemistry in the University of Edinburgh, etc. 12mo, 760 pages, illustrated. Philadelphia and New York: Lea Brothers & Co. 1906.

Seventeen editions of this excellent work in the United States and eighteen in Great Britain are abundant evidence of approval of the professions of medicine and pharmacy, and we are pleased to welcome this nineteenth edition. The most prominent changes in the book are those necessary to make it accord to the new Pharmacopeias of the United States and Great Britain, and it has in other respects been brought up to date. We can continue to recommend the book.

Gastric Surgery. Being the Hunterian Lectures delivered before the Royal College of Surgeons of England on Feb. 19, 21 and 23, 1906. By HERBERT J. PATERSON, M.A., M.B., B.C. (Cantab.), F.R.C.S. (Eng.), Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons; Assistant Surgeon to the London Temperance Hospital. New York: William Wood & Co. 1906.

This is the series of three Hunterian lectures delivered by the author in 1906, considering the operation of gastro-jejunostomy, gastric ulcer, complications of gastric ulcer, infantile hypertrophic stenosis of the pylorus and the surgical treatment of cancer of the stomach.

They are well written, for they make easy reading and contain much valuable information. The author has given an excellent bibliography of the technique of gastro-jejunostomy, and appended to the book are tables of the various gastric operations performed by the author, with their end results. The end results of these operations are what is so much needed, and we are just beginning to receive information as to the permanent value of much of the operative work constituting gastric surgery.

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THE PROBLEM OF EPIDEMIC UNCINARIASIS IN PORTO RICO.

On the evening of Feb. 6, Capt. Bailey K. Ashford, assistant surgeon in the United States army and honorary member of the Porto Rico Anemia Commission, will speak at the Boston Medical Library on the general subject of the campaign against endemic uncinariasis in Porto Rico.

The situation regarding this disease in Porto Rico has for many years been an alarming one, and although a very definite beginning has been made toward its more thorough study and prevention, it still remains a menace and demands the earnest attention of the medical profession throughout the country. In a recent paper published in *The Military Surgeon*, Captain Ashford describes the work which has already been accomplished toward combating the disease since the first definite knowledge of its ravages was brought home to those in authority in 1899. It was formerly supposed that the extraordinary death-rate from " anemia," which was from 20% to 30% of the total death-rate, was attributable to starvation or to lack of proper food. In the latter part of 1899 it was shown that this condition of anemia was the product of a definite parasite and was thereafter known as anchylostomiasis or uncinariasis. In 1902 the situation was seriously taken in hand by Dr. Walter W. King, of the Public Health and Marine-Hospital Service, and by Captain Ashford, who systematically treated a hundred of the worst cases to be found in Ponce. Gradually from this beginning public interest was excited and the problem was seriously taken up by the medical corps of the army and the Public Health and Marine-Hospital Service.

It is not our intention at this time to discuss in detail the theory of the disease or the energetic measures which have been taken to combat it. The point of importance is that it is a preventable and curable disease, and that with the proper co-operation of members of the profession, not only in Porto Rico but elsewhere, and through moral and financial support, a pest which has claimed from five to seven thousand victims yearly may be removed. Captain Ashford will speak with peculiar authority in this matter to which he has devoted much attention, and it is not to be questioned that a discussion of the disease, although somewhat remote from our own doors, will attract the attention of physicians, interested not only in the cure of disease, but also in the broad economic questions to which an endemic affection of this sort leads. Naturally the first commission which undertook the study of what was regarded as a necessary and essential evil met with difficulties and discouragement. The professional men of Porto Rico, however, have shown the greatest interest in the problem and are applying the principles which have been demonstrated as useful, and also on their own initiative are making positive headway against the widespread and fatal endemic disease. The work that these men do is self-sacrificing and arduous. They are eminently deserving of sympathy and positive assistance from their colleagues in more favored regions. It is somewhat extraordinary and altogether unfortunate that laboratory facilities, so essential to the investigation of such a disease, are wholly inadequate. The physicians are interested in microscopic work and post-mortem study, but the disadvantages under which they are working are almost prohibitive of progress. For example, the president of the Medical Association of Porto Rico, a physician of German family, although decrepit through age, is working faithfully by experimental means to determine certain important facts regarding the biology of the parasites. This investigator has no laboratory and no adequate income to prosecute his work. In spite of these drawbacks, he buys what apparatus he cannot improvise and is continuing his work with enthusiasm. Other men are in the same predicament, and even the commission appointed to investigate the disease is not provided with means to establish a laboratory to prosecute the researches which are essential to a complete understanding of the disease.

In view of these facts, Captain Ashford's remarks should receive the closest attention, and at least sufficient public interest be aroused to direct attention in a concerted manner toward a great medical problem, evidently capable of solution provided the necessary means can be secured. We suffer in our medical work from a concentration of interests in the immediate problems which face our individual communities. It is, therefore, eminently useful that we should from time to time be addressed by those whose duty or interests take them into wider fields.

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THE CAUSE OF PORTAL OBSTRUCTION IN CIRRHOSIS OF THE LIVER.

Not infrequently in medicine, as the result of the inquiry of a man mentally endowed with healthy skepticism, doubt is cast on some explanation hitherto unquestioningly accepted. A case in point appears to be in the explanation usually given for the increased portal pressure in cases of cirrhosis of the liver. The ascites, the distended collateral venous channels and the hemorrhages in the course of cirrhosis are facts pointing to increased resistance to the flow of blood through the portal system. The increased amount of fibrous tissue about the portal vessels within the liver is easily demonstrable. Contraction of this fibrous tissue with consequent narrowing of the blood vessels is the next step in explaining the portal obstruction, which frequently accompanies cirrhosis. The explanation is logically satisfying and has been accepted without question as to whether the blood actually does meet with resistance in its flow from the portal vein through the cirrhotic liver.

It has remained for Herrick[1] to test this point. By washing the vessels free from blood and circulating salt solution through them, Herrick finds that in the cirrhotic liver the portal vessels permit as free a flow as in the normal, and that the portal capacity in proportion to the size of the liver is increased rather than decreased.

How, then, is the fact of the increased portal pressure of cirrhosis to be explained? In the normal liver, Herrick shows that changes in pressure in the hepatic artery from 0 to 130 mm. of mercury cause a rise of but 3 or 4 mm. in portal pressure, while, on the other hand, in the cirrhotic liver there is a rise of pressure in the portal vein of 20 or 30 mm. This is due to the greater influence of the arterial circulation on the venous brought about by an increased arterial supply to the fibrous tissue of the cirrhotic liver and a freer arterio-portal anastomosis. Portal obstruction in cirrhosis, then, according to Herrick, is not caused by obstruction to portal vessels within the liver consequent upon the contraction of newly formed fibrous tissue, but is due to changes in vascularization, which result in arterial pressure abnormally influencing portal pressure, and by raising it this leads to portal engorgement and the obstructive circulatory symptoms of cirrhosis.

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MEDICAL NOTES.

Physicians among Twelve Greatest Living Germans. — A vote taken in Germany on the twelve greatest living Germans is reported to have included the following men, who occupied respectively the third, fourth, fifth and eleventh positions in the list: Dr. Robert Koch, Prof. Ernst Haeckel, Prof. Konrad Röntgen and Prof. Ernst von Behring.

Mississippi Valley Medical Association Prize. — At the last meeting of the Mississippi Valley Medical Association it was decided to offer a prize of $100 for the best essay on some medical or surgical subject. The competition is to be limited to those who, at the time of entering the competition, as well as at the time of the award, shall be members in good standing of the Mississippi Valley Medical Association. The name of the author is to be inclosed in a sealed envelope bearing some motto or device, and the essay is to be marked by the same motto or device. The name of the successful author and the title of his essay will be announced at the next meeting of the Association, to be held in Columbus, Ohio, Oct. 8, 9, 10, 1907, and the award will be made at that time. All essays must be typewritten, and are to be sent to the secretary, Dr. Henry Enos Tuley, 111 W. Kentucky Street, Louisville, Ky., on or before Aug. 1, 1907, after which date no essay will be received.

Tribute to Professor von Bergmann. — On Dec. 16 Dr. Ernst von Bergmann, professor of surgery in the University of Berlin, was seventy years old. On that occasion he was the recipient of many honors. Forty delegations are said to have called upon him, representatives of universities, the Red Cross, medical societies and the government. At a dinner given in his honor more than five hundred distinguished persons were present. Professor von Bergmann's life has been peculiarly active, not only in his professional work, but also in other matters of a social and artistic sort. Professor von Bergmann's services have extended through three wars. In 1882 he was called to the professorship of surgery in the University of Berlin and has remained there since.

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[1] Jour. of Exp. Med., 1907, ix, 93.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Jan. 30, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 53, scarlatina 63, typhoid fever 4, measles 11, tuberculosis 44, smallpox 0.

The death-rate of the reported deaths for the week ending Jan. 30, 1907, was 21.99.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Jan. 26, 1907, was 239, against 212 the corresponding week of last year, showing an increase of 27 deaths and making the death-rate for the week 20.70. Of this number 142 were males and 97 were females; 235 were white and 4 colored; 132 were born in the United States, 96 in foreign countries and 11 unknown; 51 were of American parentage, 152 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 67 cases and 4 deaths; scarlatina, 77 cases and 3 deaths; typhoid fever, 2 cases and 2 deaths; measles, 13 cases and 0 deaths; tuberculosis, 40 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 32, whooping cough 1, heart disease 40, bronchitis 6 and marasmus 1. There were 14 deaths from violent causes. The number of children who died under one year was 28; the number under five years 43. The number of persons who died over sixty years of age was 82. The deaths in public institutions were 71.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

Superintendent of School and Hospital for Crippled and Deformed Children. — It is announced that Dr. J. E. Fish, of Melrose, has received the appointment of superintendent of the new School and Hospital for Crippled and Deformed Children now building at Canton.

Death of an Army Nurse. — The death of Miss Elizabeth J. Dudley, of Jamaica Plain, at the age of seventy-nine, is announced. She served as nurse during the Civil War at the Military State Hospital at Manchester, N. H.

Pure Milk. — Dr. Charles Harrington, secretary of the State Board of Health, at a public lecture given Jan. 27, at the Harvard Medical School, expressed in no uncertain language facts regarding the procuring and storing of milk in the immediate neighborhood of Boston. He pointed out the filthy conditions under which a large portion of this essential food product is obtained, illustrating his remarks by lantern slides. The recent prevalence of scarlet fever was considered due to tainted milk. Such lectures should have a salutary effect in arousing public opinion.

Meeting of Health Officials. — About one hundred health officers from various parts of Massachusetts held their quarterly meeting at the Hotel Brunswick last week under the organization of the Massachusetts Association of Boards of Health. Dr. S. H. Durgin, of the Boston Board of Health, presided. Papers were read by Dr. J. W. Proctor, medical inspector for the State Board of Charity, on "Leprosy in Massachusetts," and by Dr. Austin Peters, State Cattle Commissioner, on "Rabies and Practical Methods of its Suppression."

Graduation of Nurses, Massachusetts General Hospital. — Graduating exercises were held in the new out-patient building of the Massachusetts General Hospital on the evening of Jan. 24 for a class of twenty-eight nurses, twenty three at the hospital in Boston and five completing their studies in New York. The Rev. John Hopkins Dennison made the chief address of the evening; Miss Dolliver, head of the training school, reported on the condition of the school, and Dr. H. P. Howard, superintendent and resident physician, also made brief remarks. The attendance was in the neighborhood of two hundred.

NEW YORK.

Diet Kitchen. — The annual meeting of the New York Diet Kitchen was held on Jan. 16. During the year over 200,000 patients, recommended by 33 hospitals, dispensaries and charitable organizations, have been the recipients of food supplies. On this occasion the principal address was made by Commissioner Thomas Darlington, who spoke particularly of the great improvement in the character of the milk supply of the city, which had in the last few years been effected by the work of the Health Department.

Education of Defective Children. — At a meeting of the Board of Education, held Jan. 9, a committee appointed last March, on the recommendation of Superintendent Maxwell, to investigate the feasibility of undertaking the education of the crippled, blind and deaf and dumb children of the city, submitted its report. This stated that the management of the East Side Crippled Children's School, in Montgomery Street, and the Madison Avenue School for Cripples had already been assumed by the Board of Education, and that there were several other similar institutions which it was desirable to have placed under the control of the board as soon as the trustees of these were willing. "If the state is under obligation and considers it good policy to educate a normal child," the report went on to say, "much more is it under obligation to educate as far as possible children who, at best, are a great burden upon their parents. The effort should be made to make these children happy, helpful and self-supporting. In the section lying east of the Bowery and south of Eighth Street, 672 deaf and dumb children have been found. It is probable that there may be 2,000 or more such unfortunate children in the city who are entitled to as much of an education as they are capable of receiving."

MOUNT SINAI HOSPITAL. — The annual meeting of the managers of the Mount Sinai Hospital was held on Jan. 13. The report of the secretary showed that out of 10,543 patients admitted during the past year, 4,713 were treated free. There were 647 private patients. The consultations in the dispensary department numbered 158,295. The total receipts of the year amounted to $347,839.84, and the expenses to $356,722.63 and the deficit of less than $9,000 was paid from cash in hand.

PREVENTION OF TUBERCULOSIS CHARITY ORGANIZATION SOCIETY. — The committee on the prevention of tuberculosis of the Charity Organization Society has just issued its annual report. While lamenting the fact that the attitude of the public generally towards the matter is still one of indifference, the committee expresses the hope that great and lasting benefit will result from the tuberculosis exhibitions which have been held, and are to be repeated, in New York and other cities. The report, in appealing to the public, says: "We seek your co-operation in carrying out a systematic and organized campaign of education, the object of which is to prevent the ravages of tuberculosis, a preventable disease, each year costing the state 14,000 lives and at least $30,000,000."

SANITARIUM FOR HEBREW CHILDREN. — The annual meeting of the Sanitarium for Hebrew Children, a Jewish fresh air charity, was held on Jan. 20, and the secretary's report showed that in the past season over 20,000 children and mothers had received treatment and care at the sanitarium at Rockaway Park, on the seashore and on the all-day boat trips. It was further reported that the new addition, a building with a capacity of about 175 beds, had been completed, at a cost of $41,000.

ALUMNI ASSOCIATION OF THE ALBANY MEDICAL COLLEGE. — The twelfth annual dinner of the Greater New York Alumni Association of the Albany Medical College was held on Jan. 24, with Dr. Maurice J. Levi presiding as toastmaster. Among the speakers was James W. Osborne, ex-assistant district attorney, who took occasion to speak in very high terms of the expert medical witness, stating that he was the most truthful man with whom he had had anything to do in the twelve years of his experience as a public prosecutor in New York. "There is a notion," he said, "which has impressed itself upon the mind of the general public to the effect that the expert medical witness is of little value because of the fact that he often disagrees with the medical man on the other side; and it certainly is true that he does not often agree with the physician on the other side except as to questions of fact. A hypothetical question is put to an expert witness by the lawyers for one side based upon a line of testimony favorable to that side, and another hypothetical question is put to another physician which is based upon a line of testimony favorable to the opposite side. The two physicians disagree as to their findings, but not as to their medical science, and it is for the jury to decide which hypothetical question was the proper one. I have always found that expert testimony was reliable. In fact, it seems to me impossible for a physician to tell an untruth when he has against him another physician who is competent."

Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
JAN. 12, 1907.

1. *ORTON, S. T., LOCKE, E. A. *The Pathologic Findings in Two Fatal Cases of Mycosis Fungoides.*
2. GOTTHEIL, W. S. *Endothelioma of the Skin.*
3. *TAYLOR, A. S. *Results from the Surgical Treatment of Brachial Birth Palsy.*
4. HALL, J. N., HOPKINS, S. D. *Landry's Paralysis.*
5. BYINGTON, J. F. *The Submucous Resection of the Nasal Septum.*
6. HURD, L. M. *The Submucous Resection of the Nasal Septum.*

7. Myles, R. C. *Subperichondrial and Subperiosteal Operations on the Nasol Septum.*
8. *Novy, F. G. *Trypanosomes.*
9. Peckham, F. E. *Treatment of Fractures of the Neck and Shaft of the Femur.*
10. Smith, M. A. B. *Treatment of Lobar Pneumonia.*
11. *Ford, J. H. *The Antitoxin Treatment of Tertian Malarial Infections.*

1. Orton and Locke describe two cases of mycosis fungoides with pathologic examination of the growths. In one case the cell type was that of a small round-cell sarcoma, but a comparison with other skin sarcomata showed these to have their origin deeper in the corium and pushing up a thin layer of connective tissue beneath the epidermis. In mycosis, on the other hand, the infiltration begins just beneath the epidermis and progresses both downward and upward. Melanotic sarcomata have a distribution and growth like mycosis. Syphilitic and tubercular skin lesions have an appearance not unlike the tumors in the fungoid stage, except that the infiltration suggests more a passive condition than an active invasion. In the second case, the tumors had disappeared, leaving only indurations when examined, and the histologic structure was that of a chronic inflammatory change. Inoculation experiments in the other case were negative.

3. Taylor has found, both experimentally and in a pathologic case that occurred under his observation, that the cause of brachial birth palsy is overstretching the roots of the brachial plexus which give way from above downward. This over-tension is caused only by pulling the head and shoulder away from each other, *i. e.*, pulling on the shoulders to deliver the after-coming head in breach cases, or pulling on the head when the shoulders are obstructed in vertex cases. As a result of this overstretching, there is a cicatrization, compressing the nerve fibers and preventing the transmission of impulses. This is not necessarily all in one mass, but may be distributed in several foci, a fact important to remember, since all the cicatrices must be removed to secure the best result. The after consequences are contractures producing the characteristic deformity and insufficient development of the bones. The only way to re-establish nerve conduction is to excise the cicatricial area and to make an end-to-end suture of the nerves. A comparatively early operation is needed to avoid undesirable deformity, and massage before and after operation is indicated for this purpose. Between six and two months would seem to be the proper time to operate, as the lesion is then well located; further experience may suggest even an earlier date. The damage to nerve roots in the order of severity is from above downward. The suprascapular is always damaged, and, as it controls the external rotators of the humerus, it should be carefully sutured to a good proximal nerve stump. The technique of the operation is fully described. Such post-operative palsies as may occur are soon recovered from. The article is fully illustrated.

8. Novy describes the organisms that go under the name of trypanosomes, gives what is known of their life history and transmission through insects, etc., and describes the diseases they produce. He does not accept Koch's views of the specific unity of many of the pathogenic trypanosomes, but recognizes eight pathogenic species for mammals, including the kala azar organism, the generic relations of which seem to be somewhat in doubt. Only two of these are pathogenic for the human species, the Tr. gambiensis, which causes the African sleeping sickness, and the Tr.? (Piroplasma) donovani, responsible for the kala azar disease of India, but these are formidable enough. The most formidable trypanosome infection of the domestic animals, the tsetse fly disease of South Africa, has become a much less serious matter since the extermination of most of the wild game of that region that harbored the parasite, the fly itself being only the passive carrier of germs. It is probable also, in Novy's opinion, that the same is true of the Glossina palpalis, the biting fly that transmits the germ of sleeping sickness which has lately depopulated whole regions of eastern Africa. The treatment of the severer forms of trypanosome disease, including those affecting man, is very unsatisfactory. Encouraging results, however, have been obtained with aniline dyes and arsenic in monkeys affected with sleeping sickness, though, save in one case reported by Dutton and Todd, treatment has been ineffectual so far in the human species. The paper is fully illustrated.

11. Ford reports the results of experiments made with the serum treatment of malaria. The animals employed were monkeys, indigenous to the Philippines, and goats, which were repeatedly inoculated with defibrinated human blood containing Plasmodium vivax. Of 20 patients suffering with benign tertian infection and treated by injections of defibrinated blood of these animals or of serum from the inoculated goats, 17 recovered without further medication, while 3 were apparently unaffected by the injections. Two cases of the quartan type were also uninfluenced, and the same method was later tried with 5 cases of estivo-autumnal fever, also with negative results. It would seem, therefore, that these experiments bear out Koch's opinion that immunity from one malarial parasite does not confer immunity against the other types. Control cases were observed which confirmed the results of the experiments, showing a very small proportion recovering spontaneously from the benign form and no results from the injections of normal goat serum. It would appear from this study that the successive inoculations of monkeys or goats with blood containing the Plasmodium vivax gives rise in those animals to an antitoxin which, when injected in adequate doses in human beings, may be followed by disappearance of the parasites from the circulation and disappearance of the symptoms of malaria. The antitoxin has apparently no effect on infections by other varieties of the malarial parasite than that from which it was derived. Ford suggests the advisability of similar studies in the case of yellow fever, especially in view of the observation of Marchoux and Simond that a temporary relative immunity can be conferred by the injection of the serum of a convalescent from yellow fever. An antitoxin for yellow fever might have a more definite value than one for malaria, since natural immunity is usually produced by a single attack of the former disease, while in malaria it develops much more slowly and with less certitude.

The American Journal of the Medical Sciences.

January, 1907.

1. *Mayo, W. L. *Principles Underlying the Surgery of the Stomach and Associated Viscera.*
2. *Thayer, W. S., Fabyan, M. *Paravertebral Triangle of Dulness in Pleural Effusion (Grocco's sign).*
3. Ashton, T. G., Norris, W., Lavenson, R. S. *Adams-Stokes Disease (Heart Block) Due to a Gumma in the Interventricular Septum.*
4. *Janeway, T. C. *The Pathological Physiology of Chronic Arterial Hypertension and Its Treatment.*
5. *Hamill, S. McC., and Le Boutillier, T. *Inorganic Late Systolic Pulmonary Murmurs in Infancy and Childhood.*
6 *Cushing, A. R., and Edmunds, C. W. *Paroxysmal Irregularity of the Heart and Auricular Fibrillation.*
7. Futcher, T. B. *Hemochromatosis with Diabetes Mellitus.*
8. *Riesman, D. *Acute Pulmonary Edema, with Special Reference to a Recurrent Form.*
9. *Lavenson, R. S. *The Nature of Aplastic Anemia and Its Relation to Other Anemias.*
10. Sailer, J., and Farr, C. B. *Studies in the Natural and Artificial Inhibition of Peptic Digestion.*
11. Eisendrath, D. N. *Acute Unilateral Septic Pyelonephritis.*
12. Adler, H. *Gastric Ulcer in Childhood.*

1. Mayo discusses the bearing upon gastric surgery of facts of "living pathology" as observed by himself in the course of operations and as revealed by the results of laboratory experimentation. He summarizes the process of digestion and absorption, mentioning particularly the absorption of solid elements of food by the jejunum and ileum, the absorption of water by the large intestines and cecum, the storage function of the cardiac portion of the stomach and the grinding function of the antrum. Gastric ulcers are in 80% of the cases prepyloric, situated in the antrum. Duodenal ulcers are more frequent than is generally recognized, forming 40% of all peptic ulcers. Cancer of the stomach occurs in the same position as ulcer,

and in 54 of 134 operated cases was found to have originated in the margin of an ulcer. The lymphatic glands of the stomach lie along the whole length of the lesser curvature, but only in the pyloric region of the greater curvature; thus in radical operations for cancer, even of the pylorus, the whole of the lesser curvature must be removed, whereas much of the greater curvature may be saved. The functions of the stomach are under reflex control, partly nervous, especially through the sympathetic system, and partly myogenic. Various causes may produce reflex disturbances of function which are not to be treated surgically. Pyloric spasm is a disorder of this class which has been observed in operations under local anesthesia, with symptoms simulating gastric ulcer. The contents of the fasting stomach are relatively sterile, but bacteria may easily descend from the mouth. Therefore care of the mouth is advocated. In peritonitis cases, elevation of the head and chest, so as to cause discharges to gravitate to the pelvis, has given remarkable diminution of mortality. The article contains many other such observations which cannot be included in this abstract.

2. Thayer and Fabyan summarize the literature upon the paravertebral triangle of dulness in pleural effusion, and report their own findings in 32 cases. This triangle of dulness, first described by Grocco in 1902, is found in cases of pleural effusion filling the angle between the vertebral column and the base of the lung *on the unaffected side*. Its third boundary is formed by a line which extends from the vertebral column at about the level of the upper border of the effusion downward and outward to the base at a variable distance from the median line. Most observers have confirmed the diagnostic value of this sign. The cause of the dulness is either pressure of the fluid against the vertebræ, or displacement of the contents of the posterior mediastinum. In the author's 32 cases the triangle of dulness was distinct in 30, indistinct in 1 case of small effusion and absent in 1 case of interlobar empyema. In the triangle there may be suppressed voice, egophony and coin sound. The dulness diminishes or disappears when the patient lies on the side of the effusion. The triangle is usually larger in the presence of right-sided effusions. It is concluded that the sign is remarkably constant and characteristic of fluid in the pleural cavity.

4. Persistent high blood-pressure, according to Janeway, in addition to its frequent occurrence, as is generally understood, in nephritis and in arteriosclerosis, occurs also in a clinical group of cases in which there is no evidence of renal involvement. Of 130 cases with systolic pressure of over 200 mm., 13% belonged in this category. The mechanism by which hypertension is produced is uncertain, but it seems probable that it is a compensatory process in renal insufficiency, tending to increase the flow of blood through the kidney, and in the cases of unknown origin possibly an effort to supply more blood to the brain. The preventive treatment of the condition is the treatment of chronic nephritis and of arteriosclerosis. To relieve symptoms when the disorder exists, digitalis and allied drugs are the chief reliance, in spite of high blood-pressure, since symptoms are due mainly to failure of the left ventricle. In emergencies the vasodilators (nitroglycerin, etc.) and venesection are useful. In cases with severe abdominal pain and headache, morphine has a strikingly beneficial effect. Hypertension, however, without symptoms, is no more to be attacked therapeutically than a heart murmur.

5. Hamill and Le Boutillier call attention to the fact that although most textbooks on pediatrics state that functional heart murmurs are rare in children, such murmurs are extremely common, especially late systolic murmurs audible in the pulmonic region. In eighty institutional children showing no manifestations of disease, this murmur was heard in 66%.

6. Cushing and Edmunds report a case of paroxysmal arrhythmia with marked acceleration of the heart. It is shown that the irregularity is due to irregular discharge of impulses and not to defects in the contraction of the ventricle, which appears to respond to impulses received. A similar form of irregularity in the dog's heart is described, observed under morphine anesthesia with the thorax opened. This is shown to be due to the ventricles receiving irregular stimuli from the auricle, which is in a state of fibrillation. This form of arrhythmia occurs in dogs occasionally from peripheral irritation, and it is probable that this gives rise to reflex inhibition of the vagus center, which causes auricular fibrillation. The suggestion is made that in the patient described the arrhythmia was due to auricular fibrillation from inhibition of the vagus center.

8. Riesman calls attention to the importance of acute pulmonary edema, a disorder which has not received sufficient recognition. It comes on rapidly without any apparent exciting cause and is often fatal. Recovery is frequent, but there is a marked tendency to recurrence. Of the clinical causes, arteriosclerosis and cardiac and renal disease are the most important. In its production vasomotor disturbances and a disproportionate activity of the two ventricles are the chief factors. The principal symptoms are agonizing dyspnea, cyanosis, cough, expectoration of a frothy, albuminous fluid, and profound prostration. Over the lungs, especially in the upper portions, the characteristic moist râles of edema are heard. The most valuable remedies are bleeding, dry cupping and cardiac stimulants.

9. Lavenson has collected ten cases (one original) of the disease described as aplastic anemia. This disease, he concludes, is a variety of pernicious anemia, but is distinguished by the following characteristics: rapidly fatal course, low color index, absence of megaloblasts and usually of normoblasts. At autopsy the bone-marrow is not red as in pernicious anemia, but is intensely pale and fatty, and shows no signs of blood regeneration.

The Lancet.
Jan. 5, 1907.

1. Bland-Sutton, J. *Removal of the Gall Bladder. (Cholecystectomy.)*
2. *Salaman, R. N. *The Pathology of the Liver in Cardiac Disease and its Clinical Lessons.*
3. Clarke, W. B. *Intraperitoneal Bleeding from a Uterine Fibroid, with Acute Distention of the Abdomen; Abdominal Section; Removal of the Fibroid; Recovery.*
4. Kidd, F. S. *Hyperplastic Tuberculous Pericolitis.*
5. Cattley, R. *The Localization of Potassium in Malignant Tumours.*
6. Dimmock, A. F., and Branson, F. W. *Some New Methods for the Determination of Uric Acid, including a Simple Clinical Process.*
7. *Box, C. R. *Bronchiectasis in Childhood, with Some Observations on the Condition Known as Honeycomb Lung.*
8. Bennion, J. M. *Some Observations on the Treatment of Epilepsy in the Insane with Strontium Bromide.*
9. Beale, J. F. *An Outbreak of Typhoid Fever due to Eating Clams from a Polluted Source.*
10. Boston, L. N. *Absence of the Uterus in Three Sisters and in Two Cousins.*
11. Koike, P. *A Short Review of the Results Achieved by the Japanese Army Medical Service during the Russo-Japanese Campaign of 1904–05.*

2. From histological examination of over sixty cases, Salaman divides the lesions of the liver in cardiac disease into three classes: (1) Engorged liver. (2) Nutmeg liver, where there has been a prolonged course of back pressure of more or less equable degree. Such livers show some distention, more or less fat, and always some fibrosis. (3) The cirrhotic nutmeg liver. Here fibrosis, portal, hepatic and central, is found strongly developed. From a series of experiments on livers normal and otherwise as to how much water they would hold at given pressures, he concludes: (1) That under conditions of cardiac stress the liver will draw off a large volume of blood from the right auricle; but (2) that often chronic fibrous changes take place which lessen this capacity, and (3) by increasing the force of the liver's recoil, prevents its use as a reservoir in which blood may accumulate. (4) In complete compensation there is no engorgement or back pressure. (5) While the liver may act as a sponge safety-valve to the heart, continued use of this safety-valve action leads to its own abolition. In connecting these facts and clinical observations, especially as regards ascites, he puts this

last into two classes: (1) Associated with acutely engorged livers of type 1, fluid bloody, small in amount and often associated with hemorrhages and congestion of the intestines, and (2) large in amount, clear, of low specific gravity, associated with the cirrhotic type of liver. He believes the liver to be a factor of the greatest importance in formation and course of ascites in cardiac disease, but not the only factor.

7. Box believes that the so-called honeycomb lung found in children and less often in adults may be due (1) to a true bronchiectasis; (2) a dilatation of the atria beyond the bronchi, atriectasis, or (3) focal areas of necrosis of lung tissue due to bronchopneumonia in childhood. The original process he believes in nearly every case to be a bronchopneumonia, and that these honeycomb lungs are the real antecedents of the cases of chronic bronchiectasis of later life. In some cases, where the inflammatory process has subsided, a diagnosis of honeycomb lung is impossible during life; in others the signs and symptoms are those of bronchopneumonia; while in still other cases there is retraction of the lung and of the heart to that side, clubbing of the fingers with cough, profuse expectoration, dyspnea, etc. The general nutrition is often good, and repeated examinations of sputum show no tubercle bacilli; cases are often called tuberculous notwithstanding; others, especially when the cavities are not draining properly, are mistaken for empyema. Signs in the lungs vary greatly as the cavities are full or empty. Routine emptying of the cavities by inverting the patient night and morning should be employed. Creosote and other antiseptics give good results. Surgical intervention is not wise.

British Medical Journal.

Jan. 5, 1907.

1. Cheyne, W. W. *The Treatment of Recent Fractures.*
2. *Collier, W. *Functional Albuminuria in Athletes.*
3. Calwell, W. *Age Incidence of Gastric Ulcer in the Male and Female.*
4. Bond, J. W. *Preliminary Laryngotomy.*
5. Butlin, H. T. *Preliminary Laryngotomy.*
6. Snell, S. *An Inquiry into the Alleged Frequency of Cataract in Bottle Makers.*
7. Rankin, R., Mackay, E. C., Lunn, J. R., Cranke, J. *Achondroplasia, with Notes on Cases.*
8. Robinson, H. B. *On the Use of Taxis for Hernia and on Some Complications that May Arise during and after its Employment.*
9. Graham, G. H. *Fracture of the Fifth Metatarsal Bone.*

2. In an examination of the urine of 156 men training for boat races, Collier found albumin in the urine in 57%. After a hard, tiring row every member of the university crew showed albumin. He believes that just as a certain amount of cardiac hypertrophy is normal in athletes, so is a certain amount of physiological albuminuria. He does not consider it necessary to cut down on the exercise as long as the general health remains good.

The Practitioner.

January, 1907.

1. Allbutt, T. C. *Influenza.*
2. Powell, R. D. *A Note on Some Clinical Aspects of Influenza.*
3. *Broadbent, W. *Note on the Therapeutics and Prophylaxis of Influenza by Quinine.*
4. Duckworth, D. *A Note on a Possible Source of Influenza.*
5. Moore, J. *Thoughts on Influenza.*
6. *West, S. *Some General Considerations on Influenza.*
7. *Mackenzie, H. *The Respiratory Complications of Influenza.*
8. Thomson, St. C. *Influenza as it Affects the Nose and Throat.*
9. *Dalton, N. *Influenza in Relation to the Digestive Organs.*
10. *Armour, D. *Influenza and Appendicitis.*
11. *Cowan, J. *Cardiac Complications of Influenza.*
12. *Harris, W. *The Nervous System in Influenza.*
13. *Shaw, T. C. *The Psychoses of Influenza.*
14. Lyle, H. W. *Ocular Manifestations Accompanying Influenza.*
15. *Cheatle, A. H. *The Aural Complications of Influenza.*
16. Emery, W. D. *The Micro-Organisms of Influenza.*
17. Newsholme, A. *Influenza from a Public Health Standpoint.*

3. Broadbent has found quinine to be the best remedy for influenza. In fulminating attacks, quinine hydrobromate subcutaneously has proved of great value. During any epidemic he orders 2 gr. of quinine to be taken every morning as a prophylactic measure. His results under this treatment have been very good.

6. West discusses the disease from a general point of view, with especial reference to the history of its epidemics. The post-febrile depression following an attack is very characteristic and one of the most distressing symptoms, requiring very careful treatment. Its effect on the heart shows itself in two forms as regards pain,— one a simple neuralgia, distressing but not serious; the other a real angina, often occurring in the young, of a very serious import, leaving the heart for months afterwards in an absolutely crippled condition, but with ultimate complete recovery.

7. The mucous membrane of the trachea is especially liable to infection by the influenzal organism, giving rise to hoarseness and a distressing, hacking cough which may last for months. There are usually small areas of consolidation, which often eventually give rise to abscesses or bronchiectasis. Lobar consolidation is not infrequent; in these cases resolution is slow; at the bases of the lungs there are often heard sticky râles. These are especially characteristic. Pneumonia is met with as a complication in 5% to 7% of cases and is fatal in from 17% to 43.9%. The patient should be put to bed at once with windows wide open and the temperature not more than 62°. The writer mentions various drugs, but lays special emphasis on the value of fresh air and proper hygiene.

9. Although many cases of abdominal "grippe" have been reported, it is extremely difficult and even impossible to prove that the condition is definitely due to the influenza bacillus. There are, however, in certain influenza attacks, various symptoms related to the gastro-intestinal tract, such as loss of appetite, nausea and vomiting. In other cases the attack may seem to be entirely directed at the alimentary tract. In these cases the organism is probably in the blood and acts directly, or through its toxins, on the stomach and intestines. There may be a simple catarrh or an inflammation simulating typhoid, cholera or ulcerative colitis. Dalton gives illustrations of these various types. The treatment is usually expectant; both antipyretics and purgatives must be used with caution.

10. In every epidemic of influenza there seems to be a large increase in the number of cases of appendicitis; the complication occurs during or shortly after the attack of grippe. This fact is probably due to the lowering of resistance of the intestinal mucosa by the toxins of the influenza organism, thus increasing the chances for the development of an attack of appendicitis.

11. Endocardial and pericardial complications are rare in influenza; it is the myocardium which is oftenest attacked. The danger from this condition is immediate and not remote as in rheumatism. In those previously healthy, cardiac symptoms are not alarming, but in fat people and in alcoholics they may prove serious. Strychnia is the important drug; alcohol is often useful, but large doses are dangerous.

12. Next to diphtheria there is no acute disease which affects the nervous system so severely as does influenza, and there is no other disease which has such varied nervous sequelæ. This very fact may lead to error by attributing too many nervous phenomena to an invasion of Pfeiffer's bacillus. At the onset of the disease the chief symptoms are those of the nervous system, pain,— neuralgia, cramps, and headache. A very severe frontal headache accompanied by pain in the back of the neck and at the back of the eyeballs is almost pathognomonic of influenza. Sudden syncopal attacks are apt to occur at the outset; tachycardia and dilatation may develop. Various ocular complications have been recorded,— optic neuritis, retinitis and even meningitis. Paralysis of one or more of the eye muscles sometimes occurs, and occasionally complete temporary blindness. Myelitis, herpes

zoster, multiple neuritis, and numerous other complications are alluded to.

13. Shaw discusses the psychoses following influenza, quoting from the various authorities on the subject and giving illustrative cases. Melancholia is the chief form, occurring twice as often as all other forms put together. The mental disturbance usually shows itself immediately after the acute influenzal attack; if treated properly, as its importance demands, the prognosis is good; if neglected, the condition may become an obstinate and serious one, In Paris, in 1889, the percentage of suicides increased 25%, probably owing to the post-influenzal depression so prevalent.

15. Influenza may attack the middle or the internal ear. The middle ear infection is due to a direct extension through the Eustachian tube and may be suppurative or catarrhal. The catarrhal forms are acute or chronic and are not especially characteristic; the suppurative forms, however, are of extreme violence, sometimes leading to rapid destruction of bone. In most cases recovery is rapid. Antral empyema, mastoiditis and meningitis may result, or the pus may burrow under the fascia deep into the neck. Involvement of the internal ear is due to an extension from the middle ear. Treatment in all cases should be vigorous and prompt.

Deutsche Medizinische Wochenschrift, No. 1.
Jan. 3, 1907.

1. *Fränkel, A. *The Treatment of Pleuritic Effusions.*
2. Jürgens. *Diseases Resembling Typhoid.* (Continued article.)
3. Pels-Leusden. *Tumors of Tendons in Children.*
4. *Landois, F. *Chronic Tuberculous Meningo-Encephalitis.*
5. Pfister, M. *The Internal Treatment of Appendicitis.*
6. *Bleibtreu, M. *The Influence of the Thyroid Gland on the Development of the Embryo.*
7. Jacobi, C. *The Mechanical Effect on Human Beings of Lowering of the Atmospheric Pressure.*
8. Pick, A. *Acoustic and Optic Motor Sequels of Convulsions.*
9. *Engel, K. *Injurious Effects of the X-ray Resulting from its Use as a Therapeutic Measure.*
10. Cohn, P. *A Case of Para-urethral Gonorrhea.*
11. Laqueur, A. *Oxygenated Baths.*

1. Fränkel devotes most of his article to the consideration of when and how to tap in pleuritic effusions. In every case aspiration should be preceded by an exploratory puncture with an ordinary hypodermic syringe, but with a somewhat longer needle than that usually provided. This serves the purpose of localizing the spot where fluid can be obtained, and saves unnecessary pain to the patient and possible laceration of the lungs. It is well to wait a day or two before proceeding to aspiration, as occasionally after exploratory puncture the fluid becomes absorbed; the reason for this is not known. For the diagnosis of encapsulated effusions, the exploratory puncture is indispensable. For aspiration, the old Potain apparatus is the most convenient, but siphonage is usually satisfactory and is less expensive. Fränkel advises aspiration in all cases as soon as the fluid reaches the spine of the scapula behind or the third rib in front; also in lesser effusions which show no tendency to become absorbed. An injection of morphine should be given before the operation to prevent cough. It is better never to remove more than two and one-half liters (quarts) at one sitting. The aspiration is to be stopped at once if paroxysmal cough or pain in the chest occurs, or if the pulse becomes weak; a neglect of this precaution may be followed by edema of the lungs with albuminous expectoration. Aspiration favors the absorption of the remaining fluid, probably because it removes the pressure from the lymph vessels; it also causes active hyperemia of the pleura, which probably aids in overcoming the inflammatory process. Absorption may be facilitated by the use of diuretin or potassium acetate, but these drugs are effective only after thoracentesis. Salicylates have never in Fränkel's experience exerted any effect on the effusion, but they may be tried in rheumatic cases. In convalescence, breathing exercises and outdoor life are recommended as a means to expand the lungs and stretch adhesions. [Early tapping in smaller effusions probably hastens recovery and can do no harm.]

4. Landois reports a case in which there was a localized chronic tuberculous meningitis which gave rise to epileptiform convulsions, and was apparently cured when the patient suffered a fall on the back of the head. Soon after this fall, the man developed symptoms of meningitis, of which he died seven weeks after the injury. The autopsy showed a chronic fibroid process localized in the parietal region of one side, apparently nearly healed. As the cause of death, there was found a fresh miliary tuberculosis of the meninges. The writer assumes that the trauma lighted up the old focus in the brain, and thus was the occasion of the fatal outcome.

6. Bleibtreu and Nerking have found by experiments on rabbits that the ingestion of thyroid extract causes sterility, or death of the fetus. In a few cases the embryos were found much diminished in size and shrunken, as if in the process of absorption. Similar results have been obtained by the use of x-rays, and of injections of cholin. It has been shown by Nerking that thyroid extract splits up mucin, and it is possible that the deleterious effects of thyroid extract on the embryos is due to its action on mucin, a substance necessary to the building up of the growing organism.

9. The injurious effects of the x-ray may be considered under two heads: (1) Those due to its direct action, such as dermatitis, atrophy of the testis and ovaries; and (2) toxic symptoms, especially fever, diarrhea, prostration, acute nephritis, and a rapid fall in the number of red cells. In several cases the use of the x-ray in leukemia has been followed by these symptoms and death has resulted in a short while. They are probably due to toxins set free by the destruction of leucocytes. Sudden death has also occurred in some cases, for which no other cause could be assigned than the x-ray. Great caution is, therefore, necessary in the use of the x-ray, for some patients are much more susceptible than others. Cases of leukemia should not be treated indefinitely after improvement has taken place, but the use of the x-ray should be omitted for a while and the patient kept under observation.

Münchener Medizinische Wochenschrift, No. 1.
Jan. 1, 1907.

1. Pfaundler, M. *The Nature and Treatment of Disturbances of Nutrition in Infancy.* (Continued article.)
2. Soltmann, O. *The Infant Mortality in Hospitals.* (Continued article.)
3. *Schlossmann, A. *Statistics on Infant Mortality in Their Relation to Prophylaxis.*
4. *Esser. *A Consultation Station for Mothers, and the Distribution of Milk for Infants in Bonn.*
5. Doerfler, H. *The Care of Infants in Weissenburg.*
6. Fraenkel, C. *The Demonstration of Toxin in the Blood in Diphtheria*
7. *Klapp, R. *Air Massage.*
8. Krauss, W. *The Relations of the Orbit to the Pterygo-Palatine Fossa.*
9. Burkhardt and Polano. *Filling the Bladder with Oxygen to Facilitate Cystoscopy and Radiography.*
10. Kromayer. *The Treatment of Gonorrheal Posterior Urethritis by the General Practitioner.*
11. Isemer. *Two Cases of Aural Vertigo Cured by Operation.*
12. Mann, A. *The Treatment of Hemorrhages from the Stomach and Intestine by Means of Gelatin.*

3. Schlossmann points out that the reduction of the infant mortality, which equals 25% in some parts of Germany, can only be accomplished by a study of the local conditions in each city. A more thorough instruction of students in pediatrics will accomplish something; most important are an extension of the practice of breast feeding and the providing of pure milk for the poor. A good deal may be expected from trips into the country during the hottest part of the summer, if carried out on a large scale.

4. Esser describes the consultation station for mothers in Bonn, which is modeled on the well-known *Consultations des Nourissons* in Paris. It is required that all infants who are boarded out shall be brought here once a

month for inspection, and mothers are given advice as to the care and feeding of their children. The city also supplies *gratis* to the poor a pure modified milk which is furnished ready for use in four strengths. A written prescription from a physician is required.

7. Klapp describes a new method of physical treatment which he calls air massage. It consists of a strong current of air which is directed against the desired part of the body by means of a nozzle. It has much the same effect as manual massage, but differs from it in that there is no friction. If a current of cold air be followed by one of hot air, active hyperemia is also produced. Good results are claimed.

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Miscellany.

THE USE AND ABUSE OF SODIUM BICARBONATE.

In the whole range of drugs in common use there is, perhaps, none the pharmacological value of which is considered less open to question than sodium bicarbonate. It has enjoyed a wide vogue for many generations in cases of gastric pain and hyperacidity of the stomach. It is important, therefore, to notice in the *Bulletin des Sciences Pharmacologiques*, 1906, No. 10, a monograph by Dr. Léon Meunier in which the value of this classic remedy in allaying gastric pain is discredited. Dr. Meunier states that the action of the drug is generally explained in the following way: Gastric pain is due to an excess of hydrochloric acid, which causes no inconvenience during digestion owing to its absorption by the food. But when the stomach is empty the acid begins to exercise an irritating action upon the sensitive nerves of the mucous membrane. The acid is neutralized and as a result the pain is removed by the administration of bicarbonate of sodium at an interval of two, three, or four hours after a meal. Having doubts as to the validity of this theory Dr. Meunier set himself to investigate both clinically and chemically the part played by the drug. He found that in nearly every one of sixteen cases the most severe pain was experienced when the hydrochloric acid in the stomach was at a minimum. As bicarbonate of sodium was uniformly successful in relieving the pain Dr. Meunier was led to attribute its beneficial action not to a mere neutralizing effect, but to the production of carbon dioxide which exerts a calmative effect on gastric pain. The acceptance of this hypothesis suggests the unsuitability of administering sodium bicarbonate alone as a source of carbon dioxide, since its therapeutic action is proportional to the quality of hydrochloric acid present in the stomach and is liable, therefore, to great variations. Moreover, the saturation of the hydrochloric acid by the sodium salt retards the progress of gastric digestion, as pepsin acts only in an acid solution and it further retards intestinal digestion, as the acidity of the gastric juice has been shown by Pawlow to be the specific excitant of the pancreatic gland. This drug may thus reduce a patient to a state of alkaline cachexia which led Trousseau to utter the dictum: "The abuse of alkaline drugs has done more harm than the abuse of mercury." Dr. Meunier suggests that it is more rational to produce carbon dioxide in the stomach by means of tartaric acid and a mixture of carbonates, so chosen as to evolve the gas slowly and continuously without modifying the acidity of the gastric juice. The tartaric acid is prescribed in 1 gm. powders and the alkaline powders contain sodium bicarbonate 0.4 gm., calcium carbonate 0.3 gm. and hydrated magnesium carbonate 0.2 gm. The patient is directed to add an acid and an alkaline powder separately each to half a glassful of water and when the pain commences, to take alternately tablespoonful doses of the acid and alkaline draughts. Dr. Meunier has found that gastric pain is most readily relieved by this treatment, whereas the administration of the alkaline draught alone is much less efficacious. From clinical experience he concludes that the carbon dioxide acts as a sedative by accelerating the evacuation of food from the stomach. — *London Lancet.*

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STRAUSS'S "SALOME" FROM A MEDICAL STANDPOINT.

A physician, who is presumably a professor or teacher at either the Polyclinic or Post-graduate Medical School, but does not give his name, has published in the New York *Times* a scathing condemnation of Strauss's "Salome," after being present at its first performance. It is, in part, as follows: "To-night there was presented at the Metropolitan Opera House an opera, 'Salome,' which, in my judgment, is the most serious reflection upon the taste and morals of this community, or of the persons constituting the part of this community which supports the opera, that has ever been made. I am a man of middle life, who has devoted upward of twenty years to the practice of a profession which necessitates, in the treatment of nervous and mental diseases, a daily intimacy with degenerates (using that word in its biological sense to designate those who do not conform to the moral, mental and physical standard to which the position we have reached in evolutionary progress entitles them), so that I may be presumed to have some familiarity with the subject; more particularly as I essay to teach its recognition and significance. Therefore when I say, after deliberation and a familiarity with the emotional productions of Oscar Wilde and Richard Strauss, that 'Salome' is a detailed and explicit exposition of the most horrible, disgusting, revolting and unmentionable features of degeneracy (using the word now in its customary social, sexual significance) that I have ever heard, read of, or imagined, it may be assumed that I have some qualifications that entitle me to sit in judgment upon it. It portrays in the most graphic and explicit way, by appeal through those seductive avenues, the senses of hearing and sight, the consecration of perversion, lust and murder. It depicts a subject that I hesitate to define and outline or to discuss the significance of, even to my classes, which are made up of mature men and women, all of whom have had years of experience in the practice of a profession which has made them sympathetic with those who are burdened with abnormality, moral or physical." On account of its objectionableness, the owners of the opera house have requested the withdrawal of the work.

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Correspondence.

LETTER FROM PARIS.

[*From our Special Correspondent.*]

THE AUTOMOBILE AS A THERAPEUTIC AGENT.

PARIS, Jan. 11, 1907.

Mr. Editor: Time was when the American chryso-aristocrat came to Paris to lead the cheerful life. Faultlessly overdressed, his hard features clean-shaven and a huge cigar stuck well into one angle of his mouth, he descended on this resourceful metropolis. Voisin's and the Ritz gave him every opportunity for laying a solid foundation for future troubles of one description; while Maxim's and the Moulin Rouge furnished the pabulum adapted to his mental capacity, and at the same time supplied occasions for the acquirement of troubles of another description.

But frequent repetitions of dinners of pressed duck cooked over a brushwood fire, followed by choreographic evolutions of dames of the *Nini-patte-en-l'air* variety among the empty champagne bottles on the table, finished by wearing out the novelty of these attractions, so that our neo-plutocrat had begun to be bored. It was at this psychological juncture that salvation appeared in his visual field in the form of a comet of the first dimensions — the automobile!

Never were two objects better suited to each other than this type of man and the high-speed motor car. Talk about *Wahlverwandschaften,* — these two loved each other at sight. Here was something new and big, that could go like Sheol, that cost so much money that most people were naturally barred, in which he could show off to his heart's content, and about which he could brag eternally; for a man can always find a gallery for a racing motor; few things give the public an idea of such suppressed energy and endless force as a big car standing quivering and exploding in front of a hotel, impatient to be off. Now to be lord and master of such a machine, to stroll with due deliberation up to it, surrounded by the gaping crowd, get aboard, and with negligent movement of the toe start this mass of potential destruction quietly going and in a few moments be rushing along the highway with the velocity of an express train, was an experience that warmed the very cockles of his 4 horse-power heart.

Hence comes that the classic resorts that once sheltered this man's playful gambols now know him no longer. Wrapped in coat of skins, with face-shield and a heavy cap, he spends his time on the fine French *chaussées.* Doing what? Seeing how fast he can get from one place to another.

He doesn't care much where he is, so long as he has a good, straight, level road before him with lines of poplars at the sides, and he is getting over the ground. The country? What matters that to him; distances and speed are his only interests. Were it not for formalities and money deposits at frontiers he would very likely often not even know what country he was in. It is not the fact that between Paris and the Riviera there are places of interest to see: the Loire, Savoie, Provence, etc., that he takes into account: merely the detail that he did the trip in thirty-five minutes less time than the last Willie that went over the ground on a racer.

In the evening at the inn his conversation is of shop: kilometers, horse-power, gear, tires, hill-climbing powers and number of dogs killed. About this last item he is very particular, and never fails to mention it.

With him generally goes a *chauffeur,* a clever French or German, always of course "the best mechanic in the works the car came from, and only permitted by the management to enter his service as a mark of signal favor" (which means that the agents have taken the measure of their client and rely on the chauffeur to get his patron to buy each new model in succession as it is put on the market). This mechanic, to whom he pays fabulous prices, is far too good to do any work, swindles his *Monsieur* in royal fashion over all the bills, and looks on him with the most abysmal contempt for his complacent gullibility.

But you will be wondering to what all this may tend. Well, it tends to a good deal more than may on the surface be apparent. The type we have been describing is a common and, particularly to his compatriots, a highly offensive one. But other people motor, too, and in a more sensible fashion. The changes that the explosion motor has wrought in the habits and lives of a certain portion of the population are most remarkable and well worth the close attention of medical men, and of American physicians in particular. The motor car is more than a means of locomotion, more than a species of reformatory for the bum-element above mentioned; its hygienic aspect is considerable and far-reaching, and it is besides a therapeutic means of the very first order.

A French physician recently published an article on the medical aspects of motoring, in which, after going over a good many of the ills to which the flesh is heir, he examined *seriatim* the question as to whether patients with these various disorders should be allowed to motor. But it would seem preferable to leave such details to the physician, to decide in each case on its particular merits. Whether a patient with tuberculosis, heart-disease, or diabetes is to motor is a question for that particular person's medical adviser, and not for the laying down of rules in advance. What interests us are the general aspects of the subject.

Motoring, to be of use medically, presupposes a good car and good roads; without these it can quite safely be ruled out beforehand. A retired business man from the West, to whom the special merits of motoring for unoccupied men like himself were being unfolded, replied that he had tried it, but had given it up and sold his machine. "Why?" "Because I saw that what little chance I have for salvation would soon be irretrievably lost if I kept at it," from which it was inferred that American cars and western roads may not be above improvement.

Good roads and a good machine, then, being granted, the effects to be derived from motoring depend on a certain number of factors, of which the following appear to be the most salient: Whether you drive yourself or are driven; whether you sit in the open in front, or protected behind, or even inside; the rate of speed at which you habitually go; the length of your trips; the climate of the region where you motor, and the season of the year. No great amount of reflection is required to realize that in these elements we possess a scale of very ample dimensions, as regards the results which a discerning physician can obtain by skilfully varying his combinations of them.

It stands to reason that one class of people should never drive under any circumstances whatever: those with whom there is any possible question of epilepsy. Furthermore, persons with any kind of serious organic disorder, and particularly cardio-vascular cases, will certainly be well-advised in not attempting to drive themselves. For they must bear in mind that in motoring there is always hanging over them the possibility of a sudden and violent emotion: the danger of collision, of an accident to the machine with overturning, and of running over something or even somebody. Such an emotion might easily prove fatal. But there seems less objection to allowing a certain proportion of such cases to be driven by other people, and in particular by careful chauffeurs.

These classes, then, being set aside, which are those for whom motoring may seem particularly suitable?

A large division of the well-to-do occurs to the mind at once, — those who need an occupation; those who are wearied in the pursuit of means of killing time; those whose ordinary life consists in high living and low thinking; those who have too little to do and too much money to do it on. We are all familiar with the sympathetic tatterdemalion known as "Weary Willie." His fatigue, however, congenital and only muscular, is a mere airy trifle, not to be for an instant compared with the awful *acquired mental* fatigue of the leisure classes. For such persons as these motoring provides that foundation of all things, an occupation; an occupation that will absorb a large part of their time and energy, one that they are not apt to tire of soon (unless they have bad luck right at the start with a defective machine or a rascally chauffeur), and one which they will find very instructive, provided nature has furnished them with the intelligence necessary for that purpose.

Next, for the idle man about town, late riser, leading a confined life, the diner at clubs or with friends who keep chefs, the frequenter of theaters and functions, the candidate heading straight for gout, dyspepsia, spas, obesity and a bald head, — motoring is a godsend. It transforms his life and gets him away from all these pitfalls, out into the open air and to a simple mode of life, to activity and country inns, to early hours and a good, tired sleep. It is true that some people have objected to motoring as necessitating long periods of immobility and giving the owners of cars an aversion to any form of exercise other than that of being whirled along at sixty miles an hour. But if the truth were known, and a motor man were to total up at the end of a season, we should find that the amount of actual footing done by this class is larger than any one imagines, — walking to the nearest village, when not actually helping push the car there! Plenty of motoring is a Providence for these men, whose figures will remain slim thereby and their days long in the land that gave them birth or in some other land.

In tubercular cases, when the process is not in activity and there is no fever or hemorrhage, with patients where the reactive power is well in hand, the pulse does not rise at every pretence and the daily extremes of temperature are normal, motoring ought to constitute a delightful form of open-air treatment, incomparably preferable to the sanatorium. Such a patient is quiet in a car, need have no more motion or emotion than is advisable, has variety and occupation, and, above all, is removed from the depressing herding-together with other tubercular patients in one place with the never-ceasing discussion as to temperature, weight and cough, and the dreary contemplation of the pocket-spittoon. (N. B. It would be an interesting question to know how many tubercular patients have been sent to a premature grave by the sickening thought and sight of this deplorable commodity.)

But the class of people that, before all others, seems particularly indicated as likely to derive benefit from motoring is that of the neurotics, the modern *détraquées*, the large body of our people, particularly women, victims to what has been called, not unhappily, "nervous prosperity." And this is why the subject seems especially worthy of the attention of American physicians.

To these people motoring has nothing but advantages to offer: the attention is diverted to outside objects, and self-concentration becomes less assiduous; in the place of pains and aches they soon begin to talk of speed and kilometers. The continuous douche of cold air to the face, with its stimulus to the nerve terminations (a more energetic action than would be believed *à priori*) does marvels therapeutically and is far more agreeable than the cold water spray or ice sponging of the spine, held in such high favor by Charcot and his followers. All the subordinate conditions in such cases improve dyspepsia, anemia and defective power of sleep, and the transformation effected by a trip of only a few weeks' duration is sometimes absolutely remarkable. In a word. these patients have been supplied with a means of being treated that is at the same time efficacious and interesting.

I have now seen a sufficient number of these neurotic cases treated in this manner to remove all doubts in my mind on the subject; but one of them in particular has made a lasting impression on me. It is that of a lady of a certain age, forty-five to fifty, with no organic trouble whatever; she was merely a woman frail in both body and spirit. When I first knew her she was a confirmed hypochondriac, spending most of her time in her room treating her various conditions and symptoms and thinking of little outside of herself. But one day an energetic friend got her to go out in her car, though under vigorous protest and in fear of her life. This trip, which went better than she expected, was followed by others; the woman began to take an interest in motoring, and finally ended by getting a car for herself.

That patient is now an absolutely different person. She is out and all over the country. Her condition might almost be termed robust, for her. She hardly ever sends for a physician. Her evenings are spent poring over maps, planning trips and running a little wheel along roads to measure the distance between towns, to see whether with her speed she can be at this place for lunch and at that for dinner; in short, she is a transformed creature. She has now an interest in life, and although I do not tell her so, I do not despair of seeing her run her own car before I die at the rate she is now progressing.

Having thus glanced at motoring from the patient's point of view, I will close by an anecdote of its effects on a physician.

A *confrère* I know here recently attained that degree of prosperity or bluff at which a physician sets up a car of his own; and not long afterwards I met him looking fairly satisfied with himself; as a matter of fact he was walking along a quiet street smiling and rubbing his hands. On my inquiring into the cause of this unseemly hilarity in a public place, he replied, "You would never imagine what I was thinking of, so I'll tell you. For the first time in my life I am doing full justice to my patients, now that I have my own motor car. For formerly when I used to go around in one of those public taximeter motor-cabs, while I was upstairs with my patients, I had constantly before my eyes the registering dial on the cab downstairs on which the needle was careering around at frantic speed piling up the francs; so that I hurried through my visits as best I could and was off down again four-at-a-time. But now that there is no registering dial in question *I take my time and do my work properly!*"

"Spectator."

HE WAS AN ENGLISHMAN.

Boston, Jan. 25, 1907.

Mr. Editor: In the excellent paper entitled "The Medical Knowledge of Shakespeare," from the pen of Dr. Getchell, that has recently appeared in the Journal, there occurs a rather serious error which I beg leave to correct. On page 111 of the Journal, Dr. Getchell says, "In a book of John of Gatisden, an Italian medical authority of the fourteenth century, the decay of the teeth is ascribed to a humor or worm."

Dr. Getchell undoubtedly refers to John of Gaddesden (not Gatisden), the author of the famous *Rosa anglica, seu Practicae medicinae a capite ad pedes.* He is also known by the name of Johannes Anglicus. His book appeared between 1305 and 1317, and was published in 1492, at Pavia, at least I am aware of no earlier printed edition.

He was an Englishman and not an Italian. He received his education at Merton College, Oxford, and was physician to the court at London. Chaucer speaks of him in the highest praise.

Very truly yours,
Charles G. Cumston, M.D.

AMERICAN PHYSIO-THERAPEUTIC ASSOCIATION.

Cincinnati, Ohio, Jan. 7, 1907.

Mr. Editor: Will you kindly announce that physicians who are interested in the study and legitimate practice of the physical (drugless) therapeutic methods, notably electro-therapy, photo-therapy, mechano-therapy, hydrotherapy, suggestion and dietetics, are invited to join the American Physio-therapeutic Association. Address the secretary, No. 8 W. Ninth Street, Cincinnati, Ohio.

The officers for the ensuing year are: President, Dr. H. H. Roberts, Lexington, Ky.; Secretary, Dr. Otto Juettner, Cincinnati, Ohio; Treasurer, Dr. George H. Grant, Richmond, Ind.

Very truly yours,
Otto Juettner, M.D.,
Secretary.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JAN. 19, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,586	364	Quincy	9	3
Chicago	638	189	Waltham	10	3
Philadelphia	—	—	Gloucester	4	1
St. Louis	—	—	Pittsfield	7	—
Baltimore	211	51	Brookline	8	1
Cleveland	—	—	North Adams	1	0
Buffalo	—	—	Chicopee	5	0
Pittsburg	—	—	Northampton	8	1
Cincinnati	—	—	Medford	10	1
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Hyde Park	2	1
Providence	84	27	Newburyport	—	—
Boston	244	48	Leominster	2	1
Worcester	51	10	Melrose	—	—
Fall River	28	14	Woburn	5	1
Cambridge	24	5	Marlborough	2	0
Lowell	38	11	Westfield	5	1
Lynn	24	8	Peabody	—	—
New Bedford	29	8	Revere	5	—
Springfield	30	2	Clinton	2	0
Lawrence	28	6	Attleboro	5	1
Somerville	26	2	Adams	2	—
Holyoke	28	13	Gardner	—	—
Brockton	9	1	Milford	2	1
Malden	11	2	Weymouth	2	0
Salem	18	4	Framingham	3	—
Chelsea	16	1	Watertown	1	0
Haverhill	17	—	Plymouth	—	—
Newton	12	3	Southbridge	1	1
Fitchburg	7	1	Wakefield	—	—
Taunton	21	2	Webster	—	—
Everett	8	4			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JAN. 26, 1907.

G. PICKRELL, surgeon. Detached from Bureau of Medicine and Surgery, Navy Dept., and ordered to Naval Academy.

F. H. STIBBENS, assistant surgeon. Appointed assistant surgeon with rank of Lieutenant (junior grade) from Jan. 4, 1907.

T. W. SCOTT, O. C. RUGE, appointed pharmacists from Jan. 15, 1907.

E. J. GROW, surgeon. Ordered to Marine Recruiting Station, New York, N. Y., and additional duty in attendance upon officers and men of the navy and marine corps of New York City not otherwise provided with medical aid.

H. E. ODELL, passed assistant surgeon. Ordered to the Naval Hospital, Newport, R. I.

H. F. STRINE, passed assistant surgeon. Detached from New York Hospital and ordered to Naval Hospital, Naval Academy.

J. E. GILL, assistant surgeon. Detached from the "Dubuque," and ordered to the Naval Recruiting Station, Kansas City, Mo.

J. T. DUHIGG, assistant surgeon. Ordered to the Naval Hospital, New York.

R. H. MICHELS, assistant surgeon. Orders of Jan. 4, modified; detached from the Naval Recruiting Station, Kansas City, Mo., and ordered to the "Dubuque."

E. THOMPSON, surgeon. Detached from the Naval Station, Charleston, S. C., and ordered to the Naval Station, Guantanamo, Cuba.

H. C. CUEL, surgeon. Detached from duty with Department of Government and Sanitation, Canal Zone, and ordered to report to Surgeon General, U. S. N., for special duty.

S. G. EVANS, surgeon. Ordered to the Naval Station, Charleston, S. C.

I. S. K. REEVES, passed assistant surgeon. Detached from the "Scorpion," and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

B. L. WRIGHT, surgeon. When discharged from treatment at the Naval Hospital, New Fort Lyon, Colo., ordered to duty in that hospital.

SOCIETY NOTICES.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — A meeting of the Clinical Section of the Suffolk District Medical Society in Association with the Boston Medical Library will be held Feb. 6, at 8 o'clock, at the Medical Library, 8 The Fenway. Captain Bailey K. Ashford, M.D., Assistant Surgeon United States Army, will read a paper on "Some Observations on the Campaign against Endemic Uncinariasis in Porto Rico."

R. C. CABOT, *Chairman.*
EDWIN A. LOCKE, M.D., *Secretary.*

LECTURES ON RELATION OF THE MEDICAL PROFESSION TO THE LAW AND THE COURTS. — The first lecture on this subject by Mr. Ezra R. Thayer, at the Harvard Medical School, will be given Feb. 11 instead of Feb. 4 as previously announced.

RECENT DEATHS.

CHRISTOPHER PHILIP LYONS, M.D., M.M.S.S., died in Boston, Jan. 22, 1907, aged thirty-six years.

DR. HENRY A. LEBARBIER of Larchmont, Westchester County, N. Y., died on Jan. 21, from facial erysipelas. He was born in New York City, and was fifty years of age. He was graduated from Dartmouth Medical College in 1891, and at the time of his death was Fleet Surgeon of the Larchmont Yacht Club.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Ophthalmological Society. Forty-second Annual Meeting, New York City, 1906. Vol. XI, Part 1.

Plaster of Paris and How to Use It. By Martin W. Ware, M.D. Illustrated. New York: Surgery Publishing Co. 1906.

The Harvey Lectures delivered under the Auspices of the Harvey Society of New York, 1905–6. By Prof. Hans Meyer and twelve others. Philadelphia and London: J. B. Lippincott Co. 1906.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D. Vol. IV, sixteenth series, 1906. Philadelphia and London: J. B. Lippincott Co.

Organic and Functional Nervous Diseases. By M. Allen Starr, M.D., Ph.D., LL.D., Sc.D. Second edition, thoroughly revised. Illustrated. New York and Philadelphia: Lea Bros. & Co. 1907.

The Practical Medicine Series. Under the general editorial charge of Gustavus P. Head, M.D. Vol. X. Series, 1906. Chicago: The Year Book Publishers.

Woman in Girlhood, Wifehood, Motherhood, Her Responsibilities and Her Duties at all Periods of Life. By Myer Solis-Cohen, A.B., M.D. Illustrated. Philadelphia, Chicago, Toronto: The John C. Winston Co. 1906.

Transactions of the American Surgical Association. Vol. XXIV. Philadelphia. 1906.

The Hygiene of Pregnancy. By Walter B. Jennings, Ph.B., M.D. New York: Medical Review of Reviews (Inc.)

The Growing Years. By William Seaman Bainbridge, A.M., M.D. Reprint.

A Brief Résumé of the World's Recent Cancer Research. By William Seaman Bainbridge, M.D. Reprint.

A Clinical Lecture on Malignant and Non-Malignant Growths. By William Seaman Bainbridge, A.M., M.D. Reprint.

Malignant and Non-Malignant Growths. By William Seaman Bainbridge, A.M., M.D. Reprint.

The Practitioner's Library. The Practice of Obstetrics. In Original Contributions. By American Authors, edited by Reuben Peterson, A.B., M.D. Illustrated. Philadelphia and New York: Lea Bros. & Co. 1907.

A Treatise on Orthopedic Surgery. By Royal Whitman, M.D. Third edition, revised and enlarged. Illustrated. Philadelphia and New York: Lea Bros. & Co. 1907.

Official Register of Harvard University. The Harvard University Catalogue, 1906–7. Cambridge, Mass. 1907.

Original Articles.

TUMOR OF THE SPINAL CORD LEADING TO DESTRUCTION OF THE LUMBAR REGION, HYDROCEPHALUS, DOUBLE OPTIC NEURITIS, AND PAINLESS LABOR. *

BY E. W. TAYLOR, M.D., BOSTON.

The following case is reported in detail because of its exceptional character and extreme interest from the diagnostic standpoint and also because it revealed a unique pathological condition as a cause for the imperfectly understood symptoms observed during life. It is rare that so great a diversity of manifestations may be explained by a single lesion.

The patient, a woman twenty-four years old, married, noticed the first symptom of the disease, from which she later died, Sept. 25, 1905. She was at the time pregnant, but had hitherto not suffered more than the usual discomfort. On Sept. 25, during the night, while traveling in a sleeping car, she was suddenly seized with pain radiating down both legs. The next day the pain and discomfort continued and on the whole increased in severity. During the following month, October, she had constant and excruciating pain. During this time she was unable to lie in bed and slept propped with pillows, in a semi-erect position. Treatment by violet rays did not result in benefit. In spite of her discomfort she slept from four to five hours during the night, although often waked by pain. Her mind was perfectly clear. The first week in November there was apparent improvement, although she was never wholly free from pain. In spite of a specially selected carriage driving caused pain. At this time the condition was diagnosticated as neuritis. On Nov. 24, she was able to walk from a carriage to the train in New York and had a relatively comfortable trip to Boston. She was seen in Boston by Dr. J. G. Mumford. She was then suffering from extremely severe pain in the legs, coming on in attacks which lasted several hours. There was also complaint of pain in the back. In consideration of the advanced stage of pregnancy and the pain common to women in this condition, it seemed reasonable to suppose that many of her symptoms might be referred to relaxation of the sacro-iliac ligaments. Dr. J. E. Goldthwait, who was called by Dr. Mumford in consultation, confirmed this opinion, and on Dec. 5, etherized the patient and applied a plaster jacket, after having reduced a subluxation of the joint. This was followed by a considerable temporary relief from pain, and the patient was able to lie upon her back, which she had not done for several weeks. This jacket was not well borne, however, and for a time immobilization was obtained by strapping.

On Dec. 7, there was complaint of pain and stiffness of the legs, pain in the region of the bladder, and pressure in the rectum. The patient was extremely restless and much constipated, but obtained a fair amount of sleep. During the days immediately following there was much pain in the legs and back and a constant desire to sit up on account of the greater comfort while in that position. At times the pain in the back and legs would recur immediately on lying down. The urine was passed freely, but was under control. The restlessness evidently induced by pain was constant and distressing, necessitating very frequent changes of position, both in bed and out. At times the pain seemed to become unbearable, but frequently was alleviated by drugs other than morphine. Toward the middle of December, there was complaint of soreness in hips, legs and knees. She found relief in walking; micturition was frequent, but in spite of this fact she complained that the bladder "felt bursting." On Dec. 22, there was for the first time some difficulty in passing urine with continuance of the complaint of pain in the bladder, at times described as intense. Catheterization relieved this symptom for the time being and large amounts of urine were passed when the catheter was not used, but only after efforts lasting for an hour or more. At about this time she became irrational at night. Excessive pain in the back and legs continued, and the legs and feet began to grow weak. On Dec. 24, when out of bed, she was practically helpless, and could not support herself properly when standing. She was, however, still able to pass urine although with much difficulty. On Dec. 25, control of the feet and legs was practically lost, and there was complaint of numbness of the legs.

On Dec. 26, Dr. J. G. Mumford called me in consultation. In addition to the facts already noted, it was found that there had been definite hallucinations both of sight and hearing, and occasional disorientation both as to time and place. She had at no time been depressed, but on the contrary was rather elated. Many of her remarks concerned events which had not occurred, and there was considerable mental confusion combined with an apparently clear recognition on her part of her mental failings, together with considerable sensitiveness when they were pointed out to her. There had been no elevation of temperature at any time, so far as known, but the temperature had not been taken with absolute regularity. Physical examination on Dec. 26 showed for the time being a somewhat flighty mental state, but absolutely no further disturbance mentally. All questions were answered with absolute clearness. Examination of the legs objectively showed that pain and contact were felt and correctly interpreted, although blunted over certain areas below the knee. Temperature was correctly recognized over both legs wherever tested. The muscular sensibility of the toes was unimpaired, but the soles were not ticklish. The motion of the toes and ankles was preserved and carried out with a fair degree of strength. Both flexion and extension of the knees were, however, very much affected, and, in fact, very little movement was possible. The knee jerks were absent in spite of reinforcement. There was no plantar reflex whatever, no clonus, no Achilles reflex. The paralysis was flaccid. Further physical examination was entirely negative as regards signs of organic disease. There was no definite complaint of the head or upper part of the body, and beyond the mental disturbance already alluded to, there was nothing whatever in the condition of the pupils[1] or otherwise to call attention to disturbance elsewhere than in the lower portion of the spinal cord. The headache, of which complaint was made, was somewhat vague in character, and at this time wholly subordinate to the more intense pain of the lower back and legs. The following day the condition was essentially unchanged. There was, however, much mental confusion regarding time, persons and events. For example, she did not realize that her husband had gone to New York, although well aware of the fact. During the following days there was some improvement in regard to the mental state. She was much clearer, and seldom made mistakes of identity. There was

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* Reported at the meeting of the American Neurological Association, Jan. 4, 1906.

[1] The pupils later were widely dilated and immobile, as the subsequent optic neuritis increased to blindness. The fundus when first examined was normal.

an increase of disturbance in the legs. Sensibility was more impaired and the disturbance extended up, involving the thighs. The sense of position of the legs was lost. The bowels were excessively constipated and there was retention of urine with occasional dribbling. On Jan. 11, the urinary incontinence was complete, and the patient had no knowledge whatever of the passage of urine. There was absolute loss of power in the legs and thighs. Sensation was completely lost to all forms of stimulation in the legs. At the upper part of the thigh there was a slight preservation of the pain sense. Slightly higher in the gluteal region and to a point about midway between the pubes and umbilicus there was marked hyperesthesia.

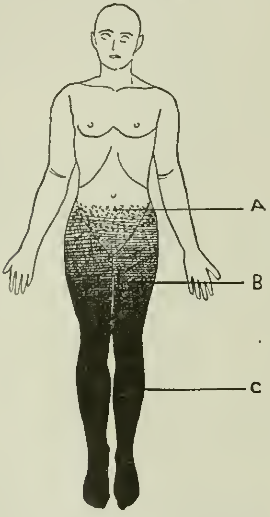

FIG. 1. Areas of anesthesia and hyperesthesia, Jan. 11, 1906. A, Hyperesthetic zone. B, Anesthesia almost complete. C, Complete anesthesia. Disorders of sensation occurring later in body and upper extremities not charted. (See text.)

During the development of these signs of organic disease the patient became more excitable, at times emotional, and occasionally asserted that she had been deceived. On Dec. 29, headache became more conspicuous, together with backache. There was extreme nervousness, restlessness, discomfort and pain. Examination of the urine at this time by Dr. H. F. Hewes was as follows:

Twenty-four hour amount, 2900 cc.; sp. gr. 1004, color pale, reaction acid. Uph.— ; Ind.— ; B.C., 0; Sulph.— ; acetone, 0; urea 23.999 gm.; uric acid, 0.17; chlor. 4.4; phos. a. 0.14; sugar, 0; albumin, slightest possible trace; uric acid to urea 1 to 141. Sediment, occasional hyaline and granular cast with occasional squamous cells and leucocytes. Lead and arsenic both absent.

On Dec. 30, she thought she was in Montreal, but much of the time was entirely rational. The pulse was slightly irregular. On this day there was a consultation of Drs. W. L. Richardson, J. G. Mumford, J. C. Hubbard and E. W. Taylor, at which no definite conclusions were reached. On this day also certain symptoms developed which were regarded as in a measure at least hysterical. On being offered her dinner she asserted that she had already had several and would not eat another. She ate a small amount, however, on persuasion, but became angry, threw down her fork, screamed loudly and attempted to get out of bed in spite of paralysis of the lower extremities. Up to Jan. 12, symptoms similar to those already described persisted and on the whole increased in severity. Stiffness of the neck was added to the other signs, associated with the greatest sensitiveness on moving the head in any direction. Absolute paralysis of motion and sensation of the legs and of the sphincters persisted. The headache became severe and all the pain, excepting that in the legs, which naturally no longer existed, increased. During this entire period the pregnancy had progressed normally and with no discomfort beyond that naturally incident to the condition.

On Jan. 11, an examination of the fundus oculi by Dr. F. I. Proctor showed a slight and somewhat doubtful beginning optic neuritis with slight lack of balance of the ocular muscles. Several examinations later by Dr. Proctor showed a rapidly increasing swelling of the papillæ and an excessive amount of inflammatory exudate. Diminution in vision kept pace with the neuritis and sight was finally completely lost.

On Jan. 13, an examination by Dr. J. C. Hubbard, who was in charge of the case, showed definite uterine contractions; although the patient was conscious of these contractions she made no complaint of pain beyond a certain amount of abdominal discomfort. The membranes had ruptured during the night. About three hours later the head was on the perineum, the labor having been accomplished absolutely without pain. The abdominal muscles apparently took no part in the process, although the uterine contractions up to this time had been adequate, though lacking in force. There was, however, no evidence that further progress would be made. Low forceps were applied and a healthy girl baby delivered without difficulty. The perineum was torn and was at once sewed up without the slightest evidence of pain. There was no post-partum hemorrhage and the uterus contracted in perfectly normal fashion and without further incident. The entire labor had been accomplished without pain, and, in fact, the birth of the baby was merely an incident in the day, insignificant in comparison with the pain and distress caused by the underlying disease. No anesthetic was at any time used and the patient was practically unconscious of the process of delivery, although there was some complaint when the placenta was expressed by a hand on the abdomen. Dr. Hubbard calls attention to the following points of interest in the labor: (1) Its painless character. (2) The absence of any instinctive use of the auxiliary muscles during the second stage. (3) The satisfactorily firm contractions of the uterus after the labor. The possibility of a severe post-partum hemorrhage had been considered, due to an interference with the proper nerve supply to the uterus.

The patient remained under Dr. Hubbard's care during an uneventful convalescence from the labor. She did not nurse the baby, and there were no complications whatever of an obstetrical sort. In other respects the condition remained essentially the same, except that toward the end of January there was some nausea associated with headache and at times rather free vomiting. The pain was localized in the middle of the back and occasionally extended up into the neck. There was complaint of a feeling of general numbness and pain, particularly in the left eye, with ringing sounds in the right ear. An examination of the ear by Dr. E. A. Crockett found no local cause for this latter symptom. Jan. 26, there was a further consultation by Drs. W. L. Richardson, J. C. Hubbard and E. W. Taylor. The patient had again become very disturbed, continually twitching and working her hands in a more or less purposive way. Ringing in the ears continued and there was complaint of prickling sensations in the arms. The mental state was, however, such that no adequate or systematic examination of the objective sensory disorders in the upper part of the body and arms was attempted. The symptoms in general were of an irritative character. There was at no time paralysis of the upper extremities. During the latter part of January an attempt to express herself could not be understood. She was emotional at intervals, refused her medicine, and was apparently much distressed in mind, muttering constantly and incoherently. She also refused food, made few requests and lay much of the time, when not moving her hands, in an apathetic state with her eyes closed. At this time she was disoriented, and also on one occasion refused tea, saying it was rotten and filled with drugs. In spite of these occasional lapses, however, her appetite remained remarkably good, and, in fact, continued so up to the very end of her illness. She was interested in the baby for some weeks after her birth, and frequently asked to have her in the room. This interest she later entirely lost.

Early in February, Dr. J. C. Hubbard retired from the case with the patient recovered from the effects of labor. An examination on Feb. 6, showed no Faradic reaction whatever in any of the muscles of the legs to very strong currents. Complete paralysis of sensation and motion remained. By means of regular catheterization at short intervals the urinary conditions were somewhat improved, although there was absolutely no control. The condition of the bowels also improved very considerably, and, although requiring strong cathartics and occasion enemas, the previous impaction was in great measure overcome. The attempt to use a wheel chair did not meet with success, although frequent efforts were made. On the whole the patient was now much more comfortable lying flat than in an upright or semi-upright position. A bed rest was used temporarily with satisfaction, but the patient never sat up for any length of time without complaint of much discomfort and an expressed desire to return to bed.

Examination of the eye grounds by Dr. Proctor early in February showed much swelling of the left optic disc and considerable inflammation of the right. The sight of the left eye was practically abolished and of the right much blurred. She could count fingers but was wholly unable to read typewriting in any position or with any light. The visual fields roughly tested were apparently normal so far as the deficient sight permitted a determination. An examination of the urine by Dr. Wilder Tileston from a catheter specimen showed pale color, acid reaction, specific gravity 1010, cloudy, slightest possible trace of albumin, no sugar, and normal chlorides. The sediment showed no casts and nothing of significance beyond a moderate amount of pus. An examination later by Dr. Tileston for arsenic showed a wholly insignificant trace.

During the first part of February, except for occasional lapses, the patient was mentally clear nearly all the time, but complained constantly of pain in various parts of the body and general discomfort. On the whole, however, she was cheerful, and extremely courageous, though at times naturally discouraged. Dr. Morton Prince saw the patient on several occasions at about this time. He was unable to explain the curious and changing mental condition which he was inclined to think might be analogous to certain hysterical states, or possibly to an intoxication of some unknown sort. He also suggested the possibility of tumor, but owing to the unexplained combination of definite signs of transverse lesion of the cord in its lower portion, together with marked cerebral symptoms, notably optic neuritis, this idea was not seriously entertained.

During a night in the latter part of February the patient became suddenly apprehensive and assured the nurse that an attack of some sort was imminent. Soon thereafter she became totally incoherent in speech, possibly beginning or ending a sentence with a definite word, but using absolutely unintelligible syllables between. This incoherent muttering continued almost constantly for some hours. This was followed by vivid hallucinations of sight and occasionally of hearing with constant movement of the arms and fingers as of tying and untying string. During the remainder of her life she at no time completely recovered from the condition which was ushered in by the foregoing sudden mental change. She became increasingly apathetic and indifferent to her pain, but at no time was she totally unconscious, or presumably ignorant of her surroundings. It was evident that her weakness was increasing and that nothing but a fatal outlook was to be looked for, although previously hope had been entertained that the underlying process might be of the nature of a myelitis and self-limited.

Early in March, Dr. F. C. Shattuck was called in consultation and again later. He found absolutely no abnormality of the chest or abdominal organs, and, like those who had previously seen her, was at a loss as to a definite diagnosis. A blood examination by Dr. John B. Hawes at this time was as follows: Hgb. 80%; reds 6,232,000; whites 10,500. Stained specimen showed no achromia or other abnormality. No blasts or plasmodia seen. Diff. count of 500 whites showed: Polynuclear, 70.8%; lymphocytes, 26.6%; eosinophiles, 2.6%.

At about this time a very slight paresis of the left facial nerve was observed, together with slight disturbance in the movements of the left eye, both externally and internally. These disturbances, however, did not increase, but on the other hand the facial paralysis distinctly improved later. She was at this time probably totally blind, but made small complaint either of this or of other symptoms. Owing no doubt to the increase of the cerebral symptoms and the blunting of sensibility dependent thereon, her suffering was very decidedly less than during the previous months, although it was evident from time to time that pain of the back, neck and head persisted. Weakness increased rapidly, and although food was fairly well taken up to within a week of her death, her strength failed to such an extent that all movement was impossible and even swallowing became difficult and a painful effort. The urine became scanty in amount, of high specific gravity; the pulse for some weeks was between 110 and 140, and the respiration increased to 36 to 40 toward the end. She died quietly March 25, without suffering, but apparently conscious up to a short time before.

AUTOPSY.

A complete examination was made by Dr. S. B. Wolbach, March 25, three and a half hours post-mortem, the notes of which follow:

Body well developed, but poorly nourished. No rigor. Slight lividity of the dependent parts. No edema. Pupils equal, 0.5 cm. There is a scar in the left axilla, several linear scars over the right tendo-Achillis. The feet are extended.

Peritoneal cavity. — Abdominal fat 1.5 cm. thick, deep yellow in color, loose in texture. No retroperitoneal fat. The peritoneal surfaces are everywhere normal. No free liquid; no adhesions. There is a small calcified node, 0.5 cm. in diameter, in the superior ileo-cecal angle. Several mesenteric nodes contain minute, calcified nodules. The diaphragm reaches to the fourth space left, fourth rib right. The appendix is normal, about 8 cm. long, directed upwards and inwards. The proximal half is retroperitoneal, the distal half is free with a mesentery.

Pleural cavities. — Normal.

Pericardial cavity. — Normal.

Heart. — Normal in size, weight 250 gm. There is very little epicardial fat. The myocardium is firm, dark red, walls are rather thick. Valves and endocardium are normal. Coronary arteries are normal.

Lungs. — Both lungs are pale red, soft, dry, except along posterior borders, where they are darker in color, wet and injected.

Spleen. — Weight, 110 gm. Normal in size. Capsule smooth. Color, bluish red. Consistency, firm. On section normal structures are visible.

Liver. — Weight, 1300 gms. Dark red in color. Capsule smooth, even. Consistency, normal. On section lobular markings are easily visible by virtue of darker red centers. Gall bladder and ducts normal.

Pancreas. — Normal.

Gastro-Intestinal Tract. — Normal. The transverse and descending colon are filled with nodular masses of dry, dark brown feces.

Kidneys. — Weight, 265 gm. Normal in size. Dark red in color. On section the pyramids are dark red. The cortex is pale, with dark red radial lines. Glomeruli prominent as red dots. The consistency is very firm. Capsule strips easily from a smooth surface. Cortex measures 6-8 mm.

Adrenals. — Normal.

Genitalia. — Normal. Bladder, normal.

Aorta. — The intima has a few bright, yellow linear elevations in the lines of the orifices of the intercostal arteries.

Head. — Scalp normal. Pacchionian granulations are small, but numerous.

Brain. — The convolutions are flattened. Pia is dry, markedly injected. While the brain lies in position, the posterior half bulges slightly, and is firmer on palpation than the anterior half. The vessels at the base are normal. The olfactory grooves are deep, their foramina are large. The dural sinuses at the base are normal. The floor of the middle fossa on the left side near the anterior margin contains several small pits and the dura corresponding presents small, soft, grayish excrescences. The olfactory bulbs are poorly defined and the olfactory tracts terminate in masses of gray matter with irregular surfaces, molded apparently to correspond with the deep, olfactory grooves. The consistency of the brain is slightly plastic. The cortex on section has a bluish tinge. The puncta cruenta are prominent as oozing points. The lateral ventricles are markedly dilated and contain about 80 cc. of clear, colorless liquid. The ependyma is normal. Nothing abnormal found on section of the hemsipheres, basal ganglia, pons, medulla and cerebellum.

Cord. — The cord completely fills the spinal canal and the exposed dura presents many irregularities. In the region of the cauda equina the canal is packed with a soft, inter-dural mass, which after removal of the cord, presents as a spindle-shaped mass, matting together the filaments of the cauda equina and extending upwards surrounding the whole lumbar enlargement. The whole dorsum of the cord as far as the middle of the cervical enlargement is covered with an irregular, knobbed, sub-pial growth. In the lumbar region there is a fairly uniform layer, 2-5 mm. thick, surrounding the cord, invading it and filling the spinal canal below. In this region the mass is composed of yellowish, rather firm tissue in places soft and necrotic, with occasional small foci suggesting hemorrhage. In the upper thoracic and cervical cord the dorsal surface alone seems to be involved. In the lower thoracic cord there is a fairly uniform layer of grayish, translucent, rather firm, and elastic tissue with many rounded knob-like projections. Higher up the layer is thinner, in places not demonstrable, but there are mounds of similar tissue 2-5 mm. in diameter, closely placed as far up as the middle of the cervical enlargement. Here there is again a sheath 2-3 mm. thick on the dorsal surface, and above this a few small nodules, extending about to the upper third of the cervical enlargement, higher on the left than on the right side.

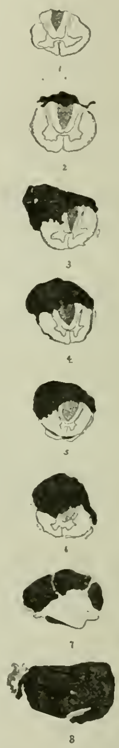

Fig. 2. Cross sections of cord from lumbar to upper cervical region, showing extent and position of tumor. 8. Lumbar region, practically complete destruction. In upper sections note dorsal sub-pial position of the growth. The secondary degenerations, mainly of the dorsal tracts, are explained by the partial destruction of the dorsal nerve roots, portions of the dorsal tracts, and to a much less degree of the dorsal gray leading to slight degeneration in Gowers's and direct cerebellar tracts. (Accurate tracings, Edinger drawing apparatus.)

In no place is the pia penetrated. The sub-pial vessels are injected, tortuous, in places pushed up, in places surrounded by the growth. Section of the lower lumbar cord shows an apparent continuity between the growth and the gray matter. The cord is everywhere distorted and soft. In the lumber region the cord is markedly flattened and in places no margin can be made out between the tumor mass and the cord. In the dorsal and cervical regions the cord is sharply demarcated from the surrounding growth. Several dorsal ganglia removed from each of the cervical, dorsal and lumbar regions are apparently normal.

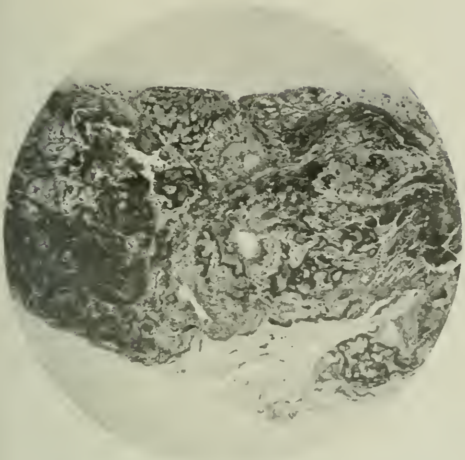

Fig. 3. Lumbar region No. 8 of Fig. 2. x 6.4. Practical complete destruction of the cord by the tumor. (Photograph by W. C. Greene.)

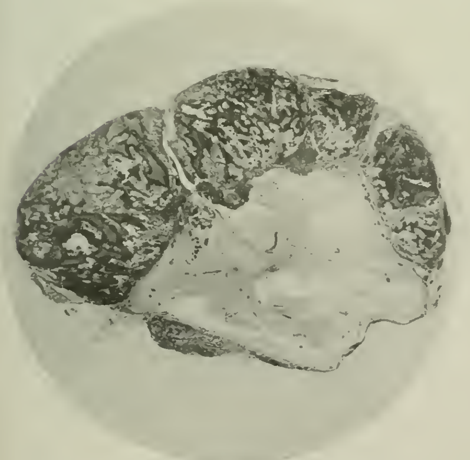

Fig. 4. Lower thoracic region No. 7 of Fig. 2. x 6.4. Dorsal position of tumor; slight invasion of the ventral surface. Disintegration of the substance of the cord. (Photograph by W. C. Greene.)

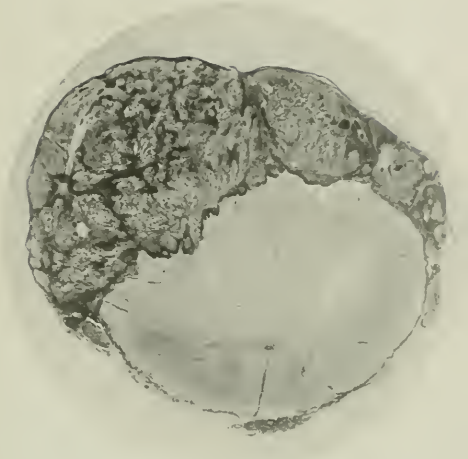

Fig. 5. Mid-thoracic region. No. 5 of Fig. 2. x 6.4. Dorsal position of main tumor; the subpial location is well shown, also the manner of invasion of the cord. (Photograph by W. C. Greene.)

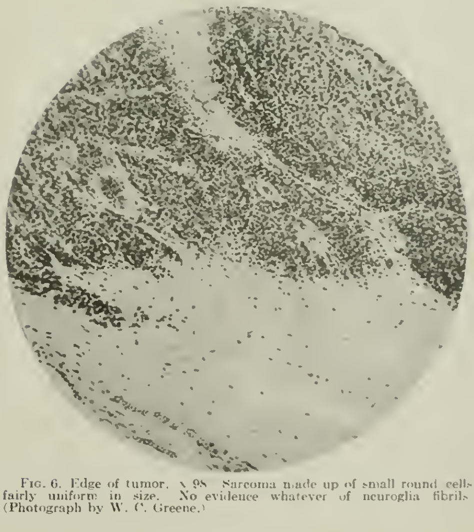

Fig. 6. Edge of tumor. x 98. Sarcoma made up of small round cells fairly uniform in size. No evidence whatever of neuroglia fibrils (Photograph by W. C. Greene.)

ANATOMICAL DIAGNOSIS.

Sarcoma of the spinal cord. Internal hydrocephalus (acquired). Congestion of liver and kidneys. Retention of feces.

MICROSCOPIC EXAMINATION.[2]

Histologically the new growth consists of relatively small, for the most part round, cells, with a small amount of protoplasm. The cells are in general uniform in size and arranged indefinitely as regards blood vessels and stroma. (Fig. 6.) In places the tumor has evidently followed the course of least resistance along the walls of the blood vessels, but in general the relation to blood vessels is entirely indefinite and the cells are no more numerous in their immediate neighborhood than elsewhere. Most careful study by means of several neuroglia stains, especially phosphotungstic acid hematoxylin, showed no evidence whatever of fibrils. The blood vessels are extremely numerous throughout the tumor and in certain places there is evidence of free hemorrhage. So far as can be determined at the late stage at which it was possible to study the tumor, the new growth began in the membranes external to the cord, presumably in the region of the cauda equina, and even in its developed state lay between the pia and cord, infiltrating and destroying the cord only at certain levels later to be described. In general the invasion of the cord is sharply marked and a fairly sharply defined line separates the pathological from the normal tissue. It is evident that the external surface of the cord afforded a barrier to the growth of the tumor inwards. Except in the lower portion of the cord the tumor lay almost entirely on the dorsal side and between the pia, which is lifted by the tumor from the cord, and the cord itself. The subdural space was in no part affected except possibly at lower levels where the destruction was practically complete of all the nervous structures.

Appearance at various levels. — The sacral and lumbar cord is practically entirely destroyed by the invasion of the tumor. At these levels it is impossible to distinguish the outlines of the cord or the distinction between the gray and white matter. Weigert myelin sheath stains show in these levels a complete disintegration of myelin, and the nerve roots, both dorsal and ventral, are likewise indistinguishable in the tumor mass. (Fig. 3) At the upper levels of the lumbar enlargement and the lower part of the thoracic region, the cord, although very much distorted and distintegrated, is not completely destroyed. (Fig. 4.) The mass of the tumor at this level is localized on the dorsal portion of the cord, involving and destroying the dorsal nerve roots and sparing the ventral nerve roots. The cord itself is also to a certain degree invaded by the new growth. The same condition persists throughout the thoracic region (Fig. 5), the tumor, however, decreasing somewhat in extent, but always sharply localized dorsally and wholly within the pia. The invasion of the cord varies at different levels, but the ventral horns are nowhere involved above the lumbar enlargement. In the cervical region the tumor gradually disappears, extending, however, well into the enlargement and involving, as below, the dorsal nerve roots. The tumor also appears in very slight degree at certain levels on the ventral surface of the cord, but not sufficiently to involve at any level above the lower thoracic region the ventral nerve roots. Secondary degeneration of the dorsal tracts, and also in lesser degree of the direct cerebellar and Gowers's tracts, occurs throughout the thoracic and cervical regions. The fact that the columns of Burdach in the cervical region are not deeply degenerated naturally indicates that the thoracic nerve roots were not completely destroyed in their passage through the tumor.

The oblongata is normal and the brain also shows no abnormality beyond the high degree of hydrocephalus. Most careful examination shows that the tumor is limited to the spinal cord and in all probability is a continuous growth from below upwards, showing no metastasis even in the cord itself. Owing to the hydrocephalus the optic chiasm is very markedly compressed. Microscopic examination, however, shows no evidence of edema or other pathological change in spite of the high degree of choked disk observed during life. Examination of other internal organs shows no significant abnormality except very slight evidence of previous but healed tuberculosis.

Summary. The essential features of the foregoing case are as follows:

A young, pregnant woman was suddenly seized with radiating pains down both legs, in September. The pain increased, and walking became difficult on account of the pain. The urine was at first under control. Later, the pain extended to the bladder and rectal regions, and in the latter part of December, difficulty in micturition supervened, necessitating the occasional use of the catheter. Beginning mental disorder appeared at this time; pain extended into the back; beginning paralysis of the legs, standing alone impossible; urine passed only with extreme difficulty; sensory disorders in the legs developed; loss of power in the legs rapidly supervened, together with disappearance of the reflexes. Increase of mental confusion, disorientation as to time and place; extreme constipation, and complete urinary incontinence. Thereafter, headache, much restlessness and discomfort, stiffness of the neck, and sensitiveness on moving the head; increasing headache, beginning optic neuritis, going on later to blindness. In the middle of January a painless labor, giving birth to a healthy child. Prickling sensation in the arms, but without paralysis. In February, persistence of complete transverse lesion of the cord, with no Faradic response in the muscles of the legs. Very marked mental disturbance, with final loss of the power of speech, and increasing apathy. Death six months from the onset of the first pain.

Post-mortem. Extensive tumor of the spinal cord, destructive in the lumbar region, associated with internal hydrocephalus.

DIAGNOSIS.

The signs and symptoms observed during life are evidently completely explained by the post-mortem findings.

Pain. A predominant feature of this case from its beginning to its end was pain, the significance of which was not at any time completely appreciated. The original assumption in the early part of the disease was that the pain was due to a peripheral nerve affection which was regarded as a neuritis. A later assumption was that the pain, confined as it was largely to the legs in the sciatic distribution, was due to the loosening of the sacro-iliac joint, in part a consequence of the advanced pregnancy. Investigation showed that there was an actual displacement of the bones, and their restoration to a proper position gave rise to an amelioration of the symptoms which, however, did not persist. The pain later redeveloped in a severe form, as before the operation on the joint. This idea, therefore, although no doubt explanatory of a part of the discomfort, did not account for the persistent and distressing pain. The third supposition, which was erroneously entertained by many of the physicians who saw her, was that the pain in great measure was due to the somewhat nervous condition in which the patient was supposed to be, partly as a consequence of her pregnancy, and partly as a temperamental peculiarity in a person who had in her previous life not been the victim of pain. Under this supposition it was supposed that the pain was less severe in character than appeared from the statements made regarding it by the patient. In the light of the outcome this theory was proved to be wholly incorrect, but there was much reason for entertaining it during the illness. It was, for example, repeatedly observed that relatively small doses of the less powerful drugs apparently frequently produced an amelioration of the pain. Excepting on one or two occasions morphine was at no time given. It was also supposed that the pressure of the pregnant uterus possibly might conduce to pain in the legs through actual pressure. The correct interpretation of the pain as due to the tumor was at no time made, although Dr. Prince, in consultation, suggested the possibility of new growth. The extension of the pain upward, the stiffness of the neck, with extreme discomfort on moving the head, and the varied descriptions of abnormal sensations which the patient gave did not throw light during life on the cause of the pain. Had the discomfort remained localized in one part of the body the confusion would not have been so great; its widespread distribution somewhat naturally obscured its cause.

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[2] I am indebted to Dr. S. B. Wolbach for assistance in making histological preparations and in interpreting the appearances, as well as for the gross pathological examination.

The findings at the autopsy completely explained the pain. The tumor undoubtedly originated in the nerve roots of the cauda equina. The first symptoms were irritative in character, radiating pains down the legs. Later, as the tumor extended and destroyed the lumbar region, the pain in the legs gave place to a complete paralysis, both of sensation and motion, naturally with a cessation of pain in that region. As the disease progressed upward, involving the dorsal nerve roots practically throughout the entire extent of the cord pain naturally developed at the various levels of the spinal segments, and finally involved the neck and arms to a certain degree. The head pain was due to the hydrocephalus, a consequence of the tumor, and misleading in its significance.

MYELITIS. In addition to the confusion resulting from the interpretation of the pain, the relatively sudden onset within three weeks of a complete transverse lesion of the cord in the lumbar region still further complicated the situation. In spite of the fact that there was no evidence of a rise of temperature during this period, or immediately preceding it, the character of the onset, and the completeness of the resulting lesion led to the supposition that a softening of the cord had taken place, presumably of an inflammatory sort, producing a lesion which might justly be termed a transverse myelitis. The signs of transverse lesion were almost complete. There was almost absolute sensory and motor loss from about the level of the pubes down, with an area of hyperesthesia immediately above this level. It was supposed not unnaturally that a destructive lesion of the cord had occurred, which would remain limited to that area; and the opinion was expressed that this lesion had no direct causative relation with the pregnancy, but was rather to be considered as a coincidence. This subsequent developments proved to be the fact.

The etiology of this condition was, in the minds of those who saw the patient, absolutely in doubt. To use a popular, but not altogether exact, term, it was regarded as probably an intoxication or infection localizing its destructive effects at a certain level of the cord, but also influencing higher areas in the nervous system, as shown particularly by the mental disturbance which was already conspicuous at this time. This idea was further re-enforced as time went on by the appearance of an optic neuritis and increasing mental disturbance for which no adequate cause could be found. In 1899, Bielschowsky [3] reported in the form of a monograph four cases with autopsy, of myelitis associated with optic neuritis. In these cases disseminated lesions of the cord and of the optic nerves were disclosed postmortem, due it was supposed to a common cause.

The combination of mental symptoms, considerable though not excessive headache and optic neuritis, together with the symptoms of a transverse lesion of the cord somewhat naturally diverted attention from the correct diagnosis. As the case progressed, however, the increasing failure of strength was difficult to interpret, together with the pain which, although no longer appearing in the legs, was a constant source of complaint through the back, neck and, in less degree, in the arms.

Here again, the autopsy provided a complete explanation of the clinical symptoms. The transverse lesion of the cord was due to the somewhat sudden invasion by the tumor of the lumbar region. The optic neuritis was unquestionably due to the hydrocephalus which in its turn resulted from the complete occlusion of the vertebral canal by the tumor throughout practically its entire length. The mental symptoms also no doubt find their explanation in the disturbance occasioned by the hydrocephalus. The clinical interpretation was defective, but it is altogether questionable whether the evidence during life as demonstrated post-mortem would have justified the assumption of a single tumor as the cause of the cerebral as well as the spinal symptoms.

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[3] Bielschowsky: Myelitis und Sehnervenentzündung. Berlin, 1892. S. Karger. Pp. 92. Ref. Neurologisches, Ctb. 1901, vol. xx, 457.

Clinical course of cases. Schuster and K. Mendel, *idem.*, 1899, pp. 1088-1093.

That the motor power in the arms was at no time affected is explained by the fact that the tumor in its course upward through the spinal canal was confined almost exclusively to the dorsal portion of the cord, never, in fact, invading the ventral portion in the upper thoracic and cervical regions to an extent sufficient to produce definite motor disturbance of the arms.

The clinical course of the case therefore finds complete explanation in the pathological findings. The initial pain, the succeeding apparent myelitis, the ascending disturbances in the body and arms of a sensory sort, and, finally, the altogether puzzling involvement of the brain in the process, together with a degree of optic neuritis which led within a few months to practically complete blindness were due to a single widely extended spinal tumor, destructive of the cord in the lumbar region, external to the cord in the thoracic and cervical regions, and obliterating practically the entire spinal canal.

REMARKS.

Several matters in relation to this altogether extraordinary case demand further comment.

The Pathological Condition. A tumor involving so great an area of the spinal cord and canal is exceedingly unusual.[4] Except in cases of general metastasis, the location of a spinal tumor is, in the great majority of cases, somewhat sharply circumscribed and therefore in a measure amenable to surgical interference. In this case the growth of the tumor was evidently continuous from below upward, although at many points the growth assumed a nodular form, which superficially gave the appearance of discrete tumors. There were no metastases, and the oblongata and brain in general were uninvolved by the tumor. The location between the pia and the cord, except at the lower levels, was noteworthy, and also the relatively slight tendency to actually invade the cord except where the mechanical conditions of rapid growth in the lumbar region apparently necessitated such invasion. The histological character of the tumor was somewhat unexpected, namely, a small-celled sarcoma. Evidence of glia cells was wholly lacking. In the light of the clinical history, the tumor undoubtedly originated in the sacral nerve roots, which could hardly have been the case had it been a gliomatous tumor, except through some malformation of tissues, which the autopsy did not reveal. The points of chief interest regarding the tumor are: its histological character; its extent; its method of growth, and the diversified symptoms it was capable of producing. The etiology of the tumor is wholly obscure.

The Painless Labor. The birth of a baby at term was, so far as the patient was concerned, a trivial incident in the course of her illness. The labor was absolutely painless, due naturally to the complete destruction of the lumbar cord. The only indication of the beginning of the progress of the labor, as expressed by the patient, was that she had some "pain in her stomach," to which, however, she gave little attention. The beginning of labor was only determined by the perfectly definite and apparently normal contractions of the uterus as felt through the abdominal wall. The baby's head reached the perineum without incident, and without conscious labor pains. The uterus then ceased to perform its function, and extraction by forceps was necessitated. This was easily accomplished, and a perineal tear sewn up absolutely without pain to the patient. After labor the uterus contracted normally, and there was no hemorrhage, which naturally had been feared. The convalescence was so overshadowed by the underlying disease that it made little impression either upon the patient or upon the attendants. Naturally the same precautions were taken as in an ordinary labor. The perineal tear healed entirely without complications in spite of the complete anesthesia of the part, and the urinary incontinence. The development of the baby was entirely uneventful.

Occurrence of Optic Neuritis in Tumors of the Spinal Cord. In spite of the fact that optic neuritis has occasionally been described in cases of tumor of the spinal cord, this event is so unusual as to justify a serious doubt regarding diagnosis if it occurs. This is particularly true in tumors involving the lower portion of the cord. In such cases, so far as we are aware, optic neuritis has never occurred, nor would it have occurred presumably in this case had the tumor not also extended into the cervical region, and thereby made possible the condition which led secondarily to the neuritis. In our case the explanation of the neuritis is evident: it was due to hydrocephalus which in turn was occasioned by the practical occlusion of the spinal canal by the tumor. This led to a blocking back of the cerebrospinal fluid normally finding egress from the brain into the subdural space of the cord. It is difficult to conceive that such a mechanical cause for optic neuritis could arise from a tumor limited to the lumbar region. Had we suspected an extension of the tumor upward, as proved to be the case, a possible explanation of the optic neuritis might have been reached before death. In the absence of such knowledge the supposition of a common inflammatory process producing at the same time a destructive lesion of the spinal cord and an optic neuritis was the more justified hypothesis.

Kernhensteiner[5] has recently reported a case of optic neritis and myelitis, and gives as an explanation a common toxic cause, after the manner of tabes. In 1901, James Taylor and Collier[6] made a careful study of the occurrence of optic neuritis in various lesions of the spinal cord. In this article they report twelve personal cases, but only one with autopsy, cite the cases in literature, and analyze a large number of local lesions observed at the National Hospital between the years 1892 and 1900. In their own cases they found optic neuritis associated with tumor in two, and possibly three, cases, all localized in the cervical region, judging from the symptoms. There were five and possibly six cases of optic neuritis associated with myelitis, again in all cases involving the cervical and upper dorsal portion of the cord. From this analysis it appears that myelitis is a far commoner cause of optic neuritis than tumor. The relation of neuritis to lesions of the spinal cord, according to these authors, depends, first, upon the position of the lesion, second, upon some peculiarity in the nature of the disturbance of the function of the spinal cord produced by the lesion, which, although in some cases extensive, has always been partial. Beyond this the authors advance no definite theory, but call attention to the fact that even in the cervical lesions optic neuritis is exceedingly rare. These writers hold that the theory of separate inflammatory foci is not tenable, particularly in cases of spinal tumor. In a further series of cases to which Taylor and Collier refer, numbering 154, and including myelitis, new growth, hematomyelia, fracture dislocation, pachymeningitis, and spinal caries, the optic discs were normal in 135 cases, making neuritis present in but 19. Of these 18 were lesions affecting the cervical enlargement, one, the thoracic region, and in no case did lesions of the lumbo-sacral cord produce neuritis. There were but three cases of new growth; two in the cervical region, and one in the upper thoracic, but only one of these was verified by autopsy. Myelitis was associated with neuritis in eight cases, and these also were nearly all cervical. The lowest myelitic focus was at the sixth dorsal vertebra.

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[4] Nonne has reported a somewhat similar case also with optic neuritis. Ueber einen Fall von intramedullärem ascendirendem. Sarcom, sowie drei Fälle von Zerstörung des Halsmarks. Arch. für Psychiat., 1900, vol. xxxiii, 393–430.

[5] Kernhensteiner: Ueber Neuromyelitis optica. Münch. med. Wochenschr., 1906, vol. liii, 802. References to literature.

[6] Taylor and Collier: The occurrence of optic neuritis in lesions of the spinal cord, etc. Brain, 1901, vol. xxiv, 532.

From these statistics it is clear that optic neuritis associated with myelitis is very infrequent but, particularly in view of the Bielschowsky cases,[7] is by no means unknown. But even in these the higher lesions of the cord are much more frequently associated with neuritis than the lower. The assumption, therefore, in our case, in view of the clinical symptoms, was in a measure justified that we were dealing with an inflammatory process rather than with a new growth. In this connection a case recently reported by Weisenburg and Thorington of syringomyelia with double optic neuritis is of interest. These writers refer to two other cases in the literature, and give as possible causes: first, an intracranial growth, and, secondly, internal hydrocephalus, the latter of which they regard as the more probable. In these cases undoubtedly the mechanism is exactly similar to that in our case, namely, an occlusion of the spinal canal in its upper portion by a distorted spinal cord, resulting in hydrocephalus, and consequent optic neuritis.

The condition is so unusual a one, and particularly in our case so completely eluded diagnosis during life, that it is well worthy of special mention.

Onset of Paralysis. The relatively sudden onset of paralysis of the lower extremities was a further source of confusion in the diagnosis. When I first saw the patient she had a beginning, very definite weakness of both legs, together with sphincter disturbances. In the course of a week or ten days this had progressed to a practically complete transverse lesion of the cord. Apart from the other considerations such an onset of paralysis naturally would lead, as it did in this case, to the supposition that a local, presumably inflammatory, condition, or one due to softening from vascular causes, was at the basis of the disturbance. In addition, one would not expect so sudden a loss of power as the result of the invasion of a tumor, although such cases have been described. The completeness of the paralysis is also worthy of special note. The patient had practically no consciousness whatever of the existence of her legs from the time the paralysis became complete up to the time of her death. There was absolute loss of both deep and superficial reflexes, no doubt explained either on the basis of complete destruction of the cord, or, more probably in this instance, by the actual invasion of the reflex arc by the new growth. It was not possible to bring the pregnancy into immediate relation with these symptoms of transverse lesion of the cord. The painless labor which followed shortly after the onset of the transverse lesion of the cord is further evidence of the complete destruction of the spinal cord at that time. The cessation of pain in the legs following the lumbar destruction was, of course, to be expected, but naturally threw no added light upon the nature of the destructive process. It is worthy of passing mention that bed-sores and other trophic disturbances in the legs were absolutely avoided.

Lumbar Puncture. Lumbar puncture was not done. There was no evidence whatever on the clinical side that a meningitis lay at the bottom of the symptoms, and for various reasons it seemed undesirable, unless there was special indication, to perform even so simple an operation as lumbar puncture for diagnostic purposes. Had such a puncture been made early in the disease it is altogether probable that a dry tap would have resulted, but very probably certain of the tumor cells might have been extracted with the needle, which would have assisted, if not definitely established, the diagnosis. Had this occurred it is possible that surgical interference might have been considered.

The Possibility of Operation. When the diagnosis of spinal tumor was definitely established post-mortem, the question naturally arose as to whether it would have been possible at any period of the disease to have operated with success. It must be remembered in considering this question that the patient was well advanced in pregnancy at the time the first irritative symptoms on the part of the sacral nerves appeared, and presumably would have been a poor subject for laminectomy. If, however, in spite of the pregnancy, such a procedure had been undertaken it is altogether improbable that the tumor could have been completely removed. Its growth evidently was extremely rapid, and it was clearly not encapsulated. Shortly after the onset of the first pain the disease involved a large area of the sacral nerves within the spinal canal, and it is highly improbable that a growth of this character could have been reached with sufficient thoroughness to have completely extirpated the disease. Naturally, under all the conditions the indication for operation must have been absolutely plain before any such procedure could with justice have been undertaken. Lumbar puncture might have given the information desired; that is, however, merely a matter of speculation. It is certain that when the tumor had attained to sufficient extent to involve the cord substance itself, which occurred in the latter part of December, operation could not have been undertaken with the slightest hope of permanent relief. The postmortem examination did not definitely reveal the place of origin of the tumor, and in the absence of exact knowledge bearing upon this point it is unnecessary to speculate further as to the conceivable possibility of operation at any stage of the disease.

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[7] *Loc. cit.*

Interpretation of Pain. Apart from the diagnostic difficulties which this case presented, and their perfectly clear explanation by the autopsy, the matter of the interpretation of the pain is deserving of a few words of final comment. The patient unquestionably suffered extremely from the beginning to the end of her illness. In fact, it is hardly possible to conceive of a condition of affairs more calculated to produce pain of a most excruciating sort, than was found in this case. The various physicians who saw could not fail to recognize the fact that she was suffering constant discomfort, and often pain. They were, however, deceived as to the real extent of this pain, which undoubtedly was very much more severe than was supposed. Morphine was withheld, partly because of the wishes of the family, and partly because those in attendance felt that the pain could be controlled by less radical means. This was a mistake. Morphine should have been administered freely, and much more weight should have been given to the complaints of the patient who bore her suffering with heroism from the beginning to the end of her six months' illness.

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THE CONTROL OF SYPHILIS AND VENEREAL DISEASES.*

BY PRINCE A. MORROW, M.D., NEW YORK.

I wish to express my sense of appreciation of the honor of being invited to appear before you this evening. I have accepted the invitation all the more willingly as it affords the opportunity of presenting before this representative body of medical men of Boston the general features of a plan of control which was inaugurated in New York, some eighteen months ago, by the American Society of Sanitary and Moral Prophylaxis, and I do this with the confident hope that a society similar in aims and purposes may be organized in this city.

It has long been recognized that the control of a class of diseases, which, in their genesis and mode of spread, are pre-eminently, social diseases, is the most difficult of all the problems of hygiene. These diseases are not only a grave danger to the public health, but, through their morbid irradiations, constitute a serious menace to the health and productive energy of the family, and thus become a powerful factor in the degeneration and depopulation of the race.

It is hardly necessary to spread before this body of medical men the pathological balance sheet of venereal infection in order to emphasize the importance of the subject for discussion this evening. Lest we forget the enormous debt created by these infections, and which humanity must pay in suffering, disease and death, let us glance for a moment at some of the more salient items in this exhibit. The mere inventory of the morbid conditions, chargeable to syphilis alone, would include entries from every department of pathology. A large number of morbid conditions formerly credited to other pathogenetic factors are now recognized as the product of syphilis.

Syphilis is met with, in some of its forms or manifestations at least, in every branch of practice. It furnishes a large contingent of morbidity in the practice of the neurologist, the gynecologist, the eye, ear, throat and nose specialists, as well as the internist in general medicine. The significance of syphilis as a danger to health and life is not measured by its immediate effects. Acquired syphilis rarely overcomes the citadel of life by direct assault; its rôle is that of the sapper and miner. It undermines the constitution, weakening its organic defenses and inaugurating changes which render it an easy prey to other forces of disease. It is especially in its late or terminal stages that its worst effects are manifest, in lesions which seriously compromise the integrity of organs essential to life.

In the sphere of the nervous system alone we may place to the debit side of syphilis 90% of locomotor ataxia, more than 75% of ocular paralyses, a large but indeterminate proportion of general paralysis, paraplegia and hemiplegia; 80% of all cases of paresis give a syphilitic history, — all affections of a serious nature and, for the most part, incurable.

The pathologic liabilities of gonococcus infections are scarcely less formidable. Less than a generation ago it was not suspected by the medical profession that in what was regarded as a trivial local disease of the urethra there lurked a germ possessed of such pathogenetic possibilities as we now ascribe to the coccus of Neisser,— a germ which is susceptible of being taken up into the circulation, causing serious articular and often fatal systemic complications; an infection, which, in respect to the character and sum total of its dangers constitutes a greater social plague, perhaps, than syphilis.

We are indebted to gynecologists for statistical evidence that it causes 80% of all deaths from inflammatory diseases peculiar to women, practically all the pus tubes, more than 75% of the suppurative pelvic inflammations and 50% of all gynecological operations performed by surgeons, to say nothing of the large number of women who are permanently invalided.

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* Read before the meeting of the Boston Library and the Suffolk District Medical Society, Dec. 19, 1906.

This pathological exhibit embraces only the direct damage to the health of the individual,—the personal risks of the disease. There is, however, another aspect of venereal morbidity and mortality which constitutes its peculiar social danger and gives to the work of prevention a distinctly humanitarian value. I refer to infections of the innocent and helpless members of society, from their introduction into married life. Unfortunately, marriage does not represent that asylum " pure and chaste " in which these infections find no port of entry.

Of syphilis it may be said that it is a most pernicious foe to the family; it is antagonistic to all that the family stands for. The function of the family is to create life, the effect of syphilis is to damage or destroy life. The function of the family is to produce children, healthy, well-formed and vigorous; the effect of syphilis is to so vitiate the process of nutrition that it results in beings blighted in their development and stamped with physical and mental inferiority.

Syphilis stands as the perfected type of an hereditary disease, the only disease which is transmitted in full virulence to the offspring. The bill of syphilitic heredity and mortality is appalling; it causes 42% of all abortions; 60% to 80% of all syphilitic children die in utero or shortly after birth; those that finally survive are the subjects of degenerations and organic defects which are susceptible of transmission to the third generation. Many look upon this as nature's scheme for the elimination of the unfit, but these children might have been born in conditions of physical soundness but for the syphilis of the parents.

The influence of gonorrhea as a depopulating factor is even more marked. A large proportion of gonorrheally infected women abort, while 50% are rendered permanently sterile.

The social danger of gonococcus infection is not limited to its influence upon pregnancy and conception; it is still further manifest in the infected risks conveyed to the offspring. A proportion variously estimated from 10% to 30% of all blindness is caused by gonorrhea, to say nothing of the vulvovaginitis, the arthritis and other accidental infections of children in family life. Such are some of the undeniable and scientifically demonstrated dangers of venereal diseases which render their prophylaxis the most important problem in preventive medicine that confronts us at the present day.

When there is question of the control of any infectious disease dangerous to the public health we naturally turn to those who are officially charged with this duty. But we perceive that there is on the part of these officials absolute inaction. It would seem an anachronism in the present era of preventive medicine that a class of infections which entail such a vast amount of morbidity should be wholly ignored by our sanitary authorities. What is the explanation?

I have elsewhere stated my conviction that the prevention of these diseases is not a purely sanitary problem, it cannot be worked out from the sanitary side alone; moral issues enter as an essential factor and cannot be ignored. When we examine more closely into the nature of these diseases we must recognize that while they are diseases of the human body, due to microbic invasion, they are in a special sense diseases of the social organism. Their spread is determined by social conditions which lie entirely without the sphere of sanitary control. Their communicative mode, intrenched in the stronghold of privacy, cannot be reached. They are not susceptible to the application of strictly sanitary measures.

Obligatory notification, the essential condition of sanitary intervention, is not practicable, it is opposed by both social sentiment and professional ethics; here the medical secret dominates the situation. The responsibility for this official inaction is thus shifted to the shoulders of the general medical profession and the public.

Now the public cannot be expected to seek deliverance from a danger which it does not appreciate and the significance of which it does not comprehend. The public has no adequate conception of the danger of these diseases and especially of their social dangers; the invalidism they produce, the sterility, the abortions, the blindness they cause, the vast mass of disease and misery they engender. The medical profession knows these facts and this knowledge carries with it a responsibility, a responsibility of which the medical profession cannot divest itself until it shares this knowledge with the public. The laity is clearly entitled to a knowledge of facts which so vitally concerns its interests.

Clearly, the first step in any real progress toward prophylaxis must be the education of the public and the creation of a social sentiment in favor of this preventive work. The fact that the public is averse to this enlightenment only emphasizes the necessity of a crusade against ignorance. It will be granted that public opinion has often a force much beyond its merits. There is no greater force for evil than ignorant public opinion, and a public opinion based upon tradition and prejudice is always ignorant. Witness the insensate fear of leprosy, and the barbarous inhumanity betrayed in the treatment of lepers in this country, notably in the case of the Syrian leper who was done to death by cruelty in West Virginia, so recently. Science tells us that a syphilitic or consumptive is ten times more dangerous as a source of contagion to others.

On the other hand, there is no greater force for good than enlightened public opinion. Witness the prompt and invaluable co-operation rendered by the laity in the crusade against tuberculosis.

Experience in dealing with other communicable diseases has shown that any infectious disease which is spread in the relations of family and social life cannot be brought under control without the co-operation of the public, and the first and most essential condition of this coöperation is the enlightenment of the public as to its dangers to the individual and society; further, the public cannot give an intelligent co-operation without a knowledge of the conditions under which the disease is spread and the modes of its contagion, direct and indirect.

Another fact, developed by experience, and which finds its special application here, is, the more the spread of a disease is independent of environmental conditions, the more it comes within the control of the individual, the more essential this enlightenment. Venereal diseases are distinguished from all other infectious diseases by the fact that they are voluntary infections; they are contracted and conveyed to others by relations voluntarily entered into. But they are none the less *ignorant infections* and, in the opinion of the public, *benign infections*. The man who contracts venereal disease is either ignorant of the risks of exposure, or believes it to be a benign affair. The man who carries this infection into his family does it ignorantly and without full knowledge of its dangerous consequences.

The education comprehended in our program is, however, much more comprehensive than thus far indicated. This general enlightenment of the public as to the extent and dangers of these diseases is simply a preliminary, designed to create a public sentiment in favor of an education which shall be more radical in its nature and more efficient in prophylactic value. Many thoughtful men are beginning to recognize that the education of the rising generation in a knowledge of the laws of life and sex is most important, but they must also recognize that this is not possible without the consent and co-operation of the public. Our educational program proposes an innovation upon the established system of home and scholastic education, which shall take account of the sexual organization of the individual, the origin and facts of life and sex which are now regarded as forbidden subjects.

Time and space will not permit me to enter into full details of the scope of this education, the age at which it should be given and the agencies through which it should be imparted. The function of the medical profession is to insist upon the value of this education and supply the requisite knowledge, intrusting its practical application to those who command the facilities and are better qualified by experience and a knowledge of specific methods. This education should be begun early, before sensuality is awakened and the curiosity of youth in regard to the mysteries of life and sex takes on a dangerous turn. Upon this foundation should be built, later, instruction in the physiology and hygiene of sex which should include the true purpose of the sex function, its essential dignity, and further, that its impulses should be educated, controlled and directed in a proper channel. Later, he should be taught the dangers, both physical and moral, which come from the irregular exercise of the sex function. The high purpose of this education is to teach young men how to live according to the laws of a healthy nature by letting them know what those laws are. It aims to promote clean living by cultivating a right attitude of mind toward the passions and appetites; its essential object is to promote continence as the surest prophylactic against venereal infection.

This innovation proposes to substitute sound, sanative and wholesome knowledge of the sex function for the erroneous and demoralizing instruction the youth now receives from ignorant and often vicious sources.

The fruit of this evil seed sown in the fertile mind of youth is, and always must be, evil. Men do not gather grapes from thorns, nor figs from thistles. Medical men who have the opportunity of observing the practical results of a system of education which is organized on a basis of secrecy and silence in all matters pertaining to sex cannot too strongly deprecate the blindness of educators whose spirit and practice is to ignore this most important fact of life.

One of the noxious growths of this harvest of evil is the idea almost universally prevalent that sexual intercourse is a necessity to the health of men, and which is so deeply grounded that it becomes a sort of " obsessional belief." This idea, coupled with its natural outgrowth, that a man has a natural right to gratify himself in this way, constitutes, in my opinion, the most powerful determining cause of masculine immorality. The lax social sentiment which accepts and tacitly sanctions the " sowing of wild oats " as a natural incident in the evolution of the adolescent is a contributory cause.

I shall not attempt to say in what degree the medical profession is responsible for this false physiologic doctrine. It is the duty of medical men not only to repudiate, but uproot, if possible, the physiologic heresy that " using a prostitute " is a hygienic procedure by teaching what is amply verified by experience, that continence in young men is not prejudicial to health, but is compatible with the highest physical and mental vigor.

The so-called " sexual necessity " has been invoked as a physiologic basis of the conventional code of morals, expressed in the double standard of morality for men and women. As before intimated, moral questions enter as an important factor in the venereal problem, and cannot be ignored in any intelligent attempt toward its successful solution. In considering this question it is important to recognize the distinction between the social code of morals and the moral code taught by Christianity. The late Senator Hoar, of Massachusetts, in one of his last published papers, thus defines conventional morality: " We mean by morals the rules of conduct which govern men in the ordinary social relations, which do not, in general, depend for their sanction on religion on the one hand, or the law of the state on the other." " In speaking of actions as immoral, we speak in general of those condemned by public opinion. The standard of private morals must be measured by the opinion of society," etc.

Now, the morality of many men, — I may say, of the average man, — is expressed in the formula that it is his private right to indulge his sexual appetite whenever and wherever he may find a receptive partner. This morality is accepted and tolerated by society, not theoretically, perhaps, but practically it is so tolerated, since no social stigma attaches to its practice.

While allowing himself the largest sexual liberty, man's standard of morality for women is quite different; he demands of woman entire abstention from sexual intercourse before marriage and absolute fidelity after marriage. Women weakly accept man's standard, and while not demanding or even expecting premarital virtue in men vainly imagine that the mere fact of marriage will transform the polygamous man into a monogamous partner. A change in relation does not, however, alter character. Doubtless, a certain large proportion of men are restrained by a sense of sexual honor from infidelity, but, unfortunately, a man seldom lives a life of impurity without consequences, and these consequences, introduced into marriage, make up the saddest chapter in the martyrdom of women. The thousands of virtuous wives who suffer in ignorance disease, sterility and mutilation of their bodies, and in whom the holy office of maternity is desecrated by the production of abortions, tainted and diseased children, should know that the standard of morality they now tolerate in the men they marry is the responsible cause. This knowledge should come through general enlightenment of the public.

It will be admitted that a marked improvement in public morals has taken place through publicity. Certain public, political and commercial evils are no longer tolerated; the standard of business probity has been elevated. But while social sentiment ostracizes the drunkard, it still gives a free charter to the libertine. This ethical awakening has not penetrated the realm of private morals; man's morality is still the traditional morality, a survival of the domination of the strong over the weak, and based upon the theory of property ownership in women.

There can be no question that this traditional standard of private morals enters as an important etiological factor in the spread of venereal infection. It is believed that the education of the public along the lines already indicated — the exposure of the magnitude of the venereal peril, its significance as a social danger, the havoc wrought in the home and family — will do much in creating a public sentiment which will no longer tolerate these evils nor sanction the standard of morals of which they are the outgrowth. There is need to educate, not only the intellect but the conscience of the people, which shall recognize a moral responsibility in sex relations and which shall develop a higher sense of sexual honor among men to the women they marry, and of fidelity to the interests of the unborn.

The medical profession has a grave responsibility in this regenerative and uplifting work. In so far as the existing standard of private morals rests upon a false physiologic foundation, it should be swept away.

It may be said that it is not the province of the physician to teach morals; many physicians claim that we should eliminate all questions of morality and study this problem solely from the standpoint of the sanitarian. I make no apology for the intrusion of this educative work in the domain of morals. The successful solution of the problem of prevention can never be approached from the sanitary side alone. Social morals and social diseases are indissolubly linked on the relation of cause and effect. Here, at least, public health and public morals are one and indivisible. Whatever makes for morality is a distinct gain in the diminution of venereal infection; reciprocally, all hygienic teaching which conduces to clean living makes not only for the physical but the moral health of the individual and society.

TREATMENT.

The prophylactic value of this purely sanitary measure is so generally recognized that it is scarcely necessary to insist upon it. While the primary and specific object of treatment is to cure the patient, the prompt sterilization of sources of contagion; prevents infection of others; moreover, the treatment of the patient affords the opportunity of instructing him in regard to the danger of the disease to himself and others, the laws of its contagion, especially the duration of its contagious activity and its modes of communication. The physician but half fulfills his duty by merely prescribing for the patient while omitting this instruction.

It will be admitted that the existing provisions for the treatment of this class of cases are insufficient and badly organized for the purpose. Venereal patients are discriminated against or barred from admission to general hospitals while no special hospitals are provided for their reception.

In an investigation made by myself, not long ago, into the organization of our present hospital system with especial reference to this class of cases, letters were addressed to leading genito-urinary specialists in all the large cities in this country. The replies showed that there was but one single special hospital in the United States for these diseases, and that this was not used exclusively for this purpose. New York City provides only twenty-six beds for female and something over twice that number for its male patients, suffering from these diseases in an acute form. I may refer to one or two gross abuses growing out of these insufficient hospital accommodations, coming under my personal observation in the City Hospital. Respectable married women infected by their husbands are compelled to inhabit the same ward and sleep in beds side by side with the most abandoned prostitutes. A young girl who may have taken only the first step in the downward path and has been robbed of her virtue and her health at the same time is not likely to be reclaimed after being exposed to the demoralizing influence of these adepts in vice; young girls, under fifteen years of age, when found diseased, usually from criminal assault, who come under the care of the Society for the Prevention of Cruelty to Children, are placed in this same ward and detained until cured.

Fortunately, the vast majority of this class of patients are ambulatory and require only dispensary treatment. The dispensary services, are, as a rule, not organized with reference to the peculiar shameful nature of venereal diseases in popular estimation. The conditions are such as to repel rather than attract this class of patients, as the nature of their disease is apt to be suspected or positively known by the other occupants of the waiting room. Under these conditions it is not surprising that so many venereal patients seek the seclusion of the out-of-the-way office of the advertising quack or prefer the secrecy assured by a sealed package of medicine whose inviolability is assured by the United States Postal Department.

The prophylactic value of treatment may be vastly improved by a reform of these and other abuses. What is required are enlarged facilities for treatment which shall be gratuitous, which shall be convenient and available and which shall be adapted to the private nature of the disease.

Social prophylaxis embraces measures of a general order which relate to social causes and conditions that favor the spread of venereal infection. It is evident that no comprehensive scheme of prophylaxis can be framed which ignores the chief source of these diseases and the agency by which they are commonly propagated, viz., the social institution known as prostitution.

Since moral, as well as sanitary, measures enter as component parts of this scheme of prophylaxis it does not include the system of *réglementation* employed in continental countries. Apart from objections on moral grounds and the hostility of public sentiment in this country to its adoption, it is condemned by its practical results, it does not materially diminish the sum total of venereal morbidity in countries where it has been most perfected and longest employed.

So far as relates to prostitution as a social institution it is proposed to take up the study of the underlying causes, material and economic conditions, etc., and present the results of this study for the education of public opinion. The essential object in view in dealing with the social evil is to prevent the *making* of prostitutes by correcting, as far as possible, the conditions which lead to prostitution. The making of prostitutes may be prevented in a measure by protecting young women against seduction, not only by education, but by safe-guarding minors in every possible way. By combating proxenetism in all its forms and severely punishing the purveyors of prostitution in whatever guise they are found, whether the cadet, the white slave trader or the employment agent.

The industrial and occupational dangers of young girls of the working classes and other conditions of living which lead to prostitution come within the scope of this prophylactic work.

It is evident that the problem of prevention is most complex in its causes, and that sanitary measures must be supplemented and reinforced by influences and agencies which can more effectively intervene in the correction of the conditions under which these diseases are spread, and for this purpose it is necessary to enlist the co-operation of all the social forces which work for good in the community. Hence the necessity of a society, composite in character, which shall embrace in its membership medical men, representatives of the clergy, of the law, educators, sociologists and public-spirited citizens interested in the social welfare.

In closing this paper which has extended beyond the proposed length, I may refer to the work done by the society organized in New York last year, and indicate briefly what has been learned and what has been accomplished by eighteen months of experimental work directed thus far chiefly along educational lines.

In the first place, we have learned that the work is most difficult, and that it is necessary " to labor and to wait" for results. The late William H. Baldwin, chairman of the Committee of Fifteen, who was consulted in the organization of this movement and who was profoundly impressed with its importance and deeply solicitous of its success, advised us " to go slow." This advice was entirely unnecessary, and, in the light of present experience, appears almost ironical. " To go slow " is the only mode of locomotion.

We have found:

On the part of the mass of the medical profession a general recognition of the importance of this work, a practical unanimity of sentiment as to the necessity of doing something towards checking this evil, but a more or less pronounced incredulity as to its accomplishment. A certain large and influential element, I may almost say, the best element, in the medical profession of New York City, has given its moral support by becoming members, a still more restricted number are giving their active co-operation. A few are openly hostile, deprecating any attempt to make public evils which they claim ought, in the interests of decency and social propriety, to be concealed.

On the part of the general public an indifference, evidently the consequence of ignorance, and this on the part of many persons of superior intelligence in other matters — public-spirited citizens, prominent in social work, and whose co-operation would be invaluable — a reluctance to identify themselves with this movement, an aversion to personal engagement in this work because of its unsavory character. At the same time, a large number of the very best men in every department of social life have given in their adhesion, doubtless impelled by a sense of duty; one distinguished divine declares that his conscience compelled him to join in this movement.

On the part of educators, and, especially, directors of physical training in schools, colleges, associations and settlements, — men who have the opportunity of observing the evil results of our faulty system of edcuation,— the keenest appreciation of the educative feature of our program.

Finally, on the part of the public press, a veritable Chinese wall of traditional prejudice, which closes any advance to publicity in this direction. Editors of newspapers are most loyal champions of the "conspiracy of silence." One notable exception, the *Charities and Commons*, has given us most effective support.

What has been accomplished? It is, perhaps, premature to expect definite results. The mere agitation of this subject has been of immense service in awakening the perceptions of both the medical profession and the people to the magnitude of a social danger which social sentiment and professional ethics have always united to cover up and conceal.

Societies with similar aims and purposes have been organized in various cities, Detroit, Chicago, Milwaukee, Philadelphia. The society in Philadelphia has over seven hundred medical men in its membership. Many district medical societies are now taking up this work.

The policy of frank and open discussion of these forbidden topics inaugurated by our society has given courage to many of the laity to break with traditional restrictions and to speak out their innermost convictions.

The molding of public opinion to the importance of this work is as yet only in the formative stage, but the receptivity of the public mind to the knowledge we wish to convey is a most cheering indication. This society is receiving from serious-minded men and women all over the country requests for literature which shall throw more light on the situation. The indications are unmistakable that a sentiment in favor of this work is deep, wide-spread and constantly growing.

There have been numerous demands from societies, schools, settlements and various social groups for lecturers who shall give talks to young men. The extension of the educative work of the society in this direction has been made possible by the generous contribution of two of our members toward the establishment of a lecture fund, which will not only enable us to supply existing demands, but still further expand the work of this society, by organizing a regular system of lectures, in various parts of the city. It is proposed to employ as lecturers only those who are specially fitted for this delicate and important work.

I fear that I may have overtaxed your patience in this exposition of a system of prophylaxis which is planned along the lines recommended by the last Brussels Congress and has been adopted by the American Society with material modifications and additions, and which may be still further modified, and, it is hoped, improved, with the larger wisdom gained by practical experience. No one knows better than myself that it does not realize the ideals of a perfect system. It presents the advantages, however, of being practical, available and promises to be effective in limiting at least the evils we wish to prevent. In dealing with this important problem of social hygiene, the solution of which has always been the despair of sanitary science, it substitutes interest for apathy, action for inaction, the energy of hope for the impotence of despair.

Massachusetts General Hospital.

CLINICAL MEETING, JANUARY 11, 1907.

DERMATITIS EXFOLIATIVA AND DERMATITIS HERPETIFORMIS.

BY H. P. TOWLE, M.D.

Through the courtesy of Dr. C. J. White I am enabled to show these two cases from Ward G:

Case I. *Dermatitis exfoliativa.* — The first is a case of dermatitis exfoliativa developed from an obstinate form of psoriasis of eight years' standing. During this period the psoriasis showed moderate remissions and exacerbations but never disappeared. The lesions, which were always very abundant and have covered a large proportion of the body area, varied in size from a pin's point, scale-capped papule to very large, thick, red, scaling plaques. The general health has been good throughout, and aside from the mechanical discomfort produced there have been practically no subjective symptoms. Twice during this time a universal dermatitis developed which resembled the present attack exactly and from which the patient made a complete recovery. It is a striking fact that chrysarobin had been used before each of these attacks, although, before the last at least there was no marked reaction apparent. On Sept. 11 when the patient was admitted to the ward he had a typical but very extensive eruption of psoriasis. Not long after admission it was noticed that the lesions were growing much redder and were enlarging peripherally. This extension has continued steadily until at the present time the whole body surface is involved, with the exception of three or four thumbnail areas. Other changes in the skin have accompanied this process of extension. There have been attacks of an intense general hyperemia lasting from one day to a week or more. Occasionally moderate malaise and a local feeling of heat and tension have accompanied them. After a variable interval the hyperemia would subside quickly, to be replaced by a duller red or, on some occasions, by a brownish color. The scales also have shown great and often rapid variations. As the disease extended, the characteristic psoriatic scales were gradually replaced by thin, gray-white flakes attached by one edge and easily removed. Suddenly the scaling would become branny and as suddenly flaky again. The changes in the character of the scales have corresponded in a general way to the changes in the intensity of the hyperemia. The more intense the hyperemia the smaller the scales were apt to be. The attacks of hyperemia have gradually become rather less frequent, and the skin, which was formerly much infiltrated and stiff, has become thinner and more pliable. The temperature was irregular during the first few weeks, sometimes rising as high as 101°, but no exact relationship could be established between the variations in the temperature and the cutaneous manifestations. For the past six weeks the temperature has shown very little variation from normal. Shortly after the extension of the disease set in the glands enlarged generally and have remained so ever since. About one month after entrance a number of irregularly quadrilateral grayish plaques appeared on the dorsal surface of the tongue which were thin, well defined, and not elevated or tender. There has never been much general itching, although from time to time the patient has complained of local itching, chiefly on the back, and especially when the scales were large and abundant. Several weeks ago a tender area appeared at about the middle of the anterior surface of the right thigh. There were no objective symptoms and the tenderness disappeared gradually. Similar areas of tenderness occurred on the lower legs and once on the palms and soles. Physical examination of the chest and abdomen has been negative. The urine and blood show nothing abnormal. During the first weeks the patient lost weight, but recently he has been gaining steadily.

Case II. *Dermatitis herpetiformis.* — J. W. S., aged ten, was admitted to the ward Sept. 15, 1906, with a bullous eruption on the chest, arms and legs. There is no history of a similar or any other skin disease in the family. Except for the present affection the patient has never had any serious illness. Six months before the first appearance of the eruption the boy was vaccinated. The sore pursued the usual course except that a swollen gland appeared in the left axilla, which has remained enlarged up to the present time. Five weeks before admission vesicles suddenly appeared on the arms and later on other parts. There was no itching although where the lesions were numerous and confluent there was considerable pain after they had ruptured and crusted. There has been no disturbance of the general health. Upon admission the internal organs were found to be normal. The urine was also normal. The skin of the whole thoracic region, front and back, was covered with vesicles and bullæ which varied in size from a small pea to a small marble. Some were intact, others were ruptured, crusted or superficially ulcerated. There was no tendency to grouping. Similar lesions existed on the flexor surfaces of the arms, scattered over the thighs and legs and on the genitalia. Since admission there have been constant crops of lesions, sometimes only a few at a time and sometimes many and in groups. New lesions have appeared on some occasions before the old had disappeared, while at other times the new crops have been preceded by intervals of freedom varying in length from a few days to a week or two. During the longer of the intervals the old lesions would dry up into a crust and disappear so that at the time of the fresh outbreak nothing remained of the old except purplish plaques on their sites. The type of lesions has varied from small to large, from scattered to discrete, but the majority of lesions in any one crop have usually been of the same type. Some crops were made up of small pea-sized globular lesions, tense, thin walled, with clear contents and springing from apparently healthy skin. Other crops showed a marked tendency to confluence and to the formation of large bullæ. In one instance the eruption, particularly over the feet and ankles, showed a distinct annular arrangement. First, pea-sized vesicles appeared in a ring which soon became confluent about a central area of uninvolved skin. Then the epidermis was uplifted in the center and a large bullæ resulted. Itching has never been a prominent symptom, although there has been pain where there were large areas of crusted lesions. The temperature has shown considerable elevation at times and has often corresponded or even anticipated a new outbreak. The glands which are markedly enlarged generally are smooth, firm and not tender. In size they vary from a small marble up to an olive. The gland in the left axilla, which is said to have resulted from the vaccination, has pushed the overlying skin into a rounded prominence the size of a grape. The skin shows no change in color or texture and the firm, non-tender gland is freely movable beneath it. The blood, the contents of the vesicles and smears made from the bases of opened vesicles and bullæ have been examined for eosinophiles repeatedly, but the marked increase in these cells which many writers have reported was not found except in the last examination made Jan. 9. Up to this time the number of eosinophiles had varied from 1% to 3%. At this last examination they were found to the amount of 14%. The disease at this time was quiescent and no new lesions had appeared for several days. The hemoglobin has varied from 100%, shortly after admission, to 80% Dec. 24. The reds ranged from 5,520,000 to 3,800,000; the whites from 5,200 to 9,200. The polynuclear leucocytes have been decreased during the periods of cutaneous activity and increased in the periods of quiescence with a corresponding increase or decrease of the mononuclear elements, chiefly the small. The general health has been good. The regions especially affected have been the dorsum of the feet, the ankles and the lower parts of the legs, the fronts of the knees, the genitalia, buttocks, chest and wrists, although sparse lesions have appeared on other parts of the extremities, on the abdomen, back, face, about the mouth and a few on the mucous membrane of the mouth.

CHRONIC ENLARGEMENT OF PROSTATE GLAND: SUPRAPUBIC SECTION AND ENUCLEATION.

BY H. H. A. BEACH, M.D.

A single case of prostatectomy is presented for those who may not be familiar with the technic of Fenwick, published in 1904; later in 1906.[1]

He believes that the usual technic employed is faulty in tending to the sacrifice of the orificial ring at the internal meatus, the prostatic urethra and the efferent seminal ducts. Whether the suprapubic or perineal method be employed, neglect of this precaution will leave the patient with a narrow or warped vesical orifice due to cicatricial contraction with its miseries and dangers. His plan is to begin the separation by inserting the finger to the first joint in the prostatic urethra. The end of the finger is then bent and pushed through the mucous membrane which usually gives way before the pressure. At once, the finger finds itself between the tough capsule of the gland and the contained adenomatous masses, travelling on without much opposition until the entire lobe is enucleated and generally stripped off from the urethra. Especial care is employed in detaching the lobe from the floor and sides of the urethra and the triangular ligament. The opposite lobe is removed in a similar way. Fenwick employs no instrument after the bladder section.

My patient entered the accident room with complete retention. He was seventy-one years old and for twelve years had observed that his stream was slowly diminishing. One day after a long drive he was unable to expel more than a few drops. His physician relieved him for the time with a catheter. On entering the hospital, the distended bladder reached half way to the umbilicus. On rectal examination the prostate was found enlarged. Thirty ounces of bloody ammoniacal urine was drawn by catheter and constant drainage maintained for a week.

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[1] Jour. Am. Med. Asso., Oct. 13, 1906.

At that time the catheter was withdrawn but he was unable to pass any urine, and the bladder gradually refilled. Constant drainage was used for another week with a similar result.

Oct. 16, Suprapubic section: in Trendelenberg position general prostatic enlargement found, with a firm ring around the vesical orifice. Two lobes, each of the size of a hen's egg, were removed in the manner described. The left hand was used to support the rectal side of the growth during that part of the enucleation. The bladder was carefully cleansed and the wound closed around two catheters reaching to the base of the bladder for irrigation and drainage. They were removed in a few days and a catheter substituted in the urethra. The latter was removed as soon as the suprapubic wound closed. His temperature reached 103° on the second day after admittance, after which it had no important significance.

His residual urine on leaving the hospital was less than half an ounce. He does not use the catheter, but passes urine with certainty and comfort. It is now within five days of three months since the operation and he informs me that he has full control of the function.

PERFORATING DUODENAL ULCER: OPERATION.

BY H. H. A. BEACH, M.D.

THE patient, a man twenty-nine years old, entered the accident room with severe abdominal pain. His father died of a " stomach trouble " lasting six months; his mother, at the age of forty-nine, of " tumor of the side." In good health until three years ago when he entered the Massachusetts General Hospital and was treated for gastric ulcer. He vomited blood several times but was free from pain. He rapidly improved and was discharged well at the end of a month.

He had remained well until last night when he had a sudden attack of very sharp pain beginning in the epigastrium and rapidly spreading to the right lower quadrant of the abdomen. He was nauseated but did not vomit. The pain has persisted in spite of the use of morphia, and is most severe in the epigastrium. The bowels moved yesterday. Temperature, 100°; pulse, 120; leucocytosis, 12,200. Patient in a marked state of shock. His abdomen not distended, but board-like in its rigidity. Tympanitic except for slight shifting dullness in the flanks. Extreme tenderness everywhere, increased toward the epigastrium and appendix region. Incision of four inches through the right rectus above the umbilicus. Considerable free turbid fluid. Intestines reddened and injected. In places covered with flakes or fibrin. On the posterior surface of the duodenum half an inch below the pylorus, was a punched-out hole one eighth of an inch in diameter, from which was pouring intestinal contents.

The hole was closed by a pursestring suture of fine kangaroo tendon. The intestine surrounding the ulcer was not thickened but rather soft, making the suturing difficult. A piece of omentum was sutured over the closed ulcer. The abdominal cavity was then thoroughly washed out with sterile salt solution. Drainage wicks placed behind the duodenum, at the site of perforation and toward the pelvis. Nutrient enemas at first and liquid diet after three days. Nutrients omitted on the fifth day. Soft solids on the sixteenth day. His condition improved, though a temperature persisted until a counter opening in the right flank provided a lower exit for drainage. His wounds had become superficial. Temperature normal and for a week he had been up, when he had a sudden rise of temperature with dullness in an area of between four and five inches on the right side above the costal border and pain between the ribs. On the following day another normal temperature with a gradual rise toward noon and some thick glutinous expectoration, grayish-green. This morning his temperature lowered. Aspirated the region with a negative result. To-night a temperature of 101°.

The patient has since been discharged from the hospital "well."

The symptoms of this case, pain and muscular rigidity, were not sufficient to establish a diagnosis, but they did warrant an exploration of the abdomen, lest some condition that could be remedied, should pass the stage when relief was practicable.

Adding the previous history of gastric ulcer, the presumption was clearly in favor of investigation, though there was no corroboration by internal or external hemorrhage in this attack. With or without that evidence the patient in these rare cases is entitled to the benefit of the doubt as in certain obscure forms of appendicitis, acutely septic gall bladder, twisted ovarian pedicle, adhesions and bands imperilling the pregnant uterus or other viscera, doubtful reductions of herniæ, partial ruptures of the bladder and questionable conditions of the Fallopian tubes.

If in some instances the operation is not always justifiable through the facts obtained, the experience gained in learning what not to attempt may have a definite value in restricting unnecessary interference in future work. Such experiences may be relied upon to develop the best and truest conservatism.

The etiology of duodenal ulcer from the time of Curling has closely associated the lesion with burns and scalds, though its observance in tuberculosis, frost-bite, Bright's disease, heart disease, septicemia, enteric fever, may be more than a coincidence. Without the evidence of partial or complete perforation its recognition as in the past must be most uncertain — without operation or autopsy. The proportion of 6 duodenal ulcers to 225 gastric ulcers and the occurrence of the great majority of duodenal ulcers in the upper section of the duodenum where the acid food has not yet been modified by the alkaline pancreatic secretion explains the tendency to group them with ulcerations of the stomach. This clinical association is emphasized by the similarity of treatment after perforation. If intestinal ulcerations are a pathological sequence of septic absorption from gangrenous skin surfaces, they supply a strong argument for a strict asepsis of all burns with the view of averting this fatal lesion in cases where it may reasonably be anticipated and with which they are most frequently associated. I believe that at present such asepsis is commonly inadequate, and deserves the careful consideration of surgeons.

PERFORATING TYPHOID ULCER: OPERATION.

BY H. F. VICKERY, M.D., AND FARRAR COBB, M.D.

CLINICAL REPORT.

BY H. F. VICKERY, M.D.

The patient, a boy of Italian parentage, born and living in Boston, ten years old, entered the hospital under my care, Sept. 23, 1906, with a large spleen and a positive Widal reaction, having already been ill two weeks. His fever was apparently about to end when it exhibited a recrudescence, Oct. 1, the twenty-second day of the disease; but he did well until Oct. 17, the thirty-eighth day, at about 6 P.M., when at the end of a bath he complained of abdominal pain. I saw him about three and one-half hours later. He had not vomited. The face looked anxious and somewhat drawn. The pulse tension was only 85 mm. The legs were drawn up. There was slight rigidity of the lower portion of the recti muscles. The white corpuscles numbered 5,600, as compared with 2,500 on entrance. In the last twelve hours the temperature had risen from 99° to 104°, the pulse from 125 to 164 and the respiration from 25 to 40. At my request Dr. Farrar Cobb was with me and concurred in the diagnosis of perforation and the decision that operation was indicated.

SURGICAL REPORT.

BY FARRAR COBB, M.D.

The operation was done at the first part of the fourth week of the typhoid fever. The case was one of a typical sick typhoid in a boy about eleven years of age, the temperature often reaching 105°. There had been no intestinal hemorrhage at any time. On the 17th of October, at 5 P.M., the patient complained of severe abdominal pain. At this time some tenderness and rigidity on the right side of the abdomen were noticed by the medical house officer. The pain increased during the next two or three hours and was accompanied by a sharp rise in pulse and temperature. There was no leucocytosis, the blood count showed only 5,600 leucocytes. The patient was seen by me, in consultation with Dr. Vickery, at 9.30 P.M., about four and a half hours after the first complaint of pain. He was in poor condition with a very rapid, feeble pulse. The decision to operate was made upon the pain and the tenderness and rigidity on the right side of the abdomen, most marked in the right iliac region. The operation took place about six hours after the first complaint of pain. Upon opening the abdomen a large amount of turbid fluid was found. A round punched-out perforation in the small intestine was found about eighteen inches above the ileo-cecal valve; this was closed with a pursestring suture of Pagenstecher linen thread. The abdomen was washed out with hot normal salt solution, the wound was closed with through-and-through sutures of silkworm gut, except that a small cigarette drain into the pelvic region was left at the lower end; this drain was removed on the fourth day after the operation and was not replaced.

The patient made an uninterrupted recovery and at no time after the operation showed any signs of typhoid. His temperature came down to normal the day following the operation and remained practically normal through his convalescence. As you see the case here to-night, he is in robust health and in excellent nutrition. It was possible, because of favorable circumstances, namely, thorough preparation before anesthesia, thinness of the abdominal wall in a small boy and good fortune in almost immediately finding the perforation, to do this operation with extreme rapidity, — the time of the anesthesia did not exceed fifteen minutes. No attempt was made to find a second perforation. The anesthetic used was ether.

It should be noted that this is one of the occasional cases in which perforation did not cause leucocytosis.

CANCER OF THE STOMACH: GASTRECTOMY.

BY FARRAR COBB, M.D.

To be accurate the term partial gastrectomy should be used in relation to this case. About three fourths of the stomach, including the pylorus, was excised. This case furnishes a strong argument for exploratory operation in apparently hopeless cases of cancer of the stomach, and illustrates forcibly the fact that certain knowledge of the extent of the disease and the possibilities of its complete removal cannot be gained by any other than operative methods. This man here before us to night is apparently in perfect health and hard at work, over a year after his operation. When first seen it was thought, because of the severity of his symptoms, his emaciation and the distinct large epigastric masses, that only a palliative gastro-enterostomy could be done. After opening the abdomen it was found possible to completely excise the disease with a wide margin of sound tissue.

The case is interesting from a pathological standpoint because the cancer started in an old ulcer, and in addition there was, at some distance from the cancerous ulceration, another ulcer which, on microscopic examination, proved to be non-malignant. The presence of the two ulcers has been shown by Mr. Aitken in the drawing which I will pass around. The reconstructed stomach has been cut open from behind so that one is looking at the inner surface of the anterior wall where the disease was located. The large, irregular ulceration with thick edges was found, on microscopic examination, to be typical adenocarcinoma. The smaller area, somewhat removed from the malignant disease, was a nearly healed benign ulcer.

The patient entered the South Service on Dec. 19, 1905, referred by Dr. Hewes of the Out-Patient Department. He was fifty-three years old. Seven months before entrance he began to have severe pain in the epigastrium, worse after eating. Up to this time he had considered himself perfectly well and it was not possible to obtain any history of digestive disturbances previously. There was progressive loss of weight and strength. Six weeks before entrance he began to vomit and continued to vomit several times a day, mostly undigested food. He had no recollection of vomiting blood, but stomach washing after he entered the hospital brought away dark coffee-ground material with considerable mucus and the Guaiac test showed the presence of blood. He was much emaciated, weighing but 108 pounds. In the epigastrium a distinct, hard mass, somewhat movable, could be palpated. On inflation the stomach seemed somewhat small and contracted. Free hydrochloric acid was present in small amounts. Physical examination in other respects revealed nothing abnormal. At the operation the anterior wall of the stomach in its middle portion, especially near the greater curvature, was occupied by hard nodular masses, in fact the whole of the anterior wall seemed, for a space as large as the palm of one's hand, infiltrated with malignant disease. There were no adhesions; no metastases could be felt in the liver or in the glands above and below the stomach, except that two or three of the glands in the greater omentum were enlarged.

The steps of the operation can be seen fairly well in the sketches which I will pass around. About three-fourths of the stomach with the pylorus was removed. There are only one or two special points in the operation that I should like to call to your attention. It was possible to meet the duodenum and the stump of the stomach without much tension; therefore all idea of complete closure of the cut surfaces and the making of a gastrojejunostomy was abandoned. Continuous sutures of chromicized catgut through all the coats of the stomach were first used followed by a continuous Cushing suture of Pagenstecher linen thread. It was found necessary to use a few additional interrupted Lembert stitches.

For forty-eight hours nothing was given by mouth. Nutrient enemata and salt solution were given by rectum. On the third day the patient was allowed water and albumen water and black coffee by mouth in small amounts. He was kept on liquid diet fos fourteen days. The abdominal wound healed satirfactorily. He left the hospital one month after the operation, apparently well.

PHYSICAL THERAPEUTICS AT THE MASSACHUSETTS GENERAL HOSPITAL. OPENING OF THE HYDROTHERAPEUTIC DEPARTMENT.

BY MAX BÖHM, M.D.

On the first of January, 1907, the resources of the Massachusetts General Hospital for the treatment of its patients were enriched by the addition of two therapeutic methods. I refer to the introduction of Wright's vaccine treatment and to the opening of the hydrotherapeutic department. With the establishment of the latter the hospital has made a further step in the direction it has been working now for some years, namely, to give physical methods in the treatment of disease their appropriate place beside the older established means, namely, surgery and pharmacotherapy.

While up to 1900 the latter were used almost exclusively, since then, more and more, physical therapeutics have been introduced.

On Jan. 1, 1907, the facilities for physical treatment at this hospital were the following: 1. Electro-therapeutics: faradic, galvanic, static electricity; high-frequency since 1902. 2. Radiotherapeutics: x-rays since 1898; modified Finsen lamp since 1903. 3. Mechanotherapeutics: complete Zander outfit with additional pendulum apparatuses for passive motions since 1904; manual massage, given by one chief masseuse with several voluntary assistants since 1904; Frenkel's co-ordination treatment since 1904. It is now interesting to compare the number of patients treated by pharmacotherapy during the last six years in the out-patient department of this hospital with the number treated by physical means.

Such a comparative study may be made in the following tables:

Year.	Number of Prescriptions Filled in the Drug Store of Out-Patient Dept.	Daily Average of Patients Treated in Out-Patient Dept.
1900	68,143	298
1901	61,849	305
1902	58,177	290
1903	55,285	312
1904	53,321	347
1905	49,793	362
1906	43,063	325

According to this table which is derived from the annual reports of the hospital the yearly number of pharmacotherapeutic prescriptions given to out-patients has decreased inside of the last six years more than 25,000, although the number of patients has increased.

On the other hand, according to statements made by those in charge of the different departments where physical treatment is given, there have been treated daily during 1906 in the out-patient department of this hospital exclusively or chiefly by electricity an average of 6 patients a day; by high-frequency, 2; by x-rays, 6; by mechanotherapy, 26; by Frenkel's treatment, 2. Total by physical means, an average of 42 patients a day. That means that during 1906 about every seventh out-patient was either entirely or chiefly treated by physical therapeutics. Undoubtedly this number will increase still more now that the hydrotherapeutic department is established. The hospital owes this equipment to the munificence of Dr. Charles G. Weld and to the trustees of the Blake fund, — Dr. James J. Putnam and Mr. Moorfield Storer.

The new department contains, (*a*) Air baths: electric light cabinet (48 lights); two hot-air and steam cabinets; local hot-air baths. (*b*) Baths: large tub for the use of full bath, half bath, carbon dioxide (Nauheim) baths, etc. Sitz bath. (*c*) Douches: spray douche; circular douche, rain douche, jet and fan douches; ascending douche. (*d*) Mechanical applications: facilities for "Teilwaschungen," wet sheet rubs, douche massage, plain massage and resistive motions. A hot-air chamber and a room for inhalation therapy are provided. With this new addition the hospital possesses now a complete equipment for physical therapeutics unequal on this continent. If this fact gives us a certain amount of pride it lays on the other hand upon the men working on this hospital great responsibilities and duties.

Every American medical man travelling in Germany is struck by the high development of physical therapeutics there; he is surprised to see that this branch of treatment enjoys there the same scientific character as the other therapeutic methods; that there are institutions for hydrotherapy, mechanotherapy, etc., connected with the medical schools and that even hospitals of the smallest size possess some outfit in this line. The public is more and more educated not to ask the doctor for a drug prescription but to receive in the first place instructions for leading a hygienic life, which end is chiefly accomplished by physical means. There are all over Germany numerous private sanatoria and similar institutions for physical therapeutics where thousands and thousands of patients are treated and the increasing number of these establishments points out that this form of treatment produces success.

Now it is no secret to you that the conditions in America are different. The chief difference is that in this country physical therapeutics do not rest upon a sufficiently scientific basis. Medical schools do not teach them; thus students leave school without knowing the physiological basis of these treatments and their indications and consequently make very little use of them in practice. The result is that non-professional men take them up, and although they apply them indiscriminately a certain amount of success results. For instance, I have very little doubt that this is the genesis of osteopathy. Such conditions are very apt to discredit physical therapeutics in an undeserved way.

An improvement of these conditions is decidedly necessary, and there we return to our starting point. An institution like this hospital with such a complete outfit for physical therapeutics can demonstrate to the profession their value in the treatment of various diseases, can take from them the bad name they at present frequently bear by placing them upon a scientific basis. To accomplish this task students and post-graduates should be taught the physiology and indications of the various branches of physical therapeutics, their technique and last but not least, methods of simplifying the elaborate technique of the hospitals for private practice. In such a way physical therapeutics should become common property of the medical profession as well as pharmacotherapy and the other branches of medical treatment.

The question how this end could best be reached was raised when the new hydrotherapeutic department was organized. In particular the question came up how the new department should be conducted and how physiology, indications and technique of hydrotherapeutics should be taught. Naturally, the system employed at present in the mechanotherapeutic department was considered in the first place. There the treatment given to referred cases is as well *prescribed* as carried out. Now, gentlemen, such a system has many advantages, as the result shows, but involves two disadvantages. In the first place it fails to make a larger part of the profession intimately acquainted with the subject, since it leaves practically everything to one man. The second disadvantage seems to us the following.

In Europe we find frequently that specialties resulted based upon certain lines of medical treatment. Thus we see there specialists for physical treatment in general, and furthermore such for its different branches as, for instance, specialists for hydrotherapeutics, for mechanotherapeutics, for radiotherapeutics, etc.

Having some experience in physical therapeutics for now about five years I believe that these specialists may be very able to teach the technique but are not the ones to give proper instruction in indications and results of physical therapeutics; for if a man is only working in a certain line of treatment for a number of years he loses more or less the sight of the results obtained by other forms of treatment and thus cannot help but acquiring a considerable amount of one-sidedness. Furthermore, a therapeutic specialist would have to be an all-round diagnostician to draw strict indications for the use of his special treatment in the different branches of medicine. For it often requires a great deal of diagnostic skill and experience to state exactly in a disease that this and no other form of treatment will help.

On the other hand, for a specialist thoroughly familiar with his line of work it will be a comparatively easy matter to determine which cases are suitable for a certain treatment and which not, provided he possesses the knowledge of the physiology and somewhat of the technique of this treatment, both of which are very easily acquired.

Starting from such considerations and particularly trying to avoid the two mentioned disadvantages we suggested to the hospital authorities to conduct the new hydrotherapeutic department in the manner set forth in the following circular:

> The Hydrotherapeutic Room in the Out-Patient Department will be open for patients Tuesday, Jan. 1, 1907. The purpose of this room is to give house patients and out-patients the benefit of hydrotherapeutic treatment, and to advance the knowledge of this important branch of physical therapeutics in this community. The room will be open daily for men from 9 to 12 in the morning, and for women from 2 to 4 in the afternoon.
>
> Out-patient cases can be referred only, not transferred. Physicians and surgeons referring their cases for treatment remain in full charge of them. The relation to the hydrotherapeutic room should be the same as to the drug store; that is to say, cases referred to the hydrotherapeutic room should come with a written prescription stating the kind of treatment needed, the number of treatments to be given, and give the date on which the doctor wishes to see his case again for control. (Printed prescriptions to be filled out.) The carrying out of the treatment, and this only, is left to the operators, who are thoroughly familiar with the technique of hydrotherapeutics.
>
> This organization requires a thorough understanding of the physiology and indications of hydrotherapeutics on the part of the hospital and the Out-Patient Department staff. To accomplish this the hospital has asked Dr. J. H. Pratt and Dr. M. Böhm to act as medical advisers in hydrotherapeutics. Dr. Pratt will give during January and February twice a week, at a time to be determined later, lectures and demonstrations on hydrotherapeutics for the staff of this hospital.
>
> Very respectfully,
> (Signed) H. B. Howard, M.D.,
> *Superintendent of M. G. H.*

The principle of such a management is to divide the benefit derived from the acquaintance with hydrotherapy as well as the responsibilities and duties, particularly the instruction given in this department, among several men. We expect from an organization of this kind that it will answer best the purpose towards which we are tending, namely, to spread the knowledge of physical therapeutics as widely as possible among the profession; furthermore to raise their scientific standard, and last, not least, to give to all our patients the benefits derived from physical treatment carried out in a scientific way.

MALIGNANT TUMOR OF THE ESOPHAGUS AND DEMONSTRATION OF THE METHOD OF FEEDING AFTER RESECTION.

BY F. B. HARRINGTON, M.D.

In November, 1905, a woman forty years of age came to the Massachusetts General Hospital complaining of inability to swallow food. A stricture of the esophagus at its upper end was found which admitted a bougie the size of a lead pencil. The patient swallowed liquids with great difficulty accompanied by frequent regurgitation. The patient was emaciated and weak from insufficient food. The finger in the pharynx disclosed a bulging of the posterior wall on a level with the upper part of the larynx. It was decided to reach the tumor from the outside by an incision on the right along the carotid sheath and between it and the trachea. An incision three inches long was made on the right side down to the bodies of the vertebræ. It was found that the bodies of the vertebræ from the fifth to the seventh were studded with exostoses, some as large as a marble, some smaller. These were removed. A bougie was then easily passed beyond the first point of obstruction caused by these exostoses, which had pressed the esophagus against the larynx and trachea. The bougie, however, was arrested at about the first dorsal vertebra where, through the incision already made, a small tumor about the size of a pecan nut could be felt apparently occupying the lumen of the esophagus. An incision on the left side of the trachea was made, parallel with the first, extending down to the clavicle. The esophagus with the tumor was freed entirely from the surrounding structures, which were not invaded by the growth. About one and a half inches of the esophagus were resected. The upper portion of the tube was closed with chromic catgut. The lower portion was attached to the skin and a good sized rubber tube was inserted six inches into the esophagus, through which she was fed. The patient made a rapid recovery, and from being emaciated rapidly gained strength and flesh.

Dr. Whitney's report of the character of the growth is as follows:

"A new growth involving the whole of the esophagus about 3 cm. in extent causing almost complete constriction and measuring about 1 cm. in its greatest thickness.

"Microscopic examination showed solid masses of flat epithelial cells infiltrating the tissues in all directions. In many of these masses there were imbricated horny whorls. Epithelioma."

The patient fourteen months after operation was shown in good health with no sign of return. She feeds herself by inserting a rubber tube six to eight inches long into the esophagus, through which she injects with a glass syringe a variety of liquids and semi-solid foods. She has no desire to masticate food and has no desire to taste her food. Yet she likes variety. She does not suffer from indigestion, although there is, of course, no "buccal digestion."

A CASE OF INTERSTITIAL PREGNANCY.

BY F. B. HARRINGTON, M.D.

In this case a six months fetus was found in the general cavity of the abdomen, the placenta being adherent to coils of small intestine. There had been no hemorrhage, but the uterus was spread open so that the walls could not be distinguished, except at the internal os where the cervical canal was found, through which a probe as large as a lead pencil could be passed into the vagina. The placenta was removed with much difficulty. The patient lived three weeks after the operation but died of exhaustion from septic absorption. A small fecal fistula developed on the third day. The abdominal wound was not closed at all. There was no involution of the uterus after the operation.

A CASE OF ECHINOCOCCUS CYST OF LUNG AND ABDOMEN.

BY W. H. SMITH, M.D., AND F. B. HARRINGTON, M.D.

Alexander Auchals, twenty-three, single, was born and always lived on his father's farm in Southern Russia. No dogs on the farm.

He speaks no English and his history is obtained through interpreters.

Apparently there is nothing important in family history.

His past history and habits are good.

Some six weeks before entrance to hospital on Dec. 12, 1906, left home and sailed for America. At that time he was perfectly well. The trip took fourteen days. On ninth day out, began to have pain in right side of chest. Has had this pain fairly constantly since. Pain has no relation to deep breathing, cough, position or food. Had no cough, no sputum. Felt mean and seedy. Unable to work, but not sick enough to be in bed. No other symptoms.

Entered hospital Dec. 12, 1906, in the service of Dr. F. C. Shattuck. At that time he was well developed but only fairly nourished. No dyspnea. His whole right chest was flat throughout. The heart was displaced to 1¾ inches outside nipple. The liver dullness was 2 inches below costal margin. The interspaces in the right were noticeably obliterated.

On auscultation, bronchial breathing with a suggestion of amphoric, with bronchophony was heard over right chest. The abdomen was flat, held rigidly, and no masses were felt. Otherwise examination not remarkable. Temperature 99°, pulse 120, respiration 32. White count was 18,000. Urine, negative. The chest was prepared and he was tapped just below angle of scapula. Just before tapping it was observed that heavy percussion brought out flat tympany.

On tapping, needle point moved perfectly free, but nothing obtained even with suction.

He was again tapped in posterior axillary line where there was absolute flatness, where thin turbid greenish fluid was obtained, but did not flow at all readily. A little over a pint was withdrawn. Sp. gravity, 1021. Albumin = 0.3%. No bacteria in sediment which was composed of pus cells. At that time no hooklets were found, but subsequently, after protracted search, they were demonstrated. Culture from this fluid showed only a few colon-like bacilli.

Examination after tapping revealed tympany above spine of scapula behind and clavicle in front. Amphoric breathing most marked at angle of scapula behind. Amphoric whisper, coin sound and succussion all present.

This area of tympany varied markedly from day to day. It rarely followed laws of gravity, but was most constantly present in upper axilla.

The man was tapped twice more in post-axillary line and about a pint of similar fluid withdrawn with some trouble each time.

The man was not doing well, losing ground though comfortable. Some little pain in side, having remissions of temperature from normal to 101°, and surgical interference was advised. He was transferred one week after entrance on Dec. 19.

OPERATION.

A portion of the eighth rib was removed and the pleural cavity opened. There was a flow of several pints of fluid containing cysts in large numbers. A short time afterwards cysts were found filling the pelvis and pressing upon the bladder. It is proposed to remove these as soon as the patient's condition will permit.

Reports of Societies.

SECTION ON GENERAL MEDICINE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, Monday Evening, Jan. 14, 1907, at 8.15. Dr. William E. Hughes in the Chair.

CHRONIC INTESTINAL AUTO-INTOXICATION.

Dr. F. Forchheimer, of Cincinnati, in presenting this paper, said that intestinal auto-intoxication might be defined as that condition in which toxins formed in the intestines are absorbed by the organism in which they are produced. The use of this term, he said, had been objected to and that of enterotoxismos or intestinal toxemia substituted. Strictly speaking, only that process should be called auto-intoxication which is caused by the toxic bodies resulting from metabolism and not due to any exogenous cause, such as bacterial activity. Attention was called to an analysis of 77 cases examined by the ordinary clinical methods, in which intestinal auto-intoxication was believed to be present.

Children were excluded because the clinical picture in them differs very much from that in the adult. In concluding the paper Dr. Forchheimer said that if the endeavor were made to get a composite picture from what had been said, in order that the diagnosis of chronic interstitial auto-intoxication might be made, the following would have to be taken into consideration:

(1) In the gastro-intestinal tract there are Riggs' disease, various forms of stomach troubles, change in functional activity of the colon and demonstrable retention of feces due to one cause or another.

(2) In a large percentage of the cases indican is increased in the urine and a microscope shows, in a large percentage of cases, calcium oxalate (50%), uric acid and urates (25%), red corpuscles (about 30%); in 28 cases about 33⅓%; the alternation of polyuria with oliguria was noted.

(3) Half of the female had menstrual trouble.

(4) Next to Riggs' disease, nervous symptoms were present in the largest number of patients. Of these 31 cases of the 77 had headaches.

(5) In a large number (58 out of 77) cardiovascular changes were observed; over one half were due to neuroses and to myocardial conditions.

(6) Of the 77, 50 cases had locomotor symptoms, gouty joints, but especially muscular symptoms.

(7) Twenty-two patients had skin lesions. From the combination made by various symptoms, the diagnosis of chronic intestinal auto-intoxication should be easily made, and, as a matter of fact, this is the case in practice, as is shown when this diagnosis is followed by the logical therapeutic measure.

The great difficulty is pointed out of determining the importance of the intoxication in an individual case, — whether it produces all the symptoms, whether it is the cause or the result of other conditions, whether it is the product or the predisposing cause. The greatest caution should be taken before chronic intestinal auto-intoxication should be looked upon as the final diagnosis. In the selected cases this diagnosis was made only ten times. In all the other cases the auto-intoxication was looked upon simply as a contributory cause, present and requiring treatment, but not the principal disease.

Dr. Hobart A. Hare, in opening the discussion, said that in the condition of auto-intoxication in a large percentage of cases the effects of the toxic materials are exercised upon the nervous system, upon the muscles and joints, thus producing widely varying symptoms. Illustrative cases were cited. Certain articles of food were said to produce toxicity and a case was related in which eggs some time after being eaten caused this effect. In some instances the chewing of a rubber band or chewing gum with the expectoration of the saliva aids in the elimination of the toxicity. One class of cases cited was that presenting a particular type of dull, constant headache for days or weeks, unrelieved by the ordinary methods, nearly always associated with the presence of excessive phosphates in the urine, the urine being alkaline. Another class of cases was unaccompanied by pain, but associated with profound melancholia and depression.

An important point in his opinion is that of the activity of the kidneys in regard to the elimination of poison. He emphasized the need of renal purges instead of simply purges by the bowel. The necessity was pointed out of studying the condition of the bowels in relation to enteroptosis, believing that most of the poisons absorbed under these circumstances are from the intestine and not from the stomach, and that good results cannot be secured until the enteroptosis is corrected. The two types of auto-intoxication, (1) that due to intestinal absorption, (2) that due to faulty metabolism, were referred to. These were frequently confused and should be separated. The intestinal cases can be relieved to some extent by renal and intestinal purge and some drugs, while the second is not usually benefited to any great extent by these methods.

Dr. David L. Edsall, continuing the discussion, said that he had found from his investigations that the total of ethereal sulphate may be increased in the urine and yet indican or phenol, one or the other, occasionally both, may not be definitely increased, and that phenol is more irregular than either of the others. He believes that the increase of phenol is a comparatively uncommon thing and of some special significance. The examination of the urine, however, in this relation he regards as absolutely valueless unless it is carried out repeatedly. The examination of the urine as an index to the existence of putrefactive processes, while in a large proportion of cases useful, in a large number of cases also is misleading. He believes, therefore, that from the examination of the urine alone the conclusion is not warranted as to whether abnormalities in the urine are the consequences of changes in the intestinal tract or the result of abnormalities in the liver, excretory or various other organs in metabolism. His feeling is that the diagnosis of gastro-intestinal auto-intoxication is a diagnosis that ought to be applied to cases in which there is found other and distinctive evidence by more perfect methods of disorder of the gastro-intestinal tract.

Dr. Joseph Sailer said that the subject of gastro-intestinal auto-intoxication had been to him a very hazy one. The chief difficulty in its study, he thought, was that the work had been based largely upon certain symptoms which were by no means pathognomonic of the condition. He attached much importance to the study of the activity of the ferments in the gastric juice and believes that there are unquestionably a great variety of conditions, both natural and artificial, which have the capacity of inhibiting ferment activity in the stomach and also a great variety of artificial conditions which have the capacity of limiting the ferment activity in the intestines. Mention was made of cases studied with reference to the acid content and clinical symptoms. Various cases of migraine, he said could be brought on by certain food, relieved as soon as the diet was corrected. An interesting group was that in which the symptoms were referable to the peripheral nerves, only relieved by lavage of the stomach, purgation and other treatment applied usually to the gastro-intestinal tract. Reference was made to the use of the commercial preparations of trypsin.

Dr. J. Dutton Steele continued the discussion, speaking of the significance of the fecal findings in intestinal auto-intoxication.

Dr. Forchheimer, in closing, said that the object of the paper was to present a clinical picture of the whole condition and not to present the presence of indican as a specific symptom in any way. He agreed with Dr. Edsall that examinations of the urine to be of value must be made repeatedly. If this were done and indican found in every specimen, its presence was probably indicative of something abnormal. He has experimented largely in a clinical way with intestinal antisepsis and believes a good mode of administration is in the salol shellac-coated pill. One of the best antiseptics he believes to be betanapthol. Next to this is menthol. Following this his choice is for permanganate of potassium. Calomel, of course, acts as an antiseptic, but he regards castor oil as the best of all intestinal antiseptics, and if given freely will produce as nearly as is possible asepsis of the intestines.

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Book Reviews.

Golden Rules of Surgery. Aphorisms, Observations and Reflections on the Science and Art of Surgery. Being a Guide for Surgeons and those who would become Surgeons. By Augustus Charles Bernays, A.M., M.D. (Hdlbg.), M.R.C.S. (Eng.); Life Member of the German Society for Surgery of Berlin; Chief Surgeon, Lutheran Hospital, and for twenty years Professor of Anatomy and Surgery in St. Louis, Mo., U. S. A., etc. St. Louis: The C. V. Mosby Medical Book Co. 1906.

This is an interesting little book which considers the following subjects in chapters: The Education of a Surgeon; On Scientific Contributions to the Literature of Medicine and Surgery; Science and Surgery; On Ways and Means of Building up a Practice; About Fees; Off with the Cloak of Superstition; Some Golden Rules of Surgery; Away with Inflammation and the Confusion it has Caused; Reminiscences.

The writer states that in this little volume will be found " philosophical *causeries.*" This method of educating young men has a very definite value, and often these brief statements are farther reaching than the author intends. It is rather strange to see a man who is strongly of the opinion that the student should be kept on the scientific track advocating so many diagnostic tips. But, after all, there are many ways of approaching a subject, and " all roads lead to Rome."

Some of the rules that are given are taken from " The Golden Rules of Surgery " by Harry Fenwick, and are admirable. No one will be harmed by reading this book; many will receive information; how much of this information will stick is the question.

Heath's Manual of Minor Surgery and Bandaging. For the use of House-Surgeons, Dressers and Junior Practitioners. Thirteenth edition. Revised by Bilton Pollard, F.R.C.S., Surgeon to University College Hospital and Teacher of Operative Surgery in University College, etc. Philadelphia: P. Blakiston's Son & Co. 1906.

It is a pleasure to again see this old, familiar manual of minor surgery and bandaging appear, revised by Mr. Bilton Pollard. Dr. Dudley Buxton has revised the chapter on anesthetics. It is a difficult thing at best to revise satisfactorily an old book, but Mr. Pollard has succeeded in doing so in an admirable manner.

The book has such a well-established reputation that it will undoubtedly still maintain its position as a guide to house surgeons, dressers and junior practitioners. The cuts are very familiar and express, perhaps, as well as may be the object they were intended to.

We wish that the book had been made more modern, but undoubtedly much of the personal side of Mr. Heath would have been lost had the text been materially altered.

Handbook for Attendants on the Insane. With an appendix giving the regulations for the training and examination of candidates for the certificate of proficiency in nursing of the Medico-Psychological Association of Great Britain and Ireland. Fourth edition. Reprinted with revised regulations. Twenty-fifth thousand. Published by authority of the Medico-Psychological Association. London: Bailliere, Tindall and Cox. Chicago: W. T. Keener & Co. 1906.

This handbook for nurses to the insane in hospitals as newly revised by the committee of the Medico-Psychological Association of Great Britain and Ireland is, as we have had occasion to say of its previous editions, a very satisfactory book for the purpose. It is for nurses and nurses only, and much judicious advice plainly put is compressed into its small compass; in fact, it is so sound that we wish there were more of it and, although the main points are well covered, there is room for further information on the management of the insane without exhausting the subject or encroaching on purely medical questions. The work, too, would then be better balanced than at present, as two thirds of its one hundred and fifty-one pages are now devoted to general nursing.

THE BOSTON

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THE RECOGNITION OF TUBERCULOSIS AS AN INDUSTRIAL FACTOR.

A number of years ago the German insurance companies recognized the fact that to provide a place for the treatment of the tuberculous was economically preferable to paying disability and death losses. They recognized that the results of the scientific treatment of tuberculosis paid, and they built extensive sanatoria. In America, for the greater part, the problem of the management of the tuberculous sick has been financed on the basis of philanthropy rather than of economy. Such motives are not to be criticised, and yet the addition to them of the incentive of economy would strengthen the appeal to the average citizen.

Recently there has been organized in two New England towns, Providence and Brockton, a move to reach the tuberculous factory operatives. The business men at the head of great factories have recognized the industrial importance of tuberculosis as a deteriorating factor in their employees and have organized an attack on the disease along the lines of home treatment and education to minimize the dangers of contact. That education has been almost as necessary to some of the physicians is a regrettable truth, but it is by no means an unimportant phase of the work.

Whether we agree with the extremists, who claim that the best results can be attained only in ideal climates, or with those who say that climate is of no importance, the facts remain that many are so situated that treatment except in the local climate and at home is impossible, and that under these conditions, with proper supervision and instruction, patients with tuberculosis are greatly benefited and often the disease arrested. Taken early and so treated, the laboring man can be returned fit for work, and instructed so as no longer to be a danger to his associates. It would seem that this occurs in a large enough percentage of cases to make the treatment economically worth while.

In Providence the fight against tuberculosis among factory operatives has already been well organized, largely under the direction of Dr. F. T. Fulton. The business men and factory owners are interested in the work. It is not merely a medical organization. In fact, Dr. Fulton has been made a member of the board of trade in order to better act with the business men. There in a number of factories the following notice has been conspicuously posted:

"There is at present a strong effort being made to exterminate the disease, consumption. It is known to be very easily curable if the treatment is begun in the early stages, and readily prevented by proper ways of living. The hopeless or incurable cases are those that have been allowed to go neglected. In order to aid in this matter, we have provided, free of expense to our employees, a physician who is especially interested in this disease, and who can advise about the best treatment; and for the purpose of helping those who may be afflicted and protecting others, we shall feel free to suggest an examination of any who may possibly have symptoms of this disease as indicated by coughing, loss of weight or appetite. If the lungs are found to be healthy, there is then no need to worry; if, on the other hand, there is any disease, it can be treated before it is too late to go ahead."

But it is especially through the co-operation of the foremen that the operatives are reached. The foreman advises the man who coughs to see the physician appointed for this purpose, and in this way every effort is made to detect the cases early and institute home or sanitarium treatment at a time when these measures may succeed and return to the shop a workman fit for work, a trained man in his old place instead of a green one to be taught.

In Brockton a somewhat similar work has been instituted in the Douglas factories, financially supported by ex-Governor Douglas and under the medical direction of Dr. Ripley. This work has been organized but very recently, but bids fair to succeed and be extended to other factories in the same town.

This organization of the tuberculosis fight in two towns marks an important advance. Developed and extended, it may prove a great aid in the struggle for the suppression of the great white plague. On an economic basis, an appeal for aid can be made to every employer. As Dr. Fulton said to a meeting of Providence business men: " You men who employ large numbers of persons control the situation. Many of them are without advice and without treatment. They are a direct menace to your health, to the health of your families and to your other employees. So, from a selfish point of view, you should become interested in helping in this important matter." It is to be hoped that even this selfish point of view, though it has not been the chief motive actuating those who have already supported the work, may serve to widely extend the recognition of tuberculosis as an industrial factor and stimulate similar moves in many other factory towns.

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CEREBRAL LOCALIZATION.

The recent work of Dr. Campbell, published under the auspices of the Royal Society,[1] must be regarded as one of the important contributions to the study of cerebral localization. He claims to have explored the whole surface of the cerebral cortex in a comprehensive and complete manner, and a study of his observations and the amount of material which he has investigated will show the extraordinary magnitude of the work which he has done. He has examined no less than three human cerebral hemispheres completely for both nerve cells and nerve fibres, three hemispheres completely for fibres only, and two partially for nerve cells and nerve fibres, and, in addition, a large amount of pathological material consisting of two brains from cases of amyotrophic lateral sclerosis, seven brains from cases of amputation of an extremity, three brains from cases of tabes, one brain from a case of old capsular lesion, and two from cases of long-standing blindness. In addition he has examined the cerebral hemisphere of two chimpanzees and an orang and studied the cortex of the dog, the cat and the pig.

As a result of this exhaustive study, Dr. Campbell has described in detail the cell lamination and the fibre arrangement of all parts of the cortex, has discussed the functions of the parts examined based on the histological characteristics of the cortex, the results of experimental investigation, clinico-pathological data, the teaching of comparative anatomy and developmental evidence.

As a result of this study, he concludes, and proves by the representations which he gives in the work, that there is a definite cell lamination and a definite fibre arrangement for different areas of the cortex which are characteristic of that particular area. He agrees with Sherrington and Grünbaum that the motor area is practically confined to the ascending frontal convolution, and both in the anthropoid apes and in man he has mapped out a histological area corresponding to the distribution of the cells of Betz which agrees very closely with that which responds to electrical irritation. The floor of the fissure of Rolando forms the constant posterior limit to this area. In amyotrophic lateral sclerosis he has found an almost total disappearance of the Betz cells of this area, but in the posterior central convolution there were no changes. In the posterior convolution, on the other hand, he finds an absolutely different anatomical arrangement, a complete absence of the cells of Betz, and he believes that this is the area for tactile sensibility. In tabes, furthermore, he has found that the characteristic pyramidal cells of this convolution are atrophied.

In the calcarine region he has also found a characteristic anatomical arrangement, bordering upon the calcarine fissure, which, in his opinion, determines the visuo-sensory area. In the temporal lobe within the fissure of Sylvius and appearing little, if at all, on the external surface, is an area which he believes to be a special auditory centre. Adjacent to the visual area is another area distinct in anatomical arrangement, which he regards as a visual psychical area. In the occipital lobe there are these two distinct cortical centers, each of a special anatomical type, one specialized for the primary reception of visual sensation, the other constituted for the final elaboration and interpretation of these sensations, and this arrangement, with the psychical center contiguous to the primary motor or sensory area, he believes to exist in the different parts of the cortex which form the terminal areas of the projection system. The parietal area he believes has the function of elaborating the complex impressions embodied in the muscular and stereognostic senses. The Island of Reil is probably old in the rank of phylogenesis and has nothing to do with the function of speech. It is possibly the centre for taste. The prefrontal cortex shows an exceedingly low structural development, an extreme of fibre poverty, and its association system is particularly deficient. It is probably the last portion of the frontal lobe to develop, and its physiological importance as a psychical center is overestimated, but this does not apply to the frontal area immediately posterior to it.

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[1] A. W. Campbell. Histological Studies on the Localization of Cerebral Function.

As we have said, this contribution of Campbell is the most important for the study of cerebral localization that has appeared for a number of years and is one which demands serious and careful study by every investigator.

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ANNUAL REPORT OF THE CRAIG COLONY FOR EPILEPTICS.

We look each year to the report of the Craig Colony, as to the report of the Hospital for Epileptics at Munson and other institutions where large bodies of epileptics are gathered, for signs of progress in the care and treatment of epilepsy. There is no doubt that the experience derived from the careful and judicial study of large numbers of patients suffering from the same disease is of the greatest possible value in determining many practical points. The large number of persons under treatment at the Craig Colony, upwards of a thousand, offers a unique opportunity for observation, and since systematic reports of results have been published, we have certainly come to look upon the disease as less hopeless and distressing than was formerly the case.

During the year under consideration the cost of maintenance was the lowest in the history of the colony, being $141.38 for each patient. It has been felt that separate provision should be made for low grade cases in order that the colony proper may be devoted more especially to those who are, at least in a measure, capable of caring for themselves. Could the colony be relieved of approximately three hundred and fifty of these low-grade cases, a valuable addition to the available space for less seriously affected persons would be provided. Dr. Spratling, who is somewhat optimistic regarding the treatment of epilepsy, makes many interesting statements in his report. There are one thousand applicants on the waiting list in New York state alone, but presumably epilepsy is not increasing, although the somewhat startling announcement is made that there is probably one epileptic to about every three hundred of the population at large. An exact census is naturally a matter of extreme difficulty, owing to the fact that the disease may appear in very inconspicuous form at night or the attacks may recur only at long intervals. Dr. Spratling makes the definite statement that epilepsy is a curable disease and that he has seen scores of cases cured during the past twenty years. Without question Dr. Spratling's dictum in the matter will be treated with great respect, but it is hardly to be questioned that so dogmatic a statement will pass unchallenged. It is at least well to define exactly what is meant by cure in an affection of this sort. Earlier admissions to properly equipped hospitals are regarded as desirable if cures are to be effected. At the Craig Colony about 5% of the possible curable cases are cured, but it takes years to accomplish this result.

Since the last report the research laboratory has undergone a change of directors. Dr. J. F. Munson, formerly of the University of Michigan, has been appointed pathologist during the year to take the place of Dr. Onuf, who previously had held the position. Dr. Munson's report is naturally a preliminary statement of what he proposes and hopes to do toward the investigation of the causes of epilepsy from a pathological standpoint. Stated briefly, the line of work which has been mapped out is, first, the study of the chemical structure of the normal and of the epileptic nerve cell, and, secondly, the study of the tissues and fluids of epileptics to find if there is an outside agent, and then, if possible, to isolate it and discover an antidote. The subject is a difficult one to attack, and it is to be hoped that Dr. Munson may be able not only to initiate a line of research, but also to carry it to some definite conclusion in his present position.

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A CARCINOMA PARASITE.

In commenting on the recent work of the New York State Cancer Laboratory at Buffalo, as reported by Dr. Gaylord, its pathologist, at the one hundred and first annual meeting of the State Medical Society, Prof. Gary N. Calkins, of the department of zoölogy, Columbia University, who is himself the biologist of the laboratory, has made a statement which is of special interest as coming from a source of such acknowledged authority in biological research. All attempts to demonstrate the existence of a parasite in either mouse carcinoma or the rat carcinoma which has been successfully transplanted for years in the Buffalo laboratory, he says, had proved futile until June, 1906, when an important discovery was made which renders it probable that a specific parasite accompanies carcinoma in mice. By the use of Levaditi's method for demonstrating the specific organism of syphilis, it was found that peculiar spirally wound organisms, belonging to the genus Spirochete, were present within and around every mouse tumor examined. These spirochetes were present in a young, rapidly growing, non-ulcerated primary tumor in a mouse obtained from Massachusetts and in every strain of transplanted tumors in the Buffalo laboratory. This discovery, Professor Calkins goes on to say, would appear to be of the utmost importance in the future study of the cause, development and possible cure of cancer. It would be premature to declare that these organisms are the cause of mice carcinoma; but their presence in and around the cancer cells and their absence elsewhere is a sufficient justification for continuing research and experimentation along the line of the parasitic hypothesis of human cancer. Of the twenty known species of Spirochete, five are admittedly pathogenic, the organisms of syphilis, relapsing fever, African tick fever, and of special forms of disease in chickens and in ducks. While all these spirochetes are on the very border line between the animal and vegetable kingdoms, their animal relatives being protozoa, such as Trypanosomata, and their plant relatives the spiral bacteria, the preponderance of evidence is in favor of the animal origin of the organisms. During the past ten years many supposed cancer germs have been discovered and described, but they have all turned out to be false leads; it having been demonstrated in every instance that the so-called germ was not a true organism. But there is no question, according to Prof. Calkins, as to the organic nature of the spirochete found in the Buffalo laboratory. All who have seen it agree that it is a true organism; and if it is ultimately found in all cancers, the conclusion will be that this organism is the cause of the disease.

MEDICAL NOTES.

International Congress on School Hygiene. — It is announced that the Second International Congress on School Hygiene will be held from Aug. 5 to Aug. 10 at the University of London, under the presidency of Sir Lauder Brunton. The work of the congress is to be divided into eleven sections.

Bequests to University of Oxford. — It is announced, according to *Science*, that the late Dr. Gustave Schorstein bequeathed £500 to the regius professor of medicine at the University of Oxford for the pathological department of the medical school and a sum which will amount to some £10,000 in trust to the University of Oxford, subject to certain life interests.

Report of Royal Commission on Tuberculosis. — As a result of a long series of experiments in relation to human and bovine tuberculosis, which Koch asserted in 1900 were distinct diseases, the British Royal Commission concludes that man is liable to bovine tuberculosis and that milk may carry bacilli capable of producing the infection. The commission therefore disagrees with Koch, and maintains that his results were based upon misinterpreted and insufficient observation.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Feb. 6, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 53, scarlatina 76, typhoid fever 5, measles 18, tuberculosis 31, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 6, 1907, was 20.69.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 2, 1907, was 261, against 233 the corresponding week of last year, showing an increase of 28 deaths and making the death-rate for the week 22.60. Of this number 126 were males and 135 were females; 252 were white and 9 colored; 154 were born in the United States, 103 in foreign countries and 4 unknown; 57 were of American parentage, 168 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 52 cases and 4 deaths; scarlatina, 70 cases and 1 death; typhoid fever, 4 cases and 0 deaths; measles, 22 cases and 0 deaths; tuberculosis, 38 cases and 27 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 43, whooping cough 2, heart disease 38, bronchitis 7 and marasmus 3. There were 8 deaths from violent causes. The number of children who died under one year was 44; the number under five years 56. The number of persons who died over sixty years of age was 79. The deaths in public institutions were 77.

There were 6 cases and 3 deaths reported from cerebrospinal meningitis during the week.

A Case of Leprosy. — A case of leprosy has recently been discovered in Somerville, Mass., in the person of a man of twenty-four, a native of Trinidad, who came to New York in 1904. He has been removed to Gallup's Island, Boston Harbor, for observation and treatment.

Maine Academy of Medicine and Science. — In view of the fact that there is a bill, introduced by the State Bar Association, now pending in the Maine Legislature, relative to medical expert testimony in criminal cases, the Academy have voted to devote to medico-legal subjects the next regular meeting called Feb. 13. Mr. Clark Bell, of New York, has accepted an invitation to address the meeting.

NEW YORK.

Annual Meeting of Stony Wold Sanitarium. — The annual meeting of the Stony Wold Sanitarium, in the Adirondacks, for tuberculous women and girls, was held on Jan. 23, and addresses were made by the Hon. Joseph H. Choate, Dr. Livingston Farrand, Dr. James E. Newcomb, and others. The report showed that during 1906 193 patients were treated and that 80 of these remained at the close of the year. There is a debt on the institution of $61,000, and it was announced that Messrs. John D. Rockefeller and Anson R. Flower had each agreed to contribute $12,500 toward its payment, provided the remaining $36,000 were raised by the managers. The sanitarium now has $26,000 as a nucleus for a permanent endowment fund.

Letchworth Park Gift Act. — The legislature has passed, and Governor Hughes has signed, as his first bill, the Letchworth Park Gift Act, which provides for the acceptance of a deed of gift made by William Pryor Letchworth to the people of the state of New York, conveying lands of about one thousand acres in extent, situated in the town of Genesee Falls, Wyoming County, and the town of Portage, Livingston County. This tract is stated to contain even more beautiful scenery than that of the Watkins Glen Park, which the state acquired some time ago by purchase, and its custody, by the terms of the bill, is to be in the hands of the American Scenic and Historic Preservation Society.

Death of a Patient with Acromegaly. — An interesting case of acromegaly has just terminated fatally at Bellevue Hospital, where the patient, a man thirty-three years of age, had been under observation for four years. The abnormal growth was not confined to the head, hands and feet, as is commonly the case in this disease but the bones of the thorax and pelvis also became enormously enlarged; the autopsy was attended by a large number of physicians.

Gift to Mount Sinai Hospital. — By the will of the late Henry Meinhard, of New York, $5,000 is left in trust to be divided equally between the Mount Sinai Hospital and two other charitable institutions.

Enlargement of Sanitary Code. — At a meeting of the city Board of Health, held Jan. 30, two important sections were added to the Sanitary Code. The first of these prohibits the sale at retail of cocaine or any cocaine salt, either alone or in combination with other substances, except upon the prescription of a physician. The other prescribes that it shall be the duty of all persons having in their possession bottles, cans, or other receptacles used in the transportation and delivery of milk or cream, to clean or cause them to be cleaned immediately upon emptying; and that no person shall use or cause to be used any such receptacles for any purpose whatsoever other than the holding of milk or cream, or receive or have in his possession any such receptacle so used which is unclean or in which milk or cream has been allowed to stand until offensive. Persons violating these ordinances are liable for misdemeanor.

Dispensary for Treatment of Tuberculosis. — It is announced that the Health Department, which for some time past has maintained tuberculosis clinics in Manhattan and Brooklyn, is about to open a dispensary for the free treatment of tuberculous patients in the Borough of the Bronx. It is to be located in the Department's building at Third Avenue and St. Paul's Place.

Physical Welfare of School Children. — At a meeting of the Committee on Physical Welfare of School Children of the Board of Education, held January 30, it was announced that the first attempt in America to provide dental treatment for the pupils of the public schools was about to be made, Dr. H. L. Wheeler stating that for this work he had organized a corps of twenty dentists, all of whom had promised their services gratuitously. At this meeting Mr. Burlingham, chairman of the committee, presented a statistical study* of the home conditions of six thousand children found by school physicians, teachers and nurses to be in serious need of dental, ocular or medical treatment or of better nourishment or fresh-air outings.

Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JAN. 19, 1907.

1. *ROTCH, T. M., and LOW, H. C., *Some Blood Cultures in Children and Their Significance.*
2. *MILLS, W. *A Physician's Creed, Past and Present, as to the Physiology of the Heart.*
3. SOLIS-COHEN, S. *The Limit of Proprietorship in Materia Medica.*
4. BRYANT, W. S. *Results of Improved Technic in Otologic Surgery.*
5. *HOLDEN, W. G. *Duties of Municipality and State in the Control of Tuberculosis.*
6. HAYNES, J. R. *Duty of Railroads in Transportation of Tuberculous Passengers.*
7. WHEATON, C. L. *The Value of the Sanatorium in the Crusade against Tuberculosis.*
8. *KNOPF, S. A. *Aerotherapy and Solar Therapy in the Home Treatment of Tuberculosis.*
9. WOLDERT, A. *Résumé of the Complete Gastric Analyses in 61 Cases of Indigestion.*

1. Rotch and Low recommend the resort to blood cultures in children when other means fail to make plain the diagnosis. In certain cases blood culture reveals directly the cause of the disease. The procedure is more practicable in children than has been supposed. In the first four years of life it was possible in 21% of cases, in the second four years in 72% and in the third four years in 86%. The blood is drawn from a vein in the arm with a glass antitoxin syringe and directly inoculated into the culture medium. Thirty-six cases were tested, 15 of which gave a growth. A negative result the authors believe to be of value in prognosis. In diagnosis the procedure is of greatest value in typhoid and in " cryptogenetic septicemias."

2. Mills reviews the history of theories held as to the origin of the heart beat. These theories are three in number. First, it was believed that the stimulus to contraction came through nerves — the neurogenic theory. Next it was suggested that the muscle fibers themselves had the power to produce and to transmit the stimulus — the myogenic theory. Most recently it has been maintained that the stimulus is chemical, depending upon salts in the blood — the ionic theory. Evidence is still accumulating in support of each of these theories. Mills believes that all three factors — chemical, muscular and nervous — enter into the production of the heart beat. The nutrition of the heart, however, he believes to be dependent upon the nervous system.

5. For prevention of the spread of tuberculosis Holden advocates the following measures: compulsory registration of tuberculous patients; compulsory isolation of patients who do not observe proper precautions; abolition of dry street sweeping and enforcement of anti-spitting laws; sanitary control of tenement houses, public conveyances and schools; inspection of dairies and herds, and, lastly, a more general establishment of sanatoria.

8. Knopf describes a window tent for the fresh-air treatment of the patients with tuberculosis, which is practically an awning put up inside of the window, instead of out of doors, to cover the patient's bed. By lowering in or raising the window sash, sufficient air space can be left to ventilate the room also, without interfering with the open-air treatment, the air of the room not being allowed to mix with the air breathed by the patient. A transparent pane is made in the tent so as to enable the patient to be observed, without disturbing the arrangement. Knopf describes the advantages of the contrivance at length, its inconspicuousness, the shelter from room draughts, the prevention of drop infection by coughing and chiefly its comparative inexpensiveness. The contrivance, though now obtainable from the manufacturers, the Kny-Scheerer Company, is not patented, and a similar arrangement can be improvised if necessary. In conclusion, he refers to the value of carefully conducted respiratory exercise and of solar therapy, in the treatment of consumptives.

SURGERY, GYNECOLOGY AND OBSTETRICS.

JANUARY, 1907.

1. *WERTHEIM, E. *The Radical Abdominal Operation in Carcinoma of the Cervix Uteri.*
2. LUTZ, F. J. *Excision of Scapula for Malignant Growth.*
3. CONNELL, F. G. *Sarcoma of the Male Breast: Report of a Case.*
4. *KÜMMELL, H. *Modern Surgery of the Kidney.*
5. *DIXON, A. *Suprapubic Cystotomy with Retrograde Catheterization in Traumatic Rupture of the Urethra.*
6. *RYDER, G. H. *Temperatures Occurring during the Puerperium.*
7. *TAIT, D. *The Control or Elimination of Pneumothorax in Pleuropulmonary Interventions.*
8. *BLAIR, V. P. *Operations on the Jaw-Bone and Face.*
9. PARKER, C. A. *Fractures.*

1. Wertheim describes the removal of the uterus with cancerous cervix in its succeeding steps as performed by him, each step being well illustrated. The vaginal extirpation of other operators has not yielded such a favorable series of remote results as has this abdominal one, for two reasons; firstly, involved glands along the course of the great vessels can be better reached by the abdominal route, and secondly, because more of the primary focus and parametrial tissues are accessible for removal. The greatest care is taken to outline the ureters, which must not be wholly elevated from their bed, for this cuts off their blood supply. Involved glands are sought as high as the bifurcation of the aorta, as well as in the pelvic cellular tissue. The operation takes place outside the peritoneum which is again sutured after the uterus has been removed, a drain being left in the vagina.

4. Surgery of the kidney depends for its success on the x-ray tube, the cystoscope, the ureteral catheter and on the method of functional examination, notably, cryoscopy. After brief remarks on the first three of these factors Kümmell describes at length his very extensive experience with cryoscopy and concludes as follows: (1) If the kidneys are intact, the molecular concentration of the blood is constant, and, on the average, corresponds to a freezing point of 0.56°. This statement is based on the results of about seven hundred examinations. In weakened and anemic individuals, figures of 0.55°, or even 0.53° and 0.52°, were sometimes observed. (2) Unilateral kidney disease causes no change in the freezing point of the blood. (3) The normal freezing point, 0.56°, proves only that so much functionating kidney tissue is present as is necessary to excrete completely the products of tissue metabolism. Theoretically it might be assumed that the division of work of the kidneys is such that each takes an approximately equal part in the excretion of these products of metabolism. Under such circumstances loss by operation of one working half might be expected to be followed by an insufficiency on the part of the remaining half. The presence of a second kidney must, therefore, always be proved by ureteral catheterization before any operative intervention. The urea and freezing point of the urine from each kidney is then determined ,thus giving data on which may be based the nature of the subsequent operation. A lowering of the freezing point of the blood indicates that the kidneys are not entirely equal to the required work, and if this falls to 0.60°, according to the experience of the writer, nephrectomy must not be attempted, nor nephrotomy unless absolutely necessary. Before the use of these modern methods the author reports 41 nephrectomies with a mortality of 36.5%, while since the introduction of ureteral catheterization and cryoscopy he is able to report 148 nephrectomies with a mortality of only 6.7%.

5. Dixon reports four cases of traumatic rupture of the urethra treated by him, with excellent results in all. He calls attention to the importance of this condition to the general practitioner, and to the lack of adequate consideration of it by most of the best-known textbooks. After incising the perineum and passing a catheter down to the seat of rupture, a small opening is made above the pubes through which, guided by the finger, a sound may be made to meet the tip of the catheter from behind forwards. By this method the torn and retracted end of the proximal fragment of urethra is brought to view without delay. The catheter can then be continued

through it, up to, or into the bladder as the operator wishes.

6. Fever during the puerperium is discussed by Ryder under the following varieties: (1) Reactionary temperature. (2) Temperature from distended breasts. (3) Temperature due to mastitis. (4) Temperature due to to pyelitis. (5) Temperature due to puerperal toxemia. (6) Temperature due to bacteriemia. These are fully discussed with illustrative charts. The following good advice concludes the article: No effort should be spared to find and remove the cause of any temperature occurring during the puerperium. Begin with the breasts and uterus. Palpate the breasts for distention, lumps and localized tenderness, and start treatment at once if indicated. Palpate the uterus through the abdomen and notice especially tenderness and height of fundus. Palpate over the tubes for tenderness. Examine the lochia. Inspect and smell the pads. Look at the vulva, the perineum and the vaginal wall. Notice the cervix. Make a careful bimanual examination. Then make a careful examination of the ears, throat, heart and lungs. Examine the urine and sometimes the blood. In obstetrics hemorrhages can be stopped, lacerations may be sewn up, but sepsis must be prevented.

7. The various appliances for producing both positive and negative pressure about the thorax are pictured and described by Tait. His investigation has led him to the following opinion: (1) Surgery of the lung is only partly governed by the laws of general surgery; and although the pleura resembles the peritoneum in its marked susceptibility to infection, the advent of asepsis has not perceptibly enlarged the field of thoracic surgery. (2) Acute pneumothorax is less dangerous and more amenable to treatment than is commonly believed, but in its control we may find the key to the much needed _scientific exploration_ and safe treatment of numerous intrathoracic lesions. (3) Experience alone will tell the value of the addition of physiological methods to the technic of intrathoracic surgery and decide the choice between the simple, the positive, and the complicated, the negative pressure apparatus.

8. Blair discusses _in extenso_ the etiology and pathological anatomy of developmental malformations of the jaws, both to each other and to the facial outline, and their operative treatment when beyond the scope of the orthodontist. The lower jaw furnishes the usual site of operative attack, which is by sections or resections with various prosthetic measures. The article is well illustrated.

The Lancet.
Jan. 12, 1907.

1. *Ettles, W. J. McG. _The Pathology and Treatment of the Ocular Complications of Gonorrheal Infection._
2. Ruffer, M. A., and Crendiropoulo, M. _On Substances Favouring and Inhibiting the Action of Bile and Serum._
3. Russell, W. _Three Stomach Cases from the Physician's Standpoint._
4. Spencer, D. B., and Staddon, H. E. _A Case of Paratyphoid Fever in Mauritius._
5. Myers, B. E., and Still, G. F. _On White-Wine Whey in Infant Feeding._
6. Nixon, J. A. _Sclerodermia and Myositis._
7. Deanesly, E. _Rupture of the Urethra, Intrapelvic and Perineal._
8. Lediard, H. A. _Gallstones in the Appendix._
9. Vaughan, J. C. F. D. _Pneumothorax from Puncture of the Pleura._
10. Webb, J. C. _A Suggestion for the Treatment of Cases of Chronic Sciatica and Similar Forms of Neuritis._
11. *Douglas, J. S. C. _A Case of Influenzal Meningitis._
12. Berry, H. P. _The Persistency of the Infection in Certain Cases of Scarlet Fever._
13. Vazifdar, N. J. F. _A Case of Dermoid Cyst in the Ramus of the Jaw._

1. In the treatment of gonorrheal infection of the eye, beside using silver salts, organic and inorganic, Ettles cuts the outer canthus of the eye through the outer tarsal ligament in severe cases. This gives much freer access to the eye, allows better drainage and takes off the cornea the weight of the heavy and edematous lids.

11. Douglas speaks briefly of the previous cases found in the literature where meningitis was due to the influenza bacillus, and reports the case of a child of ten months, who came into St. George's hospital after a vague illness of two days, showing meningeal symptoms. Lumbar puncture gave 5 cc. of fluid containing many short bacilli culturally and microscopically corresponding with the influenza bacillus. The child died five days after entrance. Postmortem examination showed thick, green pus over the surface of the brain and cord. Influenza bacilli were cultivated from this exudate also. There was no pus in the middle ear.

British Medical Journal.
Jan. 12, 1907.

1. Herringham, W. P. _Arterial Sclerosis._
2. *Wenckebach, K. F. _The Pathology and Treatment of Adherent Pericardium._
3. *Gulland, G. L. _Anomalous Cases of Pernicious Anemia._
4. Evans, H. M. _Observations on the Poisoned Spines of the Weever Fish. (Trachinus Draco.)_
5. Christophers, S. R. _Preliminary Note on the Development of Piroplasma Canis in the Tick._

2. Wenckebach bases his paper on a case of adherent pericardium in a young boy, whom he had under observation for several years. In 1903 there was an exudative pleurisy on the left with pain and fluid, for some weeks. The fluid was finally absorbed but dullness with marked retraction of the lung remained. A year later a pericarditis followed. The liver was large and hard, reaching nearly to the umbilicus and very sensitive to touch. The diagnosis of adherent pericardium was clear. The symptoms where the heart is attached to the pericardium only may be mild; where it is attached to the diaphragm and to the front and back walls of the chest as well, other more serious symptoms set in, insufficient circulation, rapid and weak pulse, low arterial pressure and overfilling of the veins, with defective respiration. Until Brauer suggested operative interference in this condition the prognosis was very bad indeed. Brauer's idea, to resect several ribs in front, and thereby to free the heart from some of its hindrances, has proved of great advantage in many cases. Professor Koch, of Groningen, operated in this case and although the results were not brilliant, at the present writing, eighteen months after operation, the condition is much improved. Fever and ascites have entirely disappeared and the liver has greatly decreased in size.

3. Gulland considers some anomalous cases of pernicious anemia in which the symptoms had been characteristic of other conditions. He mentions cases of pernicious anemia under the guise of amaurosis, peripheral neuritis, aphasia, gastro-intestinal disease, kidney disease, acute Bright's disease and pyemia. He emphasizes the need of making routine blood examinations in as many cases as possible, no matter what the symptoms.

The Edinburgh Medical Journal.
January, 1907.

1. *Mayo, W. J. _The Principles Underlying the Surgery of the Stomach and Associated Viscera._
2. Lennander, K. G. _A Case of Volvulus of the Small Intestine at a Meckel's Diverticulum; together with Some Observations on "Subacute Ileus" and the Performance of Gastrostomy for Paralysis of the Small Intestine._
3. Jamieson, W. A. _Darier's Disease._
4. Lackie, J. L. _The Management of Some Difficult Occipito-Posterior Cases._
5. *Hay, J. _Paroxysmal Tachycardia._
6. Marshal, D. G. _Notes on Tropical Diseases._

1. Mayo speaks of the great advance that is now being made in surgery of the stomach and intestines, the result of various scientific investigations which are putting all this work, which hitherto has been more or less empirical, on a firm scientific basis. He considers these changes of recent years from the point of view of embryology, anatomy, physiology and bacteriology.

5. This is a very detailed study of three cases of so-called paroxysmal tachycardia, with numerous venous

and arterial pulse tracings. Until recently most observers believed that these attacks were caused by some lesion of the central nervous system affecting the vagi. No ground for this view can be found at autopsy, however; Hay believes that although there may be lacking in these cases the normal inhibitory forces, the real source of trouble is in the heart itself, and particularly in the interauricular and auricular ventricular fibers. From his three cases he has taken many tracings, before, during and after attacks, which show that during an attack the auricle is acting independently of the ventricle, and its contraction does not precede that of the ventricle, as under normal conditions. In his cases, the paroxysms lasted from a few hours to seven or eight days, with the heart beating 150 to 300 times a minute. There was rarely much distress except while the attack was passing off, when severe symptoms of angina supervened.

Treatment should be largely prophylactic, avoiding mental and physical strain of all kinds. Often deep respiration will shorten an attack.

Deutsche Medizinische Wochenschrift, No. 2.
Jan. 10, 1907.

1. *Koch, R. *Report of the German Expedition for the Study of the Sleeping Sickness.*
2. *Rudinger, C. *Effect of X-Rays on the Proteid Metabolism in Exophthalmic Goitre.*
3. Bergell, P. *Hexamethylentetramin and Its Salts.* (Cystopurin.)
4. Loose, E. O. *The Clinical Value of Cystopurin.*
5. *Jürgens. *Diseases Resembling Typhoid.* (Concluded.)
6. Pfister, M. *The Medical Treatment of Appendicitis.* (Concluded.)
7. Boldt. *Glycosuria after the Disappearance of a Goitre.*
8. Krueger. *A Case of Intraperitoneal Rupture of the Bladder.*

1. In atoxyl (meta-arsenic anilid) Koch has found a remedy for sleeping sickness the action of which seems to be specific. Nine hundred and eighty-six patients have been treated. In many cases two injections on successive days are sufficient to produce a cure; in others the injections are repeated at the end of a month. In every instance, the trypanosomes disappear within a short time, and prompt recovery takes place except in some far-advanced cases. In these last, Koch assumes that changes in the nervous system have resulted which are irreparable, although the original cause of the disease, the trypanosomes, are removed. The diagnosis is made by examination of the fluid withdrawn from the swollen lymph nodes, in which the trypanosomes are regularly present; they are rarely to be found in the blood. Examination of the fly called glossina palpalis showed the presence of trypanosoma gambiense in 5 cases, in 2 of which it was found in the salivary glands, a situation in which the malarial parasite has been found in the mosquito. [This discovery of Koch promises to be of immense value in tropical Africa, parts of which have been depopulated by sleeping sickness.]

2. Rudinger confirms the favorable results obtained by Stegmann from the use of the x-ray in exophthalmic goitre. An increase in weight was observed, together with a retention of nitrogen; after each exposure the total nitrogen excreted by the urine was decreased.

5. Jürgens discusses the bacteriological diagnosis of typhoid and paratyphoid, especially with reference to agglutination reactions. It should be remembered that in some cases of true typhoid agglutinins are formed late, and in small quantity, and that typhoid bacilli may be cultivated from the stools of healthy persons (bacilli-carriers) or those sick with other diseases. Recent work has shown that a person may harbor the bacilli for a long time without showing signs of infection. The only absolute proof of the nature of the infection is cultivation of the bacilli from the blood, though a constantly increasing agglutinative titer as the disease advances makes the nature of the disease almost certain. Jürgens considers many of the "paratyphoid" cases in the literature to be only partial or "group" agglutinations, due to infection with the true typhoid bacilli. For it is well known that the members of the typhoid-coli group are closely related, and that a specific serum may agglutinate the corresponding bacterium in high dilution, the other members of the group in lower dilutions. Thus in a case observed by the writer, agglutination for paratyphoid bacillus-B occurred at a dilution of 1.400, and yet the disease was typhoid, as shown by the higher agglutination titer for the typhoid bacillus, and by the fact that the serum contained bacteriolysins for typhoid, but not for paratyphoid. Another point he brings out is that the paratyphoid bacillus causes other infections than paratyphoid fever proper. In many cases of meat and sausage poisoning, this bacillus has been recovered both from the spoiled food, and from the stools of the victims, and positive agglutination reactions have been recorded. The symptoms, however, do not resemble at all those of typhoid, but are those of an acute febrile gastro-enteritis, supervening without an incubation period. For such infections the name paratyphoid bacillosis would be more appropriate. He concludes with the observation that the diagnosis of typhoid should never be made on the results of examination of the stools and serum alone, but on these taken in connection with the clinical picture.

Münchener Medizinische Wochenschrift, No. 2.
Jan. 8, 1907.

1. *Bingel, A. *The Influence of Beer Drinking and Duelling on the Heart of Young Adults.*
2. Bürker, K. *Thermodynamics of Muscle.*
3. Best, F. *Correlation in Inherited Diseases of the Eye.*
4. *Arnsperger, H. *The Early Diagnosis of Phthisis by Means of the X-ray.*
5. *Pförringer and Bunz. *The X-ray Diagnosis of Pulmonary Tuberculosis.*
6. Nyrop, E. *Gastropexia and Retention.*
7. Rosenbach, O. *Methods to Bring Out the Knee Jerk.*
8. *Mekus, F. *A Case of Atrophy of the Liver Following Trauma, with Regeneration of the Organ after Talma's Operation.*
9. Goldflam, S. *A Case of Congenital Fistula of the Lower Lip.*
10. Fromm, E. *Prophylaxis of Infections in the Waiting Rooms of Dispensaries for Children.*
11. *Pfaundler, M. *The Nature and Treatment of Disturbances of Nutrition in Infancy.* (Concluded.)
12. Soltmann, O. *The Mortality of Infants in Hospitals.* (Concluded.)

1. Bingel has investigated the effect on the heart of excessive beer drinking and bodily exertion (duelling) on university students, by means of the orthodiascope, and found that no change could be detected in the size of the heart in those whose hearts were previously healthy. Some students with obesity or previously damaged hearts, however, showed attacks of acute dilatation. For the production of the beer heart, it is probable, therefore, that a long period of excess is needed.

4. Arnsperger believes the use of the x-ray to be of great value in the diagnosis of doubtful cases of incipient phthisis. With the fluoroscope there is seen in early cases a diminution in size of the affected apex together with a loss in brightness. The normal apex becomes brighter during the act of inspiration. This difference is diminished or lost in the early stages of phthisis. Williams's sign, a diminution of the movements of the diaphragm of the affected side, was found inconstant, occurring in only 6% of the early cases, though more frequent in later stages.

5. Pförringer and Bunz also recommend the x-ray for early diagnosis in conjunction with the usual physical methods. A combination of the use of the fluoroscope and of plates gives the best results. In early cases slight diffuse or mottled shadows are seen at the apex, often at a time when physical signs are equivocal. In more advanced cases, the x-ray often gives a more correct idea of the extent of the process, and cavities can be diagnosed with greater precision. A cavity shows with the x-ray only when it is empty and surrounded by infiltrated lung tissue. Central foci and infected lymph glands may be detected when physical signs are entirely negative. A limitation of the movement of the diaphragm (Williams's sign) is probably largely due to pleural adhesions, and

is too inconstant to be of great value in the diagnosis of incipient phthisis.

8. Mekus reports a remarkable case in which after abdominal trauma there occurred jaundice and ascites. At the operation, the liver was found much decreased in size and the abdomen filled with inflammatory exudate. Talma's operation was performed. The liver gradually resumed its normal size and function, ascites did not return and the patient was discharged well. [This case is important as showing the remarkable power of regeneration possessed by the liver.]

11. Pfaundler's paper discusses the various theories as to why cow's milk is inferior to human milk in the feeding of infants. It is not suitable for abstraction.

Berliner Klinische Wochenschrift, No. 40.
Oct. 1, 1906.

1. *Quincke, H. *Toxic Hydrops.*
2. Mayer, A., and Milchner, R. *Topographic Percussion of the Heart in Childhood.* (Continued article.)
3. *Saito, S. *Sahli's Desmoid Reaction.*
4. Funck, C. *Why Leukemia Improves during Intercurrent Infections.*
5. Dinger, A. N. *The Treatment of Trachoma with Radium.*
6. *Westenhoeffer, M. *The Present State of our Knowledge of Epidemic Cerebrospinal Meningitis.* (Concluded.)

1. Under the name of toxic hydrops Quincke distinguishes that form due to lesions either of the capillary walls, or of the tissues themselves, caused by various toxic substances. He forms the hypothesis that the tissues may become altered in such a way as to attract water, and cites analogous experimental facts in support of his view. In this toxic group belong many cases of cachectic, and of so-called essential hydrops, especially those occurring after scarlatina and other infections. He reports an illustrative case, in which a desquamation resembling that of scarlatina followed the disappearance of the hydrops.

3. Sahli's desmoid reaction is carried out as follows: A small rubber bag is filled with methylene blue, iodoform or salicylic acid, and the neck is tied with catgut. Such a bag is swallowed by the patient immediately after a meal, and the time of elimination of the drug in the urine or saliva is noted. According to Sahli, catgut is digested only in the stomach, so that the time of elimination furnishes a measure of the secretory activity of the stomach. Saito shows by experiments in test tubes that catgut is also digested by a mixture of pancreas and intestinal secretion, and that methylene blue and iodoform are not absorbed in the stomach. The reaction depends, therefore, also on the motor activity of the stomach. Saito concludes that since the desmoid reaction depends upon so many factors, it has little diagnostic value.

6. Westenhoeffer, as the result of his researches in the recent epidemic of cerebrospinal meningitis, in Silesia, announces that there is constantly in the early stages a pharyngitis, due to the meningococcus. The adenoid tissue at the vault of the pharynx is chiefly affected; the meningococcus may be cultivated from the pharyngeal secretion and from the tissue. This pharyngitis is always present from the beginning, preceding the involvement of the meninges, and passes off in the course of a week or so. Westenhœffer regards this as undoubtedly the port of entry of the meningococcus. The nose is only secondarily affected. The infection of the meninges probably takes place by way of the blood current, rather than directly by way of the lymph channels; for this route speak the cultivation of the cocci from the blood, and the presence of endocarditis, arthritis, encephalitis, etc. The meningococcus is also found in the pharynx of healthy persons, but only in those who have been exposed to the disease. Such "cocci-bearers" are an important means of spreading infection, and should be isolated. The reason that children form the majority of those affected (90% in this epidemic) is that the adenoid tissue is more developed and pharyngeal infections more common at this age. Moreover, the majority of adults sectioned by Westenhœffer showed hyperplasia of the lymphatic tissue, so that in this respect they resembled children.

Oct. 8, 1906.

1. *v. Baumgarten, P. *Experiments on the Hematogenic Origin of Tuberculosis of the Lymph Nodes.*
2. Cohn, E. *The Use of Hot Air in the Treatment of Emphysema, Bronchitis and Asthma.*
3. Levinson, J. B. *Barberio's Test for Semen.*
4. Bröse, P. *The Care of the Abdominal Walls after Parturition.*
5. Mayer, A., and Milchner, R. *The Topographic Percussion of the Heart in Childhood.* (Concluded.)
6. Kutscher, K. H. *The Etiology and Epidemiology of Epidemic Meningitis.*

1. Von Baumgarten and Campiche produced generalized lymph node tuberculosis by injecting bacilli intravenously into rabbits. In the earlier stages the tuberculosis of the lymph nodes predominated, later that of the lungs. This is probably because the bacilli multiply in the nodes, get into the blood current again and infect the lungs. The process was always more marked in the bronchial than in other nodes, probably because of added infection from the pulmonary process. The possibility that infection of the lymph nodes may take place by way of the blood current should be borne in mind.

Oct. 15, 1906.

1. Vulpius, O. *Failures in Tendon Transplantations.*
2. Hudovernig, C. *The Value of Methylatropine in Diseases of the Nervous System.*
3. *Danziger, F. *The Early Diagnosis of Chancre.*
4. Engel, C. S. *The Serum Treatment of Syphilis.*
5. *Levaditi, C. *Remarks on Schultze's Article Entitled "Silver Spirochete"* (*Berl. Klin. Woch.*, No. 37.)
6. Halle, M. *Is External or Internal Operation Preferable in Empyema of the Antrum.* (Continued article.)
7. Martens, M. *The Structure and Equipment of Modern Operative Rooms.*

3. Danziger reports five cases in which the diagnosis of chancre could be made by the demonstration of spirochetes in smears, at a time when the clinical appearances were misleading. The diagnosis was confirmed in every case, either by the prompt healing of the ulcer after injections of mercury, or by the appearance of secondary symptoms.

5. Levaditi refutes the arguments of W. Schultze, who claimed that the "spirochetes" demonstrated by the Levaditi silver impregnation method are nothing but elastic or nerve fibers or connective tissue or "something else." He points out that the finding of silver spirochetes in the lumina of blood and lymph vessels in syphilitic lesions, and the presence of the spirochete gallinarum in the yolks of eggs from the ovaries of infected hens, definitely exclude the possibility of such an origin.

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Correspondence.

LETTER FROM HONOLULU.

Rarity of Cancer in the Sandwich Islands. Possibility of Yellow Fever.

Honolulu, Sandwich Islands,
Nov. 30, 1906.

Mr. Editor: The rarity of cancer here is a fact which I have not seen mentioned, though it may be well known. Cancer of the stomach is so rare here, I am told, that gastro-enterostomy has been performed but once in the islands for this disease. Cancer of the breast is even more uncommon than cancer of the stomach.

The presence here of the mosquito (Stegomyia fasciata) which transmits yellow fever, causes speculation as to whether or not, when the Panama Canal has been opened, the disease itself may not gain a foothold and make terrible ravages in the Hawaiian Islands. This point has, I am aware, been brought forward and elaborated by Dr. Patrick Manson and other authorities on tropical diseases.

Very truly yours,
Geo. C. Shattuck, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Jan. 26, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,611	452	Quincy	9	5
Chicago	735	214	Waltham	7	2
Philadelphia	—	—	Gloucester	2	—
St. Louis	—	—	Pittsfield	10	—
Baltimore	239	50	Brookline	—	—
Cleveland	—	—	North Adams	4	0
Buffalo	—	—	Chicopee	7	6
Pittsburg	—	—	Northampton	10	0
Cincinnati	—	—	Medford	1	—
Milwaukee	—	—	Beverly	6	—
Washington	—	—	Hyde Park	4	—
Providence	86	25	Newburyport	—	—
Boston	239	43	Leominster	3	1
Worcester	39	6	Melrose	—	—
Fall River	48	25	Woburn	5	2
Cambridge	27	13	Marlborough	3	0
Lowell	41	14	Westfield	7	3
Lynn	26	2	Peabody	—	—
New Bedford	30	11	Revere	1	—
Springfield	27	3	Clinton	8	2
Lawrence	27	13	Attleboro	3	0
Somerville	20	4	Adams	6	—
Holyoke	19	8	Gardner	—	—
Brockton	10	4	Milford	5	—
Malden	13	2	Weymouth	4	0
Salem	10	1	Framingham	3	—
Chelsea	13	—	Watertown	4	1
Haverhill	7	—	Plymouth	—	—
Newton	9	3	Southbridge	4	4
Fitchburg	—	—	Wakefield	—	—
Taunton	13	0	Webster	—	—
Everett	13	2			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JAN. 23, 1907.

Blue, Rupert, passed assistant surgeon. Granted leave of absence for 2 days from Jan. 22. Jan. 21, 1907.

Lloyd, B. J., passed assistant surgeon. Ten days' leave of absence granted from Dec. 24, amended to read 12 days. Jan. 23, 1907.

Warren, B. S., passed assistant surgeon. Granted leave of absence for 5 days from Jan. 16. Jan. 18, 1907.

Simpson, Friench, assistant surgeon. Relieved from duty at Baltimore, Md., and directed to proceed to Fort Stanton, N. M., reporting to medical officer in command for duty and assignment to quarters. Jan. 22, 1907.

Mason, M. R., pharmacist. Granted leave of absence for 7 days from Jan. 15, 1907, under paragraph 210 of the Service Regulations.

PROMOTION.

Boggess, J. S., assistant surgeon. Commissioned as passed assistant surgeon, to rank as such from Dec. 5, 1906. Jan. 12, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEB. 2, 1907.

J. F. Leys, surgeon. Detached from Norfolk Hospital, and ordered to duty with Department of Government and Sanitation, Canal Zone, sailing from New York Feb. 5, 1907.

E. H. Marsteller, surgeon. Detached from Naval Recruiting Station, Baltimore, Md., and ordered to U. S. S. "Franklin."

C. H. Decker, surgeon. Orders to U. S. S. "Franklin" revoked.

R. A. Bachmann, passed assistant surgeon. Detached from Naval Recruiting Station, Minneapolis, Minn., and ordered to U. S. S. "Franklin."

R. H. Michels, assistant surgeon. Orders of Jan. 22, modifying orders of Jan. 4, revoked.

J. T. Miller, acting assistant surgeon. Detached from U. S. S. "Franklin," and ordered to Naval Recruiting Station, Minneapolis, Minn.

J. E. Gill, passed assistant surgeon. Orders of Jan. 22, 1907, revoked.

F. M. Bogan, passed assistant surgeon. Ordered to Naval Recruiting Station, Baltimore, Md.

R. J. Straeten, assistant surgeon. Ordered to duty at Naval Hospital, Mare Island, Cal.

C. C. Grieve, assistant surgeon. Detached from U. S. S. "Southery," and ordered to duty at Navy Yard, Portsmouth, N. H.

J. P. Traynor, passed assistant surgeon. Detached from Navy Yard, Boston, Mass., and ordered to "Scorpion."

R. B. Chapman, assistant surgeon. Detached from Navy Yard, Mare Island, Cal., and ordered to Naval Recruiting Station, Oklahoma, Okla.

J. F. Murphy, passed assistant surgeon. Detached from U. S. S. "Georgia," and ordered to U. S. S. "Scorpion."

J. P. Traynor, passed assistant surgeon. Orders of Jan. 30 modified. When detached from Navy Yard, Boston, Mass., and ordered to U. S. S. "Georgia."

SOCIETY NOTICE.

Medical Meeting of the Boston Medical Library. — The program for the Medical Library meeting on the evening of Feb. 13, at 8.15 o'clock is as follows: "Physical Training in the Boston Public Schools," by Jas. B. Fitzgerald, M.D., Supervisor of Physical Training in the Boston Public Schools. "School Hygiene — as it is and as it ought to be," by S. H. Durgin, M.D., Chairman of the Boston Board of Health. "Physical Welfare of Public School Children, investigated by a Committee of Physicians," by Geo. S. C. Badger, M.D., Boston. "Medical Supervision *versus* Medical Inspection of the Public Schools," by Thos. B. Harrington, M.D., Lowell. Discussion by Geo. H. Martin, Drs. Arthur Jelly and Joel E. Goldthwait.

Edwin A. Locke, M.D.,
Secretary.

RECENT DEATHS.

Dr. Arnot Spence, of New York, a visiting physician to St. Joseph's Hospital for Consumptives, died on Jan. 26, after a short illness. He was graduated from Bellevue Hospital Medical College in 1884.

Dr. Charles Wilmot Townsend, of New Brighton, Borough of Richmond, New York City, died at the S. R. Smith Infirmary on Jan. 27 from pistol shot wounds inflicted by an assassin in the early morning hours of the day previous. The man who is believed to have committed the crime is under arrest, and the motive for the act appears to have been an extraordinary idea of revenge because he had become possessed with the conviction that the doctor was in some way responsible for the death of his wife. As a matter of fact, however, Dr. Townsend, when called to her case, found the woman, who was pregnant, suffering from the most marked uremic poisoning. He expressed the opinion that she would die if left at her home, and advised her immediate removal to the Infirmary. This was accordingly done; but, in spite of all efforts to save her, she died in giving birth to her child. The untimely death of Dr. Townsend, in this tragic way, has been the cause of profound sorrow among a large circle of friends, as he was one of the leading physicians of the Borough of Richmond and widely known throughout Staten Island. He was in the fortieth year of his age, and was graduated from the College of Physicians and Surgeons, New York, in 1890. At the time of his death he was surgeon to the S. R. Smith Infirmary at New Brighton, Staten Island, and consulting surgeon to the Nursery and Child's Hospital, Manhattan. His wife, with whom he was in bed at the time of the murderous assault, is a daughter of the late Dr. Theodore Walser, and herself a graduate in medicine. Her brother, Dr. William C. Walser, like his father before him, is a prominent Staten Island physician and surgeon.

BOOKS AND PAMPHLETS RECEIVED.

A Clinician's Observations of Opsonic Therapy. By Charles D. Aaron, M.D. Reprint.

Gastrogenic Diarrhœa. By Charles D. Aaron, M.D. Reprint.

Practical Dietetics with Reference to Diet in Disease. By Alida Frances Pattee. Third edition. New York: A. F. Pattee.

Twenty-second Annual Report of the Directors of the New York Post-Graduate Hospital. For the year ending Oct. 1, 1906.

Woman. A Treatise on the Normal and Pathological Emotions of Feminine Love. By Bernard S. Talmey, M.D. Illustrated. New York: The Stanley Press Corporation. 1906.

A Case of Tubo-abdominal Pregnancy Secondary to an Incomplete Tubal Abortion. By B. S. Talmey, M.D. Reprint.

A Plea for the Simple Round-Ligament Ventrosuspension. By B. S. Talmey, M.D. Reprint.

Original Articles.

THE TREATMENT OF TUBERCULOSIS OF THE HIP-JOINT (HIP DISEASE).

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

The following paper is presented for the purpose of stating as clearly as possible the principles which are of importance in the treatment of tuberculosis of the hip-joint. Much confusion exists in the minds of many of our profession as to the importance of various details in such treatment, and it is for this reason that the whole subject of the treatment of tuberculosis of this joint, both the operative as well as the nonoperative, is here presented. In so doing it is the desire of the writer to emphasize the principles upon which, it seems to him, the treatment should be based, rather than to attempt to advocate special forms of apparatus or other technical features. The application of the principles in a given case must be left to the individual who may be responsible for that case, and any apparatus or method which makes the application of these principles possible should be considered satisfactory, no matter how unlike, in appearance or form, they may be to those more commonly used.

The opinions here expressed are based upon a fairly large experience, and are those which have been in constant use in the Massachusetts General Hospital and the Carney Hospital, as well as in the writer's private practice, during the past six years. The years of previous experience with other methods have simply served to emphasize the value of those here presented, and as the opinions are in keeping with those which are recognized as desirable in the treatment of tuberculosis of other parts of the body they are offered without apology, even though they may differ somewhat from those advocated by other writers.

In the treatment of tuberculosis of the hip-joint it should be remembered that the disease is tuberculosis, and that too much stress cannot be laid upon the general hygienic measures which have been described so fully in the many popular and scientific articles that have appeared in connection with this disease as it shows itself in the lungs. An abundance of fresh air should be insisted upon, with rooms always generously ventilated, with life spent in the open air as much as possible, even living at times entirely in tents or shacks; and besides this an abundance of good food, together with proper bathing, and other details of good hygiene are all of importance. The different appearance presented by those treated in this way and those treated by the older methods in their homes or in close hospital wards is more striking than any word picture would indicate. The general health improves, the circulation is better, the appetite is more keen, the food is more perfectly digested, and the whole appearance is one of health, instead of sickness so universally seen with such cases when confined indoors. Under such wholesome conditions not only is there marked improvement in the general health but there is a corresponding improvement in the local disease. The acute symptoms subside and the healing goes on more rapidly because of the increased local resistance which must result from this gain in the general health.

For local treatment the principles which are of chief importance consist in the protection of the joint from the irritation which would result from use or from the reflex muscle spasm, with, at the same time, as little interference with the joint function as is possible.

To accomplish this the motions of the joint must be limited, but the degree of limitation or the duration of this limitation must depend upon the severity of the disease in the given case. This limitation may be obtained most easily by rest in bed, and while this is of more value in connection with apparatus, yet nevertheless alone it is of importance. In the untreated cases it is in this way that the protection is instinctively obtained, but as by this alone the muscular spasm is only partially controlled, the healing is necessarily slow and deformities inevitably result.

More complete protection is to be desired and can be obtained with varying degrees of efficiency by means of any of the various splints or dressings which have been devised for this purpose, the special form to be determined by the merits of the individual case and the personal equation of the physician. That which has given by far the best results, with the writer, in the early cases of hip-joint tuberculosis before deformities have developed, is the plaster of Paris spica bandage extending from just above the knee to just above the crests of the ilia, applied with the hip in the position of physiological rest. This dressing is not expected to completely immobilize the joint, but the limitation is so definite that the motion which remains is of little importance. The position of physiological rest or muscle balance is chosen in order to control the muscle spasm, which is one of the most important elements of irritation in disease of this special joint, and which must be overcome before treatment can be carried on satisfactorily. Because of the naturally greater mobility of the hip than the other joints and because of the greater number of muscle groups involved in these motions, this reflex spasm is more marked in disease of the hip, and its results are more injurious than is true of the same feature in any of the other joints. In the knee or in any hinge joint there are but two groups of muscles to be considered, the flexors and the extensors, and as long as they properly antagonize each other there is little difficulty. Under such conditions the position of ease or balance is obtained when the joint is straight or nearly so, and explains the fact that in the knee as long as it is in this position there is little if any spasm, but that as soon as flexion develops the spasm of the posterior muscles at once becomes evident, disappearing again as soon as the straight position can be assumed.

In the hip there are not only flexors and extensors, but abductors and adductors, as well as rotators, so that the balance between these groups, which is nature's protection against deformity, is very hard to maintain. If the leg is drawn in, the adductors have the advantage over the abductors, and the common deformity of adduction with the adductor spasm is the result. If flexion begins, the extensors work at a disadvantage, and the spasm of the flexor muscles tends to constantly increase the deformity. So also is it true of the abductors and rotators.

Recognizing these facts, if now the balance between these various groups of muscles can be obtained and maintained for a short time, the spasm ceases, and not only is this feature of the joint irritation removed, but the effect which this irritation has upon the reflex atrophy of the leg is also eliminated. The position in which this muscle balance is most perfectly obtained is the position in which the head of the femur rests mostly easily and evenly in the acetabulum, and practically consists of about 20° of flexion, 15° to 20° of abduction, and 10° of outward rotation.

In such a position the plaster of Paris dressing (if that be the form of apparatus decided upon) should be applied, extending from the knee to just above the crests of the ilia. The knee is purposely not included, nor is any attempt made to immobilize the lower spine, as this mobility of the adjacent joints is of importance in preserving the circulation in the affected part, while the slight amount of motion to the hip which their use represents is of little consequence. With the early cases, in such a dressing the patients may be allowed and should be encouraged to walk about bearing the weight upon the leg. By so doing, the strength of the part is maintained, the circulation of the whole leg is stimulated, the reflex atrophy is much less, and the resistance which the part must offer to the extension of the disease is necessarily greater.

This principle of use up to the limit of toleration is, of course, not new in the treatment of tuberculous disease in other parts of the body, since, for instance, with tuberculosis of the lungs the use of the chest is not only not restricted but, on the contrary, is encouraged as much as possible, by bracing climates, high altitudes, breathing exercises, including even the pneumatic cabinet, and all such measures as tend to give strength to the part affected. With the disease in the hip or in the other joints the same general principle should be constantly before us, and the treatment should interfere with the function of the part as little as possible. Practically the motion must be limited, and limited quite markedly, but if the position is correct, weight bearing with the free use of the adjacent joints is an advantage. Not only is the extension of the disease lessened by keeping up the proper tone of the part, but for the same reason the cicatrization also takes place more rapidly, so that treatment can be discontinued in much shorter periods than is possible with methods which interfere more with the function of the part.

The plaster of Paris dressing should be removed in one or two months, and should be reapplied until evidence of active disease, as shown by pain and muscle spasm, has passed. When this time is reached, and in the mild and early cases this may not require more than a few months, the rigid dressing should be replaced by something which allows more motion but still offers some protection to the joint. For this purpose a splint made of stiffened leather of the same shape as the plaster of Paris splint is quite satisfactory. This is not as rigid and consequently allows more motion than the plaster of Paris, and is easily removed for bathing or other purposes. In a short time, if all goes well, the splint should be omitted at night and gradually can be entirely discontinued. Practically, as a splint of this kind is worn, it gradually softens so that the transition from the rigid support to nothing is not a sudden one.

Bed and traction treatment. — In case the disease be more acute or of longer duration, so that all of the symptoms are more marked with the presence of undesirable deformities, it may not be possible to obtain the desired position for the joint at once. If this be the case the patient should be put to bed with traction and treated until the desired position can be obtained. For this the patient should be kept upon the back with the leg raised and supported in the position of the deformity. In this position traction should be applied by means of weight and pulley and continued until the muscle spasm has been overcome so that the leg can be straightened. When this has been accomplished, the plaster of Paris bandage, or whatever other dressing is decided upon, should be applied in the position of physiological rest, described above, and the traction discontinued. For a short period the patient should be kept in bed to allow the joint process to still further quiet down and should then be allowed up and about, using crutches at first, these being gradually discontinued as weight-bearing without pain becomes possible.

Occasionally, although very rarely, such a dressing does not control the sensitiveness and the muscle spasm, and under such circumstances either the plaster of Paris dressing should be made to more completely immobilize the joint by carrying it down to the toes and up to the ribs, or a traction hip splint of the Taylor or Dane pattern should be used. Either of these features should be of temporary use only and should be substituted for the plaster of Paris spica or a less confining dressing upon the cessation of the acute symptoms. In this way the interference with the nutrition which invariably results from the continued use of the long fixed dressing or the traction apparatus is prevented, and the growth not only goes on but the healing is not retarded.

Use of the affected leg in all such cases should be encouraged as soon as possible in order to stimulate the circulation and the bone growth, recognizing that by so doing there is the best chance for preserving the function of the part. In the mild cases the healing and encapsulation of the disease is rapid, leaving at times very little to show for its presence. In the severe cases, which always recover under any treatment with marked limitation of motion and with much weakened joints, the best possible functional result is a firmly anchylosed joint in the position most favorable for use. A few degrees of motion in such cases is undesirable, as the joint is not strong enough for this limited range of motion to be of practical use, and the fact that there is a little motion necessarily produces strain of the joint in use, with, as the result of this in many cases, later on the starting up of the original disease. Such relapses are always serious and so commonly associated with extension of the disease to other organs that largely because of this in these severe cases a firmly anchylosed joint should be tried for.

From the point of view of the practical use in such an anchylosed joint, the flexion, abduction, and outward rotation make walking possible with the body erect and without the rolling gait seen when adduction is present. The abduction serves as flexion in sitting, while on standing the lumbar spine compensates for both the flexion and abduction.

Operative treatment, excision, etc. — In the large majority of the cases if treatment can be started in the early stages of the disease and if it can be carried out upon the lines indicated above, little else is necessary; healing takes place with a useful leg, without undesirable deformity, and with varying degrees of limitation of motion depending upon the virulence of the disease. Occasionally, however, other and more radical measures are required. The disease may be so far advanced and associated with so much destruction before treatment can be started that conservative measures fail to prevent extension of the process. At other times the location of the focus of the disease is such that an attempt to remove it may be considered justifiable in order to prevent possible extension and to bring about more rapid healing; and again, as the result of lack of treatment or imperfect treatment in the beginning, deformities may be present which will not yield to conservative measures. These and various other features may be present in any given case, and the treatment of these must depend not only upon the present condition with the immediate result, but quite as much upon the probable condition years hence.

If the disease is far advanced with much bone destruction or is of the very virulent type the first consideration is with reference to the life or general health of the individual. The joint should be protected in the most favorable position; but aside from this the local process should be ignored in the attempt to improve the general condition. Life out of doors should be insisted upon, and besides this, forced feeding, stimulants, tonics, etc., should be pushed to the limit of toleration in order to improve the general health and consequently increase the resistance to the progress of the disease.

At times under such conditions, even in seemingly hopeless cases, marked improvement takes place, so that nothing further is necessary. At other times, however, in spite of this, the improvement is so slight that other and more radical measures become necessary in order to save life or to preserve the function of the part. To meet such conditions various operations may be required, but the exact operation or the exact steps in the given operation are to be determined by the conditions found at the time. To explore the joint either the anterior incision, just in front of the trochanter, or the posterior incision, just behind the trochanter, may be used. For simple exploration the anterior incision is to be preferred, since none of the muscular attachments have to be sacrificed. When there is extensive disease, however, and it is desirable to remove as much of the diseased tissue as possible, the posterior incision is better, as it exposes the joint more fully. Through this latter incision the head or upper part of the femur can easily be removed if it is considered necessary and the acetabulum is readily reached for drainage. In such an operation, while as much of the diseased tissue should be removed as possible, it must always be borne in mind, and it is for this reason that such operations are resorted to only as extreme measures, that no matter how thoroughly the operation may be performed, it is absolutely impossible to entirely remove the disease. Some of the tuberculous tissue must remain, and for this reason every precaution should be taken at the time of the operation and afterwards to prevent absorption from taking place. It is this common extension of the disease, together with the functionally imperfect leg which results from the extensive removal of the bone structures, that should prevent such operations from being used except as extreme measures. In such operations, in order to lessen the possibilities of absorption and possibly at the same time to destroy some of the remaining disease, before the wound is closed the entire operative field should be thoroughly wiped with the tincture of iodine. After this the wound should be closed loosely with temporary drainage to allow the escape of the post-operative exudate, but as soon as this has passed, closure of the wound should be encouraged.

The post-operative treatment in such a case, except for the wound which should be treated like a sterile wound, is the same as that used in an early case of the disease. The joint should be held in some fixed dressing in the position of least joint strain and most favorable for function in case anchylosis takes place. The flexed, abducted and outwardly rotated position is undoubtedly that most favorable, as has been described, but as in such extreme cases atrophy and destruction have frequently resulted in much shortening, more abduction may be wise, since in this way the apparent difference in length of the legs is lessened.

Use of the leg in weight bearing should be encouraged, as soon as the patient is able to get about, increasing the amount of use as the sensitiveness disappears. At first the toes only may be touched to the floor, but with perseverance the crutches are used less and less and the leg carries more and more of the weight. This use improves the local circulation and consequently favors healing.

Removal of focus of disease. — At times, although quite rarely, the location of the focus of disease is such that its removal is possible. Naturally this must apply to disease in the trochanter or in the neck of the femur, and only by means of the x-ray can the localization be made definitely enough to justify attempt at removal. Under such conditions the incision which will best expose the lesion should be used, and a sufficient amount of the bone removed for the cavity to be thoroughly cleaned out. Every precaution should be taken to avoid absorption from the fresh wounds, and, as in the operations just described, the entire operative field should be thoroughly wiped with the tincture of iodine. Aside from provision for the escape of the post-operative exudate no drainage should be allowed. As in such a case the joint itself is not involved, protection of the joint after the operation for a long time is not necessary, unless symptoms develop that would indicate the extension of the disease or the presence of some other focus.

Correction of deformities. — At times deformities exist which are not only trying to the patient because of the unsightliness, but which result in so much strain in regular use that a diseased area which has been quiescent may become active. For the correction of such deformities several operations are in use. Occasionally in rare instances the forcible correction of the deformity is justifiable. Ordinarily it should be avoided because of the danger of making active the old disease, but in certain cases if there is only a slight amount of motion present so that this renders the joint more liable to strain, the correction of the deformity in this way may be allowed, expecting that the disease will be started up, but hoping that in the new healing firm anchylosis will result in a position more favorable for use. Should such a procedure be undertaken, sufficient force should be used to correct the deformity, but no unnecessary force or motion should be allowed and the joint should at once be fixed in the position desired.

If this procedure is not considered wise, or if the hip is already anchylosed so that manipulation would be of no avail, osteotomy below the seat of the disease is indicated. For this the bone should be divided transversely just below the trochanter or obliquely through the trochanter. If there is firm anchylosis either incision will do, but if there is some motion in the joint the upper fragment is better controlled by using the oblique-trochanteric section and impacting the two portions. The post-operative treatment consists simply of fixing the leg in the position desired and holding it there until the union is firm. Since with the deformity there is usually considerable actual shortening, the position should be planned so as to make the apparent length of the affected leg as great as possible. Twenty degrees of flexion should be provided with the slight outward rotation of the leg, as described in connection with the treatment of the acute disease, but the abduction, instead of being 15° to 20°, can be increased to as much as 30° or 35°, if necessary, this increase necessitating on standing or walking an increase in the tilting of the pelvis. With the leg in such a position the patient can stand or walk erect, while in sitting the flexion and abduction both serve as flexion, so that this posture is not awkward.

The age at which such an operation should be performed is of importance, especially in connection with the after-treatment. Whenever possible it should be avoided under eighteen years of age, since the upper part of the femur is not fully ossified previous to that time. If such an operation is considered advisable under this age fixation should be kept up for five or six months at least, while in an adult with bones fully ossified three months is usually ample.

Pseudarthrosis. — At times when complete anchylosis exists it is desirable to obtain motion even though such a joint is not as stable for weight bearing as the anchylosis. This should not often be necessary since, as has already been stated, a firmly anchylosed hip with no undesirable deformity is much better for all round use than any joint which could result from this operation. When, however, both hips are involved and both are anchylosed it is better for general use to obtain motion in one, even though the joint may not be as firm for weight bearing as before. Pseudarthrosis is obtained by removing the head of the femur with the top of the trochanter, and turning in, between the exposed surfaces of bone, a flap of muscle or any available tissue so that bony union cannot take place. The after-treatment consists of protection only until the healing is complete, after which motion and use should be encouraged.

Abscess. — In case abscess develops in the course of the disease it should be ignored, unless its presence causes inconvenience, or unless it is affecting the general health. In the early stages if the capsule is intact and the abscess develops within the joint, the tension upon the capsule which such an abscess represents frequently causes great pain, and justifies incision of the capsule in order to relieve the tension. This is not often necessary, as usually the capsule has already been destroyed so that the distention is impossible. Under other conditions the abscess should not be disturbed until it has come well to the surface, and then it should be aspirated whenever possible, this to be repeated as often as the refilling makes it necessary. If for any reason more free drainage is necessary or desirable, a small incision or incisions should be made. It is to be remembered that it is impossible to remove all of the disease in such a case, and as the abscess is merely a symptom, nothing more than drainage should be attempted. After such an incision drainage should be arranged by means of a wick for three or four days, this then to be removed and healing encouraged. Such an abscess should not be scraped out, as it simply opens points for absorption, nor should irrigation be used, as there is more danger of carrying other organisms in than benefit to be derived. In all of the treatment of such abscesses the dressings should be as infrequent as possible and extreme care should be taken to prevent the wound from becoming infected with other organisms, as the danger from these secondary infections is quite as serious as the danger of the primary disease.

Opsonic index. — In all of these operations which may have to be performed while the tuberculous disease is active, and in the non-operative cases in which the severity of the disease suggests a degree of virulence on the part of the organism that it is not easy for the natural resistance of the individual to withstand, in all of these cases, an attempt should be made to increase the resistance of the individual to the disease, as is suggested by the theory of the opsonins. In case operation is considered the opsonic index should be tested and if found to be low should be raised before this is performed. It is probable that with this the prognosis can be made more favorable, while in certain other cases the operation may be not required. This method is, of course, too new to speak of its merits from large experience, but as far as it has been observed it has been beneficial, and it is so in keeping with the progress of scientific medicine that it seems reasonable and should be tried, especially as there is little risk in its use if the proper precautions are taken.

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SOME STATISTICS OF INDIGESTION IN DERMATOLOGICAL PATIENTS.

BY CHARLES J. WHITE, M.D.,
Instructor in Dermatology in Harvard University.

This study was suggested by the increasing conviction in the writer's mind that many chronic dermatoses may be due to errors of metabolism, either in a direct or in an indirect way in preparing the soil for the growth of bacteria. For this reason it was determined to question the patients who came to the skin clinic of the Massachusetts General Hospital as to their powers of stomachic digestion. It was thought advisable to investigate this function only in adults, men and women who (in hospital practice) had reached an age when a definite mode of life had been established, people who could answer our questions intelligently.

During the months of July, August and September, 819 new patients came to the clinic, and 438 of these men and women had reached the age of eighteen, a starting point perhaps arbitrarily chosen to determine the prevalence of indigestion. All of the 438 individuals were questioned as to the presence of pain in the gastric or cardiac regions after eating; as to eructations from the stomach; as to sensations of heaviness, weight, distress or discomfort after meals; as to regurgitations and, finally, as to constipation. Temporary or accidental occurrences of any of these symptoms were not admitted. These figures relate only to habitual conditions.

As a result of these inquiries, the following statistics were obtained:

Of the whole number questioned 260 or 59+% showed one or more of these symptoms.

There were 228 men investigated of whom 120 or 52+% admitted the existence of one or more of these symptoms; and of the 210 women questioned 139 or 65+% were similarily affected.

The statistics of race were computed, and of the 163 Americans 104 or 62+% acknowledged one or more of the conditions sought; of the 165 Irish, 94 or 57% were dyspeptic; while of the 85 Jews, 47 or 55+% came into this category. The twenty-five remaining individuals belonged to six other nations, but their numbers were too small to admit of any reliability from a statistical point of view.

The formation and eructation of gas was the most prevalent symptom. In the 438 individuals 173 admitted its presence; while 158 mentioned regurgitation, 138 heaviness and distress, and 86 complained of pain. Constipation was present in 141, but this condition was not counted in this study as evidence of stomachic indigestion. This symptom appeared in many of these subjects, however, who were otherwise free from other disturbances of digestion.

The patients were questioned also as to their inability to digest certain classes or individual articles of food and their answers were entirely in accord with our accepted ideas of idiosyncrasy. No one mentioned any indigestible food with which the medical world is not already familiar.

Dividing foods into their classes, nineteen persons could not digest fats; eleven, acids; ten, meats; four, salt foods; two, sweets or fish; and one, condiments. Of special articles of food, one patient could not digest oysters; one, mackerel; seventeen, pork; seven, corned beef; three, bacon or eggs; two, beef, lamb, veal, or ham; sixteen, cabbage; seven, beans; four, tomatoes or cucumbers; three, oatmeal or onions; two, corn or potatoes or bread; one, green vegetables; two, oranges; seven, pastry; three, cake; one, candy; six, pickles; one, cheese; six, coffee; two, milk or tea; one, beer.

During this period of investigation, 61 different diseases were diagnosticated in these 438 patients. The subjoined table enumerates them in two columns. On the left are placed the patients who exhibited signs of indigestion, while in the right hand column appear the non-dyspeptics.

Acne rosacea,	5	2
Acne vulgaris,	15	12
Alopecia areata,	2	0
Angioma,	1	0
Carcinoma,	0	1
Cellulitis,	1	1
Chloasma,	0	1
Dermatitis,	7	2
Dermatitis herpetiformis,	1	0
Dermatitis medicamentosa,	4	1
Dermatitis venenata,	14	20
Dysidrosis,	1	0
Eczema,	43	24
Eczema seborrhoicum,	6	1
Edema circumscriptum acutum,	3	0
Epithelioma,	7	4
Erysipelas,	0	1
Erysipeloid,	1	1
Erythema induratum,	1	0
Erythema multiforme,	0	3
Erythema nodosum,	1	0
Erythema scarlatiniforme,	1	0
Fibroma (multiple),	1	0
Folliculitis staphylogenes,	3	5
Furunculosis,	4	3
Herpes simplex,	1	0
Herpes zoster,	3	2
Hydroa estivale,	0	1
Hyperidrosis,	2	2
Impetigo contagiosa,	9	10
Keratosis,	1	0
Keratosis pilaris,	1	0
Leucoderma,	0	1
Lichen planus,	0	1
Lupus erythematosus,	3	1
Lupus vulgaris,	0	1
Melanoderma,	0	1
Miliaria,	2	1
Morbilli,	1	0
Paronychia,	2	1
Pediculosis capillitii,	2	2
Pityriasis rosea,	0	1
Pruritus,	6	1
Pruritus senilis,	1	1
Para-psoriasis,	1	0
Psoriasis,	10	10
Purpura,	1	2
Sarcoma,	0	1
Scabies,	11	10
Scrofuloderma,	0	1
Seborrhea capitis,	10	2
Syphilis,	28	20
Tinea favosa,	0	1
Tinea tricophytina,	3	1
Tinea versicolor,	6	5
Ulcus molle,	1	1
Ulcus varicosum,	13	10
Urticaria,	17	3
Verruca,	1	0
Verruca plana,	1	0
Vitiligo,	1	2
Totals,	260	178

Such figures were unexpected, and the great apparent proportion of stomachic indigestion in so many diseases precludes our laying much stress on the relative frequency of digestive disturbances in the few diseases which dermatologists have, from time to time, associated with indigestion. On the other hand, the statistics of most of the diseases enumerated in the above table are far too few in number to prove reliable individually. We are simply confronted with the fact that out of every one hundred persons who consult our skin clinics we may expect to find approximately 59 with more or less disordered digestion.

The dermatoses hitherto associated etiologically with indigestion are acne rosacea, acne vulgaris, eczema(?), eczema seborrhoicum, pruritus, seborrhea (?) and urticaria, and in this investigation the respective percentages found are as follows: 71 + %, 55 + %, 64 + %, 85 + %, 85 + %, 83 + % and 85%. The figures are significant, for, with the exception of acne vulgaris, we find the percentages just mentioned well above the average (59 + %) obtained in our 438 individuals.

The writer is well aware that such inferences are superficial, for the numerical results obtained relate only to symptoms and do not record the actual chemical errors of metabolism. The *post hoc, propter hoc* inferred in the present deductions does not rest upon the solid foundations of biological chemistry, but these relatively conclusive clinical proportions should serve as a basis for some future chemical research which may enable dermatologists to treat these obstinate cutaneous symptoms in a more scientific and more successful manner than at present.

Summary. — From these various figures, then, it has been demonstrated:

1. That 59% of hospital-seeking skin patients have one or more symptoms of stomachic indigestion.
2. That 52% of the men are so affected against 65% of the women.
3. That Americans head the list of dyspeptics with 62%, while the Irish follow with 57% and the Russian or Polish Jews present 55%.
4. That eructations are the most prevalent symptom of dyspepsia and occur in 39 + %, regurgitation in 36 + %, epigastric weight in 31 + %, and pain in 19 + %.
5. That our established ideas as to the digestibility of certain classes of foods and as to the indigestibility of certain special articles are correct.
6. That our previous etiological association of certain dermatoses with dyspepsia is substantiated with one exception, for whereas our present standard is 59 + % we have found in acne rosacea 71 + %, in acne vulgaris (the exception just mentioned) 55 + %, in eczema 64 + %, in eczema seborrhoicum 85 + %, in pruritus 85 + %, in seborrhea 83 + % and in urticaria 85%.

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COCAINE IN INDIA. — The Bureau of Commerce and Labor has been informed that the Government of India has prohibited the bringing in of cocaine by means of the post, and has restricted its importation by any other means to cases in which it is imported by persons, or by their authorized agents, who have been especially permitted to import the drug by a local government or administration. The government has also empowered the postal officials to search for any cocaine in course of transmission by post, and to deliver all such to the nearest excise officer. — *Medical Record.*

Boston City Hospital.

CLINICAL MEETING, NOV. 15, 1906.

Dr. Henry Jackson in the chair. Dr. L. R. G. Crandon, Secretary. The following cases were shown.

Dr. William P. Bolles reported

OPERATION FOR HYPERTROPHIED PROSTATE.

M. F., night watchman, aged fifty-nine, but seems older; temperate. He had typhoid fever twenty years ago. Hernia ever since childhood which was well retained by a truss. He has had increasing urinary trouble for one or two years; his first attack of complete retention was a year ago. Six months ago he had a second attack, followed by incontinence for a time. A short time ago he had a third attack and had to be catheterized up to the time of operation. He had a slight systolic cardiac murmur. General condition was very good, however, There was a large and evenly hypertrophied prostate, which was shown by rectal examination to be smooth, rounded and not tender. No stricture.

The patient was operated on one week after entrance by the perineal method of enucleation. Syphon drainage was used for the first two or three days through the perineum. The sphincter of the bladder began to functionate within two or three days more. The packing around the drainage was removed the day after operation. The patient had but little pain from the operation, and sat up in five or six days. He wheeled around the ward in a chair in a little more than a week. He began to urinate partly through the penis in a fortnight and did so almost completely within a week after that time. At the end of four weeks the perineal wound had entirely healed and all the urine was voided through the urethra without pain and in full stream about once in three hours with sphincter control perfect. The patient was discharged relieved. He has returned to-night from his home in the North End to show himself.

DISLOCATION OF CERVICAL VERTEBRÆ.

P. D., aged fifty; single; a farmer. The patient was admitted to the hospital on Oct. 26. Eleven days before his admission was thrown from a team, falling over the wheel and striking on his head. He walked unaided into the hospital and his only symptoms were pain and stiffness in the back of his neck. There was no paralysis of any kind. No deformity was found externally, but the digital examination of the pharynx revealed a prominent bulging forward of the bodies of the middle cervical vertebræ.

He has improved slowly but steadily since his admission to the hospital, gaining motion of his head and the pain is gradually diminishing. He is still in bed, but very comfortable and it is probable that he will be up within a few days.

Dr F. S. Watson reported,

TWO CASES OF PROSTATIC HYPERTROPHY IN WHICH THE PROSTATE WAS REMOVED BY TOTAL PERINEAL PROSTATECTOMY.

These two patients represent the beneficial results of total prostatectomy when it is performed in appropriate cases. Both of them were subjects of chronic retention of urine. Both had very large accumulations of urine retained within the bladder because of the inability of the expulsive power of the bladder to overcome the obstacle offered by an enlarged prostate to the outflow of urine.

In the second case we had a factor present which ordinarily constitutes one of, indeed, the greatest objection to the performance of prostatectomy, namely, a urine which suggested that the kidneys were functionally defective. Under these unfortunately very frequent circumstances, uremia is apt to follow the performance of the operation, and when it does, to prove fatal. On this account it is of great importance to ascertain beforehand the functional capability of the kidneys. Personally speaking, I have found the amount of urea present and the specific gravity of the urine very safe indications of the condition of the renal function and ordinarily sufficient to enable me to estimate the dangers of the operation in any given case so far as this, the most serious of all the post-operative dangers, is concerned.

In this particular instance we disregarded the indications furnished by a low specific gravity and a diminished proportion of urea, of an insufficient renal capability, for the reason that it seemed to me probable that they might be due to the temporary polyuria which so commonly follows the withdrawal of the urine from the bladder in cases of retention with large accumulations of urine in the bladder, and the event shows that we were right to have the courage of our convictions, in this case at any rate.

With regard to the method of operating, there is not much to say. There has been a great deal of to-and-fro discussion and an immense amount of literature with regard to the operative technique of the perineal operations of prostatectomy. I have been connected with the study of the operative treatment longer than any one in this country, was the sole and only surgeon for a good many years to be found who advocated prostatectomy and especially perineal prostatectomy, have seen the recent development of the various techniques of the latter procedure, each and every one, and have practised some of the more important and promising of them, as well as the method that I have employed long before any of them were put in the field; I therefore feel a certain right to pronounce with regard to their claimed merits and demerits, and I say this with regard to the surgical technique of the perineal operations: That it makes not the least difference which of them you employ so far as the safety or danger of the operation is concerned. Whichever one is preferred by any individual surgeon and whichever one of them he is most skilled in performing, that is the one he had best adhere to.

There is, however, something to be said as to the character of the results obtained by them. It is this: That those operations which afford the best chance of avoiding injury to the ejaculatory ducts and the floor of the urethra, which is saying one and the same thing, are to be preferred to those which do not aim at doing this. The question of injury to all other parts of the prostatic urethra than the floor of it is of secondary importance. It has yet to be shown that any serious harm or even inconvenience comes from tearing through the sides of the prostatic urethra, which is what I do personally in every case of perineal prostatectomy in which I follow the method of operation which I have done for the last eighteen years, though in smaller numbers than has been the case with some other surgeons. The operation to which I refer has the advantage of being the most rapid of all the methods. In the cases we are showing you to-night the time taken was much longer than is sometimes the case. In another case done just before these two I removed the prostate in two minutes and without any more risk to the patient than if I had occupied half an hour. The time taken in these cases was respectively seven and fifteen minutes. It will average about six to eight minutes and is often as short as four minutes.

The method consists in enucleating the prostate lobe by lobe or in one mass as may be preferred, with the finger tip aided, when necessary, by snipping especially tough fibrous connections between the surface of the gland and the inner surface of the outer sheath with blunt scissors.

The finger is passed into an ordinary external perineal urethrotomy incision and into the prostatic urethra. When there, one side and later the opposite side of the prostatic urethra is scratched through with the finger nail or incised with a gum lance passed beside the finger, in either case above the urethral floor and consequently above the entrance of the ejaculatory ducts and above their course through the posterior part of the prostate itself. Through these openings in the sides of the prostatic urethra the finger tip bores until it rests upon the surface of the thin capsula vera covering the gland and forming a part of it. The enucleation is then accomplished by working the finger between this membrane and the inner surface of the outer sheath of the prostate. It is essential that this outer sheath should not be wounded, for in it lie the prostatic plexus of veins which are the source of all the bleeding that ever occurs in the course of this operation or any other way of removing the prostate. Hemorrhage need never occur if care is taken to avoid injuring this structure. Personally, I have never had a hemorrhage of the least consequence in any of these operations of which I have up to the present time done 74, 54 of them being perineal prostatectomies.

One point is well illustrated in these two cases, *viz.*, that the membranous urethra with its compressor urethræ muscle is the true sphincter of the bladder, for in the first case we lacerated the vesical outlet and its sphincter quite extensively — a rare thing to have happen in my experience but an occasional accident. This patient might have been expected to have had incontinence of urine on account of the injury done to that part of the bladder, but he retains his water for two hours at a time already and will gain in this respect as time passes. His membranous urethra is healed except for a short time now and then when it reopens. The other patient has not yet had his urethral incision heal, and he cannot as yet control his urination although he had a perfectly uninjured inner or vesical sphincter at the end of the operation.

The perineal operations have been criticised because of what is asserted to be the greater danger of wounding the rectum when performing them than in the suprapubic method. As a matter of fact the rectum need never to be wounded if only the operator will take the precaution to place two fingers, of the hand not engaged in the enucleation, in it and to press upward against the posterior surface of the prostate whenever the enucleating finger presses downward toward the rectum.

With regard to the advantages and disadvantages of the suprapubic and perineal operations, there would be, practically speaking, very little to choose between them were it not for the one persistent fact that at the very best showing the high operation has an operative mortality of 7.6% and an average one of 11.6% while the best of the series of the perineal operations is but 2% to 4% and an average of 6.5%. The operative mortality of both operations is gradually diminishing.

Dr. C. F. Withington reported the following cases:

A CASE OF MULTIPLE SYMMETRICAL EXOSTOSIS.

The patient, an Italian, a man of about thirty-five years of age, entered on account of acute articular rheumatism. During the routine examination an exostosis of the size of a small egg was noted on the inner aspect of each tibia near the head of the bone. Of these he could give no history, save to say that he had had them since he could remember. Further search showed that similar but smaller growths existed at the head of both fibulæ and the outer malleoli seemed rather large. No exostosis could be made out elsewhere. The accompanying radiographs, which I pass about, show, however, a wider distribution of the anomaly. In the first place, they make very clear the condition in the lower legs. The exostoses are shown to be slightly less dense in structure here than the rest of the bone. Their distribution is perfectly symmetrical, and there are eight of them occupying the ends of the four bones.

Though nothing can be made out by palpation elsewhere, these radiographs show a similar condition to exist in the upper extremity. Here the growths are smaller and more like spicules. They are quite symmetrical and are found on the lower end of both radii. On one radius, besides the hard, dense spicules, there is a less dense and more extended growth than on its fellow. Similar sharp spicules are seen toward the upper end of both humeri, corresponding to the insertion of the pectorales majores. From one such process a slender shadow shows in the picture extending nearly to the inner edge of the arm, as if bone structure was being deposited in the muscle towards its insertion, or as if the process were growing out from the humerus into the muscle. It is possible that other parts of the body which have not been radiographed have also similar osteophytes.

We have not been able to learn from the patient anything about this phenomenon, except that it appears to give him no trouble; nor have we got any history of heredity. I notice some similar cases are described in the *Bulletin et Mémoires de la Société Medicale des hopitaux de Paris*, 1905, no. 24, p. 647. One patient of twelve years old showed an inheritance of the phenomenon in the direct male line, from father and grandfather; it was shared by a brother of the patient, but the collateral lines, from the father's brothers and sisters, were free. Two other cases recorded in the same place, of eighteen and thirty-five years respectively, showed symmetrical exostosis, chiefly epiphyses. There were no signs of rickets, and the cases were not hereditary.

A CASE OF CHRONIC ULCER OF THE STOMACH, UNRELIEVED BY SEVERAL OPERATIONS.

The patient, a single woman, born in Ireland, aged forty, gives a history of occasionally vomiting blood at varying intervals for six years. There was considerable pain, and an occasional dark-colored stool. Three years ago she vomited about a pint of bright red blood, and about five days later entered this hospital. Operation was advised and refused. She was fed for ten days by enema, then by mouth, and was discharged, as far as symptoms went, well. There was a period of twenty months before recurrence. Then there was hematemesis, and after five months, pain. After the latter had lasted three months, there having been no bleeding for eight months, she entered on the surgical side. She was then operated upon and at one sitting there were done a gastro-enterostomy, an entero-enterostomy, a plication and an appendectomy. Two scars were seen on the surface of the stomach, the pylorus was indurated and the stomach dilated.

Eight weeks after this operation, the patient returned with pain and vomiting, and some bleeding. A second operation, of which you see the scar in the median line, was done, some adhesions were broken up and the omentum was sutured to the site of the plication. The lumen of the gastro-enterostomy was then found to be still patent.

She was discharged in five weeks, and enjoyed a period of exemption from trouble of eleven months. She then began to pass blood from the bowels and occasionally to vomit it. After six weeks of this, she again entered on the medical side and was treated in the usual way for four weeks, till she was discharged free of symptoms. Her exemption after this only lasted three weeks, and she is back again with vomiting of food, not blood, and occasional slight hemorrhage from the bowels. She is again doing well under medical treatment.

So far as concerns the time necessary to secure relief, it seems to make little difference whether she has been treated medically or surgically. The intervals of relief happen to have been a little longer following medical than surgical treatment, except in the last case, though it may well be that the relapses on the whole are getting more frequent. The case is one of those unfortunate ones in which neither medicine nor surgery can lay a very flattering unction to its soul. When first under observation here, because of the persistence of downward bleeding, the ulcer was believed to be duodenal, but at the time of the first operation, gastric cicatrices were seen. It is, of course, possible that the present ulcer is more recent than those, and is duodenal. But the early production of pain after taking food and the similarity of the symptoms to the earlier ones make it probable that the ulcer is at or near the old ones. The operation, by relief of gastrectasis, did seemingly help the vomiting, but at present her generally unpromising outlook appears hardly more gloomy under medical regimen than under further surgical treatment.

Dr. F. J. Keany showed the following cases:

ERYTHEMA GANGRENOSUM (A TROPHO-NEUROSIS).

This patient is sixteen years of age and has lived in a rural district until present visit to Boston. This case presented at the Out-Patient Department of the Carney Hospital, and was first seen by Dr. Townsend Thorndike. Subsequently, Dr. Thorndike and I saw the patient at her residence, and advised her entering the hospital. Through the courtesy of Dr. F. H. Williams, on whose service the patient is being treated, we present this case as an interesting and extremely rare dermatosis. As to past history there is nothing to learn beyond her having had scarlet fever, measles and varicella in childhood. There is no specific history.

The present trouble had a sudden onset, the first lesion of the skin appearing on the back of right hand June 16, 1905, and developed in about one-half hour. It is described as a red purplish spot which became hard and later took on the appearance of a blister, and finally sloughed leaving a scar about the size of a silver half dollar. The lesion did not itch, but was painful and of a burning character which lasted until it became indurated.

At varying intervals since, similar lesions have developed on the right forearm and upper arm, right side of neck, right foot, plantar surface, right thigh, right leg, tibial surface, right post-auricular space, and present active lesion is situated in right groin.

These, first erythematous, later gangrenous, patches develop always the same picture and go on to cicatrization leaving scars, some superficial, others fairly deep. The greatest loss of tissue is over the right tibia. The process lasts from four weeks to three months.

Antiseptic and stimulating local treatment has been tried and strychnia internally given. Later, on suggestion of Dr. Bullard, a course of bromides was appealed to, with little, if any, result. Since admission to the City Hospital, radio-therapy under Dr. Williams's care, is promising.

This condition is to be distinguished from eyrthema induratum scrofulosorum, of Bazin's, erythema nodosum and syphilis. In Professor Kaposi's clinic at Vienna, I have seen a case quite similar demonstrated as hysterical gangrene. The age of the patient, the absence of arthritic conditions and suppuration rule out erythema nodosum. The failure of anti-syphilitic treatment and the history rule out syphilis. The distribution of lesions, all confined to the right side of the body, the period of development and the hysterical elements present, lead to the consideration of a tropho-neurosis.

A CASE OF TYPHOID FEVER DEVELOPING A PURPURIC ERUPTION OF THE SKIN.

On invitation of Dr. J. L. Ames, I examined this case and observed on the abdomen, right forearm and lower limbs, from the knees down on anterior surfaces, a bright red erythematous eruption with no subjective symptoms. I expressed the opinion that it was a toxic erythema. Some six or seven days afterwards, I again saw the case and found the eruption had changed to its present character and is, as you now see, purpuric. On pressure, the surface does not pale, the condition is all intensified. In all probability the hemorrhage has only extended to the corium.

Such drugs as belladonna, bromide, copaiba, iodides, capable of producing similar eruptions, have not been employed here. Very exceptionally a purpura may, as in this case, develop in the course of typhoid, measles, malaria, scarlatina, septicemia and specific fevers. Osler suggests that a toxin may be generated, some alkaloid, which in varying dosage, in different constitutions, may produce either an urticaria, angio-neurotic edema, erythema multiforma or purpura.

Dr. J. B. **Blake** showed

A SPECIMEN OF SELF MUTILATION IN A PATIENT SUFFERING FROM ALCOHOLIC INSANITY.

It consisted of the penis and testicles removed in one mass. The physician who accompanied the patient to the hospital brought the specimen in his hands. At entrance the vessels of both spermatic cords were picked up and tied, as was also the dorsal artery of the penis. A catheter was introduced into the bladder. Three days later a plastic operation was done, turning down a flap from the abdomen from either side of the middle line, to close in the large denuded area over the pubes; this area was about the size of the palm of an adult's hand. The urethra was split and stitched to margin of the skin on either side to prevent cicatricial contraction. Convalescence was slow, and the patient was transferred to the Boston Insane Hospital, from which he was discharged to friends after two months. At that time the wound had healed completely, and he had perfect control of his vesical sphincter.

Dr. F. B. **Lund** showed cases as follows:

CASE I. PARTIAL GASTRECTOMY FOR CARCINOMA OF THE STOMACH.

A patient was presented who had been operated upon for carcinoma of the stomach seven months ago. He was sixty-two years of age and in poor general condition, being considerably emaciated, able to take but little nourishment and vomiting frequently, the vomitus occasionally containing blood. A palpable tumor extended across the epigastrium, sickle shaped, corresponding to the greater curvature of the stomach. On opening the abdomen the growth was found to involve the pylorus and about one half of the stomach, so that for its removal it was necessary to include between the clamps about two thirds of the stomach.

The operation was performed according to the method of W. J. Mayo, the clamps, cautery and inverting sutures being used upon the stomach and duodenum. At the upper outer margin of the growth on the lesser curvature the clamps were applied fairly close to the growth. Elsewhere there was a wider margin. Several glands in the mesogastrium were enlarged, and required removal. It was impossible to get the end of the duodenum anywhere near the small pouch of stomach which was left, so that the first loop of the jejunum was brought up and attached to the posterior surface of the pouch of stomach which was left, by a Murphy button, re-enforced by four sutures of linen thread. This method was adopted as the most rapid, owing to the debilitated condition of the patient. Very little shock resulted from the operation, the pulse remained full and regular, and the patient vomited only once after the operation. He began to take liquid food at once and improved from the first, having no drawbacks except a stitch abscess in inner part of the abdominal incision. The button was passed in a fortnight. Since leaving the hospital, the patient, Mr. H., has been well, and has taken a sufficiency of nourishment, although he says his stomach will not hold as much as it formerly would, and he takes one or two extra meals a day to make up for the small amount taken at the regular meals. He has worked about his place all summer, and has gained twenty pounds. There is now no evidence of recurrence, but he is being bothered somewhat by a ventral hernia in the lower part of the incision. He expects to come in within a few weeks and have this defect in the abdominal wall repaired.

CASE II. GASTRO-ENTEROSTOMY WITH ENTERO-ENTEROSTOMY FOR ULCER AT THE PYLORUS, FINALLY REQUIRING DIVISION OF THE ASCENDING LOOP.

J. A. Q., aged forty-three, female, had been treated in the medical wards of the hospital at various periods for several years for gastric ulcer, which recurred soon after leaving off treatment and was characterized by frequent bloody vomiting and great loss of strength.

In November, 1905, in the hope of inducing a healing of the ulcer, a gastro-enterostomy was performed. At operation the pylorus was found to be narrowed, indurated and scarred. A posterior gastro-enterostomy was performed by the long loop procedure, and an entero-enterostomy done, at the same time the ascending loop being narrowed by a continuous infolding suture. (Enterorrhaphy.) About two weeks after the operation alarming symptoms set in, — constant vomiting of bile, severe pain and abdominal distention. The abdomen was again opened and it was found that the line of the enterorrhaphy had become adherent to the abdominal wall to the right of the median line and folded over so as to obstruct the descending loop. It was freed and the suture, which had not absorbed, removed. The patient then recovered, left the hospital and during the winter went out to service, but was in poor condition, suffering from epigastric pain and occasional bilious vomiting. During the summer she was again in the medical ward under treatment. She had recently been serving as waitress at the convalescent home of the hospital, and while there was seized with another attack of pain and bilious vomiting. She re-entered the surgical wards, suffering from pain, muscular spasm and constant vomiting. Three weeks ago she was operated on again, and the ascending loop was divided, the ends inverted and closed by suture. Since this operation she has been perfectly comfortable, has improved in weight, color and general condition, has not vomited, and is about to return to the convalescent home.

CASE III. A CASE OF INTRACAPSULAR FRACTURE OF THE NECK OF THE FEMUR TREATED BY FIXING THE FRAGMENTS WITH A WIRE NAIL.

O. K. G., fifty-six years of age, suffered an intracapsular fracture of the neck of the femur, for which he was treated in this hospital in November,

1904. After leaving the hospital he walked with crutches for a time, and later with the aid of a heavy cane, but has never been able to bear his full weight on his right leg, efforts to do this being accompanied by severe pain, together with a slip or grating sound in the hip. Examination showed eversion of the foot, thickening about the trochanter and neck of the femur, crepitus on rotation, and a distinct slip and crepitus on pushing the leg and hip upward. There was a shortening of three quarters of an inch.

Treatment: A wire nail long enough as shown by measurement of the skeleton to transfix the trochanter, neck and head of the femur and acetabulum, was smoothed and polished. Under ether an anterior incision was carried down to the line of fracture and the ends of the bone curetted. Then a second short incision was made over the outer surface of the great trochanter and the nail driven through the trochanter, neck and head of the femur into the pelvis. The x-ray shows the relation of the nail to the bones. A plaster of Paris spica was then applied over the dressing. The patient has been perfectly comfortable. The nail was removed in five and a half weeks, by an incision under cocaine anesthesia. It was loosely imbedded at that time and was easily drawn out. The patient ten weeks after the operation was sitting up and beginning to bear weight on the injured limb. There is about three quarters of an inch shortening and some eversion, but union is apparently firm. On Nov. 23, examination shows firm union, and he is bearing more weight on the injured limb.

CASE IV. A CASE OF TALMA'S OPERATION FOR SCIRRHOSIS OF THE LIVER.

J. D., an Italian, fifty-five years of age, with a history of chronic alcoholism, had suffered for the past five weeks from swelling of the abdomen and legs. He had worked up to two weeks ago. Examination showed a slight yellowish tinge of the skin, slight enlargement of the capillaries in the skin at the sides of the abdomen, some dilatation of the superficial veins over the lower part of the chest. Marked distention of the abdomen by free fluid, as shown by shifting dullness. Liver dullness could not be accurately made out.

Under ether the abdomen was opened by a median incision above the umbilicus, and the parietal peritoneum found to be reddened and injected. There was marked dilatation of the capillaries. The veins in the omentum were somewhat dilated and tortuous. The liver was greatly contracted and adherent by loose adhesions to the parietal peritoneum over a large part of its surface. The spleen was enlarged, and likewise adherent to the parietal peritoneum. The peritoneum covering the intestines was everywhere injected. A very large amount of fluid was sponged out of the peritoneal cavity, the surface of the liver where not adherent thoroughly rubbed with dry gauze, and the parietal peritoneum in the lumbar and iliac regions rubbed with gauze in order to irritate it and if possible to secure the formation of adhesions. The peritoneum at either margin of the incision was grasped with hooks and everted, and the omentum sewn to its surface over as wide an area as possible with continuous catgut sutures. The abdominal wound was closed in layers. The patient was perfectly comfortable after the operation, which was performed on Nov. 2. Now (Nov. 15) he is considerably distended and will soon require tapping.

This case promises well on account of the evidence shown by the dilated thoracic veins, the dilatation of the subperitoneal veins, and the adhesions of the spleen and liver, that nature was making some progress toward effecting a cure. We expect to have to tap him several times, but hope that the intervals will grow longer and the amounts of fluid removed less.

Dr. John L. Ames reported

A CASE OF POISONING BY NITROBENZOLE.

The patient is a male, forty-seven years of age. While out walking one afternoon he picked up a pint bottle containing a dark colored fluid and which bore the label "sarsaparilla." He carried it home and the next morning took a drink from the bottle. It burned his throat and made him immediately very ill. When brought to the hospital he appeared to be in very bad shape. He was cyanotic, the blue appearance of skin and mucous membranes being very marked. Surface of the body cold. Temperature, 97°; pulse, 130, weak and irregular; respiration, 30. He was semiconscious, and there was marked prostration. The blood was chocolate colored, very thick and viscid. Venesection was done and a pint of thick, tarry blood withdrawn, and a pint of normal salt solution introduced into the vein in its place.

Stimulants and liquids and oxygen were freely given. He responded well to the treatment and after twelve hours began to improve. At the end of two or three days his cyanosis had entirely disappeared and his blood became normal.

Soon after entrance and just before transfusion his blood showed white corpuscles, 36,500; red corpuscles, 5,816,000. Six hours after transfusion, white corpuscles, 17,200; red corpuscles, 4,360,000. Sixteen hours after transfusion, white corpuscles, 15,600.

Poisoning by nitrobenzole is rare, but the symptoms are similar to those of acetanilid poisoning only they are more intense. The condition of the blood is one of metahemoglobinemia. In this case the urine was negative, except for an increase in the urophene.

Dr. H. A. Lothrop reported the following cases:

CASE I. TROPHIC GANGRENE OF LITTLE FINGER.

This patient is a girl about ten years of age. Three weeks before entrance she received an incised wound across the forearm, just below the elbow. The wound was seen shortly by a physician and sutured and healed by first intention. About two and one-half weeks after accident the top of the little finger became discolored and it felt cold and numb. General examination at time of entrance showed that we had to deal with a healthy young girl. There was a recent scar on the forearm below the elbow which crossed the track of the ulnar nerve. The last phalanx of the little finger was ulcerated and the second phalanx was encircled by a bulla. There was numbness of the hand corresponding to the distribution of the ulnar nerve. There was moderate atrophy on the ulnar side of the forearm anteriorly and of the hypothenar eminence. There was no obvious muscular paralysis.

After a few days' stay at the hospital, during which time the condition in the finger was treated, its appearance improved and the gangrene was self-arrested. About one week after entrance a longitudinal incision was made with its center across the scar. The cut ends of the ulnar nerve were readily accessible. There was a moderate bulbous thickening at the lower end of the proximal portion of the nerve. This thickening was excised and the ends of the nerve approximated and held in apposition by fine silk sutures. The wound was closed and the arm put up in a straight splint to avoid tension.

Five weeks after entrance the condition is as follows: The little finger is entirely well. The gangrene became limited and as a result thereof she has lost the nail of little finger and half of the first phalanx. The muscular atrophy remains as at entrance. The operation wound healed by first intention and there is no discomfort referred to any part of the arm. There is every reason to believe that the function of the ulnar nerve will be re-established eventually.

CASE II. FRACTURE OF SPINAL COLUMN.

This patient, an adult Chinaman, was run into by an automobile, sustaining injury to his back. He was brought to the hospital promptly and examination showed extreme tenderness in the lower dorsal region. At first his injury was supposed to be simply a contusion. Shortly after entrance he began to have sensory and motor symptoms referred to left leg. On the third day he had lost most of the motor power of left leg. The sensation was but little interfered with.

At this time examination of back showed a moderately prominent kyphosis. The diagnosis was obviously a fracture of spinal column at about the eleventh dorsal vertebra. This was further verified by x-ray. For two weeks be was kept on his back on a mattress with no pillows. Fracture slats were passed across under the mattress only at a point corresponding to the kyphosis. At the end of this time all deformity had disappeared and the function of left leg was nearly restored. He was then turned on to his abdomen so as to maintain the corrected position and a plaster of Paris jacket applied extending from hips to shoulders.

Examination six weeks after this plaster was applied shows that the position has remained corrected and there is no apparent deformity. All functions are normal. He is now walking about with his bandage.

Dr. L. R. G. Crandon reported a case of

GENERAL PERITONITIS. OPERATION. RECOVERY.

A boy of seventeen was admitted after four days' illness; constantly vomiting; pulse, 140; temperature, 103°; abdomen, distended, universally tender and spasmodic, dull in the flanks; tongue, dark and dry,—the complete picture of general peritonitis.

Under ether, a right rectus incision liberated foul-smelling, chicken-broth pus from all parts of the peritoneal cavity. A brief search in the appendix region showed that that was the most probable source of the infection though the appendix was not found. The whole abdominal cavity was washed with twelve quarts of hot salt solution and cigarette gauze drains put through the wound in four directions. The operation took seven minutes.

The patient was discharged healed and well in five weeks.

The noteworthy points in this case are:

First, in the operation no time was wasted in an extended search for the perforated appendix stump or in handling the inflamed intestine.

Second, immense quantities of pus drained out during the first critical days after operation and this important drainage was made possible, I believe, because the patient was kept in the prone position in bed, the wound being then at the bottom of the draining cavity.

Dr. David D. Scannell reported a

CASE OF URETERAL CALCULUS.

W. H. G., twenty-one, was admitted to the hospital Sept. 30, 1906, with the following history:

Twenty-four hours before, suddenly seized with acute and constant pain in the right lower quadrant of the abdomen. This pain was progressive in intensity and associated with considerable nausea and vomiting. No chills, but moderate fever; bowels had moved regularly, pain not spasmodic and not radiating to scrotum; no blood observed in urine. No previous attack of a similar nature. At the time of admission physical examination was as follows:

Temperature, 101°; pulse, 96; patient did not look sick; tongue, coated; breath, heavy; chest, normal; abdomen, no general distention; marked spasm over whole right abdomen, but most marked in lower half; excessive tenderness over McBurney's point where the involuntary spasm made palpatiou of deeper parts impossible. The general picture of the patient was strongly suggestive of an acute appendicitis.

Operation: Under ether with the relaxation of spasm, little additional help in palpation could be derived. McBurney incision 1½ inches long; intestines markedly distended; appendix, normal. Exploration to determine the cause of the pain revealed the presence in the right ureter, just above the level of the appendix wound, a hard, fairly sizable stone. This was firmly impacted in the ureter. There was apparently the slightest dilatation of the ureter above this level.

Without enlarging the incision, but stretching to the maximum the abdominal muscles, the general mass of intestines were pushed back and retained with strips. The ureter was grasped, just above the stone, with the thumb and index finger of the left hand and tightly compressed. An incision 1 cm. long was made on the stone, which was with no great difficulty delivered. The calculus was triangular in shape, the base measuring 6 mm. and the sides each 10 mm., the thickness of the cone being about 5 mm. Immediately on delivering the stone the ureter was closed with three very fine silk sutures. Down to this point was placed one sterile gauze strip for possible leakage. The convalescence was normal, the wick being taken out at the end of twenty-four hours, and the wound allowed to close.

Dr. George B. Shattuck reported

CEREBRAL TUMOR OF THE RIGHT FRONTAL LOBE.

W. S., a woman, fifty-two years old, and married, entered the Boston City Hospital Nov. 24, 1906.

Her family history showed nothing of importance and she had been well up to about a year before. She then began to show an unusual tendency toward general nervousness and worry. At about the same time her eyesight began to fail. Six months previous to entering the Boston City Hospital she had undergone an operation at the Homeopathic Hospital, in which tubes, ovaries and uterus were removed for fibroid tumor. Four weeks previous to entering the City Hospital she had severe headaches and vomiting after eating. It was also noted that she moved her left arm almost continuously, for which she gave the somewhat unique explanation that she did so "from a sense of loneliness."

On entrance, examination was as follows: She was conscious and rational but her mental processes were slow and her memory defective. The knee jerks were exaggerated and the Babinski phenomenon was present on both sides. The gait was spastic. There was no Kernig or Romberg sign and no disturbance in sensibility to pain. There was also no astereognosis. The speech was slow and slightly indistinct, the pupils were unequal, the right somewhat larger than the left and examination of the fundus showed papillitis in both. There was no edema, and the physical examination was otherwise negative, except that there was a mass the size of an egg in the right iliac fossa.

On the fourteenth day of her residence in the hospital she became unconscious and twitching movements of the left hand and arm developed. The temperature rose, together with the pulse and respiration; there was retraction of the head, and the patient died seventeen days after entrance.

AUTOPSY.

The autopsy, so far as it concerns the head, follows: Scalp is covered by sparse growth of rather short iron gray hair. The layers of scalp are particularly dry and free from congestion. Calvarium is normal. Pacchionian granulations are quite prominent and longitudinal sinus is free from blood. The membranes of brain are apparently normal throughout except that vessels of pia are deeply congested, the venous channels especially being distended with dark blood. There is no subpial edema. On removing brain from skull the portions of cerebellum surrounding medulla show a grooved indentation which is prominent. Consistence of both cerebrum and cerebellum is increased and there is a slight bulging of right cerebral hemisphere in the lateral portions. No focal point of increased consistence can be determined. Vessels at the base are normal. Cerebellum, medulla and cord are normal. The brain is sectioned in layers beginning at the vertex and cutting anteroposteriorly in a horizontal plane. At a point about 2.5 cm. from superior portion of cortex in frontal lobe, the increase in transverse thickness of right half of cerebrum compared with the left is noticeable. At a point 6 cm. from anterior portion of frontal lobe measured along great longitudinal fissure the right lobe of cerebrum is 7 cm. in thickness, the left lobe 5.5 cm. On removing the next layer an oval, fairly firm, encapsulated tumor appears. The long axis of this tumor is in the vertical plane of right cerebral lobe. Tumor is located in white matter of frontal lobe well out toward lateral surface and back toward parietal portion of cerebrum. Transverse diameter of tumor is 4 cm.; anteroposterior diameter 2.5 cm.; vertical diameter 4 cm. Cut surface is made up of two varying kinds of tissue. The inner half, around which the capsule is the thickest, measuring 5 mm., is grayish yellow in color, rubbery in consistence and without evidence of softening or hemorrhage. The outer half, around which capsule is fairly thin, measuring 2 mm., is softer in consistence, grayish in color, mottled with fine hemorrhagic points, and the boundary between it and the capsule is rather indefinitely fixed. A rod driven down through the center of this tumor would appear on inferior surface at the beginning of the fissure of Sylvius opposite the anterior portion of the fourth frontal convolution. The gray matter is apparently not involved at any point. From the center of tumor to median line is 4 cm.; from anterior portion of frontal lobe in median line is 6 cm. The superior surface of tumor is 3.5 cm. below cortex and throughout its extent the tumor is fully 1.5 cm. from lateral portion of cortex. The lateral ventricle on right side is almost obliterated. On left side the lateral ventricle contains a few cubic centimeters of clear fluid. Basal ganglia apparently normal.

Anatomical diagnosis. — Tumor of right frontal lobe of cerebrum. Rapidly growing glioma.

Exact focal diagnosis of tumors of the frontal lobes anterior to the precentral sulcus is always a matter of difficulty. In the foregoing case the diagnosis of intracranial tumor was unquestioned from the symptoms of double optic neuritis, headache and vomiting, together with general mental failure. Until the very end of the disease, however, localizing symptoms were not obtained. The movements of the left arm observed during the first days of her residence in the hospital were of too vague a character to lead to the supposition that they were due to an invasion of the arm area of the motor region. The spasmodic movements observed three days before her death were much more significant, but her condition at that time was such that an operation was unadvisable. In the diagnosis of prefrontal tumors, particularly of the right side, in which speech disturbances do not occur, the most important sign is a failure or disturbance of the higher mental qualities. These the patient showed to some degree, but evidently a definite diagnosis, without symptoms of invasion of the motor area, based on this alone, is at best uncertain, in view of the fact that tumors in other parts of the brain unquestionably produce very marked symptoms of mental defect through general intracranial pressure. The exaggeration of both knee jerks, together with the double Babinski sign, can only be attributed to the generalized pressure which the tumor caused on the motor tracts. Death, when it occurred, was unexpected and in great measure unexplained.

In all cases of brain tumor verified post-mortem the question of operative procedure during life becomes a matter of interest. In this case the subcortical localization of the tumor would have rendered its exact position difficult to ascertain, even after a generous laying bare of the bone surface. In such cases an operation in two stages is frequently useful, as well illustrated by a case reported some years ago by Drs. J. J. Putnam and M. H. Richardson, in which the tumor had extruded as a hernia and was in great part removed to the temporary great relief of the patient.

Medical Progress.

REPORT ON ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D.

LATERAL CURVATURE.

The most important contribution to orthopedic surgery in the past year has been the publication of the wonderfully thorough work of Schulthess,[1] of Zürich, embodying the results of his remarkable work on this deformity. As is well known, the subject of scoliosis has deen one which has been the despair of many orthopedic surgeons, and the various theories as to etiology and pathology have been followed by equally varied theories as to treatment.

The work of Schulthess is so thorough in its treatment of the subject that it will serve for many years as the standard, leaving further work in many of the important questions in regard to this deformity unnecessary. It is impossible to do justice to this monumental work in a short synopsis of current literature. A few points, however, can be mentioned.

Schulthess has proved definitely that this deformity can be improved by thorough treatment, and the treatment should be directed not simply to the strengthening of certain muscles, but to the correction of the distortion in a thorough and common-sense way, namely, by exerting pressure in such a way as will tend to correct the faulty curve.

His conclusions are that there is no royal road in the treatment of lateral curvature. He says that the attempt of many publications, even from the pen of orthopedic surgeons, which seek to point out simple methods for the correction of this deformity are to be rejected. What the practicing physician should know is the diagnosis and the etiology of scoliosis, but the treatment must be left to persons who are especially trained in this work. The treatment of severe scoliosis demands the resources of charitable institutions, where long-continued treatment can be persisted in. Under these circumstances even severe scoliosis can be improved.

It is to be noted that Schulthess considers that although schools and attitudes in study may be a detrimental factor in lateral curvature, they do not furnish the chief etiological influence.

TREATMENT OF SCOLIOSIS.

Klapp,[2] as is well known, has advised creeping on all fours as an exercise to develop motion in the pelvis and lumbar vertebræ in scoliosis.

A STUDY OF THE EFFECT OF PRESSURE ON THE CURVE AND ROTATION OF THE SPINE.

In order to determine the important question of the value of pressure in the treatment of lateral curvature, Soutter[3] performed 94 experiments upon a five- and a twelve-year old cadaver placed in the sitting, prone and supine positions, the shoulders and pelvis being held by straps.

The conclusions which he was able to deduce are as follows: The spinal column can be rotated by pressure on the ribs. Slight pressure causes flattening with lateral bulging of the ribs; more pressure causes this with a rotation of the spine; increased pressure causes more rotation and bulging of the chest wall anteriorly, also increased flattening and lateral bulging. Pressure on the ribs rotates the spinal column but not the spinous tips to the same extent, as the spine may be markedly rotated and curved while the line of the spinous processes is not curved to a similar extent.

It is impossible to cause rotation without some lateral deviation, and lateral deviation cannot exist without some rotation. In the dorsal region the recumbent position gives more rotation under given pressure than the upright position, but in correction of slight curves the vertical position may be employed advantageously. In correcting rotation where more correction is desired in front, the supine position is the best, but the prone position is better where more correction is desired behind.

Head pull is an advantage where effect on the upper portion of the spinal column is desired. Suspension with the toes touching is effective for both high and low rotation, that is in double curves. A lying position is most advantageous for the maximum correction with a minimum force.

THE TREATMENT OF FAULTY WEIGHT BEARING IN "WEAK" AND "FLAT" FEET.

The writer[4] considers that the exercise treatment of weak feet is much neglected in hospital clinics. He advocates the exercises described by Ellis. In addition to these he recommends a simple foot exerciser, made of a piece of plank a foot square, with a slight depression, acentric, in which the heel rests. Two hooks are placed at appropriate places on the edges. A webbing strap to which a straight hook is sewed is placed above the foot just back of the great toe joint. A wire spring, two or three inches long, is caught by one end of the hook in the plank edge, and by the other to the hook in the webbing strap. By changing the insertion of the spring, resistive foot exercises may be taken in inversion, eversion, dorsal and plantar flexion and curling the toes.

INVESTIGATION OF OSTEOMALACIA.

The writer[5] claims that this affection was little described until Fehling, in 1887, claimed that the affection was curable by castration, and he describes 4 cases of typical osteomalacia which are carefully considered both clinically and pathologically.

Osteomalacia is an affection without fever. The early symptoms which are of importance are tenderness on pressure, especially at the pelvis and at the ribs, isolated paralysis of the ilio-psoas muscles, contraction of the adductors, and an increase of the patella reflexes without loss of sensation. As the affection is essentially a disease of the marrow, it would be supposed that there would be some change noticed in the blood, but this is not the case. Neusser noted an increase of the eosinophile cells, but Fehling found no increase in one case, and in another instead, a decrease, the hemoglobin being normal, and the number of erythrocytes being also normal; the number of leucocytes is variable. Roentgen rays are of little help in the early stages of this affection, though an increase in the size of the marrow may be noticed in some variations of the long bone.

There are two varieties of osteomalacia which are classed as the puerperal and non-puerperal, in that the latter is much more progressive than the first, and the curves in the spinal column and the sternum are much more marked than in the pelvis. The differential diagnosis in the early stages presents some difficulty, there being pains in the thighs, in the hips and in the pelvis. No enlargement of the epiphyses are seen as in rickets. Osteomalacia is a disease of adults and need not be mistaken for rickets, which is a disease of childhood and of bone which is not yet thoroughly calcified, and osteomalacia is an affection which softens the already calcified bone.

The exaggerated patella reflexes seen in cord affections differ from those found in osteomalacia, as there is no loss of sensation in the latter, and the bladder and rectum are normal. There is no spastic gait. It is difficult to make a diagnosis of osteomalacia from multiple carcinoma of bone, which, although a rare affection, has been occasionally observed.

The course of osteomalacia varies in the puerperal and non-puerperal cases. The mortality may be considered to be 80% if no treatment is undertaken. Under the treatment of phosphorus and by the operation of castration, the prognosis is apparently better. Fehling reported in 13 patients, 84% of cure and 7% of recovery after castration; but in the non-puerperal cases Litzmann reported only 4 out of 46 who were improved. Puerperal cases, according to Litzmann, showed a higher mortality; 18% were improved, and 21% died. Infantile osteomalacia is occasionally observed and is considered to be fatal. The disease is one which may continue for several years before it comes to an arrest, and deformities are slowly developed.

THE ROSER-NÉLATON LINE.

Roser[6] in 1846 first described a line passing between the tuberosity of the ischium and the anterior superior spine and passing above the trochanter. Nélaton independently of Roser described the same anatomical relation, and stated that if the femur is bent at a right angle with slight adduction, the top of the greater trochanter touches a line passing from the anterior superior spine to the most prominent part of the tuberosity of the ischium. Any deviation from this line may be considered an anomaly. Certain deviations, however, would be observed according to the position of the femur, as in abduction the trochanter is buried more in the soft parts and is more prominent in adduction.

Various writers have made observations in regard to the accuracy of this line. Hoffa mentions that a marked flexion of the thigh is necessary, and authors are not in accord how far the thigh should be flexed. The writer has made a number of experiments upon cadavers and finds that it is essential that the patella and the foot should point directly forward, the thigh should be at an angle of 135°, and at the middle point between abduction and adduction.

Experiments on the cadaver show, however, a variation of from ½ to 1 cm. in different cadavers. This may be considered the error of the method. If, as Nélaton described, the thigh is bent at right angles it is necessary that there should be slight adduction and slight rotation outwards. Experiments on the cadavers showed that anatomical variations existed in this position. For extreme accuracy the writer advises marking the skin over the crest of the ilium, and also over the trochanter, with a skin pencil, and with the patient lying on his face measuring the distance between. This is especially useful in congenital dislocation of the hip.

OSSEOUS FORMATIONS IN AND ABOUT MUSCLES DUE TO INJURY. (TRAUMATIC MYOSITIS OSSIFICANS.)

Jones and Morgan[7] report a number of personal cases of bony formations in the neighborhood of joints, chiefly the elbow, following injuries, and they have collected nearly one hundred cases in the literature, and give excellent radiograms of the condition. Operative treatment is advised.

MYOSITIS OSSIFICANS.

A case[8] is reported following a kick on the vastus externus, which resulted in a hematoma, and afterwards the development of bone. The deformity was sufficient to limit the motion at the knee. The mass was found partly cartilaginous, partly fibrous and showed a cyst.

THE PATHOLOGY OF CONGENITAL TORTICOLLIS.

The writers[9] are inclined to believe that the deformity may result from an ischemia of the sternocleidomastoid, and they claim to have demonstrated by experiments that this is possible. If torticollis in a young infant is examined, an abundant infiltration of small round cells around the vessels is to be found, indicating a stage of evolution. In the old cases, marked interstitial myostitis is seen, but round cells are not found. According to the ischemic theory the deformity may develop itself in intra-uterine life.

THE PRESENT CONDITION OF THE KNOWLEDGE OF MUSCULAR TORTICOLLIS.

The article[10] is a collection of references giving a review of the present knowledge of muscular torticollis, considering the etiology of the affection from all the different theories. The conclusions are that the intra-uterine origin of the affection has been demonstrated by clinical evidence and pathological specimens, but the torticollis may also be developed by difficulty occurring at birth, resulting not only from an injury to the muscle, but also from hematoma following bacterial infection of the muscle. From this it follows that there are certain varieties in torticollis according as the contracture arises from a shortening in the skin, in the muscle, in the articulation and in the nerves.

The clinical symptoms also vary in a measure.

The treatment may consist of massage and orthopedic treatment, subcutaneous myotomy, stretching of the muscles, open incision, resection of the muscles and plastic surgery of the muscles. The treatment should vary according to the age of the affection and the amount of the muscular change. In early and light cases massage may be sufficient. If this does not succeed, then open incision, not only of the shortened muscles but of all contracted tissues, is the normal method treatment, and careful after-treatment must follow. In severe cases, and if relapses occur, a partial extirpation of the sternocleidomastoid muscle, with plastic surgery of the muscles is necessary.

In spastic torticollis operation may be tried after the failure of electricity, orthopedic treatment and the use of bromides.

THE TREATMENT OF TUBERCULOUS FISTULÆ BY SUCTION CUPS.

The writer [11] found no unusual results in old cases, but in fresh cases the cure from within out appeared much quicker after suction than by other methods.

CURE OF CONGENITAL PSEUDO-ARTHROSIS OF THE TIBIA BY MEANS OF PERIOSTEAL TRANSPLANTATION.

The method recommended by Codivilla [12] is as follows: The soft tissues are stripped from the affected region, or the pseudo-arthrosis is removed *en masse* by a chisel or saw, the periosteum being stripped from the bony extremities, the tibial surface having been laid bare by a skin incision. The primary periosteal fold is divided by incisions which can serve as flaps surrounding the two refreshed tibial edges, covering them 2 or 3 cm. above and below their extremities. These periosteal flaps should be freed in such a way as to retain some of their bony surfaces, and are applied around the tibia like the staves of a barrel. Two sutures of the silk, or silk-worm gut, one above and the other below, are fixed to the edges. The operation is more promising if performed on growing bone.

TUBERCULOSIS OF THE SACRO-ILIAC JOINT.[13]

Acute and chronic inflammations of this joint are not common, due to the fact that the joint has very slight movement. Of the chronic processes, tuberculosis is the most frequent, occurring chiefly between twenty and forty.

The chief symptom is pain either over the joint, or radiating to distant parts, as the abdomen, hip or knee. It should be distinguished from lumbago and sciatica. A slight limp is common. Abscesses may point inside or outside the pelvis. The prognosis is favorable in the dry form of caries.

The treatment is conservative or operative. Of 94 cases in the literature, 36 were cured, 18 improved and 29 died. Various methods of operation have been advised, early interference being resorted to where conservative treatment fails.

POLYARTHRITIS CHRONICA DEFORMANS.

This is the name given by the writer [14] to the affection formerly called rheumatoid arthritis, arthritis deformans, etc., the difference in term being considered by the writer due to the different stages of this affection. The pathology and clinical history are well given with many instructive x-rays and photographs. Muscular atrophy especially of the smaller hand muscles, he considers as a frequent phenomenon.

DISLOCATION OF THE FIFTH LUMBAR VERTEBRA UPON THE SACRUM.

A verified case of this rare deformity is reported by the writer,[15] referred to by Hirschberg and Reidinger, the latter without the verification of an x-ray. The case was of a man twenty years of age, who received an injury from the falling of a desk upon him. The motion of the spinal column was free, there was slight rigidity in the lower portion, the feet were held in the valgus position, the gait resembled that seen in tabes. X-rays showed a variation of one quarter of an inch of the fifth lumbar spine towards the right. Dislocation of the sacro-iliac synchondrosis was not found.

THE INJECTION OF OXYGEN INTO THE JOINTS AND SOFT PARTS FOR RADIOLOGICAL DIAGNOSTIC PURPOSES.[16]

The injection of oxygen makes it possible in radiograms to bring into prominence portions of the soft parts which are not visible. In this way the different layers in the knee joint can be differentiated, — the cartilage, the menisci, the cruciform ligaments, etc. In this way certain types of chronic arthritis may be recognized, and an early diagnosis of tuberculous joints be made possible. The usual surgical precautions are necessary in the introduction of the needle. Chemically pure oxygen is to be used, and care in the avoidance of the injection of too great an amount of oxygen.

Hoffa [17] confirms the use of hydrogen in diagnostic radiography. The method is simple and without danger. In this way injuries to the meniscus, loose bodies and chronic and tuberculous affections of the joint can be recognized.

CHECK OF GROWTH FROM THE X-RAYS.

Försterling,[18] in a number of experiments on animals, found a marked limitation in growth in the exposed portion of the body following short exposure to the x-ray. The older the child the less the influence of the x-ray was noted. For this reason the author advises that the use of x-rays in young children should be limited.

OSTEOMYELITIS AFTER MEASLES.

The changes in the radiograms in a case of a child of thirteen years of age, with osteomyelitis of the metatarsus following measles, were an enlargement of marrow at a cost of bone structure. In the lower portion of the diaphysis a cavity with thin walls communicated with the marrow, similar to what is seen in a spina ventosa, suggesting a mixed infection of a tuberculous and acute infection.

The writer [19] concludes that the marrow may be affected after measles.

COMPOSITE X-RAYS.

The writer [20] advises the placing of the negative and diapositive in radiograms, the glass side to the glass side, with a slight irregularity in apposition. A plastic effect follows, and if the new plate is laid over the negative of both plates, the result can be copied. This gives, according to the writer, in certain affections two or three means of diagnosis, especially in bone tuberculosis, where the sharp contrasts of diseased bone are not marked, the result of the procedure emphasizing the distinction, but the method is of no use in recognizing foreign bodies.

INTRAMUSCULAR NERVES AND THEIR RELATION TO TENDON TRANSPLANTATION.

The courses of the nerves in their relations to muscles have not been sufficiently well known to be of practical use in tendon transference. The writer [21] has examined this matter not only anatomically, but also with experiments upon animals, and he concludes that the split portions of the muscles should not be too small, that the split portion should not reach farther than to the middle of the belly of the muscle, and that thin muscular strips should only be used from such muscles as are supplied with nerves running along the length of the muscle.

TENDON TRANSPLANTATION.

Lorenz [22] considers that the Nicoladoni transplantation is irrational, inasmuch as it is liable to destroy the proper relation between the antagonist muscle and the afflicted muscles, and in this way a new deformity is developed. This is especially true in calcaneovalgus, which in the Nicoladoni method would develop a varus in a slight calcaneovalgus.

Lorenz advises the development of a flat-foot position, but in severe forms he advises first the correction of the cavus by tenotomy and by section of the plantar fascia freeing of the tendo-Achillis as far as the muscular belly, incision of a portion of the oscalcis, and the periosteal fixation of the divided tendo-Achillis on to the tibia and fibula.

The danger of the development of a subsequent deformity is more important in spastic paralysis than in paralytic deformity, and it is especially important that too great power should not be given to the antagonist muscles.

Great care should be employed in paralytic deformities at the knee, and for this reason Lorenz opposes the transference of the whole of the hamstring muscles in paralysis of the quadriceps, only the semitendinosus with the sartorius and the gracilis and the tensor vaginæ femoris should be transferred. Correction of the deformity and tenotomy of the hamstrings is essential. If simple paralysis of the quadriceps is present transplantation is absolutely unnecessary.

Development of a weak muscle, if the deformity is corrected and the limb properly used, is not infrequent. In paralytic flat foot there is but one indication for an operation, and that is when the completely paralyzed supinators can be supplanted by a powerful extensor, and in addition a portion of the tendo-Achillis can be inserted into the tibialis posticus. In congenital club foot Lorenz sees no indication for transplantation. The essential in paralytic foot deformities is the correction.

THE USE OF SILK IN TENDON TRANSFERENCE.

Lange, of Munich, who has been active in introducing the use of silk strands in tendon transplantation, has made a number of experiments to prevent the irritation and the development of abscesses. Suppuration follows the operation from imperfect asepsis and from direct irritation of the silk strands, and Lange has found that suppuration is more likely to follow if silk sterilized in steam is used, while it is not observed in silk which has been boiled in a solution of sublimate. An explanation of this phenomenon is offered by Frey.[23]

Lange claims that the bacteria in the blood find in silk a favorable soil for development, and endeavors through the use of antiseptic silk, especially silk soaked in sublimate, to avoid this difficulty. It is manifest that foreign bodies buried in tissue are of two classes, — those which are compact and are not permeable by fluids and those which not, being compact act as a sponge, and absorb a certain amount of fluid. The silk strands are of this latter character, and the tissue fluids remain in the meshes separated from the ordinary currents of the animal tissues and the resultant chemical changes. It is the opinion of Lange that the sublimate in the silk acts during the critical period, and aids the natural immunizing force of the tissues.

As to boiling and the chemical changes in the sublimate solution, it is necessary to prove that small quantities of sublimate or of mercury remain after boiling, in the tissues. The writer is of the opinion that in spite of the chemical change which takes place in boiling, that the quicksilver has an anti-bacterial effect, and this he bases on culture experiments as well as on experiments on animals. Silk exposed to the sublimate solution apparently in experiments on animals caused irritation, but in silk where the sublimate solution has been washed away, freed from suppuration, the conclusions which the writer comes to are as follows: In sterilizing silk through boiling with sublimate solution, the mercury of the sublimate enters into some chemical relation with the silk. Outside of the body it has no antiseptic effect; in the body, however, there is probably some antiseptic influence. The change of the mercury in the body is extremely slow, and some traces may be found in the silk two years after the introduction of the silk into the body.

Experiments prove that the healing with sublimate-boiled silk is much more perfect than with a clean silk. Simple boiled silk heals without secretion, provided it is covered with a connective tissue capsule. The irritation of the corrosive sublimate gives rise to a secretion, owing to the irritation, and this irritation causes a development of connective tissue around the silk which strengthens the resulting tendon.

INDICATIONS OF TENDON TRANSPLANTATION.

The article is a defense from the attack of Professor Lorenz. The writer [24] opposes Lorenz's idea that the transplantation should follow a month interval after the correction, in a second sitting. This, Vulpius thinks, is a loss of time except in cases of very marked deformity which has persisted for a long time. If there is paralysis without deformity, which has persisted for ten months, he considers the operation indicated. The limitation of the transplantation to spastic paralysis, and the use of tenotomy in the strong muscular group on the concave side, is not accepted by Vulpius, as he regards tenotomy as not so harmless a procedure. The transplantation of the hamstrings on to the quadriceps in deformity after white swelling has been found of use in Vulpius's hands.

He also opposes Lorenz's statement as to the danger of genu recurvatum after transference of hamstrings, and cites fifty cases operated upon by him without such a deformity. Even if it occurs, he considers the gait in genu recurvatum better than that in genu flexum.

TREATMENT OF PARALYTIC LUXATION OF THE HIP BY ARTHRODESIS.

The writer[25] reports six cases where the joints were opened and the cartilage removed from the head of the femur and the ascetabulum, with partial removal of the synovial and ligamentum teres. The joint was washed out with strong carbolic acid, followed later by phenol and alcohol and salt solution. The limb was put in a slight abduction with outward rotation, and fixed for six weeks; healing by first intention, followed in all cases with a shortening of from 2 to 3 cm.

DEFORMITIES OF THE RIBS AND THE RESULTING CONGENITAL HIGH POSITION OF THE SHOULDER BLADE.

After a thorough study of the literature, the writer[26] comes to the conclusion that no one cause but several may develop the abnormal high position of the shoulder blade. Typical anomalies of the ribs and muscles, bony union between the shoulder blade and the neck, simple muscle defects are all factors which may each cause this deformity.

CONGENITAL LUXATION OF THE KNEE.[27]

The origin of this affection is invariably intra-uterine position, although this theoretical explanation is not easily verified in the statistics of 137 cases. Operative interference is advised if other methods fail. Osteoclasis and forcible correction are rejected, but shortening of the capsule, recommended by Kocher, is advised.

A CASE OF TENDINO-FASCIATO CALCAREA RHEUMATICA.[28]

The autopsy was in the case of a previously healthy woman, who suddenly became ill with fever and general joint affections, especially of the hands, feet and knee. Foreign bodies were found under the skin after the subsidence of the welling, with pains of joints with improvements and, finally, death after two years' confinement to the bed. Multiple deposits of carbonate and deposits of lime were found in the tendon and aponeurosis over the bone.

ABNORMALITIES OF POSTURE IN HYSTERIA.[29]

A variety of peculiarities of the trunk is observed in hysterical scoliosis. A side position or peculiarity in holding of the hip is more common than a kyphosis deviation in hysteria, though a few undoubted cases of the latter are to be seen. The characteristic of hysterical kyphosis is the immediate development after an injury, the patient appearing as if bent double. The position of the kyphosis is usually in the lumbar region, but may be in that of the neck. The reflexes vary. The deformity is developed from either a contracture or a paresis of certain muscle groups. In hysterical scoliosis the erector muscles of the back are chiefly affected, but in hysterical kyphosis, the psoas and iliacus may be.

CINEPLASTIC AMPUTATIONS OF THE UPPER EXTREMITY.

This novel procedure has been performed by Ceci, of Pisa, following a suggestion by Vanghetti. It is well known that the artificial limb furnished for an amputation of the upper extremity is more ornamental than useful. In order to use the muscles in such a way that some motion can be given to an artificial limb, the writer[30] has saved the tendons of certain of the muscles in the upper extremity, and folding them upon themselves, has secured a loop which, lying protected by the skin flap, is capable of some motion by muscular contraction. A metal ring, like a large earring, is secured within this loop, passing out and beyond the stump; to this a cord can be attached, which can be fastened to the necessary portions of an artificial limb, and voluntary flexions at the elbow joint, and a grasp of the artificial fingers and thumb can be secured, enabling the patient with the artificial limb to execute certain important movements.

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Reports of Societies.

THE MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

A meeting was held at the Medical Library, Boston, on Wednesday, Feb. 6, 1907.

The meeting was called to order at 12 noon, by the President, Dr. George W. Gay; 86 councillors were present.

Delegates were appointed to medical societies as follows:

American Medical Association, 1907 and 1908: C. H. Cook, of Natick; R. H. Seelye, of Springfield, R. C. Cabot of Boston.

Alternates.—P. P. Comey, of Worcester, C. H. Richardson, of Pittsfield, C. A. Porter, of Boston.

Maine — Harold Williams, of Boston; B. R. Symonds, of Salem. New Hampshire — W. E. Faulkner, of Boston; J. V. Meigs, of Lowell. Rhode Island — S. B. Woodward, of Worcester; F. J. Cotton, of Boston. Connecticut — G. W. W. Brewster, of Boston; L. H. Plimpton, of Norwood. New Jersey — J. H. McCollom; J. B. Blake, of Boston.

The following were appointed a committee to audit the treasurer's accounts: E. A. Locke, H. W. White.

Beverly MacMonagle, M.D., of San Francisco, Cal., was elected to honorary membership in the society.

The Committee on State and National Legislation through its secretary, Dr. Sears, made an informal report, to the effect that the auxiliary committee had been appointed to assist in shaping or guiding legislation in appropriate cases this winter. The councillors were urged to use their personal influence in favor of judicious legislation in relation to matters affecting public health by seeing their respective senators and representatives, and explaining the most desirable course on these questions.

Among the important bills which will come up for consideration is one by Dr. Charles Harrington, asking that certificates of unfitness for vaccination be granted only by physicians who are school examiners. The object of this measure is to avoid those physicians who think *no* child is fit to be vaccinated.

Another important matter of legislation asked for is a change in the medical registration law, allowing the board to examine those only who have diplomas from a recognized medical school.

Dr. Harvey for the committee appointed at the last meeting to re-draft the existing by-laws reported a proposed code for the consideration of the councillors and requested suggestions from them with the view of a subsequent report at the annual meeting of the council and society. The code was considered by sections *seriatim* and various suggestions were made. On the question of changing the proportion of councillors to the membership of the district societies it was decided that a letter be sent to the district societies requesting an expression of opinion on this matter. The committee recommended that the ratio be changed from 1 in 12, as now, to 1 in 20, and it was stated that for many years previous to 1895, the proportion of councillors to the membership of their respective districts was 1 in 8. The council had in 1895 226 members. In that year the proportion was changed to 1 in 12, which reduced the membership to about 150. Now it has risen to 235, and within a year or two will reach 250 if the present rule obtains. If made 1 in 20 the membership would be reduced to about 150. Adjourned at 2 p.m.

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Book Reviews.

The Harvey Lectures. Delivered under the auspices of The Harvey Society of New York. Illustrated. Philadelphia and London: J. B. Lippincott Company. 1906.

These lectures for the year 1905–6 have been collected into a single volume, attractively bound and well illustrated. The following men lectured during the course: Prof. Hans Meyer, Prof. Carl von Noorden, Prof. Frederick G. Novy, Dr. P. A. Levene, Prof. W. H. Park, Prof. Lewellys F. Barker, Prof. Frederick S. Lee, Prof. Lafayette B. Mendel, Prof. T. H. Morgan, Prof. Charles S. Minot, Prof. J. Clarence Webster, Prof. Theobald Smith and Prof. W. H. Howell. The object of these lectures is to present in a broad way, from the laboratory standpoint, matters which are exciting general medical interest. The lecturers are chosen because of their first hand knowledge of the subjects of which they treat. Narcosis, problems of metabolism, the neurones, the formation of uric acid, the nature and cause of old age, the cause of the heart beat, are some of the topics discussed. The book is eminently readable and presents an admirable résumé from authoritative sources of our present knowledge of many topics.

L'Ame et le système nerveux: hygiène et pathologie. By August Forel, formerly Professor of Psychiatry at the University of Zurich. 8vo. Pp. 334, with 10 illustrations. Paris: G. Steinheil. 1906.

The present volume is an attempt to treat, in a popular form, the great question of the hygiene of the nervous system, certainly one of the most important matters in the domain of our social economy. In his presentation of the subject, however, the author has very wisely decided first to give a brief account of the anatomy and physiology of the nervous system, and of the chief functions of the mind, and then to discuss somewhat at length the great principles of nervous pathology and the etiology of nervous disease. In this way the reader comes to the section especially devoted to hygiene, with a clear conception of the nervous system and its functions and of the various factors which may exert a deleterious influence upon it. Although a popular presentation of the subject, the volume is one which may be read with enjoyment and profit, even by the neurologist, for the writer has brought forward many new theories in regard to nervous function which will well repay study. Although his account of the nervous system is brief it is remarkably complete. With some of his opinions we may differ, notably the extreme importance which he ascribes to alcohol in the production of nervous disease, yet his opinions always deserve attention. Of especial value are the references he gives to various social organizations for the promotion of social reform and to the various methods of education. We can heartily recommend the book both to the physician and the layman.

Tumours of the Cerebrum: Their Focal Diagnosis and Surgical Treatment. By Charles K. Mills, M.D., Charles H. Frazier, M.D., William G. Spiller, M.D., George E. De Schweinitz, M.D., and Theodore H. Weisenburg, M.D. Small 8vo. Pp. vi, 285, with 33 illustrations. Philadelphia: On sale by Edward Pennock. 1906.

This volume is made up of seven papers which have been published for the most part in the University of Pennsylvania *Medical Bulletin*, and have now been collected in this convenient form. Of these papers those by Frazier and Spiller on operations for tumor and cerebral decompression are, perhaps, of the greatest interest as reporting several favorable results of operation. Mills contributes three articles on focal diagnosis, Jacksonian epilepsy and the motor area of the cerebrum, in which he elaborates his theories upon localization in the cerebral cortex, and gives some rather inconclusive results of faradization of the motor area. De Schweinitz contributes a paper on the ocular symptoms of tumor and Weisenberg one on conjugate deviation of the head and eyes. The articles are already, no doubt, familiar to many, but every student of cerebral tumors will be glad to have them in this convenient form.

Modern Surgical Technique in Its Relation to Operations and Wound Treatment. By C. Yelverton Pearson, M.D., M.Ch., F.R.C.S., Professor of Surgery, Queen's College, Cork; Fellow and Examiner in Surgery, Royal University of Ireland; Surgeon to the North Charitable Infirmary and County and City of Cork General Hospital, etc. Illustrated with two colored and other plates and one hundred and eleven illustrations in text. New York: William Wood & Co. 1906.

This book is primarily intended for students, house officers and surgical assistants. The subject is dealt with in chapters upon surgical bacteriology, infection, disinfection, antiseptics, disinfection of the hands, the use of gloves and operating costume, preparation of the patient's skin and mucous membranes, the preparation and sterilization of instruments, preparation and sterilization of sponges, preparation and sterilization of ligature and suture materials, the nature and mode of sterilization of absorbent dressings, antiseptic dressings, the sterilization of water. In the third and fourth parts of the book are considered: Wounds, their nature and treatment; the prevention and arrest of hemorrhage; suture needles and their uses; sutures, their varieties and uses; drainage materials and their uses; the operating room; preparatory measures; the operation; treatment after operations; the renewal of dressings; operations in private houses, and asepsis in general practice.

The book is fairly well illustrated. We do not think that the author's technique is one to be copied. The day has gone by when marine sponges are used by an operating surgeon for any other purpose than to clean away filth. There are many books that present better modern surgical technique.

High Frequency Currents: Their Production, Physical Properties, Physiological Effects and Therapeutical Uses. By H. Evelyn Crook, M.D. 8vo. Pp. x, 206, with 44 illustrations. New York: William Wood & Co. 1906.

This well printed volume gives a clear and fairly satisfactory account of the method of production of high frequency currents and their physical properties, with a description of the various forms of apparatus and the methods of use. The second part deals with the physiological effects of these currents, and the third part with their therapeutical uses. These chapters are but compilations from the literature, and the writer presents no personal observations. The therapeutic value of high frequency currents is claimed in connection with all manner of diseases, but the evidence does not seem sufficient, either from the recorded cases or from personal experience, to warrant the claims that are sometimes made for this as for other forms of electricity. The book will prove useful, however, to those who wish to become familiar with this method of employing electricity in medicine.

Nature, Causes, Variety and Treatment of Bodily Deformities. By E. J. Chance, F.R.C.S., England. Edited by John Poland, F.R.C.S. Second edition. London: Smith & Elder.

This work has an historical value indicating as it does the views of a former London practitioner who, connected with the Royal Orthopedic Hospital in 1851 and many subsequent years, embodied his generalizations, from the large number of cases which passed under his view, in twelve public lectures given in obedience to the mandates of a founder's bequest.

Mr. Chance took his subject seriously and illustrated it with original sketches which in our day of half-tones appear unusual. The lectures have an academic character which is refreshing, and if the treatment of the subject is neither original, exhaustive nor new the resulting book is modestly small and has the merit that it is not exhausting.

The second edition has been prepared by a colleague of Mr. Chance as a tribute to his memory.

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BILLS BEFORE THE MASSACHUSETTS LEGISLATURE.

The number of bills relating more or less definitely to medicine and medical questions is this year much as heretofore. Certain petitions invariably are presented for new legislation or for modifications of laws which already exist, and this year is no exception to this general rule.

Tuberculosis has of late been so well covered through legal enactment that little legislation is asked for the future. House Bill No. 234, however, desires to increase the stringency of regulations regarding the registration of cases of tuberculosis. It is proposed that it be mandatory on boards of health and selectmen of towns to register in a book all cases of tuberculosis, giving the name and address of the patient, as well as of the physician who reports the case. The bill further provides for the distribution of suitable publications on the disinfection of premises and for such publicity as considerations for the general public health demand. The bill in general is carefully drawn up and should receive the approval of those interested in the combat against tuberculosis.

A practical bill is one requiring that a medical and surgical chest containing surgical supplies, instruments and appliances be maintained in factories and similar establishments for the treatment of persons injured or taken ill upon the premises. Such a bill would seem to have no objections and many practical advantages. As a means of prophylaxis and as a measure of cleanliness another bill provides that no wall paper shall be placed on walls of dwelling houses until the old paper is removed and the wall or ceiling thoroughly cleansed. The general excitement at the present time regarding hydrophobia should lend a certain weight to a bill directed to the better protection of the public in respect to unrestrained dogs. The suggestion is made that the various boards of county commissioners appoint a dog officer to exercise supervision within limits over unrestrained and unmuzzled dogs.

A bill which will surely meet with the unqualified approval of the medical profession and others interested in modern medical prophylaxis is that relative to the exemption of persons from compulsory vaccination. This bill is a revision of a law which demands that a regular practising physician shall sign certificates when it is claimed that individuals are not fit subjects for vaccination. The amendment substitutes for a regular practising physician, the words, "the school physician assigned to that school." This change, it is hoped, will obviate a certain evasion of the vaccination law which has hitherto prevailed. The school physician must at the time of giving the certificate have examined the child personally and given as his opinion that the child is an unfit subject for vaccination, if such child is to be exempt from the law. This bill is presented by Dr. Charles Harrington.

Another matter of much present public interest is the question of the milk supply and its standardization. At least three bills are offered looking to legislation to establish a definite milk standard. It is evident that this question is one difficult of solution, but it is equally clear that efforts must not be relaxed until the public can be reasonably sure of the quality of its milk supply, and the dealers in milk are forced to a recognition of their duties in the matter. Bills which assist the solution of this problem should receive hearty indorsement from all classes in the community. Dr. R. C. Cabot and others petition for further legislation relating to the labelling of certain patent or proprietary drugs and foods. This bill likewise should meet with approval.

A stricter oversight upon those practising the trade of barber is urged in Senate Bill No. 25, which provides that barbers must obtain a certificate of registration before they may legally prosecute their occupation. The details of this bill, which are included in fourteen sections, provide a detailed investigation into the methods of the occupation and the precautions which should be taken to prevent the spread of disease. In this connection the report of the State Board of Health, submitted by Dr. Charles Harrington, on the investigation of the sanitary conditions of barber shops is of interest. Although various degrees of cleanliness were found, relatively few flagrant conditions were discovered. Investigation, for example, yielded no direct evidence of a transference of disease from person to person in the barber shop, although it demonstrated the existence of channels through which infection might easily pass. Strict personal cleanliness and the scalding of shaving utensils before use are recommended. In general, the conclusion was reached that special legislation providing for regulation or inspection of barber shops, other than is already afforded through the agency of local boards of health, is at present not necessary.

Finally, a bill which might seem to have a certain justification was offered, for the establishment of a board of registration in chiropody. It did not, however, appear to the committee that there was necessity for legislation in this matter at the present time and the petitioners were given leave to withdraw. No doubt registration, as many other things which are inherently good, may be overdone. Several familiar bills we miss this year. They will, no doubt, appear again either in their old form or modified in such a way as to make a deeper impression in the future than they have in the past upon the legislators to whom they are primarily presented.

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RELATION OF MEDICINE TO DENTISTRY.

The question is a perennial one as to the practical and theoretical relationship between the professions of medicine and dentistry. It has for many years not been questioned that dental practice is a very essential factor in modern civilization, and it is also not to be doubted that the United States has done much toward establishing a higher standard of dental practice, not only in this country, but also on the continent of Europe and in even more remote regions. The very fact of the phenomenal development of dentistry has led to certain unfortunate consequences in its relation to medicine. For example, the independence of the dental school was early established. It quickly became evident that the training of a dental practitioner must be of so special a character that his course of study, except in its elements, of necessity must early diverge from that of the student of medicine. This separation of medicine and dentistry was both fortunate and unfortunate, — fortunate in that it established the dental profession on an independent basis and no doubt trained men more adequately in consequence; unfortunate in that it separated dentistry from medicine in a way which the allied character of the two lines of work does not justify.

The question constantly arises whether dentistry is properly to be regarded as a branch of medicine or as a wholly independent subject. Speaking from the broad point of view, our answer must inevitably be that dentistry must be regarded as a special department of medicine, so far specialized, however, that the medical practitioner has come to ignore it in his own training. The past few years have given some evidence that the breach which has unfortunately been established is about to be bridged. It is increasingly apparent that medicine owes much to dentistry and that a proper appreciation of certain conditions of disease demands far more knowledge of the mouth cavity than the ordinary practitioner possesses. We may refer in this connection to certain bacterial conditions in the mouth and notably to the intractable disease, trigeminal neuralgia, wherein the dentist and the physician must often unite in treatment. It should also not be forgotten that the dental profession is providing year by year scientific observations of great and permanent value. All this the medical profession should recognize. On the other hand, it will still less be questioned that dentistry owes much to medicine and that, in fact, its existence would hardly be possible were it not founded on the broader conceptions of disease which medicine at large provides.

It is extremely desirable at the present time for us to recognize the intimate relationships between the different branches of medical practice, and one of these recognitions should be that dentistry is an integral part of medicine and should be so considered by medical practitioners. The relationship between the two professions or between the two branches of a common profession should be made closer as time goes on rather than more widely separated. To accomplish this end dental schools connected with universities should be liberally and cordially supported by allied branches of science. It should be recognized that the removal of the dental department from a university is a loss not only to the department of dentistry, but very distinctly also to the department of medicine. The exact relationship which these two departments, medicine and dentistry, should bear to each other in any university system is a matter of detail, but that in the present state of science the relations should be cordial and friendly is not for a moment to be questioned.

MEDICAL RESEARCH IN THE FEDERATED MALAY STATES. BERI-BERI.

At the present time diseases of the tropics are being very widely investigated, either through expeditions sent out from medical centers in the temperate zone or through permanent institutes established within the tropics. By both means a great stimulus has been given to the medical profession of the tropics, and the combined efforts of these various agencies have already resulted in numerous additions to medical knowledge. This knowledge is of a two-fold importance to us: Commerce and colonization are bringing our country more and more in contact with tropical disease, and facts discovered in the investigation of tropical disease not infrequently throw new light on disease as it occurs in temperate climates. Consequently, the American physician welcomes an extension of medical investigation in the tropics and is interested in its results.

An institute for medical research exists in the Federated Malay States from which has been recently issued a report which is part one of the fourth volume of published studies. The author of this report is C. W. Daniels, late Director, Institute for Medical Research at Kwala Lumpur. The report is a study of beri-beri, and especially considers the mode of spread of the disease. The prison population of the islands is dealt with, since this forms a class whose mode of life is rigidly limited and whose food supply is absolutely controlled. Daniels believes that the characteristic symptoms of beri-beri are due to lesions secondary to an unknown primary condition — a secondary neuritis. It is an infectious disease spread from one prisoner to another. He does not believe that food is a causative agent though it may transmit the etiological factor. This view is opposed to the one very generally held that the disease is caused by eating bad rice. Daniels thinks that an ectoparasite may be the intermediate host, and possibly this is a bedbug or pediculus, but of this he has no positive proof. In many ways the disease suggests a protozoön disease but cultural and microscopic study has yielded him no positive evidence. As to prophylaxis Daniels believes that " in view of the failures of various attempts at disinfection of buildings and places and of various modifications of diet to have marked effects, more attention should be paid to limiting the chances of personal infection, and that particular attention should be paid to personal cleanliness, freedom from vermin, and isolation of early or trivial cases of the disease."

MEDICAL NOTES.

The Death of Sir Michael Foster. — The death of Sir Michael Foster on Jan. 29, after a brief illness, is announced. He had long been associated with problems of physiology in England and was likewise much interested in public affairs. A full obituary notice will be published later.

The Hypothetical Question. — The hypothetical question is getting to be, one may say has become, an increasingly undesirable, offensive and intolerable form of chicanery as practised in the presentation before juries in our courts of the so-called medical expert testimony.

Malaria in Greece. — As stated in *Science*, the Liverpool School of Tropical Medicine sent Prof. Ronald Ross, C.B., last year to Greece to study the question of the prevalence of malaria there. As the result of that visit, the school has made a strong effort to raise funds in England for combating malaria in Greece and has despatched to Sir Francis Elliot, British minister at Athens, £200, being the amount of the first donations collected.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Feb. 13, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 42, scarlatina 57, typhoid fever 1, measles 11, tuberculosis 52, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 13, 1907, was 21.65.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 9, 1907, was 221, against 244 the corresponding week of last year, showing a decrease of 23 deaths and making the death-rate for the week 19.14. Of this number 116 were males and 105 were females; 216 were white and 5 colored; 124 were born in the United States, 94 in foreign countries and 3 unknown; 33 were of American parentage, 158 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 51 cases and 3 deaths; scarlatina, 91 cases and 1 death; typhoid fever, 5 cases and 0 deaths; measles, 10 cases and 0 deaths; tuberculosis, 46 cases and 32 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 36, whooping cough 0, heart disease 22, bronchitis 7 and marasmus 3. There were 16 deaths from violent causes. The number of children who died under one year was 25; the number under five years 42. The number of persons who died over sixty years of age was 67. The deaths in public institutions were 80.

There were 2 cases of cerebrospinal meningitis reported during the week.

Maine Academy of Medicine and Science. — The meeting of the Maine Academy of Medicine and Science at Portland for the discussion of the bill introduced by the State Bar Association of Maine, and now pending in the Maine State Legislature, has been adjourned at the request of the friends of the bill to Saturday, the 16th of February, at which a dinner will be given and distinguished persons invited.

NEW YORK.

Reappointment of Dr. Alvah H. Doty. — Governor Hughes has reappointed Dr. Alvah H. Doty Health Officer of the Port, a position which he has held through succeeding administrations since 1894. In announcing the appointment the Governor says: "The reappointment of Dr. Doty is justified by the efficient service he has given the people in the past."

A Centenarian. — Mrs. Drusilla Morrell, of Brooklyn, N. Y., died on Feb. 4, at the apparently well-authenticated age of one hundred and two years; it is stated that she was born in Marlborough, Mass., on Oct. 22, 1804. Her husband was a soldier of the War of 1812, and with him she removed in 1836 to Brooklyn, where he was appointed a tollgate keeper.

A Professorship of Protozoölogy. — At the last monthly meeting of the trustees of Columbia University it was announced that the title of Gary N. Calkins had been changed from Professor of Invertebrate Zoölogy to Professor of Protozoölogy. It is stated that this is one of the first chairs of the kind to be established in any university in the world.

Contributions to Beth Israel Hospital. — At a dinner given on Feb. 6 by the directors and medical staff of the Beth Israel Hospital, in honor of its president, Joseph H. Cohen, $21,000 was contributed by guests toward the hospital fund, the gifts ranging from $5,000 to $500. The directors and medical staff subscribed $1,000.

Practice of Medicine and Administration of Drugs. — On Feb. 8 the Appellate Division of the New York Supreme Court made an important ruling, to the effect that the practice of medicine does not necessarily involve the administration of drugs. This decision was handed down in affirming the conviction of one E. Barton Alcutt, of practicing medicine without a license, in the Court of Special Sessions. The defendant practiced what he termed "mechanoneural therapy," but claimed that he did not require a license because he did not prescribe or administer any drugs.

Osteopathy Before the Legislature. — The osteopaths have renewed their annual attempt before the legislature to secure recognition by the establishment of a separate examining board, and on Feb. 7 a hearing was given on the bill on the subject before the public health committees of both houses. Drs. Arthur G. Root and Albert Vander Veer of Albany were the principal speakers in opposition to the bill, and in his remarks Dr. Root urged the closing of the osteopathy school now in operation.

Mortality During January. — The weekly reports of the Health Department show that during the month of January the mortality in the city represented an annual death-rate of 19.74, as against 18.11 in December and 18.59 in January, 1906. The corrected death-rate, excluding non-residents and infants under one week old, was 1,857. Among the diseases in which there was an increased fatality were the following: The weekly average of deaths from diphtheria and croup increased from 35 in December to 43.5 in January; the weekly average from influenza, from 7 to 12.25; from epidemic cerebrospinal meningitis, from 8.5 to 12.25; from pulmonary tuberculosis, from 173.75 to 186.5; from pneumonia, from 148.75 to 190; from bronchopneumonia, from 104.5 to 142; from diarrheal diseases, from 37.75 to 46; from diarrheals under five years of age, from 32 to 39.25; from apoplexy, congestion and softening of the brain, from 62.75 to 63.75; from organic heart diseases, from 129.25 to 146; from Bright's disease and nephritis, from 128.25 to 130.25; and from cirrhosis of the liver, from 21 to 22.25. Among the diseases in which there was a diminished mortality were the following: The weekly average of deaths from typhoid fever decreased from 13 to 9; from whooping-cough, from 10.25 to 7.75; from acute bronchitis, from 28.75 to 19; and from cancer, from 62 to 55. The increase in the number of deaths, both over December and over January of last year, is probably to be attributed largely to the colder and more inclement weather, particularly as regards the mortality from pneumonia, bronchopneumonia, influenza and organic heart diseases. In January, 1906, the weekly average of deaths from pneumonia was 167.25, from bronchopneumonia, 116.5, from influenza 9.5, and from organic heart diseases, 114.75. The mortality from measles, however, was decidedly less than last year, the weekly average in January, 1906, being 29.5, and in January, 1907, but 5.5. In the last week of January there was one death from smallpox, the first recorded in the city for many months.

Annual Report, State Commission in Lunacy. — The annual report of the State Commission in Lunacy, just issued, states that during the past year the increase in the number of insane in the state of New York was 5,761, and that the total number of insane in the institutions of the state at the close of 1906 was 28,302. During the year, 1,468 patients were discharged as cured, while in addition 1,142 had recovered sufficiently to resume a life free from restraint. The total amount expended on the state hospitals for the insane was $5,722,429, which was at the rate of $353 for each patient, including medical attendance and the salaries of employees. The commission reports the completion of the large nurses' home at the Kings Park State Hospital, accommodating 200 employees of this class, and asks for appropriations for the construction of nurses' homes on the grounds of three other of the state hospitals. Each of these homes is designed for 150 nurses and the estimated cost of each is $75,000. The commission urges immediate consideration of the needs of the metropolitan district for the accommodation of patients. The state's lease of Ward's Island expires within the next six years, and an appropriation is requested at once to provide a site for an entirely new establishment. The commission recommends the extension of the plan of farm colonies in connection with the existing state hospitals, and speaks highly of the results of treatment at such of the hospitals as already have these adjuncts. Excellent results are also reported in the treatment of the tuberculous insane in the sun pavilions recently erected at the Binghamton Hospital and the St. Lawrence Hospital at Ogdensburgh. An interesting feature of the report is the account of the so-called after-care system, which during the year was inaugurated by the State Charities Aid Association under the general supervision of the commission. A definite plan has been adopted by this organization for looking after patients discharged from the state hospitals in order that their resumption of ordinary life in the community may be rendered as free from disturbing elements as possible.

Obituaries.

JULIA WALLACE-RUSSELL, M.D.

IN MEMORIAM.

During the summer vacation the New England Hospital Medical Society lost another of its oldest members, Dr. Julia Wallace-Russell, of Concord, N. H., who died June 30, 1906.

It seems fitting when such a life goes out from us that we should pause a moment, and recall her many virtues. Dr. Russell was born in the old Granite State, sixty-three years ago. She became a teacher for a short time, but the medical instinct was strong within her, which led her finally to take up that profession for her life work. She graduated at the Medical College of the New York Infirmary, and then served a year as interne in the New England Hospital for Women and Children.

In New York she came under the influence of Dr. Emily Blackwell, and in Boston under that of Dr. Zakrzewska, both of whom seem to have made a deep impression on her life. She settled in Concord, N. H., in 1878, being the first woman to join the New Hampshire Medical Society.

Dr. Russell was a typical New England woman of her time. She had not enjoyed the advantages of an academic education, nor of foreign study, but her faithfulness to duty, her sterling character and common sense soon made themselves felt upon her patients, and her practice grew unprecedentedly fast.

She did not hesitate to ask counsel of her brother physicians, when in doubt about a case, and in course of time her counsel and advice came to be frequently sought by the men physicians of the state.

Dr. Russell was always loyal to women physicians, and missed being in touch with them so much that she early joined this society, and for many years was a frequent attendant at its meetings, contributing to their interest by papers and discussions.

She felt very strongly the lack of a place where poor women could be treated by their own sex. This led her in 1895 with the aid of her sister and a few friends to found the New Hampshire Memorial Hospital for Women and Children. One year later this was opened to patients, and soon after a Training School for Nurses was established in connection with it.

Dr. Russell was the physician in charge and ever after gave freely of her time and money to this cause.

Every day, winter and summer, rain or heat, she was at her post of duty. Her courage and fidelity never wavered, and to-day her name stands among the most honored women of her state.

In recognition of her connection with us, your committee would like to present the following resolutions:

Resolved, That in the death of Dr. Russell this society has lost one of its oldest and most honored members and the medical profession a devoted and successful physician — one whose sterling qualities of character and heart have left a noble example for others to follow.

Resolved, That while we mourn our loss, we rejoice in the good she accomplished. Of her it may be said: "Well done, good and faithful servant."

Resolved, That a copy of these resolutions be sent to her family, and also be recorded in the minutes of this society, and published in the Boston Medical and Surgical Journal.

Mary A. Smith, M.D., *Chairman.*
Mary F. Hobart, M.D.

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PAUL JULIUS MOEBIUS.

The death of Dr. Paul Julius Moebius, of Leipsic, on Jan. 8, is announced at the early age of fifty-four. He was born in the city where he finally died and prosecuted his early studies there, and at Jena and Marburg. On the completion of his medical education he became docent at the University of Leipsic and continued in that position for ten years. His death was due to an osteosarcoma.

For many years Moebius has been known as a prolific and virile writer on topics in general connected with neurology and psychiatry. His work in neurology was significant. He promulgated a theory of Graves's disease, marked off from other affections the symptom-complex known as akinesia algera, added to the knowledge of progressive facial hemiatrophy and took active part in discussions regarding the nature of hysteria. He was, however, particularly known beyond the medical profession by his work on psychiatrical subjects, and particularly those having direct social bearings. A list of his publications would occupy much space and would cover a wide range of subjects. His discussions of the psychopathology of Goethe, Rousseau, Schopenhauer and Nietzsche were widely read, but his brochure on the intellectual inferiority of women brought him still more into the public gaze.

He wrote with facility and with freedom from conventionality. The subjects he undertook to elucidate were such as to excite public comment, which he received in large measure. As a man he was modest, retiring, and eager rather to express his thoughts regardless of consequences than to receive the commendation of his fellowmen and its accompanying honors.

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Current Literature.

The Journal of the American Medical Association.

Jan. 26, 1907.

1. *Mayo, C. H. *Goiter.*
2. *Hertzler, A. E. *Operation for the Shortening of the Broad Ligaments.*
3. Lavenson, R. S. *A Case of Chronic Joint Disease, with Marked Osteo-Atrophic Changes.*
4. *Mueller, F. *A New Primary Position in the Bloodless Treatment of Congenital Joint Dislocation.*
5. Cryer, M. H. *Variations in the Frontal Sinuses.*
6. *Krauss, W. C. *Tumor of the Right versus Tumor of the Left Frontal Lobe of the Brain.*
7. Beggs, W. N. *Some Ways to Prevent the Spread of Tuberculosis.*
8. Knopf, S. G. *A Plea for Cremation in Tuberculosis and Similarly Infectious Diseases.*
9. *Amberg, S. *The Opsonic Contents of the Blood of Infants.*
10. Shelly, E. T. *Superstition in Teratology, with Special Reference to the Theory of Impressionism.*
11. Leonard, C. L. *Therapeutic Uses and Dangers of the Roentgen Rays.*
12. Boggs, R. H. *The Roentgen Rays in Superficial Lesions.*
13. Williams, E. G. *The Treatment of Molignant Growths by the Roentgen Rays.*
14. *Leffman, H. *Starch Sugar (Glucose and Grape Sugar) as a Food Adulterant.*
15. *Swinburne, G. K. *The Antigonococcus Serum of Rogers and Torrey in Epididymitis.*
16. *Wilbur, C. L., *Legislation for Vital Statistics in the United States.*

1. Mayo believes that the success of the surgical treatment of goiter is not sufficiently appreciated. After a description of the anatomy, physiology and pathology of the thyroid gland, he gives in outline his own operative technic. In seventeen years he has operated upon 300 thyroids, with 11 deaths. Of these 110 were for exophthalmic goiter, with 9 deaths, only 2 occurring in the last sixty-four cases. Of the cases of exophthalmic goiter which survived operation, 50% made an early recovery, 25% improved after several months and 25%, although greatly improved, occasionally had temporary relapses of tachycardia.

2. Hertzler maintains that in works on anatomy the broad ligaments are inadequately described for the purposes of operative gynecology. He has made a large number of careful dissections by which he has demonstrated an arrangement of ligamentous fibers of great practical importance. Lying between the two layers of peritoneum which cover the broad ligaments, the fibrous tissue is gathered mainly into two ligamentous bands extending inward from their origin in the pelvic fascia. Of these bands the upper one is attached to the uterus close to the corner; the lower band extends downward as well as inward to the cervix, most of its fibers passing beneath the uterine artery and the ureter. In operating for prolapse of the uterus the lower bands are exposed, divided on each side of the cervix and the two lateral divided ends united, with as much shortening as is desired, in front of the cervix. In patients in the childbearing age the fundus is also drawn forward by shortening the round ligaments

4. Mueller explains the frequent failures of the Lorenz treatment by an abnormal twisting of the neck of the femur. In these cases of congenital dislocation, the femur neck, instead of facing the socket as it normally does, points straight forward past the socket whenever the patient is placed in the erect standing position. In such a case the femur head can be only partly permanently replaced and is liable to be easily redislocated. He, therefore, introduces a modification of the Lorenz method by adopting a primary position with the thigh in rectangular abduction in such a way that the knee cap is turned toward the frontal plane and maintains this position by a plaster cast, reaching to the ankle joint or even to the toes. The position of the kneecap serves in this way for the determination of the position of the femur neck. The results obtained are, he says, most satisfactory. The method does away with the brutal widening of the capsule after the operation and simplifies the after treatment. The article is illustrated.

6. Krauss discusses the question of the function of the frontal lobes and summarizes his conclusions as follows: (1) The prefrontal lobe of the left hemisphere is, in all probability, the seat of reason, memory, intuition and judgment, or the higher intellectual faculties. (2) A distinct center for writing and printing exists in the base of the second frontal convolution of the left hemisphere. He refers to the work of other writers, and reports two cases, one of glioma in the right frontal lobe, in which the symptoms were merely

severe pain and optic neuritis, the other of glioma of the left frontal lobe in which, together with the symptoms of headache and optic neuritis, there was marked mental apathy resembling a mild type of acute dementia, with the consequent symptoms of slowness and hesitancy of speech, loss of memory and ideation, but no paralysis or localized spasm. In this second case agraphia, both for writing and for printing, was marked, subsiding somewhat after operation.

9. Amberg has tested the opsonic content of the blood in infants, breast-fed and otherwise, and in different conditions of health and nutrition. His results do not altogether support Moro's finding that the blood of breast-fed infants always exceeds in bactericidal power that of other infants; while the kind of food may exert an influence, other factors must enter into consideration. One of these appears to be the state of nutrition, but there are indications that there are still other factors that come into play in certain cases. While he admits the insufficiency of the data, he offers tentatively the following conclusions: (1) The opsonic content of the infant's blood does not seem to follow the rules laid down by Moro for the bactericidal power of the blood. (2) The average values for the opsonic content of infants' blood exceed those laid down by Simon for normal adults. (3) A distinct advantage seems to exist in favor of the breast-fed infant. This advantage does not seem to be dependent so much on the breast feeding as such, as to some extent on the state of the nutrition of the infant and, perhaps, on the constitution.

14. Leffman believes that the advisability of allowing commercial glucose and grape sugar to be used in foods is open to serious question. It is now known that the sugars formed chemically from starch are very different from the normal digestive products of starch and of cane sugar. Moreover, the process of manufacture of glucose and grape sugar involves the use of sulphuric acid, which often contains lead and arsenic. In England a few years ago extensive poisoning was traced to arsenical glucose. Sulphites also may be present, which are protoplasmic poisons. Thus the uses of starch sugars should be more strictly regulated.

15. Swinburne has employed the Rogers and Torrey antigonococcus serum in 13 cases of epididymitis. He was able to trace 11 of the patients through the whole course of their ailment. Eight were treated within twenty-four hours of the beginning of their symptoms; three had had the trouble three or four days. Three patients received two injections, four received two, two received four and two received five injections. In three patients who received two injections twenty-four or forty-eight hours apart, there was apparent complete recovery in a few days, then a slight relapse requiring another injection. In all the cases but two the patients had no pain after the fourth day, except in the three who relapsed. In five there was left no trace of the disease, in four there was a slight nodule and in two there was a rather soft mass left about the epididymis. Four of the cases were severe from the start. Swinburne believes the serum had a distinct effect in all the cases, markedly modifying the course and shortening the duration of the disease, and in several of the cases the quickness of the recovery was remarkable.

16. Wilbur declares that the condition of vital statistics in the United States is a reproach to the country. He states that the importance of vital statistics, both from a legal standpoint and for the purpose of effective sanitary administration, is altogether overlooked by us. He takes up in detail the necessary provisions of a registration law for deaths and calls attention to the evils of non-enforcement of the law when one exists.

The Lancet.

Jan. 19, 1907.

1. Batten, F. E. *The Diagnosis of Tumours of the Spinal Cord.*
2. Bampton, A. H. *Skepticism in Therapeutics.*
3. *Bunch, J. L. *On Opsonins and Treatment by Bacterial Vaccines.*
4. Harnett, W. L. *A Case of Hemorrhagic Cyst of the Spleen.*
5. Holdich, J. C. *The Relative Sizes of the Maternal Pelvis and of the Fetus in Europeans, Eurasians, East Indians and Bengalis.*
6. *Forsyth, D. *A Fatal Case of Myxedema with Changes in the Parathyroid Glands.*
7. Moullin, C. W. M. *Pyloric Stenosis and the Condition of the Pylorus During Life.*
8. Spicer, J. E. *A Case of Abnormal Development of the Esophagus.*
9. *Sawyer, J. E. H. *Some Observations on Fat Necrosis.*
10. Mennell, Z. *Notes on a Case of Disseminated Sclerosis.*
11. Field, F. E. *Diphtheritic Membrane, Involving the Pharynx, Esophagus, and Respiratory Passages.*
12. Atkinson, S. B. *Some Limitations of Medical Evidence.*
13. McCollum, H. A. *William Addison, M.D.: The World's First Hematologist.*
14. Little, J. S. *Notes upon Health Resorts. A Layman's View of the Riviera.*

3. This paper is largely a consideration of the theory of opsonins and the various investigations which led up to it. The work of Wright and Douglas is gone into in detail; the practical application with regard to tuberculosis is fully discussed. The preparation of tuberculin of various kinds and the uses of each are considered. A few illustrative cases are given.

6. Fatal cases of myxedema are now rare. This case with careful histological report is, therefore, of interest. The thyroid showed the typical fibroid changes characteristic of myxedema, in this case in an extreme degree; there were six parathyroids and in each there was evidence of an extreme degree of activity as if they were trying to replace the lost function of the thyroid gland.

9. Sawyer gives the pathological findings in 8 cases of fat necrosis; six of these cases were of primary pancreatic disease, one of HCl poisoning and one of mitral disease. The necrosis was more abundant near the pancreas than anywhere else, which suggests that it is due to a leakage from the pancreas into the tissues around, either by means of a direct leakage into the peritoneal cavity or by means of the lymphatics; probably it is caused in both ways. Eppinger has suggested that the areas of fat necrosis are infarcts arising by the displacement of small portions of pancreatic tissue along the path of the lymphatics and that this tissue contains "activated" pancreatic ferment. Sawyer does not agree with this view.

British Medical Journal.

Jan. 19, 1907.

1. Bowlby, A. *Fractures of the Base of the Skull.*
2. *Barling, G. *Intraperitoneal Implantation of the Ureters into the Colon.*
3. *Paton, E. P. *Transplantation of the Ureter into the Bladder for Uretero-Vaginal Fistula.*
4. Mursell, H. T. *Traumatic Recto-vesical Fistula.*
5. Lockwood, C. B., and Shaw, E. H. *The Immediate Microscopical Diagnosis of Tumours During the Course of Operation.*
6. Leiper, R. T. *The Etiology and Prophylaxis of Dracontiasis.*
7. *Breinl, A., and Todd, J. L. *Atoxyl in the Treatment of Trypanosomiasis.*
8. Kilvington, B. *The Treatment of Paralytic Talipes Valgus by Tendon Transplantation.*
9. Branch, C. W. *Papain in Malignant Growths.*
10. Bevers, E. C. *Hydatid Cyst of the Neck, with Cellulitis caused by Rupture and Escape of Hydatid Fluid.*

2. Barling goes over briefly the development of the surgery of transplantation of the ureters for various causes and then gives the details of his own case, a youth of twenty who, after a fractured pelvis, suffered constant misery from the suprapubic vesical fistula until the ureters were finally diverted into the colon. The result up to date is excellent.

3. Paton describes in this paper his operation on a case in which the ureter was cut during an operation and had to be transplanted into the bladder.

7. The beneficial action of arsenic in the treatment of sleeping sickness has long been noted; unfortunately in too many cases the patient dies of arsenic poisoning before a dosage can be reached which is fatal to the parasites in

the blood. The efforts to find a combination of arsenic less toxic to the human organism, and more so to the invading parasite have resulted in the discovery of "atoxyl" (meta-arsenic-anilid), which contains 37.6% of arsenic. This has been used before in treating some skin diseases and anemias. The Liverpool School of Tropical Medicine has sent 2,800 grs. of this drug to doctors and missionaries in the tropics, but as yet no results have been reported. The writers recommend using a 20% solution of atoxyl in sterile normal salt solution in subcutaneous or intravenous doses of 0.6 ccm. daily for four days. The solution should be warmed to blood heat before using. The dose should be increased gradually up to 1 ccm. every other day and then gradually reduced. This should be kept up till the blood is free from the parasites or till toxic symptoms arise. The majority of reports as to the results obtained from this drug have been favorable; it is as yet too early to speak definitely however. [*Cf.* Koch's article on sleeping sickness, abstracted in the BOSTON MEDICAL AND SURGICAL JOURNAL, Feb. 7, 1907, p. 190.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 3.

JAN. 17, 1907.

1. DEYCKE and RESCHAL. *A Bacterial Fat as Immunizing Substance in Leprosy.*
2. KATZENSTEIN, M. *Chemical Changes in the Stomach Contents after Gastro-enterostomy, and the Influence of this Operation upon Ulcer and Cancer of the Stomach.* (Continued article.)
3. *KUTNER, R. *The Reflexes During Sleep.*
4. LESCHTSCHINSKI, A. E. *A Case of Chylous Ascites.*
5. STUHL, C. *The Treatment of Fractures of the Humerus Occurring During Delivery.*
6. FIEDLER, L. *The Treatment of Hernia into the Umbilical Cord in the New-Born.*

3. It has been claimed that the tendon reflexes are decreased and often absent in sleep. Kutner found this was not the case. In a large proportion, however, of cases of general paresis and of delirium tremens he found a positive Babinski only during sleep. This he attributes to a slight lesion of the pyramidal tracts, not sufficient to cause a positive Babinski when the patient was awake.

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT, No. 3.

JAN. 15, 1907.

1. *TENDELOO, N. P. *Aero-lymphogenous Tuberculosis of the Lungs.*
2. SCHUCHT, A. *The Experimental Transmission of Syphilis to the Eyes of Rabbits.*
3. *HOFFMANN, F. A. *Rudimentary Eventration of the Diaphragm.*
4. BÜDINGEN, T. *The Treatment of Cardiac Patients in Sanatoria and its Indications.*
5. *ROEMISCH, W. *Late Results of the Tuberculin Treatment.*
6. *GANSER, S. *Treatment of Delirium Tremens.*
7. WEYGANDT, W. *The Care of Idiots in Germany.*
8. MITTERMAIER. *Hammer-toe and its Treatment.*
9. EIJKMAN, C. *The Polyneuritis of Hens and Beri-Beri Not Due to Poisoning with Oxalic Acid.*

1. Tendeloo shows that the hematogenous mode of infection is not probable in phthisis, because in miliary tuberculosis the tubercles are evenly scattered over all parts of the lung; the same is true of finely divided particles such as carmine when introduced into the blood current; phthisis, on the other hand, shows a predilection for the apices. A second possible mode of infection would be through the lymphatics from infected lymph nodes; this has been supposed especially for the mesenteric and cervical nodes. This mode must be regarded as possible, but no anastomosis can be shown between the lymphatics of the neck and the mediastinum, and in the case of the mesenteric nodes the bacteria would have to enter the general circulation through the thoracic duct and would, therefore, cause a miliary tuberculosis. To explain the fact that primary tuberculosis usually affects chiefly the upper lobes, it is necessary to study the physiology of the lungs. Tendeloo's researches have shown that the lymph current is most sluggish towards the apices and that here the respiratory expansion of the alveoli is least. This means that small substances, such as particles of dust or tubercle bacilli, will be deposited most readily in these places. And, in fact, it is found that anthracosis occurs chiefly in the upper lobes, just like phthisis. For anthracosis, however, it may be considered certain that the mode of entrance of the carbon particles is through the inspired air, and that they are then taken up by cells and passed into the lymphatics. The claim has been made that anthracosis also is of intestinal origin through the blood current, but the invariable absence of pigment from the mesentery glands, and the uneven distribution in the lungs, render this assumption improbable. Primary tuberculosis may occur in any part of the lungs, but where it is in the lower lobes, the lesions are usually small and show little tendency to spread (this remark applies, of course, only to *primary* infection and not to "metastatic" processes due to aspiration). This is because the lymph current being faster, the poisonous products of the bacilli are quickly removed, and the further growth of the tubercle is thereby inhibited. The same phenomenon is seen in chronic miliary tuberculosis, in which tubercles attain a much larger size in the upper lobes than in the lower lobes. To sum up, infection in primary tuberculosis of the lungs takes place primarily from the inspired air, the germs being taken up by the lymphatics in the lung and carried to the apices, where they are deposited.

3. Eventration of the diaphragm is a condition in which, owing to weakness of the diaphragm, its position is very high on one side, usually the left; the lung is compressed, the heart displaced and tympany due to the stomach or intestines may extend up to the second rib. Hoffmann has observed a number of cases in which this condition was present in a rudimentary form, and believes that it is not infrequent. The diagnosis is best made by means of the x-ray, which shows the high position of the diaphragm, and just beneath it a rounded, bright area due to air in the stomach. The symptoms occur chiefly after meals and consist of pain in the region of the stomach and palpitation. The treatment includes small, frequent meals, and breathing exercises to strengthen the diaphragm.

5. Roemisch reports that the excellent results from tuberculin treatment published by him in 1902 have been permanent. These cures were obtained in cases which had resisted for long periods the best hygienic-diatetic treatment in high Alpine sanitoria, and can only be attributed to the use of tuberculin. The selection of cases is important. Acute cases with fever should be treated first by absolute rest, for they may be rendered worse by the use of tuberculin at this time. Roemisch begins with .001 mg., and increases the dose gradually in such a way that a violent reaction is never produced. Slight fever, increase in the amount of sputum and malaise call for a reduction in the dose. The kind of tuberculin used does not make much difference, but sometimes benefit is obtained by changing from one kind to another.

6. Ganser obtained a reduction in the mortality of delirium tremens from 6.4% to .9% by the careful use of digitalis. He uses it in all cases from the beginning; if, in spite of this, the heart becomes weak, injections of camphor are added. His experience covers 1,000 cases, of which about one half were treated with digitalis, the therapy being in all other respects the same.

BERLINER KLINISCHE WOCHENSCHRIFT, No. 43.

OCT. 22, 1906.

1. MARAGLIANO, E. *The Specific Treatment of Tuberculosis.* (Continued article.)
2. *RAUTENBERG. *Poisoning by Oil of Sesame, with Methemoglobinemia.*
3. *ROJAS, J. C. *On Atrophy of the Intestinal Mucous Membrane.*
4. JANSEN, H. *The Influence of Heat in the Finsen Treatment.*
5. POSNER, H. L. *The Cystology of Gonorrheal Pus.*
6. HALLER, M. *Is the External or the Internal Operation Preferable in Empyema of the Antrum?* (Concluded.)

2 In Rautenberg's case very alarming symptoms followed the use of oil of sesame by the rectum. The patient became cyanotic and unconscious, with edema

of the lungs. The blood was coffee colored and showed the characteristic absorption bands of methemoglobin; the urine showed the same bands but faintly. Recovery took place. He attributes the symptoms to impurities in the oil used. Cares should be exercised to secure a pure preparation.

3. Rojas reports a case of atrophy of the intestinal mucous membrane in chronic intestinal obstruction, which resembled exactly that seen in pernicious anemia. Such atrophy, therefore, cannot be considered characteristic of pernicious anemia

Oct. 29, 1906.

1. *Hoffa, A. *Marmorek's Anti-tuberculosis Serum in the Treatment of Surgical Tuberculosis.*
2. Krönig, C. *A Simple Expedient to Elicit the Knee-Jerk.*
3. *Hoffmann, E. *The Diagnostic Significance of the Spirocheta Pallida.*
4. Morgenroth and Carpi. *A Toxolecithid in the Poison of Bees.*
5. Cohn, M. *The Intestinal Origin of Anthracosis of the Lungs.* (To be continued.)
6. Maragliano, E. *The Specific Treatment of Tuberculosis.* (Continued.)
7. *Simon, F. *A New Test for Free HCl in Gastric Contents.*

1. Hoffa, the well-known Berlin orthopedist, reports excellent results in bone and joint tuberculosis from the use of Marmorek's anti-tuberculosis serum. It was used in doses of 2 to 10 cc. either subcutaneously or by rectum; the latter method gave as good results and was not followed by urticaria. Cure was observed in 18%, marked improvement in 27%, benefit in 36%, no effect in 18%.

3. Hoffmann points out the great value of the demonstration of spirochetes in cases where the clinical signs are doubtful. It enables a very early diagnosis of chancres, so that treatment may be begun before the outbreak of secondary symptoms. Moist papules and mucous patches may be distinguished from chancroid and herpes, and latent syphilis may be recognized by the examination of the fluid withdrawn by puncture of the lymph nodes. The presence of typical spirochetes is pathognomonic, but their absence does not exclude syphilis.

7. Simon proposes a new test for free HCl in the gastric contents, which rests on the principle that nitrous acid oxidizes guaiac with the production of a blue color. The test is performed as follows: A knife-point of powdered guaiac is dissolved in 5 cc. of a mixture containing spiretheris nitrosi 10 parts, spir. vini 40 parts. Five cc. of filtered stomach contents are overlaid with a few centimeters of the solution; at the junction of the two a gray-white ring is formed, which in the presence of free HCl quickly turns blue, or if the amount is very small, green. The HCl forms nitrous acid from the sweet spirits of nitre, and the nitrous acid oxidizes the guaiac. The test is even more delicate than Günzburg's, and is not given with other ingredients of stomach contents.

Nov. 5, 1906.

1. Bernhardt, M. *Status Hemi-epilepticus.*
2. *Dege. *The Etiology of Paralysis of the Recurrent Laryngeal Nerve.*
3. Hübner, A. H. *Nervous Syphilis.*
4. Seeler, J. *The Treatment of Cystitis with Alcohol.*
5. *Maragliano, E. *The Specific Treatment of Tuberculosis.* (Concluded.)
6. *Cohn, M. *The Intestinal Origin of Anthracosis of the Lungs.* (Concluded.)

2. Dege reports several cases of paralysis of the recurrent laryngeal due to trauma, and one complicating a pneumonia of the right upper lobe, probably due to direct extension of the inflammatory process from the lung.

5. Maragliano gives the results of his researches on the specific treatment of tuberculosis, covering a period of many years. He found that antibodies could be produced in animals by the injection of living or dead tubercle bacilli, or extracts of bacilli, or the filtrate of bacterial cultures. The substances produced included antitoxins, bacteriolysins and agglutinins. The protective substances are contained in the tissues, serum, leucocytes, and milk. The injection of serum containing these antibodies causes a new production of antibodies in the animal receiving the injection. It is possible by such methods to immunize animals against tuberculosis, and to heal previously existing experimental tuberculosis. Maragliano uses in the treatment of human tuberculosis "bacteriolysine," a serum obtained from goats immunized with expressed extract of dead tubercle bacilli. The results have been excellent in joint and gland tuberculosis and in the early stages of phthisis. Later cases, especially if secondary infection has occurred, show as a rule no cures, though improvement may take place. The results are apparently the same whether the serum is given subcutaneously or by mouth. Brilliant results are claimed for the preventive inoculation of children from tuberculous families. The children have in no case developed tuberculosis, and show the presence of specific antibodies in their blood. The inoculation is performed on the arm like vaccination; the material used consists of the inflammatory products obtained by injecting dead tubercle bacilli under the skin of an animal. A single vaccination suffices.

6. Cohn refutes the experiments of Vansteenberghe and Grysez, who claimed to have demonstrated the intestinal origin of pulmonary anthracosis. He shows that all their results are capable of being interpreted as inhalation anthracosis, the presence of which is physiological in the animals used by them. He repeated their experiments, using cinnabar, which, owing to its red color, is preferable to India ink, because readily distinguished from the black carbon pigmentation. He found that it was not deposited in the mesenteric glands or in the lungs, nor in fact was it absorbed at all from the intestines.

DIE THERAPIE DER GEGENWART.

January, 1907.

1. Kraus, F. *Does Fever of Itself Demand Treatment?*
2. *Schultze, F. *Clinical Notes.*
3. *Minkowski, O. *The Treatment of Edema by the Regulation of the Amount of Water and Salt Ingested.*
4. *Klemperer, G. *When to Operate in Diabetic Gangrene.*
5. *Géronne. *A Case of Fever Due to Syphilis of the Liver.*
6. *Krüger, W. *Clinical Investigations with Theolactin, a New Diuretic.*

2. The absence of reaction to light on the part of the pupils has hitherto been regarded as characteristic of epileptic as distinguished from hysterical paroxysms. Schultze reports a case of undoubted hysteria in which, in the first few moments of the attacks, the pupils failed to react to light, and cities a few similar cases from the literature. He also reports a case of syncope in which there was absence of the light reflex.

3. Minkowski points out that a retention of water in the tissues is always accompanied by a retention of sodium chloride also, and that either one of these may be the primary factor in the production of edema. In pure cardiac hydrops, the retention of water is primary, that of salt secondary, and, therefore, no benefit is to be expected from restricting the amount of salt in the diet. On the other hand, a diminution of the fluid ingested down to 1½ or 1 liter per day is often efficacious. In hydrops of renal origin, the retention of salt is primary, and is due to the inability of the kidneys to excrete salt in proper quantity. Here, therefore, a restriction of the salt taken with the food is theoretically sound, and often gives surprising results in practice, in that the edema rapidly disappears. The best measure of the success of the treatment is the weight: the salt free diet is indicated as soon as the weight shows a marked increase even though edema may not yet be evident. In nephritis, restriction of the fluid ingested is not indicated, but rather a moderate increase, in order to flush the kidneys. It has been objected that such a course increases the hydrops, but this is only exceptionally the case. In chronic interstitial nephritis, no restriction of water is in place, for the kidney has lost

its power to secrete a concentrated urine, and a larger amount of water is necessary for the excretion of the waste products. Not all cases, however, react alike to these measures and especially in cardio-renal patients it is difficult to foretell what the result will be. Minkowski believes that in the regulation of the salt and water intake we possess a powerful agent for the treatment of edema.

4. Klemperer divides diabetic gangrene for the purpose of treatment into two classes: (1) Those without acidosis and (2) those with acidosis. The cases in the first class offer a good prognosis and usually recover without amputation; they are to be put on a strict diet and the wound treated with dry applications, supplemented by Bier's passive hyperemia. Those of the second class will surely die without operation, and a high amputation should be performed as early as possible. Cases with marked nephritis, and those which show acidosis only after they are put on a strict diet, are to be included in this category.

5. Géronne adds another to the few cases reported of fever due to syphilis of the liver. The patient presented several interesting features. Jaundice was present, contrary to the usual rule, and increased together with the fever at each menstrual period. The fever lasted several months and resisted all forms of treatment until mercury was employed, when a complete cure took place. No other signs of syphilis were present, but the husband gave a clear history of infection.

6. Theolactin is a double salt of sodium theobromin and sodium lactate, and, according to Krüger, possesses marked diuretic properties fully equal to those of diuretin It proved efficacious in some instances where other diuretics had failed, but in some cases no effect was observed. Its chief disadvantage is that it often causes vomiting and loss of appetite. The diuresis disappears as soon as the drug ceases to be given.

Noma. WEAVER AND TUNNICLIFF (*Jour. Infectious Diseases*, JAN. 1, 1907) publish an exhaustive study of the literature of noma or gangrenous stomatitis, and report a case with autopsy. The disease was known to the most ancient medical writers. It occurs almost exclusively in children, most often in children of the poor and as a sequela of some acute disease, especially measles. There is reason to believe that it is contagious. It is usually fatal. In bacterial studies, two organisms have been most frequently observed, the anaërobic, threadlike organism of Seiffert, and the diphtheria bacillus. Many other bacteria have been found in certain cases by other observers. In the authors' case fusiform bacilli and spirilla were present in the tissues. The article is of great value as a summary of our present knowledge of the disease, in its etiology, pathology and clinical course.

The Treatment of Certain Chronic Infectious Processes. BARKER (*Brooklyn Med. Jour.*, December, 1906) summarizes the principles of treatment of chronic infections under the following heads: (1) Keeping up the general strength; (2) removing the focus of infection, as in appendicitis; (3) increasing the flow of blood and lymph through the part, or producing passive hyperemia (Bier's method); (4) specific serum therapy, as in diphtheria; (5) inoculation methods, as recently urged by Wright, in which dead bacteria (such as compose " new " tuberculin) are injected in numbers guided by the patient's reaction, determined by changes in the opsonic index; (6) removal of unguarded points of entrance for bacterial invaders which may cause prolongation or recurrence of infectious processes in any part of the body. Under this last heading is mentioned particularly the benefit which has followed extirpation of the tonsils in chronic infectious forms of arthritis, as advocated by Goldthwait.

Miscellany.

IN MEMORIAM: DR. MARY PUTNAM JACOBI.

THE New England Hospital Medical Society of Boston is co-operating with the Women's Medical Association of New York City in the effort to raise the sum of $25,000 to pay a permanent tribute to the memory of Dr. Mary Putnam Jacobi, by establishing in her name a fellowship which shall be known as the Mary Putnam Jacobi Fellowship. A circular issued under their auspices states:

" Dr. Jacobi's interests were broad and numerous. She lent her influence and gave freely of her time to many movements for advancing the educational, economic and legal status of women.

" In her special domain, that of medicine, she won an international reputation and recognition as a woman physician by opening the Ecole de Médecine of Paris to women medical students. She did pioneer work in gaining admittance to a number of medical societies, thus establishing a precedent for other women. As Professor of Materia Medica and Therapeutics in the Women's Medical College of the New York Infirmary, she was an honor to the institution and an inspiration to her students.

" Her unusual spirit of helpfulness, which led her to seek every opportunity for women in medicine, seemed to make it especially appropriate that a permanent tribute to her memory should be along these lines. This particular form of endowment was decided upon partially in view of the fact that Dr. Jacobi herself felt most keenly the meagre and unequal opportunities for women in post-graduate hospital work.

" It is planned that the appropriation of this fund shall be as broad in its scope as possible. Any properly qualified woman graduate of medicine from an American medical school shall be considered eligible for the fellowship. The details as to the final award will be in the hands of a special committee. To have an adequate income it is necessary that the sum of twenty-five thousand dollars be raised."

Any one desiring to contribute toward the Mary Putnam Jacobi fellowship will please send subscription to Dr. Mary A. Smith, Treasurer for the New England Hospital Medical Society, 33 Newbury St., Boston, Mass.

NEW YORK ASSOCIATION FOR IMPROVING CONDITION OF THE POOR.

THE New York Association for Improving the Condition of the Poor has just issued the full proceedings of the milk conference held under its auspices in November last together with the names of the permanent committee, 38 in number, which was appointed at the request of the conference to continue the agitation of the question of an improved milk supply for the city. Among the members of this committee are President Nicholas Murray Butler of Columbia University, Bishop David H. Greer, and Drs. Simon Flexner, L. Emmet Holt and Ernst J. Lederle. The report of the conference was prepared by a special committee of five, the chairman of which is Dr. Rowland G. Freeman. The committee regards the inspection of dairies of prime importance, and urges that in order to secure anything like a satisfactory inspection in the country districts a force of from sixty to eighty inspectors is required, while sixty additional inspectors are necessary for work in the city. The milk must be drawn from healthy cows, under conditions of cleanliness for animals, milkmen, premises, water, utensils and milk cans. The milk must be delivered cooled to 50° F. at the creameries, where it should be handled in a thoroughly sanitary manner and further cooled. Inspection must then follow the milk every step of the way to the consumer, protecting it from contamination and never permitting its temperature to rise at any stage above 50° F. While the members of the conference differed as to the extent to which a general attempt at pasteurization was practicable or desirable in New York, there was substantial unanimity as to the saving of infant mortality accomplished each summer through the agency of the Strauss milk depots. The results of observations made under the auspices of the Rockefeller Institute by Drs. Holt and Wm. H. Park were highly favorable to the use of pasteurized milk, and Health Commissioner Darlington stated that he thoroughly believed in the utility of depots for pasteurized milk for infants. As to whether this work should be carried on by the city or entrusted to private philanthropy, as at present, he was unable to say.

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ANNOUNCEMENT OF SCHOLARSHIPS AND FELLOWSHIPS BY THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, NEW YORK.

The Rockefeller Institute for Medical Research purposes to award for the year 1907–1908 a limited number of scholarships and fellowships for work to be carried on in the laboratories of the Institute in New York City, under the following conditions:

The scholarships and fellowships will be granted to assist investigations in experimental pathology, bacteriology, medical zoölogy, physiology and pharmacology, and physiological and pathological chemistry.

They are open to men and women who are properly qualified to undertake research work in any of the above mentioned subjects and are granted for one year.

The value of these scholarships and fellowships ranges from $800 to $1,200 each.

It is expected that holders of the scholarships and fellowships will devote their entire time to research.

Applications accompanied by proper credentials should be in the hands of the secretary of the Rockefeller Institute, L. Emmet Holt, M.D., 14 West 55th Street, New York City, not later than April 1, 1907. The announcement of the appointments is made about May 15. The term of service begins preferably on Oct. 1, but, by special arrangement, may be begun at another time.

Correspondence.

LETTER FROM TOKYO.

Imperial Institute for Infectious Diseases. A Serum Institute. A Lymph Institute. A New Antitoxin Serum for Typhoid. Leprosy. Scleroderma.

Tokyo, Japan, Dec. 15, 1906.

Mr. Editor: A brief account of some medical things I have seen here may interest your readers.

Among other cases of interest at the hospital of the University of Tokyo I saw one of advanced tubercular peritonitis in a boy having a fecal fistula at the umbilicus, and in another ward were two typical cases of scleroderma side by side.

All the physicians here speak German and the bedside records are kept in German.

The Imperial Institute for Infectious Diseases, the Serum Institute and the Lymph Institute, all run by the government, have been brought together under the management of Professor Kitasato. There are stables for some two hundred horses and cattle from which to make sera. There are laboratories where antitoxins and vaccines are made for the entire nation. There is a special rat- and fly-proof building for the bacillus pestis alone. There is a small hospital for the *study* of infectious diseases, and there are laboratories to which practising physicians come from all parts of Japan. Here they become familiar with pathogenic bacteria and modes of prophylaxis, and when they have completed the course their names are enrolled upon a list from which deputy health officers are chosen in times of danger from epidemics.

In separate laboratories for each, antitoxins are made for diphtheria, tetanus, erysipelas, plague,[1] cholera, typhoid and Shiga's dysentery,[1] and vaccines are prepared for smallpox, plague, cholera and typhoid. Tuberculin also is provided, and hydrophobia is treated by Pasteur's method. A new antitoxin is being developed against the venom of the "habu,"[2] a poisonous snake common in some parts of Japan.

Professor Kitasato is experimenting with a new antitoxin serum for typhoid, the process of making which is, for the present, a secret. Since serum therapy for typhoid was begun in the hospital of the Institute, it is claimed that the mortality has fallen to about 10% from a much higher figure. It is believed that serious epidemics of typhoid have been prevented by immunizing inoculations. Less confidence is placed at present in the antityphoid sera than in those for plague or cholera.

Hemorrhages are not common here in typhoid. Hydrotherapy is not used in typhoid, either at the Institute or in the hospital of the University.

Not far from the Institute is a private hospital lodging about thirty lepers. Though the majority of the patients have lesions of skin and nerves, there are a few in which the infection is limited to one or the other. One individual looking perfectly healthy complains of numbness of the little and ring fingers of the right hand; duration about two years. This case was diagnosed without finding bacilli. In another case presenting only a few small nodules on the face, bacilli were obtained from the nose. Serum treatment is being tried. The results are encouraging in some cases, but in others there is no benefit.

I think that serum therapy in the United States has not received the attention it deserves. I hope our government will undertake to provide reliable sera in the United States as it does already in the Philippines.

I wish to express my thanks to the Japanese physicians and scientists whom I met, for their great kindness to me.

Very truly yours,

Geo. C. Shattuck, M.D.

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[1] Philippine Jour. of Sc., vol. i, no. 5. This number contains two articles of exceptional interest, one by Professor Kitasato on plague, the other by Professor Shiga on dysentery.

[2] Trimeresurus_ninkinamus.

RECORD OF MORTALITY

For the Week ending Saturday, Feb. 2, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,612	434	Quincy	7	1
Chicago	741	235	Waltham	5	—
Philadelphia	—	—	Gloucester	—	—
St. Louis	—	—	Pittsfield	—	—
Baltimore	223	51	Brookline	3	1
Cleveland	—	—	North Adams	8	0
Buffalo	—	—	Chicopee	5	4
Pittsburg	—	—	Northampton	7	3
Cincinnati	—	—	Medford	10	2
Milwaukee	—	—	Beverly	4	1
Washington	—	—	Hyde Park	2	0
Providence	74	19	Newburyport	—	—
Boston	261	56	Leominster	4	—
Worcester	55	11	Melrose	6	1
Fall River	35	13	Woburn	7	1
Cambridge	31	9	Marlborough	5	1
Lowell	50	22	Westfield	5	3
Lynn	31	6	Peabody	—	—
New Bedford	25	7	Revere	2	1
Springfield	36	6	Clinton	8	2
Lawrence	25	10	Attleboro	10	2
Somerville	27	5	Adams	4	1
Holyoke	21	7	Gardner	—	—
Brockton	11	4	Milford	—	—
Malden	—	—	Weymouth	5	0
Salem	21	7	Framingham	4	—
Chelsea	15	—	Watertown	4	0
Haverhill	19	5	Plymouth	—	—
Newton	14	3	Southbridge	4	4
Fitchburg	—	—	Wakefield	—	—
Taunton	21	2	Webster	—	—
Everett	6	—			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDING JAN. 30, 1907.

Gwyn, M. K., passed assistant surgeon. Granted an extension of leave of absence for two days from Jan. 18. Jan. 25, 1907.

Stimson, A. M., assistant surgeon. Leave of absence granted for seven days from Jan. 16, amended to read five days. Jan. 25, 1907.

Mullan, E. H., assistant surgeon. Granted leave of absence for fourteen days from Feb. 7. Jan. 30, 1907.

Falk, Chas. C., acting assistant surgeon. Granted leave of absence for ten days from Jan. 15, 1907. Jan. 25, 1907.

Knowles, Ralph, acting assistant surgeon. Granted leave of absence for five days from Jan. 28, 1907, under paragraph 210 of the regulations.

Watts, T. W., acting assistant surgeon. Granted leave of absence for nine days from. Jan. 22, 1907. Jan. 25, 1907.

Brown, F. L., pharmacist. Granted leave of absence for ten days from Jan. 29, 1907. Jan. 29, 1907.

Richardson, S. W., pharmacist. Granted leave of absence for ten days from Feb. 7, 1907. Jan. 28, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., on Jan. 28, for the physical examination of applicant for cadetship in the Revenue-Cutter Service. Detail for the board: Surgeon L. L. Williams, Chairman; Passed Assistant Surgeon D. E. Robinson, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEB. 9, 1907.

Sankey Bacon, acting assistant surgeon. Appointed Acting Assistant Surgeon; from Feb. 1, 1907.

G. P. Lumsden, medical inspector. Detached from the naval rendezvous, Dallas, Texas, and ordered home to wait orders.

F. H. Stibbens, assistant surgeon. Ordered to the naval training station, San Francisco, Cal.

O. G. Ruge, pharmacist. Ordered to the Naval Medical School, Washington, D. C.

SOCIETY NOTICE.

The New England Hospital Medical Society. — This society will hold a meeting on Thursday, Feb. 21, 1907, at 7.30 p.m., at the home of Sarah R. Stowell, M.D., Adams St., Dorchester. (Take Meeting House Hill car, get out at Adams St.) Section of Surgery, Dr. Sarah R. Stowell, chairman. Paper: Address on Ethics, by Dr. David W. Cheever.

Blanche A. Denig, M.D., *Secretary.*

RECENT DEATHS.

Henry Joseph Gaffney, M.D., M.M.S.S., died in Salem, Feb. 9, 1907, aged fifty-nine years.

Isaac Warren Starbird, M.D., M.M.S.S., of Dorchester, died Feb. 2, 1907, aged sixty-seven years. Dr. Starbird was born in Litchfield, Me., in 1839. He went to the War of the Rebellion as a captain in the 19th Maine Volunteers. He was actively engaged at the battle of Gettysburg, and commanded his regiment in the assault on Petersburg which led to Lee's surrender. After the war was over General Starbird studied medicine at Dartmouth, where he took his degree. He was in charge of the Soldiers Home at Chelsea. One of his sons is a practising physician in Dorchester.

Dr. Elsner Christian Gunther, of New York, died on Jan. 31, at the age of forty-two years. He was born in New York and was graduated from Harvard in 1889. Three years later he received the degree of M.D. from the Harvard Medical School, and then studied abroad for five years.

Dr. Henry Harris Davidson, of Northport, Suffolk County, N. Y., died on Feb. 5, in the sixty-seventh year of his age. He was the eldest son of the late Robert Davidson, D.D., and was graduated from the New York Medical College in 1864.

Dr. William H. Donnelly died last week in Worcester, Mass. He was physician of the Floating Hospital during the summer of 1905 and later was house physician in the Holyoke Hospital. He was graduated from the Baltimore Medical College.

Samuel Jay McDougall, M.D., M.M.S.S., died in Boston, Feb. 8, 1907, aged seventy-six years. Dr. McDougall was born in Albany, N. Y., in 1830, and was graduated from the Albany Medical College in 1837. He was a pioneer in the formation of medical societies, and it was largely through his efforts that the Massachusetts Dental Society was organized in 1864.

BOOKS AND PAMPHLETS RECEIVED.

Studies from Institute for Medical Research, Federated Malay States. Vol. 4, Part I. Observations in the Federated Malay States on Beri-beri. By C. W. Daniels, M.B. Camb., M.R.C.S. Eng. London: E. G. Berryman & Sons. 1906.

The Friendship of Dr. Nathan Smith and Dr. Lyman Spalding. By Dr. James A. Spalding. Reprint.

Des Indications de la Cystoscope a Vision Directe. Par le Dr. Georges Luys. Reprint.

Du microbe de la fièvre typhoïde (Ileo-typhus) et de la théorie ternaire de Pettenkofer. By P. I. Koubassow.

Des microbes du paludisme. By P. I. Koubasoff. Reprint.

Annual Report of the Board of Health of the Department of Health of the City of New York for the Year ending Dec. 31, 1903.

Annual Report of the Board of Health of the Department of Health of the City of New York for the Year ending Dec. 31, 1904. Vols. I and II.

Original Articles.

THE RELATIONSHIP OF THE PHYSICIAN TO THE PUBLIC NEED.*

BY CLARENCE JOHN BLAKE, M.D., BOSTON.

The relationship of the physician to the public need is one which has greatly changed within the last half century, had been changing indeed, gradually, by an evolutionary process, in the time before, but has evolved more rapidly, within the period mentioned, under the influence of certain economic and educative conditions.

These have included, economically, the concentration of people by residence, and their dissemination by increased facilities for travel; the growing necessity for encapsulation within, or absorption into, the community life, of large numbers of aliens and, educatively, the enormous advance in medical research which has revealed the mechanism of the motive power of disease and made possible that series of beneficent activities which we aggregate under the title of preventive medicine.

Nor has the physician himself remained unchanged. At first, in the early history of medicine in this country, individually trained to an individual service in isolated communities living under healthy conditions, his relationship to individual needs made the main sum of his service; epidemics there were which had to be met, and were met individually but which, in default of knowledge of their causation, were regarded rather as visitations to be endured on the whole, and dealt with only in units, than battled with in the mass.

Both by instinct and by education, conservative, the physician has been reluctant to step outside of his individual responsibilities; but the demands of the times, the growing opportunities for public service and the increased appreciation of the value of the ounce of prevention are forcing him steadily, as a community factor, into an educative position in public affairs.

The Samaritan found a wounded man by the roadside, ministered to him, bound up his hurts, set him upon his own beast, conveyed him to an inn, or caravansary, which was not only the temporary home of the wayfarer, but stood in lieu of the hospital of to-day, and there left him, with charges prepaid, to such ministrations as might be necessary to his recovery. The word picture of the Samaritan, a member of a people set apart by their peculiar points of view, but not the less a reverent people, with tenets which impelled the practical, personal application of true benevolence and charitable conduct, has been taken as the typical presentation of the office of the medical profession, a representation which has been justified by the intensity of the definition of the true relationship between the doctor and his patient.

The service of the Samaritan was an individual one; it began and ended with self-effacing attention to the case in hand and provision for the necessary continuance of the benefaction; it had nothing to do with the conditions which brought about the mischance; it evoked no question as to the possible effect of effort at prevention; there was no thought of the safeguarding of the highway along which poured the passage of orderly traffic, of the legitimate business of life; with the individual succor applied to the individual need, the business of the man of Samaria began and ended.

The distinctive peculiarity of the education in medicine, as contrasted with the education for other professions, has set the medical profession apart as a cult in the great body of community life, and has served still more to emphasize the relationship of the doctor to the public as that best expressible in the attitude toward the need of the human unit; but in these modern days, the expansion of the education in medicine, through the impulse of the general advance in scientific research, the elevation of the medical school to the plane of a school of applied science and the evolution of the study of preventive medicine have served to broaden the outlook and to apply the tenets of the Samaritan to service in a wider field. No longer the servitor of the individual solely, though that office must always be conserved, the physician, to a greater or less extent, according to his abilities, has become a factor in public interests. Within his own peculiar province, still an arbiter of last recourse, he is coming to be called more in counsel by the other factors in the community welfare and, as a natural result of his own broadening thereby, is coming to take, increasingly, the initiative in matters of public concern which especially appeal to him from his own point of view.

In all matters which deal with a deviation from the human normal average, his intimate investigation of the human unit has afforded the physician the foundation of information for application to general community conditions and opens to him a sphere of usefulness, not only in the study of preventable diseases of the body and the mind, but in the study of preventable causative conditions also.

The safeguarding of the public health, in the broadest possible construction of that term, is, therefore, a legitimate outcome of the application of the original Samaritan principles to modern community conditions; and that this is a duty especially incumbent upon the medical profession to discharge is made plain not only by the public demand for such service, but by the educational provision which is being increasingly made to meet it, a striking instance to this effect being the new medical department of Harvard University, in which there is to be provided not only training for both undergraduates and graduates in medicine, but provision for special students, both within and without the profession, seeking instruction in public hygiene, in all that pertains to the application of medical teaching to the conduct of public institutions, and to welfare work in the safeguarding from the results of unwholesome living and the deleterious effects of the trades. In the light of this view it has seemed advisable to our president to devote a session of the present meeting to the illustration of this subject as it is presented in the program before you.

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* Chairman's address at the Massachusetts Conference of Charities, held in Worcester.

Two important subjects concerning the safeguarding of the public health, suggested for consideration, have been purposely omitted from the program for different reasons; in both of them the responsibility for the initiative rests especially with the medical profession. The first is the safeguarding from tuberculosis, which is omitted because it is already the subject of an individual campaign, vigorously prosecuted. The second is the subject of the, so-called, venereal diseases, especially propagable by relationship between the sexes but communicable also in other ways.

However much the medical profession may be at one in the recognition of the community injury effected by these latter diseases, it is by no means united as to the manner in, and the extent to, which the knowledge of which it is possessed should be brought before the public; and until such societies as that of Moral and Social Prophylaxis and the special committees appointed by various medical societies throughout the country have come to a definite conclusion of their own, the public consideration of this subject may, advisedly, be left in abeyance.

That it is a subject to be considered with as little sentimentality and upon as rational a business basis as that applied to other communicable diseases there is no matter of doubt, but the foundation for such consideration must be, first, the scientific ascertainment and tabulation of facts, and, second, a careful consideration and determination of the form of public education to be applied.

Since impairment of health and, correspondingly, of wage-earning capacity has an important bearing upon that which charitable organizations are called upon to consider, and because medical charities are open to large criticism on account of their pauperizing tendencies, it is well that the physician and the educated social worker should not only take counsel together, but have opportunity for the public, and educative, discussion of such problems as they have in common.

With such opportunities the outlook of the medical profession toward public service inevitably widens, the array of questions in which the physician may take elucidative part lengthens, and such subjects as the relation of hospitals to the community, the establishment of medical police work upon more definite and effective lines, the educational differentiation of defectives, the extension of compensatory education to the mentally sound but physically disabled, the betterment of transportation facilities for the sick and the insane by the establishment of a uniform ambulance system on railways, and other and newer problems, the outgrowth of community centralization, may advisedly be made subjects for conference in future meetings of this association.

To such gatherings as this the term conference is justly applicable; the bringing together of earnest and purposeful workers along special but related lines of social service, the presentation of the objective from various standpoints, the comparison of results and the suggestion of additional activities, broaden information, stimulate effort and strengthen endeavor.

THE DECREASE OF INFECTIOUS DISEASES CONSEQUENT UPON THE APPLICATION OF PREVENTIVE MEASURES.*

BY JOHN H. MCCOLLOM, M.D., BOSTON,

Physician for Infectious Diseases, Boston City Hospital; Resident Physician, South Department (Infectious Service); Assistant Professor of Contagious Diseases, Medical Department, Harvard University.

In this paper an attempt will be made to show what has been done in the past few years towards the diminution in the frequency of the three principal infectious diseases, namely: diphtheria, smallpox and scarlet fever. It is beyond the scope of this paper to say very much regarding tuberculosis, typhoid fever and cholera. Certain suggestions will be offered regarding more efficient means of isolation and the importance of special hospitals for the treatment of the diseases just mentioned. These subjects will be treated from two standpoints; that of the general practitioner and that of health officials.

The science of preventive medicine which has made marked advances in this country in the past few years is yet in its infancy, and although much has been done in the prevention of disease, much yet remains to be accomplished. There is always a certain amount of friction between the general practitioner, health officials and the public. All of them have certain duties and certain responsibilities which they cannot evade. They should work in unison, in order to accomplish the best results. The health officials should be specially trained in their duties, as is the case in England and on the Continent. On the other hand, the general practitioner should not be sensitive regarding the invasion of his rights as the family consultant. He has *his* duty to perform not only regarding the individual patient, but also regarding the general public.

The sanitary code varies considerably in different countries. The most complete and satisfactory one is that of England. Sanitary laws in many instances must be arbitrary, and they sometimes seem to attack individual liberty. In no country in the world has the idea of individual liberty taken such strong root as in England. The English originated the law of *habeas corpus*, and the common saying that an Englishman's house is his castle shows very clearly how jealous the Englishman is of his individual rights; notwithstanding this, he submits willingly to laws which deprive him of a certain amount of individual license.

After the ravages of cholera in 1832 and 1833, preventive medicine commenced to have an important influence in reducing the death-rate of infectious diseases.

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* Read, by invitation, at the Fourth Massachusetts State Conference of Charities, Worcester, Thursday evening, Nov. 15, 1906.

The sanitary administration of England is, in accordance with the Public Health Act of 1875, in the hands of a central authority, the local government board and local authorities, the local boards of health.

In 1776, the first steps were taken in France for the establishment of a public sanitary service. Each district has a council of public health, which corresponds to our boards of health. The duties of the medical officer of health are practically the same as those of England.

In other continental countries the rules and regulations regarding infectious diseases and other sanitary matters are quite strict and rigidly enforced.

It is a fundamental principle that, in order to limit the spread of a disease, its cause should be discovered. It is in this direction that valuable work has been done the past few years, not only by foreign investigators, but also by our own State Board of Health. The establishment of local health boards is no new thing, but the methods incident to increased knowledge of disease, as well as the power and responsibility of health officers, have materially changed. In 1797, more than one hundred years ago, an act of the legislature was passed authorizing the establishment of local boards of health. This act was changed slightly in 1817, and again in 1878. The text of the Act of 1895, now in operation, is as follows:

"Every town in the Commonwealth may elect a board of health by ballot at the annual meeting of the town, or at a meeting legally warned for this purpose, consisting of three persons, to serve, one for the term of three years, one for the term of two years and one for the term of one year, beginning with the day following such town meeting or until their respective successors are chosen and qualified; and thereafter such town shall, at its annual town meeting, choose in the same manner one person who shall hold office for three years from the day following such town meeting or until another is chosen and qualified in his stead. If no such board is chosen the selectmen shall constitute such board of health."

It will be seen from this that there is no mention of a physician on the board, but later an act was passed in which it was expressly stated that in cities and towns of more than five thousand inhabitants one member of the board should be a physician. In the acts of the legislature of 1895, so much of Section 3 of Chapter 218 of the Acts of the year 1894 as provides that one member of the board of health shall be a physician shall not apply to towns in which the selectmen constitute the board of health.

The organization of a state board of health is of much more recent date than that of local or city and town boards of health. In 1849, the idea of the State Board of Health of Massachusetts was brought to public notice, but the board was not established until twenty years later. There had been during the year 1849 a great deal of infectious disease, and the death-rate had been extremely high in Massachusetts. Dysentery, scarlet fever and typhoid fever had been extremely prevalent, and in addition Asiatic cholera had invaded the state causing the death of about 1,200 of the population. In that year a commission was appointed by the legislature to report upon the sanitary condition of the state. This commission advised the establishment of a general board of health, the duties of which were very clearly stated. When the board was finally established in 1869 under the title of the State Board of Health and Vital Statistics, it was organized very nearly in accord with the suggestions of the sanitary commission of 1849. The members of this commission were Lemuel Shattuck, Nathaniel P. Banks and Jehiel Abbott, men identified with the history of the state fifty years ago, one of whom was governor at a later period. No one of them was a physician, and, therefore, the medical profession must be relieved of the public suggestion of making an exaggerated claim for the importance of sanitary science. In the introduction of the report of the commission relative to the importance of public health regulations, the following passage appears:

"We believe that the conditions of perfect health, either public or personal, are seldom or never attained, though attainable; that the average length of human life may be very much extended, and its physical power greatly augmented; that in every year, within this Commonwealth, thousands of lives are lost which might have been saved; and that tens of thousands of cases of sickness occur which might have been prevented; that a vast amount of unnecessarily impaired health and physical debility exist among those not actually confined by sickness; that these preventable evils require an enormous expenditure and loss of money, and impose upon the people unnumbered and immeasurable calamities — pecuniary, social, physical, mental and moral — which might be avoided; that means exist, within our reach, for their mitigation or removal· and that measures for prevention will effect infinitely more than remedies for the cure of disease."

Admirable as this report of the sanitary commission was, it took twenty years for the public to appreciate the importance of a state board of health that should have cognizance of all diseases dangerous to the public health. Since 1869, when the board of health was organized, rapid advancements have been made in the prevention of contagious diseases, not only in man, but in the lower animals, and the power of a board of health to abate nuisances has been very much increased. The state board of health, as well as local boards of health, now, by statute law, have power to abate nuisances, sources of filth and causes of sickness, whether arising from contagious diseases or due to an infected water supply. In the early history of health boards very little is said regarding diphtheria and scarlet fever. The etiology of typhoid fever at that time was not known, and, therefore, very little attention was paid by local boards of health to the water supply. The cause of cholera was not known, and, therefore, very little was done in preventing epidemics of this disease. Smallpox, however, as it was the most dreaded and fatal disease of the early part of the nineteenth century, did receive great attention at that time. In 1802, the Boston Board of Health instituted experiments remarkable for their accuracy to demonstrate the protective power of vaccination. These experiments were unique in their nature and are worthy the careful consideration of any one interested in this subject.

In the Acts of 1886, Chapter 104, Section 4, the powers and duties of the State Board of Health are thus defined:

" The State Board of Health shall take cognizance of the interests of health and life among the citizens of the Commonwealth. It shall make sanitary investigations and inquiries in respect to the causes of disease, and especially of epidemics and the sources of mortality and the effects of localities, employments, conditions and circumstances on the public health, and shall gather such information in respect to those matters as it may deem proper, for diffusion among the people. It shall advise the government in regard to the location and other sanitary conditions of any public institutions."

In the Acts of 1894, Chapter 218, Section 4, further duties of the board in case of contagious diseases are thus defined:

" If smallpox or any other contagious or infectious disease dangerous to the public health exists, or is likely to exist in any place within the state, the state board shall investigate the same, and the means of preventing the spread thereof, and shall consult thereon with the local authorities, and shall have co-ordinate powers as a board of health, in every place, with the board of health thereof or with the mayor and aldermen or the selectmen, if no such board or officer exists in such place."

One very important duty of a board of health is that regarding death certificates. It is by careful supervision of these that frequently the prevalence of any disease in a given locality can be determined.

A second important duty of the board is the supervision of the water supply. Typhoid fever and cholera are disseminated by a polluted water supply. The history of Boston before and since the introduction of Cochituate water abundantly proves this. In Boston, for instance, before there was a general supply of water from a non-infected locality, the ratio of deaths from typhoid fever was very large. For the four years from 1846 to 1849 the average rate of mortality from this disease was 17.4 per 10,000 of the population; after the introduction of Cochituate water in 1848 the rate commenced to decline, so that from 1850 to 1854, inclusive, the average was 8.2, less than one half as great as in the previous four years. Since 1854 the rate has, with one exception, that of the semi-decade from 1870 to 1874, inclusive, gradually diminished to 1.96 per 10,000, the rate for 1905.

In the cholera epidemics of 1832, 1849, 1854 and 1866 the dangers of an infected water supply are manifest. The history of the outbreaks of this disease in Hamburg in 1892, as compared with Altona, is an apt illustration of this fact. The water supply of Hamburg was taken immediately from the Elbe without proper filtration; the supply of Altona was from the same source, but before the water was used, it was subjected to very careful filtration. In Hamburg there was a frightful epidemic of cholera; in Altona, a short distance from Hamburg, there were only a few cases of the disease. Hamburg, unlike most cities, has learned wisdom from experience, and has now one of the most elaborate and perfect systems of water filtration in the world.

A third important duty of a board of health is a medical examination of dairies and of the men employed in these dairies; for it has been demonstrated time and time again that a man ill with walking typhoid may infect the milk so as to cause an outbreak of this disease. Some five epidemics of typhoid fever in Massachusetts, of more or less severity, have been traced to infected milk supplies. As bearing on this fact, it is of interest to note that in the foreign cities where the ratio of deaths from typhoid fever is much lower than in this country, there is a most rigid and careful supervision of the milk farms, both as to their sanitary condition and as to the health of the employees. In London, for instance, where typhoid fever is comparatively rare, large dairy companies have been formed whose supply of milk is based on most minute and rigorous regulations. To prevent the spread of infectious diseases by milk, the farmer is required by his contract to call a physician if any person employed in his dairy is taken ill. If the disease is infectious, the secretary of the company must be at once informed, who will indicate the measures to be taken. In the event of serious disease the delivery of milk from the farm is forbidden. Arrangements are made with local medical officers of health to obtain information as to each case of infectious disease arising in the neighborhood of a dairy. In Berlin, also, there are stringent regulations regarding persons who have come in contact with any infectious disease having anything to do with milk. Similar observations are true regarding Vienna and Glasgow. In Paris, a large proportion of the milk comes from dairies situated in the city. The employees of these dairies are subjected to a careful medical supervision, and it is very reasonable to suppose that this has a decided effect in reducing the death-rate from typhoid fever in that city. In Boston, the milk comes from so many different places and such long distances, and passes through so many hands, that it would be difficult to absolutely trace the source of infection in a given case. But there can be no doubt that in Boston, as well as in many other cities, infected milk may be and is, much more frequently than is generally supposed, a cause of an outbreak of typhoid fever. While this statement so far as Boston is concerned may not be capable of positive demonstration, it is certainly worthy of careful consideration.

A fourth duty of a board of health is the establishment of compulsory notification of all contagious diseases dangerous to the public health. This was established in England quite a number of years ago and was known as the Compulsory Notification Act, and for a time was bitterly opposed not only by the laity but also by physicians. It was claimed that it interfered with private rights; that it was a source of annoyance to the individual; and that it interfered with his ability to earn a living. Some physicians opposed it on the ground that it violated professional etiquette. After much discussion the act was finally passed in England, and is now generally enforced. The degree of infectivity should also be an important factor in deciding the question of compulsory notification. Placarding the houses, in certain instances, where there is a case of infectious disease, should be the result of the compulsory notification. For over a hundred years a compulsory notification of smallpox has been required. In Boston it was not until 1877 that notification was required in cases of scarlet fever. In 1878, diphtheria and croup were placed on the list of compulsory notifications. In 1881, typhoid fever was also placed on this list. Within three years it has been required to report cases of consumption.

A fifth duty of a board of health, and perhaps the most important, is the establishment of isolation hospitals, or fever hospitals as they are called in England, for the care and treatment of patients ill with infectious diseases. A hundred years ago smallpox hospitals were established in nearly every large city, because the fear of smallpox was much greater than that of the other infectious diseases. Some thirty-five years ago Glasgow, which had suffered more than any other city from the inroads of diphtheria, scarlet fever and measles, established the first fever hospital for the treatment of these diseases. In 1862, an act was passed to provide a fever hospital in Glasgow. A beginning was made in the early winter of 1864, and a pavilion hospital of wood on brick foundations, erected, furnished and opened with 136 beds on the 25th of April, 1865; this was the first Municipal Fever Hospital. It must be borne in mind that at that time the population of Glasgow was about 428,231, and that previous to the erection of this hospital there were no accommodations for diphtheria, scarlet fever and measles. These diseases ran riot in the crowded tenement houses. Isolation was impossible; whole families would be swept away by either diphtheria or scarlet fever.

Boston at that time with a population of 192,318 had no provision for infectious diseases other than smallpox.

The effect of the first municipal hospital at Glasgow, which, as has just been stated, was opened on the 25th of April, 1865, was such in diminishing the death-rate from infectious diseases that a large estate was purchased for hospital purposes. On this estate was erected a pavilion hospital capable of accommodating some four or five hundred patients. There was also a laundry and disinfecting plant where bed linen used by patients ill with infectious diseases treated at their homes could be sent to be disinfected and washed. The hospital itself was opened the latter part of 1870, and is known as the Belvidere Fever Hospital of the city of Glasgow.

The health authorities of Glasgow, not satisfied with the hospital accommodations at Belvidere because they were unable at certain times of the year to give each patient 2,000 cubic feet of air space, and because they were unable to vacate certain wards for six months for purposes of disinfection and renovation, decided to purchase land for a third fever hospital known as the Ruchill Hospital, which was opened by her Royal Highness Princess Christian on the thirteenth day of June, 1900. The entire cost of the Ruchill Hospital was about $1,250,000, and it will accommodate about 440 patients, allowing upwards of 2,000 cubic feet to each bed.

It is, therefore, evident that Glasgow is more liberally supplied with hospital accommodations for infectious diseases than any city in this country; or, to state it in a different way, there are beds for patients ill with infectious diseases for 9.79 out of every 10,000 of the population. This is a magnificent work in sanitary science, and has been a very important factor in lowering the death-rate of Glasgow to an astonishing degree. It is well to remember that the population of Glasgow in 1900 was 755,730, only about 200,000 more than that of Boston.

In London, the first fever hospital or hospital for infectious diseases under the charge of the Asylums Board was opened the last of September, 1871, but patients ill with diphtheria were not admitted until the 23d of October, 1888. Since the opening of the first hospital and the others that have been opened from time to time, there have been treated, to Jan. 1, 1901, 244,206 patients, 161,646 of whom were ill with scarlet fever; 48,529 had diphtheria. Typhus fever, which is always present to a greater or less extent in England, was represented by 2,351 patients. Typhoid fever, or enteric fever, as it is termed in England, caused the admission of 15,632; and there were admitted patients ill with other diseases, 16,048. It is interesting to note the diminution in the death-rate of diphtheria. In 1888, the death-rate from this disease was 59.30%. In 1889, it was 40.74%, but there was no marked diminution in the percentage until 1894, when the death-rate was 22.85%, co-incident with the use of antitoxin. In 1896, when antitoxin was more generally used, the rate was 17.69%. In 1900, the percentage was 12.27. Nine of these fever hospitals in London and one large convalescent home are under the charge of the Asylums Board. They are situated in different sections of the city, many of them in the outlying portions. All of them are in the centers of large tracts of land, so that they have an abundant supply of fresh air. [The names are as follows: the Eastern Fever Hospital, the North Eastern, the North Western, the South Western, the Fountain, the Grove, South Eastern, Park and Brook Fever Hospitals.] What immediately attracts a hospital man from this side of the water is the bountiful supply of air space: 2,000 cubic feet to each patient and fifteen feet of wall space. A second thing that also attracts his attention is the number of vacant wards, purposely kept vacant until an emergency arises for their use, or until the time has come to empty a ward for disinfection and renovation; a condition of things that has not been reached in this country. In London nine individuals out of every 10,000 of the population can be provided with good hospital accommodations, if ill with an infectious disease.

Previous to 1888 there was no special provision in Boston for the care of patients ill with diphtheria and scarlet fever, but as physicians viewed with dismay the constantly increasing prevalence of these diseases it was decided by the trustees of the Boston City Hospital in 1887 to erect two pavilions for this special purpose.

It is an interesting fact that the Board of Trustees of the Boston City Hospital established the first separate hospital for the treatment of infectious diseases in this country. This is known as the South Department of the Boston City Hospital, and was opened for the admission of patients Aug. 31, 1895.

In the twenty-fifth annual report for 1893 of the State Board of Health of Massachusetts, an article was published detailing the advantages of isolation hospitals, together with some of the measures which have been taken in other countries for their establishment and maintenance. When the report was written the provision for the separate treatment of infectious diseases in this state was very limited. The continued prevalence of this class of diseases, together with the rapid increase of population and of the consequent density in the cities and large towns, brought the importance of the subject more and more forcibly to the local sanitary authorities.

In 1894, an act was passed by the legislature bearing on this point. The text of the act is as follows:

ACTS OF 1894, CHAPTER 511.

" Section 1. In any city in which no suitable hospital accommodations have been provided for the care and treatment of persons suffering from contagious diseases dangerous to the public health, the board of health of such city may address a communication to the mayor thereof, stating that, in the opinion of said board, the safety of the inhabitants of the city demands that suitable accommodations should be provided for the reception and treatment of persons suffering from such diseases, other than smallpox and those of a venereal nature. The mayor shall forthwith transmit such communication to the city council and the city council shall forthwith order such hospital accommodations to be provided and shall make the necessary appropriations therefor.

" Sect. 2. Every city in which hospital accommodations have been provided in accordance with the provisions of this act shall make an annual appropriation for the maintenance of such hospital accommodations, and said appropriation shall be expended under the direction of the board of health, unless otherwise ordered by the city government."

As a result of an investigation of the State Board of Health in 1899, regarding the existence of hospitals for infectious diseases in Massachusetts, it appeared that in ten cities of this state and in the town of Brookline there was at that time provision for the reception of persons ill with infectious diseases except smallpox. Nine of these hospitals are in cities having a population of over 30,000 each. Four of these are supported by public funds, four by private funds, and three by both. In only three or four of the cities, and the town of Brookline, are the hospitals under the management of the local boards of health. In other cities the hospitals are managed by independent boards of trustees.

In the state of Massachusetts, as a whole, there are accommodations for 1.58 persons ill with an infectious disease out of every 10,000 of the population; in Boston there are accommodations for four out of every 10,000 as compared with London with a ratio of nine out of every 10,000, or with Glasgow with practically the same ratio.

The diagnosis of a mild attack of an infectious disease is frequently a difficult matter, but it is the mild and atypical forms that cause epidemics and not the severe and typical cases.

A mild attack of smallpox is of greater danger to the community than a severe attack. The only reason that there are not more mistakes made in diagnosis in this disease is due to the fact that smallpox at the present time is an extremely rare disease.

It is unnecessary in this paper to advance any argument in favor of vaccination, its protective power being so thoroughly well established. It is well, however, to appreciate the fact that vaccination eight days after exposure to a case of smallpox does not mitigate the disease. The importance, therefore, of vaccinating immediately on exposure and then forty-eight hours later to repeat the operation, so that if the first attempt is not successful, the second may be, is evident. It has been demonstrated that, if the vaccine vesicle arrives at maturity before the onset of the variolous symptoms, the disease will be modified and in some instances prevented. Well-vaccinated communities never have epidemics of smallpox, as is evidenced by the history of the German Empire.

Diphtheria. — The importance of a bacteriological examination in all cases of suspicious sore throat and where there is a profuse nasal discharge cannot be overestimated. Much has been said about the inaccuracy of cultural diagnosis, and while mistakes may be made in the laboratory, the chances of error are very much less in cultural diagnosis than in the clinical. One great source of error is carelessness in taking the culture. The swab is simply put into the mouth and does not come in contact with the membrane. The swab should be rubbed near the edge of the diphtheritic membrane and not over the center of the patch. Sometimes the swab is not rubbed sufficiently on the surface of the culture medium and consequently there is no growth. These may seem trivial matters, but as accuracy of diagnosis is all important, it is well before criticising the work of the laboratory to be sure that the critic himself is not at fault. The reaction of the culture medium is sometimes the cause of a mistake, as the serum may be acid or very strongly alkaline. The bacilli of diphtheria grow more abundantly and more characteristically on serum that is neutral or very slightly alkaline. Sometimes the serum is found to be perfectly dry, and when in this condition the growth is disappointing, as a certain amount of moisture is necessary for the growth of the organism. To sum up the whole matter in a few words: It can be said that in a given case, if the culture medium is of the proper reaction, if there is a sufficient amount of moisture; if the culture is taken with care, and the tube is placed in the thermostat within a short time after it has been inoculated and allowed to remain there for at least eighteen hours, the results will be satisfactory.

Some years few ago the writer made an examination of 500 throats in which the clinical diagnosis was doubtful, but there was a suspicion of diphtheria. In this investigation it was found that about 40% of the cultures contained the bacilli of diphtheria. It must be borne in mind that the diagnosis of diphtheria in these cases would not have been tenable without the aid of cultures. It was also noticed that in many instances a positive culture was obtained twenty-four or forty-eight hours before any membrane appeared. The importance of taking cultures in nasal diphtheria of a mild type cannot be too strongly emphasized, for this type of the disease in which a diagnosis is impossible without the aid of the microscope is responsible for the prevalence of diphtheria in the community. If these mild cases of diphtheria in the schools could be detected, there would be a marked diminution in the ratio of morbidity of this disease. In laryngeal diphtheria, however, cultures are frequently of no avail because the membrane is situated so far down that it is impossible to reach it with the swab, and, therefore, the diagnosis must be made from the clinical symptoms.

The statement has been made that the bacillus of diphtheria is frequently found in cultures from the throats of healthy individuals who have not been exposed to diphtheria. Loeffler found this organism 4 times in the examination of cultures from 160 well children. Park and Beebe found it in 8 out of 330. Kober found this bacillus 5 times in cultures from 600 individuals. Denny,[1] of Brookline, Mass., found the organism of diphtheria only once out of 235 cultures from normal throats. The writer examined 130 throats with this point in view, and in no instance was an organism found that gave the same staining reaction as the bacillus of diphtheria. In a few instances, however, bacilli were found having morphologically a marked resemblance to the organism of diphtheria, but the differentiation was easily made by the staining and cultural peculiarities. In these 1,455 examinations by different observers in only 18 instances were the bacilli of diphtheria found, giving a percentage of only 1.23.

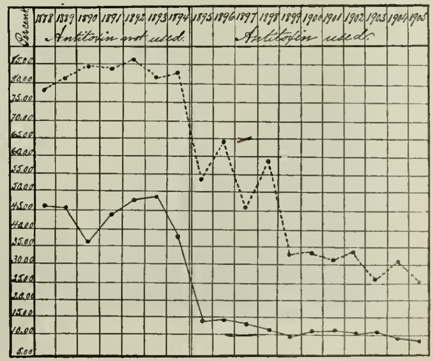
The statement has been made that the bacillus of diphtheria is very frequently found in the throats of perfectly well persons who have the care of patients ill with diphtheria. My experience is the opposite of this. In order to show that the organism is not found, as a rule, in the throats of attendants of patients ill with diphtheria cultures were taken from the throats of 120 nurses on duty in the diphtheria wards of the South Department of the Boston City Hospital, and in no instance was the bacillus of diphtheria found.

Previous to the discovery of Klebs and Loeffler the question of the release from isolation in a case of diphtheria was a very difficult one to decide. By means of cultural examination the physician is now able with a certainty to say that the patient is free from infection. Two negative cultures from the throat and from the nose should always be required. In certain rare instances the bacillus may remain in the throat for a very long time, but in these cases the organism, as a rule, is non-virulent and the inoculation of guinea pigs will definitely settle the question of virulence. As a matter of fact, a cultural examination shortens rather than lengthens the period of isolation.

A.

Per cent of mortality of diphtheria at the Boston City Hospital, proper, and at the South Department, from 1888 to 1905, inclusive. Per cent of mortality of intubations for the same time:
From 1888 to 1894, antitoxin not used.
From 1895 to 1905, antitoxin used.

Diphtheria = ——— Intubation = ………



So far as alleged "return cases" of diphtheria are concerned, it may be said that they are of such rare occurrence at the South Department of the Boston City Hospital as to prove the very great importance of cultures for discharge, as in no other way can it be definitely shown that the individual is free from infection. Cultures for the release of patients from isolation should be commenced ten days or a fortnight after the disappearance of the membrane and the cessation of the discharge from the nose. It is a waste of time and labor to commence taking cultures any earlier, and if the condition of the patient is satisfactory, it is unnecessary to wait any longer.

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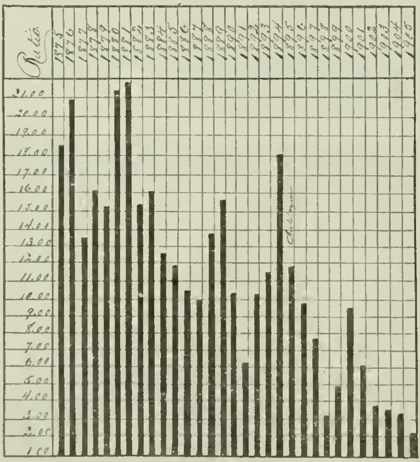
[1] Bacteriology and the Public Health. George Newman, M.D.

In 1894, antitoxin commenced to be used to a somewhat limited extent. Like everything new in medicine it required some little time for medical men in this country to become convinced of its value in the treatment of diphtheria. Without going into a lengthy account of the advantages to be derived from the serum, a glance at Chart A, which gives the percentage of mortality of diphtheria of all types at the Boston City Hospital, proper, from 1888 to 1894, and in the South Department from 1895 to 1905, inclusive, may be of interest. The broken line represents the laryngeal cases, and it will be seen that previous to 1895 the death-rate from this type of the disease was extremely high; that in 1895 the September of which year the South Department was opened, the death-rate commenced to fall in a marked degree. Or, to put it in another way, considerably more than three fourths of the patients ill with larygeal diphtheria, before antitoxin was used, died. Since antitoxin has been used, nearly three fourths have recovered. By following the full black line, which represents all the types of the disease, it will be seen that the death-rate previous to 1895 was about 45%; that since 1895 it has been about 10%.

B.

Ratio of mortality of diphtheria per 10,000 of the population, in Boston, from 1875 to 1905, inclusive.



Average ratio of mortality from 1875 to 1894, 14.61.
Average ratio of mortality from 1895 to 1905, 6.

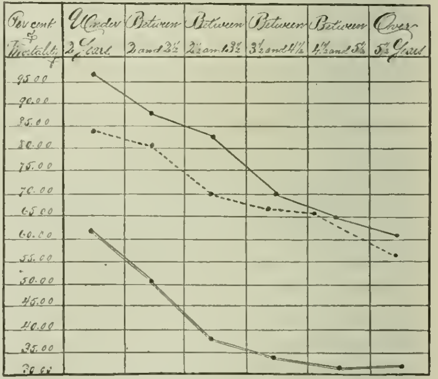
Chart B shows the ratio of mortality of diphtheria per 10,000 of the population in Boston from 1875 to 1905, inclusive. Without taking up each year in detail it will be seen that, in 1894, 18 people out of every 10,000 died from diphtheria. In 1905, two and a fraction died. The effect of antitoxin in the operative cases of diphtheria is shown in Chart C, an examination of which shows that there has been a very marked diminution in the mortality rate in this type of the disease since the advent of antitoxin.

Scarlet fever. — The diagnosis of a severe attack of scarlet fever after the appearance of the eruption is not particularly difficult. The diagnosis of a mild attack of scarlet fever is frequently very difficult, but a careful examination of the throat and an appreciation of the peculiar appearance of the tongue will, in most instances, be sufficient to enable the physician to arrive at correct conclusions. There are cases, however, in which the symptoms are so slight that it is impossible, no matter how much experience a man may have had, to decide definitely for or against the existence of scarlet fever in a given case. The only safe course to pursue is to isolate the patient for a certain length of time until he either does or does not desquamate, although the absence of desquamation is not absolute proof that the patient may not have had scarlet fever.

C.

Percentage of mortality of tracheotomy cases and of intubation cases without antitoxin, and of intubation cases with antitoxin.

Bourdillat's Tracheotomy Cases = ————
Waxham's Intubation Cases = ··········
South Department Intubation Cases = ════



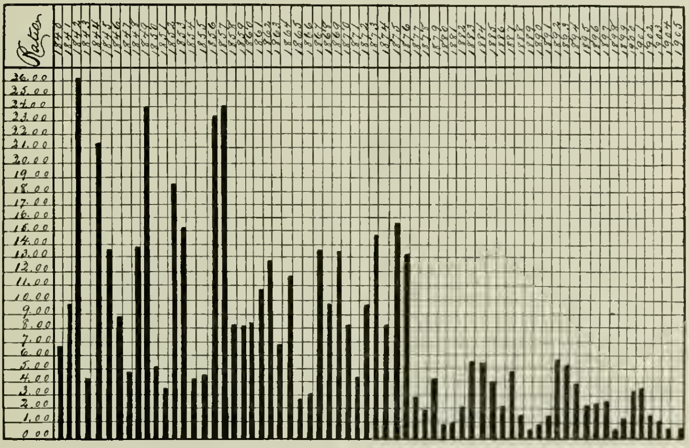
The percentages of Bourdillat's tracheotomy statistics are estimated on 1,024 operations.
The percentages of Waxham's intubation cases are estimated on 1,072 operations.
The percentages of the South Department intubation cases are estimated on 1,671 operations.

The prevalence of scarlet fever in the community is not due to the severe and therefore recognized types of the disease, but is due to the mild and unrecognized forms, as children suffering from which attend the public schools and cause epidemics of the disease.

Chart D gives the ratio of mortality of scarlet fever per 10,000 of the population in Boston for sixty-six years. It will be seen that previous to 1878 scarlet fever was a very important factor in increasing the death-rate of Boston; that since that time, although there have been frequent outbreaks of the disease, there have been no frightful epidemics like those in 1842, 1848, 1856 and 1857. It is also worthy of note that since 1895, when the South Department was opened, there has been no general epidemic of scarlet

D.

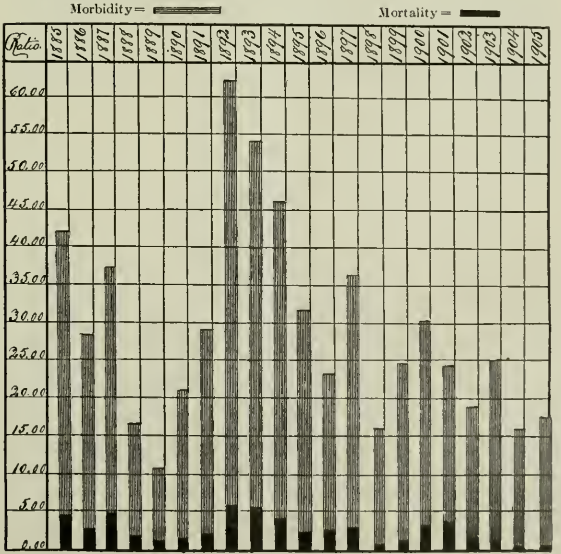
Ratio of mortality of scarlatina per 10,000 of the population, in Boston, for sixty-six years, 1840 to 1905, inclusive.



Since 1895, when the hospital was opened, there has been no general epidemic of scarlatina in Boston, as compared with previous years.

E.

Ratio of morbidity and ratio of mortality of scarlatina, in Boston, per 10,000 of the population, from 1885 to 1905, inclusive.



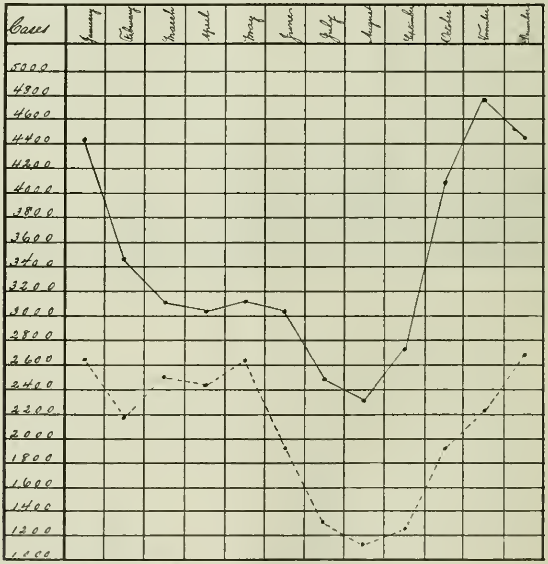
Average ratio of morbidity from 1885 to 1894, inclusive, 34.84.
Average ratio of morbidity from 1895 to 1905, inclusive, 24.25.
Average ratio of mortality from 1885 to 1894, inclusive, 2.99.
Average ratio of mortality from 1895 to 1905, inclusive, 1.53.

fever in Boston as compared with previous years.

Chart E shows the ratio of morbidity and the ratio of mortality of scarlet fever in Boston, per 10,000 of the population, from 1885 to 1905, inclusive. In 1892, 62 people out of every 10,000 in Boston had an attack of scarlet fever. In 1905, 17 people out of every 10,000 were ill with this disease. It is a significant fact as bearing on the importance of isolation hospitals that since 1895, when the South Department was opened, the ratio of morbidity of scarlet fever has diminished to a considerable extent; for instance, compare the years 1892, 1893 and 1894 with any of the subsequent years, and in no instance is the ratio of morbidity as high as in the former years.

F.

Cases of diphtheria and scarlatina in Boston, by months, reported to the Board of Health from 1890 to 1905, inclusive.
Diphtheria = ——— Scarlatina = - - - - -



Diphtheria, 41,199 cases. Scarlatina, 24,978 cases.

Allusion has already been made to the importance of isolating patients ill with mild attacks not only of diphtheria but also of scarlet fever. As the majority of these patients attend the public schools, the importance of a careful medical inspection of the children in the schools, as was recommended by the writer in 1891, is evident. It is a source of gratification that this suggestion has at last begun to bear fruit.

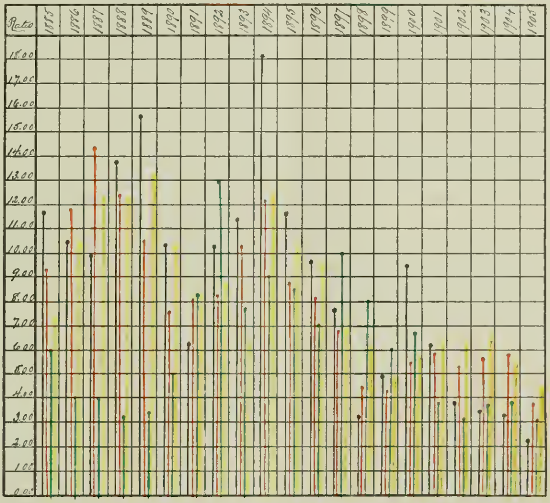
In order to demonstrate the rôle that mild attacks of diphtheria and scarlet fever play in the prevalence of these diseases Chart F has been prepared. This chart gives the number of cases of diphtheria and scarlet fever in Boston, by months, reported to the Board of Health from 1890 to 1905, inclusive, a period of sixteen years, comprising 41,199 cases of diphtheria and 24,078 cases of scarlet fever. By following the curve of the full black line which represents the cases of diphtheria, it will be seen that in the month of January for sixteen years the number of cases of diphtheria was 4,400; that there was a diminution in the month of February; that during the months of March, April, May and June, although there was a slight diminution in the number of cases, it was not very marked. The schools close the last of June, and the diminution from June to July is quite marked. The number of cases reached the minimum in August. The schools open in September, and there is an increase in the number in this month. The greatest increments, however, occur from September to October and from October to November, the highest number being reached in the latter month. There is a slight decrease in the month of December. December and January are practically the same. The same conditions obtain in scarlet fever, the lowest point, as in the case of diphtheria, being in the month of August and the increase commencing in September and ending in December. As in diphtheria, the number in the months of December and January is practically the same. It is evident that meteorological conditions are not factors in increasing the number of cases; therefore, it is plain that these mild cases are very important factors, if not the only factors, in causing the prevalence of these diseases.

It is always well to compare the results obtained in different cities. In Boston the percentage of cases of diphtheria treated in the hospital is larger than in New York, Philadelphia and Brooklyn. Chart G gives the ratio of mortality of diphtheria per 10,000 of the population in Boston, New York, Philadelphia and Brooklyn, from 1885 to 1905, inclusive. It will be seen from this chart that Boston, which is represented by the black line, previous to 1895, suffered more from diphtheria than any of the cities taken for comparison. For instance, compare the years 1885, 1888, 1889 and 1894 with any of these other cities, as represented by the colored lines, New York being red, Philadelphia green and Brooklyn yellow; since 1895, with one exception, 1900, it will be found that Boston is lower than any of these other cities. In 1905 Boston is at the bottom of the list as compared with the other cities. This would seem to be a conclusive argument in favor of isolation hospitals.

G.

Ratio of mortality of diphtheria, per 10,000 of the population, in Boston, New York, Philadelphia, Brooklyn, from 1885 to 1905, inclusive.

Boston = ▬ New York = 🟥 Philadelphia = 🟩 Brooklynn = 🟨



In order to accomplish much in the suppression of infectious diseases it is all important that there should be cordial co-operation of the physicians health officers and the public. There is always a certain amount of friction, which is a positive detriment to the well being of the community. The health officer should be specially trained for his duties.

In a paper by Prof. H. C. Ernst, read at the thirty-third annual meeting of the American Public Health Association, the importance of special instruction in medical schools for health officers was strongly emphasized. Foreign countries are very much in advance of us in this particular, and the result is that the investigations of subjects pertaining to public health are on a scientific basis. Much of the work that has been done by local boards of health in this country has been crude and unsatisfactory. It is the duty of health officers, whether members of boards of health or appointed by them, to elevate the standard and increase the knowledge of public hygiene in this country, which cannot be done without the assistance and co-operation of the family physician. It is the duty of the general public to assist the family physician and the health officers in this work.

MEDICAL INSPECTION IN SCHOOLS.*

BY ROBERT W. LOVETT, M.D., BOSTON.

There are certain propositions relating to the public health which would seem self-evident, but, curiously enough, the community adopts some of them while it neglects others. For example, it is pretty generally agreed that it is objectionable to allow sewage to run into streams or ponds used for drinking water; it is quite generally accepted that plumbing connected with sewers must be ventilated by traps; but with regard to the proposition that children should be placed under the most favorable possible conditions during school life there has been but little interest as expressed by public activity.

In the report of the Board of Education of Massachusetts, dated January, 1906, there were only fourteen towns and cities that had regular school inspection. The movement of school inspection was begun in this country, in Boston, in November, 1894. Governor Guild recommended in his inaugural message in 1906 that there should be a general school inspection in the state, and the legislature of 1906 passed a law requiring school inspection in every city and town in Massachusetts. Here, then, is a movement that dates its beginning twelve years ago in Boston, yet in January, 1906, has been adopted by only fourteen cities and towns and is now required in every city and town in the Commonwealth. What are the facts with regard to this school inspection? Is it necessary? And if so, why and what should its limits and methods be?

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* Read at the Fourth Massachusetts State Conference of Charities, Worcester, Nov. 15, 1906.

In the first place as to its necessity. Children are not on the whole favorably affected by school life as shown wherever figures have been collected. In Copenhagen 18% of boys were sickly on entrance, 30% sickly after two years and 40% at puberty. The percentage in girls increased from 12% to 32% in three years. Pilger found that the youth of Germany increased in nervousness from 10% in the lower grades to 60% in the higher. The Danish Government Commission found 29% of schoolboys, 41% of schoolgirls sickly. The Swedish figures show 5% sickly in the first year, 36% in the second and 40% in the fourth. This does not look as if the school conditions of the countries investigated were favorable to health.

The statement is made by President Eliot that in the primary grades of school life 40% of the children are beyond the normal age for that grade and from 20% to 40% in the grammar schools are over the maximum age for that grade. It is well known that mental progress is retarded and mental dullness of a marked degree induced by errors of vision, deficiency of hearing, the presence of a third tonsil and the like. Of 90 incorrigible children in Philadelphia 64% presented physical defects. In New York from March, 1905, to March, 1906, there were 75,000 examinations of school children and 24,000 of the children examined showed defective vision, and 1,600 defective hearing. These and other defects required medical attention in 50,900 of the 75,000 examined. A claim for the usefulness of school examination can be based alone on the fact that from 25% to 33% of school children show defective vision. To push children with such defects as those mentioned is cruel, uneconomical and useless.

It would seem warrantable to conclude from the figures presented that school inspection is useful. It is not very expensive. In Boston the expense was $17 for 1,000 of the inhabitants, making an expense of $10,200 in one year in Boston. The question is, if this is not really money economically spent and if more than that is not saved in hospital and board of health expense. Dr. Durgin estimated that the whole cost of medical inspection has been saved to the city at the City Hospital.

The generally accepted method of school inspection is to notify the parents of the child's condition and to leave the responsibility with them, where it belongs. Hospitals are at hand where the child may be taken for advice from specialists, and for general ailments they are treated by their family physician. In many cities nurses have been added to follow up the children at home, and most favorable reports of their usefulness have come where they are employed.

The functions of school inspection should be as follows: First, to detect infectious disease in its early stages, thus cutting down the danger of contagion; second, to detect and cure or provide for defective children; third, to improve school conditions.

First, to detect infectious disease in its early stages appeals most to the general public and is the most powerful means of pushing the cause. No one wishes his child to contract scarlet fever, measles, diphtheria or tuberculosis. There is no room for discussion, and detection of these diseases in their early stages is acceptable to every one. In New Bedford in one year when school inspection was in force 1,093 notices of infectious disease were reported to the superintendent of schools. The next year when no such medical inspection was in force 170 cases only were reported to the same office. The cause of the suspension of medical inspection was a disagreement between the board of health and the city council as to the amount of the appropriation. It is quite clear that the schools are one probable source of the spread of infectious disease. From the report of the Committee on School Hygiene of the Worcester Physical Educational Association I quote as follows: "Extensive studies indicate that over 90% of the deaths from contagious diseases, such as diphtheria, scarlet fever, whooping cough and measles, occur before the age of ten. The detection of these diseases early and the isolation of the affected child is an evident matter of public utility."

The second function of school inspection is the recognition of the fact that all children are not alike and that mental dullness and school backwardness are most often the result of some physical defect. Such defective children should be made right, or if this is not possible should be especially provided for. This is such a well recognized function of school inspection that it requires only to be mentioned. I quote from a letter printed in the report of the Civic League on "School Inspection":

"A boy of five attended school a half year without learning even one letter. His teacher concluded that he was deficient in brains, and questioned whether he ought to be allowed to attend longer, a not unusual conclusion in such cases. An examination of his eyes, however, showed that they were astigmatic to a degree which made it a physical impossibility for him to distinguish one letter from another. The defect was remedied, and he then proved to be able to learn as well as his fellows.

"A cabinet maker, a very superior workman, who was at my house recently, told me that as a boy he was a failure at school, and that when he tried to learn the carpenter's trade at the age of sixteen he failed until he accidentally discovered, and then supplied, his need of glasses for near-sighted eyes, after which his success was immediate. 'Why, I had never seen a line,' he said.

'only a blur, and how could I cut to that?' Had his defect been discovered a few years earlier it would have saved him some years of humiliating failure, and might have changed his whole life."

The third function of adequate school inspection must be the preventive or remedial side. It is of little use to find out that 26% of school children have lateral curvature of the spine, and that it progresses during school life from about 18% in the lower grades to 33% in the higher, unless we do something about it in the way of providing proper school furniture as has been done on a large scale in Boston by the School House Commission with satisfactory results. The school furniture in general use is, as a rule, badly conceived, adapted with little or no care to the individual child and calculated to induce improper attitudes and to favor lateral curvature.

It is obvious from the figures already given that school conditions in general are not favorable to health and that efficient inspection might be provided for making them more so. The importance of proper light, air space and ventilation need not be dwelt upon. The whole curriculum must be investigated. Is it well arranged? Is the progression of studies a proper one? Are the children pushed too hard? Is sufficient stress laid on frequent recesses, manual training and recreative studies? As an example of the problems to be met is the following one suggested by Dr. T. F. Harrington, of Lowell: "Children grow not at a uniform rate, but by fluctuation. The greatest increase in weight occurs in the winter, the greatest growth in height from March to August. Yet in the spring term, when the child's resistance is least on account of his growth, come the examinations and public exhibitions." This fluctuation of growth was not known in 1630 when our present school system was imported from England, but it is known now, and yet we do not change our examinations to January when height and weight are balanced and the child in his best condition, but keep them in June. The diminution of fatigue is not studied as it should be, nor is the question of the value of gymnastic exercises as given a settled one.

An experiment tried in England is suggestive. One of the schools was divided into two parts, half of the boys working for the regular school hours and the other half working only one half of the time and playing out of doors the other half. At the end of the school year the examination showed that the half who worked all of the time were behind the others in their studies. The value of nature study, manual training and recreative studies, such as geography and music, must be formulated and the whole curriculum investigated from a modern point of view.

Finally, it may be said that the question of school inspection refers not entirely to the public schools, for in them on the whole the hygienic conditions are quite as good, if not better, than they are in most private schools conducted in dwelling houses, badly lighted, badly ventilated and in no way adequate to their purpose or properly equipped.

The movement in favor of school inspection is a recent one. We are, I believe, on the verge of a reform of great importance. Let us hope that the community may be led to see that decent school conditions and the health of their children are as important to them as proper plumbing in their houses or the protection of their drinking water. It would seem that publicity was the best means at our disposal to create public sentiment; and above all let us not forget that the medical inspection of schools properly formulated should have a strong preventive aspect.

Clinical Department.

A CASE SIMULATING CIRRHOSIS OF THE LIVER, DUE TO CARCINOMA OF THE KIDNEY AND VENA CAVA.

BY CHARLES F. WITHINGTON, M.D.,
Visiting Physician, Boston City Hospital.

Wm. D., age fifty-six; grinder; born in England. Entered hospital, May 15, 1906. Drank very hard as a young man. Of later years drinks "ale and beer in moderation."

Thinks he was well until ten weeks ago, when he became dyspneic and his legs gave way under him. He continued to work off and on, being fairly comfortable when sitting, but unable to climb stairs. Considerable digestive disturbance, belching, nausea, vomiting, constipation. Has noticed swelling of legs only recently.

Physical examination. — Well developed and nourished. General condition poor; slight jaundice. Arcus senilis and some arterial rigidity. Pulse, fair strength. No general glandular enlargement. Abdomen distended, not tender, contains free fluid; dilated, superficial veins. Liverdullness fifth rib to level of umbilicus, 18 cm., edge distinctly felt. Splenic dullness 12 cm., edge not felt. Moderate edema of both legs, more on right. Superficial veins slightly distended. Knee jerks absent. No ataxia. No Romberg symptom. Heart dullness at upper edge, third rib, 2 cm. to right and 14 cm. to left of median line. Apex in fifth space. Sounds of fair strength. No murmurs. Fluid in both pleuræ, right from mid scapula, left from angle.

The first urinary examination showed nothing abnormal, except that the total amount was at first diminished. This increased and on the eighth and ninth days was 66 and 64 oz. respectively. Then it rather rapidly fell to 21 oz. On that day the specific gravity was 1,024, albumin slightest possible trace, an occasional hyaline cast with renal cells adherent. Few small and large round cells, the latter occasionally fatty. Calcium oxalate crystals. No blood seen. The edema steadily increased, the right leg being the more swollen. The fluid in the abdominal and pleural cavities also increased, and the patient rather rapidly lost strength. He became incontinent and the heart action grew weak. Death occurred May 28.

In view of the absence clinically of evidence of sufficient disease either of heart or kidneys to account for the great edema, because of the portal obstruction, the dilated veins, large liver and the strongly alcoholic history, the diagnosis of cirrhosis of the liver was made.

AUTOPSY.

The autopsy was made five hours post-mortem. The edema of the legs is noted as then being slightly greater on the left side instead of the right, as at first. There was also an area of ecchymosis 14 by 20 cm. on the left leg.

The abdominal wall was tense and contained a moderate amount of yellow fat. Both the deep and superficial veins were distended, the former more markedly, measuring 4 cm. in diameter. The peritoneal cavity contained 1 liter of clear straw-colored fluid which solidified on heating. The omentum extended well into the pelvis and its veins stood out prominently. Mesenteric lymph nodes not increased in size or consistency. Diaphragm to fifth space left, fifth rib right.

The pleural cavities had a few thin firm adhesions. Scattered throughout the parietal pleuræ, most marked along the course of the ribs, were numerous irregularly distributed small, round, jet-black, smooth areas, "anthracosis"; (more properly siderosis, as the patient, it will be remembered, was a grinder by trade). In a small area in the right anterior parietal pleura where the latter is reflected over the pericardium, the two layers of the pleura were united by many firm, fibrous bands. Here the small jet-black areas above described were more numerous, being closely packed together.

The heart was not abnormal, save for a few scattered, small, thickened areas along the mitral curtain, and moderate myocardial degeneration. The coronaries were normal.

The lungs. — Scattered throughout the pleuræ of both lungs were very many small, smooth, flat, jet-black areas, similar to those seen on the parietal pleura. There was a small, healed, tubercular focus in each apex. Otherwise, the lungs were normal, save for some congestion and edema of the lower lobes.

The spleen weighed 320 gm., and was rather firmer than normal.

The chief interest, outside the pleura and lungs, above described, lay in the gastro-intestinal tract, the kidneys and the large veins. Scattered throughout the gastro-intestinal tract were numerous irregularly distributed and shaped small, submucous, deep red spots, in which small vessels could be easily seen. The vessels about the cardiac end of the esophagus and about the anus were moderately dilated. The portal vein was patulous throughout and somewhat increased in size. The smaller branches everywhere stood out prominently.

The liver weighed 1,933 gm. The surface was smooth. On section it had a very marked mottling of a brownish red and light gray color, the former most marked about the periphery of the lobule. The central veins of the lobules stood out prominently. There was no macroscopic evidence of compensatory circulation between the liver and diaphragm through the vessels of the suspensory ligament. Gall bladder normal. Ducts patulous.

The kidneys weighed 195 gm. Cortex, 5 mm. There were slight remains of portal lobulation. Capsule stripped with difficulty, leaving slightly roughened surface. Cortex light gray throughout. Small vessels stood out prominently. Malpighian bodies easily visible as glistening points; vessels of pyramids easily visible and somewhat distended. A few scattering, definitely walled areas which contained a small amount of thin, clear fluid (retention cysts) were seen throughout the pyramidal region.

The left renal vein was patulous to within 1 cm. of its opening into the vena cava. Here the vessel was plugged by a soft red mass similar to that seen in the vena cava (to be described below). At the free end of the mass, within the left renal vein, a small amount of blood was adherent. The left spermatic vein was distended. The *right* kidney was increased in size and firmly united to its surrounding tissues. It was removed, together with the vena cava and the liver. Throughout the immediate perirenal tissues there were many small distended veins, extending in all directions through the retro-peritoneal tissue of the region. The right kidney measured 14 by 10 by 5.5 cm. Its surface was roughened, most markedly so throughout its lower half, where there were several round, soft, protruding areas. The upper half was not so rough, and felt much firmer. The right adrenal was removed without difficulty. The capsule of the right kidney adhered firmly to the underlying kidney substance. The right renal vein stood out prominently and felt as if filled with an elastic material.

On section of the kidney, the lower half contained several round, grayish, protruding, soft areas, the contents of which were rather granular, especially in their central portions. These were circumscribed and between them the tissues were much firmer and white in color. The upper half of this kidney contained many fairly well circumscribed pale red and light gray areas. In contrast with the lower half the upper was quite firm throughout, less so in the red areas. Left ureter patulous.

The right renal vein contained a light red, soft, stringy material, filling it completely and extending outward into the vena cava, which stood out prominently and felt soft. Upon opening the vena cava a very soft, stringy, pale red mass spread out over the edges of the cut. This material extended from a short distance below the entrance of the right renal vein to a point a short distance beyond the exit of the vena cava from its groove in the liver. Below the lower point of this occluding mass there was firmly adherent to the wall of the vena cava a thin, elastic material the surface of which was dark red and the deeper portions a light gray. Adherent to the vena cava in the region of the renal vein was an enlarged lymph gland which on section contained a soft, pale red material. These lesions of the kidney, extending into the renal veins and vena cava proved histologically to be carcinoma.

We have then, in this case, as a cause for the ascites and edema of the legs, a carcinomatous growth of the right kidney, with carcinomatous occlusion of the inferior vena cava, the right renal vein, the proximal portion of the left renal vein.

Dr. Mallory kindly furnishes the following description of the new growth:

"Microscopically the tumor consists of epithelial cells covering delicate branching stalks of connective tissue in which run large thin-walled blood vessels, and lining also the cysts of various sizes in which the papillary masses lie closely packed together. The epithelial cells are fairly large, of a short cylinder form and contain usually but one, occasionally multiple nuclei. The cytoplasm is abundant and stains rather intensely with eosin. The nuclei have large distinct nucleoli.

"The tumor may be classified as a papillary adenocystoma or as the papillary form of growth of a carcinoma. The latter is the view adopted by Ribbert."

The original site of the carcinoma in this case would appear to have been the right kidney, in its lower half. Thence it grew into the right renal vein to the vena cava inferior, crossed this, and established itself for a very short distance at the mouth of the left renal vein. It then extended up the vena cava far enough to produce an obstruction to the hepatic vein, and when this point was occluded, there followed the dilatation of the portal vein, which extended to all its branches, the superficial and deep epigastric, the esophageal and hemorrhagic veins, with the resultant ascites and anasarca.

PYELITIS COMPLICATING PREGNANCY.*

BY J. B. SWIFT, M.D., BOSTON.

Within the past few years a number of cases have been reported which are of special interest to the obstetrician and surgeon. I refer to cases of pyelitis complicating pregnancy. Undoubtedly there have been many of these cases unrecognized, but now that the condition has been brought to the notice of the profession, we will be able to rightly diagnose the disease and recognize symptoms which heretofore have been wrongly interpreted. At the French Congress of Surgery in 1892 Dr. Reblaud reported 5 cases — 3 antepartum, 2 postpartum — which he had studied, and described the symptoms which have been common to the cases reported since. These symptoms are, pain in the side (usually the right), increased frequency of micturition, elevation of temperature and pus in the urine.

The urine is usually acid, and, from the bacteriological examinations which have been made, this seems to depend on the infecting bacteria. About all the cases, studied bacteriologically, show the colon bacillus as the cause of the trouble, and the course of the disease to be a descending, rather than an ascending, infection, that is, the infection takes place primarily in the kidney, or its pelvis, rather than through the bladder. It is supposed the infection is brought by the blood, and the reason for its development in the pelvis of the kidney is on account of the changes which are caused in the ureter and pelvis of the kidney by pressure on the ureter by the gravid uterus.

Reblaud says: "Where the ureter crosses the pelvic brim it is compressed by the uterus. This causes a hydronephrosis, and this dilatation, although aseptic, causes modifications and lesions which furnish a place of least resistance for bacterial development."

The pain is usually in the lumbar region and radiates in the direction of the ureter, but that it may be referred to other regions is shown by the fact that some of the cases have been originally diagnosed and operated on for gall-bladder disease, appendicitis and extra-uterine pregnancy. The pain may be constant or intermittent, the remissions being explained by the compression being removed by a change in the position of the uterus. The fever may be slight or high, and accompanied by rigors. Palpation of the lumbar region shows a tenderness of the kidney, or even a fluctuating tumor may be made out. The disease does not show itself much before the fifth month of pregnancy, that is, not until the uterus is large enough to compress the ureter where it crosses the pelvic brim, for it has been shown that while the uterus is in the pelvic cavity the anatomical relations are such that the ureter, under normal conditions, cannot be compressed. The right side is more frequently affected than the left. This is explained by the position which the uterus occupies rather than by the size or weight of the child, it being generally recognized that as the uterus develops it is turned toward the right side, swinging on its longitudinal axis, and thus filling the right oblique diameter of the pelvis. That this development of the uterus, rather than the size of the child causes the compression is claimed, because, in many cases the disease develops before the child is large enough, and before it has any fixed position, that is, in the fifth or sixth month. Then again, the position of the sigmoid flexure on the left side acts as a protection to the left ureter. This view is not universally held, however, as one observer, Albert Sippel, whose original paper I have not been able to read, claims that the developing uterus more easily compresses the left ureter, and reports two cases in which there was complete obstruction of the left ureter by the developing uterus. One would naturally suppose that the disease would be more common in primiparæ than in multiparæ, on account of the greater rigidity of the abdominal muscles, but from the reported cases this is shown not to be so.

As to the effect on the course of pregnancy,— several cases of spontaneous premature delivery have been reported, but they seem to have been due to the high temperature rather than to the actual effect of the disease. Most of the cases have gone to term with a cessation of the symptoms when the pressure on the ureter has been removed. The question of inducing labor must be considered in the interest of the woman, and depends on the condition of her health caused by the disease. Where an abscess is diagnosed the question of surgical intervention arises, the point to decide being whether it is better to induce labor, await normal delivery, or do a nephrotomy. The time in the pregnancy and the amount of damage being done will be important factors here. Where drainage through the ureter seems to be sufficient, in view of the fact that these cases apparently recover shortly after delivery, it would seem better not to interfere surgically; but if the drainage is not sufficient then, of course, drainage above the point of obstruction must be furnished. Because the disease has appeared in one pregnancy is no reason for expecting its occurrence in succeeding ones if the pus has entirely disappeared from the urine, but as long as there is pus in the urine pregnancy should be avoided.

The origin of the disease seems to be most frequently connected with some alimentary disturbance. Here is a cause for the development of the colon bacillus, which is then carried by the blood throughout the system, and then being retained in the dilated pelvis of the kidney flourishes here and causes the inflammation. That this may be so has been shown by experiments, where, after aseptic ligature of the ureters, streptocci, or colon bacilli, were injected into the blood of the animal, and later were found flourishing in the dilated pelves of the kidneys. That alimentary disturbances may be a factor in the development of the disease gives us a hint in prophylaxis. Constipation being a common trouble in pregnant women it should be our endeavor to keep their bowels in the best possible condition.

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* Read before the Obstetrical Society of Boston, Dec. 18, 1906.

When the disease appears our efforts should be directed to see that pressure on the ureter is removed as much as possible, so that there may be proper drainage. This may be done by changing the position of the uterus, having the woman lie as much as possible on the unaffected side. In one of the cases reported by Sippel, there was no pus in the urine at the outset, only the pain in the left side, with the fluctuating tumor. The diagnosis was perinephritic abscess. At the operation it was found that the ureter was completely obstructed by the pressure of the uterus, and the swelling was the dilated pelvis of the kidney. By keeping the woman on her right side, the ureter became pervious, pus was passed through the bladder, the pelvis was sufficiently drained, and shortly after the normal delivery the patient was well. During the acute stage the patient should be kept in bed on a milk diet. The bowels should be kept open, and the pain relieved. Urinary antiseptics have apparently been of service in some cases, the pus disappearing from the urine before the termination of the pregnancy. Pyelitis, of course, may be caused by the infecting material ascending from the bladder. Here, however, we have first to deal with a cystitis, and the pyelitis is seen oftener postpartum than antepartum. I have seen three cases of pyelitis complicating pregnancy, but as my notes in two of them are very scant I will report only the third, regretting that here also the record is not perfect.

Mrs. M., thirty years old, was confined with her first child Jan. 30, 1895. There was nothing unusual about the pregnancy or delivery except that, during the latter part of the pregnancy, the urinary examinations showed considerable mucus in the sediment. She became pregnant again in May, 1897, and, aside from the usual discomforts of pregnancy, was well until Dec. 3, when she was troubled with nausea and insomnia. A report on the urine of Dec. 6 says, "Urine acid; specific gravity, 1,026; no albumin; considerable mucus sediment." On Dec. 13, she complained of a dull aching pain in the right lumbar region, and this continued, with more or less severity, until her confinement on Feb. 28, 1898. There was indefinite tenderness over the lumbar region throughout this time, but at no time when I saw her was there any elevation of temperature. The urinary examinations during this time all report an acid urine, with rather high specific gravity, no albumin, but considerable mucus sediment.

The third pregnancy began in July, 1898, the last catamenial period beginning July 2. She was away from home and I did not see her until Nov. 22, when she told me of her pregnancy and said she had been more comfortable during the early months this time than in the former pregnancies. On Jan. 30, 1899, I saw her because she was having the same kind of pain in the right lumbar region as last time, only much more severe. There was no fever, she was passing her urine frequently, which was said to be dark colored, and on standing deposited a red sediment. There was constipation, and on making a vaginal examination I found the rectum filled with hard feces. The pain in the side was so severe she was given morphia. An enema was ordered and she was given alkaline drinks. The pain continued for two days, requiring $\frac{1}{4}$ gr. codia from time to time to relieve it. The report of the urine on Feb. 3, was, "Reaction neutral; specific gravity, 1,012; trace of albumin by heat and nitric acid; considerable mucus sediment." Pus appeared in the urine on Feb. 7, and after that time there was no more pain. During the rest of the pregnancy she always expressed herself as feeling well and without discomfort, except for the frequent micturition. She had an easy delivery on April 19, 1899, and the convalescence was uneventful. Ten days after delivery all urinary symptoms had disappeared and the urine was normal. From the attack on Jan. 30, until after delivery, Dr. E. S. Wood made many urinary examinations and I will read a few of his records. All the specimens examined by him showed an acid urine and a slight trace of albumin.

Feb. 7, 1899, specific gravity, 1,016; reaction, very acid; albumin, 1-40%; sediment, chiefly pus, some of which is in clumps stained brown by blood pigment, with numerous small round cells. An occasional small fatty cell and compound granule cell. Numerous squamous cells (vaginal). Few blood corpuscles. Remarks: "This sediment looks very much like that of a pyelitis. The pus was not mixed in intimately with the vaginal cells as I would expect with a leucorrhea, and also there are no more vaginal cells than I frequently see when no pus is present. I am unable to find any casts although it is possible that I have overlooked an occasional one in the presence of so much pus. I usually find an occasional cast in cases of pyelitis. It is, of course, possible that the pus comes from some inflammatory condition outside the kidney or urinary passages and is being drained into the pelvis of the kidney. It is also possible that the pus is of tubercular origin, and I have saved some to test for tubercle bacilli, if you so direct." Signed, E. S. Wood.

March 2, "Amount of sediment 2-10 cc. in 15 cc. of urine, equals 1-75 total bulk. Only one group consisting of four bacilli which looked like tubercle bacilli could be found on thorough examination of six cover slip preparations. I do not think this sufficient to warrant a positive diagnosis. I will try again next time, and if you will send me a perfectly fresh specimen will inoculate a guinea pig with the pus, so as to make a sure test."

On March 30, he writes: "Sediment, chiefly pus, free and in clumps. Numerous small round cells, few of which are fatty. Few blood globules. Vaginal cells. This specimen shows an improvement over that of March 15. The urea is 2 gm. more nearly normal. The uric acid has diminished to normal, and the phosphoric acid has increased to normal. The pus and sediment remain unchanged. The sediment has been washed and injected into a guinea pig as was that of the last specimen. This was done for the purpose of having a duplicate experiment going in case the other one failed accidentally." As I have said above, she was confined on April 19, and ten days after all urinary symptoms had disappeared. On May 3, Dr. Wood wrote: "There is absolutely no sign of tuberculosis in the guinea pig inoculated with the pus in Mrs. M.'s urine March 7. This is a perfectly satisfactory test."

In going through the literature I have found 40 cases, my own making 41. Erich Opitz in the *Zeitschrift für Gynäkology*, Bd. lv, 1905, has an article on this subject, but being in German I was not able to read it. An abstract of the paper, however, by Henry Russell Andrews, is in the *Journal of Obstetrics and Gynecology of the British Empire*, vol. viii, November, 1905. Opitz collected 79 cases and added 5 from the Marburg clinic. In a series of 53 cases spontaneous premature delivery occurred 23 times. Of 60 children born, 7 were stillborn or died soon after birth.

In my collection of 41 cases, there were 15 primiparæ, 14 multiparæ, not mentioned 11. The right side was affected 37 times and the left 4. Twenty-eight cases went to full term. Spontaneous premature labor occurred 4 times, premature labor was induced once and in 9 cases, the pus having disappeared from the urine, the patients passed from observation. Nephrotomy was done once antepartum, 4 times postpartum. The colon bacillus is reported 17 times; no bacterial examination recorded in the rest.

PYELITIS IN PREGNANCY AND THE PUERPERIUM.*

BY F. S. NEWELL, M.D., BOSTON.

Case I. Primipara. Twenty-five years old. Delivered Nov. 19, 1903, in Lying-in Hospital. Pregnancy normal. Labor terminated by low forceps. Easy delivery. Patient catheterized before operation. Convalescence complicated by an acute cystitis with moderate symptoms, which yielded promptly to treatment. Temperature from the third to the sixth day ran from 100 to 102.5; sixth to ninth day, temperature normal. Tenth day patient up; had an attack of severe pain in the right side, with a chill. Patient put back to bed, given ¼ gr. morphia for the pain, with relief. The evening temperature was 104. Practically no pain. Physical examination showed a pale, anemic woman rather poorly nourished. Exquisite tenderness in the right hypochondrium extending through to the lumbar region without muscular spasm. Next day patient comfortable. Urine turbid and showed large amount of pus on microscopic examination. Kidney still exquisitely tender and slight degree of spasm over the quadratus lumborum. Temperature 102; some nausea. For the next three days the temperature varied from 102 to 104. Pain was comparatively slight, but there was a constantly increasing amount of pus in the urine and increasing muscular spasm and rigidity.

Treatment: Large quantities of water and urotropin 7½ gr. twice a day. Light diet.

The local signs, muscular spasm and tenderness over the kidney, grew steadily worse, and the question of operation to drain the pelvis of the kidney was raised. Patient sent to the Massachusetts General Hospital. Seen by Dr. Greenough in consultation. Dr. Greenough advised against operation and in favor of a continued observation. The temperature varied from 100.5 to 104 for the next ten days, more or less dependent on the amount of pus appearing in the urine. The muscular spasm and the tenderness over the kidney gradually decreased. Kidney not palpably enlarged at any time. Following this time the symptoms gradually improved and the patient made a satisfactory recovery, complicated by a lighting up of the left kidney of much shorter duration and much less severe than the right side. At the time of discharge from the hospital, five weeks after the onset of attack, the urine showed a slight trace of albumin and a slight amount of pus. The kidneys were apparently normal on palpation. No tenderness, no muscular spasm.

Case II. Feb. 3. Primipara. Four months pregnant. Twenty-five years old. Seen in City Hospital, to which she had been admitted with a diagnosis of chronic appendicitis. Complained of some pain in the right iliac fossa. Moderate tenderness in the right hypochondrium in the region of the gall bladder. Urine slightly turbid and showed small amount of pus. Temperature running between 99.5 and 100.5. Blood count, 15,000. Owing to the mortality attendant on acute appendicitis during the pregnant state, operation was considered advisable in spite of the fact that the symptoms were indefinite and pointed rather to the gall bladder than to the appendix. A median incision was made and the appendix examined, found normal and removed. Examination of the other abdominal viscera showed a distended gall bladder and the right kidney questionably enlarged. The median wound was closed and incision made over the gall bladder, which was found distended, but not inflamed. The gall bladder was opened and drained; contained a considerable quantity of biliary sand, but no stones found. The wound closed except for drainage to the gall bladder. Good ether recovery. Temperature promptly dropped to normal. Pain disappeared and the patient was apparently doing well. Blood count dropped to normal. On the fourth day after operation the patient complained of a severe pain in the right lumbar region. Marked spasm developed over the renal region. Urine at this time clear and containing no pus. Pain increased, requiring large doses of morphia. Some vomiting. Temperature went up to 102, where it remained for three days, at the end of which time the patient experienced marked relief from pain and had a copious flow of urine containing large amount of pus, showing that the urine obtained before had been the secretion from the left kidney, the flow from the right kidney having been shut off. For the next ten days convalescence was normal, the spasm in the region of the right kidney disappeared and the patient appeared to be doing well, and pus was present in the urine constantly though in diminished quantity. Two weeks after operation the patient had a second attack of pain in the right kidney and again the pus disappeared from the urine. This attack lasted two days and was rather less severe than the previous attack, and disappeared as before when the obstruction to the flow of urine was overcome. During the remainder of her stay in the hospital (three weeks), the patient was comparatively comfortable, having two or three slight attacks of pain lasting only a few hours, and was discharged relieved, the gall bladder incision being practically closed. A week after leaving the hospital the patient had another severe attack of pain as reported by her husband, lasting two days and clearing up as the previous attacks had done. A month later the patient had another severe attack of pain, which was accompanied by the onset of labor, and the patient was delivered prematurely at about six and one-half months. Following delivery the patient experienced absolute relief from her attacks of pain, and six weeks later reported at the hospital as being in good health. At this time there was no tenderness over the kidney and nothing abnormal in the urine.

Case III. Seen in consultation. Following history: Patient delivered of her first baby after a normal pregnancy five weeks before. Unable to urinate during the early days of convalescence; was catheterized for three days. After that made apparently a normal recovery. During the five weeks before I saw her the patient had had three distinct attacks of what the attendant had called gastritis, attended by a slight rise of temperature, reaching perhaps 102. Pain in the right hypochondrium and some nausea and vomiting. Patient had gained strength very slowly and was in poor condition for a patient at that length of time after delivery. Dissatisfied with her progress she called in another physician, at whose first visit the condition was found to be as follows: Patient complaining of considerable pain in right hypochrondium and nausea. Temperature 102. Marked tenderness over the whole right side of the abdomen. Some muscular spasm. Diagnosis probably appendix. Urine absolutely clear. No albumin. Sediment showed no pus. I was asked to see the patient in consultation, and three hours later found the condition as follows: Pain had largely subsided. The whole abdomen was flabby and perhaps slightly distended. Very slight abdominal tenderness in the right hypochondrium. Lower portion of the abdomen normal. On deep palpation over the right kidney region distinct tenderness noticed, particularly over the quadratus lumborum. Specimen of urine obtained at this time was cloudy and contained a trace of albumin. On examination the sediment was composed almost entirely of pus. The case is interesting as showing that what is apparently an acute inflammatory condition of the abdomen may be produced by the blocking up of the ureter, and during the attack, the secretion from the other kidney being normal, the observer may be led entirely astray as to the condition present. At the time I saw the patient, the diagnosis was perfectly evident, the condition having been relieved by drainage of the affected kidney. The subsequent progress of the case under urotropin and ingestion of large quantities of water was satisfactory.

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* Read before the Obstetrical Society of Boston, Dec. 18, 1906.

CASE IV. Multipara. Third pregnancy. Gave the history of having had two previous attacks of pyelitis, the right kidney being affected in both cases. The cause of the first attack unknown; the second attack followed a catherization after an operation for trachelorrhaphy and operation for hemorrhoids. First attack had been comparatively mild, subsiding in a few days, and the second attack had lasted for rather more than four weeks before definitely clearing up; and at one time distinct uremic symptoms appeared, raising the question of drainage of the kidney for relief. Urine had been kept under careful observation during the early part of pregnancy and had been normal, no albumin being present and the sediment showed nothing but squamous cells with occasional leucocytes. Three weeks before the expected time of labor, patient complained of the symptoms of beginning cystitis. The urine at this time showed a slight cystitis. Patient put at once on urotropin, 7½ gr. twice a day, and increased quantities of water, and the bladder was washed out with 20% argyrol in the hope of checking the upward spread of the infection. The following day the bladder was more comfortable and the treatment was repeated. The third day after the beginning of the attack the patient complained of pain in the region of the right kidney; there was no spasm or definite tenderness. The urine showed an increased amount of pus and the temperature at that time reached 102.° The following day the pain and tenderness in the region of the right kidney was increased and some muscular spasm was present. The temperature at night was 105°, and it was decided to empty the uterus to relieve the pressure the next morning unless marked amelioration of the symptoms occurred. During the night the pain subsided and a markedly increased amount of urine was passed; on settling, about one eighth pus. The next morning the temperature was normal and the patient felt perfectly comfortable, though there was still spasm and tenderness over the right kidney. I decided to wait twenty-four hours longer to see whether relief would be permanent before emptying the uterus. During the day the symptoms gradually increased, showing that absorption was once more taking place, and the temperature at night reached 105° for the second time. It was definitely decided to empty the uterus next morning under any circumstances. Labor began spontaneously at 4 A.M., and the cervix dilated rapidly. As there was an increase of pain in the kidney with each contraction of the uterus, the patient was etherized as soon as preparations could be made for the delivery. Dilatation of the cervix was completed and an easy forceps operation done. During the next three days the temperature ranged from 100° to 103°, showing a gradual downward tendency. The third day the left kidney became involved and there was a slight increased rise in temperature to 103.5°, but with pain and spasm over the left kidney. This attack lasted in all two days, and from that time on there was a rapid subsidence of symptoms, so that by ten days after delivery the patient was passing from 90 to 100 oz. of urine containing a very slight trace of urea and comparatively little pus, the temperature running normal, and the pulse was running between 80 and 90. Still slight tenderness over both kidneys, but no muscular spasm and no subjective symptoms. Patient was able to nurse with fair success. A month later examination of the urine showed that the pus had entirely disappeared. No albumin present. The organism in this case in all three attacks was the Bacillus coli communis. The first and third attacks occurred without interference with the bladder and therefore must be set down as idiopathic in origin. The second attack followed directly after catheterization.

CASE V. Patient seen in consultation Nov. 12, 1906. History of a difficult operative delivery two weeks before. Convalescence normal till the twelfth day, when the patient had sudden attack of pain in the right side. Chill, temperature reaching 102°. Treatment had been increased water and urotropin. Urine had been of high specific gravity, containing a large quantity of pus. Temperature had remained about 102° from the onset of the attack up to the time when I saw her (on the fourth day), when it had taken a sudden drop, and at the time of my visit was 100°. Careful abdominal examination showed moderate tenderness over the region of the right kidney. No muscular spasm present and no palpable enlargement of the kidney made out. Nausea and headache, which the patient had previously complained of, had disappeared. Patient was passing an increased amount of urine containing a considerable quantity of pus. Evidently the kidney was draining itself properly, and a good prognosis for ultimate recovery was given. Temperature kept on falling till it reached normal, where it remained for twenty-four hours, then jumped up to 102° again, and on the following day phlebitis of the right leg was evident. This was followed by involvement of the left leg, and the patient is still suffering from the phlebitis, but has the pyelitis entirely cleared up.

One interesting feature of these cases is that the right kidney has been involved in all cases, the left kidney being secondary in both cases in which there was bilateral involvement. I know of no anatomical reason why the right kidney should be peculiarly susceptible, but it seems to be the case in the various series of cases which I have seen reported. This right-sided involvement opens the door for constant mistakes in diagnosis during pregnancy or in the early puerperium. The differential diagnosis between inflammatory conditions of the abdomen during pregnancy is very difficult, if not impossible, and unnecessary operations will undoubtedly be frequently performed on account of the impossibility of distinguishing accurately between an acute attack of appendicitis and an acute pyelitis. Time will, of course, show the true diagnosis, but the history of acute appendicitis during pregnancy or in the early days of the puerperium shows such a large percentage of fatal cases that time is the one factor which cannot be given, and it is unquestionably safer to operate unnecessarily for a pyelitis than to delay operation on a gangrenous appendix.

A CASE OF PYELITIS DURING PREGNANCY.*

BY C. H. HARE, M.D.

Mrs. 5289; age thirty-eight; married five months. Catamenia began at seventeen and one-half years, and has always been normal. Last menstruation Oct. 26. She had always been perfectly well in every way, and was a well, strong looking woman. She was first seen March 20, when her story was that urination had occurred regularly five or six times a day up to March 14, when without any known cause, after going seven and one-half hours without voiding the urine, she suddenly began to pass it every half hour day and night with dysuria and tenesmus, and that condition had existed up to the time I saw her, although the tenesmus was somewhat better. She was a careful observer, and had seen a few specks of blood in the urine at various times. She had kept the daily secretion above 60 oz. since the fourteenth. There had been no renal colic, but there had been an ache in the region of the right kidney, especially in the back, for two days. The urine had been clear before the fourteenth, but cloudy as a rule, though clear at times, since the fourteenth. Her weight was 128 lb. There had been no edema, headache or nausea, or any other symptoms except the above. She was the fifth of eight children, two of whom had died in infancy. Both deaths were said to have been caused by pneumonia. Her mother died of tuberculosis when the patient was eleven years old. Examination of urine taken by catheter March 20 had about 2 dr. of practically solid pus in 3½ oz. of slightly acid urine; specific gravity 1,010 and a good trace of albumin. There was a moderate amount of blood and bacteria, very few round cells and a few pavement cells. Probable diagnosis: Pus in the right kidney. She was told to stay quietly in bed and watch the urine for intermittent pyuria. She was given 7½ gr. urotropin three times daily, and told to take all the liquid she possibly could. On March 23 she had a chill at 11 A.M. and was chilly at 5 P.M., when I next saw her, at which time pulse was 108 and temperature 99.4. For a few days she had profuse sweating and looked flushed in the face although she felt perfectly well. By March 25, urination had dropped to once every two to four hours day and night. Tenesmus had ended and there was no dysuria. Pyuria which had been steady, ended on this day. She had voided from 2 to 10 oz. each time, and passed 54 oz. in twenty-four hours. On this day she had her highest temperature and pulse, which at 1.30 P.M. was, pulse, 116; temperature, 101. The urine on March 24 was examined by Dr. Garceau, who reported: Total twenty-four-hour amount, 60 oz; total urea, 20.34. Specific gravity, 1,005. Very slight trace of albumin, much sediment which consisted chiefly of pus, many round and medium size epithelial cells which were granular. Few cordate cells. Few hyaline and granular casts. Many bacteria. Many diplococci. No gonococci. No tubercle bacilli. Many subsequent examinations were made by both Dr. Garceau and myself, which I will not report in detail, as the urine gradually cleared up, and by April 5 was normal. The urine was also normal on all subsequent examinations during her pregnancy and her puerperium. She was up and about after April 1 and since then has had no trouble although she was carefully watched until about a month after her baby was born. She had a normal and easy labor July 23, which was followed by normal convalescence.

Reports of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Stated Meeting, Thursday, Jan. 3, 1907, at 8.30 P.M.
The President, Dr. Wilmer Krusen, in the chair.

VAGINAL HYSTERECTOMY.

Dr. George Erety Shoemaker presented this paper in which the conditions under which vaginal hysterectomy was considered, the operation of choice as contrasted with hysterectomy through the abdomen, were illustrated by the histories of ten cases last operated upon. All made normal recovery. Nearly all the patients had passed through the menopause. Fibromata not larger than a child's head which gave trouble from pressure or from hemorrhage were considered suitable for vaginal hysterectomy, especially in stout women with poor hearts. In procidentia of old women where the uterus was diseased, especially in the presence of adenoma of the endometrium, the uterus was removed through the vagina as a preliminary to thorough repair of the pelvic outlet, including the anterior and posterior vaginal walls high up. Where the uterus is not diseased vaginal hysterectomy is not usually an element in the operation for procidentia. Great stress was laid upon the importance of paying heed to post-menopausal bleeding and cases were cited bearing upon this condition. The danger of overlooking early malignancy in the examination of scrapings was emphasized. That only a few and perhaps none of the tiny pieces removed by the curette might happen to contain structure from which a diagnosis of malignancy could be made, if present, was shown by reference to a case in which Dr. Shoemaker had removed the uterus for constantly increasing hemorrhage at the age of forty-one under a clinical diagnosis of malignant adenoma. The microscopical report pronounced the adenoma benign, but three years later there is reported a recurrence of malignant disease in the vaginal scar which proved the clinical diagnosis to have been more correct than the microscopical.

The method usually adopted for removing the uterus by the vagina is to cauterize freely if there is suspicion of malignancy, ligate with silk low down and to use the clamps high up, morcellating the mass when it is too large to deliver easily. The operation was considered not sufficiently complete for malignant disease of the cervix nor indeed of the endometrium, except in very early cases of adenocarcinoma of the fundus. In all other cases abdominal hysterectomy is to be preferred. Vaginal hysterectomy, considering the after care, was regarded as harder and more tedious for the surgeon, but in selected cases easier for the patient. Convalescence was more rapid and satisfactory, both mortality and morbidity being less than in abdominal hysterectomy, while the after condition of the patient, especially in fat and flabby persons, is better.

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* Read at the Obstetrical Society of Boston, Dec. 18, 1906.

Dr. John C. Hirst would hesitate about doing hysterectomy before trying atmokausis in a case of persistent bleeding where examination of the scrapings showed no malignancy.

Dr. Brooke M. Anspach believes there are cases of persistent metrorrhagia or menorrhagia requiring hysterectomy in which no pathological lesion of the endometrium exists, and in which, therefore, examination by curettement is absolutely negative. In these cases the lesion is in the myometrium and it is amenable to nothing but radical treatment.

Dr. C. C. Norris believed that in the large majority of cases the microscope can be relied upon to give an absolute diagnosis in all cases of carcinoma of the fundus uteri. Especial care should be taken of the curettings, which should all be at once placed in fixing solution. Personally, he prefers Zenker's, but Muller's fluid or 4% formalin will do very well. A plan suggested as possibly better, in cases with a small amount of tissue, is to place it first in water and then transfer it to the fixing solution, that the blood may be separated from the tissue. Special pains should be taken to have all the tissue cut. This is best done by having two or three or more blocks mounted and from these cut serial sections and have every tenth or fifteenth section stained. The chief sources of error in the pathological diagnosis were thought to be because the tissue is often improperly hardened, that it is not all cut and consequently not all examined, and that in some cases the diagnosis is made by men not especially experienced in this line of work.

Dr. Shoemaker in closing said he did not wish to be understood as advising hysterectomy where no pathological lesion has been demonstrated, except where the menopause has definitely occurred and bleeding has recurred after one year. The malignancy could unquestionably in most cases be established by the curette, if proper pieces including basement membrane were obtained. Reference was made to an examination of curettings made for him by Dr. Foulkrod in which in twenty slides all but one were negative.

REPORT OF A CASE OF CHORIO-EPITHELIOMA. OPERATION. AUTOPSY.

Dr. Brooke M. Anspach and Dr. Henry R. Alburger reported a case of chorio-epithelioma which came to operation and autopsy. A careful examination was made of the original uterine growth and of the metastatic tumors found in the retroperitoneal glands, kidney, liver, pancreas, lungs and a pectoral muscle. The following observations concerning the case were made by the authors:

(1) The history did not very closely suggest the disease, which was diagnosed only after curettage and the examination of scrapings.

(2) There was delay in performing a radical operation, due solely to an unwillingness on the part of the patient, and this probably led to the fatal result.

(3) Widespread metastases were found at autopsy involving almost all of the visceral organs except the spleen.

(4) The tumor was very malignant and did not contain chorion villi.

(5) The ovaries were riddled with Graafian follicle cysts. There was very little lutein tissue present. In this, therefore, if the lutein secretion of the ovary is intimately connected with the physiology of placentation, the defect was decrease and not an increase.

(6) The histologic picture presented by the metastatic growth in the liver presented an interesting feature. There was difficulty in determining the line between the liver cells and the borders of the chorio-epithelioma. This condition was suggestive of the hypothesis which has been advanced, that certain neoplasms in a tissue or organ may stimulate the parenchymatous cells to more rapid growth with the production of a new type of cell resembling closely those of the invading tumor.

Dr. J. A. McGlynn reported a case seen in the Medico-Chirurgical Hospital in which the uterus was typical of chorion epithelioma. The patient died in about three days subsequent to hysterectomy. The patient was fifty-seven years of age and had had no children for over twenty years. There was no history of mole but the bleeding was profuse. Stress was laid upon the frequency with which chorion epithelioma follows hydatid moles. For this reason the after-treatment of mole should be carried out with care. Curettage of the uterus should be followed by swabbing with carbolic acid or flushings of bichloride of mercury and sterile water.

Dr. J. S. Baer spoke of the importance of seeking the cause of bleeding at any time, except during the regular menstrual period. This to the general practitioner he thought was of great importance.

Dr. Currie referred to the case mentioned by Dr. Hirst and which had been under his care. The bleeding had followed a normal convalescence from confinement and was the only symptom.

Dr. Anspach in closing called attention to the two most practical points: The necessity in making a diagnosis by the microscopic examination of scrapings of curetting the uterus very thoroughly so as to include some of the inner muscular tissue of the uterine wall; and that sometimes even apparently hopeless cases are cured by an operation which is incomplete. He referred to a case reported by Dr. Noble of a tumor involving the bladder in which it was impossible to remove all of the diseased area. Supra-vaginal hysterectomy was done, no attempt was made to excise the diseased bladder wall and the patient recovered. Other similar cases were said to be reported.

THE TREATMENT OF ECLAMPSIA.

Dr. John C. Hirst's conclusions as to the treatment of eclampsia, based upon the cases at the University of Pennsylvania Maternity, were as follows:

The routine treatment consisted of,

1. Chloroform to avert the attack, if possible.
2. Fifteen minims of fluid extract of veratrum viride hypodermically.
3. Wash out stomach and through the tube introduce 2 ounces of castor oil and 4 drops of croton oil.
4. Hot vapor bath or hot pack for thirty minutes in every four hours.
5. Hypodermoclysis of salt solution Oi under breast every eight hours.
6. If convulsions recur, repeat veratrum viride in five-minim doses every hour for three doses, and then if blood pressure is still high and patient cyanotic, venesection is performed, removing 8-16 ounces of blood.
7. Under ordinary circumstances let the labor alone.

Morphine and pilocarpine are not used routinely, but their use is restricted to desperate cases only.

Venesection is not used routinely, at least until veratrum viride has been given a trial.

Accouchement forcé is used only under the following conditions:

1. When the patient is far advanced in spontaneous labor, forceps are applied.
2. If patient is seen very early after the first onset of convulsions, it may be advisable to interfere.
3. If patient is going from bad to worse under treatment, the uterus is emptied as a last resort. The method employed is either vaginal hysterectomy and forceps or the Pomeroy bag, followed by forceps. The latter method is probably the better. The cases studied were 88 cases of eclampsia and 278 cases of albuminuria. This treatment gave a mortality, excluding cases brought in in a moribund condition, of 13.4%. Of the cases of albuminuria, 40 had had eclampsia in previous labors (one four times) but escaped under treatment.

Dr. Richard C. Norris, in opening the discussion, said that casual reference to his records at the Preston Retreat showed an average of two or three cases of eclampsia in a year. He usually sees four or five cases every winter in consultation, but has had but one case of eclampsia in his own private practice in fifteen years. He has never done Cesarean section nor used a Bossi dilator in eclampsia at the Preston Retreat. When the cervix is dilated, forceps or version is resorted to, and prior to dilatation eliminative treatment is vigorously employed while a bag is used to obtain dilatation. The method of elimination by the bowel he regards as the most valuable. He has yet to see a woman die of eclampsia from whom he was able to secure from 12 to 20 stools in twenty-four hours. This is his first aim in treating any case. Two ounces of Epsom salts are first adminstered and if vomited, then three to five drops of croton oil are given in sweet oil. The danger to the case was pointed out of excessive amounts of salt solution unless the purging or sweating is free. Veratrum viride should be used with caution, in some cases of eclampsia being distinctly contra-indicated. If the condition is of sudden onset, veratrum would be useful in moderate, frequently repeated doses until it has markedly slowed the pulse. Morphia, owing to his early training, he has usually omitted. There should be a differentiation as far as possible between the various types of the disease. Cases showing a slow onward progress suggest a kidney type, and in such cases morphia would be a bad drug to give, especially in the interstitial type as recently pointed out by Dr. Tyson. Other groups of cases may be looked upon as of intestinal origin, and here large doses of morphia to control convulsions and copious lavage of the bowel would be of value. Another group of cases, hepatic in origin, he has always felt to be the most hopeless Admitting that there is nothing to prove the theory of the syncytial origin of the toxins of eclampsia he is inclined to group those as possible of syncytial origin in which the onset is sudden and without premonitory signs. In such a case he would not hesitate to either stretch or cut the cervix and deliver the patient rapidly. The plan of treatment to which he has always objected is the routine use of vigorous surgical procedure. He admits that the literature of the world in the last year or two shows a steadily reducing mortality from the aggressive plan of surgical treatment, but he believes the secret of this to be that all cases are being so treated, and that the mild ones that would have gotten well without the surgical treatment are credited to it, and that the worst cases that will die in spite of surgical treatment continue to give a mortality to even that treatment.

Dr. Norris regards the absence of mortality from eclampsia at the Preston Retreat due to the fact that they do not have the neglected emergency cases rather than as a credit to himself. For the same reason he explains the absence of mortality from sepsis in almost 4,000 consecutive cases.

Dr. Barton Cooke Hirst referred to the serious problem in the treatment of eclampsia in the University Maternity on account of the kind of cases brought in in the ambulance. He does not agree wholly with Dr. Norris concerning purging. He thinks it is brought about too slowly to be of great value in the worst cases, and in such cases he depends mainly upon sweating. This, however, he thinks is very imperfectly carried out in the average private house and suggests that the double mortality of the private house cases compared with the hospital cases may be due to this imperfect method. An illustration was given in which a patient treated at home was given up to die by the attending physician, when sweating brought about by the apparatus used by Dr. Hirst in the hospital resulted in recovery. The patient must be put into a regularly arranged tent, a steady stream of live steam must be introduced under the tent and the treatment must be continued for thirty minutes, when literally quarts of fluid can be drained from the woman's blood vessels. The loss of fluid is replaced by normal salt solution given midway between the sweats. The sweats should be given every four hours during the worst of the attack, but should be continued once or twice a day for several days. Of special interest to Dr. Hirst in the treatment of eclampsia is the relative advantages of rapid delivery in eclampsia during pregnancy or labor and the conservative treatment. His feeling at the present time, after ample experience with both kinds of treatment, is that the conservative obstetrical treatment of eclampsia gives the best results. An absolutely rigid rule, however, cannot be followed. Cases are presented in which he deliberately resorts to accouchement forcé in spite of his prejudice against it; for example, a woman entering the hospital comatose and in convulsions who fails to respond to the routine treatment, is subjected to accouchement forcé. He has seen some of such cases recover unexpectedly. Veratrum viride has seemed to him the best drug in the treatment. Cases in which it is contra-indicated were given. Venesection has not worked well in his hands. If veratrum viride is indicated he gives 15 minims of the fluid extract as a first dose, repeated in 5-minim doses as often as necessary to keep the pulse at 50 or 60. In twenty years he has seen but a single case of veratrum viride poisoning. The woman, however, was easily revived by digitalis, strong coffee and alcoholic stimulation.

Dr. Hopkinson had employed the Straganoff treatment in a large number of cases, and in eight consecutive cases it was successful except in the last.

Dr. Swithin Chandler referred to the change of opinion concerning the use of morphia.

Dr. William R. Nicholson regarded the most important point that of rapid delivery. He cited a case which had recently come under his care in the Maternity of the Presbyterian Hospital. The patient had been brought in in the ambulance after having had a dozen convulsions at her home. The mere placing of the hand upon the abdomen caused convulsions. Eliminative treatment was instituted but the convulsions remained. Under mild chloroform anesthesia the cervix was dilated without tearing and the child which was dead delivered by forceps. There were subsequently two convulsions and within the next thirty-six hours the woman returned to consciousness. He would not go on record as believing this the proper treatment for a large number of cases.

He does believe, however, that accouchement forcé is indicated in a certain limited number of cases *after* eliminative treatment has been instituted.

Dr. Foulkrod spoke of his interest in watching the treatment of eclampsia in three different maternities. He felt that there was a strong feeling against operative interference unless it was imperative. The solution of the whole problem, he thought, rested upon a man's judgment. The primary source of infection and concerning the length of time eliminative treatment should be continued he felt were questions of great importance. He thought it an open question whether or not in the cases of hepatic toxemia the estimation amount of nitrogen excretion will not aid in a diagnosis before the eclamptic seizures. The question present is whether it is not possible by some such means to decide whether a severe rather than a mild case will ensue. While it would sometimes seem that the primary cause of eclampsia may be due to the lack of intestinal movement causing irritation in the various organs, it is difficult to make an analysis with much care before a patient goes into eclampsia.

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Book Reviews.

Pulmonary Phthisis. By H. Hyslop Thomson, M.D., Glasgow. New York: William Wood & Co. 1906.

Another book upon this prolific subject has been brought to our attention. The one in question presents many good points for recommendation. While not offering any very new opinions or facts, it presents many data in not only an attractive but sane manner, and will be read doubtless by many with interest and profit.

The book is divided into four sections, devoted respectively to the Diagnosis, Prognosis, and Treatment of Phthisis, the fourth being devoted to the consideration of Tuberculosis in Childhood. An appendix gives the Circular of the Local Government Board of Scotland.

Under the first section practical and useful hints are given for the best methods of examining sputa, and also for the use of tuberculin in diagnosis. An excellent word of caution is also given against the much-abused term " cure " in cases of phthisis in which the disease has been arrested. The author speaks as one who knows the folly of making extravagant claims in this matter, and deserves an earnest word of commendation for his conservative expressions upon the subject.

Treatment by serums is touched upon without giving decided opinions, and the author is evidently a believer in the use of drugs for lowering persistent temperature, and has faith in creosote as a means of combating one of the most distressing symptoms of this disease.

He is a believer in compulsory notification of cases of tuberculosis, and at some length gives the reasons for his belief. Several pages are devoted to the history of tuberculin and of the various methods introduced by Koch, Maragliano, von Behring, and others.

On the whole, the book is well worth reading because, for one of its size, it gives an excellent if necessarily superficial picture of modern methods of treatment of tuberculosis.

Elements of General Chemistry with Experiments. By John H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1906.

This work on general chemistry is peculiarly suited to the needs of the student. While the subject matter devoted to any given topic is rather elementary and brief, yet the numerous experiments given should be sufficient to leave a lasting and valuable impression on the mind of the student. In this fourth edition some additions have been made in the presentation of chemical theory and in the description of new substances. Most of the added matter is given in a chapter which is not found in the older editions and which deals with the theories of solution and the conditions of chemical equilibrium.

Practical Dietetics with Reference to Diet in Disease. By Alida Frances Pattee, Graduate, Boston Normal School Household Arts; Late Instructor in Dietetics, Bellevue Training School for Nurses, Bellevue Hospital, New York City; Special Lecturer at Bellevue, Mt. Sinai and the Hahnemann Training School for Nurses, New York City. Third edition. New York: A. F. Pattee.

A third edition of a book of this sort demonstrates its usefulness. As an instructor in dietetics in various hospitals the writer is in a position to offer her readers a practical manual for their guidance. This the book appears to do. We question the good taste of the binding, which appears to be the cloth commonly used in the nurses' costumes.

Indications for Operation in Diseases of the Internal Organs. By Prof. Hermann Schlesinger, M.D., University of Vienna; authorised English translation by Keith W. Monsarrat, M.B., F.R.C.S., editor. New York: E. B. Treat & Co. 1906.

This is an admirably conceived and valuable little book. It is full of serviceable information, and should be used as a book of reference. Schlesinger, the distinguished professor of internal medicine, writes of those diseases for which the physician should call the surgeon. He begins with diseases of the central nervous system, and takes up *seriatim* the pathological states of all the organs of the body, dealing with them under the following headings, severally and invariably: etiology, pathological anatomy, clinical phenomena, diagnosis, indications for operation, contra-indications, prognosis, risks of operation, results without operation. Every general practitioner should find the book useful, and it is for such men that it is written.

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POPULAR MEDICAL LECTURES.

The experiment recently inaugurated by the Harvard Medical School of giving information direct to the people regarding medical matters through a course of lectures has thus far met with success. It is evident that if such lectures are properly advertised, the laity will attend them, and it is furthermore not to be questioned that the general result is educative. In previous editorial comment on this subject, while commending the plan in its broad features, we drew attention to certain possible pitfalls to which the lecturers were exposed. On that occasion we said that the utmost care should be taken to prevent the possibility of misconceptions on the part of those who may attend the lectures; that matters still in doubt and theories should be carefully subordinated to a plain statement of ascertained facts which have a definite practical bearing, and that those who give the instruction should realize fully that the difficulties are far greater than, for example, in lecturing to a class of medical students.

The lectures given up to this time have been well attended, presumably by persons of average intelligence. The question is a pertinent one as to whether these persons have carried away misconceptions which might have been avoided by the lecturers and which possibly may have led to certain unfortunate misunderstandings. The medical profession stands in a peculiar relation to the community, as the guardian of its interests in connection with health. This relation has naturally led to an attitude on its part of universal criticism, and comparatively rarely to one of satisfaction with the existing order of things. This is in one sense unfortunate and may very easily under certain circumstances lead to misunderstandings and misapprehensions on the part of the public. We speak of this because it is apparent that public lectures given by medical men are likely, unless particular care is taken, to alarm as well as to enlighten the public. Unnecessary alarm over the existing state of affairs in public hygiene, it will be generally acknowledged, is undesirable. It should certainly be the aim of lecturers in any public course to state the facts exactly as they are, certainly not palliating any abuses that may exist, but also not laying undue stress upon conditions which taken in general are not bad. It is unfortunate to excite the public fear in matters relating to disease unless for certain very special reasons. In the question of tuberculosis, for example, while it has been necessary to insist upon the infectious character of the disease, there has evidently been much misapprehension regarding the actual danger, and much injustice has thereby been done to individuals, and families in which the disease occurred.

The duty of the medical profession in this matter is evident; on the one hand, to warn the public against the dangers of disease and, on the other, not to exaggerate the possibilities to the extent of creating unnecessary and unhealthy alarm. This responsibility has become more apparent since the development of the idea of giving public lectures on topics hitherto reserved for medical gatherings. In a recent editorial, entitled " The Medical Education of the Public," the *British Medical Journal* comments favorably on the idea of public lectures given at the Harvard Medical School and alludes to a similar attempt which has recently been made under the auspices of the British Medical Association. We quote a paragraph from this editorial:

> " It appears to us that nothing but good can come of such teaching, if only the people for whom it is intended can be got to attend. There can be no doubt that the intelligent co-operation of the laity with the profession, not only in public movements but in the treatment of disease, would be of the greatest use. In this country a step in the medical education of the public has been taken by the British Medical Association, and the popular lecture at the annual meeting, instituted two or three years ago, has attracted large audiences. We should like to see this beginning developed into a fully-organized system. The lectures should be limited to plain statements of facts without excursions into the region of speculation. The lecturers should aim at impressing the aims and methods of rational medicine on the public mind. But, as President Eliot points out, to discharge this function properly requires in medical men the power of

interesting exposition with telling illustration and moving exhortation. The lecturers would have to be selected for their natural gifts, and would, further, have to be thoroughly trained for this mission. Although the suggestion may at first blush startle the more conservative minds of the profession, it is nothing more than adopting the methods used by the enemies of science. The case for rational medicine is allowed to go by default, and the people not unnaturally run after false prophets."

With this point of view we are in entire agreement. It is simply necessary to bear in mind that the entire movement toward further education of the public in medical matters is an extremely significant one, which, as our contemporary suggests, must be entered upon with a full realization of its possibilities both for good and evil.

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OPHTHALMIA NEONATORUM.

Recognizing the large amount of blindness resulting from the neglect of the eyes in newborn children, resolutions were adopted at the last meeting of the American Medical Association in which attention was called to the increase of blindness from infectious ophthalmia, to the relative certainty of treatment when properly applied, and finally it was recommended that a committee be appointed to formulate and render effective a plan to combat the disease. In pursuance of this plan the committee, composed of Drs. F. Park Lewis, J. Clifton Edgar and F. F. Wesbrook, has drawn up a program and distributed it in the form of a double leaflet for the purpose of securing expressions of opinion.

Admitting the fact that merely washing the lids of the newborn child with sterile water is a useful prophylactic in many cases, it nevertheless seems essential to employ a germicide to render the prophylaxis complete. It is furthermore generally agreed that of such germicides a solution of nitrate of silver is the most efficacious. It is, however, suggested that this solution be used in the strength of 1% rather than 2%, inasmuch as it must be used largely by inexperienced persons, and also since the weaker solution properly applied is apparently entirely satisfactory. The question is further asked whether the use of this silver salt should not be employed as a routine measure in every newborn child's toilet. In order to accomplish this end it would be necessary that state health boards take it upon themselves to supply the solution to physicians and midwives in properly sealed receptacles. Again it is questioned whether it would be well that a blank should be left on each birth certificate to be signed by the obstetrician regarding the treatment of the eyes instituted at the time of birth. If such precautions are neglected, as indicated by a failure to sign the certificate, and ophthalmia later develop, should the accoucheur be held responsible? Finally, it is proposed that ophthalmia neonatorum be placed on the list of communicable diseases.

The circular states these various propositions in amplified form and requests general answers from physicians as to whether or not they approve of the plan as outlined. It is to be hoped that the circular may be widely read and that a free expression of opinion may be given the committee. It is not to be questioned that ophthalmia of the new born may and should be prevented. The question at issue rather is what the best and most practicable method may be to accomplish this end. A wide response on the basis set by the committee should certainly be forthcoming.

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ILLUSTRATIONS THAT DO NOT ILLUMINE.

Very frequently in looking over the medical weeklies, English, American and German, the eye is caught by a photographic illustration suggestive of the impressionist school. Closer scrutiny reveals a marked absence of detail and curiosity as to the meaning of the picture is aroused. If the latter is its purpose the presence of the picture is justified. If, on the other hand, the illustration is intended as an aid in the clear presentation of some medical subject, it is a failure. A careful study of the paper and the legend attached to the picture usually, not always, serves to make clear the intent of the illustration. Frequently some particular cell or cell group described in the text and intended to be shown in the picture can only be made out vaguely. The picture in no way aids in understanding the views of the author. If this were merely an infrequent experience there would be no occasion for criticism, but as it is an almost weekly occurrence, it seems that attention should be called to it since poor illustrations detract from the good appearance of the medical journal and in their cost represent a waste of money.

The reason for the many poor illustrations that we see are several. Primarily it is due to the fact that the subjects are chosen and the photographs made without reference to the mode of reproduction to be employed. There is a necessary loss of detail between negative and reproduction, and this varies with the kind of reproduction, whether halftone, heliotype or other process, and also with the paper used for printing. This must be taken into consideration and all photographs which, when reproduced, will not show in sharp detail the structures to which attention is called should be discarded, or the process so varied as to attain the desired end. Again, it is essential in the first place that the negative be a good one and that the print from it be made on the paper which will yield the best result in reproduction. A negative or print which itself is poor can never make a satisfactory reproduction.

Medical journals should decline to go to the expense of illustrating a paper whenever the editors believe that the illustration will fail to show what it is intended to show. Under these circumstances a good verbal description or a diagrammatic sketch is far preferable. If printing on good paper will allow the desired detail to appear it should be used, or there should be no illustration. Illustrations which merely show that the author has spent time and money in photomicrography are far too frequent in the weekly medical journals.

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MANAGEMENT OF TRUANCY.

Superintendent Maxwell has made a report to the New York Board of Education in regard to the management of truancy, in which he expresses the opinion, based on investigations made during the past few months, that this problem, which has always been a source of trouble to the board, can probably be solved to a very considerable extent by the proper medical and surgical treatment of the children. An examination of the boys in the truant schools, made by a physician of the Health Department, showed that a majority of the truants were suffering from disorders, particularly throat and nasal troubles, requiring surgical treatment. Of 50 boys so examined, 33 were found to have hypertrophied tonsils and 16 adenoids. It may be, Dr. Maxwell goes on to say, that these disorders are the direct cause of the nervous restlessness that results in insubordination, stupidity or violence in school, and finally in truancy. The first duty of the school authorities, when a boy shows symptoms of insubordination, is to have him subjected to a scientific medical examination. In case a physical disability, susceptible of removal by medical or surgical treatment, is found, the parents or guardians should be requested to have the treatment applied. It is questionable whether the compulsory education law confers upon the school authorities the right to have a surgical operation performed, without the consent of the persons in parental relation, on a boy committed to the truant school. It if does not, Mr. Maxwell believes the law should be amended to confer that authority. He believes that we have not gone far enough in the matter to be able to say that a physical defect is the prime moving cause in every case of truancy. Enough is known, however, to assert that the majority of truants are suffering from some physical defect, and that the removal of this defect will probably lead to improved conduct and to the restoration of normal mental power.

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MEDICAL NOTES.

A Large Bequest to the Pasteur Institute. — *The British Medical Journal* announces that M. Daniel Iffla Osiris, a wealthy Jewish financier, who died in Paris on Feb. 5, has left the half of his fortune to the Pasteur Institute. The amount is 25 million francs (£1,000,000), the testator's object, in his own words, being to assure to the institute a revenue of a million francs yearly (£40,000) to enable it to investigate the diseases that afflict mankind and to discover remedies for them.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Feb. 20, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 29, scarlatina 54, typhoid fever 5, measles 10, tuberculosis 42, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 20, 1907, was 23.38.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 16, 1907, was 262, against 217 the corresponding week of last year, showing a increase of 45 deaths and making the death-rate for the week 22.69. Of this number 138 were males and 124 were females; 256 were white and 6 colored; 165 were born in the United States, 90 in foreign countries and 7 unknown; 58 were of American parentage, 162 of foreign parentage and 42 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 31 cases and 1 death; scarlatina, 50 cases and

1 death; typhoid fever, 4 cases and 0 deaths; measles, 9 cases and 0 deaths; tuberculosis, 43 cases and 34 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 45, whooping cough 2, heart disease 27, bronchitis 5 and marasmus 3. There were 14 deaths from violent causes. The number of children who died under one year was 45; the number under five years 56. The number of persons who died over sixty years of age was 71. The deaths in public institutions were 89.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

Scarlet Fever at Amherst. — Owing to the appearance of scarlet fever among Amherst students the precaution has been taken of closing the institution until March 1. All students not residents of Amherst are expected to go to their homes.

Report of Danvers Insane Hospital. — The twenty-ninth annual report of the trustees of the Danvers Insane Hospital shows a gratifying condition of affairs at that hospital. The medical staff both on the clinical and laboratory side has accomplished much work of significance during the period under consideration. Dr. Albert M. Barrett, formerly pathologist and assistant physician at the hospital, resigned about a year ago to accept the position of director in the psychopathic wards of the University of Michigan. Dr. Barrett has been succeeded by Dr. Elmer E. Southard, who is also assistant professor of neuropathology in the Harvard Medical School. For about six months Dr. F. P. Gay has served in the position of bacteriologist and laboratory assistant. The routine work in the laboratory and in the wards is such that the reports coming from this hospital are of the utmost value. Fifteen clinical and pathological papers have been furnished during the year from the laboratory. The Danvers Hospital may be regarded as a model of what may be done by a great institution for the insane, not only toward the care of this class of dependents, but also toward the elucidation of the problems which psychiatry presents.

Alumni Association of the Boston City Hospital. — The Alumni Association of the Boston City Hospital held its annual meeting on Feb. 11, 1907. Interesting medical and surgical cases were shown in the amphitheatre of the hospital from eleven to one, when the trustees entertained the alumni at luncheon.

The business meeting was held at 6.30 o'clock in the Hotel Brunswick, Dr. George A. Leland presiding. Dr. Samuel B. Woodward of Worcester was elected president for the ensuing year.

Dr. Leland acted as toast-master at the dinner and introduced the following speakers: Dr. E. H. Bradford, president of the Alumni Association of the Massachusetts General Hospital, the Rev. E. A. Horton, Dr. Horace D. Arnold, Dr. George W. Gay, Dr. D. W. Cheever and Isaiah Clarke, Esq., and the president-elect, Dr. Woodward. One hundred and twenty-three men were present.

The Foxboro, Mass., Hospital Investigation. — After a long investigation as to the condition of affairs at the Foxboro Hospital for Inebriates, the hearing has finally been closed. Although no definite report will be made for some time to come, the opinion of those who have followed the proceedings is on the whole favorable to the general conduct of the institution. Certain changes of policy would no doubt be advisable, but the testimony given by witnesses for the prosecution was of such a character that it could not reasonably be taken as an expression of the existing state of affairs. Various disinterested persons spoke on the general subject of institutional treatment at one of the later hearings. Among these were Mr. Joseph Lee, Mr. Robert A. Woods, Drs. Charles P. Putnam, George F. Jelly, and others interested in civic affairs. The general opinion was expressed that the institution should be continued, although modifications might be desirable. Dr. Jelly spoke particularly of the character of the patients admitted and of the difficulties in their proper classification and care.

Withdrawal of Dr. D. W. Cheever from the Presidency of the Boston City Hospital Staff. — Dr. D. W. Cheever having declined a re-election as president of the General Staff of the Boston City Hospital, the staff, at a meeting held Feb. 18, passed the following vote:

"For upwards of fifteen years Dr. Cheever has served this association as its presiding officer. dignified, patient, faithful, impartial, zealous, always striving for the best interests of the hospital and its staff. Ever since that June day in 1864, when this institution first opened its doors to the sick and injured, he has stood in the front rank of its friends and advisers.

"Long before the staff was accorded the high privilege of taking part in shaping the policy of the hospital, and of making nominations for vacancies upon its roster, Dr. Cheever was often consulted informally by the trustees upon these and other matters, showing the estimation in which his character and his judgment were held at that time. Subsequent events have only served to emphasize the earlier experience.

"Dr. Cheever has always occupied an important position upon the Conference Committee, now the Executive Committee, which is the principal connecting link between the staff and trustees. The results of his efforts in this direction are well-known to all of us.

"After this long and faithful service, Dr. Cheever now feels it to be for the best interests of the staff that he should retire from the office of president. As might be expected he gives such cogent reasons for this action that we can but comply with his request, however much we may regret to do so.

"It is moved that the cordial appreciation of the staff be extended to Dr. Cheever for his long and arduous service in our behalf, together with the hope that so long as he may be spared to the profession and the community in which he holds such an enviable position, we may enjoy his presence at our meetings, and also avail ourselves of his wise counsel upon the various important measures that may arise."

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NEW YORK.

Officers of Medical Society of State of New York. — At the annual meeting of the Medical Society of the State of New York, Jan. 29–31, the following officers were elected for the ensuing year: President, Dr. Frederic Colton Curtis, Albany; first vice-president, Dr. Julius C. Bierwith (Brooklyn), New York; second vice-president, Dr. Edward Torrey, Allegany, Cattaraugus County; third vice-president, Dr. Nelson G. Richmond, Fredonia, Chautauqua County; secretary, Dr. Wisner R. Townsend (Manhattan), New York; treasurer, Dr. Alexander Lambert (Manhattan), New York.

Milk Supply. — At the second meeting of the public series at the New York Academy of Medicine on Jan. 1, the milk supply and its relation to the health of the community was the subject of discussion. Among those who spoke were Health Commissioner Darlington and Dr. Rowland G. Freeman, physician to the St. John's Guild Seaside Hospital and other children's hospitals; and Dr. Darlington expressed the opinion that the only effective way to secure a good milk supply was to go to the sources of supply and prevent the shipment to the city of impure milk.

Jewish Maternity Hospital. — A new lying-in hospital, to be known as the Jewish Maternity Hospital, has been organized on the lower East Side, and property purchased, at a cost of $50,000, for its uses. The two houses on this property, which is situated on East Broadway near Gouverneur Street, are to be remodelled, and will furnish a capacity of at least fifty beds. While these alterations will not be completed until September, the outdoor department of the hospital is to be put in operation immediately. It is stated that the special need of this new maternity hospital is in consequence of the fact that a large number of Jewish women who, by reason of their poverty, must have free attendance in confinement, are unwilling, on account of their religious scruples, to avail themselves of the service of the New York Lying-In Hospital and other similar institutions.

Purity of Ice. — A special committee, appointed by the New York Merchants' Association, to investigate the sanitary condition of the ice now being harvested on the Hudson River, has sent to Governor Hughes a communication in which it is stated that several chemists were employed to analyze samples of ice taken from various points supplying the crop. By these it was found that most of the ice, either at the top or bottom of the cake, showed the presence of intestinal bacteria. Especially bad was the ice cut on the fields between the cities of Albany and Troy, and for five miles south of Albany. In both instances it was practically solidified sewage. Near Albany and elsewhere ice was cut close to the large sewer outlets. In this communication the State Commissioner of Health is severely criticised for his inactivity in preventing the harvesting of ice from polluted sections of the river. The committee has been unable to get any satisfaction from him, and it is stated that it is for this reason that an appeal is made directly to the governor. In his annual report, recently submitted, the Health Commissioner complained that the appropriation for his department was not sufficient to enable him to put a guard on the harvesting of ice, and expressed doubt as to whether, in any event, he had the authority to prohibit the cutting of ice from streams or lakes supposed to be polluted.

Manual Employment for Women. — In his annual report, just submitted to the legislature, the Fiscal Supervisor of State Charities, H. H. Bender, speaks with approval of manual employment for women. He states that at the New York State Reformatory for Women at Bedford, Westchester County, more has been done in the way of employing the inmates at manual labor than at either of the other institutions for female misdemeanants, and that the results have been excellent. At this reformatory the women are employed in grading the grounds, laying cement walks and floors, painting and decorating, cutting ice, harvesting hay and working in the garden. This hard manual labor, the superintendent reports, besides reducing the expenditure for labor in all these lines, has tended to improve both health and discipline, and is thoroughly enjoyed by the inmates.

A Large Award for Personal Injuries. — One of the largest settlements ever made by a railway company in a suit for personal injuries has just been made in the case of Edward Kleist, of New Rochelle, against the New York Central and Hudson River Railroad Company. The original suit was for $200,000, and an agreement upon $50,000 was finally arrived at. Mr. Kleist, who is fifty years old, was one of the victims of the collision in the Park Avenue Tunnel on Dec. 19, 1905, and besides fractures in various parts of the body received an injury to the brain which resulted in hemiplegia and aphasia.

Addition to German Hospital. — To the German Hospital and Dispensary, Jacob Ruppert has given $10,000 for the erection of an isolation building for contagious diseases, and George Ehret $5,000 for the purchase of an adjoining lot as a site for an additional ward for the hospital.

Bequests. — By the will of Mary J. Johnson, of New York, her whole estate, valued at $108,000, is left to religious and charitable purposes. Among the bequests are $7,500 each to St. Luke's and the Presbyterian hospitals, for the endowment of beds.

Among the bequests in the will of Mrs. Mary H. Pratt, of Brooklyn, N. Y., is $10,000 to the Brooklyn Home for Consumptives. The Pratt Institute, which was founded and endowed by her husband, the late Charles M. Pratt, is made the residuary legatee of the large estate.

Centenarians. — Two deaths of centenarians are reported for Central New York. Thomas Snyder died at Chittenango Falls, Madison County, on Feb. 13, and John Van Etten, at Littlefalls, Herkimer County, on Feb. 15; both at the alleged age of one hundred and two years.

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Current Literature.

The Journal of the American Medical Association.

Feb. 2, 1907.

1. Witherspoon, J. A. *Gonorrheal Arthritis.*
2. *Conner, L. A. *The Bacteriology of Acute Articular Rheumatism.*
3. Herrick, J. B. *Differential Diagnosis of Rheumatoid Joint Affections.*
4. Barker, L. F. *Joint Affections in Nervous Disease.*
5. *Locke, E. A., and Osgood, R. B. *The Treatment of Non-Tuberculous Chronic Arthritis.*
6. Hall, W. S. *Physiologic Effects of Alcohol.*
7. MacNicholl, T. A. *Alcohol and the Disabilities of School Children.*
8. Mays, T. J. *Alcohol as a Factor in the Causation of Pulmonary Consumption.*
9. Talbot, E. S. *Alcohol in its Relation to Degeneracy.*
10. Noble, G. H. *Intramural Abscess of the Puerperal Uterus.*
11. Albert, H. *Disinfectants and Disinfection.*
12. Van Allen, H. W. *Roentgen Rays in the Treatment of Lupus Vulgaris.*
13. *Einhorn, M. *The Digestive Bead Test for Ascertaining the Functions of the Digestive Apparatus.*
14. Sollmann, T. *Digestive Ferments* (special article).

2. Conner reviews the literature and theories of the bacterial etiology of acute rheumatism. He concludes that while we are justified in accepting rheumatism as a specific infectious disease and not merely as an attenuated pyemia caused by the common pyogenic organisms, and while there is considerable evidence in favor of the view that it is caused by a specific diplococcus or streptococcus, positive proofs of the specificity and identity of this organism and its causal relation to rheumatism are still lacking. Achalme's bacillus, he believes, has no etiologic relations to the disease.

5. Locke and Osgood discuss the treatment of chronic arthritis of non-tuberculous origin under the following heads: (1) Villous arthritis; (2) infectious arthritis; (3) atrophic and (4) hypertrophic arthritis. The first is not properly an entity, though it may occur without discoverable etiology or following trauma. Nevertheless, it may accompany the other forms as part of the symptom-complex. The infectious arthritis includes those joint affections supposed to be due to some chronic infection in the blood. The articular cartilages in this group are less likely to show marked changes than in the two following ones. Atrophic arthritis is the type characterized by atrophy of joint structures together with debility and general constitutional disturbance. It includes many of the cases of so-called rheumatoid arthritis. In the hypertrophic type there is less, if any, constitutional disturbance and a hypertrophy of cartilage and bone. The so-called osteo-arthritic types are here included. The classification is here recognized as imperfect and provisional, but is offered for the sake of conveniently stating the authors' views of treatment. This is general as well as special and the former, as a rule, most important. All abnormal conditions must be sought out and remedied. The general health, physical and mental environment, and all local foci of disease must be attended to, diet regulated, exercise, dress, etc., directed. In the physical treatment they include hydrotherapy, hyperemia, counterirritants, massage and active and passive motion, and the substitution of these for drugs is the secret of much of the success of the treatment at the present time. Hyperemia holds the chief place in the local treatment. In cases of simple villous arthritis, if conservative methods fail, radical operative measures are advised. Infectious arthritis gives a better prognosis and often improves rapidly with treatment. The authors insist on the importance of early active and passive movements to prevent adhesions. In the atrophic form, which is often very resistant, early massage and active and passive movements to correct the tendency to atrophy and fibrous ankylosis are also advisable. Operative treatment may be required. In the hypertrophic type, on the contrary, passive motion, unless employed with the greatest care, may do harm and the main principle in the treatment of this type is rest. Mechanical support may also palliate the symptoms. The local treatment is less effective in this type on account of the tendency to bony proliferation and ankylosis. The final results in any case will depend largely on early diagnosis and persistence in the treatment. In old cases we may relieve, but can hardly hope for a complete cure.

13. Einhorn again describes his new method, originated at the beginning of 1906, of giving the patient, in a gelatinous capsule, beads with various food substances attached and examining the stools, at longer and shorter intervals, to ascertain whether or not the substances have

been digested. He usually employs the following six substances: Catgut, fish bone, meat, potato, mutton fat, thymus gland. The first two are usually digested in the stomach, the others in the intestines. With regard to the functions of the digestive apparatus, the following conclusions are drawn: If all or most of the beads reappear before twenty-four hours there is an accelerated motility; if, after forty-eight hours, a retarded motility exists, if only traces of fat and thymus or fish bone remain, the digestion is good; the reappearance of meat and potato, much fat or thymus, indicates poor digestion, and if all the substances appear, the digestive function is absolutely bad. He has recently used this test in a number of cases, in various conditions of health or disease, and discusses the tabulated results. These tables, he says, show that the test gives a thorough insight into the relations of the functions of the digestive apparatus. More study, however, will be required before they can be used diagnostically. Einhorn has previously shown that catgut is occasionally digested in the intestines, and these later experiments seem to show that fish bone may also be thus digested in rare instances. He, therefore, instituted experiments by suspending pieces of catgut and fish bone by a silk thread in the stomach, and withdrawing it after certain periods. This experiment seemed to show that excessive acidity of the gastric juice retards the disappearance of the catgut, and other experiments showed that catgut is occasionally digested in the intestine, and that trypsin has occasionally a digestive action on fish bone. He is also experimenting to ascertain the value of the method of determining the presence or absence of HCl. He gives detailed directions for preparing the food beads, and remarks that while the test is of value, when a more thorough knowledge of the functions of the digestive apparatus is desired, it is not permissible with pronounced stenosis of the digestive tract, or with stricture of the esophagus, stomach or intestine.

The Journal of Medical Research.
December, 1906.

1 and 2. Tobey, E. N. *The Indol Reaction. The Cholera-Red Reaction.*
3. Austin, A. E. *The Uricolytic Enzyme in Animal Organs.*
4. Tobey, E. N. *Non-Virulent Diphtheria Bacilli from an Infected Middle Ear.*
5. Stookey, L. B. *The Influence of Subcutaneous Injection of Liver Extract upon Hepatic Catabolism of Uric Acid.*
6. *Marshall, H. T., and Knox, J. H. M. *Modification of Bacillus Dysenteriæ after Cultivation in Agglutinating Serum.*
7. *Baldauf, L. K. *The Chemistry of Atheroma and Calcification (Aorta).*
8. Schultz, V. T. *The Spirocheta Pallida in the Tissues in Congenital Syphilis.*
9. Hewlett, A. W. *The Effect of Amyl Nitrite upon the Blood Pressure in Man.*
10. *Thompson, R. L. *The Parathyroid Glandules in Paralysis Agitans.*
11. Smith, T., and Brown, H. R. *The Resistance of Red Blood Corpuscles to Salt Solutions of Different Tonicities before and after Withdrawals of Blood.*

12 and 13. Lewis, P. A. *Hemorrhagic Hepatitis in Antitoxin Horses. Diphtheria Toxin Paralysis in the Guinea Pig.*

14. *Frothingham, C. *Lesions Caused by Trichina Spiralis in Man.*
15. Dutton, J. E.; Todd, J. L., and Tobey, E. N. *Hemoflagellates of an African Fish.*
16. Rivas. *Bacillus Coli Communis in Drinking Water.*

6. Marshall and Knox report the results of their experiments with the bacillus of dysentery grown in antidysenteric sera in normal horse serum and in other allied fluids. The changes which took place in the characteristics of the bacteria, particularly in their agglutinability, were great. These modifications are suggested as evidence that the differences between different but closely related forms of bacteria, such as the members of the colon-typhoid group, may be simply the results of similar modification, under the influence of environment, from a single prototype organism. It is even possible that pathogenicity may be developed in certain strains of a bacterial species ordinarily non-pathogenic.

7. Baldauf has made quantitative analyses of human aortas in different stages of calcification with a view to tracing the chemical changes which the process involves. Unlike other observers he fails to find evidence that the formation of calcium soaps plays a part in such changes. He fails to confirm the finding that the deposit of inorganic salts occurs in the same percentages in calcification as in normal ossification. He finds a remarkable high percentage of lecithin, a phosphorus-containing substance, in the early stages of calcification, and suggests that this compound may be an essential step in the process.

10. Thompson reviews the history of our knowledge of the parathyroid glandules and their function. These bodies are very constantly present in close relation to the thyroid gland. Their removal in animals results often in tremors, tetanic spasms and convulsions. In certain cases these symptoms subside, after a short period, and are replaced by constant tremor. This fact has led several authors to the belief, on theoretical grounds only, that parathyroid insufficiency is the cause of paralysis agitans. To investigate this theory Thompson has examined nine cases of paralysis agitans post-mortem and compared the findings with those obtained in forty routine autopsies. Although in some cases abnormalities were found, his observations in no way support the theory that paralysis agitans can be traced to disorder of the parathyroid glandules.

14. Frothingham has demonstrated trichina embryos in the sinuses of the mesenteric lymph nodes and in liver sinusoids, from which he concludes that the mode of entrance of these parasites is by the lymph stream; their later distribution occurs by the circulating blood. The embryos may break out of the vessels in various organs and cause local destruction of tissue.

British Medical Journal.
Jan. 26, 1907.

1. Voelcker, A. F. *Some Common Errors in the Diet and General Hygiene of Children.*
2. LePage, J. F. *Remarks on Post-Partum Hemorrhage.*
3. Jordan, J. F. *Notes on the Treatment of Myoma of the Uterus.*
4. Cowen, G. H. *Cæsarian Section in a Case of Contracted Pelvis with Twin Pregnancy.*
5. Holmes, T. *On the Cause of Acute Illness Supervening during Menstruation.*
6. Ray, M. B. *Case of Obstructed Labour Due to Osteo-Sarcoma of Pelvis.*
7. *Watson, B. P. *The Influence of an Excessive Meat Diet on Fertility and Lactation.*
8. Sealy, G. J. *The Food Factor in the Twentieth Century.*
9. Charles, J. R., and Sangumetti, H. H. *Multiple Myeloma.*
10. Jones, W. E. *A Case of Scurvy Occurring in a Diabetic.*
11. Menzies, J. A., and Jameson, W. E. *Vaccination of the Cornea.*

7. The problem of the falling birth-rate in England is one which has attracted many observers. During the fifty years in which this decrease has been marked, there has been a great increase in the consumption of meat, 3 lb. a head per annum in 1850 and 50 lb. a head per annum in 1902. The writer, thinking that this great increase in meat eating may have some relation to the declining birth rate and the decrease in the number of mothers who have breast-fed infants, conducted a series of experiments on rats, the controls fed on bread and milk, the experimented animals on meat. The results showed a marked decrease in fecundity among the meat-fed rats, as well as a considerable decrease in the amount of lactating tissue in each.

The Lancet.
Jan. 26, 1907.

1. Symes, J. O. *Erythema Nodosum and Rheumatism.*
2. Moffat, R. U. *Spirillum Fever in Uganda.*

3. Williams, C. *X-Rays in the Treatment of Carcinoma and Sarcoma.*
4. Andrew, J. G. *Two Cases of Traumatic Rupture of the Kidney, in One of Which a Single Kidney Existed.*
5. Fenton, H. J. H. *On a New Test for Sugar.*
6. *McCulloch, H. D. *Observations on the Induction of Auto-vaccination in Tuberculosis and Other Chronic Glandular Infections by the X-Rays (as Revealed by the Opsonic Chart).*
7. Bisson, A. O. *Tracheotomy in Slight Respiratory Obstruction, Associated with Febrile Toxemia.*
8. Mallannah, S. *The Glandular Extract from Immunized Animals, as a Curative Agent in Plague.*

6. McCulloch has used the opsonic index as a guide to x-ray treatment of glands enlarged from tuberculosis or other causes. He believes that the effect of the x-ray on glands infected with micro-organisms is to stir up these organisms to produce a toxin which acts as an auto-vaccination; such vaccination from living tissue has been shown to be more beneficial than that from dead products, for in tuberculosis it has been demonstrated that tuberculin made from material taken from a tuberculous focus is more effective than any other kind of artificially prepared product. The paper is largely a discussion of theories rather than of a report of actual results.

Deutsche Medizinische Wochenschrift, No. 4.
Jan. 24, 1907.

1. *Uhlenhuth, Gross and Bickel. *Experimental Investigations on the Action of Atoxyl on Trypanosomes and Spirochetes.*
2. *Hoppe-Seyler, G. A. *Clinical Lecture on the Treatment of Endocarditis.*
3. *Boas, I. *Digestive Gastrosuccorrhea.*
4. *Katzenstein, M. *The Changes in the Gastric Secretions after Gastro-Enterostomy, and the Effect of this Operation on Gastric Ulcer and Cancer.* (Concluded.)
5. Strauss, H. *The Technic of Intravenous Injections.*
6. Reichardt, M. *Voluntary Dilatation of the Pupils.*

1. Koch has recently reported brilliant results from the use of atoxyl in trypanosomiasis or sleeping sickness. The authors have investigated the action of this drug in dourine, a venereal disease of horses due to the trypanosoma equiperdum. Using rats, mice and rabbits they found that by the simultaneous injection of atoxyl with blood containing these trypanosomes, the disease could be prevented, while the control animals all sickened and died, with numerous trypanosomes in the blood. Animals injected with atoxyl after infection show a rapid and complete disappearance of trypanosomes from the blood, which, in many cases, is permanent. In other cases, they reappear in small numbers at the end of a week and can be again made to vanish from the peripheral circulation by another dose of the drug. Similar results were obtained with the spirocheta gallinarum, which causes a septicemic disease of hens. The action of atoxyl would appear to be specific on trypanosomes, and might well be compared with that of quinine in malaria.

2. Hoppe-Seyler emphasizes the importance in acute endocarditis of searching for and removing the focus of infection which is the cause of the disease. Otitis media, tonsillitis, chronic appendicitis, abscess of the prostate and of the tubes are mentioned in this connection. He reports a very serious case of recurring endocarditis in a young girl, in which the removal of the infected tonsils resulted in a cure. For other details, the reader is referred to the original article.

3. Boas alludes to two forms of gastrosuccorrhea previously described, the continuous and the paroxysmal; the former is usually associated with organic disease of the stomach, the latter with gastric neurosis and diseases of the spinal cord, especially tabes (gastric crises). He then describes another form which he calls alimentary or digestive. In this type, hypersecretion of gastric juice takes place only after food and is then excessive, up to 300 cc. The acidity, however, may be normal or even below normal, that is to say, there is a true hypersecretion as distinguished from hyperacidity. The male sex was exclusively affected, in his 12 cases. The symptoms are those of nervous dyspepsia with marked emaciation. Motor insufficiency may or may not be present, its relation to the disease has not yet been settled. The diagnosis is best made by the examination of the gastric contents one hour after a dry test breakfast consisting of dry bread or a few crackers. There will be found an excessive amount of contents consisting of a small sediment of food above which there is a colorless liquid. The digestion of starch is markedly impaired. Treatment consists in nourishing food, with avoidance of all substances which stimulate secretion, and a substitution of sugars and dextrins for the starches. Sodium citrate in drachm doses four times a day has proved of benefit.

4. From experimental work on animals as well as from analyses of the gastric contents of patients with gastro-enterostomy, Katzenstein is of the opinion that after every gastro-enterostomy both bile and pancreatic secretions enter the stomach. This occurs continuously just after the operations, becoming periodic later. The time of appearance of these fluids in the stomach is partially dependent, at least, on the sort of food used in the test meal. Following a test meal which is free from fat, bile and pancreatic juice appear in the stomach in about one and one-half hours; while when fat is administered they are present in a half hour. Katzenstein feels that in this latter instance the secretion is called forth by reflex stimulation. The results of the presence of these alkaline substances in the stomach is a diminution of the acidity by a chemical union on the one hand, and, on the other, by an inhibition of the production of hydrochloric acid. It is further shown that while pepsin is rendered inert by even transient alkalinity, the action of trypsin is only diminished in a slight degree by a transient acidity. Pepsin-hydrochloric acid digestion is practically absent following a gastro-enterostomy. In regard to gastric ulcer Katzenstein feels that hydrochloric acid is the main factor in its maintenance, if not also in its causation. Therefore, by regulating the diet after a gastro-enterostomy for ulcer conditions may be made favorable for its healing. Such a diet should consist of fatty food given in small quantities at frequent intervals, together with a liberal amount of water. It is also suggested that the favorable action of a gastro-enterostomy on a cancer of the stomach takes place not only by improving the motility of the stomach, but also by a digestive action of the trypsin on the cancer itself.

Munchener Medizinische Wochenschrift, No. 4.
Jan. 22, 1907.

1. *Rumpf. *The Effect on the Heart and Blood Pressure of Pressure over Tender Areas.*
2. Gauss, C. J. *A Report of One Thousand Cases of Labor in Scopolamin Seminarcosis.*
3. Preller. *The Combined Use of Scopolamin and Morphin in Obstetrics.*
4. Penkert, M. *The Technic of Lumbar Anesthesia in Morphin-Scopolamin Narcosis in Abdominal Surgery.*
5. Hirschel, G. *The Operative Treatment of Dangerous Gastric Hemorrhages.*
6. Vogel, K. *On Operations of the Hands and Their Preparation.*
7. Mohr, H. *Incarceration of Appendices Epiploicæ in Hernia.*
8. Theilhaber, A. *Alcohol in Obstetrics and Gynecology.*
9. *Adler, R. *On Cribbing.*
10. Fischer, K. *A Case Illustrating the Etiology of Intussusception.*
11. Dehner. *Removal of a Foreign Body from the Abdomen.*
12. Grosse, O. *Two Pencils in the Urethra Removed by Operation.*

1. Rumpf has found that pressure over tender points, especially in traumatic neurosis and neuralgia, may cause marked changes in the action of the heart, namely, increase in the rate which may be preceded by a decrease of short duration; decrease in the volume of the pulse, occasionally also irregularity; cyanosis of the face, diminution or in some cases increase in the blood pressure. These changes, if the examination is carried out in such a way as to exclude sources of error, may be of diagnostic importance, especially in medico-legal cases.

9. Adler recommends warmly Bouveret's method for

the treatment of cribbing, which consists in the wearing of a plate which holds the mouth open. This effectually prevents the swallowing of air. The plate is to be removed during meals.

Berliner Klinische Wochenschift, No. 46.
Nov. 12, 1906.

1. *Claus and Kalberlah. *Chronic Icterus.*
2. Wimmer, A. *A Case of Extensive Thrombosis of the Cerebral Sinuses.*
3. v. Aldor, L. *Sahli's Desmoid Reaction.*
4. Rosenbach, O. *Is There Any Exception to the Rule that in Paralysis of the Recurrent Laryngeal the Abductors of the Vocal Cords Show Loss of Function before the Adductors.*
5. Neumark, H. *Plastic Induration of the Penis and Dupuytren's Contracture.*
6. Löwenthal, S. *The Action af Radium on the Human Body.*

1. Claus and Kalberlah report two cases of permanent chronic icterus occurring in brothers. There was also a family history of biliary affections. This interesting symptom-complex is characterized by a permanent icterus of moderate intensity, usually without bile pigment in the urine, and with normal colored stools. It has a strong tendency to occur in certain families, and is often congenital. The congenital cases, as a rule, have enlarged spleens with normal livers, whereas in those occurring later in life the liver is frequently involved. The cause of the disease is unknown, and probably not the same in all cases. The prognosis is good as to life, but the icterus remains permanent.

Nov. 19, 1906.

DEDICATED TO B. FRÄNKEL ON HIS SEVENTIETH BIRTHDAY.

1. Semon, F. *The Therapeutic Value of Silence in the Sanatorium Treatment of Tuberculosis of the Larynx.*
2. v. Schrötter. *A New Method of Illuminating Cavities.*
3. Killian, G. *The Basic Principles of Modern Rhino-Laryngology.*
4. Chiari, O. *Two Cases of Extraction of Foreign Bodies from the Bronchi by Means of Killian's Direct Superior Bronchoscopy.*
5. *Lermoyez, M. *The Contagiousness of Ozena.*
6. *Massei, F. *The Significance of Anesthesia of the Entrance to the Larynx in Paralysis of the Recurrent Laryngeal Nerve.*
7. Onodi, A. *Anatomical Studies on the Relations between the Posterior Ethmoid Cells, the Sphenoidal Sinus and the Optic Canal, in Connection with the Nasal Origin of Retro-bulbar Neuritis.*

5. Lermoyez claims that ozena is a contagious disease, and brings forward strong clinical evidence in favor of this view. He believes the coccobacillus of Perez to be the cause of the disease. This organism gives off the characteristic odor in cultures, and inoculated intravenously, causes atrophic rhinitis in animals. Cases of ozena should not come into close contact with the healthy, on account of the imminent danger of infection.

6. A bilateral anesthesia of the entrance to the larynx, according to Massei, is an almost constant symptom of paralysis of the recurrent laryngeal nerve, often preceding the motor paralysis. This observation makes it probable that the recurrent carries sensory fibers.

Nov. 26, 1906.

1. *Krause, F. *Transplantation of the Big Toe to Replace the Thumb.*
2. *Zupnik, L. *Meat Poisoning and Paratyphoid.*
3. *Gengou. *Antituberculous Sensibilisators (Amboceptors).*
4. Fein, J. *Lupus of the Nasal Mucous Membrane.*
5. Apfelstedt, K. *Protection and Repair of the Perineum.*
6. Munter, S. *Hydrotherapy in Febrile Diseases.*
7. Rosenthal, F. *Experience with the New Artificial Food "Visvit."*

1. Krause reports successful transplantation of the big toe to replace the thumb, of which only one half the basal phalanx remained. The first phalanx of the toe was first partially resected, and then the thumb was grafted on to it, being held in position by a plaster cast. The strange posture was maintained by the patient for three weeks without great discomfort; at the end of this time, union having taken place, the bridge of tissue connecting the two parts of the toe was severed. Good function was obtained.

2. Polemic against Trautmann.

3. Gengou injected various acid-fast bacilli into guinea pigs (human, avian, and fish tubercle bacilli, acid-fast bacilli of butter, etc.), and found that each type caused the production of antibodies which were effective against all members of the acid-fast group, with a few exceptions. He used the method of Bordet and Gengou, which rests on the principle of absorption of the complement.

Deutshce Archiv für Klinische Medizin.
Bd. 88, Hft. 1–3, 1906.

1. *Fellner, Jr. *Clinical Observations on the Value of the Determination of the Pulse Pressure in Cardiac and Renal Disease.*
2. Erb, Jr. *The Influence of Blood Pressure Variations on the Concentration of Arterial and Venous Blood.*
3. *Dietlen. *The Size and Position of the Normal Heart and Its Dependence on Physiological Conditions.*
4. Wassmuth. *The Change in the Conductivity of the Urine in the Presence of Albumin.*
5. Grünwald. *Functional Renal Diagnosis.*
6. Bettmann. *Herpes Sexualis.*
7. *Sick. *Observations on the Secretion and Motility in the Fundus and Pyloric Portion af the Stomach.*
8. Pollak. *Uric Acid Excretion in Gout and Alcoholism.*
9. *Simons. *Very Light Percussion ("Schwellenwertsperkussion") of the Heart in the Cadaver.*
10. *Moritz. *Some Remarks on the Percussion Outlining of the Total Anterior Surface of the Heart.*
11. *Dietlen. *Percussian of the True Heart Boundaries.*
12. Völker. *The Relation af Urinary Acidimetry According to Moritz to the Method of Freund-Lieblein.*
13. *Abeles. *The Relation of Proteus and Typhoid Agglutinins to Each Other.*

1. Pulse pressure is the difference between the systolic and diastolic blood pressures and corresponds to the true size of the pulse. The pulse pressure multiplied by the pulse rate within certain limits is a measure of the volume of blood flow. Though data obtained for the brachial artery may not correspond with conditions in the aorta and other vessels, they give some information as to the general circulation. Fellner determined systolic and diastolic pressures by means of a broad cuff Riva-Rocci apparatus in various conditions and points out the advantages of a knowledge of the pulse pressure in certain diseases, as compared with systolic pressure changes, the latter merely measuring vascular tension. Especially is this apparent in chronic nephritis with high systolic pressure. In these cases there may be a rise in systolic pressure either with an improvement or deterioration in the patient's condition. A corresponding rise in pulse pressure is of good prognostic omen, a fall of bad, indicating an increased renal insufficiency. It is possible here for toxic products by peripheral constriction to both raise systolic pressure and lower pulse pressure, and consequently a determination of the latter is a great help in prognosis.

In aortic insufficiency a high pulse pressure is of diagnostic value, but its variations are of slight prognostic importance since many disturbing factors enter. The particular value of pulse pressure determinations in cardiac cases with broken compensation is in connection with a determination of the value of digitalis therapy, and here it is very valuable for a rise indicates good effects from the drug, whether systolic pressure rises or falls. In arteriosclerosis the results are very confusing and pulse pressure determinations of comparatively little value. In general, the determination of pulse pressure is of much more value than a determination of systolic pressure.

3. Dietlen has outlined the heart by means of the orthodiagraph in two hundred and sixty-one individuals in which no evidence of cardiac abnormality could be found. This paper contains in the form of tables data

regarding age, height and weight of the individuals, form and measurements of the thorax and measurements of the diameters and form of the cardiac outline and its relations to the chest wall, arranged so that easy comparison can be made of any given case with the average for that age, sex and size, in order to determine whether it falls within the limits regarded as normal. Certain facts are brought out by these data. The heart is found to increase in size with the height of the individual, but to bear a still closer relation to body weight. The importance of using the midsternal rather than the parasternal line as a fixed point for measurements is emphasized. Notwithstanding a decrease in body weight in old age, there is not a corresponding decrease in heart size, which may be regarded as a physiological senile dilatation. The upper border of the heart outline is usually higher in women (second interspace) than in men (third rib), except in old women, when it becomes lower. The apex beat usually lies at a higher level than the apex of the cardiac silhouette, the latter corresponding to the tip of the right ventricle, the former due to the contraction of the left. The apex beat is usually inside the left border (12% of cases). In women a larger part of the heart lies to the left of the median line than in men. [The chief value of this paper is its tables which embody much data regarding cardiac outlines determined by a most accurate method, orthodiagraphy.]

7. By means of a rubber ball introduced into the stomach and connected with a manometer Sick has studied the peristaltic motions of the stomach, recording them as tracings on a revolving drum. The introduction of food into the stomach causes at first an active relaxation of the muscle of the fundus. This is followed by contractions. Sick was able to place his apparatus either in the fundus or in the pyloric end of the stomach and thus compare the contractions at each place. Further by an ingenious arrangement he was able to withdraw small portions of stomach contents at intervals from the same part of the stomach in which his apparatus for recording peristaltic motions lay. In addition to cardiac respiratory movements Sick obtained in his tracings from the cardiac end of the stomachs of normal individuals rather low gradual curves of slighter gastric contractions, while in the pyloric end there was a curve with more abrupt higher rise, followed by a slightly less abrupt fall. The former was present both during gastric rest and activity, the latter only during activity. In cases of gastric hypermotility, while the difference between pyloric and cardiac ends was still apparent, the contractions in the latter were more powerful than in the normal. In cases of atony there was little muscle contraction and no distinctive pyloric type. The analyses of food withdrawn during the observations showed that food, even semiliquid food, is not thoroughly mixed in the fundus, but settles in layers, the more fluid portions at the top. After fifteen to twenty minutes free HCl appears in the mixture of food and gastric juice in the fundus. After forty or fifty minutes the pyloric portion becomes highly acid, but there is no evidence of the secretion of acid in the pyloric end though pepsin and rennin are formed there as well as in the fundus. In cases of decreased secretory activity the difference between the gastric juice in the two ends of the stomach becomes less. A practical point brought out by this work is that ambulatory cases may yield chemical analyses quite different from the same case in the hospital at rest. Also after being emptied and given a night's rest, the stomach has a greater secretory power than when recently relieved of food. This shows that the secretory power of the stomach undergoes fatigue with lessened activity.

9. "Schwellenwertsperkussion" is the name given to a just audible percussion (in the intercostal spaces) with one finger, using the other as pleximeter. Simons believes this gives the most accurate outline of the relative cardiac dullness. The determination of the absolute cardiac dullness the author considers insufficient because numerous important diseases of the heart muscle change it scarcely if at all, while in other cases the parts of the heart adjacent to the thoracic wall change later than the other parts. Moreover, changes in the absolute cardiac dullness allow no definite conclusions as to a change in the whole heart. Simons practiced this method on the cadaver to show its accuracy, not to give data as to the cardiacoutline in the living. He compared his outline with the actual size of the heart by means of long pins thrust into the chest. He found the correspondence close even to the lower border of the heart. Simons believes this very light percussion has no appreciable effect on deep structures, but the differences obtained are the result of entirely superficial tension changes dependent on the presence of a solid mass beneath in an elastic environment. In the method both senses, touch and hearing, are utilized.

10. Moritz points out the variations in cardiac percussion outlines given in the various books and compares them with the orthodiagraphic projection of the heart on the chest wall. Orthodiagraphy he points out is to control not to supplant percussion. The latter he carries out as follows: For the right border a strong percussion, especially during maximal expiration, for the left a moderately strong to light percussion, never during expiration, in each with the pleximeter finger parallel to the median line. The farther to the left the heart border, the lighter the percussion should be. Allowing a variation of .5 cm., outlines so obtained agree with the orthodiagraph in 86% for the right border and 70% for the left. In greatly enlarged hearts and narrowed chests come the greatest errors, and in these the apex beat may fall quite wide of the true outline of the left border.

11. Dietlen discusses and gives the outlines of the relative cardiac dullness determined by Moritz's method of percussion and the cardiac outline determined by the orthodiagraph in two hundred and thirty-one cases from the Greifswald and Giessen clinics.

13. Abeles has studied the agglutinating effect of human serum from typhoid, paratyphoid, icteric and normal cases on various strains of proteus and that of rabbits immunized against typhoid or proteus. The result of these studies is the conclusion that no relation exists between the agglutinating substances produced by the two bacteria and consequently the species specificity of the two organisms holds for agglutinins. He explains those cases in which jaundice has been regarded as causing an agglutination reaction for typhoid bacilli as due not to the action of bile in the serum, but to an antecedent typhoid infection. This work was stimulated by the conflicting claims of various workers, some of whom claimed a close agglutination relation between typhoid and proteus organisms.

Correspondence.

LONDON LETTER.

[From our Special Correspondent.]

Sir Michael Foster. Royal Commission on Tuberculosis. Provident Dispensaries and "Consultations des Nourrissons." The "Leno" Treatment of Chronic Ulcers. Anesthetics.

London, Feb. 4, 1907.

Mr. Editor: The name of the late Michael Foster is no doubt well known to your readers. Without contributing any considerable mass of concrete additions to scientific knowledge, Sir Michael Foster, by his gift of pellucid description and exposition, as well by his remarkable faculty for stimulating the mental energies of his pupils as by the forceful glamour of his personality, was enabled to achieve results of no mean order. He created the Biological School at Cambridge, and during the thirty years of his active directorship not only was there much valuable work turned out but distinguished pupils also were given to science.

Sir Michael's breadth of mind and exceptional powers of oratory were nowhere better exemplified than in the lecture on the History of Physiology delivered at San Francisco, in 1900. Almost his last public act was his signature of the second interim report issued by the Royal Commission on Tuberculosis, of which he was chairman. The work already reported, and the vast amount of evidence accumulated, especially by the German Commission since Koch's dictum in 1900, made it a foregone conclusion, that the second term of reference, *viz.*, "Whether animals and man can be reciprocally infected" with tuberculosis, should be answered in the affirmative. The essential points established are that a considerable proportion of the cases of human tuberculosis is of bovine origin, and that milk is the vehicle of infection. These facts are all that is necessary to confirm existing legislation, and furnish the warrant, or rather an inexorable demand, for even more stringent regulations with regard to the segregation or destruction of tuberculous bovines and for the prohibition under penalty, of the sale of tubercle-tainted milk.

Over-ridden as we are in England by fanatical antivivisectionists (whose vogue is such that they are permitted to erect in one of London's Public parks — "The heritage of the people for ever" — a bronze statue of a dog with inscription recording the brutal treatment to which it was subjected by scientific assassins), it will be interesting to watch how this report, pregnant with importance to the public weal, will be received by those who deny that any result of even the smallest practical value has ever been attained by animal experiments. Since the Bayliss fiasco they have been a little bit chary of going to law, but inasmuch as these last results have been attained by the use of public funds, they can never have a better opportunity to prove their point!

London has begun to wake up over a matter in which Paris has given us such an excellent lead, — that of milk depots and "*consultations des nourrissons*."

In Finsbury, more particularly, great results have been attained by the combined efforts of the local practitioners and local philanthropic organizations, and now there seems to be some chance of the various provident dispensaries of the metropolis assuming the rôle played in Paris by special institutions. All our advances in sanitation have left untouched the appalling infantile mortality of great cities; and although we know that more of it is due to ignorance than to conditions ineradicably planted in the social system, no organized effort at all commensurate with the evil has been made to remedy it.

Many people look to these provident dispensaries, which in some instances date their foundations earlier than most of the hospitals, and which draw their patients from a class one degree removed from that for which the hospitals are *supposed* to exist, for a solution of the problem of hospital abuse.

All patients at these dispensaries pay, directly or indirectly, something for treatment and medicines. The visiting staffs at these, as at all hospitals in London, are, of course, entirely honorary, but no use is made of the clinical material for teaching purposes. It is a great loss to medical education in London that none of the wards of the Poor Law Infirmaries to which chronic cases of every description get ousted by the pressure of work at the hospitals are available for the instruction of students. The young practitioner, in London, leaves his medical school almost entirely ignorant of the terminal stages of many chronic diseases, and a visit to the Salpêtrière or the Hôpital St. Louis is often a revelation to him; but near as Paris is to us now, it is ridiculous to be obliged to seek there what we might see in plenty at home.

Experience amongst post-graduate students, many of whom have visited clinics in all parts of the world, leads me to speak of a method of treatment of chronic ulcers of the leg which is extremely successful and yet, it seems to me, almost unknown. If it be familiar to your readers, they must forgive me. It consists in the application of a bandage of open-wove, square-meshed canvas, which permits the escape of discharges and, therefore, does not require renewal more often than once a week or once a fortnight. This "Leno," as it is called in the trade, is "dressed" with boracic acid and starch and is applied wet, very evenly and uncrossed, over the raw surface; but with a fair tension upon the edematous parts below, and firmly above, as far as the knee.

In drying it contracts a little, exerting thereby an equable and gentle pressure which not only secures it in place, but procures in a remarkably short time a levelling of the sharply cut edges, and an evenness of surface, together with uniform granulations, which permit rapid healing from without inwards, and peripherally from any surviving "islands" of epithelium.

Outside the "leno" which the patient is instructed to leave untouched, a simple dressing of lint cut to the shape of the ulcer and soaked in boracic lotion (16 gr. to 1 oz.) is applied and covered by wool and an ordinary roller bandage; this dressing is renewed once or twice daily by the patient, who is told to wash the surface free from discharge by a gentle stream of water. It should be stated that a foul ulcer must be cleaned by repeated hot fomentations, before the "leno" method is adopted; the results obtained are almost as surprising to the surgeon as they are gratifying to the patient.

It is no uncommon thing to see ulcers of twenty-five years' standing, soundly healed in three months and that without the patient's ever lying up for a single day. It is this last feature which makes the method invaluable in out-patient practice. I need hardly say that as a preparation for skin grafting the procedure is very valuable and that in fixing the grafts themselves the "leno" is very useful.

I must mention a new apparatus devised by Hewitt for the administration of the chloroform and ether mixture particularly, though it is also adapted for ethyl chloride. It is figured in the new edition of his book on anesthetics, and is still on its trial, but from what I have seen of its use in his own hands, it is not only simple and compact, but perfectly safe, both in principle and practice; it is likely to come into very general use.

Professor Barker, of University College, who obtained such good results with the Schleich infiltration method is now devoting his attention to spinal anesthesia. At the Cancer Hospital too, it is employed but on the whole, there is no marked tendency in London to desert the inhalation routine.

C.

UNIVERSITY OF PENNSYLVANIA MEDICAL SCHOOL RAISES REQUIREMENTS FOR ADMISSION.

Philadelphia, February, 1907.

Mr. Editor: I take the liberty of sending you a statement of the requirements for admission to the Medical Department of the University of Pennsylvania, which have recently been adopted by the Board of Trustees.

According to the plan finally adopted, the requirements will be increased gradually beginning with the annual session in September, 1908, and reach the maximum September, 1910. The present requirements cover four years graded course in a high school or its equivalent. The essential points in the new requirements are as follows:

I. For the session 1908–1909, in addition to the present requirements, either one of two foreign languages, French or German; (2) physics; (3) inorganic chemistry, including qualitative analysis; (4) general biology or general zoölogy.

II. For the session 1909–1910, in addition to the requirements of 1907–1908, the candidate must have completed successfully work equivalent to that prescribed for the Freshman Class in colleges recognized by this university.

III. For the session 1910–1911, in addition to the requirements of 1907–1908, candidates must have completed successfully work equivalent to that prescribed for the Freshman and Sophomore classes.

IV. Candidates who have successfully completed at least three years of an accepted college course may be admitted with conditions in chemistry, physics and general biology or zoölogy.

The maximum requirement is two years of collegiate training, including biology, chemistry and physics. The two additional years of collegiate training are regarded as an adequate preparation for entrance into a professional school. The importance of the candidate having had instruction in subjects leading to the study of medicine is so generally recognized that biology, chemistry and physics have been added to the requirements. This combination of special and general training is, without doubt, a much more logical requirement than a collegiate degree which does not imply any special preparation for medical studies.

Truly yours,
Charles H. Frazier, M.D.,
Dean.

RECORD OF MORTALITY

For the Week ending Saturday, Feb. 9, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,670	482	Quincy	8	—
Chicago	783	282	Waltham	5	—
Philadelphia . . .	—	—	Gloucester	—	—
St. Louis	—	—	Pittsfield	13	1
Baltimore	224	69	Brookline	9	1
Cleveland	—	—	North Adams . .	5	1
Buffalo	—	—	Chicopee	6	3
Pittsburg	—	—	Northampton . .	11	3
Cincinnati	—	—	Medford	8	—
Milwaukee	—	—	Beverly	5	—
Washington . . .	—	—	Hyde Park . . .	3	2
Providence . . .	93	28	Newburyport . .	—	—
Boston	221	42	Leominster . . .	4	—
Worcester	56	12	Melrose	6	2
Fall River	48	18	Woburn	6	2
Cambridge	28	5	Marlborough . .	8	3
Lowell	48	14	Westfield	4	1
Lynn	24	5	Peabody	—	—
New Bedford . .	29	9	Revere	1	—
Springfield	27	3	Clinton	4	1
Lawrence	24	9	Attleboro	3	0
Somerville	17	4	Adams	2	—
Holyoke	26	9	Gardner	—	—
Brockton	18	3	Milford	6	1
Malden	14	5	Weymouth . . .	7	1
Salem	15	5	Framingham . .	—	—
Chelsea	16	—	Watertown . . .	1	9
Haverhill	14	1	Plymouth	—	—
Newton	8	2	Southbridge . . .	8	2
Fitchburg	6	1	Wakefield	—	—
Taunton	—	—	Webster	—	—
Everett	7	1			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED FEB. 14, 1907.

White, J. H., surgeon. Directed to proceed to Jump Point, La., for special temporary duty, upon completion of which to rejoin station at New Orleans, La. Feb. 12, 1907.

Cofer, L. E., passed assistant surgeon. Relieved from temporary duty at Ellis Island, N. Y., effective Feb. 3. Feb. 9, 1907.

Cofer, L. E., passed assistant surgeon. Granted leave of absence for sixteen days beginning Feb. 4. Feb. 9, 1907.

Cofer, L. E., passed assistant surgeon. Directed to proceed to Coatzacoalcos and Salina Cruz, Mexico, and San Francisco, Cal., for special temporary duty, upon completion of which to rejoin his station at Honolulu, Hawaii. Feb. 11, 1907.

Glover, M. W., passed assistant surgeon. Granted five days' leave in Jan., 1907.

Glover, M. W., passed assistant surgeon. Leave of absence granted for one month from Jan. 12, 1907, amended to be effective from Jan. 23, 1907. Feb. 11, 1907.

Boggess, J. S., passed assistant surgeon. Upon the return of Assistant Surgeon E. H. Mullan, relieved from temporary duty at Perth Amboy, N. J., and directed to report to the Medical Officer in Command, Stapleton, N. Y., for duty and assignment to quarters. Feb. 9, 1907.

Salmon, T. W., assistant surgeon. Granted leave of absence for two days in Jan., 1907, under paragraph 191, Service Regulations.

Ashford, F. H., assistant surgeon. Granted leave of absence for one day in Jan., 1907, under paragraph 191, Service Regulations.

Miller, W. W., assistant surgeon. Granted leave of absence for one day in Jan., 1907, under paragraph 191, Service Regulations.

Delgado, J. M., acting assistant surgeon. Granted leave of absence for thirty days on account of sickness, from Jan. 1, 1907. Feb. 8, 1907.

Foster, S. B., acting assistant surgeon. Granted leave of absence for eleven days from Feb. 9, 1907. Feb. 12, 1907.

Glascock, A., acting assistant surgeon. Granted leave of absence for one day in Jan., 1907, under paragraph 210, Service Regulations.

Goldsborough, B. W., acting assistant surgeon. Granted leave of absence for fourteen days from Feb. 4, 1907. Feb. 7, 1907.

Kennard, K. S., acting assistant surgeon. Granted leave of absence for one day in Jan., 1907, under paragraph 210, Service Regulations.

Moncure, J. A., acting assistant surgeon. Granted leave of absence for thirty days from Feb. 10, 1907. Feb. 13, 1907.

Wetmore, W. O., acting assistant surgeon. Granted leave of absence for six days in Jan., 1907, under paragraph 210, Service Regulations.

Wilson, J. G., acting assistant surgeon. Granted leave of absence for two days in Jan., 1907, under paragraph 210, Service Regulations.

Woods, C. H., pharmacist. Granted leave of absence for thirty days from Jan. 7, on account of sickness. Feb. 12, 1907.

Allen, G. C., pharmacist. Directed to report to Surgeon W. G. Stimpson, chairman of board, for physical examination to determine his fitness for promotion to grade of pharmacist of the first class. Feb. 7, 1907.

Rogers, Edward, pharmacist. Directed to report to Surgeon P. H. Bailhache, chairman of board, for physical examination to determine his fitness for promotion to grade of pharmacist of the first class. Feb. 7, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEB. 16, 1907.

L. H. Schwerin, acting assistant surgeon. Detached from the "Celtic," when placed out of commission, and ordered to the Naval Hospital, Norfolk, Va.

R. G. Heiner, assistant surgeon. Ordered to additional duty at the Naval Proving Grounds, Indian Head, Md.

APPOINTMENTS.

The following Assistants have been appointed for the remainder of the academic year at the Harvard Medical School: Cleaveland Floyd, M.D., in Bacteriology; Joshua Clapp Hubbard, A.B., M.D., in Surgery; Harris Peyton Mosher, A.B., M.D., in Otology; David Harold Walker, M.D., in Otology.

Dr. Edgar Gareeau has been appointed Consulting Gynecologist to the City Hospital of Quincy, Mass.

RECENT DEATHS.

Dr. Adolph Rupp, of New York, died on Feb. 14, from cardiac disease. He was born in Brooklyn, N. Y., in 1856, and was graduated from the medical department of the University of the City of New York in 1877; after which he spent some time in post-graduate study at the German universities. He devoted himself more especially to laryngology and otology, and at the time of his death was aural surgeon to the Metropolitan Nose, Throat and Ear Hospital. Dr. Rupp was one of the translators of Ziemssen's Cyclopaedia of General Medicine.

Dr. Claudius Van Deusen, a retired physician of Leeds, near Catskill, N. Y., where he practised for over fifty years, died at his home in that village on Feb. 13, at the age of eighty-three years.

BOOKS AND PAMPHLETS RECEIVED.

National Association for the Study and Prevention of Tuberculosis. Transactions of the Second Annual Meeting, Washington, D. C., May 16 to 18, 1906. Lancaster, Pa., 1906.

Fibroid Tumors of the Uterus. By Charles P. Noble, M.D. Reprint.

Blakiston's Quiz-Compends. A Compend on Bacteriology, Including Animal Parasites. By Robert L. Pitfield, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

The Muscles of the Eye. By Lucien Howe, M.A., M.D. In two volumes. Vol. I. Illustrated. New York and London: G. P. Putnam's Sons. 1907.

The Overtime Bill. Would Its Provisions Benefit or Injure Labor? By William Whitman.

The Diagnosis and Treatment of Intussusception. By Charles P. B. Clubbe. Edinburgh and London: Young J. Pentland. 1907.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., and Albert H. Buck, M.D. In eight volumes. Vol. II. Illustrated. New York: William Wood & Co. 1907.

Original Articles.

A CONTRIBUTION TO THE STUDY OF HYDRONEPHROSIS.*

BY ARTHUR TRACY CABOT, A.M., M.D.,
Surgeon to the Massachusetts General Hospital.

Much confusion still exists in the minds of the profession as to the relations of false and true hydronephrosis. This study of personal cases is offered as a contribution towards a right understanding of these wholly distinct and different conditions which closely resemble each other clinically.

In true hydronephrosis the sac which contains the fluid is the distended pelvis of the kidney, and as the internal pressure increases, the parenchyma of the kidney becomes stretched and thinned, forming sometimes no inconsiderable part of the wall of the cavity.

In false hydronephrosis the fluid is contained in a sac outside the kidney.

The site of this collection of fluid exactly corresponds to the position of a hydronephrotic kidney and may lead to a mistaken diagnosis. So close is the similarity, in size, position, consistency and mobility, that no case of traumatic hydronephrosis can be accepted as an instance of true hydronephrosis unless proved by dissection in operation or autopsy.

In the Boston Medical and Surgical Journal, Feb. 22, 1883, I reported a case of traumatic hydronephrosis which at the time I believed to be an example of true hydronephrosis brought about by some temporary stoppage of the ureter by blood clot or otherwise, due to the trauma. I wish now to review that case and to correct the mistake made in my original report of it.

Case I. The patient was a boy of ten, who, three months before, had fallen down stairs and immediately after had passed bloody urine. Following this accident a tumor formed in the left renal region, was several times aspirated and a urinous fluid obtained. As it constantly refilled after aspiration an incision was made into it. The cyst wall was found immediately beneath the muscles. "The finger passed into the cavity felt" what I described in my report as "a soft nodular mass, probably the kidney, in the posterior part of the cyst." Drainage was introduced and as the boy made a quick and complete recovery no further examination of the condition was possible.

I supposed at the time, that the sac opened was a greatly dilated renal pelvis and that the kidney was felt from the inside, as it were. This explanation never fully satisfied me, for the mass which was in the proper location for the kidney projected into an otherwise smooth-walled globular cavity; whereas in true hydronephrosis the distended kidney forms, as I have said, a part of the wall of the cavity and the only projections from it are the flattened papillæ and the walls separating the different calices which stand out and give that portion of the sac a multilocular arrangement.

Subsequent experience has convinced me that this mass was indeed the kidney (felt from the outside) which had been ruptured by the trauma, and that the cavity which I took, at the time, for a greatly dilated renal pelvis was an extra renal cavity in which the urine was confined after its escape from a rent in the renal pelvis.

False hydronephrosis of this sort was not a well-recognized condition at the time of my first experience with it. Since that time it has been somewhat investigated and is now better understood.

In many cases of renal contusion or rupture a tumor is to be felt occupying the site of the kidney and extending down well towards the brim of the pelvis. This tumor is produced by an effusion of blood about the kidney. When the laceration of the kidney opens its pelvis this effusion contains urine as well as blood.

Writing in 1901 Morris says: "The most characteristic effect of rupture into the pelvis of the kidney is extravasation of urine. This takes place principally in the neighborhood of the kidney, forming with the blood a large retroperitoneal tumor, more especially where a free passage along the ureter is interfered with; under these circumstances a large cyst may develop with a smooth inner wall containing urine mingled with detritus of blood." In another place he says: "Such a tumor, whether a hemato-nephrosis or a circumrenal extravasation, is rounded in form and slightly movable both from side to side and in the antero-posterior direction."

It is interesting, in our endeavor to understand these cases, to study the anatomical conditions which confine this effusion about the kidney and prevent it from becoming diffused in the loose cellular space behind the peritoneum.

This post-peritoneal space is so loose and readily opened up that it might be expected, if urine and blood were poured freely into it, that they would quickly spread and form a diffused extravasation. In some cases of extreme violence this occurs, but usually the effused fluids are confined about the kidney in the form of a clearly defined tumor. This limitation of the effusion cannot reasonably be explained in all cases by the formation of a limiting wall of "inflammatory formation" (Morris), for it is observed in cases where the effusion is very rapid, and a circumrenal tumor is apparent within a few hours of the injury. It is inconceivable that a strong limiting wall should form by inflammatory or other action so quickly.

This limitation of the effusion must then be due to the confining action of an already existing membrane.

My observation of cases, together with careful dissections, has convinced me that the wall of the cavity in these false hydronephroses is the fibrous outer wall of the so-called fat-capsule of the kidney.

This tough capsule plays an important and beneficent part in thus confining effusions about the kidney. When the effused fluid is urine, extensive urinary infiltration is prevented; while in cases of hemorrhage from a ruptured kidney the blood presently fills this capsule tightly and by its own internal pressure brings the bleeding to a standstill.

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* Read at a meeting of the Surgical Section of the Suffolk District Medical Society, Dec. 5, 1906.

The subsequent history of one of these cases will vary according as the effusion contains urine or not.

If the effusion consists of blood alone it will usually disappear by absorption. When absorption is slow, aspiration of the serous part of the hematoma may hasten its disappearance.

When the effusion contains urine it may form a false hydronephrosis such as I described above. Such a false hydronephrosis in which the fluid is mainly urine if not cured by one or two aspirations, as has not infrequently occurred, may be confidently expected to yield to a simple incision with drainage.

A mixed effusion of blood and urine may lead to suppuration and is pretty certain to do so if any inflammation exists in the kidney or its pelvis at the time of the accident.

In a healthy patient such a mixture of blood and urine may, however, disappear and cure itself.

The following case illustrates this condition:

CASE II. A young man while playing football was thrown against a wooden bench and suffered a severe contusion of the right loin. This was followed by hematuria, and a tumor presently appeared in the right side which simulated a greatly enlarged kidney. It was elastic and somewhat tender to palpation.

I saw the patient in consultation with Dr. Chas. E. Abbott, of Andover, Mass., on about the third day after the accident. There was now an indistinct sense of fluctuation in the tumor. I introduced an aspirating needle and drew off seven or eight ounces of a watery fluid, dark purplish red in color. This did not reduce the size of the tumor materially but it made it soft and flaccid. Aspiration was stopped by the plugging of the needle with old blood clot.

An examination of this fluid on the following day showed it to contain abundant urea, and to be evidently a mixture of urine and blood.

Supposing, at that time, that such an effusion of urine must necessarily lead to suppuration, I expected to receive a summons within a few days to open and drain the sac; but, contrary to expectation, the tumor steadily decreased in size and finally disappeared.

It is questionable whether this disappearance of the effusion is due entirely to absorption or whether drainage through the rent in the renal pelvis plays any important part in its removal.

Passing from this false hydronephrosis to true hydronephrosis I have an interesting observation to report in which both conditions, the false and the true, co-existed in connection with one kidney.

CASE III. J. S. W., Jr., a well developed boy of eleven years, was seen by me March 20, 1897, in consultation with Dr. E. H. Stevens, of Cambridge. His history was as follows:

Since the age of one and a half years he had had repeated attacks of severe abdominal pain. At first these came every week and lasted several hours. Gradually they became less frequent but were of longer duration. Presently it was noticed that a fullness appeared in the left loin with each attack and disappeared as the pain subsided. These attacks were usually accompanied by vomiting and by high fever.

The last previous attack was seven months ago and lasted about two weeks. Two weeks before I saw him he began to have pain in the left side and presently a tumor in that side was noticed. The pain was of moderate severity until four days ago, but since then it has been very severe. Two days ago Dr. Stevens aspirated the tumor and drew off eighteen ounces of fluid of specific gravity 1,006 and containing urea. The tumor rapidly refilled and when I saw the patient it was as tense as ever and the boy was suffering great pain. It extended well up under the ribs and downwards to the brim of the pelvis.

Operation was advised and under ether we opened the tumor widely in the lumbar region. A large quantity (not measured) of bloody fluid escaped and it was then seen that the fluid was contained in a sac the wall of which seemed to be the outer layer of the fat-capsule; and at the bottom of this sac lay a collapsed hydronephrotic kidney with a rent in its wall three fourths of an inch in length, which opened the kidney through the thin wall of one of the calices. This opening was enlarged and the finger, introduced, showed the whole kidney to be reduced to a thin walled sac with numerous irregular pockets. An examination as careful as could be made with a rather poor light failed to show which pocket represented the pelvis and the ureter could not be made out. The kidney was drawn up and sutured to the lumbar fasciæ in the hope of thus straightening the ureter; and the rent in the kidney was closed by a continuous catgut suture.

For two days the boy was comfortable, and then he began to have severe pain in the side and the swelling was found to have returned to almost the same size as before operation. It was found that the tumor now was the greatly distended hydronephrotic kidney, which had filled up tensely since the rent in its wall had been closed. It presently became necessary to puncture the kidney and put in drainage. The wound soon healed down to the tube and with a bottle attached to a swathe to collect the urine he kept pretty comfortable for two years.

In March, 1899, he entered the Massachusetts General Hospital to have an operation for closure of the fistula. At this time he had about ℥xxx of urine each day from the bladder and ℥ xx from the opening into the kidney. The urine coming from the renal fistula was of very low specific gravity while that from the bladder was normal in character. A nephrectomy was done now. When the ureter was reached it was found that just after leaving the pelvis it was looped over a little artery which ran direct from the aorta to the lower part of the kidney. The wall of the ureter was very thin at the bend where it was caught up over this vessel and the caliber was so narrowed that the finest probe would not pass. The operation was successfully completed although the separation of the sac was difficult on account of firm adhesions. The boy made a good recovery and has been perfectly well ever since.

This was properly a case of congenital hydronephrosis. Although the dilatation of the kidney did not make itself noticed until some years after birth, the condition that led to it was a congenital one.

It is an interesting speculation whether it was the assumption of the upright posture which, causing a downward sag in the kidney, tightened the loop of the ureter over the artery and caused an obstruction which had not shown itself during the horizontal life of the child.

Besides the last case in which a congenital obstruction of the ureter by looping over a vessel caused the hydronephrosis, I have seen one case of congenital hydronephrosis in which the obstruction seemed to be a valvular one at the junction of the ureter with the renal pelvis.

Case IV. A poorly developed boy of four had had a swelling in the left lumbar region since birth. One month previously this tumor had been aspirated and urine had been obtained. It rapidly refilled again and the day before I saw the child he had suffered from pain in the abdomen followed by vomiting. The child was pale and anemic, with quick pulse and respiration rapid and superficial. The temperature had been considerably raised for some time.

When I saw him the abdomen was distended by a tumor which, lying mostly to the left of the median line, extended out and filled the flank, reached well across the middle line, up under the ribs and down over the pelvis. Fluctuation by wave was distinct over this tumor and its character, its position and the previous aspiration of a urinous fluid from it made the diagnosis of hydronephrosis sure. It was felt that the child was rapidly failing and that immediate interference was demanded. He was not strong enough for an extensive operation, consequently a nephrotomy was quickly done and drainage established. In opening down to the sac a cavity was opened containing several ounces of chocolate-colored fluid. It was thought that this was due to leakage from the puncture made with the aspirating needle. The sac was then opened and a large quantity of a similar chocolate-colored fluid was evacuated. The interior of the cavity presented the sacculated appearance of a hydronephrotic sac in which no traces of the kidney could be made out at the time. Drainage tubes were introduced. The child was much relieved by this operation and made a slow recovery.

A month and a half later the temperature which had remained irregular and somewhat raised since the operation fell to normal. The child seeming now in good condition, a nephrectomy was done and the hydronephrosis was enucleated and removed. The sac was quite adherent and the peritoneum was opened during the operation. It was closed by a continuous catgut suture and in no way complicated the result. The boy made a good recovery. The sac presented nothing peculiar. The upper end of the ureter made a nipple-shaped projection into the pelvis in such a way that it was quite clear it must have acted in a valvular manner to close the exit. The ureter was otherwise normal in size with no dilatations.

This case afforded a good illustration of the occasional benefit of a nephrotomy as preliminary to a nephrectomy.

Acquired hydronephrosis. — The cases of acquired hydronephrosis that I have met with have all of them resulted apparently from mobility of the kidney. I refer here to the cases of unilateral hydronephrosis appearing long after infancy, and I exclude many cases of distention of the kidney in which the contained fluid has been purulent, also those in which both kidneys have been distended owing to obstruction in the lower urinary passages.

In a number of the cases that I have seen the distention of the kidney has been only moderate in degree and has disappeared under the influence of posture with raised hips and lowered shoulders. I have also seen manipulation greatly assist in the reduction of a kidney distended in this manner.

I have had two cases in which operation has brought about a cure of hydronephroses of considerable size in kidneys which showed mobility.

In neither of them could a distinct valve formation, such as Fenger has described, be made out. The ureter was, in each case, found to be tortuous just below its emergence from the pelvis, and the obstruction seemed to be due to a folding of it upon itself.

There was nothing to indicate which particular twist of the ureter had been the seat of the obstructive pressure. It is easy to see that an obstruction of this sort may act intermittently until the enlargement of the kidney is sufficient to cause a firm pressure against the kink and make the obstruction a permanent one.

In one of these cases intermittent attacks had been a marked feature. In the other, although the mobility of the kidney was very great, no history of intermittent pain or tumor could be obtained.

The point of especial interest in the two cases of this sort upon which I have operated is that the simple measure I adopted for straightening the ureter seems to have been efficient in restoring the permeability of the canal so that no subsequent filling up of the kidney occurred.

This measure was to insert a bougie through the ureter down beyond the portion that was tortuous.

In this way the various curves of the canal are effaced while the pelvis is contracting and pulling it into shape. Furthermore, and this is I believe most important, " a moderate amount of inflammation is set up in the walls of the ureter, which stiffens them, and attaches them to the parts about and thus tends to keep the form given to the tube." This explanation of the manner in which the bougie may accomplish the permanent correction of the obstructing condition was first given by me in an account of my first case reported to the Surgical Section of the Suffolk District Medical Society in January, 1896.

This case was seen seven months later, and at that time there was no sign of any refilling of the sac, showing that the patency of the ureter had been satisfactorily restored.

The second case only confirmed the good opinion I then formed; for the result has been most satisfactory and there is no sign of recurrence at the end of one and a half years.

I append to this article a brief report of these two cases. In both cases the kidney was fastened in the loin by stitches attaching it to the rib and the fascia.

The end of the bougie was brought out through the opening left for drainage, and it was removed at the end of three days. It was my intention in the second case to have kept it longer, but the bougie was so acted on by the urine that its surface showed a tendency to scale off and on this account it was removed earlier than had been intended.

It is interesting to note that Dr. Fenger in his instructive and successful operations on valves at the uretero-pelvic junction was in the habit of leaving a bougie in the upper part of the ureter for three or four days. Under these circumstances it is difficult to determine the importance of the plastic operation on the valve for it is conceivable that the action of the bougie, combined with fixation of the kidney, might have worked a cure without further interference with the valve.

Cases of intermittent hydronephrosis due to mobility of the kidney have been cured by fixation of the kidney alone so that it may even be doubted whether the bougie played an important rôle in my cases. While admitting the possibility of such a doubt I am not inclined to accept such an explanation. For both of my cases were instances of persistent hydronephrosis with large loose pelves which could not have pulled sufficiently on the ureter to straighten it even when the kidney was attached well up in place.

Case V. Miss A., thirty-two years of age. A thin, pale woman. Two years before she had first noticed an enlargement of the abdomen a little to the right of the median line, and in the past year had suffered considerably from abdominal pain, which had been almost constant and was noticed more for a week following catamenia. She had never noticed any symptoms in connection with urination.

Examination of the abdomen showed a large, fluctuating mass which, when lying on her back, lay on the right side, extending up well under the liver and extending down to the brim of the pelvis. When she stood up this mass rested across the lower part of the abdomen, just above the pelvis, and the region about the neighborhood of the liver was then empty.

The catamenial history led to the diagnosis of ovarian cyst, but the position of the tumor when she was on her back strongly suggested a hydronephrotic kidney. Examination of the urine was wholly negative. The great mobility of the tumor made it seem probable that if it were the kidney it had a long meso-nephron, and there was danger that a puncture in the loin might traverse the peritoneal cavity. We therefore thought it wiser to explore by an abdominal incision, which was done March 29, 1895.

The tumor was found to be a large hydronephrotic kidney, which was extremely movable as had appeared by previous examination. With the hand in the abdomen guiding the aspiration, a needle was introduced through the loin and the sac entirely emptied. The abdominal wound was then closed. This operation was followed by no reaction, and the patient made a good recovery.

The examination of the fluid drawn gave the following result: It was of a pale, amber color, with a specific gravity of 1,007, and having a slight trace of albumin. The sediment consisted of brown, granular cells with occasional granular and fibrinous cylinders, like renal casts. The examination for urea showed that the fluid contained 1.01%.

For at least a fortnight there was no sign of any refilling of the cyst, but at the end of that time the tumor began to be noticeable in the loin. Examination of the urine soon after the operation gave a specific gravity of 1,020, a slight trace of albumin. In the sediment hyaline and granular casts, with fat adherent.

The patient was in a rather feeble condition during her convalescence, with edema of the ankles, which postponed further operative treatment. On May 7, her condition being then pretty good, the kidney was opened in the loin, and after it was emptied the ureter could be seen emerging from the cyst by a funnel-shaped opening and running a tortuous course downward towards the pelvis. There was no valvular appearance to the opening of the ureter, nor any condition which could be corrected by incision or other alteration of that orifice.

The mechanical condition which had led to the hydronephrosis appeared to be a twisting of the ureter at some point in its tortuous course, that point not being determinable after the sac was emptied and the parts were lax. It being desirable, therefore, to efface, as far as possible, all of these abnormal twists and turns in the ureter, a gum-elastic bougie, about No. 6, French, was introduced and carried with some difficulty down through the ureter until it reached the neighborhood of the bladder. The sac was sewed to the edges of the wound through the muscles with continuous catgut. A drainage tube was then introduced into the pelvis of the kidney, and the bougie was left *in situ*.

The recovery was rather slow, but as far as the healing of the wound went, was uneventful. The bougie was removed at the end of three and a half days, and the drainage tube was out in nineteen days.

This patient was seen seven months later and, although there had been at times some discomfort in the abdomen, there was no sign of any filling up of the kidney.

Case VI. Mrs. B., fifty-four years of age, was brought to me in May, 1905, by Dr. G. C. Smith, of Boston.

The patient gave a history of pelvic and low abdominal pain intermittently during middle life. This had ceased five years previously, at the time of the menopause. For some (uncertain number) years has had attacks of pain in epigastrium accompanied by nausea and vomiting, with some chilly sensations. In the past year these attacks have come more frequently (once in five weeks), but have been somewhat less severe than formerly. There is, at times, some sense of discomfort in the right side and down the leg. There has been no noticed disturbance of urination nor have there been any symptoms referable to the bowels.

Examination of the patient showed an elastic mass in the right side of the abdomen close below the liver. This mass was pushed downward by inspiration and could then be held down by the fingers thrust in above it so that it did not rise on expiration, but left a space between it and the liver.

The diagnosis of hydronephrosis was made and an operation advised. This was done on June 15, 1905. A lumbar incision was made along Israel's line and on reaching the kidney it was seen that the pelvis was greatly distended with the body of the kidney above it. A trocar drew over a pint of pale, clear urine. The sac was then incised and the opening into the ureter was found. No valvular condition was found and a urethral bougie, about No. 12 French size, was passed down to the bladder without encountering any resistance. This bougie was left *in situ*, a drainage tube was placed in the sac, alongside of it, and the opening was closed down about them with a continuous catgut suture. The kidney was then fastened to the fascia and to the lower rib with Pagenstecker sutures placed after Guyon's method. The patient made a good recovery, the bougie being removed from the ureter on the third day.

A comparative examination of the urines during convalescence was of some interest as indication of the functional activity of the hydronephrotic kidney. The urine drawn from the sac at operation showed a specific gravity of 1,006, no albumin and a rare granular cast. Two days later the specific gravity of the urine from the nephrotomy tube had risen to 1,012, while the urine from the bladder had specific gravity of 1,019. Three days later they were, from nephrotomy, 1,009; from bladder, 1,011. Four days later, from nephrotomy, 1,008; from bladder, 1,010. The quantity of urine from the hydronephrotic kidney was very nearly the same as from the other, showing that its functional activity was but little impaired.

The patient made a good recovery. One year later she wrote me that she had had since the operation four attacks of epigastric pain similar to those before. She said, however, that the tumor in the side had not reappeared in connection with these attacks. She expressed herself as feeling well and said that she had gained twenty pounds in weight during the year.

This patient was seen eighteen months after operation. She had at this time been more than six months free from any discomfort whatever. There was no sign of any enlargement of the kidney and she weighed thirty pounds more than at the time of operation.

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THE SURGICAL TREATMENT OF RENAL TUBERCULOSIS.*

BY F. S. WATSON, M.D., BOSTON.

The question of the surgical treatment of renal tuberculosis may be summarized thus:

1. *Nephrotomy* is of service as a palliative measure for the purpose of evacuating pus retained in the kidney and for the relief of pain and fever due to such pus retention when it occurs in cases in which nephrectomy is contra-indicated. Other than this, nephrotomy has no place in the surgical treatment of this condition.

2. *Nephrectomy, when performed under proper conditions,* is the *only* form of treatment of whatever kind by which we can hope to *cure* any important number of patients with this malady.

What are these proper conditions? They are as follows: (*a*) That the tuberculous infection does not involve both of the kidneys. (*b*) That there are no tuberculous lesions elsewhere in the body of such extent or involving such organs or structures as to render the performance of nephrectomy useless, because of their existence. (*c*) That the functional capability of the kidney to remain, after the performance of the nephrectomy, shall have been established beforehand.

When these conditions are present, nephrectomy will result in the *cure* of from 25% to 30% of the patients, and at an operative risk of from 7% to 10%.

This statement is made upon the strength of the series of more than 300 cases reported by Casper, Rafin, Albarran, Fenwick, Kümmel, Kuster, Kelley and Israel, in which about this percentage of cure was obtained, as shown by the fact that there was no evidence of tuberculous infection in the remaining kidneys of this proportion of the patients, examined at intervals of from one to ten years after operation.

How often *is* tuberculous infection confined to one of the two kidneys, and can we demonstrate with reasonable certainty its presence in one and its absence in the other of them?

Tuberculous infection of the kidney at the outset, is confined to one of the two organs in the large majority of female patients and in probably more than one half of the males.

The evidence upon which this assertion rests is as follows: In 37.6% of all the cases of renal tuberculosis found in a series of 13,000 *autopsies* made at Kiel in Germany, the infection was unilateral.

Surgeons having the widest experience in the treatment of this condition are substantially agreed in estimating the proportion in which the infection is confined to one of the two kidneys in from 60% to 80% of the patients examined early in the disease.

The means employed to determine the presence of the disease in one kidney and its absence in the other consist in testing the urine drawn from each kidney separately with ureteral catheters. These tests being to determine the presence of tubercle bacilli, of pus and blood, and by inoculations.

One other diagnostic evidence of the presence of the infection in the kidneys deserves special mention. I refer to the cystoscopic appearances of the orifice of the ureter of the infected kidney and of the part of the bladder immediately adjacent to it, which appearances are so characteristic to those surgeons who are thoroughly familiar with them — Hurry Fenwick, Willy Meyer and some others — that they are all that is needed for them in order to make an absolutely positive diagnosis of tuberculosis of the corresponding kidney.

A striking opportunity was offered to Mr. Fenwick for proving the correctness of this assertion and is published by him recently in the form of a clinical lecture which he delivered to students and medical men.

In the course of this lecture, he showed a woman who presented none of the usual evidences of the existence of renal tuberculosis; that is to say, she had no fever, loss of weight or strength, neither kidney was enlarged or tender. The urine contained no pus or renal elements, and repeated expert examinations failed to discover tubercle bacilli. Cystoscopic examination, however, revealed the conditions shown in the two figures which I pass around for your inspection, and which are taken from the article of Fenwick.

Upon these appearances solely and only, Fenwick not only positively asserted the existence of tuberculous infection of the corresponding kidney, but also stated that he was equally confident of the exact location and extent of the process in the kidney and ureter. He next demonstrated the cystoscopic appearances to a number of his audience, and then showed them a sketch of what he expected to find in the kidney upon its removal, which sketch he had made several days before and which I will also pass around. Finally he removed the kidney without opening it, and upon doing so after the operation, his prediction with regard to the extent and location of the disease as shown by the sketch previously made by him, was verified in every respect.

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* Read at a meeting of the Surgical Section of the Suffolk District Medical Society, Dec. 5, 1906.

Cystoscopic fallacies.—I may here appropriately speak a word of warning with respect to reports of the findings with the cystoscope made by those who have not had a very extensive and long experience of such examinations, for the fallacies and errors of cystoscopy are numerous, and no better testimony of the truth of this can be furnished than that of Fenwick himself. In the course of a chapter devoted to these fallacies and errors in his very interesting volume published in 1904, and entitled "Clinical Cystoscopy," Fenwick refers among other cases to three of his own, in which he opened the bladder for the purpose of removing tumors which he was positive of having seen with the cystoscope, but in none of which was the slightest trace of the tumor to be found.

Elsewhere in reporting the cystoscopic examinations in a series of 150 cases of tumors of the bladder, he remarks that he throws out the first fifty of these as useless because of their having been made at a time previous to that at which he had learned to interpret correctly what he saw or to see all that there was to be seen.

If one of the first if not the first cystoscopist of our time in point of skill and experience says this of his own examinations, it is evident that the results of such examinations made by those who are less experienced should be taken with some reserve.

With regard to the influence exercised upon our decision as to whether nephrectomy should or should not be done, by the presence of tuberculous lesions elsewhere in the body than in the kidneys, it will depend, as has been said, upon the structures involved by them and upon their extent. We should not, for example, do a nephrectomy upon a patient with widespread tubercular infection of the lung, nor again in a case in which the prostate and bladder were involved; but on the other hand nephrectomy is the best treatment for tuberculosis of the bladder in the case of women, when both these organs are involved in the process provided one kidney only is involved.

Moderate lesions of bone or lungs do not constitute contra-indications to the performance of nephrectomy.

With regard to establishing the functional sufficiency of the kidney that is to remain after nephrectomy, the means for so doing are too well known to need more than a passing reference. I will only say with regard to this part of the subject, that of the more recent tests by which functional capability of each kidney individually is ascertained, that of cryoscopy is, I believe, the most reliable, and is of real value. None of the ways of segregating the urine in the bladder thus far devised seem to me to be reliable or to compare in value with ureteral catheterization.

The value of the cryoscopic, phloridzin and other recently devised tests is well shown by the comparison of two series of 362 and 292 nephrectomies, in the former of which the tests of the functional capability of the other kidney were not applied, and in which the operative mortality was 35%, and the latter of which the tests were applied, and the operative mortality of which was 7.8%.

To recapitulate we may say this:

1. The kidneys are the first of the genito-urinary organs to be involved in the infection in a considerable proportion of male patients, and in a majority of females.
2. That the infection at the outset and for variable periods afterwards involves but one kidney.
3. That we are almost always capable of determining the presence of the infection in one kidney and its absence in the other, when such is the case.
4. That we can determine the functional capability of the other kidney in almost all cases.
5. That nephrectomy performed in cases in which the infection is confined to one of the kidneys, and in which the functional capability of the other one has been demonstrated, yields from 25% to 30% of cures.
6. That the operative mortality when nephrectomy is done under the proper conditions is about 8%.

It is true that this is not a very brilliant showing, but it becomes so in view of the fact that no other form of treatment gives more than 4% or so of cures, which I say upon the strength of an inquiry made by me personally a few years ago, in which I addressed questions with reference to this point to members of the American Climatological Association and some other general practitioners, and upon the fact that pathologists tell us that they rarely if ever see examples of spontaneous healing of tuberculous lesions in the kidney other than in the comparatively small number in which the process has been terminated by total destruction of the organ through extensive suppuration or occlusion of its ureter, which is not healing in the proper sense of the word.

Whether or no we shall discover an antitoxin which shall be as beneficent in cases of tuberculosis as that which has robbed diphtheria of its dangers, we do not know. Until such discovery has been made, we must turn to nephrectomy as the only means by which *cure* can be obtained in a considerable proportion of the patients. The measure of success obtained will depend upon the operation being done at an early period of the malady. One of the most important objects to be sought is therefore to make the physician realize the necessity of early diagnosis and early delivery of the patient to the surgeon for operation.

As it was with appendicitis and in a measure still is, as it is with cases of prostatic hypertrophy, of gallstones and cholecystitis, or renal calculus and other maladies, the tendency of many minds in the profession is to temporize, and under the soothing narcotic belief and self-commendation of being conservative and safe, to treat the patients with palliative measures so long as they are not in immediate danger or are not actually suffering. In the presence of danger and of pain or at the final insistence of the patients themselves, they are at length brought to the surgeon at a time at which their malady has long since passed the stage at which surgical intervention could have saved or greatly benefited or cured them. Renal tuberculosis is another example of the cases which surgery cannot be expected to benefit in any important degree when it is in its later phases; it can be looked to to cure at least 20% of those who are brought at or near its inception, and will prolong life and spare suffering of a still larger proportion under those circumstances. Moreover, up to the present time it is the only treatment which can accomplish anything worth mentioning in the way of cure, and though its results are not brilliant, we may say that they are at least twenty times better than can be hoped for from any other course known to us.

I have purposely spoken with reference only to the essential features which concern the application of nephrotomy and nephrectomy in cases of renal tuberculosis, and of the latter operations, only in so far as its curative power is concerned, thinking that to enter into any other parts of this most interesting subject would lead me too far afield. Just one other point I should like to touch upon; it is with reference to what nephrectomy may do to benefit patients in the cases in which we do not look for cure because of the fact that both kidneys are already involved. Nephrectomy is not positively contra-indicated in all of these, and in some of the cases in which I have done the operation myself under these circumstances, and in some in which I have had the opportunity to see something of the results of the operation when done by others, I have found great temporary benefits result from it.

The indications for taking out one kidney when the other is slightly affected are when the seriously damaged kidney is the seat of extensive suppuration, is causing a great deal of pain and high temperature and when, for any reason, it is better to run the greater danger to life from the performance of a nephrectomy than to have a fistula to care for after doing a nephrotomy.

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A FEW NOTES ON A FEW CASES OF RENAL TUBERCULOSIS.*

BY PAUL THORNDIKE, M.D., BOSTON.

Your secretary has asked me to present this evening a short paper on renal tuberculosis. It is an important subject, interesting alike to the physician and to the surgeon; to the former, because of the difficulties and importance of diagnosis in the early stages of the disease, and because of the gradually growing realization that some such early cases may be properly and successfully treated by non-surgical means; to the latter, because of the brilliant surgical results to be obtained in properly selected cases, and because of the dependence of these results upon such proper selection.

Up to 1880, although the disease was well-known, pathologically speaking, it was not included in the schedules of those diseases which are well recognized clinically as subject to accurate diagnosis. Since that date, its clinical picture, during the various stages of its development, has been made more familiar to us, its frequency of occurrence has been recognized more completely, and its accurate treatment has been a gradual evolution of the last ten or a dozen years.

It would not be possible, nor is it the writer's intention, this evening, to make a complete *résumé* of our present knowledge of this disease, but rather is it his desire to emphasize a few points which have arisen in his personal experience with such cases.

It has come to be known during the last few years that genito-urinary tuberculosis is a common disease, and that it occurs in the kidney, epididymis and in the Fallopian tubes with about equal frequency. It starts not uncommonly in the prostate but, so far as we know, less frequently there than in the kidney or epididymis. The disease is not usually primary in the genito-urinary system, but has a focus in some other part of the body, from which the infecting material is carried to the kidney or other genito-urinary starting point, in the blood stream; so that no matter how early in the progress of the renal or other lesion we are fortunate enough to make a diagnosis, we must always remember that we are not dealing with the only focus of disease which the body contains. There are, of course, exceptions to this, as to most other rules. In the writer's experience, a prostate, which was removed for other reasons, was found to be tuberculous, and upon the patient's death some time later, from other causes, this tuberculous prostate was found to have been the only tuberculous focus in the body, and was, therefore, the primary disease not only for the genito-urinary system but for the whole body. Renal tuberculosis, then, is a fairly common disease, and Bevan states,[1] in an admirably practical article recently published in the *Journal of the American Medical Association*, that "in surgical clinics, in which kidney fixations are limited to suitable cases, tuberculosis of the kidney usually furnishes the largest percentage of any single pathologic process, being more frequent than stone or tumor." Of the fifty operative renal cases in the writer's personal records, seven were tuberculous.

After the renal infection takes place, it has been found that, for a considerable period of time, in most cases the process is limited to this one kidney, and with the cystoscope and other modern aids it is possible in many cases to make the diagnosis before further extension of the disease has taken place.

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* Read at a meeting of the Surgical Section of the Suffolk District Medical Society, Dec. 5, 1906.

[1] Jour. Am. Med. Asso., Oct. 6, 1906.

We are dealing, then, with a disease which, although not usually primary for the whole body in the kidney, has its most important focus of infection in that organ, and is limited to that organ long enough after its inception to make a diagnosis, with the means at present at our command, possible during this period. These facts seem to be proven to the universal satisfaction of students of this disease, for although autopsy records show an enormous percentage (certainly over 50%) of bilateral renal tuberculosis, clinical records, from modern surgical clinics, have shown during the last ten years a very small percentage (none over 15%) of bilateral cases at the time the diagnosis was made.

From these facts, then, we should infer that with a diagnosis made while the disease is still unilateral, brilliantly successful results should follow removal of the infected kidney, and such has already proved to be the case.

Primary nephrectomy in proper hands for this disease seldom proves fatal, and the after-result at this stage of the development of the disease is all that may be desired. What cases should be so treated? In reading reports of some cases where a diagnosis has been made very early in the progress of the disease, made perhaps by the lucky finding of the few bacilli in the urine from one kidney or the other, in a patient where the symptoms of irritation, etc., were all referred to the bladder and where there was nothing to suggest renal involvement until the ureters were catheterized, it is perhaps fair to speculate as to whether the brilliant cures which followed nephrectomy might not be equally brilliant following a proper hygienic and climatic treatment in similar cases. In this connection, the writer has been interested to note a statement of Dr. Edgar Garceau's in a paper recently published,[2] which is as follows: "Incipient tuberculosis of the kidney is best treated by a change of climate, but, unfortunately, incipient renal tuberculosis is rarely diagnosed, and it is only when the disease is well along and has invaded the rest of the urinary tract that the diagnosis is usually made. If it has not gotten too much of a start, and this may be fairly accurately determined by the amount of pus in the ureteral urine, it is worth while to try the effect of climate." Now it may be true that such early diagnoses are seldom made, but it is getting less true all the time, and it is up to the surgeon to have an opinion on this question and to decide what is to be done with these patients when such an early diagnosis is possible.

Every year the profession proves itself wider awake to the frequent occurrence of this disease, and every year more and more early and accurate diagnoses are made. In the last few weeks, the writer has seen in consultation three cases,—all referred to him as possible cases of renal tuberculosis by physicians in general practice. The fact that only one of the three cases proved to be of tuberculous origin does not alter the fact of the physician's recognition of the possibilities, nor does it undervalue his promptness of action. Of seven personal cases of the writer's, four were operated for the removal of the kidney; all of these recovered and did well. Of the three other cases, one was never operated because of her own refusal, and the other two were deliberately treated by change of climate and hygiene after an early diagnosis was made. One of these patients is a young girl who (two years after the diagnosis was made) is now in good health. Her physician writes that, although the urine still shows the same evidence of disease as formerly, he cannot see that she has progressed beyond the point reached two years ago. The other is a clergyman who writes from the mountains of California that he has forgotten he ever had anything the matter with him, and that he is told his urine no longer shows the bacilli of tuberculosis. In one of these cases, operation had been vigorously insisted upon by other advisers.

The point is this: while it is true that nephrectomy results are brilliant and that the bulk of the patients presented to us come at a stage of the disease where few surgeons would hesitate to operate, the incipient case, with little or no pus in the urine, is becoming more and more quickly suspected by the physician and, therefore, more frequently recognized by the surgeon. In such cases, frequent or infrequent though they be in the experience of any one of us, hygiene and climate should have a chance before the surgeon removes so important an organ.

Now to consider the later cases. Nephrectomy is always the operation of choice. For years many pus kidneys have been approached through the loin and drained. Many of these have, doubtless, been tuberculous kidneys. All surgeons are familiar with the stubborn persistence of these loin sinuses resulting from nephrotomy for pus kidney, from stone or some other cause. All surgeons dread the care of them just as they dread the care of the empyema sinus, and patients may well dread the possession of them. The writer never does a nephrotomy for pus kidney without wishing that nephrectomy were the possibility instead, and as the years go by and the number of his secondary nephrectomies accumulates, he is more and more prone to make the nephrectomy a primary procedure. In these tuberculous cases he believes that nephrotomy is never indicated, except for the relief of pain and the evacuation of pus in far advanced cases which cannot be subjected to the more radical operation. He also believes that nephrectomy should be done in all cases where the patient is strong enough to bear the operation, even when portions of diseased tissue are left behind. We all realize that even in comparatively early operations, where the local focus is removed with apparent completeness, we are still leaving behind another (the primary) focus elsewhere in the body. We all realize when we cut open and clean up a tuberculous joint that we are not removing all of the disease, and yet we often get a good stiff joint and a complete healing. It has been the writer's experience to remove tuberculous testes, knowing that he was leaving behind infected vasa and often infected prostates, and then to see the remnants of the disease die out, leaving the patients apparently free from further trouble. It has been his experience to see tuberculous ulcers in the bladder heal themselves after the infecting kidney was removed, and to see, in one case at least, the remains of an infected ureter stump shrivel down and heal itself after a nephrectomy which removed so much of the diseased tissues as the patient's condition would stand. Therefore he believes that, while every emphasis should be placed upon the necessity for completeness and thoroughness of the operative technique, the removal of ureter as well as the kidney, whenever possible, and the absolute necessity for leaving behind no part of the disease which is safely removable, the surgeon should not be discouraged, nor should he hesitate to operate, because he knows or perhaps learns, after his incision of approach is made, that the disease has passed the point which limits its complete removal.

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[2] Jour. Am. Med. Asso., Nov. 3, 1906.

Now let us consider for a moment the question of the other kidney. It has already been stated that autopsy statistics show in a large percentage (over 50%) of renal cases, both organs involved, while clinical statistics in these later years show the diagnosis made at the time when only one kidney was involved, less than 15% of the patients presenting themselves having the infection in both organs.

Bevan, in his recent article already mentioned, notes figures as follows: 12,732 autopsies at Kiel showed that of the cases of renal tuberculosis 62.3% were bilateral and 37.6% unilateral; or, roughly speaking, two out of three cases had involvement of both kidneys.

On the other hand, the clinical statistics show as follows:

Kroenlein showed 92% with only one kidney involved; 8% where both organs were involved; Israel showed only 8.3% bilateral involvement; Facklam showed only 9% bilateral involvement; Kümmel showed only 12% bilateral involvement.

In these bilateral cases, however large or small their number, the question at once arises, Shall we remove a badly diseased kidney in the face of the knowledge that the other kidney is beginning to be involved? It is, of course, unwise to make sweeping generalizations concerning questions not subject to proof, but one may always be permitted an opinion. The writer's opinion is that any large tuberculous focus which is so readily removed as is a kidney should be at once so removed in every instance where the patient's condition will stand the removal, and where it has been possible to get a fairly accurate knowledge of the working capacity of the other organ. With a full recognition of the many difficulties attending the use of ureter catheterization, especially in the male, with a realization of the many limitations and sources of inaccuracy attending the employment of cryoscopy, the phloridzin and other similar tests in ascertaining the relative work-capacity of the two organs, the writer believes that in most cases it is possible to find out not only which kidney is the chief offender, for usually by the time the second kidney is involved at all the first is very evidently so involved, but whether the other kidney is capable of doing the work of both with a fair degree of success; and he earnestly believes that the simple fact of the known involvement of the second kidney does not always remove the necessity for and the propriety of a nephrectomy upon the organ chiefly involved. He is strengthened in this belief not only by the fact that many such nephrectomies have been done in the past, often without the knowledge of the operators, but also that his own experience is constantly showing him, with more and more clearness and insistence, the fact that the removal of a large part of the tuberculous infection is often the turning point in the progress of the disease and enables the patient to handle the remaining portion in a way that would have been otherwise quite impossible.

To sum up, then, the writer believes that in the comparatively small but constantly increasing number of patients where the diagnosis can be made before much destruction of kidney tissue or involvement of other organs has taken place, hygiene and climate should have a chance before the kidney is removed. He believes that this treatment will often do away with the necessity for an operation. For the more numerous later cases nephrectomy is always the operation of choice, and should be done in every instance, if the patient can stand it and if he has another kidney capable of doing a fair amount of work, whether the disease has passed beyond the limits of the organ to be removed or not, and whether the other kidney be involved or not.

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EXPERIMENTAL STUDIES IN ARTERIO-SCLEROSIS.*

BY OSKAR KLOTZ, M.D.,
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Our conception of the pathology of arteriosclerosis has recently been so altered, that much confusion exists at the present date, as to what form or forms of arterial disease should be considered under this term. There were and are still many who would limit the term to a single kind of lesion, while others again are more liberal, and use this appellation to include the great mass of arterial diseases which eventually lead to a thickening of the vessel walls. The author of the term leaned towards using the word "arteriosclerosis" for all conditions of hardening of the arteries, and with this meaning the old anatomists expressed themselves, reserving, however, the term "atheroma" for another distinct lesion. However, Virchow's description of endarteritis chronica deformans, as the commonest type of arteriosclerosis, has led to the adoption of these expressions interchangeably, and has found the most favor recently. In my own studies I have given the wider use of the word, and include under arteriosclerosis, as was formerly the case, all hardening of the arterial coats. This, you will agree, is more in accord with the findings of the clinicians, for, *intra vitam*, they can in no wise differentiate the various histological forms of arteriosclerosis. It is necessary to bear in mind this wide definition I have given to the term, for otherwise it may be held up to me that arteriosclerotic lesions were not obtained in the experimental work.

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* Read before the Medical Association of the Greater City of New York, Jan. 21, 1907.

One must also not lose sight of the diverse functions which the vascular system has to perform, and how the manifold work of the arteries is at the bottom of their histological structure. The arteries of the uterus, which are well supported by the muscle tissue of the organ, are rich in muscle fibers, while the quantity of elastic fibers falls much in the background. These uterine arteries require this abundant muscular development for the periodic congestion at menstruation and pregnancy. On the other hand, the splenic arteries which within the organ have a poor supporting framework must rely entirely on their own strength to withstand the blood pressure. This extra strength of the arteries is obtained in a well developed adventitia, strengthened by elastic fibers.

The intima, too, of the different arteries varies in its constituents. Thus the arteries of the first order possess a muscular layer in the intima which is not present in the smaller arteries. Certain diseases therefore can and do occur in the intima of these larger vessels which can in no way be developed in their branches.

The experimental production of arteriosclerosis in animals is of fairly recent origin. The first experiments undertaken were by the direct injury, as crushing of an artery. In this way the experimenters had hoped to bring about sufficient change in the vessel walls to lead to aneurism. They were disappointed in this, but instead of an aneurism they found that certain local inflammatory changes with endothelial proliferation were produced. It has since been shown in all cases where an artery is disturbed in its natural bed, thereby affecting the vaso vasorum, that an inflammatory reaction is the result.

From a study of these inflammatory processes two important facts were noted. Firstly, that an inflammatory reaction in the media is evidenced by a leucocytic infiltration about the vasa vasorum and in the lymphatic channels; and secondly, that a lesion of the media of inflammatory nature may lead to a chronic proliferation in the intima. This intimal proliferation is the result of endothelial and connective tissue overgrowth and is similar to the disease which Virchow called " endarteritis chronica deformans " in man, while the medial inflammation is like Koester's " mesarteritis." This mesarteritis passes gradually from the acute inflammatory stage into the process of chronic healing in which fibrous tissue is laid down in the middle coat of the artery. In man the most severe form of this disease is met with in syphilitic arteritis, but no doubt other infections can lead to the same results.

Since the above mechanical experiments were made, several other ways were found to bring about the same results. The chronic endarteritis has been brought about by the intravenous inoculation of bacteria of low virulence. Thus I have been successful in producing an endarteritis chronica deformans in the arch of the aorta and sometimes in the abdominal portion by the injection of old laboratory stocks of the streptococcus or B. typhosus. A true inflammation of the media (a mesarteritis) I have not succeeded in obtaining except when an injury had been induced close to the vessel itself. In this case the inflammation of the surrounding tissue spread into the arterial wall.

The experimental endarteritis chronica deformans has histological characters quite similar to that in the human arteries. The lesion is composed of a heaping up, layer by layer, of the endothelial cells, while the connective tissue underneath the endothelium is also undergoing a proliferation. The result is that a white, pearly plaque is produced, under which degenerative changes of a fatty character may develop in the deeper part of the intima.

Whether these pearly plaques in the human or experimental arteriosclerosis are composed wholly of endothelial cells, or of connective tissue, or both, is quite immaterial at present. The result is the same, the production of a nodular hyaline mass of tissue on the surface of the intima. Such a thickening of the intima has a disastrous effect on the tissue just underneath it. The intima and the inner third of the media derive their nourishment from the lumen of the vessel, and the production of a firm mass of tissue at one point in the intima cuts off the supply of nourishment to the cells underneath it. From this there follows the fatty change in the deep layers of the intima and the inner portion of the media, a condition which is so often seen in the aorta.

The experimental lesions which have of late received the most attention are of a different nature. I have just pointed out that the endarteritis chronica deformans is essentially of a proliferative character, and that degenerative processes, if they occur at all, are secondary to this. We have, however, on the other hand, been able to produce pathological conditions which from the first are degenerative in nature. By the use of adrenalin, digitalin, nicotine and barium chloride, it has been shown that *the muscle cells in the middle zone of the media are primarily attacked*, and according to the intensity of the intoxication of these drugs, the cells either undergo a fatty degeneration or complete destruction. Along with the death of the muscle cells, the elastic fibers in the media are also affected and, like the former, they either become fatty, or with more severe intoxication, undergo necrosis.

However, in each instance the muscle fibers are primarily affected. These lesions, it is obvious, have destroyed the most important tissues in the artery, and have weakened the vessel wall very considerably. Aneurisms are commonly to be found at the sites of medial change while little if any intimal compensation occurs. Thoma's dictum, therefore, that intimal compensatory hypertrophy follows medial weakening is not universally true. This type of arterial disease, in which the media is first destroyed, is spoken of as "Moenckeberg's arteriosclerosis."

Not alone was the medial degeneration with calcification produced by means of drugs, but I have also obtained it by the inoculation of the diphtheria toxin. This is important in demonstrating that the effects of diphtheria are not confined to nervous tissue and heart muscle, but that the muscle elements of the vascular system are also attacked. It may be that the intoxication in cases of diphtheria is an important agent in bringing about Moenckeberg's arteriosclerosis, such as is seen in the radials and other peripheral vessels.

This latter form of medial degeneration with aneurismal pouchings has also its analogy in the peripheral arteriosclerosis in man. The greater majority of the cases of arteriosclerosis which are diagnosed from the condition of the radial arteries are of this type. The beadings so often noted in the radials of old people are the small pouchings in the vessel wall that have become calcified.

It is therefore evident that if the term arteriosclerosis is to be retained for the use of the clinician that this form of arterial disease, which is most commonly seen at the bedside, must be included under it.

The calcified plaques of the aorta or the calcareous beadings in the radials and other peripheral vessels are in each case secondary to a previous fatty change of the tissues. Experimentally these deposits of lime have been produced in connection with the medial destruction, when both muscle and elastic fibers become fatty. It is interesting to trace the course of the muscle tissue through the process of fatty degeneration with a subsequent death of the cells. The fine fat droplets within the cells are converted into the fatty acids by the lipase of the blood and serum, following which the salts of lime form a stable compound with the fatty acid in the form of lime soaps. These fatty acids and soap compounds are readily demonstrable by special staining. From the calcareous soaps the phosphate and carbonate of lime become deposited later.

Thus, up to the present, we have at our command the production of three types of arteriosclerosis, namely, (1) endarteritis chronica deformans, (2) mesarteritis, (3) Moenckeberg's type of arteriosclerosis. Each of these experimentally produced arterial diseases follows the same course and has the same ultimate result as in man. However, as the lesions are produced in healthy animals, which have power to compensate the effect of extreme arteriosclerosis, fewer symptoms are to be noted. The heart rapidly becomes hypertrophied and is able to carry the new load with comparative ease.

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VISCERAL ARTERIOSCLEROSIS.*

BY HARLOW BROOKS, M.D.,
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Physiology has taught us that all the tissues of the body are dependent, either directly or indirectly, on their blood supply. From our pathological investigations we recognize that when the amount or character of this nutriment is decreased the tissues begin to degenerate and become diseased then a decrease in function results. When this takes place in a single organ, or in a group of organs, the demands of the other viscera being at their normal, symptoms of deficiency on the part of the diseased viscus become all the more prominent on account of the lack of correlation. If the decrease in nourishment, on the other hand, be a general one, as normally present in senility, none or few visceral symptoms appear, since the functions and requirements of the various diseased organs are equally diminished and the balance of relative visceral activity is not disturbed. Furthermore, with the general body requirements at the normal, a crippled system is regularly called upon to do the work of an otherwise natural body, and this normal and constant demand on the diseased viscera tends more and more in many cases to encompass progressive pathological changes.

Partly on account of this general law, visceral arteriosclerosis is clinically of very much more importance than the disseminated disease, at least in the body of an active growing or adult subject, and, as a rule, the symptoms of localized disease are more striking. For very much the same reason cases of general arteriosclerosis where the larger vessels, as the aorta, the femorals, axillaries and other general trunks, are mostly affected, present few or no general or specific symptoms, except in the presence of active disease, as an acute aorteritis. This is due to the fact that the distribution of the nutritive fluid does not depend on the action of these large trunk walls, for their lumen is generally constant. This is so because their media or muscle coat is slight and the vessels are constructed for the most part to withstand pressure. Their condition does not act materially on the blood pressure and even when their lumen may be considerably encroached upon, the distribution of the blood is but slightly unbalanced, except in most unusual instances. As you all know, even when aneurisms of the large trunks are present, little or no disturbance of the nutritive function may appear and changes in general blood pressure are usually slight. Quite a contrary condition of affairs results when the trunks supplying the important viscera are involved.

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* Read before the Medical Association of the Greater City of New York, Jan. 21, 1907.

The visceral arteries are those of the "medium" class as classified by the histologists, they are the trunks which have thick and well developed muscle coats. This heavy media is physiologically necessary since the blood supply to these organs must alternately be increased by the relaxation of the muscle and decreased during the physiological resting stage by the local contraction of this coat. As a result of this delicately balanced function, even relatively slight changes in any of the walls of these very active vessels hinder or limit the possibilities in these directions. Thus an alteration in the intima, even if it do not, as in most cases, also extend to the media coat, causes an appreciable alteration in the caliber of the vessel when it contracts or expands. Most important of all, when the media or muscle coat becomes even slightly diseased, either by degenerative muscular alterations, by encroachments of interstitial hyperplasia or by true inflammatory exudate, the physiological relaxation and contraction, the entire control of nutritive vascular supply is interfered with and the organ may, as a result, become chronically congested, or perhaps habitually anemic. In either case the viscus becomes permanently damaged and is no longer able to properly maintain its functions and its physiological balance in the interreactions of the body. A disturbance of this equilibrium leads first to secondary changes in the immediately dependent organ and perhaps finally to lesions of the general viscera.

Furthermore, disease of the arterial walls in vessels of this class tends to alterations in the general blood pressure, probably in an attempt on the part of the body by an increase in the pressure to balance the blood distribution or to furnish a normal requisite amount of blood for the functional activity of the diseased organ, especially if it be of great vital importance as is the case with the heart or kidney. Elevation of the blood pressure, due apparently to local arterial disease, is particularly well illustrated in cases of arteriosclerotic or small, contracted kidney where the blood pressure is almost uniformly elevated, a fact for the full recognition of which we are chiefly indebted to Dr. Janeway.

As to the relative rate of occurrence in visceral arteriosclerosis analysis of my series of 400 cases of arteriosclerosis showed 368 in which the visceral arteries were mostly or exclusively involved.[1] This rate of occurrence in itself demonstrates the importance of the consideration of the disease of these vessels. Analysis as to the relative distribution showed the coronary artery diseased in 270 of the 368 cases; the cerebral vessels were involved in 107 instances, the renal vessels in 81 cases, the pancreatic in 74, the hepatic in 43, the splenic in 35 and the spinal vessels in 20 cases, the pulmonary in 16, the celiac and its visceral branches in 19 and the mesenterics in 4. I urge these statistics as of special value to New York physicians, since they have been compiled exclusively from cases residing in this city, therefore subjected to its general and local etiological conditions, also to the strain and wear of New York professional, business and laboring life.

Dr. Fisher, who was to have presented one of the aspects of visceral arteriosclerosis (as it occurs in connection with the nervous system), has unfortunately been prevented from favoring us to-night, but in general it may be stated that the symptoms of arteriosclerosis of any organ are practically those ascribed to the brain and cord. Thus we have temporary aphasia of the pancreas, not manifested by loss of speech, of course, but by loss of the pancreatic equivalent for speech, namely the pancreatic secretion. We have intermittent claudication of the renal vessels; and those of you who follow your kidney cases carefully, especially as to the relative amount of renal excretion, are, I am sure, able to fully corroborate this statement. Nearly every other symptom can also be likewise compared as to character and causation.

Very briefly the most constant symptoms of visceral arteriosclerosis in any organ are, (*a*) depressed function, often spasmodic, but mostly evident when studied for long periods, (*b*) pain, also usually spasmodic and always of the anginal character, localized in the distribution affected and exemplified by that seen in angina pectoris, erythromelalgia and Reynaud's disease, (*c*) also spasmodic elevation of blood pressure is an important but inconstant symptom.

Our diagnosis must as yet rely chiefly on the appearance of these symptoms coupled with a requisite history of etiological factors and the usual method of diagnosis of general arteriosclerosis (largely by the inspection and palpation of the superficial arteries which are, as I have formerly stated, most unreliable in visceral arteriosclerosis). Thus in my 400 cases the superficial vessels were involved but 154 times, and in 4 of these instances changes were not present to any appreciable degree in the internal visceral trunks, but were found only in the superficial vessels. Thus peripheral and ofttimes quite general arteriosclerosis may exist without involvement of the nutritive vessels of the important organs.

I am intensely interested in the treatment of visceral arteriosclerosis and, notwithstanding the very short time allotted to my paper, I cannot refrain from mentioning some of the methods which have proven most efficient in my hands.

First, we must mention those measures which tend to eliminate the productive factors; this primarily involves in most cases the relief of the diseased viscus from overfunctional activity; if the brain, the patient must be relieved from worry and stress, if the pancreas or liver, from excessive digestive demands, and if the kidney vessels are chiefly diseased elimination by other routes must be substituted, and the products for elimination simplified by the correction of diet or relief of metabolic disorders. In all instances general hygienic measures are to be insisted upon.

Diminution of the physiological or pathological demands on the diseased organ may be occasionally encompassed by the proper exhibition of drugs, or by local mechano-therapy. Thus, in coronary arteriosclerosis the use of the various vaso-dilators or of the warm or Co_2 bath may give, as you all know, gratifying results.

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[1] Transactions New York Academy of Medicine, Feb. 15, 1906; Amer. Jour. Med. Sc., May, 1906.

General treatment is attended by benefit in nearly all instances. Thus the general lowering of the blood pressure when it is habitually high, either by local or general means, is often necessary. Potassium iodide and perhaps other forms of iodide as well, employed as general drugs, serve to prevent extension of the disease, as definitely shown by recent experiments; and also, in at least a certain class of cases, it tends to facilitate absorption of inflammatory and degenerative products in the vessel walls already diseased. This action of the iodides no doubt takes place quite independently of syphilitic disease, in which instance, of course, we all recognize the utility of the drug and that of its companion, mercury.

In conclusion, permit me to especially urge upon you the following points: First, the great frequency of visceral arteriosclerosis and its importance, particularly in internal medicine. Second, the diagnoses, in many cases partly by exclusion, partly by its direct signs and symptoms and partly by the results attending treatment. Third, treatment which is attended with great benefit in a very considerable number of cases, but which must first be based on a close study of the special etiology, on a thorough appreciation of the physiology of the diseased organs and of the special idiosyncrasies of each instance and, finally, on a correct diagnosis.

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Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY W. L. BURRAGE, M.D.

THE INNERVATION OF THE UTERUS.

The uterus up to the last few decades has been described in the textbooks as having no nerves in its tissues, notwithstanding the fact that it is the seat of much pain both in the pregnant and non-pregnant condition, it is sensitive to intrauterine instrumentation, and, moreover, the causative agent of the condition known as hyperemesis gravidarum. Nerves had not been demonstrated in the muscles or mucosa.

That nerve ganglia and nerve trunks existed in the tissues immediately surrounding the uterus had long been known. Their exact description, more particularly the description of the cervical ganglion, was left to Ph. Jung to demonstrate.[1] He published in 1905 an article on the innervation of the female genital organs previously noted in these columns.[2]

His plates show a cervical ganglion, half moon shaped, situated in the connective tissue of the parametrium of a full term infant. It lies at about the level of the vaginal fornix, laterally at a considerable distance from the uterus, not far from the ureter. There are many nerves radiating from this ganglion in all directions. Jung thinks that the ganglion represents a conglomeration of all the branches of the genital nerves and is not a true plexus. Great masses of ganglion cells and connective tissue make up its substance. He also demonstrated what he considered to be nerve ganglia in the posterior wall of the uterus of a newborn child. Later investigations have not confirmed him in this interpretation of what he found, however.

Alf. Labhardt[3] has conducted investigations on the uteri of animals and women in the Woman's Hospital of the city of Basel and the Physiological Laboratory of the University of Basel, embodying his results in an exhaustive article of seventy-six pages, five colored figures and one hundred and thirty references to the literature.

He set himself the task of answering the following questions: "How do the nerve fibers run in the uterine tissue?"

"How do the fibers end in the myometrium and how in the mucous membrane?"

"Are there ganglion cells in the substance of the uterus?"

Before discussing and answering these questions he reviews the literature as to the origin and the course of the nerves reaching the uterus, concluding with the following statement:

"The uterus receives sympathetic nerve fibers as well as those which arise from the cerebrospinal system. The sympathetic fibers, to which branches are given by the solar ganglion, run downward in the aortic plexus. In its downward course the aortic plexus receives auxiliary branches from the lumbar ganglion of the sympathetic.

"At the point of bifurcation of the aorta, the aortic plexus divides and becomes the two hypogastric plexuses, which surround the rectum and give off branches to it as well as to the other organs of the true pelvis. These hypogastric plexuses receive in turn auxiliary branches from the sacral ganglia of the sympathetic. As concerns the uterus, single branches run direct on each side from the hypogastric plexuses to the uterus, but other branches — and these make the majority — lead to the cervical ganglia, which lie to the right and left between the layers of the broad ligaments midway of the length of the cervix uteri.

"Branches from the spinal nerves enter this ganglion, fibers from the third sacral nerve and also the second and fourth (infrequently from the two latter together). Most of the fibers destined for the uterus pass through the cervical ganglion and have a direct connection with the ganglion cells.

"Another ganglion situated near the uterine insertion of the true ovarian ligament is composed of an anastomosis of the uterine and spermatic nerves.

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[1] Monats, für Geburts. und Gynäkol. Bd. xxi, 1.

[2] Boston Medical and Surgical Journal, vol. cliii, 449.

[3] Das Verhalten der Nerven in der Substanz des Uterus, Arch. für Gynäkol., Bd. lxxx, heft 1, 135.

"Fibers from the cervical ganglion enter the edges of the uterus, follow along them and give off branches to the substance of the uterus that run towards the median line."

The author reviews at great length the literature of the situation of the nerves in the tissues of the uterus, and then proceeds to a description of his technique in staining nerve tissue and his experiments on the uteri of animals and women, concluding with remarks on the innervation of the uterus from a physiological point of view.

The final conclusions are as follows:

1. (*a*) An extended nervous system is present in the uterus of the rabbit. The larger trunks run between the two chief muscle layers and give off inter-fascicular branches, which, in turn, give off intra-fascicular branches. The large trunks contain, besides numerous colorless fibers, a small number of fibers containing myelin that have already lost their medullary layer while within the larger trunk.

(*b*) A rich nervous system is present also in the human uterus. The larger trunks run within the middle muscular layer and give off from this situation branches which lie inter-fascicularly and from which intra-fascicular smaller branches are given. The larger trunks contain besides numerous colorless fibers, some fibers of double outline, which have lost their medullary layers while still within the larger nerve trunk.

2. The manner of ending of the nerve in the musculature, and in the mucous membrane, either in rabbits or in human specimens, has not been determined accurately by the methods now in use (special Golgi and methylene blue stains).

3. Ganglion cells have not been discovered in the uterus, either in the human specimen or in rabbits.

4. The view that there is an intramural system of ganglia is absolutely without foundation. Contractions of the uterus follow,

(*a*) Through the nerves, by irritation of the cervical ganglion or by a reflex irritation, or

(*b*) Through the muscle by direct irritation of the musculature.

Jung claimed [4] that uterine contractions during labor are caused by pressure on a succession of the nerve ganglia distributed through the genital organs.

Franz [5] and Kurdinowski [6] have made extensive studies of the physiology of the uterus, showing the effects of cold and heat and asphyxia and anemia on uterine contractions.

O. Schaeffer [7] holds that the varying tonicity of the uterus is due to vasomotor as well as to purely motor influences. It is a co-ordinate function. Every dilating stimulus emanating from the internal os has a regular, dilating influence, even on the non-pregnant uterus. The fundus balloons out regularly on all sides and stretches upward. The grating transmitted to the operator's hand during curetting is due to the formation of ledges in the wall of the uterine cavity by the strongly contracting muscularis of the internal layers. The uterus of a nullipara is not capable of a high degree of relaxation. Affections of the adnexa causing metrorrhagia induce a predisposition to a lively alternating tonus, similar to that of pregnancy, and from this up to paralysis.

Catharine van Tussenbroek, of Amsterdam,[8] thinks that the stimulus causing uterine contractions may be central in the uterus or of peripheral origin. Dilatation with laminaria tents predisposes to uterine relaxation, therefore she advocates anesthesia and rapid dilatation with steel dilators.

The explanation of the physiological processes of the uterus with our present knowledge of the innervation is by no means an easy matter. The absence of ganglion cells in the tissues is a serious loss. An analogy has been drawn between the heart and bowel with their intramural ganglion systems, and the uterus. There is a difference in the fact that the uterus becomes enormously distended during pregnancy and the distention requires a long time. If there were a ganglionic system in the wall of the uterus this would be destroyed and its parts separated by the enlargement of the organ, and the irritation of the ganglia at such a time would result in uterine contractions with the result of expelling the uterine contents.

In the case of the heart and the bowel, where contractions follow each other relatively rapidly, one can understand how through the stretching the stimulus for a new contraction is given, and thus is explained the conception of an intramural ganglion system. In the case of the uterus it is otherwise; nature has provided that during the stretching of the organ up to a certain definite point, the stimulating ganglia shall remain undisturbed, therefore these cells are placed outside the uterine walls but in the immediate neighborhood, in the cervical ganglion. It is to be noted that during the expansion of the uterus in pregnancy, no pain is experienced by the patient under normal conditions, that is, if there are no adhesions of the uterus to surrounding structures, whereas during delivery when the nerve ganglia of the pelvis are subjected to trauma by the passage of the child, pain is a prominent symptom.

Stimuli come to the uterus from outside, as by irrigating or curetting the interior and thus irritating the uterine muscles, or through the nervous system, as for instance from the breasts, in the classic example of uterine contractions caused by the child's nursing. That the uterus is not entirely under the influence of the nervous system has been shown by Kurdinowski [9] who caused contractions in uteri two days after they had been removed from the body. The contractions caused by drugs such as ergotin are probably due to the direct action of the drug in the blood current on the uterine muscle, an example of what Kurdinowski calls "myogenous contractions."

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[4] *Loc. cit.*

[5] Zeitschr. für Geburts. und Gyn., Bd. 53, 1901.

[6] Arch. für Gynäkol., Bd. 76, 1905.

[7] Kritik der Waben erregenden Methoden und über die kunstliche Muttermundserweiterung. Liepzig, 1906. Zentralbl. für Gyn., no. 40, 1906.

[8] Näheres zum Tonusverlust der Gebärmutter bei der Curettage. Zentralbl. für Gynäkol., 1906, no. 2, 47.

[9] Arch. für Gynäkol., Bd. 76, 1905.

Much work remains to be done, not only in tracing the ramifications of the minute nerve fibers in the uterine muscle and mucosa, but in physiological experiments, to determine the factors which govern uterine contraction and relaxation.

Reports of Societies.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting Held at the New York Academy of Medicine, Jan. 21, 1907.

The President, Dr. T. E. Satterthwaite, in the chair.

Arteriosclerosis was the general subject of the evening. The first paper was by Dr. Oskar Klotz, of Montreal, on

EXPERIMENTAL STUDIES IN ARTERIOSCLEROSIS.

Dr. Louis F. Bishop read a paper on

SOME DIAGNOSTIC FEATURES OF ARTERIOSCLEROSIS IN CLINICAL MEDICINE.

The only point that interested us in diagnosis was, he said, that in certain instances arteriosclerosis causes a sufficient thickening and irregularity of the blood vessels to be recognized by direct examination. The importance of the condition, however, must be judged by the symptoms which accompany it. In itself a moderate degree of arteriosclerosis is of no importance to the individual. It is only important when considered in relation to its causes and the possibility that their continuance may bring about such functional and structural vascular degeneration as to endanger the functions of important structures. Hypertrophy of the heart is Nature's effort to strengthen an organ to meet a strain. In the same way arteriosclerosis may be the result of a small cell infiltration designed to strengthen arteries in the presence of undue pressure from without. He believed that high blood pressure was not the cause of arteriosclerosis, but rather the result of a cause which usually also resulted in high blood pressure, but which might induce sclerosis without the accompaniment of blood pressure.

For the proper circulation of the blood the organs of the vascular system are maintained in a uniform state of tension, which is altered in one place or another to vary the blood supply to meet the demands of the body. This general tonicity of the vessels is maintained by a constantly acting influence from the central nervous system; but when for any reason this central influence is in excess we have hypertonicity of the vessels, and this immediately complicates the circulation by demanding a higher blood pressure and tending to cause hypertrophy of the heart. Under such circumstances arteriosclerosis develops, either as a conservative measure analogous to the cardiac hypertrophy or, perhaps, also to some degree as a trophic change of central origin. The symptoms of arteriosclerosis are, therefore, the symptoms of hypertonia vasorum, with its irregularity of vascular control, except in the case of very gross lesions, where there may be purely mechanical results, due to the blocking or rupture of a blood vessel. This conception of arteriosclerosis seemed to the speaker to explain the local and general symptoms better than any theory which has regard only to the pathological anatomy. Clinically, arteriosclerosis may be suspected where there is high arterial tension with cardiac hypertrophy not due to valvular lesions; where there are symptoms of circulatory irregularity in the central nervous system, such as dizziness, attacks of syncope, and changes in disposition in old people; and where there are irregularities of blood pressure and albuminuria with low specific gravity. Our judgment as to its existence to an extent to be of importance must be founded upon the whole picture of the case, rather than upon a single objective or subjective manifestation. Mental strain is undoubtedly a very important etiological factor, acting by an exaggeration of the tone-maintaining nervous function, and when there is a history of prolonged nervous strain the symptoms enumerated become of greater significance.

The influence of the nervous system in originating and maintaining a vicious tension in the circulation is second in importance only to the results of degenerative kidney disease, and of late years it would appear that the cases of nervous origin are becoming constantly more frequent. Dr. Bishop went on to say that he had come lately to use the term "chronic vascular overtone." Thus he would explain upon physiological grounds, rather than those of pathological anatomy, the vicious contraction of the blood vessels which is the basis of so many cases of cardiac disease and eventually of destructive lesions of the kidneys and central nervous system. The recognition of this class of cases, which would seem to be well-named cases of vascular overtone, he thought would clear up the diagnosis in cases which certainly were not primarily disease of the kidneys, and point very distinctly to remedial measures of such a character as to modify the physiology of the nervous system. Thus, clinical experience shows that the subjects of hypertonia vasorum improve when mental activity is reduced and muscular activity increased. Also that they improve on a diet restricted in quantity and restricted as to the amount of meat and sugar ingested; and also that many patients are more comfortable when the hemoglobin of the blood is below, rather than above, the average found in healthy individuals. Since he has come to regard these changes as simply an abnormal exaggeration of a naturally existing force he has been much more hopeful as to the successful care of the condition and of its practical cure in many instances. This, he said, is entirely different from the logical conclusion when we regard the condition as the result of arterial sclerosis, a change in the vascular structure which from its very nature is permanent and immutable. Every clinician would confirm the observation that one patient with arteries which could not be more altered without obstruction to the blood flow might show but few symptoms, while another, the thickening of whose arteries could scarcely be detected, would suffer from many symptoms of irregular blood supply. Opposed to vascular overtone there was a corresponding condition of vascular undertone, which in other papers he had described under the name of constitutional low arterial tension. The recognition of the physiological fact of the existence of this force constantly acting between the nervous and vascular systems he thought would explain very satisfactorily many of the disorders of circulation met with in functional and organic diseases of the nervous system, and would point the way to the interpretation and treatment of many circulatory disorders hitherto misunderstood and considered incurable.

Dr. Edward D. Fisher was to have read a paper on

ARTERIOSCLEROSIS IN DISEASES OF THE NERVOUS SYSTEM,

but was prevented by illness from being present.

Dr. Harlow Brooks read a paper on

VISCERAL ARTERIOSCLEROSIS.[1]

Dr. Wilbur B. Marple read a paper on

ARTERIOSCLEROSIS IN DISEASES OF THE EYE.

He said that he preferred to use the term "angiosclerosis," since Thoma's investigations had shown that changes in the veins invariably accompany those in the arteries. These changes were more apt to affect isolated retinal vessels, or a short length of one of these, while all the other vessels might be normal. The narrowing of vessels over a short course might readily escape notice unless looked for very carefully. Quite frequently the use of a mydriatic was required.

The various ophthalmoscopic signs of arteriosclerosis were as follows: 1. A general change in the size of the arteries and veins of the eye ground. The narrowing of the arteries might be very slight or so extreme as almost to suggest atrophy of the optic nerve. As the disease affected some parts of the vessel more than others, as was the case in arteriosclerosis in other portions of the body, irregularity in caliber resulted. In contrast to the narrowing of the arteries, the veins often appeared relatively dilated, and actual dilatation occurred in about 50% of all cases. In addition to the narrowing of the arteries, there might be, in the early stages, a tortuosity of certain small branches, especially in the vicinity of the macula. 2. Changes in the color of the arteries. When this was the case the central light streak was broader and of increased distinctness, while the whole surface of the vessel was of somewhat lighter color than normal. This "silver wire" appearance was due to the higher reflecting power from the arterial wall after it had undergone a hyaline fibroid change. 3. Changes in the caliber of the vessels at different points, the points at which such changes were most commonly noted being where a vein was crossed by an artery. In the early stages the first abnormality observed was a loss of the light streak of the vein on either side of the artery, with possibly a very slight diminution of the caliber of the vein under the artery. The vein was also apt to be observed where it passed under the artery, whereas under normal conditions the underlying vein could be distinguished through the translucent artery. In more advanced cases the vein might be very much constricted and wind around the artery, the marked twist being the more conspicuous because the rest of the vein was frequently not all tortuous. Sometimes a vein when passing over a rigid artery was flattened out like a strap.

The changes in the vascular walls in ocular arteriosclerosis might be of two kinds, visible and invisible. Among the former was the occurrence of white lines along portions of some vessels, and sometimes the whole diameter of a vessel was changed into a white cord, frequently with glistening points along it. In addition to these visible opaque changes in the vessel walls there was observed localized and marked narrowing of the retinal arteries, limited to a short section of the vessel, the *arteriosclerosis nodosa* of Raehlmann. Nothing could be seen of the thickened vessel wall, but the abnormally narrowed blood column pointed to this condition. There were, then, a narrow and a broad part of the vessel, the latter looking as though constricted by a band; while sometimes two broad parts were united by a very thin part, and in advanced cases the blood column seemed to be completely broken at certain points. Sometimes the vessel presented knob-like irregularities in caliber, like a string of pearls. Coats had pointed out that the pathology of these two changes in the vascular walls was different. Where the white lines appeared along the vessels there was a fibrosis in which the connective-tissue wall became greatly thickened and encroached more or less concentrically upon the lumen of the vessel. On the other hand, the narrowing of the lumen indicated only by a narrowing of the blood column, and not by any visible change in the walls, was due to a proliferation of the endothelium and was almost invariably eccentric, the lumen being displaced to one side. The two conditions were, no doubt, also due to different causes: disease of the intima, with proliferation, probably resulting from a circulating toxin, and thickening of the connective-tissue wall being probably a strengthening process to compensate for raised blood pressure. Finally, there were aneurismal dilatations or varicose ectasiæ of vessels, which might be oblong or sac shaped and two to four times the normal caliber, and these were more frequent in the veins than in the arteries.

The progressive venous pulse, first described by Raehlmann, was visible not only in the central venous branches, but also in the periphery of the fundus and on all the larger branches of the veins. When it was conspicuously present, the physiological venous pulse on the disk was absent, and this symptom was the expression of the pulse wave transmitted abnormally far into the rigid vessels of the sclerosed arteries which acted through the distended capillaries upon the veins. Besides these various changes in the vessels themselves, we might have, as the result of such changes, hemorrhages and opacity or infiltration of the retina, especially in the region of the macula. It seemed probable that hemorrhages did not occur at the actual seat of disease, but that the changes effected caused obstruction to the circulation, damming back of the blood, and rupture at some spot where the wall was unthickened or in the capillaries where the wall was incapable of much thickening.

Dr. Schweinitz had recently made a useful division of the lesions of angiosclerosis into those which were suggestive and those which were pathognomonic. In the former he included uneven caliber and undue tortuosity of the retinal arteries, increased distinctness of the central light streak, an unusually light color of the breadth of the artery, etc. The most important of the pathognomonic signs was the indentation of the veins by the stiffened arteries, and this was recognized by all observers as the one ocular symptom most nearly pathognomonic. Other signs included in this category were changes in the size and breadth of the retinal arteries of such a character that a beaded appearance resulted, distinct loss of translucency, decided lesions in the arterial walls, consisting of white stripes in the form of perivasculitis, and alternate contraction and dilatation of the veins. It was only when several of these signs were present together, however, that it could be positively asserted that the arterial changes were of great importance. The majority of cases of angiosclerosis were met with in the old, but occasionally it was observed in persons under forty, and even much younger than the latter age, as in the subjects of nephritis and syphilis. It was in part a senile change and in part a definite response to a pathological stimulus.

Both arteries and veins might be affected to quite a marked extent without any evidence of disturbance of vision. If considerable visual impairment occurred, it was apt to come on suddenly, as the result of hemorrhage at the posterior pole, or, perhaps, of venous thrombosis; and cases of the latter were especially prone to glaucoma subsequently. Sudden loss of vision might also result from obstruction of the central artery of the retina, a class of cases formerly thought to be due to embolism. As to the location of the lesions, the central vessels, those in the vicinity of the optic nerve, were the most apt to be affected. It was also near bifurcations, especially where they branched almost at right angles to one another, that the lesions were most frequently met with. In speaking of the matter of limitations Dr. Marple warned against the mistake of attributing all vascular changes in the retina to angiosclerosis, since these were frequently of merely a local character. On the other hand, he said it would be equally a mistake to consider the absence of ophthalmoscopic evidence of retinal changes as positive proof that arteriosclerosis was not present in the eye or elsewhere in the body.

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[1] See page 269.

As to the significance of these changes, so far as the eye was concerned it was found that glaucoma occurred very frequently in connection with them, and it was to be borne in mind that if acute glaucoma came on suddenly in an eye in which the retinal changes of arteriosclerosis were present, a very guarded prognosis should be given in case an iridectomy were done. The chief significance of the changes, however, was in the assistance they rendered in diagnosing a serious general condition, not infrequently before it was suspected by the patient's regular medical attendant. This was well understood to-day in the case of nephritis, when due to arterial sclerosis, and here the retinal changes were also the result of vascular degeneration. In general arteriosclerosis, as well, the ophthalmoscope afforded valuable information, for in the retina alone were the minute capillaries of the body visible. If these degenerative processes could be demonstrated here, it was very probable that the cerebral vessels were similarly affected. The practical point was that if early evidence of arterial degeneration were discovered ophthalmoscopically, the patient should be subjected to a thorough general examination. Proper treatment could thus be instituted, the results of which were often very satisfactory, and possibly an impending catastrophe might be averted.

DISCUSSION.

Dr. **Reynold Webb Wilcox** said he considered arteriosclerosis the most important subject before the internalist to-day. Some of the best work in throwing light upon it which had been done recently was by New York men, and especially Dr. Pearce, of Albany. He had been deeply interested in the statements made by Dr. Marple, which he thought impressed the lesson that no one method is to be depended upon in gaining the required knowledge. The ophthalmoscope was certainly of great service, and he believed that if internalists would perfect themselves in its use they would often be able to make a much earlier diagnosis than at present. As to so-called interstitial nephritis, the small red kidney described by Richard Bright, this was not an interstitial affection at all, but in reality an arterial nephritis. It was simply one manifestation of a general arteriosclerosis, and, therefore, it was utterly impossible that in this particular condition the decapsulation of the kidney should be of any benefit whatever.

Dr. **Robert C. Myles** said that he had met with an interesting experience regarding the manifestation of arteriosclerosis in the nose. Ordinary epistasis, as was well known, was concerned with the region of the septum; but for some time past his attention had been directed to the occurrence of slight hemorrhages due to the rupture of small blood vessels located throughout the turbinate region and the upper recesses. Following these small hemorrhages there were apt to result degenerative changes in the vessels, and the process might even go so far as to give rise to an offensive odor. A careful examination of such cases had shown him that these phenomena were always preceded by a condition of high blood pressure. In nearly all instances they occurred in men of from forty-five to fifty-five years of age, who were apparently in fine health, but who were living under a severe strain. Subsequently, he found these patients became victims of cerebral apoplexy. If we eliminated the septum as a source of the leakage, the occurrence of these little nasal hemorrhages was, therefore, a very significant diagnostic sign of arteriosclerosis, which should be regarded as a distinct note of warning.

Dr. **Adolf Meyer** said that in the past ten years much progress had been made in the investigation of arteriosclerosis as it affects the nervous system, and as a result of this work much could now be accomplished in the way of prophylaxis. Formerly, the first thing noticed was the attack of apoplexy, but, in consequence of the improvements in the methods of examination which had been made, many indications antecedent to this could now often be detected.

Dr. **Bishop**, in closing the discussion, said that when the Schott resistance exercises first came into vogue he was very much puzzled to understand how they could be of any service. Now, however, it was clear to him that the benefit resulting from these was fully explained by the effects of the tone-maintaining influence of the voluntary muscles in counterbalancing the tone-maintaining influence of the circulatory system. By these resistance exercises and by moderate ordinary exercise the blood pressure was regulated, and he had frequently noted the bad effects resulting when patients with high blood pressure were for any reason deprived of their accustomed exercise.

Book Review.

Ellis's Demonstrations of Anatomy, being a Guide to the Knowledge of the Human Body by Dissection. Revised and edited by Christopher Addison, M.D., B.S. (Lond.), F.R.C.S., Lecturer on Anatomy, Charing Cross Hospital Medical School; formerly Hunterian Professor, Royal College of Surgeons, England, etc. Pp. 851. Twelfth edition. Illustrated. New York: William Wood & Co. 1906.

This new edition of a very old book, which has won for itself a valued place in medical instruction, does not depart materially from the plan adopted in previous editions. A re-arrangement of the matter has, however, been thought necessary in order to meet the demands of recent teaching. Sixty-two illustrations have been added, nearly half of them in colors, and a number of the old illustrations have been improved. The book is arranged with side references on each page, which is always a convenience and is particularly useful in a book of this character which is not intended to be consecutively read.

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INSANITY AND THE LAW COURTS.

IT must be discouraging to mental nosographers to discover, after devoting several decades to the laborious study of insanity in large institutions, that types of mental alienation exist, which they never dreamed of incorporating in the printed volumes representing the fruits of their industry and learning. Out of the growing list of these ordinarily unappreciated insanities, we select only two for comment: the "amnesic" and the "brain storm" varieties, and refrain from going farther than the mere mention of the "senile dementias" so common to testators with large fortunes to dispose of.

Before proceeding with our theme, we wish to say a word in excuse of those learned colleagues, both in this country and abroad, whose written opinions, in the form of textbooks, convict them of the crassest sort of ignorance with regard to the two particular forms of insanity we have chosen to discuss. Our main argument in their defence lies in the fact that these forms of insanity, of which they are so palpably ignorant, appear to afflict persons of the highest social standing and are manifest only at the time when what is carelessly spoken of as a crime is committed by them, and they are called to an accounting before the courts. The only place, then, that these forms of insanity may be properly observed is in the criminal courts, and any one at all familiar with the multifarious duties of the alienist who presides over a large hospital knows that he has no time to go ferreting out types of mental alienation in such uncongenial places. We are positive that other extenuating circumstances could be put forward, but we consider the one cited abundantly sufficient.

As we understand amnesic insanity — and we do not for a moment wish to be considered as flaunting our knowledge in the faces of the writers of textbooks on mental disease — it has one peculiarity that is absolutely pathognomonic. The amnesia must cover a certain (legally) important period prior to and following the commission of the crime and must embrace every possible incriminating circumstance connected therewith, down to the finest possible detail. There are two well-known varieties of amnesic insanity,— the epileptic and the alcoholic. If the gentleman temporarily detained as a delinquent committed the criminal act, murder or what not, while in a drunken brawl, it is a case of alcoholic amnesic insanity. If it can be shown that he happened to have a convulsion while teething, it is the epileptic variety.

The "brain storm" variety may occur in a pure and independent form, or it may complicate the amnesic. It is the type most commonly observed among gentlemen murderers, and is marked by the "rolling eye" and, at the moment of committing some deed of violence, by such coprolalic utterances as *blackguard, beast,* and so forth. The "storm" is of brief duration, covering only the time of the murder and the first one or two visits of the alienist sent by the defence subsequent to this event. A striking feature of this peculiar malady is that, although the lunatic talks openly of his intended crime for months prior to the unlawful act and carries upon his person deadly weapons, with which to carry out his criminal intention, nobody ever suspects for a moment that he is insane.

Whereas this "brain storm" form of insanity appears to be peculiar to murderers, the amnesic forms are most commonly observed among financiers and persons having large trust funds within their control, and it would seem that the widow and the orphan, whose money has been irrevocably dissipated by reason of the mental unbalance of these unfortunates, ought to be more lenient toward them in the future.

We have noticed a tendency on the part of certain writers for the lay press, notably those connected with avowedly comic publications, to scoff at the types of insanity we have been discussing and to speak lightly of their victims collectively as the "Insane Murderers' Trust," the "Demented Financiers' Union," etc. These writers appear to regard the whole matter as a species of medical sophistry, and, indeed, we are inclined to ask ourselves if their gibes are not entirely warranted by the facts.

Sophistry, or the twisting of facts to fit preconceived hypotheses, has long been the bane of the medical doctor. From as far back as the time of Montaigne, the profession has been lampooned and pilloried by essayists for this grievous failing. Molière, as almost every schoolboy knows, devoted whole plays, replete with the most crushing sarcasm, to the exposition of this professional weakness. Even the gentle, but not less sarcastic, Holmes made it a target for the shafts of his brilliant satire. When it crops out, as it not infrequently does, in medical discussions or in the exploitation of some pet theory in the columns of strictly medical publications, it is always offensive but not particularly harmful. When, however, it becomes the main stock in trade of the medical expert and is employed by him in a court of law to show that a criminal is irresponsible for his acts, its harmfulness is twofold; it serves to defeat the ends of justice and at the same time, through the publicity given it by the lay press, it casts undeserved discredit upon the profession in general and the expert witness in particular.

So long as the laws relating to expert testimony remain as they are, and so long as trials for capital crimes continue to be conducted as at present, the medical profession may make up its mind that the theories concerning insanity which to-day pass muster in the courts will continue to be a barrier to the advancement of mental science and an obstacle to the proper appreciation of the untiring efforts of well-balanced and devoted men.

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ACUTE CARDIAC DILATATION.

The other day a colleague died suddenly in his prime of " heart failure " during an attack of grippe. A patient was doing so well after his pneumonia that his physician permitted him to sit up in bed and play at cards with his wife to while the time away; the patient suddenly fell back upon his pillow and presently expired. The case of a little child, convalescent after diphtheria, terminated in like manner while it was engaged with its toys upon the floor. Such patients have collapsed even while straining at stool. Deaths from acute cardiac dilatation, during or after acute infectious diseases, are being reported with disconcerting frequency, and counsel is by no means amiss, that the period of rest after these grave diseases should be prolonged, that there should be freedom from excitement, anxiety and strain, and against the too early resumption of active life by such patients.

In many infections — acute rheumatism, diphtheria, scarlet fever, influenza, pneumonia, endo- or peri-carditis, typhus, typhoid, erysipelas and the like — the myocardium may be seriously affected by the action of the various toxins upon it; wherefore a relaxation of muscular tissues, a loss of tone in them, or a parenchymatous degeneration must be feared and carefully taken into account. Cardiac dilatation must be particularly guarded against when the temperature changes have been marked and prolonged.

Beside the toxic element the dilatation is also due to heightened blood pressure, especially within the right cavities, and to the impaired resistance which must generally follow. In pneumonia, where the pulmonary obstruction is great, the right ventricle cannot empty itself during the systole; and regurgitation into the auricle is inevitable, so that that chamber becomes distended in its turn. Nor can the left heart perform properly its functions, by reason that its chambers contain, instead of the usual amount of blood, so little that the normal systole and diastole are not excited. Another factor, quite independently of these two, may be a paralysis of the cardiac plexus, which obtains especially in diphtheria.

What signs should we observe in guarding against acute cardiac dilatation? A weak, failing, rapid, intermittent pulse, dyspnea, cyanosis of lips and finger tips, a dusky or ashen or gray-hued skin, epigastric pulsation, pain about the precordium, increased cardiac dullness, especially to the right of the median line, and distention of the cervical veins.

What may be done under these grave circumstances? The patient must lie prone; leeches or wet cups or ice bags should be applied to the precordium; venesection is appropriate in these desperate cases; strophanthus *per os* with brandy or ammonia, or by hypodermic; oxygen should always be at hand; camphor and ether (one part in eight) should be prepared for injection. The nitrites should be employed, to the excellent end that the patient may be bled " from the veins to the arteries "; glonoin in drop doses every fifteen minutes. Beverly Robinson, in a very wise paper,[1] finds that the dreadful lassitude generally following upon grippe is due to the dilated heart, and he deals comprehensively with this condition not only with regard to the infections, but also as it is due to nervous origin or to irregular modes of life. We may find cardiac dilatation not only as a lesion of the diseases here stated, but also as the result of chronic endocarditis, of renal diseases, of arteriosclerosis, of arduous and continuous work (as among the laboring classes), of frequent heavy strain (as in athletes), in late syphilis or chronic alcoholism, of anemia, leukemia, chlorosis, goitre, angina pectoris, paroxysmal tachycardia, a mitral stenosis, emphysema, an old myocarditis and after profound emotional disturbances.

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[1] The Clinical Manifestations and Treatment of Some Forms of Acute Cardiac Dilatation. Am. Jour. Med. Sci., February, 1907.

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INTESTINAL PARASITES AS INFECTING AGENTS.

The transmission of disease by means of insects, acting either as intermediate host or simply as germ carrier, is well known. Merely to mention the part played by the mosquito in transmitting malaria and yellow fever is sufficient evidence of the importance of insects in infecting man with disease. That intestinal parasites may have some such rôle is not so well recognized.

In a recent address on the influence of parasitism on the host, before the Section on Zoölogy, of the American Association for the Advancement of Science, Ward[1] points out that various animal parasites inhabiting the human intestinal canal burrow into the mucosa and thus form a portal of entry for bacteria. It is probable that bacteria do not penetrate the uninjured mucous membranes, but with this aid from intestinal parasites they may be enabled to enter the system and produce their characteristic lesions. Typhoid and cholera infections may take place in this way in some cases. In this connection it is of interest to note that in 1762 the whip worm (Trichuris) was looked upon as a cause of typhoid fever and its abundant presence was noted by early investigators in many epidemics of typhoid. Bacteria that are normal inhabitants of the intestine may also penetrate in this way and produce ulcerative or inflammatory lesions. In 1901 Metchnikoff suggested that sometimes appendicitis might so originate. The full extent of the part played by intestinal parasites as infecting agents is not known but it is certainly one way in which they may bring harm to their host, and this action deserves further study.

TRANSACTIONS OF THE NATIONAL ASSOCIATION FOR THE STUDY AND PREVENTION OF TUBERCULOSIS.

The transactions of the second annual meeting of the National Association for the Study and Prevention of Tuberculosis, which was held in Washington in May last year, have recently been published in a volume of 638 pages. The work done by this association must be regarded as the most far-reaching in its scope and painstaking in its methods of any which is systematically undertaken against tuberculosis in this country. We may, therefore, look in the published proceedings for an authoritative statement of the present status of the various departments into which the tuberculosis work is being divided. In the organization of the association it has already seemed advisable to divide it into several sub-sections, presided over by individual chairmen each giving attention to some special phase of the general subject. Papers, for example, were read at this meeting under the auspices either of the sociological section, the pathological section, the clinical section, and finally of the surgical section. It is clear that this arrangement will tend to concentrate papers of similar sort, and thereby, as time goes on, simplify references and increase the efficiency of the general system. It is not our purpose to detail the many admirable papers which appear in this imposing volume. There can be no question that the work which they represent is of such a character that definite progress may be expected toward a clear understanding of the disease in its various social and medical relations. The volume is suitable for binding, but we venture to suggest that for those who do not wish to have this done and yet desire to keep the records of the association in convenient form for reference, it would be desirable to print the titlepage, or a part of it, on the back of the pamphlet.

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MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Feb. 20, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 29, scarlatina 54, typhoid fever 5, measles 10, tuberculosis 42, smallpox 0.

The death-rate of the reported deaths for the week ending Feb. 20, 1907, was 23.38.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Feb. 23, 1907, was 225, against 261 the corresponding week of last year, showing a decrease of 36 deaths and making the death-rate for the week 19.48. Of this number 108 were males and 117 were females; 207 were white and 18 colored; 126 were born in the United States, 93 in foreign countries and 6 unknown; 48 were of American parentage, 141 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 41 cases and 2 deaths; scarlatina, 53 cases and 2 deaths; typhoid fever, 3 cases and 0 deaths; measles, 11 cases and 0 deaths; tuberculosis, 39 cases and 20 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 44, whooping cough 3, heart disease 15, bronchitis 0 and marasmus 3. There were 11 deaths from violent causes. The number of children who died under one year was 37; the number under five years 53. The number of persons who died over sixty years of age was 73. The deaths in public institutions were 73.

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[1] Science, Feb. 8, 1907.

There were 7 cases and 7 deaths reported from cerebrospinal meningitis during the week.

MEETING OF INSTRUCTIVE DISTRICT NURSING ASSOCIATION. — The twenty-first annual meeting of the Boston Instructive District Nursing Association was held Feb. 27, at the District Nursing House. Addresses were made by Dr. Elliott P. Joslin, Mr. Robert A. Woods, Miss Martha H. Stark, District Superintendent, and Miss Charlotte Macleod, Superintendent of the Training School.

NURSES IN THE SCHOOLS. — The hearing before a committee of the Massachusetts Legislature relative to providing nurses for the schools was held at the State House, Feb. 26, and was largely attended. The opinion was unanimously expressed, by physicians and others, that a regular system of nursing in the public schools was feasible and desirable. No opposition whatever was expressed to the bill, except in minor and easily-adjustable details.

LEAVE TO OSTEOPATHISTS TO WITHDRAW. — The Massachusetts House of Representatives' Committee on Public Health has granted leave to withdraw on the petition of Arthur M. Lane and others for the establishment of a state board of examination and registration in osteopathy.

IS VACCINATION UN-AMERICAN? — At a disorderly hearing regarding the vaccination bill before the Massachusetts State Legislature, introduced by Dr. Charles Harrington, many remonstrants appeared, and when not allowed by the committee to express at length their objections to the bill, took refuge in stigmatizing such attempted legislation as un-American and Russian. The author of the bill retired from the council chamber at the psychological moment after a masterly argument in its support. We await the ultimate outcome with interest.

IN HONOR OF DAVID W. CHEEVER. — The staff of the Boston City Hospital gave a dinner to Dr. David W. Cheever at the Tavern Club, Monday evening, Feb. 25. The occasion was a tribute to Dr. Cheever on his retirement from the presidency of the staff, a position which he had held for fifteen years. Dr. Cheever has been a member of the Hospital staff since the opening of the institution in 1864.

About fifty men were present at the dinner representing the board of trustees and members of the hospital staff. Dr. C. M. Green, Dr. Cheever's successor as president of the staff, presided and introduced the speakers of the evening: Mr. A. Shuman, president of the board of trustees; Dr. J. G. Blake, vice-president of the staff; Dr. George B. Shattuck, senior visiting physician, and Dr. George W. Gay and Dr. F. S. Watson representing the surgical section of the staff. Dr. Gay, on behalf of those present, presented Dr. Cheever with an engrossed address signed by the participants, and Dr. Watson, representingt he staff, presented a very handsome silver cup. Dr. Cheever's acknowledgment of the appreciative recognition of his life and work was of great interest and marked by much feeling.

NEW YORK.

DEATHS AND BIRTHS. — According to the annual report of the State Department of Health there were in New York State during the year 1906, 140,773 deaths, as against 183,012 recorded births. In the cities of the state the birth-rate was 19.17 and the collective death-rate was 15.9.

GERMAN CHARITY BALL. — By the recent annual German Charity Ball in New York over $11,000 was netted. Among the institutions to which this fund has been distributed are the German Hospital and Dispensary, which received $2,000, and St. Francis Hospital, St. Mark's Hospital and the German Policlinic, to each of which was allotted $1,300.

BEQUEST TO HOSPITAL. — Among the charitable bequests in the will of the late ex-Governor

Frank Wayland Higgins is the sum of $10,000 to the Olean General Hospital, in the town where Mr. Higgins resided.

DEATHS FROM EXPOSURE AT FUNERALS. — Dr. William F. Finney, of Trenton, N. J., has set an example which might well be followed in other instances where such a course is practicable. Instead of having public services at the present inclement season for his son, who died recently, he has had the remains placed in a receiving vault, postponing the formal funeral until the latter part of May. Dr. Finney states that he has seen so many deaths result from exposure at funerals that he is not willing to have the health and lives of the living risked for the sake of paying tribute to the memory of the dead.

Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. FEB. 9, 1907.

1. *ADAMI, J. G. *The Myelins and Potential Crystalline Bodies of the Organism.*
2. WOODS, M. *The Relation of Alcoholism to Epilepsy.*
3. ALLEN, M. M. *The Value of Temperance Instruction.*
4. HALL, V. S. *The Value of Instruction Regarding Alcohol.*
5. WHOLEY, C. C. *Infantile Head Nodding and Rotary Spasm.*
6. CHANCE, B. *A Case of Secondary Hypernephroma of the Iris and Ciliary Body.*
7. PROESCHER, F. *A Remarkable Case of Carcinoma of the Gall Bladder.*
8. *OPHÜLS, W. *Experimental Chronic Nephritis.*
9. SNYDER, J. R. *Rheumatism of Childhood.*
10. *DUNN, C. H. *The Clinical Aspects of Rheumatic Fever in Childhood.*
11. DE SCHWEINITZ, G. E. *Auto-intoxication in Relation to the Eye.*
12. *WHITE, F. W. *Value of Tests for Invisible Hemorrhage in Diseases of the Digestive Tract.*
13. *GRAHAM, C. *Diagnosis between Duodenal Ulcer and Gallstone Disease.*

1. Adami describes the polarizing microscope and calls attention to it as a neglected instrument. By means of this he has studied the occurrence of myelin globules. Myelin is a substance long recognized, but still little understood. It has been supposed to be related to soaps of oleic acid and to cholesterin. It is suggested that bodies of the myelin type may be intermediate products in the process of fatty degeneration.

8. Ophüls summarizes the results of work done in the past upon experimental nephritis. Numerous substances have produced epithelial lesions in the kidneys and some interstitial lesions are said to have been produced. Ophüls himself has produced marked chronic interstitial nephritis in dogs by means of lead acetate and bichromate of potassium.

10. Rheumatic fever is the term chosen by Dunn to designate what is commonly called acute rheumatism in childhood, including the cardiac and other symptoms, as well as the arthritic manifestations. He gives the literature and facts as to its infectious and microbic etiology a critical examination, and concludes as a result that at present it seems advisable to accept the Micrococcus rheumaticus of the English investigators, Poynton and Paine, not as the absolutely proven, but as the probable cause of the disorder. A careful study of some three hundred cases treated at the Children's Hospital, Boston, during five years, brings out the following points as characteristic of the disease, as here conceived, in early life: (1) The comparative mildness of the articular manifestations. (2) The relative frequency of cardiac manifestations. (3) The large number of cases in which only cardiac manifestations occurred; an actually greater number than those with only articular symptoms. (4) The frequent primary occurrence of endocardititis or pericarditis. (5) Cardiac manifestations are the most severe. In acute endocarditis, and even more in acute pericarditis, the severity of the case and danger to life are greater than in acute arthritis. (6) A notable feature was the tendency to recurrent attacks with varying manifestations, arthritic, pericardial, etc., and not following any particular order, one form one year and another form for another year. What is called "broken compensation," and generally attributed to overexertion, was observed in 121 of the 300 cases. Dunn attributes it here to a fresh infection rather than to overstrain. As regards diagnosis, he says, given any case of arthritis, especially if with the physical signs of endocarditis, or any case of acute infectious disease without other localization than in the pericardium or endocardium in childhood, the probability is that it is a case of rheumatic fever. Previous attacks, chorea, sore throat, etc., strongly increase this probability. Endocarditis and other infections from the pyogenic cocci or as complications of other recognized infections are readily diagnosable. As regards prognosis, he says many physicians do not recognize that the chances of death may be as high as one in five. The cardiac complications are more frequent than in the adult. The severest form is pericarditis, with a high mortality. In conclusion, Dunn points out that the general characteristics are those of a definite clinical entity, and most probably a specific infection to be placed in the same rank as scarlet fever and measles as definite disease species.

12. White, from an experience of nearly one thousand examinations of gastric contents and stools, mainly at the Boston City Hospital, finds that the guaiac or aloin test for invisible blood is, in spite of exceptions, the most valuable single clinical method recently developed for the recognition of latent cancer and ulcer of the digestive canal, and as a guide in the treatment of peptic ulcer. It consists in shaking up 10 cc. of gastric contents or feces, rubbed up with a little water, with 3 cc. of glacial acetic acid, and then extracting with an equal volume of ether by gently shaking back and forth. The tube is then allowed to stand till a clear layer of ether separates; the latter is then poured off and tested for blood by the addition of 10 drops of freshly prepared tincture of guaiac or aloin, and 30 drops of hydrogen peroxide or well-ozonized turpentine, the latter preferably when aloin is used. In the presence of blood the guaiac gives a clear blue color to the mixture, while the aloin gives a clear cherry red. The method is very delicate as well as very simple and practicable, and should be invariably used in conjunction with the other means of physical examination. Its value depends on the care with which other sources of bleeding are excluded. It has most value with the stools, when both positive and negative results are significant. With gastric contents, positive results are often misleading, but negative results are significant. One should never be content with a single test, however much it may agree with previous opinion of the case. In gastric and duodenal ulcer the chief value of the test is: (*a*) In distinguishing ulcer from a disease of the biliary passages or from a neurosis; (*b*) as a premonitory symptom of severe hemorrhage ; (*c*) as a measure of the results of medical treatment and as an aid in deciding when surgical measures are indicated; (*d*) in prognosis, in gastric cancer, in diagnosis from anacid gastritis, achylia gastrica, pernicious anemia and similar conditions, and from chronic gastric ulcer. In general, the test is of great value in discovering or ruling out hemorrhage in a suspected case.

13. Graham reviews the symptoms of gallstone disease and duodenal ulcer with special reference to their differentiation from each other, using for his study 141 cases with tabulated histories. In spite of the most painstaking care, there will always be some cases of ulcer undistinguishable from gallstone disease, and *vice versa*, though to a less extent. The sudden, irregularly appearing pains unconnected with eating, the lack of history of gastric ailment between the attacks, the diaphragm spasm and dyspnea, the less pronounced vomiting and eructation and

the slighter relief they afford, are more especially characteristic of gallstone disease. Nausea and intense retching when they occur may be followed by vomiting of a small amount of thin, yellowish, bitter liquid mixed with mucus. In duodenal ulcer the pain comes on in attacks lasting for days or weeks, and though often sudden and sometimes severe, is of a more gnawing and burning nature, not so intense as with gallstones, and clearly related to food, its intensity being often modified by the kind and quantity of food taken. It may be irregular as to the time of the separate attacks, but is regular during the period of stomach disturbance. It is relieved for a time by food and hot drinks; soda and irrigation give relief. Spasm of the diaphragm is rare except in case of perforation. The chronic gallstone case with impacted stone ulceration and adhesions, without jaundice, and with predominating gastric symptoms, such as gas, sour belching, moderate pain following eating, dilatation and impaired appetite, will be too often diagnosed as ulcer; while the duodenal ulcer with an early history of irregular attacks of sudden, sharp, intense pain of peritonitis, without obstruction or hyperacidity, with no gas, vomiting, or sour eructations, will be as surely mistaken for gallstones. It is these early acute types with tendency to perforation that are most frequently confused in the diagnosis. Early ulcer is more often mistaken for gallstones than is early gallstone disease for ulcer, while in the chronic forms of both conditions, the reverse is apt to be the case.

Annals of Surgery.

February, 1907.

1. *Dawbarn, R. H. M. *Sequestration Anemia in Brain and Skull Surgery.*
2. *Greenough, R. B., and Simmons, C. C. *Papillary Cystadenomata of the Breast.*
3. McDonald, E. *Puerperal General Peritonitis.*
4. *Moynihan, B. E. A. *Subacute Perforation of the Stomach and Duodenum.*
5. Benjamin, A. E. *Report of a Case in which a Large Number of Foreign Bodies were Removed from the Stomach.*
6. Barling, G. *Sarcoma of the Small Intestine and Mesentery.*
7. Dowd, C. N. *Congenital Lumbar Hernia at the Triangle of Petit.*
8. Walker, Geo. *Tuberculosis of the Bladder.* (Continued article.)
9. *Cunningham, J. H. *Recurrent Intermittent Retention of Urine Occurring with the Remissions in a Case of Pernicious Anemia. Bottini Operation.*
10. *Scudder, C. L. *Arthroplasty upon the Elbow-Joint.*

1. By applying a tourniquet to each thigh just tight enough to nearly stop the venous blood on its return, Dawbarn is able to remove from active circulation enough blood to cause definite lowering of the general blood pressure. Used in connection with operations on the skull and brain the following points are claimed for the method: (1) A diminution in the amount of anesthetic needed, with consequent relative safeguard against bleeding due to straining from subsequent vomiting and against hernia cerebri; also against lowering of vital heat. (2) Ease of control of hemorrhage during operation because of lessened intravascular tension. (3) A shorter operation because of a dryer field. (4) Less danger of sudden death from pressure on the respiratory center. (5) More space between brain and brain case.

2. Twenty breast tumors of the papillary cystadenoma type showed the following characteristics: (1) They were single or multiple involving the large ducts near the nipple, and composed of one or more cyst cavities, from the walls of which grew papillary outgrowths composed of fibrous tissue stroma and a luxuriant growth of duct epithelium in the form of irregular gland tubules and polypoid projections. (2) They occur in the male breasts as well as in the female. (3) They occur at all adult ages and independent of trauma, marriage or lactation. (4) They are usually painless. (5) They are generally situated near to or beneath the nipple. (6) They are usually of small size, but occasionally attain the dimensions of an orange. (7) They are of slow growth. (8) Their most characteristic symptom is the presence of a discharge from the nipple, which may be serous, but is usually bloody in character. (9) The axillary glands are not enlarged. (10) Fifteen per cent of the cases were associated with a form of cancer (adenocarcinoma) of a relatively low type of malignancy. (11) Treatment demands a complete removal of the tumor, either by excision, or, if necessary, amputation of the breast.

4. In subacute perforation of the stomach there is a sudden rupture of an ulcer, *always of the chronic type*, followed by a definite localization of the fluids escaping from the stomach, instead of their being spread generally through the abdominal cavity as in the acute type. Moynihan has seen this occur under the following conditions: (1) An empty condition of the stomach; (2) the plugging of the opening of the ulcer by a tag of omentum; (3) the opening may be sealed over by plastic lymph; (4) adhesion of the stomach at the base of the ulcer to the anterior abdominal wall, the under surface of the liver, or to the pancreas. The symptoms are the same in subacute as in acute perforation except that they are less intense. The treatment is either to clear the ulcer of adhesions and infold it, or to perform gastro-enterostomy, or in some cases to combine both these procedures.

9. Cunningham reports a rare case of intermittent urinary retention in a man of forty-seven years suffering from pernicious anemia. There were five repeated attacks of retention, always associated with relapses of the anemia. Concurrent with the changes in the blood and weakness of the general muscular system, the bladder wall lost its contractile power. As the anemia improved, the bladder symptoms diminished or were even absent. A Bottini operation was of benefit in overcoming the obstruction in the prostate.

10. Scudder reports a case of arthroplasty on the elbow with excellent final result. He advises section of the olecranon in order to preserve the triceps action as well as to get better exposure of the joint. The interposed flap of fascia, with a little fat, was swung down between the bared ends of the bones from the posterior surface of the upper arm. The operation is not suited to elderly individuals.

February, 1907.

1. *Halstead, A. E. *Ectopia Testis Transversa.*
2. Porter, J. L. *The Treatment of Hip Disease.*
3. Hessert, W. *Perforation of Gastric Ulcer. Report of two Cases with Recovery.*
4. Kahlke, C. E. *Rupture of the Abdominal Wall.*
5. Dowling, G. A. *Secondary Sarcoma.*
6. Yerger, C. F. *Multiple Aneurysms of the Large Vessels.*
7. *Andrews, E. W. *The Operative Treatment of Wounds of the Diaphragm.*
8. Gamble, W. E. *Recent Progress in Surgery of the Conjunctival Sac.*
9. Martin, F. H. *Uterine Prolapse.*
10. *Heineck, A. P. *The Terminations and the Treatment of Extra-Uterine Pregnancy.*
11. Adams, C. *Gunshot Wounds of the Cranium.*
12. Reed, C. B. *Pyelo-nephritis of Pregnancy.*
13. Bybee, A. *Tuberculous Peritonitis in the Female.*
14. Riebel, E. C. *Abdominal Gunshots.*
15. Andrews, E. W. *Surgery of the Abdomen.*
16. Farrell, P. J. H. *Primary Field Dressings.*
17. Sullivan, T. J. *Gunshot Wounds of the Neck.*

1. At an operation for inguinal hernia Halstead found that both testicles occupied the left scrotal pouch, both having a common tunica vaginalis. They were small, but of equal size and of normal consistency. The epididymes were fused from the middle third to the tail forming a mass closely resembling a uterus. The vasa deferentia were distinct. These developmental changes undoubtedly antedated the descent of the testicles, thus causing the right testis to pass through the left inguinal canal. Reports of only two similar cases could be found.

7. The statistics of Suter on the operative mortality following wounds of the diaphragm show, following the transpleural operation, 5.26% of deaths; following laparotomy, 28.57%; and following the combined method (thoracolaparotomy), 25%. Andrews adds a further operative case of his own in which three operative steps were necessary to effect a cure: (1) Closure of the stomach

wound; (2) suture of the diaphragm; (3) aspiration of pleural cavity to remove turbid material.

10. The results of 32 cases of extra-uterine pregnancy are given in detail by Heineck. In only 3 was there a history of previous sterility; 16 had had one or more children, and 9 had had one or more miscarriages. Fifteen of the cases were between twenty and thirty years of age; 11 were between thirty and forty. Signs of pregnancy, such as tender breasts, enlarged uterus, and softened cervix were noted in about half the cases. As highly suggestive of extra-uterine pregnancy, Heineck considers (1) pain in the lower abdomen, occurring in 30 cases; (2) menstrual irregularities such as delayed or skipped periods, found in 28 cases; and (3) vaginal hemorrhage with a palpable mass in one or the other fornix, present in 31 of the cases. Conception took place in the right tube 17 times; in the left, 14 times. Pain intermittent and colicky in character was complained of by 23 of the patients; 5 experienced a single severe pain preceding rupture of the ectopic mass. In 20 cases palpation of the mass produced severe pain. There were two deaths in the series, each due to acute generalized peritonitis.

The Lancet.

Feb. 2, 1907.

1. *Bennet, W. *Pain in the Groin.*
2. *West, S., and Clarke, T. W. *Idiopathic Cyanosis Due to Sulph-Hemoglobinemia (Enterogenous Cyanosis).*
3. Harris, W. *The Causation and Treatment of Some Headaches.*
4. *Crace-Calvert, G. A. *On Opsonins and the Opsonic Index and Their Practical Value in the Treatment of Disease, Especially with Regard to Pulmonary Tuberculosis in Sanatorium Patients.*
5. Kinghorn, A. *A Review of the Present Means of Combating Sleeping Sickness.*
6. Castellani, A. *Paratyphoid Fever in the Tropics.*
7. Larkins, F. E. *A Case of Transposition of the Viscera.*
8. Parsons, J. H. *The Visual Insufficiency of the Uncorrected Myope.*
9. Campbell, H. *The Role of the Blood Plasma in Disease.*
10. Macewen, H. A. *German Methods of Meat Inspection as Carried Out in Berlin.*

1. Under the subject, " Pain in the Groin," Bennet gives various illustrative cases in which this symptom has been a prominent feature. He takes them up in two groups: (1) Those in which the incidence of the pain seemed to be from above; and (2) those in which it seemed to come from below. Among the first he describes cases of prolapsed ovary, umbilical hernia, stone in the bladder and ureter and others; in the second group were cases of femoral hernia, flat foot, popliteal sarcoma, varicocele and others. He concludes that pain in the groin may arise from causes remote or near that region; that examination should be made in the erect as well as in the recumbent position; and last, that the search for the cause for pain in the groin should be a most thorough one, as it may be a very serious condition.

2. Van der Bergh, of Rotterdam, in 1905 was the first to demonstrate that certain cases of cyanosis, hitherto supposed to be due to methemoglobin are in reality due to sulph-hemoglobin. This is likely to be the case in those instances where it cannot be shown that headache powders, coal-tar products or certain other drugs have been taken for any length of time. The substance is not in the serum, but is found only in the corpuscles; this is also true with methemoglobin. The condition is supposedly due to the absorption of H_2S from the intestinal tract; whether this is due to bacteria forming this substance or to abnormal proteid decomposition from other cause is not yet determined. The writers give the details of their most interesting case and also consider all the other reported cases of this condition. The cases of cyanosis due to methemoglobin have been associated with diarrhea and have improved on a milk diet; cases of sulph-hemoglobin have had constipation and have not improved till this condition was relieved.

4. Crace-Calvert gives the result of his experiences with the opsonic index in treating consumption at sanatoria with tuberculin. Except in very acute forms of pulmonary tuberculosis he advises treatment with tuberculin (guided by the opsonic index) when ordinary sanatorium methods fail. The technique is as yet far too difficult for general use.

British Medical Journal.

Feb. 2, 1907.

1. Semon, F. *Some Points in the Diagnosis and Treatment of Laryngeal Cancer.*
2. *Robson, A. W. M. *Duodenal Ulcer and Its Treatment.*
3. Cuff, A. *A Case of Repeated Abdominal Section for Perforation of Gastric Ulcers.*
4. Skirving, A. A. S. *Multiple Internal Diverticula of the Small Intestine.*
5. *French, H. *Opsonins and Their Utility in Practical Medicine.*
6. Hill, L. *Note on the Temperature of Japanese Hot Baths.*

2. This is an exhaustive consideration of the diagnosis, treatment, prognosis, etc., of duodenal ulcer in all its varieties and stages. The writer believes that it should now be considered separately from gastric ulcer and that a differential diagnosis is nearly always possible. He considers that a posterior gastro-enterostomy is the only treatment for duodenal ulcer. He has operated on sixty-six cases without any deaths from the operation. The ultimate issue as well as the immediate results are good. He sits the patient upright in bed at once after operating. It is important to see that the patient is well protected from cold in this position; the writer makes use of a cotton wool suit made by the nurse of gamgee tissue both during and after the operation. Feeding by mouth is begun as soon as nausea from the anesthetic has passed away. The writer considers in special detail the treatment of hematemesis and perforation.

5. The writer gives a broad consideration of the theory of opsonins, the technique of obtaining the opsonic index and the application of opsonins to medicine in general. In a few diseases, such as acne, the opsonic index has been so often worked out and the results tally so closely that the writer thinks that injections of staphylococci can now be made in most cases of acne without first determining the index.

Deutsche Medizinische Wochenschrift. No. 5.

Jan. 31, 1907.

1. *Löffler. *New Methods for the Rapid Staining of Micro-organisms.*
2. Bosse, P. *Spinal Anesthesia with Tropaeocain.*
3. *Maurer, A. *The Influence of Quinine on the Uterine Contractions.*
4. *Alexander, A. *Fever in Carcinoma.*
5. *Kothe,. *A Peculiar Form of Chronic Stenosis of the Splenic Flexure.*
6. Rona, D. *A Case of Retro-Peritoneal Echinococcus.*
7. Axmann. *Treatment of Diseases of the Eyes with Uviol.*
8. Fischer, O. *A Pipette to Measure Serum for the Widal Reaction.*
9. Laser, H. *The Occurrence of Deafness in School Children and its Causes.*
10. Fraenkel, M. *A Case of Gout in a Four-Year-Old Child.*

1. Löffler recommends for the staining of spirochetes and trypanosomes a modification of the well-known Giemsa stain. The latter method takes twenty-four hours and the results are often unsatisfactory. Quick staining can be accomplished by heating a few drops of the Giemsa stain in a ½% glycerin solution just before using. Malachite green is used as a counter stain.

3. Quinine, according to Maurer, has a marked action on the uterine muscle, bringing on contractions or increasing those already present. It is extremely useful in abortion and in uterine inertia, producing the desired effect in 78% of his cases. The dosage is important, for small doses have no action, and very large ones possibly cause paralysis of the uterine muscle. He recommends the following method of administration: 1.0 gm. (15 gr.)

by mouth, followed in one hour, if necessary, by 0.5 gm.; if there is still no effect, a final dose of 0.5 gm. Untoward effects on the child or the mother have not been observed.

4. Alexander discusses the occurrence of fever in carcinoma, and reports four cases, all accompanied by ulceration of the growth. Of Freudweiler's 117 cases, 108 were cancers of the gastro-intestinal tract. Alexander's conclusions are as follows: there may occur in cancer fever of atypical course, due to auto-intoxication by products of the neoplasm itself; the fact that ulceration is usually present is simply a coincidence. [This last conclusion is open to doubt; for it does not explain the rarity of fever in non-ulcerated cancer, nor the fact that over 90% of these cases occur in cancer of the gastro-intestinal tract, where ulceration is the rule. It would seem more probable that the fever is due to the absorption of decomposition products of the growth, or of bacterial toxins, the result of secondary infection.]

5. Kothe reports an instance of stenosis at the splenic flexure, caused by an abnormally acute angle between the transverse and descending colons, with the formation of a spur projecting into the lumen. Gas accumulating behind caused complete closure of the bowel owing to a valve-like action of this spur. Corresponding to this there were periodic attacks of obstruction. Cure after entero-anastomosis with Murphy button.

Münchener Medizinische Wochenschrift, No. 5.

Jan. 29, 1907.

1. *Frænkel, C. *The Spirilli of Tick Fever.*
2. Mosse. M. *Do Leucocytes have a Heterolytic Action?*
3. *Huber, A. *Heredity in Gastric Ulcer.*
4. *Flesch, M. *The Pathology of Appendicitis.*
5. Gläuzel. *A Case of Severe Tetanus, with Recovery.*
6. Hochheim, K. *A Case of Late Traumatic Apoplexy.*
7. *Rupfle, J. *A Case of Ascending Obliterating Arteriitis after Trauma.*
8. Blaschko, A. *The Frequency of Gonorrhea in Germany.*
9. Vörner, H. *Statistics about Gonorrhea in the Male and Its Consequences for the Wife.*
10. *Türk, W. *The Color Index of the Red Corpuscles.*
11. Mühlens and Hartmann. *The Cause of Vaccinia.*
12. Weil, A. *The Superficial Action of Percussion.*

1. In the course of experimental work with the spirillum of African tick fever, Frænkel was able to produce immunity in animals. He regards the organism as distinct from that of relapsing fever, because the animals immunized against the former could still be infected with the latter.

3. The question of heredity in gastric ulcer has been neglected hitherto. Huber of Zürich found that the disease was hereditary in 15% of his cases and in 33% of those of Bernhard. His histories are very striking, showing the presence of the disease sometimes in three generations. Reports of thirty-four families are given.

4. Flesch has observed the repeated occurrence of appendicitis in certain families, but attributes this more to the environment than to hereditary influences. He considers that the appendix is far from being a rudimentary organ in the process of degeneration, but that it possesses physiological functions of which secretion is probably the chief. The apparent increase in appendicitis he attributes to the frequency of constipation; the prophylaxis of constipation is therefore important as a means of preventing appendicitis.

7. Rupfle reports a case of obliterating arteriitis of the radial artery which came on soon after the patient struck his fingers against a table. The symptoms began with formication and numbness in the fingers, followed by pain extending up the arm. The radial and ulnar arteries and the first part of the brachial were obliterated. No other cause than trauma could be assigned.

10. This article deals chiefly with the large error which may occur in reckoning the color index of the erythrocytes. This error is due mostly to the great differences in the readings of the various instruments for measuring hemoglobin. The Sahli instrument, for instance, regularly registers about 20% too high; the reading 100 of the Fleischl-Miescher corresponds to 88 on the old Fleischl apparatus. An error of a million or more in the red count can easily occur with inexperienced observers.

Berliner Klinische Wochenschrift, No. 49.

Dec. 3, 1906.

1. *Sticker, A. *Tumors of Dogs Transmitted by Sexual Intercourse.*
2. Landau, T. *Primary Carcinoma of the Appendix.* (Continued article.)
3. *Lippel, A. *A New Method of Treating Eclampsia.*
4. *Polya, E. A. *The Pathogenesis of Acute Hemorrhage and Necrosis of the Pancreas.*
5. *Wolff, H. *The Pathogenesis and Treatment of Splenic Anemia of Infants.*
6. Mankiewicz, O. *Boravertin: A New Urinary Disinfectant.*

1. That sarcoma of dogs may be transmitted by sexual contact has been demonstrated by Sticker. A bitch with ulcerated sarcoma of the vagina was covered by four dogs; of these, one developed a sarcoma on the corresponding part of the penis, with metastases in the groin. Later on she was covered by three other dogs, and one of these at the end of three months showed a sarcomatous growth on the penis. These experiments support the view that malignant disease can be transmitted by contact provided that the tumor cells have a chance to penetrate the skin, and throw a new light on the usually discredited cases of contact transmission in man (cancer of the cervix in the wife, of the penis in the husband, transmission from lower to upper lip of the same individual, etc).

3. The customary treatment of eclampsia, immediate delivery and measures for the elimination of toxins, is usually successful. There remains a group of cases in which anuria continues after delivery, and which shows at autopsy a very tight capsule of the kidney, the so-called renal glaucoma. Lippel proposes for this group the operation of splitting the capsule of both kidneys and points to the fact that Edebohls has performed this operation in eclamptics three times, with recovery in all. While the Edebohl's operation is not a panacea for all varieties of nephritis, it certainly appears indicated in this group of cases of eclampsia. The writer has had no operative cases himself.

4. Polya reports important researches on acute hemorrhagic pancreatitis. The pure pancreatic secretion, as Pawlow has shown, contains no trypsin, only trypsinogen, which has no digestive action. It is only after activation with enterokinase, an intestinal secretion, that trypsin is formed. Acting on the belief that acute pancreatitis is due to self-digestion, Pólya injected duodenal extract into the pancreas, both parenchymatously and through the duct, and produced in most of the animals (dogs) typical pancreatitis with fat necrosis and hemorrhages. The injection of duodenal contents into the duct invariably lead to pancreatitis, as did also the injection of trypsin, even in weak solutions. One dog recovered temporarily, but suffered from diarrhea, emaciation, and jaundice, the autopsy showing extreme cirrhosis of the pancreas. Experiments with enterokinase alone were failures, possibly owing to the use of a faulty preparation.

5. Wolff reports a case of splenectomy for infantile splenic anemia, with recovery. The red count was 467,000, and the condition very bad. Ten days after operation the number of red cells had risen to 2,500,000, and there was marked general improvement. A year after operation the child was active but still anemic (2.7 millions). The author regards his case as supporting the view that infantile splenic anemia is an independent disease of the spleen, similar in many respects to Banti's disease.

Dec. 10, 1906.

1. *Lewin and Stadelmann. *Acocanthera Schimperi in Heart Disease.*
2. *Strauss, H. *Acquired Forms of Chronic Acholuric Icterus with Splenomegaly.*
3. Rothschild, A. *Stone in the Bladder Due to a Foreign Body, with Remarks on the X-ray Appearances.*
4. *Landau, T. *Primary Carcinoma of the Appendix.* (Concluded.)

1. Acocanthera is an East African tree which furnishes an arrow poison so subtle that a wound from it is rapidly fatal, even to elephants. From it is derived a glycoside,

ouabain, which is chemically identical with strophanthin, but several times more powerful. In small doses the action of acocanthera is similar to that of digitalis and quite as active. Stadelmann found it effective in some cases where digitalis was not, but in others it failed. Ouabain showed an action similar to that of digalen, but with the advantage that it is not painful in subcutaneous injection. These drugs are not yet on the market.

2. Strauss reports two cases of acquired chronic icterus with splenomegaly. The stools were colored, the urine contained urobilin but no bilirubin. Occasional attacks of pain in the hepatic region, with fever and increase of the jaundice, led Strauss to believe that an infectious cholangitis is the cause of the disease. He considers it related to Hanot's cirrhosis, from which it differs in the absence of bilirubin in the urine and the milder course. [*Cf.* abstract of Claus and Kalberlah's article, Boston Medical and Surgical Journal, Feb. 21, 1907, page 255.]

4. Landau reports a case of primary cancer of the appendix, and analyzes the literature. Almost all reported instances have been discovered at operation or as an accidental finding at autopsy; the reason for this is that later, when the disease has led to death, the extension to other organs makes the recognition of the primary seat difficult. The symptoms are due entirely to the reactive inflammation about the new growth, and are those of appendicitis. These cases may be easily overlooked unless the rule be followed, that in all laparotomies, for whatever cause, the appendix is to be palpated, and if in the least diseased, removed.

Miscellany.

SLEEPING SICKNESS IN FRENCH EAST AFRICA.

Three years ago, as the outcome of an inquiry instituted by the French Minister for the Colonies, the Inspector-General of the Medical Service of the French Colonial troops was able to map out the geographical distribution of sleeping sickness in the part of East Africa which belongs to France. We learn from the *Semaine Médicale* that he has now presented a further report, bringing the information available down to the end of 1905. In the regions before indicated as infected — Casamance, the largest part of Upper Guinea, the Hinterland of Liberia and of the Ivory Coast, Baol, Sine-Saloum and Cayor in Senegambia, Baouli, Kong and Lobi on the Ivory Coast, and the Bobo country further to the north — the disease, which nothing has been done to check, has naturally spread. In Senegal, where human trypanosomiasis had already been known to occur sporadically in Gambia, endemic foci were found in the Dakar Gorea district, and the native population of Popougine, Niaming, Joal and neighboring villages has been decimated by the disease. Moreover, sporadic cases have been observed at Podor, Tivaoune and Rufisk, which is at a distance of only 30 km. from Dakar. It is feared that a considerable part of that district is infected, and it would not be surprising if this were the case, as the tsetse flies abound there. Sleeping sickness is also prevalent in the southwestern part of the Sudan; it is uncertain whether it has existed there for some time or whether it penetrated into the country by way of Guinea — where it is rife, particularly in the Fouta region and in certain zones still nearer the Sudan — or by way of Upper Gambia, where it is also endemic. On the other hand, the southwest of the Gaoua zone, on the confines of the Sudan and of the higher part of the Ivory Coast, is also infected; it is not known, however, whether the disease has been imported from Lobi or from the Bobo country, or whether it has invaded the last-named regions by spreading from the Sudan. In Loango, one of the most important ports of the French Congo, which is the starting place of caravans for Brazzaville, sleeping sickness causes great ravages; but the disease is not localized there, many villages in the Middle Congo being also contaminated. In the Ivory Coast, in addition to the Baouli and Kong foci, isolated cases have been observed in patients coming from Senegal or the Sudan. In Dahomey only a single case has been reported; it occurred at Porto Novo, the capital. But the tsetse fly is found in Dahomey, and sleeping sickness is known to have existed or to exist in the Paouignan region quite near to Abomey. It is, therefore, not unlikely that trypanosomiasis may be more or less prevalent in several parts of the interior of the country. — *British Medical Journal.*

SINGLE EXAMINING AND LICENSING STATE BOARD FOR MEDICAL PRACTITIONERS IN NEW YORK STATE.

Believing that their enactment offers the best way of securing the preservation of scientific educational standards in the state, the regular profession of New York is at present making unusual efforts to secure the passage, if possible, of two bills before the Legislature, one in the Senate and one in the Assembly, which provide for the creation of a single examining and licensing State Board for Medical Practitioners. The members of the proposed board are to be appointed by the Board of Regents of the University of the State of New York, and it is specified that each member must have received the degree of Doctor of Medicine from some registered medical school and must thereafter have legally practised medicine in the state for at least five years.

At the present time there are three state boards of examiners,— the regular, the homeopathic and the eclectic,—and candidates are required to pass examinations in materia medica and therapeutics, but under the proposed single board the latter subjects will be omitted. Candidates are, however, required to have studied medicine not less than four school years, including four satisfactory courses of at least seven months each, in four different calendar years, in a medical school registered as maintaining at the time a satisfactory standard; and the subjects included in the examinations are anatomy, physiology, hygiene, sanitation, chemistry, surgery, obstetrics, gynecology, pathology (including bacteriology) and diagnosis. Any person who has fulfilled the requirements of the board may practice in whatever manner he pleases, but it will be seen that no one can be licensed to practice who has not shown himself possessed of a satisfactory knowledge of the rudimentary elements of scientific medicine. The establishment of such a single board would put an end once for all to the attempts of sects like the osteopaths to secure state recognition. It is felt by those favoring the measure that medical laws should not be designed to bolster up schools and sects, but simply to establish a scientific standard which the quack and charlatan cannot reach. It is believed that unless a single board is made a part of the educational system, the state, if consistent, must in time grant a board to osteopaths, vitopaths, hydropaths, electropaths and every pseudoschool whose adherents clamor for it loudly enough. Resolutions urging the passage of the bills creating the single board have been recently passed by the Medical Association of the Greater City of New York, the New York County Medical Society and other bodies, and these have been sent personally to the members of the Legislature.

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Correspondence.

LETTER FROM A "ROUND-THE-WORLDER" ON THE HOME STRETCH.

Medical Matters in Japan; in China; in India.

Crossing the Arabian Sea *en Route* for Aden,
January 27, 1907.

Mr. Editor: I am thus far on my way "round" the world, having left Bombay, India, on Thursday, the 24th inst. I hope to arrive at Port Said, the Mediterranean end of the Suez Canal, on to-day week, and by train reach Cairo on the same day. I have spent, since my arrival at Yokohama, one month in Japan, three weeks in China and one month in India. I was greatly interested in what I saw in Japan. The Japanese are wonderful imitators and have, in the few years of their entrance into modern civilization, made marvellous progress in the arts and sciences. In medicine they have accomplished much. Their first teachers were Germans, and the instruction was that of the German school, and, therefore, good. One who visits the university, colleges and hospitals must speak in German. I was surprised to see how excellent was their work in the laboratories and in their teaching system. I was pleased to see a copy of the "International Textbook of Surgery" in the libraries. The practical work in surgery was good, and fully up to date so far as modern methods were concerned. The care of the patients in the hospitals was influenced by the modes of life of the people, and could be improved, if it were possible to have them adopt more fully the habits and dress of the white race. I had a very interesting visit to Professor Kitasato's Institute and a pleasant interview with him. As you know, he it was who isolated the "bacillus pestis," "plague germ," and his institute is maintained by the government. He has charge of the preparation of all of the "serums" used in contagious and infectious diseases throughout Japan, and he has under his direction a number of able investigators and assistants, whom he sends to various parts of the country when an epidemic of any disease occurs. When I was there the plague had appeared in Asaka, and a number had gone to fight it. He does not fully accept the "rat" theory of infection and communication, or conveyance by the "flea" to man. In the institute there were, among many animals of all kinds, two hundred horses which, after infection, provided blood from which the serums were prepared.

In China I saw some of the medical work done by missionary physicians, and that which interested me most was in the Canton hospital, formerly under the charge of Dr. Kerr, whose "stone" operations have a prominent place in the records of surgery. The record is being kept up to-day, as each week there are a number of operations for stone performed. On one day I saw two done very skillfully by the lateral method, and more cases were waiting. There were also operations on the abdomen, jaws and other parts; in truth, a list quite as full and important as in one of our hospitals. The hospital accommodations are very crude, a board bed and a blanket. For the stone cases a round hole was made in the board and the patient laid over this. They told me the Chinaman was an excellent subject for operation, not liable to shock and rarely attacked by septic conditions.

In India I spent a portion of my time in the interior visiting Agra, Delhi, Lucknow, Cawnpore, Benares and other places possessing great interest in old and new history. The interest of the former times is found in the palaces, forts, morgues, temples and tombs of the rajahs of former times, three and four hundred years ago. These structures are marvels in architectural skill and artistic combinations, richness in embellishments and harmonious relations. No one who has any appreciation of structural art can fail to be impressed with what was achieved in this direction in those days. The medical work in India is largely, if not entirely, done by the English Government which has control. There are and have been native "doctors," but their practice is and was limited. "Death is the will of God," as it happens to come to Mohammedan, Hindu, Buddhist, Parsee, and by them little is done to interfere with it. The English Government in India is doing all it can to help the four hundred million people, through civil service physicians and surgeons, and in a few centers, as Bombay, Calcutta and one or two other places, excellent scientific work is done in institutes for research. Rabies prevails largely, and a Pasteur Institute has been organized at Poona, I think, for the treatment of natives bitten by rabid dogs, jackals, etc. The antitoxin is prepared and sent to all parts of the country for use. As you know, each year many natives are killed by venomous snakes. In 1904 over twenty-one thousand perished from this cause. In Bombay the government has established a laboratory, and for some time anti-venin has been prepared and used with success. I had an opportunity to see the work of this laboratory, where there are many specimens of the venomous reptiles — cobras and vipers — which are used for the purpose of obtaining the venom and from it making the antitoxin by inoculation of the horse. I also saw two persons, one, Major Lamb, the officer in charge, and a native, who had been bitten, and their lives saved by injection of the anti-venin, with the loss, however, of a portion of a finger. In this laboratory also, under the direction of their officer of the Indian Medical Service, is prepared the plague serum, with which many are inoculated as a preventive, not curative, agent. Rats, infected with the plague and having the plague flea on them, are trapped by the thousands each day, so many that it requires three or four ox carts to bring them to the laboratory. If not dead, they are killed by chloroform, and the fleas on them, by the same agent, are simply stupefied so they can be "stripped off" and placed in a test tube where they soon revive. Each rat — a thousand in a day — may be posted and the pathological condition noted. From the buboes, cervical and inguinal, cultures are made and guinea pigs infected. The fleas are used to convey the plague by confinement in protected boxes with guinea pigs. The results obtained seem to prove conclusively, first, the rat is infected; second, the flea on the rat is infected; third, the flea getting on to a guinea pig, non-infected, conveys the plague to it. The human subject is infected in the same manner by the flea by means of the dejections, as it has been observed that while biting the flea passes from the intestines its contents which infect the wound made by its proboscis. I watched for some time the process very closely and came in contact with many fleas, and have taken all precautions to prevent myself being infected. "Plague" take him, I hear you say, for such a long epistle. And so I stop, telling you that I hope, after a visit to Constantinople and Athens, to go to Vienna, Paris, and London to live over the old days in a way.

Very sincerely yours,
J. Ewing Mears, M.D.,
Ex-President American Surgical Association.

RECORD OF MORTALITY

For the Week ending Saturday, Feb. 16, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,688	484	Quincy	6	2
Chicago	698	217	Waltham	17	6
Philadelphia	—	—	Gloucester	5	1
St. Louis	—	—	Pittsfield	9	2
Baltimore	248	66	Brookline	10	1
Cleveland	—	—	North Adams	12	3
Buffalo	—	—	Chicopee	7	3
Pittsburg	—	—	Northampton	11	1
Cincinnati	—	—	Medford	4	—
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Hyde Park	5	2
Providence	—	—	Newburyport	—	—
Boston	202	56	Leominster	6	2
Worcester	57	13	Melrose	4	0
Fall River	—	—	Woburn	9	1
Cambridge	35	10	Marlborough	9	2
Lowell	41	13	Westfield	2	—
Lynn	28	8	Peabody	—	—
New Bedford	29	8	Revere	5	1
Springfield	38	6	Clinton	4	0
Lawrence	31	10	Attleboro	4	1
Somerville	12	4	Adams	3	—
Holyoke	14	8	Gardner	—	—
Brockton	—	—	Milford	4	1
Malden	11	2	Weymouth	1	—
Salem	10	3	Framingham	7	0
Chelsea	14	6	Watertown	2	0
Haverhill	22	5	Plymouth	—	—
Newton	7	2	Southbridge	4	—
Fitchburg	—	—	Wakefield	—	—
Taunton	12	1	Webster	—	—
Everett	10	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING FEB. 23, 1907.

N. T. McLean, assistant surgeon. Discharged from treatment at the Naval Hospital, Boston, Mass., and ordered to the Navy Yard, Boston, Mass.

C. C. Grieve, passed assistant surgeon. Commissioned a Passed Assistant Surgeon from June 2, 1906.

C. E. Ryder, passed assistant surgeon. Commissioned a Passed Assistant Surgeon from June 26, 1906.

S. Bacon, acting assistant surgeon. Ordered to the Norfolk Hospital.

J. M. Moore, surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va.

F. M. Furlong, surgeon. Detached from duty at the Boston Hospital, and ordered to duty in connection with the fitting out of the "Vermont" and duty on board when placed in commission.

APPOINTMENT.

Dr. H. P. Bowditch has been appointed George Higginson Professor Emeritus of Physiology in the Harvard Medical School.

SOCIETY NOTICES.

The National Association for the Study and Prevention of Tuberculosis. — The Third Annual Meeting of the National Association for the Study and Prevention of Tuberculosis will be held at the New Willard Hotel, Washington, D. C., May 6, 7 and 8. The organization of the sections for the meeting is as follows: Sociological Section, Mr. Paul Kennaday, New York, chairman; Mr. Christopher Easton, New York, secretary. Clinical and Climatological Section, Dr. George Dock, Ann Arbor, chairman; Dr. Joseph Walsh, Philadelphia, secretary. Pathological and Bacteriological Section, Dr. F. F. Wesbrook, Minneapolis, chairman. Surgical Section, Dr. W. S. Halsted, Baltimore, chairman; Dr. Hugh H. Young, Baltimore, secretary. Section of Tuberculosis in Children, Dr. T. M. Rotch, Boston, chairman.

Boston Society for Medical Improvement. — A meeting of the society will be held in Sprague Hall, Medical Library Building, on Monday, March 4, at 8.15 p.m. Program: Diseases of the Naso-Pharynx in Infancy, Dr. J. L. Morse; Demonstration of Eggs of Common Intestinal Parasites, Dr. Franklin W. White.

Daniel Fiske Jones, M.D., *Secretary.*

114 Marlborough St.

Examination of Candidates for Vacancies in the Marine-Hospital Service. — A board of officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street, S.E., Washington, D. C., Monday, April 15, 1907, at 10 o'clock, a.m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. The following is the usual order of the examinations: 1, physical; 2. oral; 3, written; 4, clinical. In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination of the various branches of medicine, surgery and hygiene. The oral examination includes subjects of preliminary education, history, literature, and natural sciences. The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. For further information, or for invitation to appear before the board of examiners, address "Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C."

RECENT DEATHS.

Dr. Sherwood B. Ives, a son of the well known New York banker, Brayton Ives, died at Datil, N. M., on Feb. 16, from the effects of a pistol shot wound accidentally inflicted by himself. Dr. Ives was born in New York City and was thirty-six years of age. He took the regular preparatory course at Groton and was graduated in 1893 from Yale, where he rowed on the crew and was one of the best all-round athletes and most popular men in the university. He was graduated from the medical department of Columbia University in 1896, and afterwards served as interne in the Presbyterian Hospital. He engaged in private practice in New York for two or three years, but incipient tuberculosis developing, he went to the Adirondacks, where he became the Assistant of Dr. Trudeau at his Saranac Lake Sanitarium. Later he decided to go to New Mexico to practice, locating at Datil, where he greatly enjoyed the open air life and soon became the most popular physician in that section of the country.

Dr. James Clark Thomas, of New York, died at the Good Samaritan Hospital, in Los Angeles, Cal., on Feb. 20, in the sixty-fourth year of his age. He was graduated from Yale University in 1864 and from the College of Physicians and Surgeons, New York, in 1868. He then served as interne in Bellevue Hospital. His whole professional life was spent in New York City, where he built up a large and lucrative practice.

Dr. Joseph O'Shea, a well-known practitioner of Paterson, N. J., died on Feb. 20, from acute pulmonary tuberculosis, at the age of thirty-three years. He was a graduate of Seton Hall College, and received the degree of M.D. from Bellevue Hospital Medical College, New York, in 1896. During the last four years of his life he was medical inspector of the public schools of Paterson.

Samuel Pitcher, M.D., M.M.S.S., of Hyannis, died at Ormond, Fla., February, 1907, aged eighty-three years.

Robert Provan, M.D., M.M.S.S., died in Brookline, Feb. 23, 1907. Dr. Provan was born in New Brunswick, and after preliminary study at Fredericton, was graduated from the Harvard Medical School, and thereafter, for the greater part of forty years, lived and practised in South Boston. He was at one time a member of the Common Council; for three years president of the British Charitable Society; at one time vice-president of the Victorian Club, and was also prominent in other such associations. He was a man highly thought of in the community in which he lived.

BOOKS AND PAMPHLETS RECEIVED.

Success: The Surgical Desideratum. By A. Ernest Gallant, M.D. Reprint.

The Cervix Uteri Before, During and After Labor. By A. Ernest Gallant, M.D. Reprint.

Superstition in Teratology. With Special Reference to the Theory of Impressionism. By Edwin Taylor Shelly, M.D. Reprint.

Thirty-sixth Annual Report of the Central State Hospital of Virginia (Petersburg) for the Fiscal Year Ending Sept. 30, 1906.

Mr. Elbert Hubbard on Vaccination; A Critical Examination. Reprint.

Some Remarks on Prostatic Hypertrophy. By Charles H. Chetwood, M.D. Reprint.

Original Articles.

ON THE DIAGNOSIS OF TUMORS, WITH ESPECIAL REFERENCE TO THE EVIL RESULTS OF OVERCONFIDENCE AND DELAY.*

BY MAURICE H. RICHARDSON, M.D.,
Professor of Clinical Surgery, Harvard University.

The frequent occurrence of diseases previously regarded as rare, soon after attention has been called to their possible existence, has been remarked by most observers. It is often said that an unusual case in practice is immediately followed by one or more similar cases. For example, a splenic leukemia, seen one day, is followed by another the next; or an extra-uterine pregnancy, operated on in the morning, is followed by another in the afternoon. Such occurrences are, of course, purely accidental. A disease accurately described for the first time seems thereby to be put immediately upon the increase; but the explanation of the fact lies, as we know, in the increased attention called to the subject, the added knowledge which makes the lesion suspected, and the careful search for the disease by the general practitioner. With the demonstration that the vermiform appendix is the cause of most symptoms in the right iliac fossa, the number of cases of appendicitis has increased beyond all conception of the early days. The changes in the pancreas owing to gallstones, and relieved by cholecystostomy and drainage, have been noted with increasing frequency. So it is with many clinical problems. The moment a question arises, conditions seem also to arise as if for the direct object of solving that question. Ten or fifteen years ago the subject of actinomycosis, for example, was brought up by Dr. C. A. Porter in connection with chronic inflammatory diseases of the lower jaw, previously treated as alveolar abscess with dead bone. This disease had hardly, in my recollection, been mentioned, and was by many of the staff — myself for one — not known even by name. Cases began immediately to be discovered, and with increasing frequency. Through the general interest excited by the studies of Dr. Wright and through the eager search made by the staff, the disease has now been demonstrated in different parts of the body. In one year I found three cases of abdominal actinomycosis, all so strongly resembling malignant disease that the diagnosis of cancer seemed the most plausible one. The possible presence of this lesion is now considered in the diagnosis of many if not most doubtful tumors, especially in connection with the alimentary tract.

The discovery of new and easily demonstrable facts has added such strength to the diagnosis of many previously obscure conditions, that they are no longer obscure. Contributions to the pathology of tumors, like the demonstration of the relations of the ray fungus to intestinal growths, or of the influence of gallstones in producing chronic inflammations resembling new growths of the pancreas, have cleared up many previously obscure questions. The etiology of tumors is better understood, or rather is a little less unknown or unsuspected. The influence which new growths exert in the very beginning of their offending, and the gross changes which they undergo in their early life history, are, as time goes by, better and better predicted and understood. The tumors which may be left with comparative safety and those which may not, whatever the pathological report may be, are within reasonably accurate recognition. Fewer errors are made previous to operation, and fewer unnecessary operations are performed.

The diagnosis of tumors is, nevertheless, uncertain, even at the present day and in the hands of the most experienced men. Many unnecessary, not to say unjustifiable, operations are performed, while many imperative ones are withheld. The decision for or against operation must depend in most cases upon the educated touch; but many tumors are so deeply seated that it is difficult, if not impossible, to feel them. In all cases the final diagnosis after exposure of the tumor depends largely upon the sense of touch. The diagnosis of inaccessible tumors depends exclusively upon the history and the general examination. Accurate demonstration necessitates the exploratory operation which in such regions as the deep epigastric is easy and safe, and which may be followed immediately by the radical operation. In other anatomical areas, the brain, for example, the exploration is itself so dangerous that the removal of the tumor does not add greatly to the risk. Indeed, the early discovery and prompt removal of a tumor from the cortex is less destructive to cerebral tissues than the laborious and extensive search for something which perhaps does not exist. But however absorbing may be our interest in the new growths of the brain, spinal cord, the pleura, pericardium, lungs and mediastinum, tumors situated in these regions do not permit much more than a shrewd guess as to their existence; much less do they permit a reasonably accurate opinion as to their nature. Such tumors are beyond the scope of this paper, in which I wish to consider mainly the common and accessible tumors.

Since reading in Atlanta in 1903 upon practically the same subject as that considered in this paper, I have been impressed more deeply than ever by its importance, for in the three years which have elapsed since then I have seen the evils which follow the overconfident diagnosis, whether of malignancy or of benignancy. Clinical records are crowded with the histories of tumors in their early and operable stages and their worse than useless treatment by " absorbents," " counter-irritants," trypsin and other newly-discovered and much-advertised " scientific " methods of sure cure. In some instances, but too few to be in the aggregate of serious moment, my operative records contain the pathologist's report of *benignancy* when the operative diagnosis read *malignancy*. Even in those cases, however, like pyloric stenosis of ulcer origin, the diagnosis of malignancy which necessitated pylorectomy, removed the menace of later degeneration which a simple gastroenterostomy would not have done. Furthermore, in disputed diagnoses the worse rather than the better prognosis — that which demands thorough removal — means the greater safety for the future.

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* Read before the Obstetrical Society of Boston, Oct. 23, 1906.

Admitting, as we must, the failure in the treatment of malignant growths of all methods other than surgical (excepting, in the rarest instances, the x-ray in superficial epithelioma and Coley's toxins in the sarcomata), admitting also in the diagnosis the fallibility of physical evidence, and considering the suffering and death which must follow delay and palliation based upon fallible diagnoses and inefficient methods of treatment, we cannot but feel the necessity for extreme vigilance, particularly in the diagnosis of benignancy, and for the candid admission on our part, that, after all, our experience, no matter how extensive it may be, is but a frail support upon which to base a diagnosis which permits the palliative, the non-operative, the medical treatment of the doubtful tumor.

There are degrees of positiveness in diagnosis, according to the situation of the tumor, its accessibility, its perceptibility to the senses, its rate of growth, and its effect upon the general health. Positiveness depends also upon the confidence of the observer in his own powers and experience. Most errors in prognosis and treatment depend, unfortunately, upon overconfidence. One may rely upon the positiveness of hopeless inoperability more confidently than upon that of benignancy, for more errors occur in calling the malignant tumor benign than in calling the benign tumor malignant. Positiveness may be, and usually is, greater in the malignant than in the non-malignant tumor, for the signs of malignancy are plain and characteristic, whereas those of benignancy are not always either plain or characteristic.

It is easy to make a positive diagnosis of a breast tumor which presents characteristic signs to touch as well as to sight, when it is difficult to make the diagnosis positive in a tumor accessible only to touch. One may be positive in his opinion that a subcutaneous tumor is a lipoma, and find in reality a sarcoma. In a word, however, positiveness varies with the evidence, for some is positive and some is not; it varies with the observer's experience, for this is sometimes broad and sometimes limited. It varies with common sense, for some observers have this quality and some do not. Finally, positiveness based upon truth and accurate observation is an attribute which can be cultivated to high perfection.

In my experience and belief, preventable errors of all kinds in the practice of surgery, especially the gross and hard to excuse — whether of diagnosis, technique or after-treatment — occur as the result of overconfidence rather than of ignorance. There is, for instance, the blunder of leaving gauze sponges in the abdomen. When every precaution has been taken by counting the gauzes, and yet one is missing; when the gauze is sought for by looking and feeling, and by looking and feeling again and yet again, and when the count is still incorrect, then the surgeon may feel as sure as can he feel of anything depending upon human frailty, that there is no sponge left in the abdomen, but that the original count was wrong, or that a gauze has been lost elsewhere than in the abdomen. When, in the confidence of a correct count, he closes the abdomen without looking or feeling, the safety depends upon the correctness of the count, and it is then, if ever, that a gauze in the abdomen may have been overlooked. Gauzes are lost when there is no suspicion of their loss. So it is in the distressing burns by heaters; in paralyses from prolonged faulty postures; in wounds of ureters, bladder, and intestines, — these accidents occur when the possibility of their occurrence is not even considered. In the diagnosis of tumors, errors arise because their nature seems so evident, so unmistakable, that careful histories are not taken and careful examinations are not made. A lipoma, for example, is diagnosticated at a glance and a touch, and found to be — a fibrosarcoma (vol. lxii, p. 70) or a round-celled sarcoma (vol. 28, p. 80). A breast tumor is so evidently a benign cyst that operation is not even considered, and it proves to be malignant and fatal (vol. 38, p. 30). A tumor of the tongue is diagnosticated by an expert as unmistakable syphilis, and is treated for a month as syphilis, the appearances being thought so characteristic that touch is deemed unnecessary. At the end of this time, when the case comes to the surgeon (vol. lix, p. 41) the tongue is removed and shown by the microscope to be cancerous! A tumor of the thyroid diagnosticated by the medical consultant as Graves's disease and inoperable proves to be a cyst easily and effectively removed after years of useless suffering (vol. 36, p. 75).

So on through many years of records, case after case will be found in which some one — through carelessness, overconfidence, preconceived ideas — has failed to recognize the nature of the tumor and the gravity of impending complications. This failure depends first upon the patient; secondly, upon the attending physician, and finally, upon the consultant. By the time the tumor reaches the surgeon's knife, it only too frequently is found to have passed the bounds of the operable.

Hence the fearful mortality of those new growths which are not perceived early by the patient or recognized early by the attending physician. My records are full of cases of inoperable tumors of the stomach, intestine and rectum; uterus and ovaries; tongue, tonsil and esophagus. Even in the visible, accessible and most favorable positions, tumors are sometimes overlooked, concealed or lightly diagnosticated as of no importance. But the most frequent errors in diagnosis, and the ones to which I wish to call especial attention, are those which occur in spite of one's eager desire to avoid them, — errors in diagnosis that cannot but arise whenever, among several observers, there is that difference of opinion which necessarily arises from the nature and situation of the growth and not from haste or overconfidence. They are met with whenever, after careful study of history and physical signs, there still remains an element of doubt.

In all tumors, but especially in those recorded as doubtful, the possibility of malignancy must not be overlooked or forgotten; hence the importance of prolonged study of history, careful and repeated examinations, and early and adequate extirpation.

In the diagnosis and treatment of tumors, the most desirable because the most beneficial proposition may be expressed, I think, as follows:

All tumors should be regarded as malignant until they are proved benign.

No tumors can be proved benign while they are still in the body.

Therefore, all tumors should, if possible, be removed.

The truth of these premises may be open to discussion; but, their truth having been proved, the conclusion is inevitable.

The present communication deals chiefly with the truth of these premises. I shall, therefore, discuss the diagnosis of tumors, and shall endeavor to show the impossibility of always making that diagnosis sure enough to justify palliative treatment. The cases which illustrate this paper are selected wholly from my own records, and chiefly the records of the past few years. The sum total of errors in diagnosis is extremely small, for the signs have been only too characteristic and too often deplorably hopeless. The object of my remarks is not, however, to show the fallibility of the general practitioner, or even the medical consultant, but of the experienced surgeon. The chief argument is that, no matter how skillful the surgeon may be, he cannot be sure that any case which he deems benign is not in reality malignant. If it is admitted that the men most experienced in the diagnosis and treatment of tumors cannot in any case absolutely exclude malignancy, then the only rational treatment of tumors which are apparently benign is to remove them when the operation is neither dangerous, disfiguring nor disabling. But before a tumor is removed by an operation which is necessarily dangerous, disfiguring and disabling, the burden of proof that the tumor is malignant, though apparently benign, is upon him who would perform the dangerous operation.

The diagnosis of the lipomata may be conceded to be the easiest of all accessible tumors. Mistakes in this group are, therefore, least liable to occur.

When a malignant growth is diagnosed as a lipoma and the patient lives in the false security of the wrong diagnosis, the results are about as disastrous as can be imagined. In the cases which follow, the history and physical examination were careful and complete. The conclusion was not, from its inaccuracy, necessarily hasty or overconfident. It was one of the possibilities in the diagnosis of all tumors.

The first case was that of a strong, young man who had a tumor at the anterior border of the left axilla, a little above the level of the nipple. I examined this carefully and found what seemed to me a lipoma. It did not have, perhaps, all the characteristics of a fatty growth, for the skin did not show the irregular dimpling on lateral and inward pressure. I advised, but did not urge, removal. Two years later this man, having relied on my diagnosis that it was not a serious matter, though not accepting my advice, came to me with his axilla infiltrated by a new growth which proved to be a round-celled sarcoma and which was practically inoperable. The only thing to do after the failure of two extensive dissections, was amputation of the whole upper extremity — an operation which the patient wisely declined. Coley apparently cured him with the toxins of erysipelas and the x-rays, and he was shown at Washington four years ago before the American Surgical Association. He has since then died with recurrence in the mediastinum.

In this case the tumor was not a characteristic lipoma, and my error may have been, perhaps, a little less inexcusable. Something suggested that it ought to be removed, but I did not urge the operation as I should have done.

" The characteristic lipoma is unmistakable," most authorities would say. Unmistakable by whom? I maintain that the characteristic lipoma is the easiest of all external tumors to recognize; but I also maintain that no surgeon, no matter how experienced he may be, can avoid sooner or later making a wrong diagnosis even in so plain and simple a growth as a lipoma; furthermore, if he must err — being human — in the lipoma, what must be the probability of his erring in the uncharacteristic, the deeply seated, the inaccessible tumor? After all, however, the error usually results from haste or overconfidence, as I have said, especially, when no doubt arises. I select my cases, therefore, from those which I know have been carefully and repeatedly examined.

Mrs. H. (vol. lxii, p. 70) presented a subcutaneous tumor of slow growth over the upper part of the left scapula. The tumor was flattened, movable and connected more or less intimately with the skin, as all lipomata near the back of the neck are. Every attachment of this tumor required cutting. Dr. Whitney reported it to be a fibro-sarcoma.

This tumor was removed by a sufficiently broad margin because of its situation and attachments, which even in the case of a lipoma are so extensive and intimate in this part of the body that they must be actually cut. Here was a tumor, having the history and appearances of an innocuous growth, in a common situation of the lipomata, with the characteristic dissection of the lipomata. The tumor was not disfiguring, and its removal seemed in a sense unnecessary. Had this patient been advised against operation, and, relying on that advice, had she let the growth alone, two or three years' delay might have resulted, as in the previous case, in inoperability and death.

If it is easy sometimes to mistake the lipomata, what shall I say of breast tumors? In hundreds of breast tumors operated upon, even the most stupid observer must learn something of the gross appearances of cancer. Indeed, cancer of the breast in its full development is so plain that I think the diagnosis from gross appearances alone is as reliable as that from the microscope alone. It may be even more reliable, considering the possibilities of overlooking characteristic portions, the mixing up of specimens and slides, and other occasional and unavoidable mistakes.

In most cases of breast cancer the signs are so distinctive that a glance and a touch are sufficient to make a positive diagnosis. In some cases, especially the early ones, careful and repeated examinations fail to make the diagnosis positive. In some the diagnosis of malignancy cannot be made with certainty until a section is made through the tumor. In some the microscope alone will first detect the beginning evidence of malignancy. Accurate diagnosis of the doubtful, the indistinctive, breast tumor is impossible, even by the most experienced. Even if the surgeon can make a reasonably sure diagnosis of benignancy, as in the cyst or the encapsulated fibroma, he *cannot* in any case, except by the most prolonged and painstaking laboratory research, be absolutely sure that some minute focus of malignancy has not been overlooked.

These facts I can illustrate by many cases seen by many general practitioners and by many surgeons. It would seem hardly worth while to prove their truth, were it not that many, especially physicians, assume that benignancy may be definitely determined, and upon that demonstration advise against operation.

The breast tumor cannot at any age, and especially after the age of thirty, be diagnosticated as benign with an accuracy sufficient to permit indefinite delay.

In young girls malignant disease of the breast is very unusual. I have, nevertheless, seen the most malignant form of cancer at nineteen, and several cases in women under thirty.

Carcinoma of the breast is so unusual in the young, however, that its presence is especially liable to be overlooked. In a patient of nineteen the age itself may be by some relied upon to eliminate this disease in the differential diagnosis, even when cancer is strongly suspected. Cancer of the breast, like cancer elsewhere, is especially virulent in the young. Its fatal course may be run in a few months. The importance of early recognition is, therefore, particularly great. The observer must remember that the signs of breast cancer are the same at all ages, and he must be cautioned not to give these signs too little heed on the sole ground that the patient is young.

One of the common breast tumors in the young is the fibroma, encapsulated and easily removed. In consistency, in outline and in mobility, the fibroma, especially when situated in the center of the breast, resembles the carcinoma similarly situated. Enlarged lymph glands in the axilla may or may not be present, whether dependent upon the breast, tumor or not. Their existence may confirm cancer; their absence cannot exclude it. Hard tumors of the breast centrally situated should, therefore, be removed, whatever the age of the patient. If they are not as an invariable rule removed, the early detection of breast cancer in the young must be admitted to be impossible.

With increasing years the doubtful breast tumor is more and more likely to prove malignant. Hence the rule which I think should be generally followed, that all breast tumors in patients over thirty years of age should be removed.

But are breast tumors of any kind, at any age, characteristic enough to justify non-interference with them? The answer is that some are, in the hands of men of great experience; in the hands of men of small experience, they are not. In no one's hands is any breast tumor so unmistakable that fatal error *may* not occur. Indeed, the only really safe breast tumor is the one which has been removed by a sufficiently broad margin.

On the other hand, if breast tumors are, as a rule, overlooked in their earliest and least unfavorable stages, the patient is occasionally referred to the surgeon long before he can make out any tumor or other abnormal condition. The burden of responsibility is then upon his shoulders, and it is a heavy one, especially if he declines to explore the breast in the presence of any abnormal signs whatsoever, particularly in women over forty.

Many years ago I learned the lesson that pain alone justifies, if it does not demand, surgical investigation of the affected breast. Dr. Brigham of Fitchburg sent me a woman of forty whose only complaint was pain in the left breast. Dr. Brigham's diagnosis was cancer. I could feel nothing abnormal; but operated because both the patient and the physician insisted upon the operation. In the center of a large breast I found a nodule of cancer not larger than a pea. Through the insistence of Dr. Brigham, this patient was given the very best chance of permanent recovery; for it was the earliest and most favorable case upon which I have ever operated. By the perversity of things and from causes which no one understands — causes which make some unfavorable breast operations permanently successful, and some favorable tumors quickly recurrent — this patient in a comparatively short time died of a general metastasis.

This case brings up the question of pain in diseases of the breast, — an interesting and important subject, but one beyond the scope of this paper. It should be said, however, that pain is a symptom of value, both positive and negative, in cancer of the breast. Its absence means little, but its presence means much. In women over thirty persistent and unexaggerated pain may be an adequate reason for exploration, especially when the family history shows much cancer.

Before a detailed consideration is given the cases which illustrate my remarks, a word should be said as to a common source of error in diagnosis at the operation itself. That source is in the examination of the specimen, both macroscopically and microscopically. I have seen many tumors pronounced benign which, as the after-history showed, were malignant, though I recall but few pronounced malignant which were benign. The evidence of the former error, based upon recurrence or metastasis, cannot exist in the latter, because the benign tumor does not recur; and if it is pronounced malignant, it simply swells and vitiates the statistics of permanent operative recoveries in malignant disease.

That many benign tumors are diagnosticated and removed as malignant, there is no doubt. Many breasts are sacrificed which need not be sacrificed, and yet the error is on the safe side. When a tumor has the characteristic appearances of cancer, it can hardly be mistaken by the experienced operator; when it does not have these appearances, the danger of mistake is great. The border line between malignant and non-malignant breast tumors is misleading, confusing and dangerous, unless the rule be followed that all doubtful breast tumors are to be removed.

At times the neoplasm will show all the gross appearances of benignancy, of chronic mastitis with retention cysts, for example, and laboratory examination will show malignancy. Most of the errors in diagnosis arise when the characteristic evidence of either malignancy or benignancy is wanting, and when the pathologist has failed to find the malignant focus.

In 1904, at Racine, Wis., I removed a breast (vol. 49, p. 163) for what to me seemed clearly chronic mastitis with retention cysts — the intracanalicular fibroma. Both breasts were similarly affected, and the worse was selected for amputation. Professor Zeit, of Chicago, who was present at the operation, reported, immediately upon examination of a frozen section, that the disease was malignant, and that the other breast was probably the same. I should have been positive that the tumor was benign, and felt sure that Dr. Whitney would have said the same. Under the evidence of the microscope, and with the decided approval of Dr. E. C. Dudley, of Chicago, I removed the other breast. Dr. Whitney's exhaustive examination of the specimens resulted in perfect agreement with the diagnosis of Professor Zeit, which was made upon the spot — endothelioma of the breast. Here was a malignant tumor most strongly suggesting benignancy — its malignancy a matter of microscopic demonstration alone, beyond the possibility of correct deductions from gross appearances.

I admit the disquieting effects of such a case. Not only must the tumor be suspected as malignant, when every appearance indicates benignancy, but every nook and cranny, so to speak, of the growth and its anatomical environment must be illuminated and searched by the most refined methods of the laboratory expert.

In the Atlanta paper I illustrated the difficulties and responsibilities of breast tumor diagnosis by a case very much like the following which has recently completed a fatal course. That a second experience should have followed so soon after the first shows the importance of the subject and the liability to error, even when the attention has recently been called to its possibility.

The case reported at Atlanta was of a woman of twenty-two, seen in 1888 for a tumor of the right breast, which she said I advised her to let alone. In 1901 I found extensive cancer of right breast, with infiltration of the axilla. Radical operation was ineffectual in preventing early metastasis and death.

This case is, however, not quite a parallel with the following one, for the patient was very young and it is impossible to say that the malignant tumor was secondary to the benignant; or, in fact, that there was any connection between the two. In point of time, too, the cases are dissimilar. Nevertheless, who can say that removal of the tumor discovered in 1888 would not have prevented the tumor of 1901? It seems to me a fair assumption that an early operation would have made the late one unnecessary.

Mrs. F. W. L. (vol. 38, p. 30), aged thirty-six, had pain and burning in the left breast in February, 1902. Nothing abnormal could be detected.

On April 9, 1902, I found and removed a small, hard tumor in the lower and outer quadrant of the left breast. The incision was only an inch long, and the tumor the size of a large green pea. It was embedded in tissues described as those of a chronic mastitis. A small pigmented area of skin at the edge of the areola was at the same time removed. In February, 1903, she was "afraid something was growing in the breast," and in June I found a "small recurrent cyst." In December, 1904, there was unmistakable cancer of this breast, upon which I operated January 10, 1905. Dr. Whitney reported a medullary cancer with axillary infection. In May, 1906, there was no local recurrence; but her symptoms indicated a metastasis in the spinal cord. She died on December 17, 1906.

The evidence upon which my opinion of benignancy was based is lost. I can find no report from Dr. Whitney. It is fair to conclude, therefore, that my opinion was the result of gross appearances. Had the tumor been examined microscopically, its real nature might have been discovered in time for a thorough operation and permanent cure. The "moral" written in my records of this case, when I discovered unmistakable cancer, is "Don't leave a breast with a tumor in it," or "Always remove the tumor, breast and all," — a rule which I am by no means sure would not in the long run be the safest and soundest to follow.

Some breast tumors are wholly benign, but resemble somewhat malignant disease. Not long ago I pronounced malignant a tumor of the breast which Dr. Simmons demonstrated to be benign. The tumor was hard, and section showed small yellowish spots of necrosis or fatty degeneration, so suggestive of cancer. Without the microscopic report I should have removed the breast, and I am not sure that that operation would not have been the better one.

In chronic mastitis the gross appearances are sometimes suggestive of cancer. The thickened edge of a medium-sized breast has at times a hardness, irregularity, and a "feel" which remind me strongly of cancer. The occurrence of cancer after the removal of such thickenings suggests not only that this condition may lead to cancer, but that cancer is often present, and, for some reason, undiscovered. The search for a small focus of malignant disease must indeed be a thorough one to enable the pathologist to say that none is present.

It is the easiest thing in the world to say that cancer is present in the case of the evident and well-marked tumor; it is not easy to say that cancer is absent in the case of the ill-defined and non-characteristic tumor. For these reasons, again, let it be ruled that the breast containing a tumor of obscure and uncertain nature, or even a tumor apparently innocuous, be removed, especially after the age of thirty.

I do not advise or urge, however, any such indiscriminate rule as that the breast be removed in every case of breast tumor. In spite of the instances which I bring forward, there is great safety in the ordinary diagnosis. A tumor which looks and feels benign, and which is pronounced benign by the pathologist, may be treated as benign, and the breast need not be amputated. The localized homogeneous tumor, sharply defined and not infiltrating the parts about, may be treated as benign when a section proves benignity. The ill-defined, non-homogeneous mass, without distinct localization, gradually blending with breast tissues, should be looked upon as dangerous; for it is in these cases that errors of judgment are likely to occur.

In every tumor which is regarded as innocuous, and is, therefore, left untouched, lie possibilities of malignancy. In my experience the disaster — the preventable error — of unsuspected and fatal malignancy has occurred in the cases which seemed the safest. "A tumor which looks and feels benign, and which is pronounced by the pathologist benign," as I have just said, "may be treated as benign"; but it must, nevertheless, be examined at regular and frequent intervals. Practically, the nervous tension which such repeated examinations cannot but keep alive in the patient, with the possibilities which make the examinations necessary, justifies, if it does not indicate, extirpation of even the apparently benign tumor.

A certain value may be given the diagnosis from the occurrence of tumors in both breasts. The chronic mastitis with retention cysts is usually symmetrical. I have seen cysts appear in the left breast after removal of similar cysts from the right. Errors in the diagnosis of breast tumors are, in experienced hands, unusual; but it is under unusual circumstances that the error occurs. If the surgeon relies too much on the rarity of cancer affecting both breasts, he will overlook, in the early stages at least, this unusual condition and one of his infrequent errors will occur. I recall two cases in which cancer, apparently independently, affected both breasts (vol. 46, p. 51). The age of the disease and its apparent extent were the same. In a recent case (vol. 63, p. 55) I was strongly inclined to think the tumors benign from their symmetry alone. Both breasts had nodules of cancer symmetrically situated. The gross appearances were so characteristic that I had no hesitation in making the most thorough dissections of both breasts and both axillæ. A third case has just come under observation, — a case in which both breasts are hopelessly involved.

But how much weight is it safe to give the fact that a left-breast tumor has been preceded a year or two by a right-breast tumor of similar history and appearance, proved by operation to be a chronic mastitis with retention cysts? A patient of thirty-six, in April, 1904, presented a large, elastic tumor of the right breast of six months' duration. The diagnosis was benign cyst. Operation on Aug. 30, 1904 (vol. 49, p. 19), showed "glandular hyperplasia with cystic dilatations" (W. F. W.). In 1905, while I was in Europe, this patient discovered a tumor in the left breast, and was advised by my assistant to have an immediate operation. I found an elastic, fluctuating tumor like the one previously removed. I calmed the patient's fears and assured her that the tumor had been practically proven benign by the experience with the other breast. In March, 1906, the tumor was smaller; in July, 1906, it was imperceptible.

In discussing at length the possibilities of error in external and easily examined tumors, it seems evident that errors in the internal and more or less inaccessible regions are much more easily and unavoidably made. Furthermore, in other portions of the female generative tract, especially in the uterus, tumors in extent, history and character are not dissimilar. Uterine hypertrophies, hyperplasias, fibromata, sarcomata and carcinomata, like similar conditions in the breast, must in every case be considered. Changes of the breast due to pregnancy are worthy of consideration, just as possibilities of pregnancy must always be borne in mind in uterine and other pelvic tumors.

Now if the breast tumor of malignancy cannot always be detected with certainty, what of the uterine, or the ovarian? And if tumors may be overlooked or mistaken, which can be felt by bimanual palpation as well as uterine and ovarian can be felt, what of the inaccessible tumors of the deep epigastrium? Is not the necessity for exploration, shown in breast cases to be great, immeasurably greater in the deeply-seated, inaccessible and manifoldly more lethal tumors of the abdomen?

Cases in abundance are at hand in my records to illustrate all the statements made in this paper. Time permits the selection of but few.

The difficulties of diagnosis are increased in tumors of the internal organs, as I say, by their inaccessibility, and yet I am impressed every day by the prevailing accuracy. Take such a tumor as cancer of the esophagus. The very existence of stricture after middle life points almost unmistakably to malignant disease. So in gastric disease emaciation with vomiting almost always means cancer, while any perceptible tumor at or near the stomach with these symptoms makes the diagnosis almost unerring. Frequent yeasty stools with paroxysmal pain, intestinal gurgling and emaciation suggest intestinal cancer so strongly that a diagnosis based upon these symptoms is almost invariably correct. Painless jaundice, persistent and depressing with loss of weight, points directly to pancreatic cancer.

But it is not the diagnosis of these advanced almost self-evident diseases which I am considering. It is rather the perceptible and operable tumor as yet unbranded as inoperable. I mean the perceptible esophageal or pharyngeal tumor (very rare, it is true) long before deglutition is interfered with; the suspected gastric disease in the earliest stages; the intestinal tumor which can be felt before obstruction exists. In the abdomen generally it is in the tumor of doubtful nature with few symptoms that operation has chance of permanent relief, — the tumor of the right upper quadrant, the gall bladder, kidney or pylorus; of the left, the spleen or kidney; of the pelvis, the uterus or the ovaries.

Some regions are so commonly the seat of malignant growths that the region itself may add the decisive evidence in favor of extirpation. The tongue, pylorus and esophagus are included in this group. Indeed, the whole alimentary tract is the seat of malignant so much more frequently than of benign growths that the general rule of universal extirpation, when possible, is applicable. One would find it hard to collect from his records a half dozen benign neoplasms of the whole alimentary tract, from the lip to the anus. When tumors do occur in these regions, however, it must be remembered that they are not necessarily malignant, however prevailing malignancy may be. The surgeon must nevertheless be especially careful and sure of his diagnosis before he advises nonintervention in tumors which, from their situation alone, are likely to be malignant.

In 1897 (vol. 24, p. 155) I removed from the pharynx of a man of forty-six an encapsulated tumor of five years' duration. The tumor involved the mucous membrane, and its removal opened the pharynx. The disease was pronounced metastatic adeno-carcinoma. I declined to accept this report; and repeated examinations and study finally showed the tumor to be in reality a supernumerary thyroid, a laboratory diagnosis which agreed fully with the clinical, as shown by the continuous good health of the patient to this day. That difficulty in deglutition, even at middle or advanced life, does not necessarily mean cancer is shown by three successful operations for esophageal diverticulum at the ages of fifty-three, fifty-four and seventy-eight.

In gastric surgery I have never found any neoplasm that was not malignant. The inflammatory infiltration of chronic ulcer sometimes suggests a malignant neoplasm, and the possibility of such benign conditions should not be forgotten in the diagnosis of pyloric tumors. Even with the tumor in the hand the surgeon may be mistaken. In one instance I removed a pylorus which had the feel of malignancy. The pathologist reported the tumor to be the inflammatory thickening of a chronic gastric ulcer. In this case Dr. Joslin had before operation made a correct diagnosis. The demonstration of benignancy in this case has had the salutary effect of making every diagnosis, however positive, whether of a virulent or of an innocuous neoplasm, open to some doubt. This experience, though very disquieting, has stimulated me to the most careful examination and diagnosis at the exploration itself.

Two interesting and unusual intussusceptions have come to my notice at an interval of thirteen years (1892–1905). Both were caused by an intestinal lipoma of the inner surface of the caput ceci, which, caught in the peristalsis of the ascending colon, was drawn forward — ileo-cecal valve and all — into the transverse colon! In the first case the intussusception symptoms were first noticed, and the tumor was discovered, at the operation; in the second, the tumor was detected in the beginning, some weeks before the operation. I failed, however, to interpret it correctly. Later an intussusception took place, and upon this Dr. Mixter operated successfully. Tumors of the ileo-cecal region must be scanned carefully, for in these cases mistakes in diagnosis are common; many a chronic appendicitis has been abandoned as hopeless malignant disease, and many a malignant tumor has been operated upon as chronic appendicitis.

The harm of regarding malignant tumors as benign is vastly greater than that of treating benign tumors as malignant. There are worse evils than those of an unnecessary operation, no matter what may, in a single case, happen. Of the real deplorable calamities of surgery there is none greater in the aggregate than the palliative, let-alone, or even the half-hearted treatment of malignant disease. True, a small percentage of explorations prove unnecessary; a small percentage may prove useless; a small number may show inadequate study or prove careless deductions; a small number may increase suffering or cause death; and yet the sum total of good accomplished would be much greater in carrying out a policy of universal and indiscriminate surgical intervention in the treatment of doubtful tumors, than in a policy of universal palliation. Indeed, were all tumors, of whatever nature and wherever situated, thoroughly investigated with a view to their complete extirpation, and were extirpation attempted in all cases, except those conspicuously inoperable, better results would follow, on the whole, than from the policy of nonintervention, except in the light of the most unmistakable indications.

In other words, is not human fallibility, even under the most favorable circumstances, so great that the evils of always relying upon a diagnosis of benignancy are greater than the evils of always questioning that diagnosis? Are not the suffering and death following the non-operative treatment of neoplasms diagnosticated as innocuous vastly greater than those of the operation?

It must, however, be remembered that there are other evils than those of malignancy in the presence of tumors, and other indications for their removal than those of life and death — such as pressure, hemorrhage, pain, weight, with such accidental complications as torsion of pedicles, necrosis, infections, and the like. These things may in doubtful cases add the deciding influence in favor of operation. Indeed, the evidence upon which I base the indications for operation in many cases does not concern in the least the question of benignancy and malignancy, but, as in the case of uterine fibroids, rather questions of weight, size, pressure, hemorrhage, rapid growth and pain. These indications, however, result in operations which demonstrate, far more frequently than I used to think possible and more than is usually admitted, the existence of unsuspected malignant disease, more particularly in the female pelvis.

In malignant tumors generally, curability by extirpation is in proportion to early detection. The best results of surgery are therefore to be found in those areas of the body which are visible, often felt of, or continually brought into external and perceptible use, and in which, therefore, abnormal conditions are easily detected or at least suspected. Curability is influenced, secondly, by the nature of the organ affected; thirdly, by the environment, affecting possible thoroughness of extirpation and width of margin; and, finally, by the nature of the tumor itself.

In some cases the most important element is the malignancy itself, which may be so great that early discovery, resistant tissues, and early extirpation are unavailing. Such are the melanotic sarcomata, which often cause internal metastases before their malignancy is even suspected. Sometimes the malignancy is such that extirpation even at the very beginning is inadequate for cure. In cancer of the tongue — extensively dissected within a month of its inception — I have seen the whole course run in a few weeks (vol. 35, p. 135). The tongue is so fertile a field for the growth and spread of cancer that nothing is effectual for even the smallest and most circumscribed growth, but total extirpation of the tongue.

In another prominent facial area the disease may, from its situation, become too far advanced for extirpation before attention is called to it. Hence malignant disease of the upper jaw is almost invariably recurrent and fatal even after the most thorough extirpation. I should place this region at perhaps the head of the line of downright discouraging situations for the surgical treatment of malignant disease, as the great bony sinuses of the ethmoid and sphenoid are usually invaded even to the basilar process, before pressure has let loose the tumor behind the eye, into the cheek, or through the hard palate — in which places it becomes, of course, immediately perceptible.

Cancer of the lip is by nature no more curable, I believe, than cancer of the pylorus, the cervix uteri, or the anus. It is taken early because its presence cannot be ignored. When taken late, cancer of the lip is as unfavorable and fatal as cancer of the rectum and pylorus.

The early discovery of tumors in our patients is, unfortunately, not our task; but it is for us to make the correct definition of them when once they are brought to our attention. We can recommend, when practicable, that the common indications of trouble be not disregarded; that unnatural discharges from the vagina be investigated rather than regarded as the "turn of life"; that bloody stools be not lightly looked upon as piles; that persistent gastric symptoms be not dismissed as dyspepsia; that abdominal enlargements be not always treated as an increase of fat; and, finally, that all bunches be brought at once to the attention of the physician. Once shown to the physician, the tumor is within reach of argument, at least, if not of surgical intervention; and upon the physician then rests the responsibility of diagnosis and advice.

In the female pelvis the errors of diagnosis are more prolific and deplorable than in any other region in the male or female. In illustration of this statement I have many cases at hand. The first source of error and delay is in the diagnosis of pelvic tumors. The diagnosis is in many cases deplorably uncertain, especially the diagnosis between the fibroid and the solid or semi-solid ovarian tumor.

The correct diagnosis of the great majority of pelvic tumors is comparatively easy. The correct diagnosis of some pelvic tumors is beyond human powers, as I have seen them exercised. The mistakes made in a hundred consecutive cases will be very small; but we are at an age when the margin of error, though necessarily narrow, is much broader than we like to admit, or than we hope will in the future prevail. To narrow still further that margin we must, first of all, admit our fallibility and uncertainty.

Were it not that the commonest source of error is the malignant ovarian tumor, the importance of exploring every doubtful case would not be so great. Were it not that many a uterine hemorrhage is dependent upon concealed cancer of the uterine body, it would not be so important to operate upon what seems to be a simple submucous fibroid or a uterine polyp. Were it not for the frequent occurrence of cancer of the cervix, it would not be necessary to regard every doubtful cervix as the probable beginning of malignant disease.

The supposed uterine fibroid often proves to be a solid or semi-solid ovarian tumor, wedged upon the uterus so intimately that it seems a part of it.

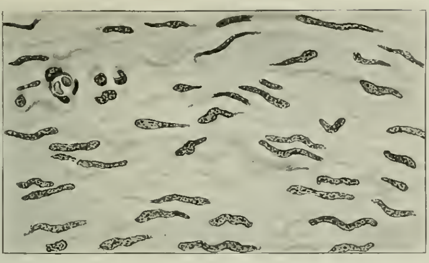

FIG. 3. New connective tissue two weeks old arising by proliferation from the dense fascia. Note the dense character of the tissue, the marked intercellular fibrillæ and the flattened cells.

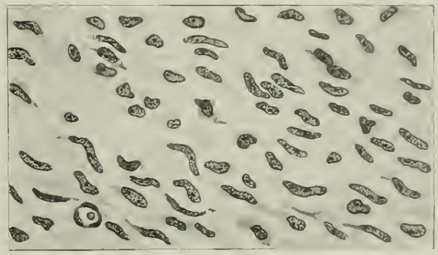

FIG. 4. New connective tissue two weeks old arising by proliferation from the intermuscular connective tissue. Note the oval and polygonal form of the cells.

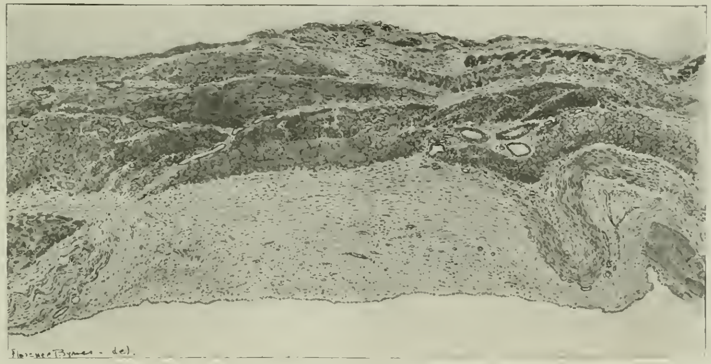

FIG. 5. Incision through the abdominal wall closed with through-and-through sutures without bruising the edges of the wound. Note the wide separation of the ends of the layers of fascia and the absence of degenerating muscle bundles.

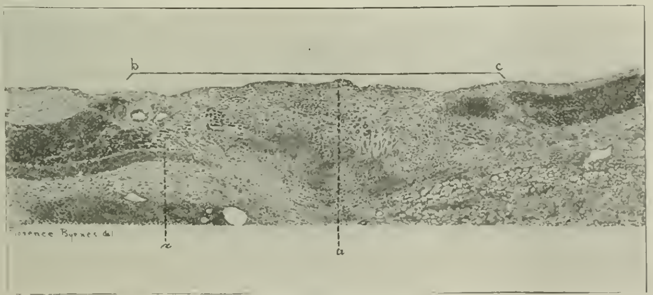

FIG. 6 Incision through the abdominal wall two weeks old closed with through and-through sutures with bruising of the edges of the wound. Note the extent of the degeneration extending from the line of the incision *a* to *b* and *c*.

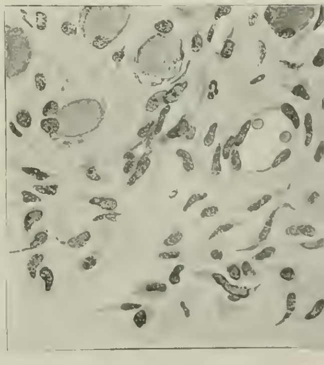

FIG. 7 High power drawing to show the dege tion of the muscle fibers in Fig. 6 at the point *x*.

The touch is the same as that of the fibroid; the cervix moves in bimanual palpation; the general impression is in every way the same. Examination under ether gives the same results. The uterine sound shows a normal depth, and proves no enlargement of the uterine body — a fact consistent with subperitoneal fibroids. Exploration shows double dermoid cysts (vol. 62, p. 159). A child of sixteen has evidently a large ovarian cyst (vol. lxi, p. 180) which proves to be malignant at its base and everywhere infiltrating. A woman of forty-nine (vol. 63, p. 105) has a uterine tumor which is correctly diagnosticated as uterine fibroid, but which under anesthesia proves so fluctuating as to raise the question of pregnancy; which, held in both hands, cannot be differentiated from a pregnant uterus; which proves to be, as the office examination seemed to show, a soft uterine fibroid. The most experienced expert in obstetrical practice is unable to rule out pregnancy.

A woman of forty-nine (vol. lvii, p. 126) has under intelligent observation for several years a multiple uterine fibroid, which proves on extirpation to be large round-celled sarcoma (Dr. W. F. Whitney) and to which the patient succumbs by extensive metastasis.

A woman of fifty-four has persistently recurring uterine flow (vol. 53, p. 119), to the investigation of which the attending physician is opposed as absolutely unnecessary, curettement having been done without ether. Thorough investigation shows adenocarcinoma of the uterine body in its very beginning. Vaginal hysterectomy has undoubtedly extirpated the neoplasm for good.

In a woman of thirty (vol. 63, p. 101) the evidence of malignancy was apparently incontrovertible. Curettage and examination of the scrapings by Dr. W. F. Whitney had shown malignant adenoma. In this case the patient's condition and age excited a doubt in my mind; I was unwilling to extirpate the uterus without further study. I therefore myself curetted, and sent, independently, the scrapings to Dr. Whitney, who pronounced them normal mucosa. There is in this case somewhere an error which must be cleared up before sacrificing the uterus of a young wife who desires, above all things, children.

That errors other than those of observation must be taken into account, Dr. Whitney himself would be first to admit. In a recent case (vol. 62, p. 131) of tumor of the upper jaw Dr. Whitney reported that the growth did not look in general malignant. The tumor was so evidently sarcomatous, malignant, hopeless, that Drs. Homans and Garland agreed with me in abandoning all attempts at removing the masses from the ethmoid and sphenoid sinuses. There was here some error either of misplacement, substitution, or actual loss of the specimen — errors which must always be taken into account — for the disease is now unmistakably malignant.

Whatever the future may bring forth in the treatment of malignant disease, the past has given us at best a very discouraging prognosis, even with the best and most thorough surgical treatment. I cannot but think, however, that even with present methods the outlook is much less discouraging than it has been. We hear more of the unsuccessful than of the successful cases. Many of us, for one reason or another, have not followed up our cases. The things which, I think, are tending toward better results are the wide dissemination among the laymen of the importance of referring all bunches to the physician, the realization on the part of the physician that neoplasms are not to be lightly dismissed with a word of encouragement to apprehensive patients; and finally, the admission on the part of the surgeon that his diagnosis is fallible.

These things tend to bring all neoplasms early to the surgeon. Let him look upon every neoplasm, no matter how innocent it may appear, as a possible nidus of malignancy, and let him treat it on the principle that it is malignant until proved benign; and finally, let him, in his methods of extirpation, whatever his belief may be, act at least upon the theory that malignant disease is in the beginning a local affection.

The failure of the patient to consult the physician early; the delay of the physician to recommend the surgeon; the surgeon's late recognition of malignancy; the surgeon's half-hearted operation, — these sources of failure will be, to some extent at least, done away with. Instead there will be early resort to the knife, with a faith on the part of the operator that the broadest practicable dissection of a neoplasm means total extirpation of the disease and permanent cure.

Hopeful as we all are of an easy and effectual destruction of malignant disease without resort to surgery, I for one do not believe that so great a boon to humanity is in store for us. I have seen too many dismal failures follow loudly heralded methods of cure, whether of tubercular or of malignant disease. Not that there may not be made at any time some discovery the wonders of which will surpass the imagination, — like the x-ray, for example, — but in our hopelessness of such a splendid achievement we must not lose faith in our present methods, which, uncertain and discouraging as they are, have, I believe, possibilities of brilliant success.

OBSERVATIONS ON EXPERIMENTAL INCISIONS THROUGH THE ABDOMINAL WALL OF CATS.

BY FRED T. MURPHY, M.D., BOSTON,
From the Laboratory of Surgical Pathology of the Harvard Medical School.

This study of experimental incisions through the abdominal wall of cats has been carried out in the hope that by emphasizing certain histological changes which occur in the process of repair definite and positive reasons may be given why one method of closure of human abdominal wounds practically is to be preferred to another.

The methods which have been proposed and used in the closure of incisions through the abdominal wall are almost without number.

Putting aside technical differences these methods may be divided into two groups — closure *en masse* by through-and-through sutures including the skin, fasciæ, muscle and peritoneum, or closure in layers with careful approximation of fascia to fascia. Some of the modifications of these main types will be discussed later.

Much has been written from a clinical standpoint in support and in condemnation of each method.

Clinical results are the final test by which a surgical procedure must be judged, but as is well recognized the interpretation of such results not infrequently may be materially influenced by the personal view point of the observer. The skill of the individual operator, the general and local condition of the patient, the relative degree of absolute asepsis and hemostasis are all factors which effect the process of healing, though the wound may be said clinically to unite *per primam*. The amount of strain exerted on the scar after the operation is also an important factor in the end result. Therefore it may fairly be said, I think, that the clinical results from different methods of closure of human abdominal wounds are subject to such modifying influences that the interpretation of the success of the different methods is most difficult, and conclusions drawn from them may be misleading.

This much has been said in introduction in order to explain the various conflicting opinions and conclusions regarding the results of the closure of abdominal incisions by different methods which have been published by different surgeons.

In the following experiments only wounds which healed by first intention were examined, and any deduction which may be drawn applies, therefore, only to clinical wounds uniting *per primam*. Thus asepsis and proper rest during the process of repair are taken for granted.

The histological study of experimental wounds has established certain fundamental facts which are relevant to this problem. These facts are as follows:[1]

In every wound the immediate result of the injury is the destruction of tissue. This destruction of tissue is followed immediately by the formation of exudation at the point of injury. In aseptic wounds the amount of exudate is proportional to the amount of injury.

The space between the edges of the wound is rapidly filled with an exudate composed of leucocytes, serum and fibrin, with some red blood corpuscles, the number of the latter depending chiefly on the amount of hemorrhage. Therefore, the greater the defect or the greater the amount of exudate the more space there is to be filled by granulation tissue, which in turn must be organized and changed into connective tissue.

The adjacent blood vessels are dilated and the exudate extends laterally for a considerable distance into the adjacent tissues beyond the line of the incision. It follows, then, that in the process of repair the new scar tissue extends also for a considerable distance laterally from the line of incision.

The weight-bearing part of the scar in wounds of the abdominal wall arises practically entirely from the connective tissue. This connective tissue arises by proliferation from two main sources, — the fascia and the intermuscular connective tissue fibers. The connective tissue formed by proliferation from the fascia has in a general way the same characteristic as that tissue arising from the peritendineum. The proliferation of new tissue from the fascia is very rapid and the blood vessels disappear early. Even the young connective tissue is dense, the intercellular fibrillæ are marked and the cells early become flattened. That formed from the intermuscular fibers is relatively slow in proliferation, the young cells retain an oval or polygonal form longer, and the rich granulation tissue is slow to disappear.

Accepting these general principles and applying them to the wounds in question, it is essential, then, that in order to obtain the most favorable theoretical results, that there be careful approximation of the layers of fasciæ and that there be as little injury to the tissue as possible, thereby keeping at a minimum the amount of exudate and infiltration.

For the purpose of histological study it is much easier to follow the line of incision and to interpret the findings where a single muscle with distinct layers of fascia is involved. Therefore, in these experimental incisions, incisions about two inches long were made as a routine through the belly, of the rectus muscle parallel with the fibers. Large cats were the animals used. Ether was used as an anesthetic and the animals were killed painlessly. The surgical technique was as carefully guarded as in operations on the human being. No wound was studied which did not unite by first intention. The time of examination was two and four weeks after the operation. In some animals the wounds were closed *en masse* with through-and-through sutures of silkworm gut; in others in layers with absorbable and non-absorbable material with careful approximation of the fasciæ. In another series the wounds were closed in layers overlapping the external rectus fascia. Also in certain other wounds certain combinations of the two methods were tried, such as the placing of deep sutures of silkworm gut with suture of the fasciæ in layers, or the combination of through-and-through,

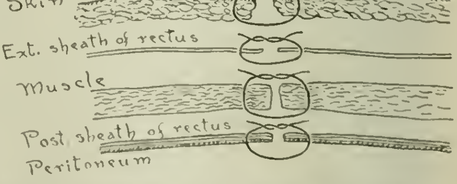

FIG. 1. Diagrammatic. To represent an incision through the abdominal wall closed with careful approximation of each layer.

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[1] Dr. Nichols: Syllabus of Surgical Pathology.

silkworm gut sutures with a deep buried stitch including all the layers except the skin. The abdominal wall of a cat is relatively so thin that this combination of suture in layers with a through-and-through suture, designed primarily to prevent the accumulation of fluid in thick abdominal walls, had really no marked effect in the process of repair.

If an incision of the abdominal wall, closed in layers, be represented diagrammatically by Fig. 1, the tendency of the sutures placed *en masse* was to allow an arrangement which may be represented by Fig. 2.

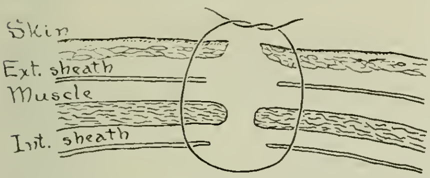

Fig. 2. Diagrammatic. To represent an incision through the abdominal wall closed *en masse*. Note the retraction of the end of the layers of fascia.

That is, the external and internal layers of the rectus sheath tended to retract, and although the muscle bundles were approximated the essentially strong tissue arising from the fascia had to fill up an unnecessarily big defect, thereby increasing and weakening the scar, and at the same time prolonging the process of repair; or the arrangement of the layers was so confused that it was impossible to follow out any definite layers in the process of repair. That is, the new connective tissue of the intermuscular fibers blended in a mass with that derived from the dense fascia. Exceptionally, the layers of fascia had not retracted and the edges were held in apposition with the suture *en masse*, and the process of repair was as satisfactory as theoretically could be desired.

Suture in layers gave universally a more satisfactory and stronger looking wound histologically. The strong fibrillar connective tissue derived from the fascia on the one side blended with a like layer from the opposite side, giving a dense scar which at two weeks was, from histological appearances, as strong or stronger than the new tissue arising from the intermuscular bundles at four weeks. This difference between the new connective tissue formed by proliferation of the fascia and that formed by proliferation from the intermuscular fibers may be seen by comparing Figs. 3 and 4.

The strength of the scar resulting from these two methods of suture was tested by an actual pull. The wounds sutured in layers were the stronger at two weeks, but so many modifying influences came into consideration that these results could be considered only as supporting the general impression derived from the histological picture and could not fairly be interpreted in actual pounds.

The omentum was adherent to an equal degree in both methods of closure.

The startling effect of trauma is graphically illustrated by comparing Figs. 5 and 6. In Fig. 5 the incision was closed with through-and-through sutures of silkworm gut without any trauma whatever, except that necessary in making the incision and placing the sutures. The muscle on either side of the incision will be seen to show practically no infiltration, with small round cells or degeneration of the muscle fiber.

Fig. 6 shows the result of trauma of the edges of the wound. This trauma was not severe or lacerating, but such as might readily be sustained by any abdominal wall during the course of an operation in which hemostats were applied carelessly and forcible retraction was used.

The infiltration extends several centimeters to either side of the line of incision. As is shown in Fig. 7, the muscle bundles far away from the line of incision are degenerating at the end of two weeks. This degeneration beyond the line of incision means, of course, an unnecessarily wide extent of scar tissue, and as scar tissue is weaker than the normal a weak abdominal wound. These wounds which had been bruised by violent manipulation were pulled apart with much less force than that required to rupture those closed with through-and-through sutures, or in layers in which care had been taken to prevent injury to the edge of the wound.

Relative to the overlapping of the layers of fascia it was demonstrated that these overlapped layers persisted and preserved their identity at the end of four weeks; that is, the layers of dense fascia could be followed in the microscopic section, and they had not blended in the mass of newly formed scar tissue.

With this overlapping technique, accurate closure of the dead space is assured as the overlap takes up any possible slack in the fascia, thereby bringing the muscles into close apposition. It also affords a greater surface for the strong fibrillar connective tissue and theoretically should give the strongest possible union between the layers of fascia.

A study of specimens in which the incision has been made at right angles to the muscle fibers demonstrated the fact that with accurate approximation of the fascia and with supporting suture to prevent the retraction of the muscle the union was as satisfactory histologically as in the cases in which the muscle fibers had been split.

It was not possible to obtain a satisfactory histological specimen from an incision in which the so-called gridiron or muscle-splitting operation of McBurney had been done, because the microscopical section would not cover the lines of the various muscle incisions. Therefore, any opinion regarding this procedure must be based on purely theoretical grounds. In order to make the inission and control the pull of the various muscle planes the force used must of necessity be greater than with the simple straight incision. Having seen the effect of trauma on the muscle adjacent to the line of incision, it is impossible on histological grounds to think of the final repair in this gridiron incision as being anything else than a plug of scar tissue of greater or less extent, in the center of the wound, provided the edges of the muscles have been roughly handled. This may be represented diagrammatically by Fig. 8.

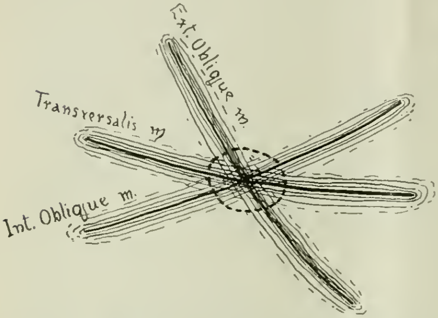

Fig. 8 Diagrammatic. The heavy lines represent the incisions through the abdominal muscles in the muscle-splitting operation. The lighter lines represent the extent of the degeneration of the muscles after rough handling. The dotted circle represents the resulting plug of scar tissue.

Imperfect sterilization of suture material used in buried stitches has been one of the chief reasons advanced for the condemnation of the layer suture, but with the improved methods for the preparation of absorbable material, this does not seem longer to be a valid objection. As was stated in the beginning, practical results must decide finally the merit of any surgical technique, and the exigencies of the individual case may warrant any modification of a technical procedure.

Judged from a histological study the suture in layers is more desirable than the suture *en masse*, because in this way in the process of repair the strong fibrillar tissue arising by proliferation from the fascia unites with tissue of its own kind thereby increasing the strength of the scar and decreasing the time necessary for repair. The well-known and very commonly used method of closing the abdominal incision with suture of the fascia in layers, and with a deep supporting stitch meets this theoretical requirement of careful approximation of layers and also the practical requirement of strength and obliteration as far as possible of all dead space. This method is represented diagrammatically by Fig. 9.

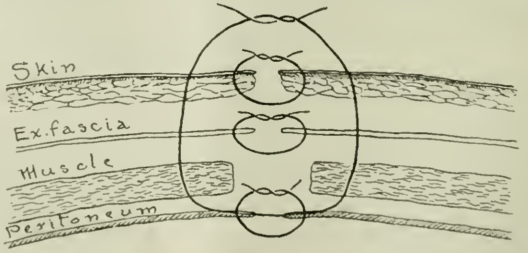

Fig. 9. Diagrammatic. To represent an abdominal incision closed in layers, and with a deep supporting stitch.

Violent manipulation of the edges of an abdominal incision should be avoided with the same care as has been recognized as essential to good results in the handling of the intestines or stomach.

* * *

ON THE PROPER INSPECTION OF IMMIGRANTS AND SCHOOL CHILDREN IN REGARD TO THE OCCURRENCE OF TRACHOMA.

BY HASKET DERBY, M.D.,
Consulting Surgeon to the Massachusetts Charitable Eye and Ear Infirmary and the Carney Hospital.

A girl of fifteen, from a New England city, had been excluded from a public school for five months, by order of the local board of health. The examination of the eyes, conducted by an agent of the board, resulted in a diagnosis of trachoma. The question now arising whether she were sufficiently recovered to return to school without injury to the other scholars, she came to Boston to consult a colleague. He found a normal state of things, decided that she might safely return, and sent her to me for confirmation of his diagnosis.

I entirely agreed with him, and added to the report a clause that the present absolutely normal condition of the eyes precluded the existence of a trachoma extending over five months. In other words that the diagnosis had been a mistaken one, and the child forced to pass the five months in entirely unnecessary idleness.

Several similar cases have recently occurred in my own practice, one being that of a working girl who had been denied an opportunity of earning her living on the ground that she had trachoma, the diagnosis being in this case made by a physician attached to a general hospital. Both eyes were entirely normal, had undergone no organic change, showed no trace of disease, and had evidently never been the seat of granular conjunctivitis. She at once resumed work.

A colleague, well versed in ophthalmic surgery, sends me the following:

" In reply to your question concerning trachoma in immigrants, I would say that on April 9, 1902, I was asked by a medical friend to see a

Swedish immigrant named Per Person, then detained on the steamship *New England*, (now the *Romanic*) on the ground that he had trachoma, or at all events a disease of the eye that was contagious. I could find no evidence of anything but a chronic catarrh and blepharadenitis, which the patient stated he had suffered from ever since childhood. There was a very small amount of mucus in the conjunctival sac. I pronounced the case *not* contagious, and this opinion was confirmed the next day by negative cultures, two in serum and one in agar.

"Notwithstanding all this, the man was deported, although he was a most desirable type of immigrant. He came over in the second cabin, and had plenty of money and was well dressed." Signed, Henry W. Kilburn.

These diagnoses had evidently been made in perfect good faith by respectable and conscientious physicians, not specialists. Such occurrences argue ignorance of the nature and appearances of trachomatous affections. The disease is in itself so dangerous from its contagiousness, so chronic and wearisome, entails in many instances such serious and permanent organic changes, and demands such energetic treatment as to be a menace to the community. It has of late years justly been made a subject of legal enactment. Immigrants laboring under it are most properly excluded from the country, and natives who acquire it rightly segregated. But in the interest of the state as well as of the individual the medical examiner should be competent and his diagnosis based on assured facts. Reference to the above instances shows that this is not always the case.

A brief recapitulation of the distinctive characteristics of trachoma, as well as a reference to the diseases with which it is most likely to be confounded, may not, therefore, be amiss at the present time. It is a task that calls for no originality on the part of the writer, although it may be aided by a somewhat lengthy experience in the examination and treatment of such cases. It may be premised that "granular conjunctivitis," as the disease is properly entitled, was once far more frequently met than at the present time. In the writer's student days the great clinics of European capitals were thronged with these patients. In some they were so numerous that they were collected in a room by themselves and let in before the surgeon at a certain hour and together. Forty years ago at the Eye Infirmary in this city they formed a third of our practice. The blackened left thumb nail of the oculist formed a brand of Cain, and caused him to be recognized by his colleagues, both at home and abroad. Thanks to modern science and vastly superior treatment the percentage of this disease has greatly waned.

It is relatively seldom that the government officials, looking through a horde of immigrants, will meet with a case of fresh trachoma. It is the chronic type that arrests the attention. By one accustomed to dealing with diseases of the eye the affection is instantly recognized and requires no minute examination. The eyelids have lost their normal shape, the curvature is excessive. The free edge turns in and the lashes, irregularly distributed, touch the cornea and prolong a state of chronic irritation. The upper part of the cornea, possibly its entire surface, is roughened and opaque, often vascular. The upper lid, everted with difficulty, is studded either with active granulations, or if the case be a very chronic one with cicatricial tissue. About the diagnosis there can be no question.

The appearances in an early stage, before cicatrization has had time to occur, are very different. Here the lids have as yet undergone no change of form, the external swelling is slight, the secretion moderate. The cornea may be perfectly clear. But on everting the upper lid the true nature of the affection is at once manifested. Our attention must be directed to the fold of transmission, the point where the conjunctiva passes from the bulb to the lid. Here, especially on the nasal side, we see the irregular distribution of granules that give the name to the disease. They are of a firm consistence, differing in size, distribution and height. On other portions of the lid we recognize the characteristic patches of yellow, jelly-like exudation, lying deep in its substance.

We see, therefore, how the classical definition of Arlt applies to both the acute and the chronic cases: "The trachomatous inflammation of the conjunctiva is characterized by the deposit of a jelly-like exudation in the form of isolated, independent grains or prominences, not only under the epithelium of the conjunctiva of the lids and (when developed to a higher point) of the eyeball itself, but also in the parenchyma of the conjunctiva and in the deeper tissues (cartilage and cellular substance) and by causing the contraction of the parts infiltrated."

This in brief is trachoma or granular conjunctivitis, a knowledge of which belongs to the very rudiments of ophthalmology. It almost seems proper to apologize for introducing so hackneyed a subject. But that in these days a certain amount of ignorance in regard to it does exist has been already shown.

In the vast majority of instances this disease affects the poor, those who live amid unfavorable surroundings and are unwilling or unable to take proper care of their persons. It is conveyed from one subject to another by direct contact with the secretion, which is virulently contagious. Among other methods of transmission among ourselves the roller towel, set in public places for common use, plays an important part. Appointed on the Examining Committee of the Boston Public Library some years ago, the writer observed roller towels in the public lavatory and ascertained that they were changed four times a day. He ineffectually called the attention of the trustees to this matter, the warning was disregarded. The same state of things exists to-day.

There is an affection of the conjunctiva entitled follicular conjunctivitis, that offers a few points of resemblance to the granular. It may be well to briefly dwell on the means of distinguishing the one from the other.

In the follicular form of the disease there is conjunctival catarrh, combined with the development of "bodies projecting over the surface of the membrane. They are gray, or else of a whitish red, round or oval and arranged in rows. They are chiefly to be met with in the *lower* fold of transmission, and on the conclusion of the process disappear, leaving no trace behind."

This description is taken from Saemisch. From it will be seen that the location of the granules is different from that in trachoma, and that they are followed by no cicatrization. With a knowledge of these facts it is hardly possible to confound the two diseases.

The most dangerous counterfeit of trachoma is a folliculosis of the conjunctiva, known here as lymphoid hypertrophy or adenoid hypertrophy of that membrane. This is particularly common among school children of both sexes. It is, I quote again from Saemisch, "a slight conjunctival hyperemia with follicular formation which provokes absolutely no disturbance and remains entirely latent, thus running its course." This never passes into trachoma and leaves no trace behind. In fact its discovery is ordinarily accidental, and is made during an examination of the eyes of school children during an epidemic of conjunctivitis. The two combined may well alarm the average examiner. Undoubtedly it exists in many cases without being suspected. It is not contagious, and it would be rank injustice to exclude such children from their school. Yet this has been done in some instances, may indeed have led not only to the banishment of individual scholars but even to the closing of the school. In inspecting such eyes it should be borne in mind that the cornea is not affected and that the course of the thing settles the diagnosis.

Parinaud's conjunctivitis, an affection of rare occurrence, is characterized by the development of follicles, in part small, jelly-like and arranged in rows, in part of almost gigantic size. But the disease is confined to one eye, and is accompanied by the development of the pre-auricular or inframaxillary glands. There is little danger of mistaking it for trachoma.

With these three affections alone is it possible to confound trachoma, and as has been seen the distinction is well marked. To stigmatize a case of catarrh or mild blennorrhea as trachoma is equivalent to telling a patient with eczema that he has leprosy, and quite as inexcusable.

It would seem that examiners of limited experience should be furnished with an abstract of the preceding facts. The sum and substance of the whole matter is that the diagnosis of trachoma should be intrusted to an expert, in the case not only of schools but of immigrants.

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The Johns Hopkins University has received $150,000 from the estate of the late Charles L. Marburg, $100,000 of which goes to the hospital and $50,000 to the university.—*Science.*

THE CONSERVATION OF HEARING IN OPERATIONS ON THE MASTOID REGION.*

BY W. SOHIER BRYANT, A.M., M.D., NEW YORK.

The amount of residual hearing following the various kinds of mastoid operations depends, (1) on the integrity of the sound-perceiving mechanism; (2) on the amount of the sound-conducting mechanism left by the disease; (3) upon the functional efficacy of this conducting mechanism; (4) upon the amount of the conducting mechanism remaining after the operation, and (5) upon the functional efficacy of the sound-conducting mechanism remaining after the operation.

The first three conditions require no discussion. The fourth condition is fundamentally a question of the amount of destruction which the disease has caused, while secondarily and practically it is a question of how much of the mechanism the surgeon will be able to save. It is far easier for him to attack the tympanic contents indiscriminately, or make a clean sweep of everything in the tympanum, taking the healthy with the diseased structures, and to use the probe unrestrained by consideration of its effect upon the acoustic balance, than to save the parts of the conducting mechanism which the disease has not seriously injured and avoid touching or dislocating them.

When the simple mastoid operation is sufficient to fulfill the surgical requirement, the operator can conserve the ossicular chain intact if he is content to stay his hand at the aditus ad antrum, nor let his curiosity carry his probe as far as the incus. The surgeon who is about to perform a tympano-mastoid operation can serve the interests of the patient and preserve an important fraction of hearing if he will spend a few minutes previous to operation in examining the tympanum through the meatus in order to locate the structures which are not sufficiently diseased to require removal, such as the stapes and neighboring portions of the drum membrane, and in some cases the whole ossicular chain. In the cases where something more than a simple mastoid operation is required, the middle ear may need to be encroached upon more or less and some unavoidable injury must necessarily befall the sound-conducting mechanism. There is a great difference in the effect on the residual hearing if the major ossicles and stapes are removed or dislocated in whole or in part, or if they are preserved in position.

The fifth condition on which the maximum of residual hearing depends, namely, the functional efficacy of the remaining portion of the sound-conducting mechanism, is capable of much amelioration if the ossicles are preserved in position without dislocation and if careful consideration is given to the action, deficiencies and needs of the conducting mechanism in the individual case. Just as in cutting off a leg there is a point of election, so, too, in the middle ear. In the middle ear certain portions of the structure should be saved together, and certain others removed together. It is important for the middle ear, as well as for a leg, to have a stump that can readily be fitted with a mechanical appliance. An artificial drum membrane is of great post-operative service when a suitable stump has been left.

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*Read at the meeting of the Eastern Section of the American Laryngological, Rhinological and Otological Society, Jan. 5, 1907.

There are five rules to guide us in disposal of the tympanic structures: (1) The tympanum should be restored to its normal condition with nothing taken away if the malleus is left. (2) The incus should be removed if the malleus is out, because the incus acts as a damper of the stapes. (3) The posterior attachments of the membrane should be preserved after loss of the malleus and incus, because this part of the membrane can be trained on to the stapes and act as a sound transmitter for it. (4) The tympanum should be kept open when the malleus and incus are gone, in order that the sonorous oscillation may infringe on the fenestræ and promontory with the least loss of intensity. The anterior attachments of the membrana tympani should then be preserved and this part of the membrane trained across the ostium tympanicum tubæ to close it and prevent infection reaching the middle ear from the pharynx. (5) The tympanum should be kept open and the major ossicles removed if the stapes is out, to allow the freest access of sound waves to the labyrinth.

Careful examination of a large number of cases has shown us that the common hindrances to maximum transmission of sound are due either to unnecessary dislocation caused in the operation, to fixation of oscillating parts by cicatricial tissue, or to the dampening of the fenestræ. All these obstacles are usually combined. Cicatrices are the most easily demonstrated cause of reduced residual hearing. When the cicatrices are least in thickness or density, or, what is the same thing, when the tympanum approaches closest to normal in regard to the covering of the ossicles, ligamentous parts and fenestræ, the best hearing is obtained. The acuteness of hearing is also in proportion to the integrity of the ossicular chain. The more that is kept of this, the better the result. The preservation of all the finger tissue possible in the treatment of injured hands is of great importance to the later usefulness of the member. The same might be said of the ossicular chain, — that all the ossicular tissue possible should be preserved; even a small stump of the malleus is valuable.

We found that the cases with the best hearing were those which had the shortest tympanic convalescence, other things being equal, while those with the poorest residual hearing were the cases which had gone through a lingering tympanic convalescence.

The rapid restoration of the tympanum together with its function can sometimes be facilitated by allowing the membrane to heal up quickly, while drainage is kept up in some other direction as long as it is required. The necessary drainage may be obtained through the Eustachian tube, the mastoid wound, or, best of all, because there is no disfigurement, through an opening in the posterior membranous wall of the canal just external to the annulus. This method of drainage requires extensive removal of the posterior osseous wall. After the complete radical operation the tympanic drainage through the meatus is perfect.

The use of skin grafts in the tympano-mastoid operations does not seem to lessen the amount of dense tissue covering the stapes.

The following cases are mentioned with the intention of showing the methods employed to secure the best conditions for the preservation of hearing.

Case I. A simple mastoid operation with epidural complications on a girl sixteen years old. Middle ear was not attacked at the operation except by a very extensive myringotomy. Middle ear dry on fourth day after operation, watch heard 20 inches; on the tenth day the membrana tympani was completely healed and the watch was heard 4 feet; six months later the watch was heard 8½ feet.

Case II. A modified tympano-mastoid operation was performed for recurrent mastoiditis and otorrhea on a lad of seventeen. The tympanum was invaded from behind, above and through the membrane as far as it was possible to go without dislocation of the ossicles. On the fifth day after the operation the middle ear was dry; on the tenth day the membrana tympani was completely healed; on the fifteenth day, watch was heard 13 inches; ten months after the operation, watch was heard 6½ feet.

Case III. Tympano-mastoid operation for chronic middle ear suppuration and tympanic caries. Woman, age twenty-four. None of the ossicles present at time of operation. No skin graft used. On the twenty-second day after the operation the tympanum was dry and epidermized. Two years and three months after operation, watch heard 10 inches.

Case IV. A very slow mastoid convalescence with comparatively good hearing. Man, age seventy-seven. O. M. P. C., perforation of left membrane, mastoiditis, osteomyelitis and scattered pus foci; operation uncovered dura of middle fossa and knee of sinus. Posterior wall of canal extensively removed, membranous canal perforated posteriorly. Mastoid wound sutured around small drain, no packing. Fourth day, wound closed by first intention. Abundant serous discharge from the meatal opening. The wound within filled up very slowly, discharging serum through the fistula in canal. Did not suppurate. Thirty-ninth day, fistulæ in canal finally closed. Acumeter O. S. 7 inches, O. D. 4 inches. Sixty-first day, watch heard 10 inches from the left ear.

Conclusion. — The maximum post-operative hearing is obtained by judicious preservation of the sound-conducting mechanism, and by the most rapid possible convalescence of the middle ear.

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Women Medical Students in Switzerland. — Switzerland has 5 universities, with a total of 2,102 medical students this year. Of this number, 1,171 are women, but only 31 are natives of the country. These figures show an increase over last year, when the total number of students was 1,799, including 993 women. — *Jour. Am. Med. Asso.*

Clinical Department.

COMPLETE SUPRAPUBIC PROSTATECTOMY UNDER NITROUS OXIDE GAS ANESTHESIA.

BY GEORGE WALKER, M.D., BALTIMORE, MD.,
Instructor in Surgery, Johns Hopkins University.

In the following case one kidney was so seriously affected that it was thought injudicious to use chloroform or ether. Gas was employed for the complete operation and proved very satisfactory. I feel sure that, in a number of these old patients suffering from prostatic hypertrophy, the kidneys are very often implicated and are in no condition to stand the irritation of the usual anesthetics. In gas we have an agent which has absolutely no effect upon the kidney structures and therefore permits an operation which otherwise it would be hazardous to perform. In some of these cases the anesthetic, and not the operation, is the cause of death, although the fatal issue may be delayed for several days.

S. N., aged sixty-eight. Family and previous history good; gonorrhea at the age of twenty-five.

Present illness. — Five years ago patient began to suffer from difficulty in micturition; the stream was slow in starting and diminished in size. Micturition was somewhat increased in frequency. Nevertheless, the health was not much disturbed until two years ago, when the difficulty became greater and the patient began to suffer from occasional nausea. One year ago the nausea was more pronounced, the appetite was poor and flesh and strength gradually failed. The difficulty in micturition increased and about six months ago he was unable to void a stream and incontinence set in. There was no pain nor local discomfort.

Examination. — The patient is feeble and anemic; the muscles are soft and flabby; there has evidently been loss of flesh. The heart and lungs are negative. Above the symphysis there is a firm, ovoidal, fluctuating mass which extends to the umbilicus; it is dull on percussion and, no doubt, is the distended bladder. The left kidney is easily palpable and forms a mass about the size of a large orange. On deep inspiration it can be grasped between the hands. It is not tender. The other kidney is not palpable.

The prostate is enlarged; the right lobe slightly more than the left. As a whole, the gland is smooth, not nodular. It is firm in consistency but not hard. The border can be mapped out readily. There is nothing about it suggestive of a new growth. The vesicles cannot be felt. The external genitalia are normal. There is a hernia on the right side. The temperature is normal; the pulse 78, of good volume. The arteries are soft and not tortuous. The patient is wearing a rubber bag on account of the dribbling. A silk catheter, with a prostatic curve, is readily introduced. It meets with only slight resistance in the prostatic urethra, but apparently after it enters the bladder it seems to encounter something that gives one the impression of a projection in the middle line. Nine hundred cubic centimeters of urine of a pale straw color and slightly cloudy are withdrawn.

Urinalysis. — Pale, straw color, turbid, acid; S. G. 1,012; normal odor; moderate amount of albumin; no sugar; epithelial cells of various shapes, pus cells, granular *débris;* no casts. Bacilli in moderate numbers.

Diagnosis. — Enlarged prostate with middle projection. Secondary hydronephrosis with infection.

On account of the extreme weakness of the patient and the condition of the kidney, it was thought unwise to operate at this time, so he was sent home with a nurse who was directed to catheterize him every six hours, irrigate the bladder twice daily with a boric acid solution and give hexametheylenetetramine externally. After two weeks he began to improve and at the end of four months he had regained a very fair condition of health. The size of the kidney had somewhat diminished, but the organ was still distinctly palpable. The urine was less purulent and the albumin had decreased.

The gas was administered for me by Dr. Rushmore, who gave it mixed with oxygen. The patient went rapidly under and remained entirely quiet, completely relaxed and free from cyanosis for thirty minutes, the time required for the complete operation and the application of the dressing. Within five minutes after the gas had been taken off the patient had regained consciousness completely; there were no after-effects and the convalescence was satisfactory in every way.

Operation. — (Dr. William Fisher.) The suprapubic opening was made; two lobes were found in the middle line just behind the urethral orifice. An incision was made with a pair of straight scissors and just to the side of these the edge of the incision was slightly raised with a blunt dissector. The index finger of the operator was then introduced into this incision, while my own index and middle fingers were passed into the rectum and pressed the gland upward. The enucleation was easy and complete. The bleeding on account of the congestion of the vessels produced by the gas was somewhat more than that seen under ether or chloroform, but was not sufficient to give any trouble. Nothing was introduced into the prostatic cavity; a double drainage tube and two strips of iodoform gauze were passed into the bladder, but no sutures were used. The external wound was packed with iodoform gauze. The edges of the upper angle of the wound (skin and muscle) were approximated.

The secretion of urine was abundant. There was no pain, the bleeding was insignificant. The bladder was irrigated through the tube after twelve hours. After this the irrigations were continued once daily. The gauze, which had been inserted into the bladder, was removed on the second day. The tubes were removed on the fourth day and not replaced. After this an occasional irrigation through the urethra was practised. The temperature ranged from about 99° to 100°. The first urine was passed through the urethra on the seventh day; sounds were introduced once; the suprapubic wound rapidly granulated. The patient was discharged on the fourteenth day with the wound completely closed, except for a slight superficial granulating surface above the muscle. There was no leakage after the eleventh day.

The examinations since have shown the patient to be in perfect health; he has gained about forty pounds; the function of the bladder is absolutely perfect; the urine is nearly clear. He passes urine only once at night and four or five times during the day.

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A Forty Per Cent Mortality amongst Children. — The medico-sanitary situation in Lapland appears to be ominous. A series of reports shows that the population of the extreme north of Russia is almost devoid of medical assistance, so that the local industries are deprived, during long periods, of many workmen, resulting in a continuous decline of output. The mortality amongst children is most striking, amounting in some localities to 40 per cent. It is not stated if this figure relates to infants under one year only, but presumably it does.

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY W. L. BURRAGE, M.D., BOSTON.

(Concluded from No. 9, p. 273.)

AGGRESSINES AS FAVORING GENERAL INFECTION FOLLOWING THE INTRODUCTION OF PATHOGENIC BACTERIA IN THE UNINJURED GENITAL TRACT OF ANIMALS.

Caroline B. Towles [1] reports the results of a series of experiments conducted on guinea-pigs in the laboratory of Prof. von Jaksch in Prague to determine the virulence of infective organisms when introduced into the vagina and uterus. After citing the results obtained by previous experimenters by placing pathogenic bacteria in the normal vaginæ of both human beings and animals, all negative as to the production of general or local reaction, the writer takes up the subject of aggressines as employed by Professor Bail and his pupils. Working with cholera and typhoid organisms, Bail found that the sterilized exudate produced in an animal by infection was capable of producing severe lesions or death when used in association with micro-organisms which, when injected alone, produced only a mild reaction. The serious constitutional symptoms were apparently due to the very rapid multiplication of the injected bacteria brought about by the aggressine, which neutralized the normal opposition of the animal body. A distinction is drawn between aggressiveness and virulence, the former referring to the power of the micro-organism to multiply and the latter to its pathogenic effect on its host.

The author used in her experiments an aggressine of streptococcus prepared from the pleural exudate of a rabbit infected with a virulent culture of streptococcus and sterilized with toluol. In the five experiments a pair of guinea-pigs of nearly the same weight were selected for each test, one for the experiment and the other for the control. A pludget of cotton saturated with fresh exudate containing a pure culture of streptococcus was introduced into the vagina; at the same time 3 cc. of aggressine fluid were injected into the peritoneal cavity.

The guinea-pigs were watched carefully during life and examined post-mortem. The experiments were repeated with pregnant animals. Following are the conclusions:

First, very young animals and those that have been treated with aggressine may receive general infection from streptococcus introduced into the uninjured vagina or uterus.

Second, in adult guinea-pigs, whether pregnant or not, a general infection cannot be produced by the mere presence of streptococcus, however virulent, in the uninjured vagina or uterus; on the other hand the subcutaneous injection of aggressine fluid, together with the introduction of bacteria, promptly results in death, no matter whether the animal be pregnant or not.

ROENTGEN RAYS FOR MENORRHAGIA.

Görl [2] reports the results of treating with the x-rays a patient forty years of age, suffering with menorrhagia caused by a fibroid. The patient was a bleeder. She had been treated by preparations of hydrastis administered first by mouth and then by hypodermic injection, fifty injections having been made without relief. She refused all operative treatment, and being a subject of hemophilia, the danger of operation was sensibly increased. Thirty treatments through the abdomen, each lasting ten minutes, were given during three months with the result of diminishing the number and duration of the flowing periods. During the next month, eight treatments with the x-rays were made. For four months previous to reporting the case before the Nuremberg Medical Society in September, 1906, the patient had been free from flowing and the myoma was diminished in size.

The question arose in the author's mind whether the menopause, delayed normally in the case of fibroids, had been brought on in his patient by the action of the Roentgen rays on the ovaries, and whether the Roentgen rays may not prove a useful means of providing atrophy of the ovaries in cases of myoma of the uterus, thus taking the place of the old castration operation for these tumors.

INFECTIOUS GENITAL HERPES IN WOMEN.

Lutaud [3] describes a form of herpes of the genitals or of the mouth which occurs in women who are the subjects of infection either postpartum or postabortum. The patient has the usual symptoms of puerperal infection which are no longer of grave import. Then there comes on a sudden rise in temperature with chills and there appears a crop of herpes of the genitals or the mouth followed by a fall in the temperature.

Whenever the physician observes a renewed rise in temperature after puerperal infection he should be on the lookout for herpes of the vulva or mouth. Genital herpes is a result of infection and is always preceded by chills or malaise. It also occurs after the menopause in women suffering with fibromata or other uterine disease.

VANADIC ACID AS A TOPICAL APPLICATION IN GYNECOLOGY.

H. Le Blond [4] gives us the result of four years' use of vanadic acid as a topical application in the St. Lazare Hospital. It is a golden colored liquid without odor. It is used in gynecology by diluting with three parts of glycerin. Cotton tampons are soaked in this solution and packed in the vagina. It is of especial value in the treatment of vaginitis. After cleansing the vagina with peroxide of hydrogen the vagina is packed with vanadic acid saturated tampons which are changed every twenty-four hours. No discomfort is caused and the vaginal mucosa loses its redness and soon returns to a normal condition. Acute cases yield rapidly, while no chronic one has continued more than two months after treatment was begun. The author has treated metritis and urethritis with vanadic acid and considers it preferable to ichthyol and creasote as a therapeutic agent.

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[1] Johns Hopkins Hosp. Bull., Dec., 1906, 405.

[2] Zentralbl. für Gynäkol., no. 43, 1906, p. 1184.

[3] Jour. de Méd. de Paris, Sept. 2, 1906. Am. Jour. Obstet., Dec., 1906, 891.

[4] Progrès Méd., July 14, 1906. Am. Jour. Obstet., Dec., 1906, 888.

Reports of Societies.

THE NEW YORK PSYCHIATRICAL SOCIETY.

STATED MEETING, JAN. 2, 1907.

THE PRESIDENT, DR. ADOLF MEYER, in the Chair.

THE SYMPTOMATIC-PROGNOSTIC COMPLEX OF MANIC-DEPRESSIVE INSANITY.

This paper was read by DR. GEORGE H. KIRBY, of the Pathological Institute of the State of New York.

DR. KIRBY: The field of psychiatry is too complex for us to expect absolute or clear-cut distinctions either in disease types or nosological groups. Kraepelin did a great service by showing that most of the previously made distinctions of types could be replaced by far more valuable nosological groups if one considered the whole *course* and *outcome* of mental disorders. From this point of view the great bulk of the acute psychoses can be brought under two divisions, *viz.*, those that pass into deterioration and those that end in recovery. It was found that in cases which terminated in either of the above-mentioned ways, one was able to identify certain characteristic symptoms *present from the beginning* and which thus acquired a distinct prognostic value. Two large symptomatic-prognostic groups were thus created — dementia precox and manic-depressive insanity. At present it seems best to consider the manic-depressive complex merely as a reaction type and not a disease entity as Kraepelin proposes. It is rather a type of response which may be elicited in various ways. In some cases the constitutional disposition may be most important, but in others the exogenous causes are of great importance and give valuable hints as to prophylaxis and probability of recurrence. This peculiar kind of reaction in its pure form has the characteristics of a benign disorder and thus a favorable prognosis is implied. Various additional elements may enter to confuse the picture and the symptomatic and prognostic features may seem to diverge at various times. There are many equivalents difficult to recognize. In a few cases the principle seems to fail through transitions to other forms.

A series of cases was reported which had offered difficulties for various reasons. Some patients were also presented. A recurrent depression with retardation and prominent auditory hallucinations; another case of depression with sensory-somatic complex and only slight signs of difficulty in thinking. A third case illustrating the mixed forms of manic-depressive insanity, the so-called "manic-stupor," showing inhibition and mutism with an exhilarated mood.

DISCUSSION.

DR. CHARLES L. DANA was inclined to think "prognostic principle" a rather unfortunate term, inasmuch as this was not all that was used in attempting to establish types. The consideration of the whole life history was the great principle to be used in making classifications, and he did not think there could be any objection found to basing groups of insanity upon this method. It was not new but the rational and accepted one in other forms of disease. The case presented by Dr. Kirby in which there was melancholia without retardation of thought was interesting, but was a type not infrequently seen outside of asylums at least, and often in connection with intense suicidal feelings. This suicidal impulse was not always due to somatic feeling of inadequacy, but was sometimes also a well reasoned out point of view. A woman of intelligence, for example, realizing that she had had melancholia now three times, that she would have it again, that she would be a burden to her family, that she would never be right permanently, schemes to kill herself, obeying in a way a logical conclusion as well as a morbid impulse. Such patients did not have always retardation of thought, but they often could not do their work easily or effectively. He did not believe the first patient presented by Dr. Kirby would be able to do her work. Such patients could not play games of skill as formerly, becoming tired quickly. Dr. Kirby had neglected to touch upon chronic melancholia, melancholia of involution, a group which Dr. Dana believed to be represented in early life. He had records of cases of melancholia at the climacteric who gave a history of depression earlier very much like that of later life, so that there was a melancholia of early life which did not belong to manic-depressive insanity.

DR. L. PIERCE CLARK thought the symptom complex of manic-depressive insanity would be easier of analysis if the idea were borne in mind that the complex was likely to partake of the nature of the physiological epochs at which it occurred. The suicidal impulse to which Dr. Dana referred was well known to most alienists. Even in convalescence this tendency was most marked.

DR. AUGUST HOCH said it was usually claimed that it was impossible to formulate any laws of prognosis about the different forms of manic-depressive insanity. This was not quite correct. Dr. Kirby had shown that a careful reasoning might do much in formulating a special prognosis. Dr. Hoch wished to mention a few more general points of view from which a prognosis might be made. The first referred to the depressions. The symptoms of the entire depressive complex were retardation, sadness and the anxiety-unreality complex. In the typical manic-depressive states there were only sadness and retardation. In such cases the outlook was good. In the typical involution melancholias there was, from the beginning, uneasiness, anxiety, to which were often added later in the course symptoms of the anxiety-unreality complex. In such cases the outlook was bad; such patients got into a state of deterioration, characterized by a narrowing of the mental horizon. But the anxiety-unreality complex might also be reached by way of the manic-depressive states. This happened not infrequently in the manic-depressive depressions, which occur at the involution period, sometimes in those occurring earlier in life. These cases might, therefore, begin with a typical retardation or feeling of inadequacy and then develop an anxiety-unreality complex. In such cases the prognosis was not so bad as in the typical involution melancholias, but decidedly less good than in the simple manic-depressive depressions.

The second point of view referred to the prognosis of the manic states. All alienists knew that those cases which present the best prognosis are cases of clean-cut manias of considerable intensity, manias in which the exhilaration, the general excitement and the flight of ideas are all of about the same degree. The hypomanic states were much less favorable prognostically. Dr. Hoch had always found that cases in which the disorder of behavior was out of proportion compared with the flight of ideas and the intellectual disorder in general, were prognostically also more unfavorable. Such cases were apt to have long attacks or many attacks. The prognosis in cases in which a delusional element was strikingly out of proportion to the flight of ideas was also more doubtful than in the simple classical mania. In other words, the cases of mania in which there were strong discrepancies in the intensity of the different symptoms were those which presented a less favorable outlook than those in which there existed a certain harmony in the intensity.

Book Reviews.

Plaster of Paris, and How to Use It. By Martin W. Ware, M.D. New York: Surgery Publishing Company. 1906. $1.00.

This little book of 88 pages is written out of a large experience on the subject with which the author deals. It is profusely illustrated with 72 cuts. It contains seven chapters which present one of the best narratives of the sort that we have read. It is useful especially for the student and the general practitioner, to whom we recommend it cordially.

The Diagnosis and Treatment of Intussusception. By Charles P. B. Clubbe. Edinburgh and London: Young J. Pentland. 1907.

The writer gives us an enthusiastic and readable story of 55 pages, with a voluminous appendix, in an attractive little book which the student can master in an hour. He tells us nothing especially new, but brings down to date the records of the interesting affection with which he is dealing.

This is the type of short, comprehensive and lucid monograph which appeals especially to students and operating surgeons.

A Syllabus of Materia Medica. Compiled by Warren Coleman, M.D., Professor of Clinical Medicine and Instructor in Materia Medica and Therapeutics in Cornell University Medical College, Assistant Visiting Physician to Bellevue Hospital. Third edition, revised to conform to the Eighth Decennial Revision of the United States Pharmacopeia. Pp. 186. New York: William Wood & Co. 1906.

The attempt in this small book is to simplify the study of materia medica by grouping drugs in various ways and by other means of assisting the memory. From this point of view the book is certainly useful. Two sections have been added upon minor toxic actions and toxicology.

Tumors, Innocent and Malignant; their Clinical Characteristics and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S. Fourth edition. Chicago: W. T. Keener & Co. 1907.

Mr. Bland-Sutton's well-known work on tumors has been a standard textbook for several years, and this fourth edition makes good the promise of previous publications. The third edition has been considerably elaborated upon, and several new features on the subject of tumors have been introduced. Especially the author has added to his former writing a discussion of chorion-epithelioma, of the causation of cancer, of tumors of the ovary and testicle and of heterotopic teeth. There are one hundred extra pages, numerous cuts, and a notable bibliography.

The striking thing about Bland-Sutton's work is that obviously it is his own work. His conclusions are drawn from his personal observations; his writing has the clear, simple, pointed characteristics we are familiar with in the publications of careful English authors. One's interest flags nowhere, and the book is well worth the thoughtful reading of every student and practitioner of surgery.

Beginning with a brief statement of the difficulty of framing a satisfactory classification of tumors, the author presents his plan, discussing his subject under six groups:

Group I. Tumor diseases of the connective tissues. This includes lipomata, chondromata, osteomata, myelomata, sarcomata, myxomata, myomata, neuromata, angeiomata, endotheliomata, and uterine fibroids.

Group II. Tumor diseases of teeth. Odontomata.

Group III. Epithelial tumors. This comprises papillomata (warts), adenomata, carcinomata.

Group IV. Tumors arising from the fetal membranes. Chorion-epithelioma (deciduoma).

Group V. Teratomata, dermoids. Embryomata.

Group VI. Cysts.

Group I, embraced in the first twenty chapters, is the most interesting portion of the text, and the reviewer finds little to add to previous statements, except to note that in describing sarcomata the author pays scant attention to those growths of the giant-cell type, nor does he distinguish variations in the malignancy of bone sarcomata, whether of round cell or spindle cell structure. Hypernephroma is not named, though tumors from "rests" briefly are discussed. Chapter X, on melanotic tumors, is especially interesting. The possibility of malignant growths arising from moles is not suggested. The classification of benign tumors of the breast is not satisfactory, and the reader is left in a state of confusion which the recent work of Warren and Bloodgood is required to correct.

Such are a few of the trifling exceptions one finds to the general excellence of Group I, as it is discussed by the author.

Group II, which deals with diseases of the teeth, is given considerable space. It contains a good deal of new matter.

As to Group III one finds little to add beyond warm commendation of a spirited writing, and the accurate, satisfactory illustrations.

Group IV comprises a discussion of chorion-epithelioma (deciduoma) which is well and briefly presented. Group V, teratomata and dermoids, tells us more than the words suggest. The chapters deal as well with freaks and monstrosities, in an entertaining fashion; while under Group VI the author gives us a novel and instructive essay on cysts of organs.

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THE LABORATORY IN PRACTICE

WHENEVER one hears that the practising physician has neither the time nor the skill to concern himself with laboratory work, the first essay of Dr. Edward L. Trudeau in this field comes to mind. When Koch announced his discovery of the tubercle bacillus in 1882, Trudeau had his home at Saranac Lake, a settlement remote from civilization, desolate in its surroundings, forty-two miles from any railway. He secured an English translation of Koch's revolutionary paper; whereupon, being without scientific training, he was instructed by Dr. Prudden during some visits to New York in the essential principles of bacteriology and how to stain the tubercle bacillus.

At Saranac Lake, then, without paraphernalia other than his microscope, without access to treatises on the subject, the water often turned to ice in his house (his wood stove would generally not burn all night, nor was there at that time any coal in that region), Trudeau arranged a home-made thermostat which had no regulating apparatus, and was heated only by a small kerosene lamp. For protection against violent changes in temperature he inclosed this thermostat in a series of wooden boxes, the doors of which could be opened or closed at will, according to the intensity of the cold. His guinea pigs he kept in a hole under the ground, heated by a kerosene lamp, this being the only spot in Saranac Lake where they could escape freezing at night. Under such circumstances as these he obtained the tubercle bacillus in pure culture, being the second observer in America to do this; and with these cultures he repeated all of Koch's inoculation experiments.[1]

When a man can do such things as these in the face of such difficulties, surely even those engaged in very active practice might, with all the advantages that most enjoy, become interested to a greater degree than is now customary, in the subjects upon which work may be done in the laboratory. Such work might be made a recreation or a fad, which would still profit greatly in the diagnosis of difficult or obscure cases. To be sure, some such work is now routine with every physician. Who is there that does not examine his own sputa and his own urines? But to these things much more might be added — the examination of stomach contents, of urinary elements and sediments (other than albumin and sugar), of feces, of aspirated fluids, for various bacteria, of throat cultures and the like.

Some among these examinations require a very special training, and are, of course, quite too difficult for the general practitioner. The blood should be examined much oftener than it is, and the results will often be valuable in diagnosis; but here the technique must be undertaken by a colleague who has devoted himself exclusively to such work. In many municipalities and in some states the health authorities undertake such examinations without charge in behalf of destitute patients. In New York state, at least, a very wise precedent has been established in the appointment of a county bacteriologist for Ontario County, whose duty it is to make examinations upon request of any one of its registered physicians.

There is some tendency among us to divide into two camps concerning these things. There are those who would make the laboratory a court of final resort in diagnosis, and those, on the other hand, who profess their purely clinical abilities to be all-sufficient in this regard. To hold extreme views either way is unfortunate. The laboratory and deep bedside observation should help and reinforce each other; they must always be correlated. The one may oftentimes rectify the shortcomings of the other. There *may* be a tuberculosis despite negative bacillus findings; and a blood examination clearing up an obscure infection is certainly a comfort to the responsible clinician.

EXHIBIT OF INDUSTRIAL CONDITIONS.

AN exhibit of industrial conditions in relation to health, safety and welfare is to be held in Horticultural Hall, Boston, the week beginning April 8. This is the first exhibit of the kind which has been held in New England; it is designed to illustrate the conditions under which wage-earners work in this and in other states, with the essential object of exciting the interest of the public and creating a sentiment which may result in remedial legislation, where such is necessary, and the general improvement of the conditions of labor.

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[1] E. L. Trudeau: Tuberculosis Work at Saranac Lake; The First Annual Report of the Henry Phipps Institute.

To accomplish this booths are to be erected illustrative of various actual working scenes which are a menace to health and life, together with photographs and data of various sorts which will render the situation more clear. Particular attention will be given to the subject of child labor and the conditions under which women work. Tenement work rooms will be reproduced and the conditions of life in tenements in relation to health. Attention will also be given to the progress made in combating the evil of child labor, over-crowding and faulty sanitation. Model work rooms will, to this end, be exhibited in conjunction with those which are open to criticism. A still further means of enlightening the public will be through afternoon and evening lectures from persons who may speak with authority on various methods of industrial development.

A large number of charitable organizations, among which is the Boston Society for the Relief and Control of Tuberculosis, are combining in the movement. The exhibit will be under the general charge of Mr. Alexander M. Wilson, secretary of the Boston society to combat tuberculosis. The general design and purpose of this exhibit is evidently precisely similar to those which have been given in this and other states in the tuberculosis campaign. Such exhibits have proved of decided educational value, and we have no doubt that this, similar but somewhat broader in scope, will have a like effect. It is another step toward the general tendency to inform the public at large regarding various conditions which have a more or less direct bearing upon the health and welfare of the community, and as such should receive the cordial support of the medical profession.

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THE DIAGNOSIS OF TRACHOMA.

We print in this issue an article on the Diagnosis of Trachoma, in which attention is drawn to the mistaken conclusions sometimes reached by inexperienced examiners. Since the passage of laws requiring the examination of immigrants and school children with reference to this disease, the subject has become a matter of national importance. A mistaken diagnosis clearly does an injustice to the community, as well as to the individual affected.

In this connection another important paper has recently appeared in the February number of the *Bulletin of the Johns Hopkins Hospital* from the pen of Dr. J. Bordley, on Trachoma in the American Negro Race. From time to time, cases diagnosticated as trachoma have been reported as occurring in negroes, often from apparently authoritative sources. Dr. Bordley's conclusion, however, after a careful review of the literature, is that it has not yet been proved that any unquestioned case has ever been reported in this race. Dr. Bordley was stimulated to write his paper through the careful examination, both clinical and microscopic, of three cases occurring in negroes, in which had the first stages only been observed, the diagnosis of trachoma would unquestionably have been made. Each of the cases, however, after showing in the early stages an apparently characteristic infection, recovered completely, leaving behind no traces of the connective tissue lesions met with in true trachoma. In each case a practically pure culture of the B. xerosis was obtained from the diseased area, and Dr. Bordley, therefore, concludes that under certain circumstances this organism may attack the conjunctiva of the negro and provoke an inflammation which in the first stages is impossible to differentiate from that of trachoma. It appears, from this investigation, that although negroes in other countries are not immune to this disease, the American negro presumably is, and that cases hitherto reported as trachoma in that race are probably due to an infection with the B. xerosis. How the American negro has gained this immunity is a question which has as yet not been solved.

We need hardly reiterate what our contributor insists upon in his article, that accurate diagnosis in this disease is a matter of the utmost consequence, both for social and political reasons.

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INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

The twelfth annual meeting of this important association will be held in Berlin during the fall of this year. It is probable that the next meeting, about three years hence, will be held in this country. If this is accomplished, it will be due to the efforts of Dr. Charles Harrington, professor of Hygiene in the Harvard Medical School and secretary of the Massachusetts State Board of Health, who represented the United States on the permanent international committee at the last meeting which was held in Brussels three or more years ago. An informal invitation was at that time extended to the congress by the authority of the late Secretary Hay to hold its thirteenth session at Washington, and it is probable that favorable action will be taken by the government to bring such a meeting about in 1909 or 1910.

For various reasons it is fitting that such a congress should hold an occasional meeting in this country. The United States has within the last few years taken a position of importance in international matters, and perhaps particularly in those which relate to public hygiene. As Dr. Harrington has pointed out, it is probable that the Central and South American republics, the sanitary conditions of which are of vital importance to the United States, would send delegates to such a congress and that matters of far-reaching importance might thereby be discussed. It is said that British, German and Italian delegates to the last congress at Brussels were strong in their desire to meet in this country. It is therefore to be hoped that the plan of holding the congress in Washington may be carried out. There is small doubt that the attendance would be large and representative.

MEDICAL NOTES.

Recognition of the Physician as a Public Citizen. — In late years the influence of the medical profession has been made to be felt more and more in questions of public welfare. The important part played by the physician in the community is being gradually more widely recognized. The Hon. Claude A. Swanson, governor of Virginia, voiced this feeling a few days ago in introducing a medical man who was to speak on the general subject of a closer co-operation between the physicians of Virginia and the people. The governor of Virginia stated that it was his intention to appoint a physician on every board of every institution in that state, and further he desired to see a physician on every school board in every county and city of the state. The idea was expressed that physicians are not generally recognized by legislative bodies on account of an erroneous idea that physicians are working for their individual ends, instead of for the people whom they represent. This expression of the chief executive of the "Old Dominion" should serve as a suggestive stimulus in many states. A wider use of medical men by the community for work beyond the bounds of their immediate profession, but in which their technical knowledge of the body and its hygiene would be of great usefulness, should certainly be encouraged.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 6, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 46, scarlatina 39, typhoid fever 8, measles 5, tuberculosis 40, smallpox 0.

The death-rate of the reported deaths for the week ending March 6, 1907, was 22.08.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 2, 1907, was 225, against 242 the corresponding week of last year, showing a decrease of 17 deaths and making the death-rate for the week 19.48. Of this number 114 were males and 111 were females; 219 were white and 6 colored; 131 were born in the United States, 88 in foreign countries and 6 unknown; 39 were of American parentage, 151 of foreign parentage and 35 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 47 cases and 6 deaths; scarlatina, 51 cases and 2 deaths; typhoid fever, 2 cases and 0 deaths; measles, 8 cases and 0 deaths; tuberculosis, 40 cases and 20 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 37, whooping cough 1, heart disease 18, bronchitis 9 and marasmus 5. There were 12 deaths from violent causes. The number of children who died under one year was 40; the number under five years 58. The number of persons who died over sixty years of age was 52. The deaths in public institutions were 86.

There were 3 cases and 3 deaths reported from cerebrospinal meningitis during the week.

Report of the Massachusetts Board of Registration in Embalming. — The first annual report of the Massachusetts Board of Registration in Embalming, created by act of legislature in 1905, has been published. Of 1151 applicants appearing for examination, 29 failed to pass at the first test. Sessions of the board have been held in various parts of the state and rules and regulations have been adopted looking toward the more satisfactory transportation of the dead and other matters connected with the work of the undertaker.

Dr. Boehm to read a Paper before the German Orthopedic Association. — Dr. Max Boehm, director of the Department of Mechanotherapy at the Massachusetts General Hospital, will sail for Germany on March the 14th. Dr. Boehm goes to read a paper on April 22, before the Orthopedic Congress which is to be held in connection with the meeting of the German Surgical Association. The title of Dr. Boehm's paper will be "The Etiology of Juvenile Spinal Deformities." This paper embodies work carried on in the anatomical department of the Harvard Medical School and at the Massachusetts General Hospital. It is to be presented on the personal invitation of the president of the Congress. While away Dr. Boehm will probably deliver addresses also in Liverpool and London on the same subject.

Bills before the Legislature. — The committee of the legislature before which Dr. Charles Harrington's bill on vaccination was presented has unfortunately reported the bill in such a way that its intent is practically lost. Dr. Harrington had proposed an amendment to the existing law, substituting the words "the school physician assigned to that school," instead of "a regular practising physician," in relation to the signing of certificates of exemption from vaccination. The committee has voted to report this bill, leaving the original phrase "a regular practising physician" and inserting the words "granted for cause stated therein." The section now reads, therefore, "A child who has not been vaccinated shall not be admitted to a public school, except upon presentation of a certificate granted for cause stated therein signed by a regular physician that he is not a fit subject for vaccination." This still allows for evasion of the vaccination law, which it was Dr. Harrington's intention to prevent by the introduction of his amended bill.

The petition of Dr. R. C. Cabot for legislation relative to the labelling of patent or proprietary drugs and foods has been favorably reported by the Committee on Public Health.

The petitioners in the bills looking to the restriction of the practice of Christian Science have been given leave to withdraw.

NEW YORK.

Problems of Insanity. — A lecture on "The Development of the Legal Regulations Concerning the Insane, with Suggestions for Reforms," was delivered under the auspices of the New York Psychiatrical Society at the Academy of Medicine in that city March 2, by Dr. Allan McLane Hamilton. This was the fourth in a series of public lectures on the general subject of insanity.

Typhoid Fever on Battle Ship "Connecticut." — The new battle ship *Connecticut*, of the Atlantic Fleet, arrived in port on Feb. 28, from Guantanamo, Cuba, with thirty-five of her crew ill with typhoid fever, and the patients were at once transferred to the Naval Hospital in Brooklyn. In addition, there were on board eight other sick sailors from other vessels of the fleet, but none of them had typhoid. This is said to be the largest number of incapacitated men that has arrived at New York on a naval vessel in time of peace. It has been but a comparatively short time since the *Connecticut* sailed from the Brooklyn Navy Yard, though it is asserted that no cases of typhoid developed until the ship had been away over six weeks. While various theories have been suggested, the origin of the outbreak is at present unknown, and Admiral Evans has appointed a medical board of inspection, with Medical Inspector Howard Ames as its head, to investigate the cause of the infection.

Obituary.

SIR MICHAEL FOSTER.

It is one of the misfortunes of a great career that death should be a signal for appraisement. The grave is scarcely closed ere places and works are set in a catalogue. Born March 8, 1836, Michael Foster was bachelor of medicine in 1858, demonstrator of physiology at University College in 1867, professor of physiology at University College in 1868, Fullerian professor at the Royal Institution in 1869, prelector at Trinity College, Cambridge, in 1870; fellow of the Royal Society in 1872; contributor to the Handbook of the Physiological Laboratory in 1873; founder and editor of the *Journal of Physiology* in 1878; secretary of the Royal Society in 1881; knight and president of the British Association in 1899; member of Parliament for the University of London in 1900; prime mover in the international congresses of physiology; author of many scientific papers, "An Introduction to Embryology," a memorable textbook, a life of Claude Bernard and a History of Physiology — thus it would read. Beyond question a remarkable list, even for a life of seventy-one years, yet how little of the man it reveals. It is a list of opportunities; his achievement lies behind. In truth, the more closely men are studied, the more elusive they become. The visual field narrows in proportion to the sharpness of our gaze. The forest fades when we regard a tree. The particular inevitably destroys the general. Sir Michael Foster was a power in the development of physiology, but the secret of his influence is not to be found in the data of the biographical dictionary. His strength lay rather in temperament, in felicity of choice, and in the admirable co-ordination of qualities in themselves of sound but not surpassing excellence.

He began life as a practitioner, the assistant of his father, who was the principal surgeon in the town of Huntingdon, a training the value of which will be doubted only by those who never have experienced it. Very early in his career he had the good sense, or the good fortune, to come into contact with remarkable men, a privilege for which Marcus Aurelius very justly thanks the gods. He was a pupil of Sharpey, whom he succeeded as professor of physiology, and he was deeply influenced by Huxley, whom he succeeded as professor at the Royal Institution. According to Sir Michael's own story, he owed the appointment at the Royal Institution to a lady. At the close of one of Huxley's celebrated lectures on the brain, this lady expressed her appreciation of the masterly clearness with which Huxley had made the structure and function of the brain so plain to them. She herself was especially interested in the cerebellum, and would dear Professor Huxley tell her — she could not *quite* remember — whether the cerebellum was on the inside or the outside of the skull? Whereupon the despairing Huxley, long tried by the frequent combination of general information and special ignorance, wrote to Foster to take his place at once.

The next year the young physiologist went to Cambridge as prelector at Trinity College. Here he began to build up that school of physiologists which forms his best title to our gratitude. It was a happy time. Ludwig, Brücke, Helmholtz, Du Bois-Reymond, Bernard, Marey, Chauveau and other physiologists on the Continent had gathered many a harvest in the rich fields to which Johannes Müller had led them. The English were beginning to stir, but only the prophetic mind could have foreseen the rapid change which the spirit of the time would bring. Burdon-Sanderson at Oxford and Foster at Cambridge were leaders of the new movement. Among those enriched by Foster's influence were Gaskell, Francis Darwin, Dew-Smith, Langley, Adami, Newell Martin, Balfour, Roy, Vines, Lea, Sherrington, Anderson and Hardy.

In these days of greater specialization the breadth of Foster's interests is often forgotten. It should be remembered that Balfour, whom Charles Darwin declared would be the leader of English biologists, did his first embryological and histological work under Foster's direction. It was to Foster that he turned for counsel in the great dilemma — whether he should give himself to science. It was at Foster's suggestion that master and pupil joined in the making of their helpful introduction to embryology. It was under Foster's clear-sighted encouragement that the fortunate youth broke all the bonds of pupilage and scaled the heights that lead to Fame's serene abode. And it was Foster who wrote his gifted pupil's requiem in the sad days after the frightful hour at the *Aiguille Blanche de Peuteret.*

The great textbook of physiology was a necessary part of Foster's work at Cambridge. His purpose was to reveal to his countrymen the extraordinary discoveries of continental physiologists; but his work did more than this. The beauty of its style, the subdued yet evident intensity of feeling, the just estimate of the correct perspective, the judicial yet kindly attitude, the laboratory atmosphere created by skilful reference to the original workers, the realism that presented without *ex cathedra* pronouncements matters that were still *sub judice,* and the wonderful interest of the discoveries therein related, made this book an inspiration in both England and America.

The same high qualities marked his biography of Claude Bernard, a book that should be in the hands of every student, that he may learn how to weigh material success and even bitter personal grief against the sense of public service, the tenacity of purpose and the imagination that made Bernard one of the glories of France.

Foster's investigations, though excellent, were the lesser part of his contribution to human welfare. He was rather the scholar and interpreter than the investigator. He had, moreover, a keen appreciation of the fact that the progress of physiology depends largely on the provision of a suitable means of publication for research, on suitable guides for teachers and laboratory workers, and on laboratory work by all students. To these ends he devoted much time, as editor of the *Journal of Physiology,* writer of many helps for teachers and organizer of laboratory instruction.

He was mindful, too, that a science cannot take its rightful position in a country except its general interest be safeguarded by men who have the public ear. We owe much to his influence as secretary of the Royal Society and as Member of Parliament. In Parliament and elsewhere he served on many important commissions, such as that on tuberculosis, in which he was greatly interested. His facility as a public speaker was of much assistance in this part of his work. His style was simple and direct, and it was often illumined by flashes of wit.

It is not necessary to assign their relative values to the many activities of his long and useful life, though the attempt might be interesting. Certainly, much should be made of a personality of extraordinary simplicity and charm. Too often the scientist lives a cloistered life, saving his fire to reduce refractory ideas. Foster grudged no energy or had unusual store. He warmed the heart.

The journals have published a photograph of Sir Michael as he might have looked on rising to address the Royal Society: a strong face, deeply lined, kindly and wise. Yet it is not the whole man. It is, so to say, official. The real man is shown in another photograph. Sir Michael, in an old, old coat,— the choice if not the fruit of wisdom,— is seated on a bench against the rough board wall of a cabin in the Adirondacks. His hand grasps a mountain staff, the symbol of activity. But the good gray head leans comfortably back against the cabin, the historic pipe is in his mouth, and kindly wrinkles, the harvest of many well-spent years, surround his smiling eyes. We shall like to leave him with this air of earned repose. The world has lost a scientist and we have lost a friend.

W. T. P.

Current Literature.

The Journal of the American Medical Association.
Feb. 16, 1907.

1. Lieberthal, D. *Lichen Planus of the Oral Mucosa.*
2. Heidingsfeld, M. L. *Myoma Cutis.*
3. *Grant, W. W. *Late Phlebitis following Clean Abdominal Operations.*
4. *Ohlmacher, A. P. *Affections Treated by Artificial Auto-inoculations.*
5. Brown, D. R. *Accurate Modification of Milk.*
6. *Townsend, C. W. *Simplicity in Infant Feeding.*
7. Brown, C. W. M. *Certified Milk in Small Cities.*
8. Lowenburg, H. *Why Percentage Feeding Fails.*
9. Lovering, P. A. *The Alcohol Question in the Navy.*
10. Woodruff, C. E. *The Army Canteen as a Means of Reducing Intemperance.*
11. Crothers, T. D. *Medical Care of Inebriates.*
12. Shrady, G. F. *Some Professional Reminiscences.*
13. Johnston, G. C. *The Ultimate Result of the Roentgen Treatment of Carcinoma of the Breast.*
14. *Barnes, H. L. *Mistakes in the Diagnosis of Pulmonary Tuberculosis.*

3. Grant says that he has been compelled by later observation and experience to modify his formerly expressed opinion that phlebitis after abdominal, rectal or genitourinary operations is invariably due to infection. In his paper he considers especially that form of phlebitis in the veins of the legs (usually the left leg), and occurring most frequently about two weeks after simple aseptic abdominal operations, without preceding fast pulse, fever, pain or any other premonition. He refers to the statistics of Cordier and Haward and gives the account of a typical case occurring after operation for chronic appendicitis. Grant gives his own opinion that it is probably not septic and that the specific cause or causes are unknown. It is not correct, he thinks, to assume an infection without satisfactory evidence. The cause of the thrombus before the inflammation or of the phlebitis preceding the thrombus is the vital point. It is impossible, he says, to reconcile the facts with the idea that the cause is the recumbent position or the simple ligature or injury of small veins, often in a distant field and on the opposite side of the body, though admitting that the infection need not come from the site of the operation. He believes that there is a general condition affecting the composition of the blood that may and often does exist before operation, which is an essential factor in the cause of the thrombophlebitis in these cases.

4. Ohlmacher thinks that possibly Wright's comparatively simple theory of opsonins and its practical application has been rendered needlessly confusing to the average practitioner and gives his own experience with the use of bacterial vaccines, preferably autogenous, in various surgical conditions. While not neglecting to take the opsonic index when practicable, he was compelled to rely largely on the clinical manifestations as a guide to the repetition and size of dose, always endeavoring, of course, to give the injections at the right time, when the positive phase is beginning to fall and not in the negative phase. As Wright points out, the great causes of failure in previous tuberculin treatment was the giving of too large injections and too frequent repetition of the dose causing a marked negative phase and keeping it up. Ohlmacher thinks that his results might have been even better than they were had he been able to make more systematic opsonic determinations, which often show a fall of resistance before the symptoms indicate it. He has had remarkable success in various types of staphylococcus infections; obstinate cases of acne and furunculosis, impetigo, palmar abscess and in a very distressing case of what had been called psoriasis, but which he thinks was an extraordinary case of staphylococcic dermatitis, and which yielded rapidly to opsonic treatment with an autogenic culture of staphylococcus aureus. He had also very satisfactory results with a case of very annoying bladder infection from the colon bacillus, similarly treated after other treatment had failed. A very striking case was one of sacculated pneumococcus empyema, in which perfect recovery occurred in seven days after two injections following a small puncture. Ohlmacher believes that even the generally condemned method of aspiration would have been sufficient in this case when reinforced by opsonic therapy. Owing to delay in obtaining Koch's new tuberculin, the standard vaccine for tuberculous cases, his experience with tuberculosis has as yet been limited, but he has been able to obtain a strain of gonococcus culture with which he has had striking success in the treatment of gonorrhea and its complications, including gonorrheal rheumatism and conjunctivitis. From what he has already seen, he is prepared to say that with proper artificial auto-inoculation we can obtain constitutional and local improvement in many subacute and chronic affections, entirely beyond anything previously possible in medicine. He believes that we have in this method of bacterial inoculations therapeutic agents of a specificity and potency beyond anything heretofore employed in the treatment of disease, except, perhaps, the diphtheria antitoxin.

6. The advantages of simple, not too formidably mathematical, rules for the percentage of milk feeding of infants is suggested by Townsend. There is less liability of error by the mother or nurse, it is easier for the physician to prescribe, and it is natural to presume that the less the manipulation generally, the better for the milk. It is better to get a clean cow's milk and modify it to suit the case than to try to improve an unclean milk by centrifugalization or Pasteurization, and as the dilution of whole milk would cut down the fat too much, it is necessary to begin with a cream as the basis. He prefers pouring off the top milk as the simplest, and on the whole the safest, method of obtaining the cream and one giving very uniform results. As a rough rule, one may remember that in a quart of milk that has stood at least four hours, the upper 6 oz. contains about 14% of cream, the upper 8 oz. 10%, the upper 12 and 16 oz. about 8 and 6%, respectively. The amount of fat must be regulated by the appearance of the stools, and it is better, as requiring less manipulation, to dilute this top milk with water than to combine a rich cream, a lower or fat-free milk and water. Instead of pure water, a cereal water can be used in even the youngest infants, and some have difficulty in digestion without it. After the age of six months, a cereal modification is better for all infants. It is safest to begin with a mixture weak in all its ingredients and increase the strength gradually. A new-born baby can be put on a mixture of only 3 oz. of the upper 8 oz. of top milk in 20 oz. and the strength increased by adding half an ounce of top milk and abstracting an equal amount of water every second day until 8 oz. of top milk are given in a 20-oz. mixture. Many infants who have failed on much modified milk mixtures will, he says, respond at once when these simple principles are borne in mind. In a note he gives a simple rule for percentage calculation and explanatory formulas for those who care to use the method.

14. Barnes gives an analysis of the histories of 165 patients with tuberculosis admitted at the Rhode Island State Sanatorium for Consumptives, with special reference to the question of early diagnosis and treatment. Only the cases with reliable and complete record were used. He found the presumable duration of the disease averaged 15.4 months, and that 40.9% of the patients

delayed seeking medical advice or treatment, such delay averaging 7.9 months. Forty-six per cent were incorrectly diagnosed, the resulting delay in correct diagnosis averaging 11.3 months. In 18.1% of patients the lungs were examined and pronounced sound, and in 18.7% the incorrect diagnosis was made without sputum examination, though sputum was available. In 2.4% the correct diagnosis was purposely withheld by the examining physician. Barnes regrets that this practice is still followed by some, and holds that it is not warranted by any valid considerations. The failure to diagnose tuberculosis after hemoptysis also is surprisingly common, occurring in 12.7% of the cases here analyzed. Inasmuch as the sanatorium does not receive the worst cases, it seems possible that those it does receive have been more wisely handled than the average of all tuberculous patients in the community, which gives his figures an added significance. He says, " This optimistic and fatal waiting policy should be appreciated. A tuberculous history should be sought for in all lung diseases, and in atypical and doubtful cases of grippe, bronchitis and malaria the diagnosis should promptly be made by tuberculin when other means fail."

The American Journal of the Medical Sciences.

February, 1907.

1. *Keen, W. W. *The Symptomatology, Diagnosis and Surgical Treatment of Cervical Ribs.*
2. *Dock, G. *Compulsory Vaccination, Anti-vaccination and Organized Vaccination.*
3. Robinson, B. *Some Forms of Acute Cardiac Dilatation.*
4. *Thayer, W. S., and MacCallum, W. G. *Experimental Studies of Cardiac Murmurs.*
5. Fussell, M. H. *Aneurysm of the Aorta, Rupture into the Superior Vena Cava.*
6. Hastings, T. W., and Hoobler, B. R. *The Different Forms of Albumin Occurring in the Urine.*
7. *Webster, A. W. *The Pathology and Treatment of Nephritis.*
8. *Edsall, D. L., and Pemberton, R. *The Use of X-Rays in Unresolved Pneumonia.*
9. Brown, L., Allen, A. H., and Lupton, E. *A Diphtheria Epidemic at the Adirondack Cottage Sanitarium.*
10. *Foster, N. B. *The Chemical Affinity of Mucus for Hydrochloric Acid.*

1. Keen reports a case of cervical rib causing nervous disorder and beginning gangrene of the hand, cured by excision of the rib. He further summarizes the symptoms and clinical findings in cases reported in the literature, with description of his operative technique. Cervical rib is a congenital vice of development probably more common than is recognized. It is crossed by the subclavian artery and the brachial plexus which always lie about it, and are often flattened by pressure against it. It may form a palpable tumor in the neck, but the diagnosis should always be confirmed by the x-ray. Pressure on nerves causes pain of neuralgic character and diminished or perverted sensation. Pressure on the artery may cause small or absent pulse and cold extremities, although gangrene is rare. Atrophy of muscles may occur. In only a small proportion of cases, however, are symptoms of any kind present. The only treatment is excision of the rib. This has been done in forty-two reported cases without a death and with complete relief in all but a few.

2. Dock believes that our present laws with regard to vaccination are inadequate to insure safety of the community. He urges popular education in the importance of vaccination. and laws to require that vaccination be made a matter of permanent record by authorized officials. Private vaccination, he maintains, should be permitted only under special conditions, with revision of the result by a health officer.

4. Thayer and MacCallum have studied the murmurs produced in the hearts of dogs by various experimental lesions of the valves and other abnormal influences. The murmurs were observed by direct auscultation of the heart with the thorax laid open. The murmurs of aortic stenosis and regurgitation were much the same as observed clinically in human subjects. The murmur of mitral regurgitation was found to be transmitted with greatest intensity into the left auricle; the fact that this is not found in clinical examinations may be attributed to the concealed position of the left auricle in man. In one case, after repeated bleeding and infusion, a dilatation of the heart occurred with distinct aortic and later mitral insufficiency; autopsy showed normal valves. Basic systolic murmurs were easily produced, especially at the pulmonic valve. Here it was found that the slightest pressure upon the conus arteriosus would produce a murmur. Bleeding and infusion also produced basic murmurs, probably by producing low arterial tension and by diminishing the viscosity of the blood. It is suggested that the demonstration of experimental murmurs in the dog would be of great service in the teaching of students.

7. Webster's article is a brief account of the treatment of nephritis on the principles laid down some years ago by von Noorden. The milk diet and ingestion of large amounts of water, formerly so generally advised, are essentially wrong. To limit the work of the kidneys the proteid intake should be limited to a minimum. In acute cases with anuria, absolute starvation may be enforced, with limitation also of the water taken. Later a small amount of milk with cream and cereals may be given. In chronic cases an excess of proteid is to be avoided, but proper nutrition must be maintained. The theory that uremia is due to retention of chlorides in the system is discussed but found wanting so far as present evidence can determine; thus limitation of chlorides in the diet is not advised. The relation of clinical manifestations and pathological findings is discussed, and the variance between the two is emphasized. The treatment other than the dietetic is the same as that usually accepted.

8. Edsall and Pemberton report their experience with the x-rays as a therapeutic measure in three cases of unresolved pneumonia. In the first case consolidation which had persisted for a month after the crisis of a pneumonia disappeared within a week after beginning of five-minute exposures to x-rays. On the second day many râles were noted, and on the fifth day a great decrease in dullness had occurred. In the two other cases results were hardly less striking. The most probable explanation of the influence of the x-ray upon these cases is that digestion or resolution through some ferment action was stimulated by its use. Careful metabolism experiments in the second and third cases showed that following the first exposures a marked increase occurred in nitrogen, chloride and phosphate excretion.

10. Foster has demonstrated that mucus, like albumin and other proteins, is capable in the presence of pepsin of combining with hydrochloric acid. He first suspected this from the finding that the gastric juice from fasting stomachs of animals with Pawlow fistulæ contained combined HCl. He believes that this will explain the variability of the amount of combined HCl in the stomach observed clinically.

The Lancet.

Feb., 9, 1907.

1. Beevor, C. E. *The Diagnosis and Localization of Cerebral Tumors.*
2. Duckworth, D. *Portal Cirrhosis of the Liver.*
3. Stephenson, S. *Affections of the Lachrymal Apparatus.*
4. *Rawling, L. B. *A Case of Sarcoma of the Scapula in a Child Aged Four Years, with Notes on Sarcoma of the Bones of Young Children in General.*
5. Morison, J. R. *Fibroids of the Uterine Cervix.*
6. *Leedham-Green, C. A. *Appendicitis in Typhoid Fever.*

7 Divine, T. *Sanitary Condition in Relation to Infantile Mortality.*

8. Campdell, H. *The Role of the Blood Plasma in Disease.*

4. Rawling describes his own case of sarcoma of the scapula, the youngest case on record, and then considers the cases collected from the literature of this subject. Unless the case be diagnosed and operated on at an early date with a very wide extirpation of the tumor, surgical procedures are generally useless.

6. Typhoid fever may give rise to appendicitis in two ways: first, a true typhoid inflammation and ulceration going on to perforation may affect the lymphoid tissue

of the appendix, just as it does any other part of the intestinal tract; and secondly, appendicitis may develop in a patient suffering from typhoid fever in consequence of a general edema and hyperemia of the gut. Needham-Green gives the statistics on this subject, quoting Rolleston, Kelly and H. Christian. He then gives in detail three cases of his own in which the question of appendicitis arose during typhoid. If possible, it is better to postpone operation, although in the early stage of typhoid the prognosis of a simple laparotomy is good. The Widal reaction seldom shows itself sufficiently early to be of value; the blood count may help, but not always; a differential count of the whites is of more importance than the total number of leucocytes, showing in typhoid infection an increase of basophiles; in appendicitis, not due to the typhoid bacillus, an increase of neutrophiles.

British Medical Journal.

Feb. 9, 1907.

1. Broadbent, W. H. *The Toronto Hospital for Advanced and Far-Advanced Cases of Consumption.*
2. Swain, J. *A Retrospect of a Thousand Consecutive Cases of Abdominal Surgery.*
3. *Morton, C. A. *The Claim of the Surgeon to Conduct the After-Treatment of Operation Cases; with Some Remarks on Position and Flatulent Distention after Abdominal Operation.*
4. *Stevens, W. M. *The Dissemination of Intra-abdominal Malignant Disease by Means of the Lymphatics and Thoracic Duct.*
5. Russell, J. W. *On the Temperature in Malignant Disease of the Liver and Bile Passages.*
6. Stewart, J. E. F. *A Pair of Forceps in the Abdominal Cavity for Ten and a Half Years.*

3. Morton makes a strong plea that the surgeon be allowed to conduct the after-treatment of his cases and not let himself be persuaded to turn this all-important part over to the medical attendant. He then speaks of posture as an aid to after-treatment, recommending the semi-recumbent or Fowler's position in practically all cases of abdominal operation, especially if there is sepsis; he speaks of the various means of making the patient comfortable in this position and advises operating with the patient in this position unless there is shock. If this is present the Trendelenburg position must be maintained during the operation and afterwards till all signs of shock have disappeared. He then speaks of the causes and treatment of distension after operation. In most cases this is due to paresis of the bowel and not necessarily to adhesions or a spreading of the septic process. In relieving it he has had the best success with turpentine and suds enemata. Colostomy is a very serious procedure and rarely does good.

4. Stevens concludes from his observations that the thoracic duct plays an important part in the dissemination of malignant intra-abdominal disease. It may act as a simple carrier, or be itself infected. It is remarkable that chylous ascites and dilatation of the lymphatic channels can be so seldom demonstrated. The supra and infra-clavicular glands on the left are enlarged far oftener than is supposed; when they cannot be felt, they can often be demonstrated by careful percussion.

Deutsche Medizinische Wochenschrift, No. 6.

Feb. 7, 1907

1. Meyer, E. *Hysteria and Earning Capacity.*
2. Krieger and Velden. *Bromural, a New Hypnotic.*
3. *Frey. *Basophilia of the Red Cells as an Early Sign of Chronic Lead Poisoning.*
4. Schuckmann. *Two Cases of Congenital Dilatation of the Colon in Adults.*
5. Rosenthal, B. *Narcosis with the Roth-Draeger Drop Apparatus.*
6. *Stern, C. *The Action of Protargol.*
7. Stein, A. *A Case of Precocious Menstruation.*
8. Winckler, *Removal of a Piece of Bone from the Right Bronchus by Means of Superior Bronchoscopy.*

3. This article deals with the early diagnosis of chronic lead poisoning by means of the detection of basophilia of the red cells. In the early stages symptoms are vague, consisting of anemia with disturbances of digestion and sometimes arthralgia; the examination of the urine for lead at this time is usually negative. Grawitz has found that all cases of lead poisoning show basophilia of the red cells, which appears either in the shape of dots or as a diffuse bluish discoloration when the blood is stained with basic dyes. The only other diseases in which this basophilia is present are pernicious anemia, cancer, sepsis, malaria and intestinal putrefaction; it is inconstant in these diseases. With the elimination of the lead from the system and the recovery of the patient, the basophilia gradually disappears. Frey, in a series of cases of lead poisoning among lead smelters, found this reaction constantly present in pronounced cases and of great diagnostic value in others in which the symptoms were equivocal. It proved also serviceable for prophylaxis, acting as a guide to show what workers should be temporarily removed and given outdoor employment. [This simple test is usually all that is required in practice, and has rendered the tedious examination for lead in the urine superfluous. Thin smears of blood should be treated with Wright's stain or any other similar stain, such as Goldflam's or Leishman's.]

6. According to Stern, the irritating effects sometimes seen after injections of protargol are due to the use of faulty preparations. The solutions should have been recently prepared and without the use of heat. In his experience, protargol remains the best of the many preparations recommended for the local treatment of gonorrhea.

Münchener Medizinische Wochenschrift, No. 6.

Feb. 5, 1907.

1. *Gruber and Futaki. *Natural Immunity towards Anthrax and the Origin of Bacteriocidal Substances.*
2. Hamburger, F. *Antitoxin and Albumin.*
3. Kehrer, F. A. *Nervous Symptoms during the Passage of Stomach Contents into the Intestine.*
4. Schumm, O. *The Demonstration of Blood in the Feces.*
5. *Fricker, E. *Two Cases of Eosinophilia of the Feces.*
6. Hartmann, F. *Twelve Cases of Mastitis treated by Suction.*
7. Krencker, E. *A Case of Subcutaneous Emphysema in Phthisis.*
8. *Bleibtreu, L. *Apparent Macrocheilia in Hysteria.*
9. *Brassert, H. *Argyll-Robinson Pupils in a Case of Fracture of a Cervical Vertebra.*
10. Pickenbach. *Stenosis of the Pylorus due to Chronic Duodenal Ulcer, Cured by Gastro-enterostomy.*
11. Walther, H. *Shall Midwives be Supplied with Rubber Gloves?*
12. Schiele, G. W. *Lead Boxes for X-ray Tubes.*
13. Weil, E. *Explanation of the Tuberculin Reaction by the Presence of Antituberculin in the Tuberculous Focus.*

1. This valuable contribution by Gruber and Futaki deals with the question of immunity towards anthrax in animals. As is well known, hens and dogs are naturally immune to this disease, while rabbits, guinea pigs and rats are very susceptible. The leucocytes of the latter anmals devour anthrax bacilli *in vitro* readily, but in successful inoculation no phagocytosis occurs. This they found to be due to the fact that in the animal organism the bacilli become invested with thick capsules, which effectually protect them from phagocytosis and from bacteriolysins; they no longer attract the leucocytes. Experiments with subcutaneous injection of anthrax bacilli showed in fact that in the dog and hen the germs are quickly destroyed at the site of inoculation before capsules can be produced, but that in susceptible animals a rapid reproduction with capsule formation takes place. The destruction of bacilli took place outside the cells, not by phagocytosis. This seems strange, for the serum of hens has little bacteriocidal action, while that of the susceptible rabbit is quite powerful. The authors show that this apparent contradiction can be explained. They found that the blood plasma of the rabbit contains absolutely no bacteriolysins, and that the bacteriocidal substances come from the blood plates after clotting. The difference between the behavior of hens and rabbits towards the anthrax bacilli they found to be due to differ-

ences in the lymph. The subcutaneous lymph of the hen kills off anthrax bacilli with great rapidity, whereas that of the susceptible animals is almost inert. The bacteriolysins in the lymph are shown to be derived from the leucocytes in great quantity under the influence of a substance in the lymph which they call a stimulin. In the lymph of the rabbit there is little stimulin, but in edema fluid obtained by the use of Bier's passive congestion, it is present in considerable quantities; this explains in part the efficacy of Bier's method. The anthrax bacilli protect themselves against the action of the bacteriolysins by the production of capsules, and the result of an infection depends largely upon whether the bacilli are destroyed before there is time for capsule formation.

5. Fricker reports two cases in which there were numerous eosinophiles and Charcot-Leyden crystals in the feces. The first was in enteritis in a child due to infection with trichocephalus; the second, a case of proctitis in an adult. [*Cf.* Neubauer and Stäubli's article abstracted in Boston Medical and Surgical Journal, Jan. 3, 1907, page 29.]

8. Bleibtreu reports a case of apparent macrocheilia occurring in hysteria. The snout-like appearance of the lips was due not to chronic inflammation as in true macrocheilia, but to hysterical contracture, as was shown by the presence of hemi-anesthesia and loss of the senses of smell, taste and hearing on one side, and lastly by the fact that recovery took place under suggestive treatment.

9. In Brassert's case fracture of the second cervical vertebra was apparently the cause of the appearance of Argyll-Robinson pupils. Several similar cases have been recently reported, and lesions here have been found in tabes, general paresis, and other spinal diseases accompanied by A-R pupils, so that it appears very probable that the center governing the light reflex is situated in the cervical cord, probably in Bechterew's "intermediate zone," between the columns of Goll and Burdach.

Berliner Klinische Wochenschrift, No. 51.

Dec. 17, 1906.

1. *Hildebrand, O. *Experiences in the Treatment of Goiter.*
2. *Oppenheim, H., and Krause, F. *Tumor of the Occipital Lobe of the Brain Cured by Operation.*
3. Ascoli, M. *Puncture of the Brain for Diagnostic Purposes.*
4. Senger, E. *Brain Surgery.*
5. *Johnsen. *A Giant Renal Stone Removed by Operation.*
6. Stern, A., and Dolan, E. *Remarks on the Surgical Treatment of Injury to the Abdomen by Blunt Force.*
7. Korff, B. *Morphin-Scopolamin Narcosis.*
8. Eichler, F. *Modification of Bier's Suction Apparatus when used to secure Blood for Serum Diagnosis.*
9. Lessing. *On Hernia.*
10. Joachimsthal. *Address on Waldeyer and v. Bergman.*

1. The symptoms accompanying a goiter are those of pressure either on trachea, esophagus, or blood vessels. In certain cases the goiter may grow downward thus becoming substernal or even subcostal, in which case it may even press on the arch of the aorta. Though difficulty in breathing due to tracheal obstruction is frequent, hoarseness or paralysis of the laryngeal muscles is of rare occurrence. A peculiar and characteristic tone of the voice is not unusual, however. The usual form of goiter found in young subjects is a parenchymatous hypertrophy, while in the aged the condition is usually one of cystic degeneration which may be of the colloid form. Even the smaller goiters may cause marked dislocation of the arteries and veins in their neighborhood. Hildebrand administers iodine internally in cases of goiter occurring in young people where the tumor is of the parenchymatous type; in the cystic type of older individuals iodine is manifestly useless. Operative procedures are either extirpation or enucleation of the tumor. The first method is the more common, since only goiters of cystic type can be successfully enucleated. The first step after reaching the tumor is the ligation of the superior and inferior thyroid arteries. In the hands of Hildebrand the operation is done usually with local anesthesia. Under these conditions it is much easier to locate and avoid the recurrent laryngeal nerve. The mortality of such operations is only .3 or .5 of 1%. In marked contradistinction to the benign goiters, as regards the prognosis, are those due to either sarcoma or carcinoma. Metastases are very readily formed, and when the disease has passed the limits of the capsule the operation is exceedingly difficult. The mortality in malignant cases is 66.5%. For this reason Hildebrand advises the immediate operative removal of every goiter which can be demonstrated to be increasing in size or which gives any symptoms.

2. The case of a man of thirty-five years is reported, who suffered from repeated attacks of headache dizziness and vomiting, followed by right hemianopsia, hemiataxia and hemiparesis. Oppenheim made a diagnosis of neoplasm of the left occipital lobe, near or pressing on the tentorium. At operation, which was done in two steps, Krause enucleated a spindle-celled sarcoma about 3 by 5 by 6 cm. in dimensions. Though there was marked rise in pulse and temperature after the operation, the result four months later was a complete cure.

5. Johnsen reports a case of kidney stone, removed by Pelz, which weighed 339 gm. The longitudinal circumference was 33.5 cm.; the horizontal, 28.5 cm. It was made up of ammonio-magnesium phosphates with a little phosphoric acid.

Dec. 24, 1906.

1. *Fraenkel, B. *The Theory of Ozena.*
2. Schütze, A. *The Forensic Value of the Method of Absorption of the Complement, as practised by Neisser and Sachs.*
3. Bing, H. J. *The Measurement of the Blood Pressure.*
4. Schulze, W. *The "Silver" Spirochete.*

1. Fraenkel reviews the various theories as to the nature of ozena, and points out that we are not much farther advanced in our knowledge than thirty years ago, when he first clearly defined this disease. The Abel bacillus mucosus, which is identical with Friedländer's pneumobacillus and with the bacillus of rhinoscleroma, is certainly not the cause, though often present in the secretions.

Certain Diseases of the Peritoneum. Mumford (*N. Y. Med. Jour.*, Jan. 12, 1907) summarizes the subject of peritonitis in its various forms with special reference to their surgical treatment. Acute peritonitis may be localized or diffuse. The former is usually recognized by the presence of a mass with tenderness, fever, etc.; the treatment is simply to open and drain. Diffuse peritonitis is where the inflammation forms no limiting adhesions. Its causes and sources are various but the great majority are traceable to infections (colon or streptococcus) from the alimentary tract. All cases should be operated upon except those obviously moribund. The operation, however, should be reduced to a minimum in time and extent. Handling and wiping of viscera is to be avoided. Irrigation is unnecessary except when the abdominal fluid is thick or contains numerous masses of fibrin. The abdomen should be opened as low as possible and the primary disease sought out and removed. Drainage through the abdominal wound and from the pelvis through a stab-wound above the pubes is essential. Fowler's position (the patient sitting as nearly upright as he can be maintained) is strongly recommended in the after-treatment. Introduction of water into the rectum by Murphy's "seeping" method (large amounts of salt solution being made to flow almost continuously into the rectum so slowly that they are absorbed as fast as they enter) aids the drainage of the peritoneum, as well as stimulating the heart and kidneys and supplying body fluid. With this treatment there is reason to hope that the mortality may be kept below 30%. The forms of chronic peritonitis are the exudative, the adhesive and the tuberculous. The first two are little recognized, and as a rule are to be treated medically, although operation is the only means of relieving adhesions. Tuberculous peritonitis is frequently benefited by operation, the benefit depending mainly upon the possibility of removing the source of the infection (*e. g.*, a Fallopian tube), the degree of adhesions, and the reparative stimulation resulting from the operation.

Medical treatment of the tuberculosis must be resumed as soon as possible.

Chronic Tuberculous Cecal Tumor. Tomita (*Wien. Klin. Woch.*, No. 52, 1906) reports four cases of this affection and discusses the clinical picture. The process is almost invariably confined to the ileo-cecal region and leads to stenosis of the bowel. The primary lesion is usually a tuberculous ulcer; the wall of the intestine becomes greatly thickened, chiefly owing to the production of fibrous tissue. As a rule no tuberculous lesions can be found in other parts of the body, at least during life. The onset is insidious, the early symptoms consisting in disturbances of digestion; later an oval hard tumor appears in the right iliac fossa and there are symptoms of stenosis, such as frequent colicky pains accompanied by borborygmi, sometimes by local distension of the bowel. The treatment is operative and consists in resection of the tumor where this is practicable, with removal of the mesenteric glands, if these are also affected. A complete cure may be expected in a large proportion of cases thus treated.

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Correspondence.

A PLEA FOR THE CHILDREN.

Boston, Feb. 28, 1907.

Mr. Editor: In the last report of the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York there is a significant sentence: "For it almost seems that in the school child lies our chief hope for preventing tuberculosis. We must teach the child what tuberculosis is and how to prevent it and not wait until our task comes to be that of curing this same child grown up to be one more of the city's thousands sick of a preventable disease." This strikes at the heart of a serious question. Why is Boston, who prides herself on her school system, so far behind France and Germany in caring for these children? In Paris, Grancher, at the head of a committee investigating school conditions, found that out of 4,226 boys and girls 15% were tubercular; only three had open tuberculosis, the others being in what is called the pretubercular stage with persistent feeble breathing at one apex accompanied by signs of debility, anemia, glands, slight cough, tendency to catch cold, etc. Whether or not these children are tubercular is open to discussion; exactly what constitutes the pretubercular stage is a matter on which opinions differ, but no one will for a minute deny that it is from among this group of children showing signs of debility that the consumptives of the next generation are to be numbered. France is meeting this problem, of how properly to dispose of these children, in two ways. First, so-called *cantines scolaires,* lunches free or at a nominal cost, are being provided these children at school; and second, by establishing outside of large cities fresh air schools, "*écoles de plein air,*" such children and the children of tuberculous parents can be taken and given their lessons under better hygienic conditions until they are strong enough and old enough to resist infection at home. Paris and Marseilles are leading in this movement. In England, Manchester has adopted this system and the city council has gone on record as saying that a system of compulsory education can only be run at a loss when those for whom it is intended are sent hungry and ill-fed to school. In Germany there are *Wald Schule,* forest schools, open-air academies outside the cities in the parks and forests where weak and sickly boys and girls can grow well and strong, reciting and studying in the open air or in shacks built for the purpose, until the critical period is past and they have entirely regained their health.

In Boston the great difficulty is to get hold of the children. Could we but get these pale and wan little ones in our hands, hospitals, dispensaries, the city itself would be forced to provide some means of caring for them properly. That is a question which at present can be left to take care of itself. The Boston Society for the Relief and Control of Tuberculosis has recently started a movement to have a careful examination made of all the children in all families in which any member has tuberculosis. This is a step in the right direction but, after all, even if carried out to the limit this will reach only a small class of children. The writer feels strongly that it is the physicians who inspect the schools, the nurses who help them and, most important of all, the teachers themselves who must see to it that all the school children are examined and that proper treatment is given to those who need it. How much does school inspection amount to at present? More than it ever has before but certainly little enough at the best. Under the present system as it has been explained to the writer by two of the school doctors only those pupils are examined who have some definite complaint or whose illness is so noticeable that it strikes the teacher's attention at once. Weak eyes, diseased ears, crooked backs are usually looked for and sometimes found; the infinitely more important question of the child's general health and constitutional vigor is neglected. There is no regular inspection of all the children. The writer has under his charge at present at the hospital a child, manifestly tubercular in the closed stage, who had never been examined while still attending school. This child's condition was such that at no time did she have any acute complaint to make, which would call the teacher's attention to the fact that she was sick. She was kept at school until her mother, a Jew woman with keener eyes than the doctor, nurse, or teacher, saw that she was not well and took her to the hospital. This girl, had she been examined in the regular routine at the school, would have been sent to the hospital a long time before she was. Is there any reason to believe that a careful examination of our school children would reveal any better condition of things than that found in the Paris schools? Probably not. Would it not be a matter of great economic saving to select these children now, warn their parents of their danger and train them to habits of fresh air, cleanliness and right living instead of waiting until later when they may become openly consumptive.

If this important duty of selecting what children are to be examined by the doctor is to be left to the teachers, ought not some steps be taken to instruct these teachers what their duties are in this matter and how best to perform them. In Philadelphia this is already being done. Cannot something of this kind or something better be instituted in Boston? In a recent number the *Lancet* said editorially: "Unless medical inspection of schools can include some method of making parents obey some of the simpler rules of hygiene, its benefits great as they are will be but a tithe of what they might be." This is putting it very mildly. It should read, "some method of making parents obey and teachers as well as parents instruct their children in the simple rules of hygiene."

There is a bill before the present legislature to provide thirty school nurses to help the school physicians in their work. This will do a great deal in solving the problem, providing these nurses are properly trained and thoroughly understand that weakness, pallor and debility are not normal in children and that it is more important for children in this condition to learn the value of fresh air and proper food than all the reading, writing and 'rithmetic in the world. The children of to-day are the citizens of to-morrow; the weaklings among these children are the consumptives of the future. Let us look to the future and not go ahead blindly in the present; if we are to have school inspection at all let us have a system that really does inspect.

Truly yours,
John B. Hawes, 2d, M.D.,
Assistant to Physicians to Out-Patients,
Massachusetts General Hospital.

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SLEEPING SICKNESS: AN ERROR.

Boston, March 2, 1907.

Mr. Editor: Permit me respectfully to call attention to an error of situation, on p. 286 of the Journal, under "Miscellany," where you quote from the *British Medical Journal,* which in turn quoted "Semaine Médicale" about the "Sleeping Sickness in *East* Africa." It should have been written *West* (for East). All those spots affected are on the "West Coast of Africa."

Truly yours,
E. D. Spear, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Feb. 23, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York			Quincy	8	2
Chicago	709	199	Waltham	10	1
Philadelphia	—	—	Gloucester	11	1
St. Louis	—	—	Pittsfield	10	2
Baltimore	211	37	Brookline	7	1
Cleveland	—	—	North Adams	13	2
Buffalo	—	—	Chicopee	4	3
Pittsburg	—	—	Northampton	10	—
Cincinnati	—	—	Medford	1	—
Milwaukee	—	—	Beverly	5	3
Washington	—	—	Hyde Park	5	—
Providence	108	—	Newburyport	—	—
Boston	225	53	Leominster	5	2
Worcester	40	10	Melrose	3	0
Fall River	52	13	Woburn	7	1
Cambridge	31	11	Marlborough	4	0
Lowell	42	13	Westfield	5	2
Lynn	16	2	Peabody	—	—
New Bedford	33	9	Revere	3	2
Springfield	24	6	Clinton	5	1
Lawrence	35	13	Attleboro	5	1
Somerville	18	6	Adams	4	1
Holyoke	22	8	Gardner	8	4
Brockton	21	6	Milford	7	—
Malden	9	5	Weymouth	3	0
Salem	17	6	Framingham	—	—
Chelsea	11	0	Watertown	3	0
Haverhill	10	4	Plymouth	—	—
Newton	8	4	Southbridge	5	1
Fitchburg	10	—	Wakefield	—	—
Taunton	14	3	Webster	—	—
Everett	9	4			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED FEB. 27, 1907.

Sprague, E. K., passed assistant surgeon. Granted leave of absence for two days. Feb. 26, 1907.

Boggess, J. S., passed assistant surgeon. Relieved from duty at Stapleton, N. Y., and directed to report to the Chief Medical Officer, Ellis Island, N. Y., for temporary duty, after which to proceed to St. John, New Brunswick, for exclusive duty in connection with the examination of aliens. Feb. 23, 1907.

Creel, R. H., assistant surgeon. Granted leave of absence for one month. Feb. 26, 1907.

Miller, W. W., assistant surgeon. Granted leave of absence for twelve days from February 19, on account of sickness. Feb. 27, 1907.

Bullard, J. T., acting assistant surgeon. Granted leave of absence for thirty days from Feb. 21, 1907. Feb. 20, 1907.

Goldsborough, B. W., acting assistant surgeon. Granted extension of leave of absence for fourteen days from Feb. 18, 1907. Feb. 20, 1907.

McConnell, E. F., acting assistant surgeon. Granted leave of absence for thirty days from Feb. 25, 1907. Feb. 26, 1907.

Morris, G. A., pharmacist. Department letter of January 31, granting Pharmacist Morris leave of absence for fifteen days, amended to read for eleven days only. Feb. 26, 1907.

RESIGNATION.

Mr. A. M. Thomas resigned as pharmacist of the third class, effective Feb. 23, 1907.

REMOVAL.

Pharmacist C. H. Woods removed from the Service, effective Feb. 28, 1907. Feb. 20, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MARCH 2, 1907.

G. P. Lumsden, medical inspector. Ordered to the Naval Recruiting Station, Indianapolis, Ind.

H. C. Curl, surgeon. Detached from special duty in the Bureau of Medicine and Surgery, Navy Department, and ordered home to wait orders.

H. E. Odell, surgeon. Commissioned surgeon from Sept. 6, 1906.

R. H. Michels, passed assistant surgeon. Commissioned passed assistant surgeon from Oct. 8, 1906.

E. S. Bogert, Jr., surgeon. Detached from the "West Virginia" and ordered home.

E. H. Marsteller, surgeon. Detached from the "Franklin" and granted sick leave for three months.

I. S. K. Reeves, passed assistant surgeon. Discharged from treatment at the Naval Medical School Hospital, Washington, D. C., and ordered to the "Franklin."

A. Hammar, pharmacist. Discharged from treatment at the Army General Hospital, Fort Bayard, N. M., and ordered home to wait orders.

ARMY MEDICAL CORPS EXAMINATIONS.

Preliminary examinations for appointment of assistant surgeons in the army will be held on April 29 and July 29, 1907, at points to be hereafter designated.

Permission to appear for examination can be obtained upon application to the Surgeon-General, U. S. Army, Washington, D. C., from whom full information concerning the examinations can be procured. The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to the localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

In order to perfect all necessary arrangements for the examinations of April 29, applications must be complete and in possession of the Surgeon-General on or before April 1. Early attention is therefore enjoined upon all intending applicants.

There are at present twenty-five vacancies in the Medical Corps of the Army.

RESIGNATION.

Dr. E. P. Joslin has resigned as physician to the House of the Good Samaritan.

APPOINTMENT.

Dr. Roger I. Lee has been appointed physician to the House of the Good Samaritan to take the place of Dr. E. P. Joslin, resigned.

BOOKS AND PAMPHLETS RECEIVED.

Prostatectomy in Two Stages: A Conservative Operation with Minimum Hazard. By Charles H. Chetwood, M.D. Reprint.

Fractures of the Spine, with Report of Two Cases Terminating in Recovery. By W. Page McIntosh, M.D. Reprint.

An Experimental Study into the Cause of the Increased Portal Pressure in Portal Cirrhosis. By Frederick C. Herrick. Reprint.

Diseases of the Lungs. Designed to be a Practical Presentation of the Subject for the Use of Students and Practitioners of Medicine. By Robert H. Babcock, A.M., M.D. Illustrated. New York and London: D. Appleton & Co. 1907.

State of Rhode Island and Providence Plantations. Special Bulletin of the State Board of Health. Sanitary Legislation in the United States enacted during the Year 1906. Providence. 1906.

Biographic Clinics, Essays Concerning the Influence of Visual Function, Pathologic and Physiologic, upon the Health of Patients. By George M. Gould. Vols. IV and V. Philadelphia. P. Blakiston's Son & Co. 1906.

Text-Book of Psychiatry. A Psychological Study of Insanity for Practitioners and Students. By Dr. E. Mendel. Authorized Translation edited and enlarged by William C. Krauss, M.D. Philadelphia: F. A. Davis Co. 1907.

A Study of the Human Blood-Vessels in Health and Disease. A Supplement to "The Origin of Disease." By Arthur V. Meigs, M.D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1907.

Annual Report of the Surgeon-General of the Public Health and Marine-Hospital Service of the United States for the Fiscal Year 1906. Washington. 1907.

The Influence of Inebriety in Railroad Accidents. By Henry O. Marcy, A.M., M.D., LL.D. Reprint.

Original Articles.

TUBERCULOUS SCLERITIS, A COMMONLY UNRECOGNIZED FORM OF TUBERCULOSIS.*

BY F. H. VERHOEFF, A.M., M.D.,
Pathologist and Assistant Ophthalmic Surgeon, Massachusetts Charitable Eye and Ear Infirmary.

The etiology of scleritis has always been one of the obscure subjects in ophthalmology. At the present time, perhaps the view in regard to it most generally held is that the disease is dependent upon a rheumatic diathesis. This belief has come about not on account of any positive evidence in support of it, but probably on account of the tendency in the past to assign this cause to any disease of obscure nature. It has been recognized that scleritis in rare instances may be due to syphilis, and that it may occur in tuberculous individuals, where, however, it has not been regarded as in itself a tuberculous process. It has also been recognized that tuberculosis of the sclera may rarely occur, although it has not been thought that the condition was related to scleritis in its typical form. The few anatomical and bacteriological examinations that have been made in cases of scleritis have not seemed, heretofore, to throw any light on the etiology of the disease. Recently, in connection with the use of tuberculin, I have made some observations in a series of cases that have convinced me that scleritis is almost always a tuberculous process, that tuberculous scleritis presents certain distinctive features and that in cases in which the proper treatment can be carried out recovery may be confidently expected.

Although a considerable number of cases have now been reported in which tuberculin has been successfully used in the diagnosis and treatment of other forms of ocular tuberculosis,[1] especially tuberculosis of the iris, cornea, and conjunctiva, its use in cases of scleritis seems to have been almost entirely neglected. In fact, I have been able to find the report of only two cases of scleritis in which both a general and local reaction were obtained. In one of these cases, that of Wagner,[2] the inflammation entirely subsided within six weeks under treatment with tuberculin. The other case was reported by Czermak in the discussion of v. Hippel's paper on the treatment of ocular tuberculosis with tuberculin.[3] In the same discussion Sattler stated that he had treated two cases of episcleritis with tuberculin T.R., presumably with good results. Von Hippel [3] has himself reported two cases of scleritis in which highly satisfactory results followed injections of tuberculin T.R., but he did not state that a tuberculin reaction was obtained in either.

The cases in which my observations were made were only thirteen in number, but their significance is increased by the fact that they were unselected cases of scleritis, and included all those that came under my charge during my services in the out-patient clinics of the Infirmary and Carney Hospital during the past year. In one of the cases the diagnosis was made and treatment with tuberculin carried out by Dr. G. S. Derby,[4] working independently, before the patient came under my care. The cases were all tested with subcutaneous injections of Koch's old tuberculin, and with the exception of two cases were all admitted to the hospital for this purpose. A positive general reaction was obtained in all cases, and a local reaction in the eye in nine cases. Where the reaction was at all doubtful, the injection was always repeated with a larger dose.

The control temperatures, which in every case were taken during the twenty-four hours preceding the tests, were always within normal limits. The method finally adopted was to give an initial dose of 1 mg., then if necessary 1 mg., and finally 10 mg., at intervals of forty-eight hours. The maximum dose of 10 mg. was necessary in only four cases, but in two others it was used to obtain a local reaction. The lowest febrile reaction obtained was 100.3° in three cases. The highest was 105° in one case, the next highest 104° in two cases. In the other cases the reaction varied between 101° and 103°. The shortest time that elapsed before the height of the reaction was reached was nine hours (105°), the longest, forty-eight hours, and the average time twenty-two hours.

As just stated a local reaction was observed in 9 cases. In only one of these was the reaction slight and possibly open to doubt. In this case it followed an injection of 1mg. and was accompanied by a febrile reaction of 100.7°. Forty-eight hours later a second injection of 10 mg. was given which produced marked constitutional symptoms and a temperature of 105°, during the continuance of which the eye not only showed no reaction but became decidedly less inflamed and remained so. The local reaction in the other cases consisted in an increased chemosis and congestion of the affected region, and where keratitis was present, sometimes in an increase in the corneal infiltration. Except in one recent case, the local reaction quickly subsided leaving the eye more or less improved.

All of the patients were females, which is in accordance with the established fact that scleritis is more common in this sex. The youngest was aged eleven years, the oldest, forty-six years, and the average age was twenty-six years. During the time I saw them the scleritis was active in one eye only, but in three cases there were corneal opacities in the other eye, which, judging by their appearance and by the statements of the patients, were due to a previous inflammation of the same nature. With the exception of one case the patients were well nourished and apparently in good health, aside from the ocular trouble. Two of the patients stated that they had formerly suffered from "rheumatism," possibly tuberculous arthritis. A thorough physical examination was made in each case, but evidences of tuberculosis in the lungs or elsewhere were made out in only three cases. One of these was a child eleven years of age, who showed enlarged cervical glands and some signs of pulmonary involvement, but no tubercle bacilli in the sputum.[5] The second case, aged twenty-eight, gave evidences of an old process, probably healed, at the apex of the right lung, while the third case, aged thirty-nine, showed slight signs of incipient tuberculosis at the apices of both lungs. In the latter case there was no definite reaction to tuberculin in the eye, and during the general reaction the patient complained of severe pains in the mediastinum. There was a definite family history of tuberculosis in only two cases. One of these was the child just referred to, whose twin sister and both of whose parents had died of pulmonary tuberculosis. In the other case the father died of Addison's disease at the age of sixty years, while a brother, who had suffered from Pott's disease in early childhood, was attacked by scleritis at the age of fifteen years, which involved first one and then the other eye.

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* Read before the Boston Society of the Medical Sciences, Jan. 15, 1907.

[1] For a review of the literature on the use of tuberculin in the eye, see paper by W. E. Gamble and E. V. L. Brown, Jour. Am. Med. Asso., Oct., 1905.

[2] Wagner: Münch. med. Wochenschr., 1891, No. 15, p. 266, No. 16, p. 286.

[3] v. Hippel: Bericht. d. Versamm. d. Ophthal. Gesell. zu Heidelberg, 1905, p. 136, and Arch. für Ophth., 1904, lix, i, p. 1.

[4] Dr. Derby informs me that more recently he has also obtained a local and general reaction in another case of scleritis.

The cases were all such as are commonly met with, and conformed to the classical description of anterior scleritis. In two of the cases the inflammation was apparently more superficial than in the others and would have come under the arbitrary classification of episcleritis. All of the cases showed more or less definite nodules and thus presented what is sometimes distinguished as the nodular form of scleritis. During the subsidence of the affection, however, after the nodules had disappeared, the diffuse form was often simulated, so that it is probable that there is no real distinction between the two forms. The nodules of scleritis seldom merit the name, since they most often appear simply as elevated areas in the sclera. They usually reach a considerable size and are situated at some distance from the cornea, most often, perhaps, where the anterior perforating vessels enter the globe. In addition to these larger well-known elevations, I have frequently noticed the occurrence of much smaller nodules which are situated beneath the conjunctiva and form the centers of small congested areas. At some period of the disease they were observed in all except three of the cases here reported. They vary from less than one to several millimeters in size. The smaller ones are almost perfectly translucent, the larger are apt to be more or less opaque and yellowish in color. They usually occur in the vicinity of one of the larger elevations, sometimes immediately upon it, but are not necessarily confined to this situation. Sometimes they occur near the limbus, where they may be mistaken for phlyctenules, but I have never seen them exactly on the limbus. Frequently they border on a small blood vessel. When an attempt is made to excise one of them, a small white spot is left behind in the sclera.

No doubt these small nodules have also been noted by others. Vossius[6] almost certainly refers to them, and Fuchs in his textbook probably also refers to them when he speaks of small hard nodules which disappear without disintegrating. So far as I can ascertain, however, attention has not hitherto been called to what I believe is their chief peculiarity, namely, their tendency to appear and disappear within a very short time, within less than a week, for instance. The histological examinations which I made of these nodules, in four cases, showed that the essential lesion was a focal proliferation of epithelioid cells, among which an occasional giant cell occurred, surrounded by an infiltration of lymphoid and plasma cells. (Figs. 1 and 2.) The vessels in the neighborhood showed perivascular infiltration with chronic inflammatory cells and the sub-epithelial tissue showed a similar infiltration in a greater or less degree. Caseation was entirely absent. Numerous sections, specially stained for the purpose, were unsuccessfully examined for tubercle bacilli. This result was not unexpected, since it is notoriously difficult to find the bacilli even in very active lesions. With the exception of the absence of caseation, these nodules thus had the structure of small tubercles. This being the case it was difficult to understand how they could disappear so quickly. An explanation was apparently found in the fact that the sub-epithelial tissue above the focal area was markedly edematous, so that it must have been the localized edema to which the appearance of the nodules as seen by the naked eye was mainly due. The color of the nodules, however, was probably dependent upon the amount of infiltration with lymphoid cells. No doubt, therefore, the sudden appearance or disappearance of these nodules is not due to changes in the size of the areas of epithelioid cells, but to the state of activity of the tubercle bacilli within the latter. When the resistance of the patient is low, the bacilli take on renewed activity and a localized edema results which again subsides when the resistance rises. Six times I have seen this phenomenon occur as a part, apparently, of a tuberculin reaction. On account of the foregoing considerations, therefore, I now regard the occurrence of one of these small nodules in a case of scleritis as alone sufficiently conclusive evidence of the tuberculous nature of the process.

In all except two cases interstitial keratitis was present at the time the patients came under my observation, and in three cases there was a sluggish iritis that had led to posterior synechiæ. The keratitis, at least when in an active stage, seemed always characteristic. It consisted of a deep infiltration of the cornea, usually but not always extending out from the sclera on the affected side, which showed one or more punctate areas of greater density. Sometimes a punctate area was observed first in the clear cornea and was afterwards surrounded by a hazy zone which increased or decreased apparently in accordance with the severity of the process. The variation in the density of the diffuse infiltration was always more apparent than in that of the punctate areas. Although I have had no opportunity to examine one of the focal areas in the cornea microscopically, it seems safe to assume that they correspond in nature to those in the sclera, that is to say, they are small tuberculous foci which become quiescent or active according to the resistance of the patients. Another characteristic feature of the corneal opacities was their slight tendency to become vascularized. New vessels were slow to make their way into the cornea, and the vascularization was always insignificant when compared to the density of the opacity or to the amount of inflammatory reaction. This was in accord with the tuberculous nature of the process since tuberculous lesions in general show a comparatively slight tendency toward vascularization. The new vessels, however, were apt to be large, although few in number. The scleritis often cleared up more rapidly than the keratitis, or at least appeared to do so, so that the eye sometimes showed simply a marked corneal infiltration with a slight circumcorneal injection. Such a condition, seen for the first time, might easily be mistaken for primary keratitis. In none of my cases has the corneal opacity entirely disappeared, but the extent to which it has cleared in some of them is remarkable and in all it has decreased in density. A considerable residual opacity, however, is of course to be expected in all the cases of long standing.

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[5] I am indebted to Dr. F. T. Lord for the clinical notes on this case. The patient was referred by him from the Channing Home to the Infirmary, on account of a local reaction in the eye following an injection of tuberculin. In most of the other cases the general physical examination was made in the Out-Patient Department of the Massachusetts General Hospital. Two cases were kindly examined for me by Dr. J H. Pratt, and three cases by Dr. W. Tileston.

[6] Vossius: Ophth. klin., iv, 1900.

In the treatment of these cases one of the chief difficulties encountered was the lack of adequate facilities in either hospital for giving the patients a sufficient supply of fresh air. Only one case showed continuous improvement while in the hospital wards. This was an advanced case treated with ascending doses of old tuberculin, in which the inflammation entirely subsided within two months. The other ward cases did so poorly as regards both their general and ocular condition that they were soon discharged to be treated as out-patients. Three cases were unable to carry out the treatment advised and were lost sight of. One patient in whose case, however, the scleritis was not in a very active stage when first seen, recovered in three months after carrying out in a very imperfect manner the fresh air treatment at her home. In four cases, owing to the more favorable conditions under which the patients lived it was possible to adopt more desirable measures. The patients were directed to give up work, including household duties of any kind, and for the first two or three weeks to rest and take as much nourishment as possible. At night they slept in rooms with the windows open and during the day reclined in couches or hammocks in the open air, taking care to be well protected from exposure to cold. Later, when the ocular condition improved, a certain amount of exercise was permitted. Each patient kept a record of her temperature and weight and any other details of importance. Twice weekly the patients visited the clinic where they received injections of Koch's old tuberculin. Each at first received a dose considerably below that to which she had reacted, and this was slowly increased so long as the eye did not react or the injection was not followed by a rise in temperature. The highest dose reached was 10mg. in one case. Under this treatment all four of the patients steadily gained in body weight and the ocular inflammation in each case entirely subsided within six weeks to two months.[7] The remaining four cases have not yet been under treatment sufficiently long for the beneficial effects to have become clearly manifest.

At least three of the patients several times showed exacerbations during the menstrual periods, which is usual, I believe, also, in other forms of tuberculosis. This no doubt explains why scleritis is sometimes attributed to menstrual disturbances. Possibly it explains also why scleritis is more common among females, since the lowering of the resistance during menstruation no doubt increases the likelihood of metastases. No local treatment was employed in any of the cases other than the use of atropine as a collyrium to prevent iritic adhesions and to make the eye more comfortable.

As already stated, signs of systemic tuberculosis were made out in only three of the cases. Nevertheless, it seems improbable that scleritis was not always secondary to a larger focus elsewhere in the body, for instance, in the bronchial lymph glands or bones. Otherwise it is difficult to explain the extreme chronicity of the process and the slight tendency toward breaking down of the tissues. This is readily explained on the assumption of the existence of a lesion or lesions elsewhere, which, in calling forth protective elements into the blood, inhibits the activity of the local process. This, of course, should not be taken to mean that a systemic infection always suffices to protect the eye, because there are cases of ocular tuberculosis, rare, it is true, such as tuberculous iritis, which usually go on to complete destruction of the eye. Additional, although perhaps not conclusive, evidence that the scleritis was not the sole focus in these cases, is also furnished, by the results of the tuberculin injections, for the general reaction following them always seemed out of proportion to the local reaction, and in four cases no local reaction could be detected. Especially suggestive was the case in which with a febrile reaction of 105° there was no local reaction, although previously the latter had been obtained with a smaller dose. It is noteworthy, too, that the general physical examination in this case was entirely negative.

It is possible, if not highly probable, that these belong to the class of cases in which healed tuberculous lesions are found at autopsy without having been suspected during life. Certainly, the well-known frequency of such cases could easily account for the total number of scleritis cases. On the other hand, it is evident that an inflammatory lesion of no greater intensity, even though more extensive than that which in the form of scleritis would produce irreparable damage to sight, might perfectly well occur in the internal organs without giving rise to any definite symptoms.

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[7] One of the patients discontinued the treatment against advice and one month later had a recurrence of the inflammation.

The explanation of the origin and character of the lesions of scleritis just suggested is also supported by the recent experimental work of Stock [8] on endogenous tuberculosis of the eyes. By injecting tubercle bacilli into the ear veins of rabbits, Stock invariably obtained small foci in the choroid, iris, or ciliary body. Instead of increasing rapidly in size and finally destroying the eye, as happens when bacilli are introduced directly into the anterior chamber, it was found that these lesions as a rule underwent spontaneous healing. Moreover, it was found on histological examination that at first the foci consisted only of round cells; that later central areas of epithelioid cells appeared within them and that, except in one instance, caseation never occurred. In sections of these lesions Stock was unable to demonstrate tubercle bacilli, although he did not doubt their presence. It will be seen, therefore, these foci were identical in structure with the small nodules of scleritis examined by me. They also corresponded in general character to the lesions that have previously been described in enucleated eyes affected with scleritis, notably those described by Uthof [9] and Schirmer.[10]

Stock attributed the mild character of the lesions obtained by him largely to the fact that the bacilli were confined to the blood vessels and thus exerted less toxic action on the tissues. It seems to me, however, that this explanation is untenable for the reason that in general miliary tuberculosis the lesions, which are also due to blood metastases, are not as a rule of this character. A more probable explanation, I think, is that just given to explain the lesions in scleritis, namely, that the bacilli in the lesions are rendered relatively inactive owing to the resistance developed in the individual. In the case of intravenous inoculations this resistance would be developed early due to the great multiplicity of the lesions throughout the body, so that a large proportion of the latter would be checked in their incipiency. It is true that Stock found in the internal organs of all his animals, tubercles showing typical caseation, but he does not state that the organs were examined microscopically, or whether or not lesions similar to those in the eyes were also found. It is fair to assume, therefore, that the latter were present in the internal organs, and perhaps in as great relative number as in the eyes.

From still another standpoint the observations of Stock are suggestive in relation to the origin of scleritis. Stock found that the foci in the anterior part of the uveal tract were much more likely to persist than those occurring posteriorly. More important still, he found that a comparatively large focus could exist in the ciliary body without giving rise to any of the clinical signs considered characteristic of cyclitis. Although a few observers have held a contrary opinion, it has hitherto generally been supposed that when cyclitis and iritis occur with scleritis, as not infrequently happens, it is due to the inflammatory process having spread from the sclera to the ciliary body. The findings of Stock, however, strongly suggest that the reverse is the case, and that scleritis always starts from a focus in the uveal tract, although the uveitis may not manifest itself clinically until the process has become well advanced. In a more recent communication [11] based upon some additional experiments, Stock has himself brought forward this view as to the origin of scleritis. In these later experiments he found in some cases that the sclera became involved in such a way as to produce a condition not unlike that seen in the scleritis of man. Should this view prove correct, it would explain satisfactorily why the nodules of scleritis are most apt to occur in the neighborhood of the anterior perforating vessels, since the latter offer convenient paths for the spread of the process. It would also explain the occurrence of certain cases of interstitial keratitis in which scleritis is apparently absent, for it is conceivable that bacilli might be carried into the cornea from a focus in the ciliary body without lodging also in the sclera. Possibly it would explain also certain cases of so-called serous iritis.

As already stated, Stock was unable to find tubercle bacilli in the sections of the ocular lesions of his animals. In the more recent communication just referred to, however, he describes an experiment which seems beyond question to demonstrate their presence. From the iris of an animal in which the lesions were apparently completely healed, he removed a piece of tissue and introduced it into the anterior chamber of a healthy rabbit. In the latter it gave rise to the typical caseating form of tuberculosis. This experiment illustrates also the fact that tubercle bacilli may remain dormant in lesions which are apparently healed.

If the above conception of the cases under consideration is correct, scleritis may be regarded as a favorable sign so far as prognosis in regard to the systemic tuberculosis is concerned. Moreover, it may be regarded as a disease amenable to treatment, a conclusion that is borne out by the actual results obtained in my cases. While it is probable that the rigorous treatment required in advanced general tuberculosis is not, as a rule, absolutely necessary in cases of tuberculous scleritis, it is obviously the most desirable treatment. It would seem also that there is no class of cases in which the use of tuberculin is more strongly indicated, for it is evident that the resistance of these patients towards the disease must be exceedingly great, and that the added stimulus supplied by tuberculin might be all that would be required to render this resistance completely effective. While a noticeable improvement almost always followed a local reaction to tuberculin in my cases, it would probably be unsafe to produce such a reaction repeatedly, owing to the possible danger of creating new foci not only in the sclera and cornea but in the internal organs as well. I have therefore endeavored always to regulate the doses used in treatment so as to avoid not only a rise in temperature, but also the slightest reaction in the eye. It would seem that the eye itself should be the best possible indicator of the resistance of the patient, superior even to the opsonic index of Wright, since it presents a focus in plain view in which slight variations in the intensity of the process are readily apparent.

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[8] Klin. Monatsb. für Augenheilk, Beilageheft, p. 17, 1903.

[9] Arch. für Ophth., xlix, 3, 1900.

[10] *Ibid.*, xli, 4, 1895.

[11] Stock: Bericht d. Versamm, d. Ophth. Gesell. zu Heidelberg, 1905, p. 297.

As is well-known, one of the chief characteristics of scleritis is its tendency to recur after the inflammation has apparently completely subsided. This is probably analogous to the flaring up of an old tuberculous focus in the lungs, and, as in the latter case, is probably not due to fresh metastases, but to renewed activity of tubercle bacilli which have remained dormant. For this reason it is evident that treatment should not be altogether abandoned even after all signs of scleritis have disappeared.

Thus far I have been so well satisfied with the results obtained with the old tuberculin that I have not considered it advisable to use the new tuberculin (tubercle bacillus emulsion). I have felt some hesitancy in using the latter also on account of the supposed danger of introducing live virulent bacilli into the patients. The difficulty of obtaining a uniform dosage is another objection to its use. However, I should not hesitate to try it in a case that was not responding well to the old tuberculin.

In conclusion, I wish to express my obligations to Drs. H. H. Haskell, A. Quackenboss, Myles Standish, H. B. Chandler and F. M. Spalding, for turning over to me some of the cases in which these observations were made.

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STUDIES IN PSYCHOPATHOLOGY.

BY BORIS SIDIS, PH.D., BROOKLINE, MASS.,

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I. RECURRENT PSYCHOMOTOR STATES.

Under recurrent psychomotor states I include insistent ideas, imperative concepts, persistent or periodically appearing emotional states, irresistible impulses, as well as the psychomotor attacks of an apparently epileptic character which may be designated as " psychic epilepsy." All those various states are found in many a symptom-complex of the insanities, but they are still more often met with in the functional mental and nervous diseases, — in functional psychosis. In fact, in many forms of hysteria, in many types of neurasthenia, or of the more fashionable " psychasthenia," recurrent psychomotor states constitute the main and often the only symptoms of the malady.

The recurrent psychomotor states, with their great wealth of symptoms, appear almost mysterious in their onset and origin; they flash lightning-like on the patient's mind, get possession of it, then disappear, only to reappear on some other favorable occasion. Others persist in consciousness, with but slight remissions, and keep the patient in a continuous agony. The patients are aware of the absurdity of the ideas and impulses, but they are powerless to resist them. They regard such onsets somewhat in the same way as the epileptics regard their attacks, which set on against will and consciousness, and which are not subject to control. I do not mean by it to indicate that all those psychic attacks are of an epileptic origin, but I only wish to point out the fact that there is some analogy between recurrent psychomotor states and epilepsy, inasmuch as both of them come on as sudden, uncontrollable attacks.

It is true that in some cases we can drive the analogy more closely, because in some of the forms of recurrent psychomotor states we observe somewhat similar symptoms. We find the presence of a distinct aura, sensory in character, a sense of oppression, and sometimes a profound disturbance of consciousness during the attack, the patient occasionally being insensible to external stimuli. In some cases we even find a dazed state of consciousness, headache, and a condition of extreme fatigue after the attack is over. This resemblance, however, is but a superficial one. Recurrent psychomotor states differ widely from epilepsy. I have pointed this out in my previous works[1] and shall show it in this paper by an analysis of cases selected from a number of others of the same type. Many writers are deceived by this superficial resemblance and regard such attacks as " larval epilepsy," " as psychic equivalent of epilepsy." Such a view is entirely unjustified by a close scientific analysis of the facts. The most that can be done is to draw an analogy between the attacks of insistent states and the attacks of epilepsy, but we must bear in mind that analogy is not a safe method, as one may find himself reasoning on the same lines with the Esquimaux, who regards glass as a kind of ice.

Now it can be shown by rigid analysis of the cases of recurrent psychomotor states that they have nothing to do with epilepsy, although they may be associated with it, and that a study of the cases of recurrent psychomotor states reveals the fact of the presence of subconscious activities which become manifested as insistent ideas, uncontrollable emotions, irresistible impulses and various psychomotor states closely simulating epileptic attacks. It is from this standpoint that we may designate such simulating attacks as psychic epilepsy, not because they are psychic attacks, " equivalents " of real epilepsy, but they are pseudo-epileptic attacks of a purely psychic

[1] Psychopathological Researches; Multiple Personality.

origin, — they are manifestations *of subconscious activities.*[2]

One general characteristic of those psychomotor states is the fact of their recurrence with the same content of consciousness and with the same invariable motor reactions. The patient thinks, feels, wills and acts the same way. Subconscious dissociated states belong to the type of recurrent moment consciousness, a type characteristic of the lower forms of animal life, which respond to external environment with the same adjustments, with the same psychomotor reactions. From this standpoint, we may regard the recurrent psychomotor states as a reversion to the lower forms of consciousness. The suddenness of the attack, the uniformity of the manifestations of the symptom-complex, the uncontrollable, overpowering effect on the patient's personal consciousness are all due to the same underlying factor of dissociation of the patient's subconsciousness. A disaggregated, subconscious life gives rise to recurrent psychomotor states, — to insistent ideas, imperative concepts, uncontrollable emotions, irresistible impulses, and to states of "psychic" epilepsy.

There are many cases of insistent ideas and irresistible impulses which seem to contradict this law of uniformity and recurrence of psychomotor states which are seemingly of an evanescent character, — they are like stray comets coming out of the depths of space only to disappear again and never to recur. A close investigation will reveal the fact that the contradiction is but an apparent one. The various insistent ideas and impulses can in reality be referred to some few fundamental states persistently present in the subconscious and only appearing under different forms in the personal consciousness; they are like so many leaves and fruits of a single plant whose stem and roots are planted firmly in the subsoil of mental life. We may then say that all insistent mental states take their origin in a disaggregated subconsciousness and are periodic or recurrent in character, and as such may well be designated as *recurrent psychomotor states.*

II. CLASSIFICATION OF RECURRENT MENTAL STATES.

We may possibly get better oriented in the vast domain of insistent mental states, if we make some provisional classification, however rough and unsatisfactory it may otherwise be. Now we may classify insistent mental states according to content and form. Classified according to content, we may divide insistent mental states into (1) conceptual or ideational, (2) ideo-motor, (3) sensory, (4) sensory motor, (5) motor. According to form, they may be classified as, (1) desultory and (2) systematized.

In the conceptual forms it is the general abstract idea that keeps on troubling the patient, such as the nature of God, the nature of Christ, or the nature of the Trinity and so on. The insistent ideas are here more or less of a metaphysical character. The patient does not feel satisfied with any answer. In many different ways the patient tries to raise difficulties to all kinds of possible answers. He tries to find loop-holes to escape from any solution, so as to have the question remain in full force. Were it not for the intense anxiety which is sometimes associated with such states, one would say that the patient delights in the mere process of questioning. He wants the problem, but refuses obstinately to accept the solution. In reality, however, it is not a matter of delight to the patient to persist in a state of problematic consciousness, so to say. Logical as the solution may appear to the patient, the problem is ever forced on the patient's personal consciousness, for it is the work of dissociated states having their origin in a disaggregated subconsciousness.

The insistent ideo-motor states refer to some act or motor activity which the patient has to reason out so as to know all the *pros* and *cons*, such as, for instance, whether it is right to play cards, or to read a Sunday newspaper, or to visit theatre, or to travel on a Sabbath day. The patient gets lost in argumentations and discussions. He employs the most subtle casuistry, but he always meets with difficulties, never coming to any definite conclusions. Like the conceptualist, his mind is set entirely on the thought of the action which is never to become a reality. The patient's will is thus paralyzed and he is in a state of doubt, indecision and hesitancy. The patient cannot accept any decision, however logical, as the same problem ever surges up in his mind with renewed vigor. What avails the patient's reason against the blind dissociated forces, surging up from the depths of a disaggregated subconsciousness?

The insistent sensory states comprise a wide domain of manifestations. All the insistent emotional states could be classed as sensory, since an emotion may be regarded as a massive complex of sensory elements coming from various parts of the organism. Under this head we may include the functional states of depression and anxiety as well as the various phobias. Here also belong the various pains, headaches, hemicranias or migraines, when forming the main or central symptom of functional psychosis. The sensory symptoms of the hysterias, such as the anesthesias and hyperesthesias, belong to the same category. All those states present the typical characteristics of the recurrent moment-consciousness. All of them can be referred to the dissociated experiences persisting in a disaggregated subconsciousness. What is manifested as the attack with the whole symptom-complex characteristic of it can be traced by a rigid analysis to an original experience which has occurred during the process of dissociation. The dissociated subconscious experience keeps on recurring as an attack. What goes under the name of hysterical stigmata can in reality be traced to dissociated subconscious experiences.

During the attack the patient may preserve his personal consciousness fully or but partially. In such a case it appears as if two centers of conciousness are at work, one beside the other and one independent of the other. The patient may be aware of the new independent forces which are foreign to him, but which have apparently taken possession of him in spite of himself. The self seems to be torn in two, and consciousness is doubled. A new incipient parasitic personality is being formed in the recesses of the subconscious, a parasitic personality having a will of its own and no longer subject to the patient's personal control. In other cases, again, the dissociated systems forming the parasitic personality may become fully manifested without the patient being aware of it. We have, then, two personalities in one organism working side by side, each apparently ignoring or not taking cognizance of the existence of the other. In other cases, again, the subconscious personality seems to take full possession of the principal focus of consciousness, the parasitic personality swamps the personal consciousness which sinks below the level of the active mental life and becomes submerged and no longer enters into active relations with the external environment. During such an attack the character of the person is changed and the memory is not bridged over as it is in the course of the normal associative activity, the functional recognitive elements are missing, consciousness may know of those experiences, but does not know them as its own.

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[2] By the subconscious is meant all mental or psychophysiological processes of which the individual is not directly conscious.

It is enough to outline here in a general way the possible lines of mental dissociation, as the discussion may carry one far into the domain of psychopathology. What we want to bring out is the fact that the phenomena of recurrent or insistent mental states range here through various stages of dissociation and that they can all by analysis be referred to a condition of a disaggregated subconsciousness.

The sensory motor and purely motor are closely interrelated; sometimes the sensory and sometimes the motor symptoms predominating in the total symptom-complex, when examined from a clinical standpoint. Here belong the various functional or hysterical visceral disturbances, hemiplegias, paraplegias, paralyses and contractures, also the functional tremors of psychic origin, all the states of "epilepsy" of the psychic type known under the name of "psychic epilepsy" which so closely simulate typical epileptic attacks. Finally, to the same category belong the various types of tics.

The dissociated subconscious states may appear in consciousness in a disconnected, disseminated form, — they may appear as broken-up sentences, phrases and sounds, or of images having no relation with one another; they may come and go in great confusion, often producing a chaotic condition in the patient's mind. The ideas keep on chasing one another, turning in circles without any rhyme and reason until the patient feels tired, exhausted and dazed by the kaleidoscopic whirl of the storm of ideas. Such insistent states may be designated as desultory.

Quite often, however, the recurrent states are paranoidal in form. The ideas and feelings are well organized. The patient can give a clear interconnected account of his insistent states. In fact, the insistent states stand out in the patient's mind so clear and definite that the patient can give a detailed analysis of all the minutiæ of the condition. It seems as if his gaze is almost microscopically distinct, the least relation and outline are noticed. The insistent mental state seems as if fixed, so that the mental picture is strongly impressed on the patient's consciousness and the vaguest detail cannot escape scrutiny. A wealth of associations are grouped around the central experience of the recurrent mental states, which form nuclei of highly organized groups of mental systems, arranged in an orderly array and logical relationship, forming an organic whole of a high degree of organization, the nature of which cannot be understood without a thorough exploration of the subconscious. Such recurrent mental states may be described as systematized.

All those various manifestations can by close investigation into the patient's subconscious life be traced to active dissociated systems, having their origin in a disaggregated subconsciousness.

Of course, the reader must be warned not to regard my classification of the recurrent mental states as final. I made this classification to bring some order into that vast domain of mental life, so that we could make a brief review of the phenomena we deal with. The classification is simply a rough outline of the various phenomena that may have their origin in dissociated states of a disorganized, disaggregated subconsciousness. I should expect that the critical eye will detect in it a number of gaps, but the classification is offered as a provisional one which may possibly serve for practical purposes.

III. MAIN TRAITS OF DISSOCIATED STATES.

One point is worth while to bring out, and that is the fact of recurrence, so highly characteristic of the activity of dissociated subconscious states or moments-consciousness. The dissociated moment rises from the depths of the subconscious regions, oversteps the threshold of consciousness, manifests itself with an irresistible energy, throws the normal psychomotor reactions, for the time being, into a state of disorganization and then lapses from consciousness, only to be resurrected under conditions favorable to its activity. Such dissociated subconscious activities I describe under the term of recurrent moment consciousness. This characteristic of recurrence is of great importance in psychopathology, as it brings the subconscious activities under one perspective view, gives an insight into their nature and mode of manifestation; and from a biological standpoint brings them in line with the mode of action of the lower mental states, which respond to various stimuli of the external environment with the same amount and quality of sensori-motor reactions.[3]

[3] The objection made by Dr. J. J. Putnam that consciousness keeps on changing continuously, not being the same at two successive moments, "that the past phases of our conscious life no longer have any real existence, and that of a series of memory pictures of the same event no two are really ever alike" is purely metaphysical; the same objection may be made to the whole domain

The sense of reality is usually described, by writers on the subject, as not being affected. This is not the case. A close study of the facts shows that the insistent mental states come with an intensity of the sense of their reality almost directly proportional to the insistence of the mental state which is truly delusional, or even hallucinatory, in character. This is especially true of the systematized recurrent states of the sensory type. The dissociated subconscious states refer to a *past reality, now subconsciously real.* In the ideational or conceptual forms the sense of reality appears to be weakened, because of the insistence of the ideational elements as contrasted with the sensori-motor elements.

Another important and striking trait of the dissociated states is the violence, I would almost say vehemence, with which they become manifested; they reveal an amount of energy which similar states do not possess in the normal condition, when the personal consciousness is in active relation with the external environment. The energy displayed is more than the individual is capable of putting forth under ordinary conditions of life. The sudden mysterious onset of subconscious states, foreign to the whole character of the individual, as well as the sudden display of energies until now unsuspected in the person, make those states appear as mystical in the eyes of the populace and the superstitious. No wonder that the church has regarded subconscious activities as supernormal and miraculous and either ascribed them to divine powers or to satanic agencies and demoniacal possessions and obsessions. In our own time we have men devoting time and energy to the investigation of the supernormal nature of subconscious phenomena.

In my previous works on the subject I have discussed the energy and violence of the eruption of subconscious forces as due to lack of inhibitions. This follows from the very nature of dissociation. Dissociated subconscious systems being released from all relations with other systems and groups of mental elements, being let loose, so to say, from all associative bonds, will naturally display an amount of energy unusual for similar systems under the normal conditions of mental association. Still the phenomena of dissociation point to facts of a very important character. They point to an extremely important principle which I term "the principle of potential subconscious energy," a principle which is of importance from a theoretical as well as from a practical therapeutic standpoint. I shall try to give a brief account of this principle of potential subconscious energy further on in this paper. Meanwhile, we should keep in mind two main characteristic traits of subconscious phenomena as manifested by dissociated states,— *recurrence and latent energy.*

It may also be well to bring out another point of interest which holds true of the various types of insistent mental states, — they cannot be understood in the light of conditions under which they occur, or truer to say recur, since they bear no relation to their immediate environment, but to that under which the states have originally taken place. Unlike the mental states of the personal consciousness which are characterized by direct adjustments to the PRESENT conditions, the insistent subconscious states are adjustments to PAST conditions. May we not describe insistent or recurrent mental states as *resurrected moments?*

IV. HYPNOIDIZATION AND HYPNOIDAL STATES.

In order to get at the dissociated subconscious states I have for many years employed a method which gives uniformly excellent results. I wish to attract the attention of the medical profession to this method of hypnoidization, as it is not only of theoretical importance for the purposes of psychopathological analysis, but it is possibly of still greater value for practical therapeutic purposes. This is all the more requisite, as recently some medical men have confused the method of hypnoidization with that of Breuer and Freud on the one hand and with Janet's method of distraction on the other. The three methods are radically different and are based on widely different principles. The nature of the states obtained by the method of hypnoidization, as well as the character of the results, differ fundamentally from those of the other two methods. I shall return to this point further on in the study.

An investigation of the nature of suggestibility carried out by me in a former work led me to formulate the following laws and conditions of normal as well as abnormal suggestibility. I do not think I shall be accused of plagiarism, if I take the liberty of quoting the table of normal and abnormal suggestibility from my "Psychology of Suggestion":

Normal Suggestibility.	Abnormal Suggestibility.
1. Fixation of attention.	1. Fixation of attention.
2. Distraction.	2. ————————
3. Monotony.	3. Monotony.
4. Limitation of voluntary movements.	4. Limitation of voluntary movements.
5. Limitation of the field of consciousness.	5. Limitation of the field of consciousness.
6. Inhibition.	6. Inhibition.
7. Immediate execution of the suggestion.	7. ————————

It will be out of place in this study to give an account, however brief, of the experiments and discussion of the results arrived at; I can refer those who are interested in the subject to the original work; for our present purpose it is enough to give here the principal laws formulated and the main results arrived at which will help to

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of science. It is based on the ambiguity of the concept "sameness," which may be taken either in the relative scientific sense or in the absolute metaphysical sense. Now from an absolute metaphysical standpoint nothing is the same, every thing keeps on changing in the very moment of its coming into being, as Heraclitus puts it, "we do not descend twice into the same stream"; or as Hegel puts it: "Das Jetzt wie es uns gezeigt wird ist ein Gewesenes. Aber was gewesen ist, ist in der That kein Wesen; es ist nicht"; but this is metaphysical. From the standpoint of science which deals with facts and their relations, with the relative, objects, states and conditions, physical and mental, can certainly be the "same." In fact, science would have been impossible if objects, states and conditions were to change "in their moment of becoming," and that without the possibility of making them recur, or of reproducing them under the *same* conditions and with the *same* results. Metaphysics should better be kept apart from science; in our scientific work we should steer clear of all metaphysics. Of course, it goes without saying, that by metaphysics is here meant the theory of being and of the ultimate concepts of science, but not that stupid vulgar stuff and silly curative religious hodge-podge of superstition claimed as "metaphysics" by the mental healer and Christian Scientist.

comprehend clearly the full significance of the method of hypnoidization.

Now in the same work I come to the conclusion as the result of the investigation that " the nature of abnormal suggestibility is a disaggregation of consciousness, a slit, a scar, produced in the mind that may extend wider and deeper, ending at last in a total disjunction of the waking, guiding, controlling consciousness from the reflex consciousness. . . . Normal suggestibility is of like nature, — it is a cleft in the mind, only here the cleft is not so deep, not so lasting, as it is in hypnosis or in the state of abnormal suggestibility; the split is here but momentary, evanescent, fleeting, disappearing at the very moment of its appearance."

We have also shown that the laws of normal and abnormal suggestibility may be stated as follows:

" Normal suggestibility varies as indirect suggestion and inversely as direct suggestion.

" Abnormal suggestibility varies as direct suggestion and inversely as indirect suggestion."

The general law of suggestibility is:

" Suggestibility varies as the amount of disaggregation, and inversely as the unification of consciousness."

Now it is on those general laws and nature of relation of the personal consciousness to the subconscious that I have based my method of hypnoidization. In order to reach the dissociated mental states we have to lay bare the subconscious, and this can be effected by the conditions requisite for the induction of normal or abnormal suggestibility, conditions which bring about a disaggregation of consciousness. In cases, therefore, where hypnosis is not practicable and the subconscious has to be reached, we can effect a disaggregation of consciousness and thus produce an allied subconscious state by putting the patient under the conditions of normal suggestibility: fixation of attention, distraction, monotony, limitation of the voluntary movements, limitation of the field of vision, inhibition and immediate execution. This is precisely what the method of hypnoidization consists in: " The patient is asked to close his eyes and keep as quiet as possible, without, however, making any special effort to put himself in such a state. He is then asked to attend to some stimulus such as reading or singing (or to the monotonous beats of a metronome). When the reading is over, the patient, with his eyes shut, is asked to repeat it and tell what comes into his mind during the reading, or during the repetition, or immediately after it. Sometimes the patient is simply asked to tell the nature of ideas and images that have entered his mind." This should be carried out in a very quiet place, and the room, if possible, should be darkened so as not to disturb the patient and bring him out of the state in which he has been put.

As modifications of the same method, the patient is asked to fixate his attention on some object while at the same time listening to the beats of a metronome; the patient's eyes are then closed; he is to keep very quiet, while the metronome or some other monotonous stimulus is kept on going. After some time, when his respirations and pulse are found somewhat lowered, and he declares that he thinks of nothing in particular, he is asked to concentrate his attention on a subject closely relating to the symptoms of the malady or to the submerged subconscious states.

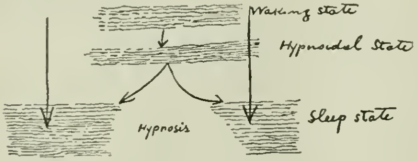
The patient again may be asked to keep very quiet, to move or change position as little as possible, and is then required to look steadily into a glass of water on a white background, with a light shining through the contents of the glass; a mechanism producing monotonous sounds is set going, and after a time, when the patient is observed to have become unusually quiet, he is asked to tell what he thinks in regard to a subject relating to his symptoms. He may be asked to write the stray ideas down, if speaking aloud disturbs the induced states favorable to the emergence of the dissociated mental states.

In some cases it is sufficient to put the patient in a very quiet condition; have his eyes shut and command him to think hard of the particular dissociated states. This mostly succeeds in the case of patients who are also somnambulists.

In short, the method of hypnoidization is not necessarily fixed, it admits of many modifications; it is highly pliable and can be adjusted to the type of case as well as adapted to the idiosyncrasies of the patient's individuality. This method of hypnoidization has nothing in common with Freud's method, nor with Janet's method of distraction. Freud's method is based on the course of normal associative activity, while the method of hypnoidization is based essentially on the process of dissociation by inducing a slight state of disaggregation of consciousness. From Janet's method of distraction, that of hypnoidization differs fundamentally in that it is not at all based on distraction, but on the conditions of *monotony*, and sensori-motor limitations. In contrast to Janet's method of distraction, hypnoidization may be characterized as the *method of monotony*.

V. HYPNOIDAL STATES.

What do we produce by the method of hypnoidization? We produce a peculiar state which, for the lack of a better term, I designate as " hypnoidal." What is the hypnoidal state? The hypnoidal state is essentially a borderland state. The subject is apparently awake and seems to be in full possession of all his powers, and still he is more closely in touch with the dissociated experiences than he is otherwise in the full waking state. Perhaps the *subwaking* state would possibly be an apt term for the hypnoidal condition. The subject seems to hover between the conscious and the subconscious, somewhat in the same way as in the half-drowsy condition we hover between wakefulness and sleep. The hypnoidal state is not a stable condition, it keeps on fluctuating from moment to moment; now falling more deeply into a subconscious condition in which outlived experiences are easily aroused, or again rising to the level of waking states. In such conditions the patient often tells you " something has come . . . , but it is gone." The hypnoidal state has changed, it has become lighter, and the dissociated moments have become again submerged. There is a constant struggle going on in the hunting out of the stray dissociated systems. The state brought about by hypnoidization is essentially a transient, evanescent, mental disaggregation of the personal consciousness from the reflex subconsciousness. The hypnoidal state borders closely on light hypnosis; and still it is not exactly a hypnotic state and may be regarded as an intermediate state. In a series of experiments on the nature of sleep of lower animals as well as of infants and adults, now being carried on by me at the physiological laboratory of Harvard Medical School and in my own laboratory, the facts tend to indicate that the hypnoidal state is intermediary between hypnosis and sleep on the one hand and the waking state on the other. The relation may be represented by the following diagram:



The hypnoidal state may either lead to sleep or to hypnosis.

The close relationship of the hypnoidal state and of hypnosis is sometimes forcibly brought to the attention of the experimenter. Some patients while in the hypnoidal state are observed to become unusually quiet, less talkative, become relaxed, and after a time a distinctly cataleptic condition of the extremities may be observed. The patient has apparently passed into hypnosis. In most of the cases the hypnosis is of very brief duration, while in a few cases the hypnosis may become lasting and deep. On the other hand, in many cases the subject falls into a sleeping state without as much as touching on hypnosis. The hypnoidal state is an intermediary state, intermediate between the waking state, and sleep hypnosis. Subwaking may possibly be an appropriate descriptive term of the character of the hypnoidal state. The subwaking hypnoidal state, like sleep and hypnosis, may be of various depth and duration; it may range from the fully waking consciousness and again may closely approach and even merge into sleep or hypnosis. The same patient may at various times reach different levels, and hence subconscious experiences which are inaccessible at one time may become revealed at some subsequent time, when the patient happens to go into a deeper level of the hypnoidal state.

On account of the instability of the hypnoidal state and because of the continuous fluctuation and variation of the depth of its level, the subconscious dissociated experiences come up in bits and scraps and often may lack the sense of familiarity and recognition. The patient often loses the train of subconscious associations; there is a constant struggle to maintain this highly unstable hypnoidal state, and one has again and again to return to the same subconscious train started into activity for a brief interval of time. One must pick his way among streams of disturbing associations before the dissociated subconscious experiences can be synthetized into a whole, reproducing representatively the original experience that has given rise to the whole train of symptoms. The hypnoidal state may sometimes reproduce the original experience which, at first struggling up in a broken, distorted form and finally becoming synthetized, gives rise to a full attack. The symptoms of the malady turn out to be portions, bits and chips of past experiences which have become dissociated, subconscious, giving rise to a disaggregated subconsciousness. The method of hypnoidization and the hypnoidal states induced by it enable us to trace the history and etiology of the symptoms and also to effect a synthesis and a cure by means of methods which will be described further on.

From the cursory discussion of the insistent psychomotor states, of the method of hypnoidization and hypnoidal states we can turn now to the cases.

(To be continued.)

THE RELATIVE VALUE OF MASSAGE, EXERCISES AND BATHS IN THE TREATMENT OF HEART AFFECTIONS.

BY DOUGLAS GRAHAM, M.D., BOSTON.

HARVEY, in 1650, narrated the case of "a man who in consequence of an injury or an affront which he could not revenge was so overcome with hatred, spite and passion that he fell into a strange disorder, suffering from extreme compressions and pain in the heart and breast from which he only received some little relief at last when the whole of his chest was pummelled by a strong man as the baker kneads dough."

Physical or external therapeutics, in contradistinction to medical or internal remedies, have come much into favor in the treatment of disease of the heart in the past few years. These are massage, resistive movements, saline baths, and mountain-climbing. Of these, massage is the most generally applicable. It can be used in cases so weak as to preclude the possibility of applying any of the others. In almost every conceivable form of weak and diseased heart I have been called upon to do massage, and usually with marked relief and comfort, before Schott or Oertel were ever heard of. While it was being done and for some time after, the patients have generally been able to lie on either side or flat on the back, and often go to sleep in this position, — what they could not have done before. In other cases, where it was impossible for them to lie down at all, I have *masséed* with relief until within a short time of their death.

Massage of the chest over the region of the heart has a powerfully tonic and sedative effect on this organ, as either physicians or patients can prove by observing its effects in their own persons by means of Bowle's excellent stethoscope. Even a well but lazy heart will be found to beat much better and with clearer accentuation after a few minutes of massage, reminding one very much of the effect of using the bellows on a fire that burns slowly. This is most marked in the flabby neurasthenics.

The enthusiasm of Professor Oertel over massage of the heart may have gone a little too far, but perhaps this may have been necessary in order to wake up the profession to its great value. In a recent work on this subject, he considers that massage acts upon the heart in the same way that it does upon the muscles of the extremities. In order to do this, the chest wall would have to be removed, so that the heart might be grasped and directly *masséed* — a procedure that would hardly be justificable in the human being, except in extreme cases. While the patient stands he advises that gliding pressure should be made upon the chest walls downward and inward, the benefits of which, he states, " are not only referable to its influence in perfecting expiration, but also to the direct pressure upon the heart, influencing its nutrition precisely as massage benefits the muscles of the extremities." The patient would have to be pretty well to stand while this was being done. The influence of massage over the heart is indisputable, but evidently it must be more indirect and sympathetic than direct. Oertel very properly considers this treatment indicated:

" 1. When the heart muscle is weak from deficient nutrition, anemia, or corpulence.

" 2. When the arterial system is imperfectly filled and there is passive congestion as a result of insufficiency of the myocardium.

" 3. When there are valvular lesions or obstructions to the circulation, the pressure of tumors, or constriction of the pulmonary orifice, emphysema, or curvature of the spine.

" 4. As an accompaniment of treatment of the heart by mountain climbing.

" It is contra-indicated in acute or recurring endocarditis or pericarditis, in acute and subacute myocarditis, the result of sclerosis of the coronary arteries, and in general arteriosclerosis."

I have never seen a case of arteriosclerosis that was harmed in any way by massage, nor have I met any one who has. Such a statement is made on purely theoretical grounds.

General massage, carefully administered, is of great aid to the peripheral circulation, lessens the work of the heart, tranquilizes the nervous system, and induces sleep in the worst kind of heart disease, and massage of the abdomen often works well as a diuretic and to relieve the stasis of the mesenteric veins and all the other abdominal veins.

Next to massage in its universality of application and under circumstances in which patients have been too weak to undergo saline baths or mountain-climbing, come resisted movements. These, combined with the saline, sparkling waters of Nauheim, were first brought prominently to notice by the Drs. Schott, who up to 1891 had treated in this way 2,700 cases of cardiac disease, mostly with great benefit or recovery. Each resisted movement of extremity or trunk is slowly and completely executed, followed by a pause, after which the opposing movement alternates in the same way, while the physician or person who makes the resistance is ever watchful to avoid anything like fatigue, difficulty of respiration, or increased disturbance of heart, and should such arise a longer pause is given. Some of the advocates of this method state that no movement is to be repeated twice in succession to the same limb or group of muscles, but I have yet to learn that Schott himself is so absolute in his directions.

The immediate effect of the bath is not quite so marked as after the exercises, but it lasts longer while the exercises can be used repeatedly on the same day and without regard to place. In illustration of this the resistive movements were given to a boy who was weak and anemic. Percussion showed dilatation of the heart. Two skiagraphs were taken, one before, the other fifteen minutes after, a quarter of an hour of exercises of moderate resistance. It was evident that the heart had contracted strongly on both sides and that it had changed from the shape of an orange to that of a lemon and was one-half inch smaller by measurement. For the sake of comparison and in order to ascertain the effect of the Nauheim effervescent bath alone, Dr. Schott had a somewhat similar case, a girl fourteen years of age, carried to the bath and after this back to the table. It was found as a result of the bath that the heart had contracted about one centimeter (less than half an inch) in its horizontal diameter. This is getting matters down pretty fine.

It has also been shown by Dr. Schott to the satisfaction of impartial observers that wrestling until the breathing became short or excessive, bicycling produced dilatation of the heart and weakened it, from which he has deduced the axiom, —

" Systematic exercises strengthen the heart, unsystematic exercises weaken it." [1]

Dr. W. Bezly Thorne, of London, who has witnessed the effects of systematic resisted movements in many cases, says of them: " The results are such as would scarcely be believed by any but an eye-witness. It is by no means uncommon in cases of dilatation to see within one hour the oblique long diameter of the heart's area of dulness diminished by from three quarters of an inch to an inch and a quarter; and, perhaps more surprising still, to observe a diminution by as many as two inches in vertical measurement of of a liver which at first extended to the umbilical level, and to hear the patient, at the conclusion of what cannot be considered an ordeal, volunteer the statement that a load has been removed from the precordium, that he breathes easier and more deeply, and experiences a sense of general relief."

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[1] New York Med. Rec., March 26, 1898.

When such good results can be obtained from massage or resistive movements alone, it would seem almost superfluous to burden patients with baths besides other than what may be necessary for cleanliness. Indeed, the advocates of the mineralized baths are not very clear in their ideas as to when the one or the other should be used or when they should be alternated or combined, so that these problems must be left to the discretion of the attending physician, who will be guided by the effects upon the patients. Dilatation of the arterioles and reduction of high arterial pressure may be obtained by slow, deep kneading of the muscles of the system at large; while on the other hand, increase of the strength of the systole may be brought about by gentle resistive movements of the limbs and by friction or stroking of the limbs and body towards the heart.

The waters of Nauheim consist largely of a solution of chloride of sodium and chloride of calcium with an abundance of carbonic acid gas, and are of varying degrees of strength. Similar combinations are for sale at the drug-stores which can be dissolved in one's own bath-tub; but employed in this way the effects are not so favorable as they are at Nauheim, where pleasant scenery, bracing atmosphere, and absence from the cares of home all contribute beneficial influences. The duration of the bath at first should not exceed ten minutes, and the temperature of the water should be about 92° or 93° F. At the commencement, the bath should be omitted every other day, then every third day, next every fourth day. Later, the baths are given oftener and longer, their mineral ingredients are stronger, and the temperature is cooler, down to 88° or 85° F. Though the immediate effect of these sparkling waters conveys the impression of a bath of champagne and induces a sense of exhilaration, yet the first few baths are apt to be associated with a sense of oppression at the precordium and the patients breathe more slowly and deeply for a few minutes. Respiration then becomes easy and continues slower. When infiltration or deposit has occurred in accessible places careful massage succeeds the bath. Sometimes the resisted movements are used to prepare patients for the baths, and they should be continued sufficiently long after until the patients can climb mountains. After the completion of the bath and exercise treatment Dr. Schott says he has seen patients make extensive tours through the Alps and even climb Mont Blanc and Monte Rosa without any difficulty. Nothing is said about the duration of the treatment. It must vary greatly to suit different cases and be limited or extended by the convenience of the patient.

It is certain that but few American patients who are well enough to go to Nauheim would be willing to submit to this treatment at home for a sufficient length of time to do any good at all.

Respiratory exercises are often of great value, even when not enforced by the exhilarating exercise of mountain climbing. John Hunter, in his graphic sketch of his own case, stated his belief that he had often prevented himself from dying by deep breathing. Deep respiration alleviates the suffering of many cases characterized by extreme arterial pressure as well as those attended by cyanosis. It probably acts by unloading the right cavities of the heart and by relieving pressure from the aorta. (Gibson.)

It is emphatically declared that gymnastics or physical exercises by means of mechanical appliances should form no part of the system of resisted movements, and that they are even opposed to it as harmful. They ought to be helpful when improvement has sufficiently progressed, especially exercises with elastic cords, as their use gives alternate resisted movements each way.

Possibly the advocates of the saline bath in disease of the heart have not taken sufficient account of the fact that when a body floats in water it is buoyed up by an elastic resistance equal to its own weight, and this presses the venous blood and lymph back to the heart from the parts that are submerged. This is massage by hydraulic pressure of the immersed portions of the body.

According to Fleischl, the shock of the blood sent into the capillaries at each cardiac systole has a mechanical action in aiding the chemical processes of tissue change in somewhat the same way, though to a less extent, as a blow upon a percussion cap. If a heart is too feeble or the resistance in the vessels too great to allow the blood entering the aorta at each systole to give a distinct forcible impulse to the blood present in the arteries, the chemical changes in the tissues will be sluggish and imperfect. It is therefore of the utmost importance in the treatment of disease to maintain the action of the heart and to stimulate it when flagging. (T. Lauder Brunton.)

Dr. Douglas Powell, in the *British Medical Journal* of April 9, 1898, helps to define more clearly the use of massage and exercise. He tells us that massage is a means of helping on the convalescent stage of acute heart disease and of combating the tendency, to stagnant circulation in those who are disabled by chronic heart disease. The treatment, he thinks, is still more useful in maintaining the circulation and mildly stimulating the coronary circulation in those who are bedridden and, on that account, suffer from impairment of heart nutrition and chilly extremities, feeble pulse, torpid digestion, and passive congestion of the lungs. The treatment is not advisable in acute affections of the heart.

The effects of the Schott or Nauheim exercises are a stimulation of the heart's action, with a steadying effect or increased completion of the systole, improved circulation through the coronary vessels, and an increased motility of the blood by its readier passage in greater bulk through the muscles, thus relieving stagnation in the great internal organs, especially of their veins. The graduated exercises may be regarded as a counsel of perfection, as a preliminary to the return to this increase of active life of which the condition of their heart admits, and also as a guide to what that measure of exercise will be. Resistive exercises are especially adapted for the initial treatment of those flabby, irritable, "stuffy" hearts, applying this term to cases of fatty infiltration and impaired metabolism which are met with in people of venous plethora. Irritation of a sensory nerve causes general contraction of blood vessels.

In cases of chlorosis with dilated heart, after a preliminary week or two of rest, the Schott treatment is valuable if combined with a dry, bracing air and milk chalybeate. It is useful in commencing failure of the heart, in chronic valvular lesions, combined with less of other exercises, and also after such cases have been restored to a certain extent by digitalis. It is unsuited in all cases of acute endocarditis while there is any trace of activity of lesion left, and in cases of advanced cardiovascular changes of the nature of sclerosis, or in introspective people with neurotic hearts.

An excellent summary of this treatment of heart affections was given by Sir Grainger Stewart before the British Medical Association at Carlisle. He has fully satisfied himself on the following points:

1. That in the great majority of cases of cardiac dilatation the area of cardiac dulness diminishes perceptibly during each administration of massage.

2. That the character of the cardiac sounds and the rhythm and strength of the pulse correspondingly improve.

3. That the patients usually experience a sensation of comfort and feel the better for the treatment.

4. That although the immediate favorable effects pass off in a few hours, yet they frequently do not pass off completely, for he has often found the line of cardiac dulness within that with which they had started at the previous séances.

5. That repeated applications of massage bring about a permanent diminution of the area of dulness, with improvement of pulse and of the patient's sensations.

6. He has seen a case in which the so-called Schott treatments produced a deleterious effect, rendering the heart more irregular and intermittent. It was afterwards treated by massage alone on the following day with most striking benefit. It turned out that the patient was not sufficiently well to bear the active movements, but was greatly benefited by the passive ones.

7. That on one or two occasions he has seen the manipulations produce unfavorable effects, apparently because the heart was too feeble and the patient was fatigued at the time of application.[2] (In this last case it is possible that the massage was too vigorous, or that the manipulator himself was not in good condition. The writer one day had to walk three quarters of a mile in the teeth of a cold wind to give massage to a patient with a weak heart. The result was the only unfavorable one of the kind he had ever had; the patient was unduly fatigued. If he could have ridden to the patient's door, the result would most likely have been different.)

Dr. Albert Abrams[3] finds that any cutaneous stimulant — mechanic, chemic, or electric — will produce diminution of the size of the heart with temporary dilatation of the lungs. Vigorous cutaneous friction by means of a wire brush seemed to afford him results in heart disease nearly as good as those obtained by the more elaborate treatment by means of baths, massage, and exercises. He quotes Moccucci, who sprayed the left half of the abdomen with ether in twelve cases of enlarged spleen with the result of decrease in volume of the spleen in all the cases. In repeating these experiments Dr. Abrams noticed a decided diminution of the size of the spleen in all the people he tried it on, irrespective of the fact whether the spleen was enlarged or not. Ether spray over the heart and over the liver caused decrease in size of both these organs. The results were confirmed not only by percussion, but also by sight, by means of the fluoroscope.

Mass[4] has reported two cases in which patients apparently dead from chloroform syncope were resuscitated by compression in the region of the heart. In both cases, respiration and radial pulse had entirely stopped and the pupils were dilated. The manipulation of the heart in both cases was carried out for over an hour. Compression over the heart was used one hundred and twenty times a minute, and soon after it was begun the pupils became smaller and the paleness of the face disappeared. Afterwards both patients suffered from mental derangement, difficulty of swallowing and speaking, all of which passed off shortly.

Physiologists have not been idle in their efforts to show how weak and failed hearts may be revived; indeed some good men give them credit for leading the way.

If any more confirmatory testimony of the efficacy of massage for weak hearts were needed we certainly have it in the experiments of Professor Prus,[5] in which dogs were suffocated and brought back to life by massage of the heart. The supply of air was shut off by clamping an India-rubber tube which connected the tracheotomy cannula with an artificial respiration apparatus. Immediately after the death of the animals some of the rib cartilages in front of the heart were removed, the pericardial sac was incised, and the heart exposed. After it had been ascertained that there was no trace of any contraction of either auricle or ventricle, Professor Prus waited from fifteen to sixty minutes before he began his efforts at artificial resuscitation. Then the clamp was removed and artificial resuscitation started. The heart was grasped in the right hand so that the thumb rested on the right ventricle, and the four fingers surrounded the left ventricle. Both ventricles were then compressed with moderate force, the compressions being made to imitate the systolic and diastolic action of the heart. In 31 cases, or 70%, life was restored. In chloroformed dogs under the same conditions, 76%, and in dogs shocked by the electric current, 14% were brought back to life. An attempt to try massage of the heart was made on the body of an alcoholic who had committed suicide by hanging, but without success, as might have been expected.

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[2] Mechano-Therapy in the Treatment of Heart Disease, Dr. T. Stretch Dowse, 1898.

[3] Med. News, Jan. 7, 1899.

[4] Berl. klin. Wochenschr., 1892, No. 12.

[5] Treatment, Oct., 1900, and New York Med. Rec., Nov., 1900.

Statistics gleaned from various sources at home and abroad by Prof. Wm. W. Keen, show that of 28 cases of apparent death in the human being, during chloroform narcosis, 42 recovered by massage of the heart. But this treatment should not be relied upon alone. Artificial respiration should also be carried on and the patient should receive sufficient oxygen. For the purpose of restoring vasomotor tone adrenalin should be employed.[6]

In the great zeal to collect statistics on this interesting subject, doubtless many of them come from the same sources. Thus Lanermant has collected 25 cases of whom 4 were restored to life.[7]

Mauclair and Zezas report 28 cases with 6 successful results.[8]

Three methods are employed to do massage of the heart:

1. Incising the anterior wall of the chest so that the hand can grasp the heart.
2. Incising the diaphragm and then passing the hand up from the abdominal cavity.
3. Seizing the heart through the diaphragm without cutting it. In syncope the diaphragm is relaxed enough to render the last method easy. It has given the greatest percentage of recoveries (5 out of 9). It is the least mutilating and the only one that should be employed. Although the number of deaths seems large it should be remembered that all the cases saved would doubtless have died without the use of this method.

When babies are born, if their respiration and circulation are at fault, they are promptly rubbed and slapped without waiting for a diagnosis and usually with the result of bringing them around all right. So the poet of the future may have a chance to express himself with regard to massage somewhat as follows:

When this world you enter if you're gasping for breath,
'Tis the first thing they do to save you from death;
If too soon you would leave this terrestrial sphere
'Tis the last thing they do to keep you long here.

PULSE-PRESSURE ESTIMATION.

BY JAMES J. PUTNAM, M.D., OF BOSTON.

HAVING been interested for some time past in the measurement of pulse-pressure, and having striven to find the best method of estimating its degree by the finger, in the absence of instruments, I have decided upon the following plan as decidedly preferable to any other and as susceptible of being made, through practice, of much value.

The physician, placing himself opposite to his patient, should lay the pulp of his extended (right) forefinger over the patient's (right) radial artery, at the same time interlocking his forefinger and thumb with the forefinger and thumb of the patient's hand. With his disengaged (left) hand, the physician should then grasp the patient's *relaxed* arm, just above the elbow and just below the swell of the biceps, in such a way that with his thumb he may compress the patient's brachial artery against the underlying humerus, while with his fingers he may make counter-pressure on the outer portion of the arm. It becomes, then, very easy to estimate just the amount of muscular effort that is required to close the brachial artery so that the pulse is no longer to be felt by the finger at the wrist, and this effort measures the maximal pressure of the pulse. Even the minimal pressure, that is, the point at which the impulse in the two arteries becomes the same as the compressing thumb is raised, can be estimated better with the aid of the brachial artery, in this fashion, than with the radial alone, and fairly well, provided the physician has been accustomed to take such pressures accurately with an instrument suited for the purpose.

It is astonishing to find what a difference there is between the tension which the compressing thumb and fingers must overcome in the case of a compressible brachial artery and that in the case of an artery altered through hypertrophy. In well-marked arteriosclerosis the amount of pressure required for complete closure may be so great that the effort exerted in overcoming it must be considerable.

New Instrument.

A NEW DEVICE FOR ADJUSTING THE FOREHEAD MIRROR.

BY WILLIAM E. CHENERY, M.D., BOSTON.

IN operating on the nose and throat I have often desired some form of appliance by which the forehead mirror could be easily and aseptically adjusted. It has been customary to use pieces of aseptic gauze, but this has not been wholly satisfactory.

It occurred to me that a steel spring clamp might be made which could be boiled with the other instruments, and when needed slipped on to the side of the mirror and left there during the operation, thereby giving the operator an aseptic handle which he could use at will to move the mirror in or out of position.

I have had several made and perfected and now present this one which I have called the universal head mirror adjuster.

All users of the forehead mirror will appreciate it. It may be easily applied, fits large and small mirrors and will cling tightly so that the mirror may be moved in any direction. During ordinary examinations it may also be used so as to avoid finger prints on the mirror. This will be appreciated by many patients.

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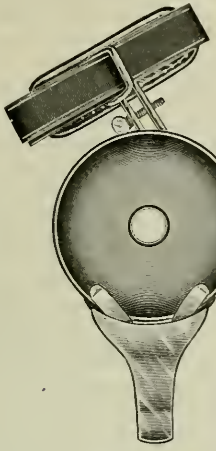
[6] Ther. Gaz., Philadelphia, April 15, 1904.
[7] Rev. de Chir., No. 3, 1906.
[8] *Ibid.*, III, i, 1906.



The instrument should be applied opposite the attachment to the headband.

Codman and Shurtleff have made the adjuster for me.

Clinical Department.

THE OCULAR AND GENERAL SYMPTOMS IN NASAL OBSTRUCTION. THE REPORT OF AN UNUSUAL CASE.

BY HARRY C. PARKER, M.D., BOSTON,
Clinical Assistant Massachusetts Charitable Eye and Ear Infirmary; Instructor in Ophthalmology, Tufts College Medical School, etc.

After reading Dr. Posey's exhaustive article presented before the Section on Ophthalmology of the American Medical Association in July, 1905, one feels there is little new to offer, showing the intimacy of the relation between the nose and its accessory sinuses and the eye. Although his article dealt with "The ocular symptoms of affections of the accessory sinuses of the nose," I wish he had given more space to those cases of simple nasal obstruction which give rise to ocular symptoms, as severe, and certainly as hard to combat without operative interference, as those of sinus troubles. I refer to the ocular symptoms caused by enlarged turbinates, spurs, deviations of the septum, etc.

There is rarely a day passes in the refraction room of the Massachusetts Charitable Eye and Ear Infirmary without the appearance of several cases which, from the character of their symptoms and the nature of their refractive errors, suggest the necessity of a nasal examination. In this connection I should like to state my hearty agreement with Dr. Edward Jackson in his discussion of Dr. Posey's paper as to the difficulty of recognizing sinus disease. I wish to call attention to the equal difficulty in recognizing cases of simple nasal obstruction, for many cases are reported back as negative by the rhinologist where, from the nature of the symptoms, you are sure a pathological condition exists in the nose, and which will usually be revealed at some subsequent examination.

The greater number of nasal cases have, at some time or another, definite eye symptoms, and the time has come when the oculist must insist, in order to get good results, on the intelligent co-operation of the rhinologist, or else be himself forced to treat the nasal conditions which give rise to ocular symptoms of greater or less severity. Few rhinologists recognize the fact that simple soft turbinate contact with the septum will, in many individuals, give rise to symptoms which will not be relieved at all, or only in part, by correcting errors of refraction or defects in the muscle balance.

The case I wish to report is of interest from the severity and the unusual character of the symptoms presented both ocular and general. My notes follow:

February, 1906. Mr. E. R. consulted me in regard to persistant diplopia and vertigo. His age, forty-one years, married, two healthy children. No history of wife having had a miscarriage. Had always been a hard worker. General health always excellent up to 1899. Denies gonorrhea or syphilis. Myopic as long as he could remember, and had worn glasses constantly from his early youth. His eyes had given him no trouble beyond the handicap of his myopia until 1899, when he developed diplopia. I wish to state here parenthetically that Mr. R. is a man of keen intelligence and not of the neurasthenic type. His diplopia at that time varied in amount for 20 to 60 prism degrees according to the notes of his oculist which he had with him. The diplopia was homonomous, *i.e.*, esophoria, which in itself is extremely unusual in as high a degree of myopia, and his binocular vision was always obtained readily with prisms. His myopia was at that time undercorrected. He was wearing O.D. — 13.00 S. ○ — 2.00 cyl. x 180°. O.S. — 12.00 S. ○ — 2.00 cyl. x 180. — So full correction — 15.00 S. ○ — 2.50 cyl. x 180°. out was given, combined with a 6 △° base out in both eyes. This produced a great discomfort increasing, if possible, diplopia and caused general symptoms, or at least general symptoms appeared at this time, such as numbness of the face, abdominal shooting pains, and the loss of muscle reflexes. He was allowed to wear his weaker lenses without prisms. His case progressed with little or no improvement, so he was taken to an alienist, who examined fully into his history as his oculist had done, and a constitutional cause of any sort could not be found. The slightest chance of syphilis denied except from possible innocent cause, about which the patient had no knowledge. He was told he had irregular tabes, advised to give up business and either rough it out West for a year or go abroad. He chose Europe and shortly after his arrival consulted a prominent oculist in Germany, who insisted he had syphilis and proceeded to give him a severe course of mercurial inunctions, potassium iodide, which by the way he had had in teaspoonful doses three times a day before leaving this country, and quantities of Blaud's pills. This heroic treatment succeeded simply in the accentuation of all symptoms together with insomnia, loss of weight and appetite.

After four months Mr. R. decided to give up the treatment and left Germany for Switzerland, where, for a period of six or seven months he had no treatment except baths. His symptoms became very much less marked, his weight returned, he was able to sleep, and the diplopia became only transitory. This relief being due in my opinion to the favorable effect of the clear mountain air on his nasal condition and the relief from a severe constitutional treatment which was unnecessary.

After ten months Mr. R. returned to this country very much improved apparently and resumed his work which was active and necessitated long hours. His condition remained fairly satisfactory until 1902, when the symptoms began to return. Early in 1903, he tells me, he had a slight nasal operation which resulted in some improvement. He was again tried with stronger lenses and prisms which again served but to aggravate his symptoms. These continued with more or less discomfort until about six months before his first visit to me when they became much more marked.

My examination showed

$$\begin{array}{l} \text{V.O.D.} - 13.00\ \text{S.} \smile - 2 \quad \text{cyl.}\ 180 = \frac{20}{100} - \\ \text{V.O.S.} - 12.00\ \text{S.} \smile - 2 \quad \text{cyl.}\ 180 = \frac{20}{100} - \end{array}$$

with full correction

$$\left.\begin{array}{l} \text{V.O.D.} - 16.00\ \text{S.} \smile - 2.00\ \text{cyl.}\ 180 = \frac{20}{50} \\ \text{V.O.S.} - 15.00\ \text{S.} \smile - 2.00\ \text{cyl.}\ 180 = \frac{20}{50} \end{array}\right\} \frac{20}{40} -$$

This correction verified by retinoscopy and astigmatic charts. *Muscles* — showed 15 △ ° esophoria. Diplopia homonomous quite easily obtained with a 5 △ ° prism base out. *Ophthalmoscope* showed clear media, retina apparently normal; optic nerve of good color, each showing choroidal crescent. *General conditions.* Health quite good; weight somewhat below normal; always has had "cold." Knee reflex active. No Romberg symptom. No Argyll-Robertson pupil, although pupils were slightly irregular in size the left being slightly the larger. The portion of his face on the cheek bones, forehead and lips was somewhat anesthetic. He also complained of occasional shooting abdominal pains. Always of late years had had difficulty in nasal breathing.

Nasal examination showed marked nasal obstruction on both sides, caused by large polypoid middle turbinates pressing against the septum, limiting naturally the air passages. Slight nasal discharge, mucoid in type. I suggested the possibility of considerable relief from a thorough nasal operation, also that he had better be looked over carefully by his physician.

Second visit, Feb. 24, 1906. His physician reported physical condition excellent, urine and blood negative, no sign of any organic disease. Muscle test 15 △ ° esophoria. Fusion with 6 △ ° base out. Referred to Dr. Goodale for nasal operation. I transmitted at the same time a full report of the case. Dr. Goodale reported back in a few days that he had found it necessary to operate under ether and had removed a portion of each middle turbinate the size of a large lima bean, and had curretted out the anterior ethmoid cells.

Third visit, March 5, 1906. — Esophoria but 6 △ ° easy fusion without prisms. Mr. R. was allowed to wear his old correction and told to report to me in one month. My patient was not seen, however, until Nov. 27, 1906, eight and a half months later as he had been very comfortable, only at extremely rare intervals having slight attacks of diplopia occurring always after a hard day and lasting but a few moments. He breathed easily through his nose, no longer awakened with dry throat, had no vertigo and no shooting pains; and the area of facial anesthesia much diminished.

Refraction showed an increase in myopia but a greater visual acuity.

$$\begin{array}{l} \text{V.O.D.} - 19.00\ \text{S.} \smile - 2.00\ \text{cyl.}\ 180 = \frac{20}{40} \\ \text{V.O.S.} - 16.00\ \text{S.} \smile - 2.00\ \text{cyl.}\ 180 = \frac{20}{30} \end{array}$$

His muscles showed perfect balance, both with the Maddox rod and the cover tests.

To recapitulate, here is the case of a man in the prime of life, engaged in an active business, forced, through what is now evident, a mistake in diagnosis, to give up everything and undergo the loss of time, the expense of a protracted stay abroad and be subjected, without cause, to an heroic antisyphilitic treatment. He had in 1899 been obliged, because of vertigo and diplopia to give up business. He was subjected to use stronger lenses and prisms which served to aggravate his symptoms. He took large doses of potassium iodide which were unnecessary and was finally told he was suffering from an incurable disease, the probable end result of an old syphilis and then advised to give up all and go forth in search of a remedy which if unavailing would mean the awaiting of the inevitable. He went forth and in Germany was put through his worst experience, that of heroic antisyphilitic treatment, all the while becoming weaker and less able to resist the underlying cause of all his symptoms, which became in consequence the more powerful. Finally, abandoning all treatment in despair he went to Switzerland where, much to his surprise, things began to right themselves, due in all probability to the effect of the dry mountain air on his nasal condition. He returned to this country full of hope that all would be well, only to find after a time his old symptoms returned with greater or less severity and in gradually increasing periods.

It was at this time that he came under my observation and I advised a nasal operation which was followed with immediate relief, and a constant improvement, so that at his last visit to me, nearly nine months after his operation, he was practically free from symptoms.

The conclusions to be drawn from this case are that all cases of stubborn muscular trouble should have a nasal examination and that we should hesitate to operate on the muscles themselves or even prescribe prisms before having the nasal condition looked into. From this and other cases which have come under my observation in private practice and in a large clinic I am convinced that aside from the many evident ocular symptoms there are unusual ocular and also general symptoms, the obscure cause of which may often be found in the nose. I am strongly of the opinion that the far-reaching effect of nasal reflexes is at present but little understood, and that along this line there is much to be learned that we may intelligently untangle many of our knotty problems.

* * *

The late Prof. Herman Cohn of Breslau, has bequeathed the sum of 10,000 marks to each of the universities of Heidelberg, Tübingen and Breslau, the income to be used for prizes for research in ophthalmology. — *Medical Record.*

Book Reviews.

American Practice of Surgery. A Complete System of the Science and Art of Surgery by representative surgeons of the United States of America and Canada. Editors: Joseph D. Bryant, M.D., and Albert H. Buck, M.D., of New York City. Vol. II. New York: William Wood & Co. 1907.

With commendable promptitude the editors have produced this second volume of their Practice of Surgery, the first volume of which recently we had the pleasure of reviewing. In certain respects the second volume is an improvement upon its predecessor. In certain respects volume I is the more interesting of the two. Volume II seems to be more carefully edited, and the selection and arrangement of the contributions seem to be in better co-ordination. Fourteen writers contribute, dealing mainly with general surgical infections and with certain rather uncommon conditions. Much more than half of the volume (437 pages out of 764) constitutes Part VIII. The book is made up of parts VI, VII, VIII, IX and X, and the writers tell of such special infections as leprosy, plague, glanders, anthrax, actinomycosis, etc., in part VI; of tuberculosis and syphilis in Part VII; of abscess, ulcer, gangrene, diseases of the skin, diseases and wounds of muscles, tendons, etc., diseases and wounds of nerves, diseases and wounds of the lymphatic system in Part VIII; of burns and frost bite in Part IX; of wounds of the soft parts and gunshot wounds in Part X.

While the sum total of information imparted is voluminous, admirable and interesting, making up for us an important book of surgical reference, there is nothing in it especially striking or novel. The literature has been studied carefully, painstaking and accurate writers have done their work and the reader may rest assured that he is dealing with a comprehensive and conservative dissertation upon the topics treated.

Outlines of Human Embryology. By George Reese Satterlee, M.A., M.D. New York: John Wiley & Sons. 1906.

This little book of 144 pages in rather large type, with 99 figures copied from various authors, gives a brief *résumé* of the main facts of human embryology. It is interleaved with blank pages for students' notes. The author has presented his subject clearly and briefly and, in the main, accurately, and it is probable that the book will be found useful by those who wish to cram up on the subject. It is not full enough to be of much use as a laboratory manual. Like most books intended essentially for cramming purposes it seems to the reviewer rather far away from practical work and personal acquaintance with embryology.

Essays in Pastoral Medicine. By Austin O'Malley, M.D., Ph.D., LL.D., Pathologist and Ophthalmologist to St. Agnes's Hospital, Philadelphia, and James J. Walsh, M.D., Ph.D., LL.D., Adjunct Professor of Medicine at the New York Polyclinic School for Graduates in Medicine, etc. New York, London and Bombay: Longmans, Green & Co. 1906.

The subject matter of this volume is wide in its scope but is intended to cover those subjects in which the work of the physician and of the pastor meet. The ethics of certain medical questions are portrayed for the benefit of the physician, and the practical bearings of many medical matters are developed for the benefit of the minister who comes close to human suffering in many of its forms. To accomplish this end the authors have written in essay form a series of thirty articles on topics chiefly with social bearings, such, for example, as Cesarean section and craniotomy, heredity, physical disease and moral weakness, unexpected death, the moment of death, the priest in infectious diseases, chronic disease and responsibility, and other more or less similar subjects. We take it that the authors approach their subject from the point of view of the Roman Catholic faith, but the book should be of interest and offers many suggestions of value to the medical profession at large, although it is perhaps open to question how far the clerical and medical professions may combine in these subtle questions.

On Retro-Peritoneal Hernia; being the Arris and Gale Lectures on "The Anatomy and Surgery of the Peritoneal Fossæ"; delivered at the Royal College of Surgeons, England, in 1897. By B. G. A. Moynihan, M.S., F.R.C.S. Second edition revised and in part rewritten by the author and J. F. Dobson, M.S., F.R.C.S. New York: William Wood & Co. 1906.

As Mr. Moynihan states in his preface, this second edition of his well-known monograph is enlarged and completely rewritten, the work being done mainly by Mr. Dobson, with careful revision by the author. There is a large number of excellent illustrations and an admirable, comprehensive index.

One feels on reading the book that retroperitoneal hernia must be a common affliction. Moynihan divides his subject into five chapters, the second and third of which, on duodenal hernia and on hernia in the cecal region, occupy the greater part of his treatise. The reviewer finds no especially important additions to knowledge already current, but many new case histories are recited, and the latest literature is quoted.

This is a useful monograph for students and surgical writers.

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Seven German Universities admit women on the same terms as men, and at present they have a total register of 116 women in the medical departments. This is an increase of 56 over the preceding year. — *Jour. Am. Med. Asso.*

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FACTORY INSPECTION.

A bill before the Massachusetts State Legislature regarding the inspection of factories is of more than passing interest to the medical profession. The object of this bill is to transfer certain powers and duties of the inspection department of the district police to the State Board of Health on the general ground that the Board of Health is by its organization and *personnel* more fitted to investigate the questions under consideration.

It appears that a large waste of life is going on in the United States as a result of unsanitary conditions in factories and workshops. It is stated that a conservative estimate of preventable deaths among men under thirty may each year be placed at approximately fourteen thousand. If a human life is worth five thousand dollars as a minimum, this means a yearly waste of seventy million dollars. As a result of industrial conditions, four out of every hundred cigar makers, ten out of every hundred Fall River mill hands, and eighty out of every hundred Northampton cutlery workers are said to die of consumption. Much of this waste is evidently remediable, but to accomplish this result expert knowledge and authority are demanded. Massachusetts was the first state to introduce a system of factory inspection thirty years ago, and now there are twenty-six states exercising a similar supervision, but, unfortunately, this inspection is apt to be perfunctory and does not approach the problem from the point of view of sanitation as would be the case were inspection placed where it more properly belongs in the hands of boards of health. In no single instance does a board of health have charge of this department of public hygiene. In Massachusetts, for example, factory inspection is a subsidiary function of the state police, and it is, therefore, not remarkable that little has been accomplished toward the positive betterment of conditions. As a result of the agitation which this state of affairs has aroused, the Board of Health was directed more than two years ago to investigate the sanitary conditions of factories, workshops and other places of employment in this state. A preliminary report was made in the early part of 1905 which pointed out the evils then existing and urged more stringent laws. The Board of Health was thereupon requested to continue its investigations and a subsequent report has very recently been submitted. From this report it appears that in many industries conditions exist highly prejudicial to the health of the operatives. The mortality among metal and stone workers from diseases of the lungs and the poor conditions existing in many shoe factories on account of faulty ventilation, dusty rooms and generally bad sanitary conditions are worthy of special mention.

Recognizing the existing state of affairs, the natural remedy has suggested itself of applying to the legislature for a law which will provide for inspection by persons expert in hygiene and modern sanitation. It is natural and fitting that the State Board of Health, whose duty it is to care for the health of the community at large, should be given the authority in this matter which will insure really adequate inspection, such as modern conditions demand. To this end the following suggestions are of value: First, there is need of the systematic development of this branch of industrial hygiene; the list of dangerous trades should be revised; it is advisable that more medical men should specialize in sanitary work to the ultimate benefit both of employer and of employee; it is probable that the study of industrial hygiene in this broad sense would provide a link now missing between the community and various forms of social and hospital work.

While in general we are altogether in favor of fixing more definitely the responsibility for unhygienic conditions in factories and places where many work-people are gathered together, the fact should not be lost sight of that reforms which come slowly are usually the most permanent, and that in general the present attitude of public opinion is possibly somewhat too radical in its insistence upon change at any cost. This does not alter the fact that the bill before the legislature is a wise one, and we have so great confidence in the discretion of the State Board of Health that we should have no fear of over-drastic measures if the authority relative to factory inspection were placed in its hands.

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THE AMERICAN CLINIC.

That the clinics of medicine and surgery in the United States have developed since their inception along different lines from the clinics abroad, especially the German clinics, is a fact of which no proof is required. That as they now exist the American clinics afford less opportunity and incentive for medical research, and the highest quality of clinical teaching is a condition which we believe most medical men who have seriously considered the situation will admit. Why is it that in America such are the conditions? Adequately to answer the query possibly the history of the foundation and growth of our hospitals and medical schools should be outlined, yet without this the following explanation may be offered: The separation for the most part of university and medical school with the establishment of proprietary medical schools acted to divorce from our medical schools the university interests. Consequently the development of higher university teaching and the university spirit of research did not make itself felt to any great extent in the medical schools. Most hospitals, moreover, in this country were either independent of medical schools or were controlled by men who controlled the medical schools and whose relation to each was a business one,— proprietary medical schools, proprietary hospitals. Hospitals independent of medical schools were either municipal or state institutions or owned by private individuals, in each case managed by those who had no vital interest in medical education. From these conditions resulted an independent development of medical schools and hospitals from which America still suffers. The results of the independent development of university and medical school are rapidly disappearing with the closer union between them which is taking place on every side. Unfortunately, the union of school and hospital is developing far more slowly, and most of our hospitals are still in fact if not in name independent in organization and management. Such hospitals, exceedingly few in number as they are, in which there is no line of division from the medical school, show by their work that herein lies the key to the situation. The ideal clinic of surgery and medicine probably cannot exist in America except where there is an indivisible union between university, medical school and hospital with means to pay attracting salaries, clinical material to place at the disposal of teacher and student, and absolute freedom from all local conditions that might prevent the best man, wherever he live, from being called to positions in school and hospital. Under these conditions the highest type of medical teaching and medical research will be possible.

Such ideas seem to be in the minds of those who are shaping the future of the Harvard Medical School if we can judge from their published opinions. Abundant clinical material Boston has, but this is not all that they desire. Abundant clinical material alone does not make an ideal clinic, and it is the latter for which Harvard is striving. A conception of such an ideal clinic seems to have been lacking in some of those who have criticised the supposed clinical situation at Harvard, or perhaps these critics have failed to recognize that this ideal clinic does not exist in their own city. If that be true they, like the Harvard men, must awake to the necessities of the present, acknowledge squarely a defect in the organization of their clinics and set manfully to work to remove these defects.

The future will show where such clinics will arise. With their possession the medical schools so endowed will be years ahead of their competitors. Whether these clinics come in Boston, New York, Chicago or elsewhere is unimportant so far as the development of American medicine is concerned, but the city in which they develop first will hold prestige in America for medical education and research. Is this not a goal to stimulate the best endeavor of the medical men in every large city? Those in which already exists a medical school that is an integral part of a university have attained an advantage which should act as a heavy handicap against those not yet so well situated. Locally we believe that Boston has the opportunity to attain to this goal.

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THE INTERNATIONAL TUBERCULOSIS CONGRESS FOR 1908.

The systematized warfare against tuberculosis which is now being carried on in the United States, was perhaps not inspired by the great international gatherings for the study of that disease, which have been held since the first Paris Congress in 1898, but these meetings have done much to make such a movement possible, by stimulating a world-wide interest in the subject. While no very radical developments as to pathology or treatment have been brought forward during this period, there has been brought about a much more general recognition of the importance of the subject. In consequence, there has been a large increase in the number of workers in this particular field, with more co-operation among the workers, a growth in the matter of governmental supervision — involving compulsory registration, disinfection of infected dwelling places, etc. — and an increase in the number of sanatoria and dispensaries devoted exclusively to the treatment of this disease. All this has had a very material influence on our vital statistics, both by limiting the number of new infections and by prolonging the lives of those already infected.

Through the invitation of our National Association, the next International Congress on Tuberculosis is to be held in Washington, D. C., in the fall of 1908. Dr. Lawrence F. Flick outlines the plan for this congress in the March number of the *Journal of Outdoor Life.* The last week in September and the first two weeks in October have been tentatively set as the date. The first and last weeks will be occupied in entertaining the visiting delegates in the different cities, while the second week will be devoted to the scientific program in Washington. It is planned to have a series of lectures delivered in Washington by thirty of the most prominent authorities, this series occupying the three weeks and constituting a symposium of exhaustive scope on tuberculosis. Exhibits of the work done in all parts of the world will be presented. As it is the first time that the International Congress has met in the United States, this country should receive an impetus which will be a great factor in carrying on the work of stamping out this disease. The committee has already collected a fund of $30,000, subscribed by a donation of $5,000 from each of six philanthropists and there should be no trouble in carrying out the plan of raising this fund to a sum of at least $100,000.

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MEDICAL NOTES.

A Member of the Canal Commission. — Col. W. C. Gorges, M.D., who has done such efficient work as chief sanitary officer of the Isthmian Canal Commission, has been appointed a member of the Commission.

A Chair of Hydrotherapy. — It is announced that a chair of hydrotherapy is to be established at the College of Physicians and Surgeons in connection with Columbia University, New York. The funds for the maintenance of this chair are to be provided by a person whose name is withheld.

Death of Sir William Hingston. — The death of Sir William Hingston, M.D., of Montreal, is announced. He was born in Quebec, in Huntingdon, in 1829, and received his degree in medicine from McGill University. After further study abroad, he returned to Montreal and began the practice of medicine in the year 1853. For many years he has been one of the most prominent physicians in Canada, and was known not only for his skill as a surgeon but also for his wide philanthropic interests. He had from time to time also held many official positions, among others, Mayor of Montreal. He was a member of the Royal College of Surgeons of Edinburgh, and had been the recipient of many honorary degrees. Some years ago he delivered the Shattuck lecture before the Massachusetts Medical Society.

The Semi-Centennial of the Cincinnati Academy of Medicine. — This representative body of the profession of Cincinnati celebrated its semi-centennial at the Hotel Sinton, on Tuesday evening, March 5, with a very enjoyable banquet at which 350 medical men sat down. Dr. J. E. Greiwe, the retiring president, was toastmaster, and speeches were made by Dr. Byron Stanton, the only charter member present, Dr. A. C. Drury, Dr. N. P. Dandridge, Dr. P. S. Connor, Dr. B. P. Good, Dr. S. Nickles, Dr. C. D. Palmer and Governor Bradley of Kentucky. The event was a very happy one and it was probably the most distinguished gathering of Cincinnati physicians which has ever taken place. The election of officers for the following year resulted as follows: President, Dr. F. W. Langdon; first vice-president, Dr. Wm. Gillespie; second vice-president, Dr. John Oliver; secretary, Dr. Mary K. Isham; treasurer, Dr. A. C. Drury.

A Dutton Memorial Professorship in Tropical Medicine. — The Liverpool School of Tropical Medicine desires to raise a fund of £10,000 with which to establish a research professorship in tropical medicine in memory of Dr. Joseph Everett Dutton.

Dr. Dutton served on four successive expeditions sent out by the Liverpool School of Tropical Medicine to Nigeria, the Gambia, Senegambia and the Congo Free State. During the years spent in Africa he did much valuable work, and by describing Trypanosoma gambiense, the parasite since recognized to be the cause of "Sleeping Sickness," gained the highest distinction for himself and for his school a wide renown.

Dr. Dutton died, aged twenty-nine, at Kasongo, in the center of Africa, when engaged on an expedition sent out to study tropical diseases and especially sleeping sickness. While investigating the previously little known "tick fever" of Central Africa, he contracted that disease and died from its effects.

As a single instance of the benefits conferred on commerce by the recent advances of our knowledge of tropical medicine, the committee in charge of this memorial fund refers to the changes in quarantine laws resulting from the knowledge that yellow fever is transmitted by a mosquito. Costly and vexatious fumigations of mails, baggage and freight are no longer necessary. Tedious quarantines of ships and the ruinous isolation of infected cities are no longer enforced.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 13, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 27, scarlatina 51, typhoid fever 7, measles 15, tuberculosis 48, smallpox 0.

The death-rate of the reported deaths for the week ending March 13, 1907, was 22.86.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 9, 1907, was 262, against 250 the corresponding week of last year, showing an increase of 12 deaths and making the death-rate for the week 22.69. Of this number 144 were males and 118 were females; 256 were white and 6 colored; 164 were born in the United States, 92 in foreign countries and 6 unknown; 66 were of American parentage, 164 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 49 cases and 3 deaths; scarlatina, 55 cases and 0 deaths; typhoid fever, 7 cases and 0 deaths; measles, 8 cases and 0 deaths; tuberculosis, 47 cases and 36 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 30, whooping cough 1, heart disease 37, bronchitis 9 and marasmus 3. There were 16 deaths from violent causes. The number of children who died under one year was 43; the number under five years 57. The number of persons who died over sixty years of age was 74. The deaths in public institutions were 84.

There were 7 cases and 4 deaths reported from cerebrospinal meningitis during the week.

A Centenarian. — It is announced that Mrs. Ann Mooney, of Westboro, Mass., has died at the age of one hundred and one.

A Hospital for Melrose, Mass. — It is announced that a gift of $25,000 has been received by the Melrose Hospital from Mr. and Mrs. Decius Beebe, subject to the condition that the Hospital Association raise an additional $25,000 within a year. It is expected that the proposed new building will cost in the neighborhood of $50,000.

Report of the Massachusetts Hospital for Epileptics. — The report of the Massachusetts Hospital for Epileptics for the fourteen months ending Nov. 30, 1906, shows continued development of the institution. On the administrative side definite progress has been made and much valuable medical experience in the care of this class of dependents is tabulated. In the report for the trustees, Dr. William N. Bullard, chairman of the board, makes the following pertinent statement which should receive the careful attention of the laity: "During the past fourteen months there have been 42 deaths among the patients and only 17 autopsies. It is extremely important that as large a number of autopsies as possible should be obtained in order to increase our knowledge of the exact conditions occurring in this affection and to enable us to act more efficiently for its relief and cure. Our knowledge cannot be adequately advanced unless we can have the opportunities for proper examination and investigation. These examinations and investigations are not at all, as sometimes seems to be thought, for the benefit of the doctors or even for the institution. They are for the benefit of the public, of the citizens of the state as a whole, and more especially for those living under the affliction of this terrible disease. It is in their name and for their sakes that we demand and shall demand persistently and perseveringly the means to aid them, and attempt to combat, so far as we may, the ignorance and selfishness and stupidity which refuses to help one's neighbor at some sacrifice of personal feeling and prejudice." We miss in the report any statment of the results of treatment. As experience accumulates, we have no doubt such reports will be made. The profession at large is now looking to the hospitals for this information.

NEW YORK.

A Centenarian. — Thomas Hazard Roe, of Newburgh on the Hudson, died on March 7, in the one hundred and first year of his age, having been born in New York City in November, 1806. The family of which he was the oldest representative is famed for its longevity, and he is survived by two sisters, one of whom is over ninety and the other nearly ninety-nine years old.

Pasteurization of Milk. — There is at present before the board of aldermen, a measure, known as the Freeman bill, which provides that all milk and cream sold in the city which does not come from certified herds and containing not more than 50,000 bacteria to the cubic centimeter, as determined by a triple test made monthly by the Health Department, shall be pasteurized. This, it is believed, would compel the pasteurization of about 90% of the milk supply of New York. On two occasions recently, arguments for and against the measure were heard, and a final hearing is to be given before the bill is acted on.

A Centenarian. — Mrs. Louise Chauncey, of Seneca Falls, Seneca County, N. Y., died on March 1, from influenza, at the age of one hundred and seven years. She was of French descent and was born in mid-ocean on March 10, 1801, while her parents, Jean and Louise Pierott, were on their way to settle in Canada. She and her husband, Joseph Chauncey, whom she originally met in Quebec, lived together for over seventy-five years. He was of the same age as herself, and died seven years ago at the age of one hundred.

Hospital for Contagious Diseases. — By a decision of the Court of Appeals on March 5, the city of New York is enabled to proceed with the erection of a hospital for contagious diseases in Hawthorne Street, near Kingston Avenue, Brooklyn. One of the property owners in the vicinity obtained a judgment at Special Term enjoining the city from building the hospital in this location and the Appellate Division of the Supreme Court reversed the judgment. The case was then carried to the Court of Appeals, and this now upholds the latter decision.

Discussion on Typhoid Fever. — At the New York Academy of Medicine on March 7, there was an interesting discussion on typhoid fever and infected water supplies. Dr. Jonathan M. Wainwright of the Moses Taylor Hospital at Scranton, Pa., read a paper in which he described the epidemic in that city last winter and recommended the plan of municipal ownership of water supplies. Under this system, he said, one at least eliminates the harm a private corporation may do during an epidemic in its efforts to safeguard the capital stock at the expense of further disaster to the people. Reports also on the typhoid epidemics in Pittsburg and Berwick, Pa., were read by Dr. J. F. Edward, superintendent of the Pittsburg Bureau of Health, and Dr. J. H. Bowman, of Berwick. Following these papers there was a report on the bacteriology of the blood in typhoid fever, based on analyses of one thousand cases, by Dr. Warren Coleman and B. H. Buxton. In discussing this Dr. E. Libman, assistant pathologist to Mount Sinai Hospital, referred to the reports of contaminated ice taken from the Hudson River and sold in New York. While the ice companies had been blamed, he said, it seemed to him that they were really doing the community a great service. They are accused of selling bad ice, and they turn and ask, " Why do you allow the water to be polluted, so that we get bad ice? " This, he thought, was a very pertinent question.

Obituary.

GEORGE BINGHAM FOWLER, M.D.

Dr. George Bingham Fowler, one of the leading physicians of New York, died on March 6. He had been in poor health for a number of months, but the end came suddenly, and was due to gastric hemorrhage. He was the son of Dr. Edmund Fowler, of Southwick, Mass., and his mother belonged to a distinguished Southern family. He was born in Mason County, Alabama, Oct. 23, 1847, and was educated at the Westfield (Massachusetts) Academy and the College of the City of New York. Later he studied for some time at the University of Heidelberg, and in 1871 was graduated from the College of Physicians and Surgeons, New York. Immediately afterward he became the assistant of Dr. John C. Dalton, the eminent professor of physiology in that school, and in 1872, while still retaining this position was appointed quiz-master in physiology and chemistry. He was also curator of the College Museum. He became a successful practitioner and was well-known as a medical writer. His thorough training in physiology led him to take special interest in diatetics and he was a recognized authority on this subject and on gastro-interstinal diseases. He was the founder and editor of *The Dietetic Gazette*.

Dr. Fowler filled with credit many positions of usefulness and responsibility. For two years he was assistant sanitary superintendent in the New York Health Department. For thirteen years he was medical officer of the Provident Savings Life Insurance Company. From 1886 until the time of his death he was professor of clinical medicine in the New York Post-Graduate

Medical School and Hospital. In 1895 he was appointed Commissioner of the State Board of Health by Governor Morton, and in 1900 a member of the Tenement House Commission of Fifteen by Governor Roosevelt. In the latter year he was elected president of the Medical Society of the County of New York. He was also attending physician to Bellevue Hospital and the New York Infant Asylum, and at the time of his death was consulting physician to Bellevue and to the hospital of the French Benevolent Society.

In addition to his marked ability, much of Dr. Fowler's success was due to his pronounced social instincts. He was one of the most genial of men, excelling as a *raconteur*, and throughout his career his popularity in the various circles with which he was associated was such as few of the profession have attained in New York. He leaves a widow, who was a daughter of the late Dr. Christopher Prince, and three children, one of whom is Dr. Edmund Prince Fowler, who from 1902 until its discontinuance last year was the editor of the directory published by the Medical Society of the County of New York.

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Current Literature.

The Journal of the American Medical Association, Feb. 23, 1907.

1. *Meltzer, S. J. *The Factors of Safety in Animal Structure and Animal Economy.*
2. Mettler, L. H. *Clinical Physiopathology.*
3. *Hecht, D. *Hysteria in Children.*
4. Posey, W. C. *Treatment of Simple Chronic Glaucoma by Miotics.*
5. *Butler, G. F. *The Care and Treatment of Inebriates.*
6. Mason, L. D. *The Psychic Treatment of Inebriety.*
7. Foster, N. K. *The Plague in American Cities.*
8. Bok, E. *The Physician and the Nostrum.*
9. *Ashburn, P. M., and Craig, C. F. *Study of Tropical Diseases in the Philippine Islands.*

1. Meltzer, noticing the tendency of some writers to emphasize the economy of nature in the animal organism, both as to material and energy, points out that the factor of safety in the body — the surplus above that which is demanded — is far greater than that which is required in artificial structures. For example, he refers to the bilateral organs, each of which is more than capable of supplying the place of both, the kidneys, the ovaries, the thyroids, the adrenals, etc. In the non-paired organs the same prodigality of tissue and functional capacity is apparent, some organs possess at least twice as much tissue as a maximum of normal activity would require; and in other organs, especially those with an internal secretion, the margin of safety amounts sometimes to ten to fifteen times the actual need. He does not think it probable that tissues are usually inactive, such must be the exception, but they work normally only a fraction of their capacity. The power of self-repair is, moreover, a safety factor far beyond anything in human-made machines. While noting some partial exceptions, the rule seems to be that the organs of the body are built on a plan of a surplus of structure and energy, and Meltzer therefore is inclined to question the theory advanced by some that a minimum, say of proteid ingestion, is the optimum or ideal. There are no facts that support it, and on the other hand there are facts that point the other way, such as the abundant secretion of proteolytic enzymes and the excessive capacity of the digestive tract for the absorption of proteids. These seem to be fair evidence that Nature intended this surplus of material and capacity to be used. The function of supply of tissue and energy by means of proteid food should, he holds, be governed by the same principle of affluence that has controlled the entire construction of the animal for the safety of its life and the perpetuation of its species. In conclusion he remarks that the factors of safety have an important part in the process of natural selection. The species best provided with a surplus of structure and energy, and thus fitted to meet emergencies, are most likely to survive in the struggle for existence.

3. Hecht says that hysteria in children has not received the attention it deserves and that its frequency is underestimated. He does not attribute it especially to defective modern methods of education or to a luxurious civilization, since statistics show that it is not confined to those who are specially liable to be affected by such, but is found as often in the children of the poor and ignorant as in those of the rich, and that the major types are recruited more from isolated rural districts than from urban centers. It is useless to look for all the so-called stigmata and accidents of adult hysteria in the child; juvenile hysteria in its objective manifestations is chiefly monosymptomatic, and a single hysterical symptom, standing out in bold relief in the child should, from its very prominence, arouse suspicion as to its functional nature. Motor symptoms prevail; sensory symptoms, according to Hecht, are rarely noted in children, and when they are, are usually of the hyperesthetic type. When an anesthetic zone, suggested or not, appears, it is of the same sharply demarcated, unanatomic type as in adults. Hysterical motor agitation shows itself largely in the form of choreic movements, a variety of facial spasms, convulsive tics and epileptoid seizures. The graver forms of the latter are frequently mistaken for epilepsy, and those of somewhat lesser degree are conveniently evaded with a diagnosis of hystero-epilepsy, a practice to which Hecht objects. As regards diagnosis, Hecht favors the Möbius dictum in dubious cases that " such symptoms may be regarded as hysterical, which cannot be voluntarily produced or which may be simulated." The greatest difficulty is often not so much to avoid mistaking organic disease for hysteria and *vice versa*, as in failing to appreciate that organic disease may, and frequently does, complicate hysteria. We should study the child's temperament, remember its imitative faculty and in all conditions with a prominence of doubtful symptoms, think of hysteria as a not impossible factor. The prognosis is infinitely better than in adults, and as a rule, the younger the child the better. The fundamental law of treatment is that all hysteric symptoms are psychic, and the means of cure can only be psychic, *i. e.*, acting on and through the patient's mind. An early and positive diagnosis favors an early and complete cure. Isolation is imperative when the cordial and efficient co-operation of friends and parents cannot be had. After a cure in isolation has been secured the patients should not be returned too soon to their former associations. Hecht refers with some little detail to Bruns' methods of treatment of these cases, the " method of surprise " and the " method of disregard " and considers the objections that have been made to them rather weak. Unpleasant and even slightly painful methods applied with due judgment may be successful in properly selected cases.

5. Inebriates are classified by Butler as congenital defectives, weak-willed instabilities, accidental inebriates, hysteric inebriates, periodic inebriates and inebriates with an acquired nervous constitution. The congenital is frequently of the pseudo-criminal variety. The weak-willed inebriates are often irritably exhausted individuals, frequently lithemic. They often improve under treatment to relapse again, when it is discontinued. The third type includes those who have had their moral inhibiting power overthrown by shock, etc., and mental and physical depression. The physical condition of these patients needs attention. Liver, skin and lungs, as well as the general nerve tone, and medical care of the rest-cure variety are often very useful. In none of these three types can the promise of the patient to abstain from liquors be entirely depended on, but the signing of the pledge as a suggestive measure may be potent under favorable conditions. The periodical drinker is considered by Butler not as an inebriate, but as a victim of periodical insanity akin to the epileptic form. The neurasthenic and hysteric types,

due sometimes to shock or traumatism, are noticed, and the possibility of cure mentioned, but the paranoiac type is practically hopeless, except in cases in which there may be a good mental background which keeps the paranoiac tendency somewhat under control, and which may be aided by removal of sources of irritation. Three of these types require medical supervision. There is no specific treatment for inebriety. It is the patient, not the disease that requires treatment. The inebriate requires restful sleep and nerve tonics. Balneotherapy in all its varieties is beneficial. The diet should be regulated; red meats and starches should be reduced, while fats should be increased. Protracted medical supervision is needed, otherwise failure results. Moral influence, suggestion, diversions, exercise and words in a special institution under medical control, are spoken of as necessary, and the increase of the number of such institutions is considered exceedingly advisable.

9. Ashburn and Craig have studied the development of Filaria philippinensis in the body of the mosquito, Culex fatigans. They found that this mosquito, in drawing blood from an infected patient, manages to take in, in some way or other, forty or fifty times as many filariæ as can be obtained by a needle puncture; some of the insects themselves apparently succumb to the infection, and in other cases the filariæ do not develop, but all die after ingestion. The great majority are dead the third day; it is apparently the exception to be able to find insects in which the life cycle of the parasite can be observed. The worm seems to develop in the thoracic muscles, the changes noted are described and a fuller account is promised when sufficient material can have been observed. At present the authors believe that the life cycle of F. philippinensis will be found to resemble closely that of F. bancrofti. The authors remark on the uncertainty of laboratory methods for the early diagnosis of cholera. Pure, or even approximately pure, cultures of the cholera vibrio are not easily obtained from the stools and in fact only once have they seen such a predominance of the germs in the stool as to give it, microscopically, the appearance of a pure culture. They have also investigated dengue, and, it not being a dangerous disease, they have been able to obtain plenty of volunteers for inoculation experiments, no demonstrable organism being discovered by blood examination. From the results of work, already done and what is in view, the authors hope to be able to demonstrate that: (1) The cause of dengue is present in the blood of the infected individual, as the intravenous inoculation of healthy men with blood from a patient suffering from dengue is followed by a typical attack of the disease. (2) The organism causing the disease is probably ultramicroscopic in size, as the inoculation of infected blood into healthy men after it has been passed through a filter which retains the smallest known organism, produces a typical attack of dengue. (3) The incubation period is four days, whether filtered or unfiltered blood be used in inoculation. (4) The disease is not contagious. (5) Dengue is transmitted by at least one species of mosquito (Culex fatigans), as proved by experiment.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.
FEBRUARY, 1907.

1. * BORDLEY, J. *Trachoma in the American Negro Race.*
2. MORSE, E. *Four Cases of Membranous Dysmenorrhea.*
3. KNOX, J. H. M. *The Medical Life of Oliver Wendell Holmes.*
4. *EMERSON, C. P. *The Blood in Pernicious Anemia.*
5. *WROTH, P. *The Volume and the Color Index of the Red Corpuscles.*
6. *CALVERT, W. J. *Pulsating Empyema.*

1. Bordley's paper may be summarized as follows: Trachoma in the American negro does not exist.

4. Emerson has analyzed the blood findings in eighty-nine cases of pernicious anemia at the Johns Hopkins Hospital. In the results the value of the accepted features of the disease is well sustained. The low red count, the degenerations in the red cells, with abnormalities in size and form, the occurrence of nucleated red cells, the hemoglobin per cent reduced in somewhat less degree than the red count were all manifest. The conditions present at entrance to the hospital showed in a striking manner the absence of exact relation between the degree of anemia and the patient's general condition. The red counts in patients whose symptoms forced them to give up work and to enter the hospital varied from 500,000 to 4,000,000; in a majority, however, the red count was under 2,000,000. A characteristic of the disease is the variability of the number of red corpuscles in each case from week to week. In many cases a periodic rise and fall of their number was observed. The counts within forty-eight hours of death varied from 376,000 to 2,704,000, again showing the non-parallelism between clinical and blood conditions. It is thought that a rise of red count just before death may be due to diminution of plasma. Nucleated red cells were present at some time in 62 out of 74 cases. These are classified as normoblasts, intermediates, and megaloblasts, by comparison with observations of the bone marrow of infants. They fall mainly into two classes, separated by a number of differences but most distinctly by the size of the nucleus, — that of the normoblast being of approximately half the diameter of a normal red blood corpuscle, that of the megaloblast being at least as large as the ordinary red cell. Cells not corresponding exactly with the characteristics of either class, the intermediate cells, seemed to have much the same significance as megaloblasts. In a majority of the cases all three forms were present. The hemoglobin was reduced roughly in proportion to the red count, giving a color index of about one. The white count was generally low, with a relative lymphocytosis in almost all cases. Eosinophilia in some cases was associated with improvement in the red count. Myelocytes were present in small numbers in 28 of the cases. The so-called blood crises in which great numbers of blasts appear in the peripheral blood, were observed 14 times, normoblasts predominating in 5 crises and megaloblasts in 9. The counts in all cases of special interest are tabulated and compared to illustrate points mentioned.

5. Wroth reports the results of blood examinations in confirmation of the findings of Capps as to the "volume index," the ratio of the volume of red cells (determined by the hematocrit) to the hemoglobin, as opposed to the "color index" or ratio of the red count percentage to the hemoglobin. He further compares the color index and the volume index with the "new color index" of Emerson or ratio of the number of grams of hemoglobin per million cells to the normal. His observations are too few and too full of changes in methods to serve as a basis for conclusions. The three indices were roughly parallel but the "new color index" was generally the highest.

6. Calvert's paper is a brief note to supplement a previous paper, to which he refers, by experimental evidence. The pulsating empyema must receive its impulse from the heart or from the aorta. Pulsation of the heart, as exerted for instance upon the pericardium distended with fluid, is diastolic, due to expansion of the heart during diastole. An empyema, therefore, which has a systolic pulsation must receive its impulse not from the heart but from the aorta

THE JOURNAL OF EXPERIMENTAL MEDICINE.
JAN. 23, 1907.

1. *THAYER, W. S., and HAZEN, H. H. *Calcification of the Breast Following a Typhoid Abscess.*
2. MADSEN, T., and NOGUCHI, H. *Toxins and Antitoxins.*
3. *CAPPS, J. A., and SMITH, J. F. *The Leukolytic Action of the Blood Serum of Cases of Leukemia Treated with X-ray.*
4. SYMMERS, D. *The Cytology of Multiple Non-inflammatory Necrosis of the Liver.*
5. SOLLMAN, T., WILLIAMS, W., and BRIGGS, C. E. *Experimental Atresia of the Ureter.*
6. ALLEN, D. P., and PARKER, H. P. *Hydronephrosis of Right Kidney, Atresia of Left Ureter.*
7. FIELD, C. W., and TEAGUE, O. *Electrical Charge of Toxin and Antitoxin.*
8. *HERRICK, F. C. *The Cause of Increased Portal Pressure in Portal Cirrhosis.*

1. Thayer and Hazen report a case of typhoid abscess in a patient who had been given large amounts of calcium lactate; after opening and packing with iodoform extensive calcification occurred all about the cavity. On the ground of observations in animals it is thought that the

iodoform dressing was influential in inducing this calcium deposit. Following this the intake and output of calcium were measured. Under diet of milk and eggs there was calcium retention. Under carbohydrate free diet there was an excess of calcium elimination, and the calcification in thirty-six days entirely disappeared.

3. Capps and Smith have performed a number of experiments with the blood of leukemic patients. They have found that the serum of leukemic patients exposed to the x-ray produced when injected into animals a marked fall in the number of leukocytes of those animals. Normal human serum and leukemic blood not exposed to x-rays had no such effect. The blood of leukemic patients exposed to the x-ray was also observed in hanging drop to have a decided leukolytic action upon normal or leukemic human blood, and also an agglutinating power over the erythrocytes. The leukolytic power of this serum in animals and in human blood under the microscope suggested a trial of its use in leukemia in human beings. This they were able to do on three occasions in one case. From 4 to 10 cc. of serum from a patient who had improved under the x-ray was injected into a patient who had been without treatment and steadily growing worse for three months. After each injection a marked fall of the white count occurred within forty-eight hours. The improvement, however, was not permanent, for the count rose again to its original number after each fall. The patient at the last two injections seemed to be acquiring an immunity to the leukolytic action of the serum.

8. Herrick's article describes his investigations of the circulatory conditions in portal cirrhosis. The results seem to establish facts of great importance in the pathological physiology of the disease. The existence of increased blood pressure in the portal circulation is well recognized, but has hitherto been attributed to *obstruction* to the portal vessels by fibrosis and its contraction. Herrick's experiments seem to prove that the increased pressure is due rather to an abnormal anastomosis between the hepatic artery and the inter-lobular branches of the portal vein. In the microscopic anatomy of the liver, it is to be remembered, branches of the hepatic artery and of the portal vein both terminate in the inter-lobular spaces, discharging their blood into a common network of capillaries which lead to the intra-lobular branches of the hepatic vein. The arterial supply of the fibrous tissue of a cirrhotic tissue is increased. Thus it is easily conceivable that such an anastomosis as is suggested might occur. That it does occur is the inference from the following experiments. Normal livers and typical cirrhotic livers were washed free from blood, with precautions against injury in the process, and transfused through the portal vein and hepatic artery, with salt solution under measured pressure. Beginning with low pressures in both vessels and gradually increasing the arterial pressure, it was found that in normal livers the portal pressure rose but 1 mm. for every 40 mm. of arterial pressure increase, whereas in the cirrhotic livers the portal pressure rose 1 mm. for every 6 mm. of arterial pressure increase. That obstruction of portal veins is not a cause of the increased pressure is shown by the fact that under equal pressures a greater volume of blood, in proportion even to the weight of the liver, flowed through portal veins of the cirrhotic than of the normal livers, showing an increased instead of a diminished vascular capacity. It is probable, therefore, that the communication of the arterial pressure to the portal pressure by direct anastomosis is an important factor in explanation of the increased portal pressure in portal cirrhosis.

The Lancet.
Feb. 16, 1907.

1. Evans, W. H. *Leucoderma and Analogous Changes in the Pigmentation of the Skin.*
2. *Elmslie, R. C. *Injury and Deformity of the Epiphysis of the Head of the Femur: Coxa Vara.*
3. Phillips, S. *Some Affections of the Pancreas.* (Continued article.)
4. Littlewood, H. *A Large Vesical Calculus (18 oz. 5 dr.) Successfully Removed by the Suprapubic Operation.*
5. Pratt, E., and Lockyer, C. *A Case of Cancer of the Esophagus of Unusual Type.*
6. Bushnell, F. G. *Note on the Value of Bacteriological Examinations of the Blood in Typhoid Fever and Other Bacteriemias.*

2. This is a study of 62 cases of coxa vara, most of which have been under the writer's personal observation. X-ray shows that more than one anatomical peculiarity is included under the term, but that in the majority of instances the origin of the deformity is connected with the mode of growth of the neck of the femur. Coxa valga is a rare condition seldom clinically demonstrable, in which the angle of the head of the femur to the shaft remains in adult life the same as it is in fetal life. Coxa vara, the opposite of this, was first described by Florani in 1881. The varieties are: (1) Congenital, (2) infantile, (3) adolescent, (4) the result of diseases causing softening of bone, (5) the result of acute or chronic inflammatory processes, (6) osteo-arthritis, (7) traumatic. The writer takes up these varieties under the heads of diagnosis, prognosis and treatment, and covers the ground carefully.

British Medical Journal.
Feb. 16, 1907.

1. Butler, H. T. *The Objects of Hunter's Life and the Manner in which he Accomplished Them.*
2. Jamieson, W. A. *Clinical Remarks on Ichthyosis and Its Treatment.*
3. *Jones, H. L. *The Treatment of Rodent Ulcer by Zinc Ions.*
4. *Sherren, J. *A Clinical Lecture on a Case of Secondary Suture of the Great Sciatic Nerve.*
5. *Fletcher, H. M., and Robinson, H. B. *A Case of Idiopathic Dilatation of the Rectum and of the Colon as far as the Hepatic Flexure.*
6. *Forsyth, D. *Observations on the Parathyroids and Accessory Thyroids in Man.*
7. Greenwood, M. *The Influence of Increased Barometric Pressure on Man. Saturation of the Tissue Fluids with Nitrogen.*

3. Jones describes the results of treating six cases of rodent ulcer by zinc ions. The idea is quite new, the technic not difficult and his results excellent.

4. Sherren reports an interesting case of suture of the great sciatic and lesser sciatic nerves which was done five years after the accident which divided the nerves. The patient had little motion in his leg and came for treatment of deep pressure ulcers of the foot. The case is described in detail as to operation, and the extent and character of loss of sensibility before and after operation. The result has so far been very satisfactory.

5. This paper is based on a case of dilatation of the rectum in a boy of twelve. Although his abdomen was always large and he was moderately constipated, there were no acute symptoms till he was brought to the hospital for sudden increase in size of the belly, marked constipation and abdominal pain. On operation there was found an enormous dilatation of the rectum and colon as far as the hepatic flexure, out of which many pounds of feces were squeezed through the anus. No constriction was found. Temporary recovery ensued with normal function of the bowels. Two years later, having had some moderate attacks of constipation in the meanwhile, he was re-admitted to the hospital in coma and soon died. The results of the autopsy are given in detail. The rectum measured 19¼ inches in circumference. The points of clinical interest are the absence of symptoms in early life, the sudden onset of acute symptoms, the great improvement in general health after an operation which consisted merely in completely clearing the gut, the duration of the improvement and the sudden termination with coma.

6. This is a preliminary communication on the mode of investigation, the number, position and appearance of the parathyroids, the age at which they occur, and the relation to the accessory thyroids.

Deutsche Medizinische Wochenschrift, No. 7.
Feb. 14, 1907.

1. Fürbringer. *The Treatment of Impotence.*
2. Kolaczek, H. *A Simple Means to Distinguish Tuberculous Pus.*
3. *Siebert, K. *The Prevention of Mercurial Stomatitis by Means of Isoform Tooth Powder.*

4. Wolff-Eismer, A. *Experience with Hay Fever for 1906.*
5. Theobold. *Antisepsis in Obstetrics.*
6. Klein, J. *The Artificial Dilatation of the Cervix during Labor and Pregnancy. A Review of the Modern Literature.*
7. Davidsohn, F. *Protective Appliances in the X-Ray Room.*
8. Goldmann, F. *The Preparation of Protargol.*
9. Eijkman, C. *The Cause of the Inhibition of Growth in Bacterial Cultures.*

3. One of the chief obstacles to a thorough mercurial treatment is the occurrence of mercurial stomatitis. This is probably due to an invasion by bacteria, after the gums have become swollen and lowered in their resistance owing to the direct action of the mercury. The destruction of the bacteria about the teeth is, therefore, the chief means of preventing stomatitis. Siebert made experiments with most of the usual mouth washes, and found that their effect upon the bacteria of the mouth was very slight. By using a tooth powder containing 5% isoform ("saluferrin") he was able to produce in himself a marked reduction in the bacteria of the mouth, which lasted a number of hours. Out of 45 patients receiving mercurial cures and using this tooth powder three times a day, none developed stomatitis, although no mouth washes were used.

Münchener Medizinische Wochenschrift, No. 7.

Feb. 12, 1907.

1. Zieler, K. *The Action of the Modern Gonorrhea Therapy.*
2. *Hildebrandt. *The Etiology of Erythema Nodosum.*
3. *Thorsbecken, O. *The Treatment of Diabetes when Complicated by Phthisis.*
4. Bab, H. *The Nature of the Spirochete Pallida.*
5. Frey, C. *A Form of Lens with Double Focus.*
6. Stern, C., and Hesse. *The Action of the Uviol Light on the Skin, and Its Use in Dermatology.*
7. Zacharias, P. *Parturition in an Advanced Case of Tabes Dorsalis.*

2. Hildebrandt reports a case of erythema nodosum in which it seems probable that the tubercle bacillus was the causative agent. The patient, a twenty-four-year old cook with a history of scrofula in childhood, was under observation for nine months. During this time, there were frequent attacks of erythema complicated with multiple serositis, (both pleuræ and pericardium). Blood withdrawn from the patient infected two guinea pigs with tuberculosis. The concurrence of erythema nodosum with tuberculous manifestations has been frequently reported, and it seems very possible that some cases of erythema are caused by the tubercle bacillus.

3. It often happens that when a diabetic contracts phthisis, the latter disease is considered the more important of the two, and the patient is put on an unrestricted diet for that reason. Thorsbecken believes that this is a pernicious practice, for the tubercle bacillus like many other bacteria grows better on media containing sugar. The first aim in such a case should be to render the urine sugar free, and this alone may be sufficient to bring the tuberculous process to a standstill, as in a case observed by the author and another reported by Naunyn.

Berliner Klinische Wochenschrift, No. 53.

Dec. 31, 1906.

1. Weil and Axamit. *Free Receptors.*
2. *Sitsen, A. E. *Myosthenia Gravis.*
3. Tupsik, L. *The Relations of the Meningococcus to the Gonococcus.*

2. This article contains the autopsy report of a case previously reported by Pel, and a table of the thirty cases in which autopsy has been performed. No constant lesions have been found in myasthenia gravis.

Jan. 7, 1907.

1. *Heubner, O. *Orthotic Albuminuria.*
2. Hildebrand, O. *Contusions of the Abdomen.*
3. Wassermann, A. *The Diagnostic Significance of Specific Absorption of the Complement.*
4. Mosse, M. *Some Rare Disturbances in Exophthalmic Goitre.*
5. Hartog, C. *When shall Patients Get up after Laparotomy?*
6. *Marmorek, A. *Tuberculous Septicemia.*

1. Orthotic, orthostatic or postural albuminuria is that form in which albumin is found in the urine on the assumption of the standing posture and promptly disappears when the patient lies down. It occurs exclusively in children and adolescents, and is to be distinguished from the physiological albuminuria occurring after excessive exertion or cold baths, and from that form which occurs only after heavy meals. It is often assumed to be a manifestation of nephritis, but this, according to Heubner, is not the case. He believes that it is due purely to circulatory changes and quotes several investigators who have found abnormal conditions of the circulatory apparatus in these cases. The work of Adele was especially significant; he found that orthotics showed on arising a fall instead of a rise in blood pressure. Heubner reports the first autopsy of a case of orthotic albuminuria. As was to be expected in case his views were correct, the kidneys showed no changes of any account, either macroscopically or microscopically. An obsolete focus of tuberculosis was found at the apex of one lung, a point of interest in connection with the somewhat frequent occurrence of tuberculosis in the cases previously reported.

6. Marmorek, working with guinea pigs, found that in the experimental tuberculosis of these animals there is always a septicemia; bacilli could always, after a varying interval, be demonstrated in the blood by means of animal inoculation. The number of bacilli was always comparatively small, so that they could not be demonstrated microscopically. The animals lived for weeks after the presence of tubercle bacilli had been demonstrated in the blood. That the guinea pig is not absolutely defenceless towards tubercle was shown by the fact that the bacilli obtained from the blood showed a decided loss of virulence. Although tuberculosis in the guinea-pig is a progressive disease, while in man it has a marked tendency to become localized, Marmorek considers it probable that in man also a septicemia exists at certain stages; that it has not been demonstrated oftener is due to the faulty methods employed.

Immediate and Remote Consequences of Cranial Injuries. As a basis of discussion for the Carpenter Lecture before the New York Academy of Medicine, Cushing (*New York Med. Jour.*, Nos. 3, 4, 5, 1907) related the histories of three cases of intracranial hemorrhage; the first, extradural; the second, subcortical; the third, intermeningeal. The first case sustained a basal fracture with rupture of the meningeal artery. There were evidences of compression without preceding concussion. An exploratory craniotomy was done, the clot removed, and bleeding controlled by a gauze pack. Until this pack was removed the aphasia and paralysis present before operation persisted. The patient was discharged well but returned three years later with a pulsating exophthalmos and a roaring noise inside the head due to an arterio-venous aneurism. Ligation of the internal carotid was ineffectual. In the second case reported, the hemorrhage was due to a penetrating stab wound of the skull. A blood clot was found under the cortex in the post-central region, which had caused astereognosis, crossed sensory disturbances and word blindness. All these disappeared rapidly on removal of the clot, except the astereognosis which persisted for about three months. Hemorrhage in the third case was due to a bullet which passed obliquely through the left frontal lobe. There followed attacks of epilepsy with vocal aura. Adhesions were separated and the bullet, lying just beneath the cortex, was extracted. Though the subjective symptoms were much relieved the epileptic attacks continued. Cushing discusses the points illustrated by these cases very fully. It has been his experience that cases of head injury which are without much doubt on the way to recovery without operative intervention receive much benefit from a craniotomy as a decompressive measure. He relates in this connection two cases presenting the usual symptoms of a moderate degree of compression, with some stupor, much headache, nausea, irritability and slowed pulse. Both entered the hospital within twenty-four hours of each other. In neither was there any doubt of their ultimate "recovery" without an operation. In both there was subdural hemorrhage (shown by lumbar puncture) and choked disk. The more dull and stuporous of the two was operated on; an old subdural clot removed, and the region drained for forty-eight hours. This patient was bright and free from headache on the next day; the second, however, was somnolent, and having changed but little a week later, he in turn was subjected to craniotomy with marked relief. Cranial surgery, to be successful, demands a wide and detailed knowledge in the interpretation of the signs and symptoms due to cerebral injury. Lumbar puncture, blood pressure measurements, and especially examination of the eye grounds, are of great value. At operation the control of hemorrhage by a tourniquet is important. An apparatus for performing artificial respiration should always be at hand, as well as a unipolar electrode for cortical stimulation. The lecture well illustrates the marked progress which has been made in this branch of surgery during the past few years and will be read with interest and profit by all interested in the subject.

Some Common Misconceptions in the Pathological Physiology of the Circulation. Janeway (*New York Med. Jour.*, Feb. 2, 1907) speaks first of the sudden death in acute disease commonly but wrongly attributed to "heart failure." He calls attention to the similarity which exists between the final collapse in pneumonia and surgical shock, also to the fact that at autopsy in contrast to the findings in heart disease there is found no right-sided engorgement. He quotes the results of the experiments of Romberg and his pupils upon rabbits inoculated with various infections, which showed that the final cause of death was not heart failure but vasomotor failure or collapse. These results, reported seven years ago and never controverted, may be accepted. Clinically this collapse comes suddenly. The earliest sign of its approach is the loss of the normal reflex rise of blood pressure from reflex stimuli. This, however, can rarely be tested. At present our most reliable warning is a falling blood pressure with a rising pulse rate. Therapeutically, our aim must be to support vasomotor tone. Romberg found strychnine of no value, and digitalis, caffein and camphor of only temporary benefit. Barium chloride, adrenalin and saline infusions are of somewhat greater benefit, but at best drug treatment is of little avail. In prevention of the final collapse our main reliance must be the guarding of the nervous system against injurious influences and in the tonic effect of bathing as in typhoid. The Nauheim bath treatment deserves further trial.

Persistent high blood pressure is the second condition discussed. Recognition of this abnormality has led to much harm, since it has caused clinicians to attempt to reduce the blood pressure without consideration of other indications. It is now well established that the hypertension is a compensatory phenomenon, necessary to make up for diseased kidneys, sclerosed arteries or other conditions still obscure. The treatment is in early cases directed toward prevention alone. The diet should be regulated, particularly as to avoidance of excess of proteid and liquids. Moderation in exercise is essential. Small doses of iodide may be of benefit. In the later stages the danger most to be feared is insufficiency of the left ventricle. For this digitalis is urgently indicated, and a rise of blood pressure is to be welcomed. Vasodilators or venesection may sometimes be indicated for cerebral hemorrhage, uremic convulsions or anginal seizures, but in most conditions the hypertension is to be maintained and supported.

The House Fly and Its Connection with Disease Dissemination. Dickinson (*Med. Rec.*, Jan. 26, 1907) states that of the seven different varieties of flies found in our houses the common house fly (*Musca domestica*) makes up 98%. They are born in manure or in decomposing matter of any kind. Their tastes are indelicate and omnivorous, and they subsist on sputum, fecal juices, and the slime and dirt that stick to exposed surfaces. The writer reports the results of experiments by various investigators. He declares that the importance of flies as a factor in the dissemination of diseases depends largely upon other existing conditions. The possibility of a spread of any type of infectious disease by this insect has been conclusively proved. From experiments the relative danger is as follows: the dejecta, the proboscis, the crushed or ingested insect and the outside parts. The writer declares that scientifically speaking the number of flies in a community is in direct proportion to the carelessness of its sanitation. The greatest care should be taken to destroy as many of these insects as possible and to protect houses and their contents from those that remain.

The Theory of the Toxic Origin of Pernicious Anemia. Hollis and Ditman (*Med. Rec.*, Feb. 2, 1907) describe various experiments that have been carried on in the search for knowledge concerning pernicious anemia. Herter has recently demonstrated the more or less constant presence of certain forms of anaërobic bacteria in the contents of the large intestine. These bacteria can break down proteids into a form which is used by other putrefactive bacteria, among which are the indol-forming organisms. Indol occurs quite uniformly in excess in pernicious anemia. Indol produces toxic symptoms in animals whose oxidizing capacity has been decreased. The anaërobic bacteria are limited to the large intestine where they can be reached by therapeutic measures introduced into the lower end of the gastro-intestinal canal. Irrigation of or local applications in the colon are suggested as a means for their removal. The clinical results of the treatment by colon irrigation in these cases are very happy.

Miscellany.

LORD LISTER'S EIGHTIETH BIRTHDAY.

April 4, 1907, will be the eightieth anniversary of Lord Lister's birth, and it seems proper that the occasion should be taken to convey to him in some appropriate way the admiration and affectionate esteem with which his work and his character have inspired his contemporaries. From Dr. C. J. Martin, the Director of the Lister Institute, has come the happy suggestion that the best form which this expression could take would be the republication of all his scientific papers, prefaced by a biography which would contain an account of the part played by the genius of Lister in the development of our knowledge of infectious processes and the history of his efforts to obviate wound infection, the successful result of which initiated a new era in surgery. As Lord Lister's original papers are scattered throughout the medical and scientific publications of this country it is thought that a very large number of professional and scientific men in Great Britain and the British colonies and dependencies, in America, and also on the continent of Europe, might be glad to have the collected works of one whose contribution to medical science during the last forty years has made him pre-eminent amongst his countrymen. A number of Lord Lister's friends and admirers have expressed their warm approval of this means of celebrating his birthday, and a committee representative of medicine and science is being formed to determine how the above object can best be attained. Dr. C. J. Martin will be glad to receive at the Lister Institute, Chelsea Gardens, S. W., the names of those who desire to take part in this tribute. — *British Medical Journal.*

RECORD OF MORTALITY

For the Week ending Saturday, March 2, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,694	449	Quincy	7	—
Chicago	786	221	Waltham	9	1
Philadelphia	—	—	Gloucester	—	—
St. Louis	—	—	Pittsfield	11	3
Baltimore	251	63	Brookline	6	—
Cleveland	—	—	North Adams	11	1
Buffalo	—	—	Chicopee	11	4
Pittsburg	—	—	Northampton	12	1
Cincinnati	—	—	Medford	12	2
Milwaukee	—	—	Beverly	4	—
Washington	—	—	Hyde Park	4	0
Providence	115	29	Newburyport	—	—
Boston	225	58	Leominster	4	1
Worcester	47	13	Melrose	—	—
Fall River	48	24	Woburn	2	1
Cambridge	34	5	Marlborough	4	0
Lowell	44	16	Westfield	5	1
Lynn	26	3	Peabody	—	—
New Bedford	28	6	Revere	7	1
Springfield	27	5	Clinton	3	1
Lawrence	36	16	Attleboro	4	2
Somerville	24	8	Adams	—	—
Holyoke	14	2	Gardner	4	3
Brockton	16	5	Milford	—	—
Malden	12	4	Weymouth	8	1
Salem	10	3	Framingham	4	2
Chelsea	9	4	Watertown	1	—
Haverhill	12	2	Plymouth	—	—
Newton	9	4	Southbridge	3	1
Fitchburg	8	3	Wakefield	—	—
Taunton	23	4	Webster	—	—
Everett	7	1			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MARCH 9, 1907.

L. H. **Schwerin**, acting assistant surgeon. Additional duty on board the "Florida."

R. W. **Plummer**, passed assistant surgeon. Detached from the "Denver" and ordered to the Chicago Recruiting Station.

J. **Stepp**, passed assistant surgeon. Detached from the "Don Juan de Austria" and ordered to the "Denver."

H. **Shaw**, passed assistant surgeon. Commissioned passed assistant surgeon from Oct. 28, 1906.

B. F. **Jenness**, passed assistant surgeon. Commissioned passed assistant surgeon from Nov. 11, 1906.

R. **Hyden**, E. V. **Valz**, F. W. **Smith**, assistant surgeons. Appointed assistant surgeons from March 5, 1907.

L. H. **Schwerin**, acting assistant surgeon. Detached from temporary duties on the "Florida" and ordered to resume duties at the Naval Hospital, Norfolk, Va.

APPOINTMENT.

Dr. Shepherd Ivory Francz, formerly connected with the Harvard Medical School, and later with the McLean Hospital, Boston, has been appointed professor of experimental psychology in the George Washington University. Dr. Francz has always held the position of psychologist to the government hospital for the insane.

SOCIETY NOTICE.

The Boston Society for Medical Improvement. — A meeting of the Society will be held in Sprague Hall, Medical Library Building, Monday, March 18, 1907, at 8.15. Program: Hydrophobia and Its Prevention, Dr. C. P. Sylvester. Its Diagnosis and Prevention, Dr. Langdon Frothingham. Rabies in Massachusetts, its Prevalence and Prevention, Dr. Austin Peters.

Daniel Fiske Jones, M.D., *Secretary.*

RECENT DEATHS.

Dr. Charles Reed, of Brooklyn, N. Y., died March 5. He was born at Ossining, N. Y., in 1856, and was graduated from the College of Physicians and Surgeons, New York, in 1879.

Dr. Thomas A. Skillman, of New Brunswick, N. J., died on March 6, at the age of fifty-three years. He was graduated from the medical department of the University of the City of New York in 1878.

Dr. William Baker Crain, the oldest physician of Richfield Springs, N. Y., died in Utica, on March 9. He was graduated from the medical department of the University of Pennsylvania in 1860, and had practised for over thirty years at the well-known health resort, where among his patients were many prominent persons from all over the country.

BOOKS AND PAMPHLETS RECEIVED.

Climate as a Factor in the Treatment of Tuberculosis. By Frederick I. Knight, M.D. Reprint.

Diagnosis and Treatment of Some of the Ordinary Diseases of the Rectum. By Lewis H. Adler, Jr., M.D. Reprint.

Medical Specialism, with Especial Reference to Proctology. By Lewis H. Adler, Jr., M.D.

Fourth Annual Report of the Superintendent of the Bureau of Government Laboratories for the Year ending August 31, 1905. Manila. 1906.

Fifth Annual Report of the Director of the Bureau of Science for the Year ending August 1, 1906. Manila. 1906.

Reports of the Trustees and Superintendent of the Butler Hospital. Presented to the Corporation at its Sixty-third Annual Meeting, January 23, 1907. Providence, R. I.

Quarterly Bulletin, Medical Department of Washington University. February, 1907. St. Louis, Mo.

Transactions of the American Gynecological Society. Vol. 31. For the year 1906.

Paraffin in Surgery. A Critical and Clinical Study. By William H. Luckett, B.S., M.D., and Frank I. Horn, M.D. Illustrated. New York: Surgery Publishing Co. 1907.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vols. I and II. Chicago: W. T. Keener & Co. 1906.

Makers of Modern Medicine. By James J. Walsh, M.D., Ph.D., LL.D. New York: Fordham University Press. 1907.

New York State Department of Health. Extract from the Twenty-seventh Annual Report. 1906. Albany. 1907.

State of New York. Report of the Sixth Annual Conference of Sanitary Officers. Held at Syracuse, Oct. 24-26, 1906. Albany. 1907.

A Text-Book of the Practice of Medicine. For Students and Practitioners. By Hobart Amory Hare, M.D., B.Sc. Second edition, revised and enlarged. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Medical Diagnosis. A Manual of Clinical Methods for Practitioners and Students. By J. J. Graham Brown, M.D., F.R.C.P.E., F.R.S.E., and W. T. Ritchie, M.D., F.R.C.P.E., F.R.S.E. Fifth edition, greatly enlarged and revised to date. Illustrated. New York: Imperial Publishing Co. 1907.

Tumours, Innocent and Malignant. Their Clinical Characters and Appropriate Treatment. By J. Bland-Sutton, F.R.C.S. Fourth edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

A Text-Book of Ophthalmic Operations. By Harold Grimsdale, M.B., F.R.C.S., and Elmore Brewerton, F.R.C.S. Illustrated. Chicago: W. T. Keener & Co. 1907.

The Graduation Ceremony, With an Account of Some Modern Surgical Celebrations. By W. W. Keen, M.D., LL.D. Reprint.

The Community of Interest of the Medical School and the Public. By W. W. Keen, M.D., LL.D., Hon. F.R.C.S. (Eng. & Edinb.) Reprint.

University of California Publications. Pathology. On the Synthesis of Protein through the Action of Trypsin. By Alonzo Englebert Taylor. Berkeley.

Notes on Blood-Serum Therapy, Preventive Inoculation and Toxin and Serum Diagnosis. For Veterinary Practitioners and Students. By Walter Jowett, F.R.C.V.S., D.V.H. Illustrated. Chicago: W. T. Keener & Co. 1907.

The New Hygiene. Three Lectures on the Prevention of Infectious Diseases. By Elie Metchnikoff, with Preface by E. Ray Lankester. Chicago: W. T. Keener & Co. 1906.

New York State Library. Yearbook of Legislation, 1905. Albany. 1906.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. III. Edinburgh and London: William Green & Sons. 1907.

The Treatment of Tuberculosis of the Urinary Tract in Women. By Edgar Gareeau, M.D. Reprint.

Thirty-first Annual Report, New York State Reformatory at Elmira. For the Fiscal Year ending Sept. 30, 1906. Elmira. 1907.

Sacrococcygeal Tumor (Teratoma). By W. W. Keen, M.D., LL.D., and W. M. Late Coplin, M.D. Reprint.

Original Articles.

SUBDELTOID BURSITIS.

BY CHARLES F. PAINTER, M.D., BOSTON.

Inflammation of the bursa beneath the deltoid muscle is quite common. It is probable that the majority of "peri-arthritic" inflammations of the shoulder are examples of this condition. The chief clinical characteristics of this affection are pain in the shoulder and upper arm, together with impairment of function at the shoulder joint. Traumatism in one form or another is the usual cause of these symptoms. The most common injury producing them is a fall upon the shoulder or a violent twist or wrench to this articulation. These constitute the direct traumatic causes of subdeltoid bursitis; next in importance are the traumatisms resulting from habitual, slight injuries connected with one's occupation; most rare of all are infections of this bursa resulting from the local action of a systemic toxin. There are occasional instances of what seem to be manifestations of osteo-arthritis in this region, with or without evidences of a similar condition elsewhere.

The cases which are herewith reported demonstrate very strikingly the influence of the two forms of injury to which reference has been made.

Codman[1] has published a very careful anatomical study of the relations of this bursa to the structures about the shoulder joint and has called attention to the fact that in some cases there is a rupture of the tendon of the supraspinatus muscle associated with injuries to this bursa. The bursa is situated immediately beneath the fibres of the deltoid muscle and directly above the fibrous capsule of the shoulder joint. In a normal condition it is very thin walled, and adapts itself accurately to the different positions of the head of the bone as it changes with motion of the humerus and scapula. It is said by Codman to be aided in this adaptability by the contracture of the muscle, the tendon of which he has found ruptured in traumatisms to this bursal sac and he attributes its liability to injury, in part, to the fact that rupture of this tendon does not permit the bursal walls to be pulled up out of harm's way when the humerus is elevated. Under normal conditions it must contain very little fluid. In size it perhaps incloses an area as large as a fifty-cent piece. The position of this sac can be well understood by looking at Fig. 1. The incision shown in this case opened into the sac at the juncture of its outer and middle thirds and quite near its inferior border.

Pathology.— The changes which take place in the walls of this sac consist of a thickening of the entire membrane in some cases, with a partial or complete obliteration of the cavity within. Some times villous enlargements have been seen in small areas of the sac so dense as to give a definite shadow in the x-ray, though there was no demonstrable deposit of lime salts associated with these villi. In one (Case IV) of the two cases in which the duration of the symptoms extended over a period of twelve to fifteen years, the sac was full of a yellowish, finely granular, cheesy material, having much the appearance of the contents of a wen. The second (Case III) case in which this condition within the sac was present was very chronic, having caused more or less trouble for ten or twelve years. Chemical analysis of the content of the bursa in Case III made by Dr. E. A. Austin of Tufts Medical School, showed the following result: "The specimen contained a small amount of albumin which was soluble in a 10% ammonium chloride solution and probably consisted of both serum albumin and serum globulin. A small amount of fat which was extracted by ether showed a very large amount of ash. This ash contained a small quantity of sulphate of potash, but over 90% of it was made up of calcium carbonate and calcium phosphate, of which the latter greatly predominated. There was a small trace of magnesia."

In all four of the operative cases to be reported the x-ray examination has shown a very definite shadow in the region where the bursa was found. In two of these (Cases III and IV) the sac was filled with cheesy material, in one of which, according to the above analysis, there was an excess of calcium carbonate and calcium phosphate, both of which substances would naturally obstruct the passage of the x-ray.

In Case I, however, there was no accumulation of cheesy material within the bursa, the walls of the sac being uniformly thickened throughout, and the cavity largely obliterated. The x-ray shadow was quite as dense as in the other two cases. In Case II there was practically no obliteration of the sac and the thickening of its walls was confined to the upper and inner and to the lower and outer corners. It was in these places that the x-ray revealed a shadow. It would appear that calcareous or cheesy change is a degeneration which may take place in the more severe injuries of the bursa in which adhesive inflammation has occurred, obliterating the cavity of the bursa and therefore destroying its function.

(*a*) CLINICAL COURSE AND (*b*) PHYSICAL SIGNS.

(*a*) In the cases brought on by direct violence the symptoms attributable to the bursal inflammation are necessarily somewhat masked at first by the immediate effects of the trauma. Occasionally, however, when the immediate effects are insignificant the true symptoms of the bursitis develop several days after the injury. This is probably always the case, though it is impossible to demonstrate it.

In the occupational cases the development of symptoms is necessarily much more insidious. Periods of comparative freedom from symptoms alternate with periods of severe pain, differing in this respect from the usual acutely traumatic case, where the maximum of severity is attained early and fluctuations are not as common. A dull ache associated with stiffness of the shoulder are the early subjective signs in the majority of instances. Severe, knife-like pain is complained of by a considerable number of patients and its distribution is over the front of the shoulder joint, radiating down to the insertion of the deltoid and even as far as the forearm and fingers.

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[1] E. A. Codman: On Stiff and Painful Shoulders. The Anatomy of the Subdeltoid or Subacromial Bursa and its Clinical Importance. Subdeltoid Bursitis. Boston Medical and Surgical Journal, May 31, 1906. p. 613.

(For illustrations of the anatomical relations of this bursa reference is made to the above article.)

Restriction of the motions at the shoulder is early noted, those first affected being lateral elevation (abduction) of the arm and rotation. Forward flexion and backward flexion (extension) are preserved rather longer than the other motions, probably because the scapula will move with the humerus in those motions; it is sometimes difficult to determine just when independent humeral motion ceases. Great difficulty is experienced by these patients at night. It is almost impossible to assume a comfortable position because of the dragging back of the humerus when in the supine position or when lying upon the well side; lying upon the affected side is usually out of the question.

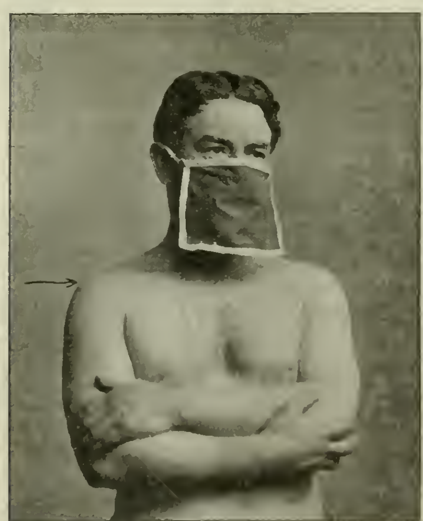

FIG. 1. Illustrates the position of the incision for the removal of the bursa and approximate location of bursa.

(*b*) The physical signs do not vary greatly. The contour of the shoulder is not conspicuously altered. In the more chronic cases there may be more or less atrophy of the muscles about the shoulder, particularly the deltoid and the supra- and infra-spinatus. Occasionally a slight swelling may be seen localized over the bursa, and in one instance there has been a slight elevation of the surface temperature over the bursal enlargement. Acute, localized tenderness to pressure is a very constant symptom and this is demonstrable over the location of the bursa at a point close to the position of the scar seen in Fig. 1.

Restriction to motion, both active and passive, is the most constant and important sign. There are exceptions, however, to this rule. Case IV, one of the patients in whom calcareous changes had taken place, could make nearly all of the motions of the arm readily, except when she had an acute exacerbation. Muscular spasm restricts all attempts at passive motion as well as prohibits active motions. Pain is aggravated by voluntary motion. Fixation of the shoulder, the erect position or support with pillows under the arm and shoulder will give some relief from pain.

Treatment.— Only the open operative treatment will be considered here. The manipulative treatment of the early or subacute cases under an anesthetic, followed by frequent passive motion and massage, accompanied, as soon as lack of sensitiveness will permit, by active stretching exercises, gives good functional results after a few weeks or months of treatment, according to the severity of the case.

The open incision and removal of the entire sac should be practised in the writer's opinion upon all cases, be they occupational or traumatic, which have lasted for six months or more. If they have caused trouble for as long a period as six months they will require, even after a thorough manipulation under ether, a very long time to regain normal motion, if indeed they ever recover completely.

Restitution of normal motion has been accomplished with much less effort and very much sooner after the dissection of the bursa than after the most satisfactory ether manipulation I have seen. Two physicians operated upon within the past year and a half (Cases I and III) have been able to return to their practices within three weeks from operation. In no instance do I recall a manipulated patient who has been able to perform his duties so soon.

The operation is very easily performed. The fibres of the deltoid muscle are separated in a direction parallel to their long axes and the bursa is found very easily beneath the sheath of the muscle if the walls are at all thickened. If this is not the case it sometimes requires a little dissection to find it. It should be thoroughly removed by scissors dissection and the fibres of the deltoid loosely drawn together with two or three catgut sutures and the sheath of the muscles closed over it before suturing the skin. Care should be taken not to get the incision too far out on the point of the shoulder, and it should be made in women so that the shoulder straps of a low-necked gown can be made to cover the scar. It is better to close the skin with a buried silkworm gut, but if the incision is too far out where the contour of the shoulder becomes dome shaped the skin is inclined to gape open, even though the suture be ever so nicely applied.

A Velpeau or a double sling applied over the sterile dressing gives good fixation and is comfortable. The suture is removed after a week or ten days and passive motion is immediately

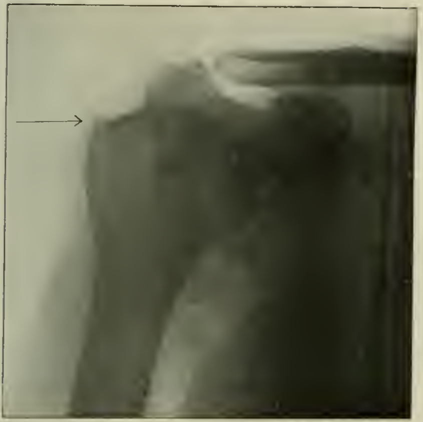

FIG. 2. Arrow indicates location of thickened bursa.

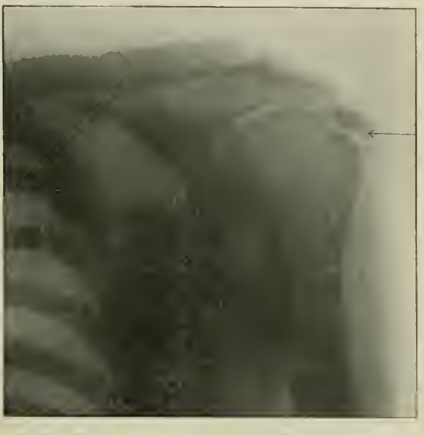

FIG. 5. Arrow indicates situation of thickened sac.

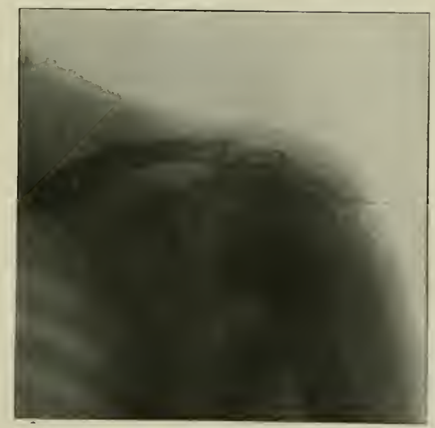

FIG. 6. Arrow indicates location of bursa.

commenced. Hot fomentations to the shoulder favor the limbering-up process and my experience has been that passive motion is restored to normal in from three weeks to two months, whereas active motion is a little more tardily secured. Pain, except that which is associated with the limbering-up process, is almost immediately relieved.

Prognosis in this class of cases the writer is led to believe from his experience with both the manipulative and open methods of treatment is better through the open method than through simple manipulation. The shoulder joint is not opened; ether has to be given in either case, and the risk of the incision is only the risk of superficial sepsis. The operation is not a long one if the bursa is dissected out, so that any subject to whom it is proper to administer an anesthetic is in all probability a proper one upon whom to perform the open operation.

Convalescence is much shorter after the open method and the functional results are believed to be considerably better. The writer is of the opinion that there is no advantage in putting the arm and shoulder up in a plaster spica in a strongly abducted position.

The following four cases are reported in detail:

Case I. G. P., physician, age, forty-five.

On Aug. 28, 1906, patient was examined because of a painful right shoulder which had been troubling him for about a year.

He is engaged in an active general practice, and finds that the discomfort is so great and the interference with the function of his right arm is so decided that he is seriously inconvenienced in the practice of his profession. Apart from a susceptibility to " grippe " and rather frequent attacks of naso-pharyngeal catarrh, he has had no infections related to the present trouble. He has never had rheumatism, and he himself attributes the present symptoms to the jar of driving a Knox automobile. The pain commenced in the shoulder and extended down to the insertion of the deltoid muscle, and occasionally as far as the hand. It has been a considerable annoyance to him at night because of difficulty in assuming a comfortable position. It has been hard for him — in fact, impossible a good deal of the time — to put on a heavy overcoat unassisted. There have been periods of relative immunity from pain during this past year, but there has constantly been some restriction in motion.

At the present time, motion of the humerus independent of movement of the scapula is absolutely prohibited in every direction. There is moderate atrophy of the deltoid and trapezius muscles and also of the supra- and infra-spinati. Over the point of the shoulder is an area about the size of a twenty-five-cent piece which is exquisitely tender. There is no increase in the surface temperature. The x-ray shows a definite shadow, as is seen in Fig. II.

Sept. 8, 1906. Under ether an incision 5 cm. long was made directly over the apex of the right shoulder. (*Vide* Fig. 1.) The fibers of the deltoid were separated, the capsule exposed and between the inferior surface of the muscle and the capsule of the joint was a bursal sac which was uniformly thickened throughout its entire extent and was about three times as dense as it should be. There was evidence of an adhesive inflammation within the sac practically obliterating two thirds of the entire cavity. There was no excess of fluid and no villous thickening of that portion of the bursal sac which was not adherent. The entire bursa was dissected out; the muscles were drawn together with interrupted catgut sutures; the skin was closed with a buried silkworm gut and the arm was restrained in a Velpeau. Previous to the application of the dressing, the humerus was moved throughout the entire arc of motion of which it was capable, in order to break up any possible adhesions. The patient was discharged from the hospital at the end of three days; the stitch was removed at the end of a week, and passive manipulation of the arm very soon restored its function. The patient was engaged in his practice again within two weeks from the time of the operation and the photographs, Figs. 3 and 4, show the possible motion of the joint at this date, Dec. 31, 1906.

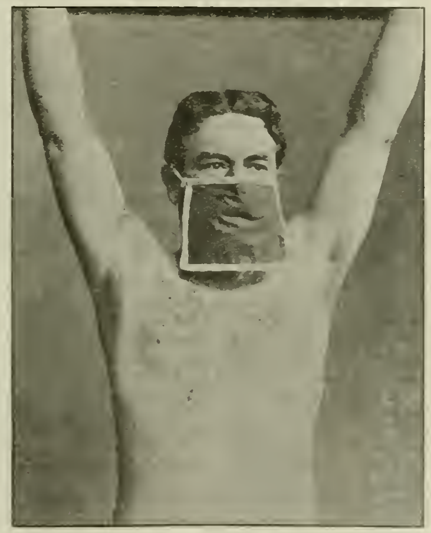

Fig. 3. Shows voluntary lateral flexion of the arms after operation.

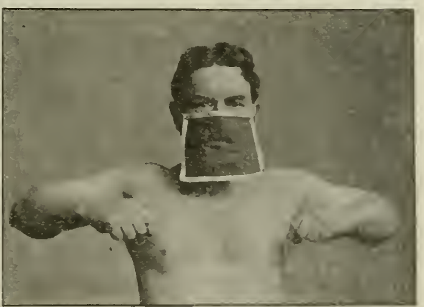

Fig. 4. Shows voluntary powers of lateral flexion and internal rotation of the humerus after operation.

Dec. 31, 1906. The patient reports that function has been entirely restored and that there is practically no discomfort attending any motion he desires to make.

Owing to a delay in getting the tissue removed from this case to the pathologist, it was not in a proper state of preservation for histological study.

Case II. Mrs. B. L. S., age, thirty years.

On Dec. 24, 1906, the patient was examined with reference to her left shoulder.

Three years ago, up to which time she had never had any injury to the shoulder and no trouble of any sort connected with it, the arm was severely wrenched, causing considerable pain at the time. This happened late in the afternoon. That night she was awakened after an hour or so of sleep by a severe pain in her shoulder. She discovered that the arm and shoulder were swollen and the pain was extremely acute. It lasted for approximately two weeks, gradually disappearing to return at varying intervals during the past three years. The recurrences have generally been associated with some excess in the use of the arm or some unexpected or unusual motion. They have lasted from a few days to two or three weeks, according to the severity of the injury. The last one occurred about ten days before I saw her, and the acute symptoms which had been connected with this injury had very largely subsided. She is the sister of Case IV in this series.

The pain radiated down the arm from the shoulder joint, being worse at the insertion of the deltoid. During the exacerbations of pain the motion of the shoulder has been materially interfered with and attempts to put the humerus through the normal arc of motion have been associated with an aggravation of the pain.

On examination, the shoulder motions were not markedly restricted in any direction, but a distinct click could be felt in the region of the subdeltoid bursa when the arm was inwardly rotated, and also occasionally, though not as constantly, when it was forward flexed. These motions were accompanied by considerable discomfort. There was no local swelling in the region of the bursa; no increase in the surface temperature and only a slight amount of atrophy of the shoulder and arm muscles.

In Fig. 5, the shadow in the x-ray indicates the situation of the bursa.

Jan. 1, 1907. Under ether an incision of approximately 5 cm. was made over the apex of the left shoulder, which exposed the bursal sac at a point about half way from the apex of the shoulder to the inner border of the bursal wall. In the extreme outer and anterior portion of this sac was some villous thickening of the capsule, and a similar thickening was noticed in the inner posterior portion. Between these two points the bursal wall was of about normal thickness, and there was a slight excess of fluid present. This was thin and watery, but bore no indication of being inflammatory. There was no calcification of the thickenings above noted. The entire bursa was dissected out, the wound being treated, and the arm restrained as in Case I.

Jan. 8, 1907. The stitch was removed; wound had healed by first intention, and about two-thirds of the normal arc of voluntary motion was possible in the shoulder joint.

The histological report upon the tissue removed from this case made by Dr. T. Leary of the Tufts Medical School is as follows:

Microscopic examination shows tissue to consist of bursa surrounded by striped muscle, fat and dense fibrous tissue.

Bursa is lined by a layer of epithelioid connective tissue which varies greatly in thickness and is thrown into papillary folds. In places this tissue encloses aggregations of lime salts in the form of granules which vary in diameter from 10 to 15 microns. In part these granules are surrounded by collections of giant cells, in part they lie directly in contact with the mononuclear cells of the epithelioid layer.

There is an occasional lymphoid cell in the epithelioid tissue and rare polynuclears.

Case III. Dr. W. P. D., age, thirty-seven.

This patient was seen on May 15, 1905, complaining of pain and loss of motion in the right shoulder and arm. At intervals during the past ten years he has suffered considerably from this. He had been a good baseball player, his particular position being that of pitcher. The summer previous to the commencement of his present symptoms he had pitched a great many games consecutively, and gradually, following this unusual effort, the right shoulder became lame and more or less stiff. This condition was so pronounced that at various times he has had marked disability in consequence of the stiffness. Only occasionally has the pain been so severe as to interfere with the use of his arm or the performance of his ordinary duties. In the two weeks previous to the time at which I saw him he had had his most acute attack. It was impossible for him to sleep in a recumbent position and he had sat up in a Morris chair for several nights. He could not get his arm into the sleeves of his clothing and had been completely incapacitated from his work. He has no rheumatic history and no infection of any sort which could have been responsible for these attacks.

On examination, there was no evidence of arthritis in any other articulation. The right shoulder was held stiffly at the side and no motion was permitted in any direction. In forward flexion a few degrees of motion were permitted, but this was due to the movement of the scapula. Abduction of the arm was particularly painful. There was marked tenderness to pressure over the deltoid bursa and considerable atrophy of the muscles of the arm and shoulder. Fig. 6 shows a pronounced shadow in the x-ray in the situation of the subdeltoid bursa.

Operation was advised, and on the 17th of May, 1905, an incision was made 7 cm. in length over the top of the right shoulder. The fibres of the deltoid muscle were separated and the bursa was exposed in about its posterior third. The portion of the bursa which was anterior to this plane was adherent and only slightly thickened. The portion which was not obliterated contained a considerable quantity of cheesy material, having very much the appearance of the contents of a wen. The walls of this portion of the bursa were considerably thicker than the part which was anterior to this and which had been obliterated. The sac was dissected out thoroughly and the skin closed with interrupted silkworm gut sutures.

On the 24th of May the stitches were removed. The patient had then about one third of the normal motion of the shoulder in every direction. Active and passive motions were kept up at home for the next few weeks, and considerable improvement took place.

The patient has not been seen from that time to this, but under date of July 27, 1905, he wrote me as follows in answer to a letter: "Have been so relieved by the operation that I have put off coming to see you. I have no discomfort now; sleep on my back and never think of my shoulder."

Under date of Jan. 1, 1907, the patient wrote in answer to another letter, "I can raise my arm, that is, the operated one, in a horizontal plane as high as I can the unaffected one. I can raise it directly forward from me to the same degree that I can the well one. I can rotate it, both outwardly and inwardly, to the degree that I can the unoperated one. I can lie comfortably on that side at night, and I do not find any motions which I naturally desire to make which I cannot make on account of either pain or restriction in motion in the shoulder."

The chemical examination of the contents of this sac has been referred to under the paragraph on pathology. The histological examination of the specimen showed evidence of chronic inflammatory changes only.

Case IV. Mrs. D. H. S., age, forty-one.

This patient was examined for the first time Oct. 13, 1906. She was complaining of pain in the right shoulder. During the past six years she has suffered more or less constantly from pain localized in the shoulder and radiating down the arm as far as the fingers, but more constantly referred to the insertjon of the deltoid, and invariably aggravated by use. Her occupation is that of a cutter. She stands at a table holding in her right hand a heavy pair of shears and cutting material which she holds in her left hand, making a series of simple motions which are constantly repeated. The motion which she thus so habitually makes is one of outward rotation of the arm, combined with forward flexion of it. Up to very recently a little rest has been sufficient to relieve the discomfort which constant use has frequently brought on. Of late, however, the pain has become intolerable, and rest has afforded her no relief. She has lost a great deal of sleep and this has told upon her constitution. For the two weeks previous to examination she had been unable to do her work at all.

On examination, the motion of the shoulder, both active and passive, were quite free, but were accompanied by a great deal of discomfort, particularly on making the motions to which I have just referred. There was a slight degree of atrophy of the deltoid. In the region of the bursa was a distinct prominence about the size of a nickel. This was palpable as well as visible. On palpation there was a marked induration extending from this central elevated portion to a considerable extent on all sides. This was very tender to pressure and there seemed to be a slight increase in the surface temperature. Counter irritation with ichthyol and fixation together with prolonged cessation from her habitual occupation was advised and was tried for a short time, but the patient soon consented to surgical interference.

On Oct. 20, 1906, an incision about 5 cm. long was made over the point of the right shoulder in a manner similar to that which has already been described. The anterior portion of the bursa seemed to present no pathological change. In about the middle of the sac, however, an adhesive inflammation had taken place and the portion which was posterior to a point where this inflammation was first noted contained a cheesy material of an exactly similar appearance to that noted in Case III. This seemed to be made up of calcareous granules, some of which were embedded in the lining membrane of the sac. This was thoroughly dissected out and curetted, and the entire cavity sopped with tincture of iodine. The muscles and skin were closed and the dressing was applied as in the previous cases. The stitch was removed on the fifth day after the operation and passive motions were found to be possible through an arc of about one third of the normal.

On Nov. 19, motions of the arm were fully restored and there was no pain attending manipulation of the joint.

Dec. 24, 1906. Patient has been at work at her previous occupation for nearly a month, suffers no discomfort, and has absolutely free use of the arm in every direction.

The histological examination of the tissue removed from this case shows only a slight amount of chronic inflammation. There was no bony material in the wall of the sac and the contents bore a close resemblance to the cheesy material obtained from Case III, which was subjected to analysis by Dr. Austin. It had every appearance of being composed of the same crystalline substance, though it was not submitted for chemical examination.

No x-ray of this patient's shoulder was taken.

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REMARKS ON THE SURGERY OF THE RIGHT UPPER ABDOMINAL QUADRANT.*

BY F. B. LUND, M.D., BOSTON.

The right upper abdominal quadrant has displaced the right lower abdominal quadrant from the position of the area of greatest surgical importance. The appendix and the right ovary, which both afford a fruitful field for surgical work, hardly extend to the surgeon such varied opportunities for differential diagnosis, or offer operative procedures of so great variety and interest as the organs situated in the right upper abdominal quadrant, namely, the gall bladder and its ducts, the pylorus and first part of the duodenum, the head of the pancreas and the right kidney. The surgeon called to attend attacks of pain in the right upper quadrant has to differentiate between pain due to stones in the gall bladder, to stones in the common duct, cholecystitis, stricture of the pylorus, painful ulcer of the pylorus or duodenum, perforation partial or complete of ulcers of the duodenum or pylorus and acute or chronic pancreatitis, etc. Complex surely are the problems, and fitted to tax our diagnostic skill to the utmost and often we must confess to defeat. Who can distinguish in every case between the pain of gallstones and ulcer of the duodenum and pancreatitis so accurately as to prove himself right every time by the test of exploratory laparotomy? If such a surgeon there be I have yet failed to meet him. Mayo puts the matter graphically as follows:

" In the upper abdomen we have attempted to study the stomach independent of the associated organs, the liver and bile passages, the duodenum and pancreas. The result has been a confusion in diagnosis and treatment. The palm of a hand may cover a serious lesion of any one of these organs and that, too, at the point of greatest liability; not only so, but any one of this group may start a pathologic process which may extend to any one of the others and with fully as great frequency as occurs under similar conditions in either the generative or urinary systems."

Graham,[1] in an extremely important paper based on 46 cases of duodenal ulcer operated upon by the Mayo brothers, conscientiously attempts the differential diagnosis between cholelithiasis and duodenal ulcer. "Pain in cholelithiasis," he states, "is sudden, severe, has a wide field of radiation, comes absolutely irregularly, is independent of and not eased by food and is not often traced to it. No stomach history is given between the short precise spells. Spasm of the diaphragm is nearly always observed and vomiting and gas are present only during the attacks, and relief through vomiting and gas eructation is not as certain. In duodenal ulcer the pain comes in decided periods of attack, may be and often is sudden, has a very limited field of radiation, may be irregular as to time of separate attacks, but regular as to periods. It is quite dependent upon food, being early eased, but later pain and distress appear. The history of gas, vomiting and acidity runs parallel to the periods of pain. No spasm of the diaphragm occurs except in some cases of perforation. The vomiting and belching are usually decided in quantity and followed by relief."

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* Read before the Obstetrical Society, Boston, Jan. 22, 1907.

[1] St. Paul Med. Jour., Sept., 1904.

In distinguishing between the duodenal and purely pyloric ulcer, he calls attention to the fact that the pain, gas, acidity and vomiting are more intense in the pyloric than in the duodenal form and that in the latter the type of pain is more apt to approach that of gallstones.

Stone in the common duct or decided infection of the gall bladder has a definite period of attack, but jaundice, enlarged gall bladder, chills and fever may here be present to assist in diagnosis.

Who of us is not familiar, however, with cases in which we have made a diagnosis of gallstone disease, on a basis of irregular attacks of pain in the right hypochondrium, with localized spasm and tenderness, the pain radiating over the abdomen and perhaps into the right shoulder, only to find on operation an ulcer of the pylorus, requiring a gastro-enterostomy for its relief? We have also operated for relief of a dilated stomach, with constant vomiting and emaciation, expecting to find a cancer or chronic ulcer of the pylorus, and found a gall bladder full of pus with a stone impacted in the cystic duct, obstructing the pylorus by involving it in a mass of adhesions and requiring gastro-enterostomy as well as a cholecystectomy.

In the presence of pain due really to a duodenal ulcer, the downward projection of an enlarged right lobe of the liver has simulated an enlarged gall bladder, so as to mislead us into an erroneous diagnosis of gallstones.

I may remark in passing that it has been a not uncommon mistake with myself and my colleagues to cut down upon a gall bladder believing it, on the evidence of palpation and percussion, to be enormously enlarged, and find out that the supposed dilated gall bladder was an enlarged right lobe of the liver, hiding under its edge a gall bladder filled with stones and surrounded by fresh inflammatory adhesions.

The gall bladder varies in its relation to the median line, also. In males with a high lying liver it lies not only well up under the ribs but further from the median line of the body. The reason for this is that the liver lies in its normal position in the thoracic cavity, in the hollow of the ribs.

In women where the liver has been pushed down by lacing the waist, as it descends it is pushed inward by the inward projecting edge of the thorax, so that the gall bladder is pushed with the liver nearer to the median line, the location of pain and tenderness approach more nearly the pylorus and the head of the pancreas; and here is introduced another element in the diagnosis, that of pancreatitis. In the typical cases of chronic or recurrent sub-acute pancreatitis we have usually antecedent history of gallstone attacks, so that the history here is consistent with either gallstones, pancreatitis or both.

The pylorus also varies very much in position, the variations being sometimes the result of adhesions, sometimes apparently congenital. In a recent operation for cancer of the pylorus the writer operated by a median incision, but found the pylorus far up behind the liver and to the right, so as to be accessible with difficulty. In the next case, a right rectus incision was made, but the pylorus was found adherent to the liver exactly in the median line. In both cases extension of the incision was necessary. While the right rectus is usually the best, it may be of advantage to predetermine the position of the pylorus by inflation of the stomach.

In pancreatitis the tumor is nearer the epigastrium, and in its typical manifestation the tumor and area of tenderness is a little lower than in pyloric ulcer, and nearer the median line than in cholecystitis. The attacks of pancreatitis are attended with more shock and constitutional disturbance than cholecystitis; and in cases preceded by a history of gallstone attacks extending over months or years and presenting in the attack under treatment a marked element of constitutional depression, with moderately high temperature and slight jaundice, the tender area corresponding to the head of the pancreas, and especially if a tumor corresponding in outline to the head of the pancreas can be felt, we must be on the lookout for sub-acute or chronic pancreatitis. Fortunately the chief *desideratum* in the treatment of these conditions is the drainage of the gall bladder, so that through the exploratory incision we are in a position for the therapeusis of either affection. The writer has within a year dealt successfully with two cases of chronic pancreatitis and one of acute, by an incision through the upper part of the right rectus for the relief of attacks supposed to be due to gallstones. In two of the cases the location of the tenderness and resistance led to pancreatitis being suspected before operation, though an absolute diagnosis was not made till the abdomen was opened. In the acute cases, especially of the right hypochondriac or epigastric peritonitis, the diagnosis between perforating ulcer, pancreatitis, and acute cholecystitis, in my belief, is not always in the power of any man to make. These cases, however, urgently call for immediate exploration and through the right rectus incision the diagnosis can be cleared up and the appropriate operative procedure carried out.

In the vast majority of acute stomach perforations, as is well known, the perforation is on the anterior surface and early diffusion of fluids takes place downward and to the left along the front of the great omentum. In these cases the mortality is in proportion to the promptness with which the surgeon acts, as many as 80% of the cases operated upon within twelve hours getting well.

The same is true of acute perforations of the gall bladder except that in the writer's experience these have been even more serious than those of the stomach. The mortality in acute pancreatitis, which Mayo well classes with the acute perforations, is as yet in doubt, but early operation with peritoneal drainage will undoubtedly bring about a more satisfactory state of things in this regard.

Operation upon an acute pancreatitis in a woman of sixty, consisting of drainage of the gall bladder with incidentally the removal of two stones and scoring the anterior surface of the pancreas and stopping the bleeding with gauze packing, the operation done twenty-four hours after the attack has resulted in the gratifying and complete recovery of the patient.

In two cases, both males, the writer has recently operated upon a diagnosis of cholecystitis, made by careful clinical observers, finding in one an ulcer of the pylorus which had perforated but had been walled off by adhesion to the under surface of the liver and in another an ulcer of the first portion of the duodenum. A gastro-enterostomy gave complete relief in both cases.

Duodenal ulcer is even more apt than gastric ulcer to be mistaken for cholecystitis, especially when threatened perforation sets up a local peritonitis, as the descending portion of the duodenum is directly in relation with the common duct and almost directly below the neck of the gall bladder.

In duodenal perforations it is an interesting fact, several times demonstrated in the writer's experience, that occasionally the greatest tenderness instead of being over the source or focus of the peritonitis, is situated at the edge or border of the process, where the advancing pus is limited by fresh fibrous adhesions. The peritonitis is hot at the edges and cold in the middle, so to speak.

In a case of recent peritonitis with general splitting of the abdomen, the writer made an incision over the appendix because here was the only tender point. The appendix was normal, but pus had run down between the colon and the abdominal wall from a perforation of the duodenum, which was found after carrying the incision upwards. It was sutured and drained and the patient recovered.

In alluding to the cases mentioned in this paper, which are selected from among a large number as the ones in which a wrong diagnosis was made, the writer does not wish to give the impression that it is not worth while to exhaust all possible means to make a correct diagnosis before operating, for the reason that operation is so apt to reveal the fact that the diagnosis has been wrong. Careful weighing of the history, together with thorough physical examination, will enable one to arrive at a correct diagnosis in a majority of the cases, but there will remain a considerable number in which exploratory laparotomy alone will reveal the true condition.

We have spoken of the upper abdomen as the borderland of surgery; it is also the borderland of medicine, for in what other therapeusis than the surgical can we hope for relief of these conditions? At the autopsy we can get a picture of the conditions at the fatal close, whose secondary conditions have masked the beginnings and the course of the disease.

The surgeon, by early operations in cases of gallstones and gastric ulcer, has given us our present knowledge of the pathology of these diseases in their early and curable stage and also afforded to us in many cases our only method of rational therapeusis.

These facts have an importance also to the practitioner of medicine. If he wishes to acquire skill in the diagnosis of the intra-abdominal conditions which he is so often called upon to treat, he must attend not the post-mortem room, but the operating table of the surgeon. There he may find his diagnosis checked, confirmed or disproved, and can see the pathology of the conditions in the living at a time when they are often susceptible of relief. It is my belief that the clinic has displaced the autopsy table as the place for acquiring the pathological knowledge upon which skillful diagnosis may be based. The practitioner who sends his cases to the surgeon and then does not personally attend the operation and see the pathological condition misses his greatest opportunity for acquiring skill in diagnosis. He has followed the symptoms of his patient over a length of time and with a closeness of observation impossible to the surgeon or to anyone else than the medical attendant. If then he attends the operation and sees the actual pathological conditions, he is in even better position than the surgeon to profit by the combination of clinical observation and that of the operating table. Only by the cooperation of the surgeon and the clinician can either attain any special degree of diagnostic skill.

The fact that the diagnosis is in doubt should make no difference to the patient. He comes to the physician not for an exact diagnosis, but to be relieved of his pain and disability. In many cases we cannot say to him, "You have gallstones or you have duodenal ulcer, but you have a lesion in the upper right abdominal quadrant requiring operation for its relief." If we are prepared to deal with whatever lesion we may find of these organs we can benefit our patient, and unless we are so prepared we shall meet with many failures. The most important practical deduction to be made is that no operator should attack these cases of supposed cholecystitis unless he is prepared to execute a change of front and perform a gastro-enterostomy or other suitable operative procedure in case he finds himself called upon to relieve an ulcer of the duodenum or pylorus.

The question may be legitimately asked, Is the early surgery of these conditions safe and attended by satisfactory results? The answer is that in the early cases and these alone is the surgery of this region eminently safe and satisfactory. The mortality of gall bladder operations, uncomplicated by stones in the common duct or cholecystitis, is less than 1% in competent hands. Gastro-enterostomy for pyloric stenosis gives a mortality of less than 5% and a high percentage of permanent cures. It is only in the late and neglected cases of surgical disease of the upper quadrant that the mortality is high, and here it is understood that the operation is one of last resort.

The speaker is aware that this excursion into the surgical borderland of the upper abdomen has been brief and unsatisfactory. He will be satisfied, however, if his hearers carry away the following points:

1. The advantages of early operation in diseases of the stomach, gall bladder and pancreas.
2. The imperativeness of early operation in perforations.
3. The recognition that present diagnostic measures are inadequate and consequent readiness to meet conditions different from those suspected before operation.
4. An interest in the great and growing field of the surgery of the stomach and pancreas.

PRACTICAL CONSIDERATIONS IN THE TREATMENT OF NEURASTHENIA.[*]

BY W. C. CANFIELD, M.D., BRISTOL, R.I.

To say that a person has neurasthenia is not stating the case much more definitely than to say that a person is *sick*, and the diagnosis of neurasthenia is often made as carelessly as that of *malaria* years ago.

There is a need among the profession for a more exact definition of the term. Few diseases have so wide a range of gradations from slightly impaired health to profound sickness, and as it borrows its symptoms from so many widely different diseases, both mental and physical, it is not strange to find many physicians go "cross lots" to their diagnosis, calling it neurasthenia without attempting to define it closely, as to its cause, or even the predominance of its symptoms, — a sort of blanket diagnosis covering complications and concurrent troubles alike.

A clear understanding of the causes that have brought about the neurasthenic state and of the channels through which they have been operative must be had before the physician can outline his plan of treatment. In no disease is it so necessary to analyze, not so much the symptoms of the case, as the personality or mentality of the patient himself in order to drive back through these same channels the causes of the disease and block them against a second entrance.

While the causes might be classed in one group as psychic, their mode of attack with each individual varies. The avenues of approach are tortuous and often obscure, and the somatic manifestations are confined only by the entire epidermis of the patient. One cannot intelligently follow a routine of diagnosing simply "neurasthenia" to be cured by a more or less routine Weir Mitchell treatment, for that is grasping the letter and not the spirit of the case. That great pioneer in the treatment of neurasthenia, S. Weir Mitchell, started the ball rolling, but it has rolled a long way since he first promulgated his "rest cure." His plan of treatment was adequate and admirably adapted to meet the indications as they were then generally understood; namely, that neurasthenia is a diseased state in which the *physical* forces have been exhausted, the mental forces suffering equally, or perhaps not at all.

Neurasthenia is essentially a disease of the mind, a psychosis, and there may or may not be organic disease as an accompaniment or complication, but always there is some impairment of the physical as well as the mental functions. "Nervous exhaustion" as a synonym is a misnomer, as there is never literally exhaustion, and the crude idea of a large percentage of the laity is that it is a disease of the nerves themselves.

That neurasthenia is primarily psychasthenia, that it has its origin in the mind and that the body suffers secondarily as a result of the widespread influence of the mind upon the body is the trend of the most advanced observation. Over twenty years ago, when I first began to study this disease our nosological printing press (which works over hours these days) had not turned out such terms as psychosis, psychiatry, psycho-neuroses, and as I could not satisfy myself that these numerous physical symptoms of neurasthenia constituted a disease, *sui generis*, I often spoke of them as a "condition," feeling convinced that they were caused by more than a mechanical drain upon the physical vitality, that another and greater source of mischief was operative, but that the mind was so active in causation I did not appreciate. Even then it was recognized that another factor than overwork was necessary to bring about nervous prostration, and that factor was called "worry," as it is still called. The full significance of worry, however, was not then appreciated, but had we followed up its pointing more quickly we would have reasoned that worry is a function of the mind, a function that may exist temporarily in a healthy mind, is almost constant in an unhealthy mind, soon becomes chronic, and if long continued is sure to develop pathological effects in the body; that worry was a mental process and therefore the mind was the starting point of this disease. With this idea as a guide, careful analysis of each and sometimes of all the symptoms, in any case of neurasthenia, would have led us then by converging lines to the same point, the psychic origin of the disease. Now it seems to me that many investigators have great difficulty in comprehending or admitting evidence that goes to show that there may exist a diseased mind without any pathological changes in the body. "A healthy mind in a healthy body" is an old adage; and a healthy mind may exist, for a time at least, in an unhealthy body, as also an unhealthy mind in a healthy body. The pathologist is always searching, and rightly so, with his knife and his stains and microscope for the anatomical lesions of a disease that is primarily mental; but will he eventually find them? I doubt it; and I find no difficulty in limiting a disease to the mind itself without pathological lesions in the body to account for the origin of the disease. The mind alone can undoubtedly by its continued action so disturb the somatic functions as to produce pathological lesions, as we so often see in the anemia following nervous dyspepsia. If one takes the materialistic view of the origin of life and mind he must always seek in the body evidence of the origin of disease, but not so if he conceives the mind as an immaterial entity fettered to the body under earthly conditions.

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I have called your attention thus briefly, perhaps too briefly, to the psychic etiology of neurasthenia because a recognition of this points out the practical and only thorough method of treatment, the only method by which the last "germ" can be followed up and exterminated, the only method by which we can prevent a relapse, that is, by psychotherapeutics. It is true that we may direct our treatment to the body without apparently taking the patient's mind into account, and think that we have effected the cure solely by the rest, the overfeeding, the isolation, the graduated exercises, the tonics, etc., and brought about improvement that we call a cure. If we carefully study the workings of our patient's mind we will see that these are largely the "outward and visible signs" of the moral and mental influences we have brought to bear upon him, of the confidence in his recovery we have inspired in him, of the "suggestion" we have unconsciously employed, or at least of the autosuggestion he has derived from these measures. Although the patient may be restored to his normal physical health, although he may have lost all his nervous symptoms, his excessive emotivity, regained his mental concentration, his memory, his interest in life and work, is he really cured? He is really in the position of the patient whose appendix has been removed, the peritoneal cavity washed out with antiseptics, and the wound closed, but a bit of necrotic tissue left inside with no drainage. He has not been taught that his regained powers are his only so long as he keeps his mind, the source of the disease, truly oriented, only so long as he recognizes the true values and proportions of causes and effects, of effort and consequent fatigue, of injury and resultant sensation.

Now, as it is the mind that causes neurasthenia, or, at least you will admit, is the greatest etiological factor, therefore the treatment must be directed chiefly to the mind, or, to bring our technology up-to-date, we must employ psychotherapeutics. In some cases we may be able to employ this alone if we are sufficiently experienced and have the essential personal qualifications for such work, but more often our own makeup or previous prejudices, or those of our patient, will make it advisable for us to employ in addition the old physical measures. In psychotherapeutics the first step is to obtain not only the patient's heredity, but his history from his cradle up to the present; not only an outline of health, but we must inquire into all the events and influences of his life that have directly or remotely exerted a moral or mental effect upon him, his ambitions or aims in life and their fulfillment or disappointment, his love affairs, his mistakes and indiscretions, his tastes, talents, weaknesses and defects, his methods of reasoning, and in fact his view of his own life and of life in general. Contrast this with the subjective history of a case of pneumonia. This cannot all be done in one examination, and it may require many conversations with him to gain his full confidence and to induce him to lay bare his whole mind.

It is very necessary, however, to quickly arrive at an approximate estimate of the requirements so that we can outline to ourselves the line of action and begin the treatment without delay. Whatever our view as to what part of the treatment is the more important, whether psychotherapeutics or physical therapeutics, or whether we diagnose cerebrasthenia or amyosthenia, we will always find numerous physical symptoms in the patient clamoring for our immediate attention. When emaciation, weak heart action, fatigue, anorexia and dyspepsia are pronounced the indication is clear for rest, overfeeding and massage and the patient expects them. When insomnia, exaggerated emotion, various phobias, general nervousness and abulia are the prominent symptoms in a fairly strong and well-nourished body the indications for rest, overfeeding and massage are not so clear, but still the patient generally expects them. A plump figure and a rosy complexion may often cover a physical impairment, and the abnormal fatigability, although chiefly of psychic origin, indicates also a lack of physical endurance. Hence it seems always wiser to begin at once with physical therapeutics, however much we may be convinced that we could accomplish the same results in the same time, or sooner, by the employment of psychotherapeutics alone. It takes time to explain to most patients what psychotherapeutics means; time to gain their confidence, and draw from them all the information that is necessary for a full comprehension of their psychic state, and if we begin at once to talk on the line of psychotherapeutics we are apt to be met by a reply, "Oh, you are a Christian Scientist, or a mind healer." True, we are mind healers, and why not as well as body healers? We are mind healers to as great an extent where we employ drugs, but we differ from the devotees of those cults in that we also recognize diseases in which the mind plays little or no part.

It is hardly necessary for me at this time to go into a detailed enumeration of all the different measures that may be usefully employed in the physical treatment, as a thesis might be written on each one of them alone, but isolation, rest, overfeeding and exercise in some form are the main features.

Isolation requires careful consideration and involves a scrutiny of the patient's environment, the household arrangements, the *personnel* of the family, and their mental and moral influence upon the patient, and the physician's judgment and tact are often taxed to separate the patient from the annoyances of the household life, from the retarding effects of sentimental sympathy, from the depressing atmosphere and over-anxious solicitude, and the numerous associations and suggestions of worry.

Rest may be made either complete in bed, or partial, the latter more often, because a certain amount of exercise is needed to keep the somatic functions in good working order, and also because exercise for hands and feet means mental occupation, and healthy mental occupation is essential to break up the habit of unhealthy thinking. I so often hear from patients, "I have plenty of will power, but my mind is so active I cannot help thinking." As a matter of fact, there is great abulia and the mind is not in the least more active than the average. My reply is along these lines: "If you are using your will power, it is in the wrong direction; it is acting only to keep your mind upon your indigestion, your fatigue, your heart action and your worries. In this direction you give it no rest. It is not more active than that of the healthy person, it needs no more rest than his, but your mistake is that you keep it active on this one unhealthy subject. You cannot stop thinking during your waking hours, and you do not need to, but you do need all your will power to give a new and healthy direction to your thoughts. It is not fighting for your health to force or allow your mind to dwell constantly upon your health or your worries; that is playing into the hands of disease. Bring into action all your will power, not to stop thinking, for nobody can stop that, but to cast out all thoughts of health or disease and fill your mind so full of pleasant thoughts that there is no room for worrying thoughts. Be altruistic, not egotistic and introspective. Think of friends, of the pleasant events in your life or in the life of others; force yourself to read and think of the current events in the world in which you are taking no active part, and a healing interest will grow up in your mind. Let your mental housecleaning be thorough, and then you will be fighting to some purpose. Then your health will take better care of itself than you can take care of it; your heart will regulate its own beating better than you can do by any effort of will power, and your stomach will attend to its work far better than if it is embarrassed by such close watching."

Overfeeding is useful if not essential in all cases, for it replenishes the losses of physical strength and restores the endurance at the same time that rest is cutting off the expenditure of energy. The diet should be of the more easily digested and concentrated kind so that the most nourishment may be obtained with the least effort, milk and eggs being the basis, with beef, mutton chops, to relieve the monotony, and toast, rice, or crackers to supply the starchy elements. If the patient is much given to consideration and inspection of his diet (and such a habit is not easily or quickly relinquished), it is wiser to prescribe a more generous and varied diet, excluding only those articles of food and their preparation as are obviously indigestible. A diet restricted to concentrated foods leads us to a consideration of constipation, this bugbear of neurasthenics, hypochondriacs, and even of persons whom we would hesitate to class as either. One would almost be led to believe, after reading Bouchard's treatise on "Auto-intoxication," that all disease has its origin directly or indirectly from toxins generated in the body and failing of elimination, and hence that constipation is a dangerous menace to health. Yet constipation of itself never seems to shorten life, and how often we observe it throughout the life of a person who on the whole has always enjoyed fair health. If the diet is concentrated there is of necessity little waste matter to be excreted, and a daily evacuation is not called for, or better, a daily evacuation of only a small quantity is all that can be reasonably expected. Large eaters of a varied diet are seldom constipated unless they become so through neglect of maintaining a regular habit, which in itself is often the sole cause of constipation. On the other hand chronic constipation can be cured by the regular daily habit of going to stool at a fixed time when laxatives or diet have failed utterly. We should therefore emphatically impress upon the patient the necessity of going to stool regularly whether he "feels like it" or not, of giving plenty of time to a movement, of withholding altogether, or at least being very chary in the use of laxatives or enemas, and of not being discouraged if from the start he does not meet with unqualified success.

Earlier in my experiences, I recognized a degree of fatigue and muscular weakness in uncomplicated neurasthenia that seemed to me to demand absolute rest, not even allowing the head to be raised from the pillow. Of such a condition I have modified my views and see in the extreme exhaustion not amyosthenia, but psychasthenia, being led to such a conclusion by seeing the patient repeatedly perform some physical acts requiring a considerable expenditure of strength when his attention was not fixed upon the acts and followed by no ill effects; while again a lesser act receiving his attention would bring in its train vertigo, tachycardia, pallor and fatigue. It was my custom then to forbid even the simplest physical acts, and to meet the need of exercise I gave massage; but with a clearer understanding of the source of these symptoms of weakness I tell the patient in detail how much exertion he should make, assuring him that such exertion is necessary to his progress, that he need have no fear of these symptoms and that they will soon pass if he ignores them with confidence in his ability to overcome them.

It is hardly necessary for me to point out the benefit and necessity of exercise. Massage is a substitute up to a certain point, also mechanical vibrations, and as such they are valuable aids in the early stages of treatment; beyond that point strength will develop faster through the gradually increased exercise. Exercise should be prescribed early, and often from the very beginning. Of course, it should be proportioned to the patient's condition and the patient should be made to look upon it in the light of a pleasure and not done as treatment; to exercise because it is, or should be, a normal, hygienic habit, and not take it and watch its effects as he would a dose of medicine, as he is very prone to do. I have seen a neurasthenic count the number of steps in his daily walk, increasing fifty or a hundred steps each day and endeavoring to calculate with equal accuracy and detail the amount of energy expended and the amount of strength gained. Such a patient may recover from his amyosthenia, but he will remain a psychasthenic or a hypochondriac unless he mends the error of his mental ways, and relapses will fall to his lot. Not only should the exercise be steadily increased, but it is as important to vary it in kind, thus avoiding monotony, maintaining the patient's interest and approaching the normal habit.

Having explained to the patient that these physical measures are aids in the building up of his physical health and in a general way how they act we must at once take up the psychotherapeutics. At the very outset we must have confidence in ourselves and our convictions or we cannot inspire confidence in the patient, and gain his confidence we must before we can make any progress. He must feel that we know our path from the many false leads that branch off from it, that we appreciate and know how to avoid the numerous pitfalls and obstructions that beset it, and that we are ready to meet or can anticipate the hidden dangers. Once his confidence is gained our unsupported assertion will often convince him, but often we will have to explain and argue our point in detail, and if he is of a logical mind it is better to do this, as thus he is in a position to call his own reason into play to guard his own health after he has once won it back. We can follow few fixed rules here, we cannot adhere to precedents and must be ready to burn our bridges behind us, and carry our point until results prove the correctness of our judgment.

Patiently we must listen to his whole story; let him talk himself to a standstill if he is so inclined, and do not miss any point, for he is likely to make small mention of the very point which is the key to the problem. Nothing is too small to listen to at first and later we can sift out and set aside the irrelevant. If the patient is reticent, patience, tact, an assurance of sympathy and of a desire to help and a wise persistence, or sometimes a wiser postponement of persistence to a more favorable mood will be called for. It is my custom to write down this record as nearly as may be in the patient's own phraseology; his own version of cause and effect, and if possible I have a talk with his most intimate relative or friend and thus obtain either a corroboration of the patient's facts or else a different and more accurate point of view. With this picture before him one can trace back to ancestors, childhood, or early life the mental defects and weaknesses and see how they have been developed by his own management of himself and his life, and by the exoteric influences bearing upon him. A study of this history together with the physical examinations will enable us to separate the psychic from the somatic causes. Then we will see psychasthenia and regard the physical symptoms as results or complications, not as causes of that disease. The study of the psychic causes will then lead us to the plan of our psychotherapeutics.

One clear, full, detailed explanation of the psychic causes and the consequent reasons for our method of treatment will seldom suffice for the patient, and we have to repeat it again and again and with many blows hammer our conviction into the patient until he is convinced. For conviction is necessary to the performance and permanence of his cure. He will say, " But I actually have indigestion, it is there, I know it and there is no imagination about it." Agree with him at once. He is right, it is there, and " it's no dream either." But point out to him that the indigestion is not due to the inability of the stomach to pour out its juices, or of the gastric muscles to properly grind and mix the ingesta, but is caused by the interference of the mind with those processes. " A watched pot never boils." Then he will say, " There you are mistaken, for I don't think of it until I feel the distress in my stomach." There he is mistaken, for his whole attitude of mind is one of watchfulness for new sensations, is stored with the memory of old sensations; he is ever ready to recognize and exaggerate every sensation into a pain and to conclude that every pain is a very serious matter. Constant thinking of and expecting pain can actually produce the pain, just as constant ignoring of such pains will cure them. He is sure to analyze his sensations but seldom correctly analyzes his thoughts, and in this matter nearly always " gets the cart before the horse." Often he is sincerely unconscious of this habit of thought and it will be hard to convince him of it. Don't make the mistake of speaking of " imagination," for imagination seldom exists and the distress does. The cure lies in ignoring it, being indifferent to it, being convinced that it is of no importance in itself and occupying the mind with other and healthy thoughts. So it is with the fatigue, the backache, the vertigo, the palpitation, the frequent micturition and other physical symptoms. We will have less trouble in convincing him of the psychic origin of his nervousness, his depressions, his pessimism, his vague apprehensions and some of his phobias, because he will recognize these as mental symptoms, but he will still argue that his physical disease causes the mental state.

Inspire him with your own confidence, for confidence in his own powers is his most vital need and, together with the conviction of the mental origin of his trouble, is his greatest safeguard against relapses.

I often hear, " Well, if that is the case, the work is all up to me and you can't do anything for me." Now, if you know your patient and if he has the right qualities you can reply, " That is true. If you are convinced of the correctness of my views of your condition and will carry out my instructions with perseverance, you can do the work alone." Practically this is seldom the case, for few psychasthenics can do the work alone from the start, and need the continued help of the physician, how long continued depending upon the capacity they have for developing confidence, self-reliance and a stable conviction. They are like the man learning to ride a bicycle; his instructor explains to him how he should hold his wheel, how he should place his feet to mount, how he should sit, how pedal, etc., doing it himself to illustrate the proper method, but can the man grasp all these details, mount and ride off at the first trial? How many tumbles does he have, how many repetitions of instructions, and how much help before he becomes proficient enough to even practice unaided? Answer that by recalling your own experience.

I do not think that medication can be entirely excluded from every purely psychic case, but when I do compromise the question and give a tonic, or sedative, or hypnotic I am careful to impress upon the patient that these are only aids, neither essential nor important, and that his own mental control will do more good than any of them. Hypnotics may be the hardest to withhold, for natural sleep once lost is difficult to regain, and the normal indifference or disregard of sleep is replaced very easily by an insomnophobia, if I may coin the word. A habit of conscious sleep in a worrying mind is quickly acquired. By conscious sleep, I mean a state in which the subjective mind, which is the repository of our memories, carries on its activities unguided by the objective mind and so simulates the conscious mental forces that the person passes into sleep without perceiving it and awakens with the memory of his thinking and the conviction that he has been awake and thinking all the time. He may be entirely sincere in this belief, and unless positive proof that he has been snoring can be shown him, it is nearly impossible to convince him of his mistake. A feeling of certainty that one will sleep or an indifference toward it is necessary to a frame of mind that will bring about natural sleep. I impress upon the patient that resting quietly in bed will go a long way toward substituting what sleep he may lose and that he will not fail to get enough sleep to supply his needs until he regains the habit of natural sleep.

In this connection I am tempted to take up the consideration of hypnotism, or suggestive therapeutics, as a method of treatment in neurasthenia. Volumes have been written and volumes more will be written on this subject, and my own conclusions as to its therapeutic usefulness is all I will lay before you now.

The application of hypnotism with a stage setting, awesome and mystic, smacks too much of the fakir, and does more harm than good unless in isolated hysterical cases, as for the cure of hysterical paralyses, aphonia, some of the phobias or tics. The theory of Charcot and his school that hypnosis is only or chiefly applicable to the hysterical state is no longer tenable, and it is to Liébault of the Nancy school that we owe a more exact and rational explanation of hypnotism. According to the latter and his follower, Bernheim, hypnotism is really suggestion, and suggestibility is common to the healthy mind as well as to the diseased mind. All, or nearly all, persons are suggestible in some degree. The weird phenomena of the somnambulistic stage of hypnotism are more curious than instructive or useful; they are not essential to the production of beneficial therapeutics. The real usefulness of hypnosis lies in suggestion which we may employ without mysticism, without tragic mannerisms, mirrors, or other paraphernalia. It obtains its benefits through the influence of the operator's mind upon the subjective mind of the patient, and the effects are maintained in permanent benefit to the patient's health by the appeal to and education of his objective mind. It is the subjective or unconscious mind that controls and regulates the functions and sensations of the whole body, and it is this part of the mind that is always amenable to suggestion either from its own objective mind or from that of another person; if from its own, then " autosuggestion " results, and from another mind comes " suggestion."

Professor Hudson says, " The faith required for therapeutic purposes is a purely subjective faith, and is attainable upon the cessation of active opposition on the part of the objective mind. . . . In all systems of healing, the processes, or rather the conditions, are essentially the same, the first essential condition being perfect passivity and receptivity of the patient. . . . Thus, the whole science of mental healing may be expressed in two words — passivity and suggestion." Again, " The more perfectly the objective intelligence can be held in abeyance, the more perfectly will the subjective mind perform its functions." Note particularly the last statement, for in that is the explanation of psychasthenia in a nutshell. The objective mind of the psychasthenic is not in abeyance and will not attend to its own business; it interferes with the work of its subordinate officer, gives him commands and countermands; it tries to perform the duties of the subjective mind which it does not know how to perform. Is it any wonder, then, that the subjective mind gets "rattled" and chaos of function and sensation results? Of what use, then, to hypnotize the subjective mind, calm it down by making it recognize the commands of a cool, self-possessed authority, temporarily bring about order and system, and then leave the management again to the warped or diseased objective mind? The subjective mind does not reason; it is receptive and impressionable, accepts its impressions and commands and acts upon them without questioning to the best of its ability — like a true soldier.

It is necessary, then, that our suggestion should be supplemented by an education, instruction, or training of the objective mind in order that the benefits of suggestive therapeutics may become permanent. To this extent hypnotism is useful, and without this supplementary education you will lead him to depend upon hypnotism, or medicine, or osteopathy, or Christian Science, or other fad in vogue to do his own God-given work, or upon you to help him when he should help himself if he is to be well or to be anything or anybody. No man should expect another to live his life for him or to keep well for him; he must live his own life of mental health as well as bodily health, and to a large extent his health is what he makes it.

With all our experience and a clear understanding of the causes and of the channels through which these causes are active, we will find some cases in which we will fail. Often the patient's training and education are at fault and leave him so deficient in the ordinary normal qualities of character that he easily drifts into a neurasthenic state, a state that hardly deserves the name of disease and yet which renders his life useless. If your conception of neurasthenia is embodied in the literal meaning of the term "nervous exhaustion" these cases will puzzle you and will not respond to your physical treatment. Unless there is enough stable foundation in him to build upon, so that we can complete the necessary part of this moral and mental training, we can accomplish nothing, at least nothing permanent. Yet let me give a word of warning here. We cannot be certain beforehand of what we can accomplish; we cannot tell until we have tried. I have had some of the best results in cases which seemed to me most unpromising at the start. Dubois says, "We preserve our temperament throughout our whole life, just as we keep our physical blemishes; but we can modify it greatly by educating ourselves. Our physical deformities are often definite, but our mentality is always malleable." In this fact lies the patient's salvation, and we should not despair of molding his mind into the form of health.

If the patient has been the victim of circumstances external to himself, loss of friends, irretrievable financial losses and consequent lack of interest in life, our task will be a hard one, for in the face of such facts we cannot alter his outlook for the future, unless we can educate in him a higher altruistic philosophy of life,— a truly difficult task. Again the task is difficult when, as so often occurs in women, there has been no purpose in life and she has worn out the novelty and interest in the trivialities of her own selfish existence, when no duties or obligations appeal to her and when through disuse her response to the stimulus of unselfish motives has atrophied.

The consideration of congenital neurasthenia I have not taken up and my paper is already too long. I will only say that I believe it sometimes exists in the very young child, and perhaps if our perceptions are sufficiently acute we will observe it in the infant. In the child we are apt to overlook it, or to attribute the symptoms to some other cause, perhaps vague in our own minds. We are safe in such case in checking the mother's efforts to teach it even to talk, or to walk, or the other rudiments of physical existence, and if observed a little later on in life we should turn the child out to grass and stop its studies.

Gentlemen, I have scarcely more than scratched the surface of these considerations, exhausted none of them, but I fear I have exhausted your patience and will refrain from giving the records of interesting cases in my own experience which would illustrate some of these points I have laid before you.

STUDIES IN PSYCHOPATHOLOGY.

BY BORIS SIDIS, PH.D., BROOKLINE, MASS.,

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(Continued from No. 11, p. 326.)

VI. CASE OF RECURRENT STATES WITH SUBCONSCIOUS CHILD-LIFE.

Mr. C., a young man of twenty-five, a college student of good standing, is very able, conscientious in his work, and is scrupulously moral in his daily life.

Except for an aunt who has apparently died of tuberculosis, family history is negative. Parents are living and healthy, sisters and brothers are all well. Both maternal and paternal branches of the family are of good healthy stock, with no neuropathic or psychopathic taint. The family is well to do, and the members are intelligent, educated and able, so that the patient's childhood and early youth have passed amidst relatively healthy surroundings.

As a child the patient passed through children's diseases, but did not suffer from any nervous troubles. As a boy he has been of robust health, taking great delight in physical exercises and pranks characteristic of boyhood. Although he is now of a rather serious, scientific turn of mind, devoting most of his time to mathematics, mechanics, and to the various branches of physical science, he has been in his childhood and boyhood very impressible and imaginative. He was a great lover of fairy tales, an omnivorous reader of all sorts of extravagant stories and of voluminous novels. Dreaming was his delight. Many a time he went off into a dark nook and kept on dreaming about princes and princesses; sailing in airships, ascending inaccessible mountains, scaling high peaks and then descending into mysterious caves and chasms. He lived in his imagination the world over and in all ages. Time and place were no barrier to him. He lived "the universe over and through eternity." He lived with fairies, spirits and genii, who built for him enchanted palaces. He was "at the creation of the universe and saw the formation of the world." Stories were to him histories, real histories in which he was the central figure, the real hero. When very young, he had auditory hallucinations, — "angels called him by name and listened in dreams to the music of the spheres." He ceased to have those hallucinations about the age of ten.

On examination, patient was found well nourished. Reflexes not exaggerated; field of vision not limited; no sensory disturbances; no motor disturbances. Memory for disconnected impressions is good, while his recollection of past events and memory for present events are in excellent condition No disturbances of recognition. Sense of localization is very good, so also is his sense of orientation. He is rather a good visualizer. A few times in his later years he experienced illusions of reversion of locality and also hallucinations of recognition of having seen the place before. Voluntary attention is in excellent condition. His conception of abstract ideas, his logical acuteness for points and distinctions, for comprehension of complicated trains of reasoning and for disputation by logical processes are truly remarkable. His sleep is very good and he has no bad dreams, though he is quite an active dreamer. The color field, on closure of eyes, is "brilliant," and his hypnagogic and hypnapagogic[4] hallucinations are often very rich and brilliant in color.

Of late, the patient has been hard at work, studying for his examinations; he has been worrying over some family troubles as well as over his future career. He is somewhat nervous and restless, and occasionally a fit of irritability seems to take possession of him, an irritability which he sometimes has great difficulty to suppress. The patient complains of irritation of the bladder, — he cannot retain his urine for more than five minutes at a time and sometimes less than that. When he makes an effort to control his urgent desire to urinate, he is getting anxious, begins to feel hot, his eyes begin to hurt and feel queer and bulging, and he has a very painful, distressing feeling of tension in his forehead, almost amounting to a severe headache. During that time he feels confused, his attention is wandering, his apprehension for complicated trains of thoughts becomes defective, his desultory memory becomes extremely poor, he cannot repeat any series of disconnected syllables, while his logical memory for phrases and connected events becomes very vague. All those distressing symptoms are instantly relieved as soon as the pressing need for urination is satisfied. This insistent troublesome desire of urination disturbs the patient's studies, interferes with his regular work, makes him undergo tortures in the lecture-room, or in church during services, or when visiting some friend. When, however, he gets greatly interested and absorbed in his work or in some conversation, the insistent distressing desire disappears for hours together. As soon as the interest lapses the insistent desire reappears.

In addition to this insistent desire there is also present the insistent idea that along with the continuous outpour of the urine there is also an oozing out of his "vitality." This fear of loss of vitality gives rise to an almost continuous examination of the urine to discover any abnormal changes. The color, the dribbling, the feel of the urine,—all are noticed and watched with a feeling of anxiety. The patient is conscious of the absurdity of the insistent idea, but he cannot help it. The idea gets the better of his reason.

Occasionally, when he gets specially fatigued, an idea at which he feels extreme disgust enters his mind. When entering into close conversation with a male person, the idea of homosexual relations gets possession of his mind. He does not have the least desire, in fact, he feels disgust at the very thought of it. He cannot account to himself for the reason of it, whether or no it is the horror of the idea which suggests it by association of contrast; he cannot understand it; the idea to his extreme disgust flashes on his mind; there is absolutely no desire accompanied with it, but deep disgust. The idea comes suddenly and as suddenly disappears. When the idea is gone, he afterwards wonders how it could have possibly entered his mind at all. It appears to him so "idiotically stupid." "Why should such a disgusting, stupid thought come to one's mind?"

The patient is also troubled by a form of *folie du doute*. He is not sure that the addresses on his letters are correctly written; and no matter how many times he may read them over, he cannot feel assured that the addresses are correct. Some one else must read them and assure him that the letters are addressed correctly. In the absence of others he has devised the plan of copying the address from the envelope. This is somewhat more satisfactory, but then sometimes he is seized with the idea that may be the copying is wrong. Now and then he can help himself out by reading the address aloud. The seeing, reading aloud, the hearing of the words read and the feeling of pronouncing the words, along with the movements of copying—all those sensory stimuli seem to help to intensify the sense of reality and increase the feeling of assurance in the "real correctness" of the address.

When he has to write many letters sometimes a sudden fear gets possession of him that he had interchanged the letters and had put them into the wrong envelopes. He has then to tear open the envelopes and look the letters over and over again to assure himself that the letters have been put by him into the right envelopes. He becomes satisfied when assured by some one else. Before he drops the letters into the letter box he must repeatedly read over the addresses to be fully sure that he has the addresses all right. This condition is not a permanent one. as this whole trouble disappears for weeks and reappears when he is greatly worried or greatly fatigued.

Similarly, in turning out the gas-jet he must needs try it over and over again, and is often forced to get up from bed to try again whether the gas is "really" shut off. He lights the gas, then puts it out, then tries to test the gas-jet with a lighted match to see whether the gas leaks and is "really" completely shut off.

Similarly, in closing the door of his room, he must try the lock over and over again; he locks the door and then unlocks it again, then locks it once more, still he is not sure; he then must shake it violently so as to get the full assurance that the door has been actually and "really" locked.

One is almost tempted to generalize that the sense of reality is weakened in the patient. But is it not strange that this weakness of the sense of reality should only be in relation to particular ideas and acts, while it is in excellent condition as far as all other ideas and acts are concerned? It is not the sense of reality then that is at fault, — it is the insistent idea.

At one time he suffered from palpitation of the heart and he thought he had some heart trouble, for which he visited many physicians who kept on palpating, auscultating and percussing his heart, giving him all kinds of directions and precautions, putting him on a strict diet, regulating his exercises, prescribing bromides, digitalis and strychnine. But the more physicians regulated and prescribed, the more the refractory heart kept on thumping. Finally, losing patience, he gave up treatment and felt much better.

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[4] From ὕπνος, sleep, and ἀπάγω, lead away; a term used by me for dream hallucinations of the intermediary state in passing from sleep to waking, in contradistinction to hypnagogic hallucinations of the state of falling asleep.

Another trouble which has possession of him, though it is not very insistent, is the fear of getting consumption, or of being infected. Sometimes the fear becomes very troublesome, and it becomes a regular mysophobia, a *délire du toucher;* he may then keep on washing himself incessantly, rubbing his skin until it gets sore. Although the patient feels quite troubled, when the fear is on him, still it is not persistent; it seems to come in flashes, and he is quite free from it for long intervals of time. Still he has the feeling that the fear is there and it requires only special conditions to have it awakened. The mere sight of a supposed case of an infectious disease, or the contact with a tubercular patient, is sufficient to revive the state of mysophobia.

There are again times when he feels as if his will is paralyzed. This condition comes on him at great intervals, when he happens to be very tired and he is in a state of abstraction and reverie. He feels as if he has no power of movement, he has hardly the strength to ask for a glass of water. When the water is brought to him he cannot reach out for it. He cannot account for this peculiar feeling that sweeps over him so suddenly. He knows well he is not paralyzed, and still he cannot move. It is an attack of abulia, it is his will that is paralyzed. After making one effort the spell is broken.

Recently, an insistent idea has gotten hold of the patient's mind, an idea which is very distressing to him and which makes him miserable. He thinks of tearing out his eyes and put them under some weight and have them crushed. If the patient sits in a chair he thinks of putting the eyes under the chair and have them crushed. If he goes in a car, he thinks of having his eyes crushed under the wheels of the car. He tells me that the insistent idea is sometimes so vivid and real that he can almost feel the cars passing over the eyes and that he can almost hear the eyeballs crush and crack. The patient fully realizes the absurdity of the idea, but it keeps on coming against his will. The idea comes in flashes, leaves for some time and then comes again when he expects it least.

By means of the method of hypnoidization and hypnoidal states the following data were obtained:

When a young child the patient lived with an old grandfather of his who suffered from bladder irritation with incontinence of urine, obliging the latter to go to the toilet-room almost every five minutes. He was very much attached to the poor old grandfather, whose sufferings evidently made a very deep impression on the child. The grandfather was also absent-minded and had to try to close the door or turn the key in the closet many times before he could fully be assured that the closet door was locked. The grandfather had also difficulty and hesitancy to handle the various things given him. When he asked for water, the glass given him was sometimes left on the tray for several minutes before he was reminded to take it. All this the child watched with great sympathy and distress. Being a highly impressionable, sensitive and imaginative child, can we wonder that his mind has been deeply impressed with what had taken place before him every moment of his young life?

It was also in relation to his grandfather that he overheard people say that " the vitality is oozing away." In his childish mind he connected the oozing of vitality with the urination. All this was associated with anxiety and trepidation for the "oozing vitality," and, though those sad experiences have all gone from the patient's conscious memory, they have not, on that account, ceased their life existence, — they have simply lapsed from his personal consciousness, but only to become submerged into his subconscious life; and from the depth of his subconsciousness these dissociated, disaggregated experiences of child-life kept on recurring as insistent psychomotor states with all the intensity of anguish of the original experiences. Instead, however, of the symptoms being associated with his grandfather, they have, by a very natural process of confluence and foreshortening, become grouped around the emotions which the patient has actually gone through at that time of his life, and have hence become associated with himself. The patient was living over again in his own subconscious life the life experiences of his deceased grandfather, experiencing all those various distressing symptoms for which the patient could consciously give no account. May we not in a certain sense say that the grandfather's sufferings have been transmitted to the grandson? May we not say, be it in a figurative sense, that the grandfather's life has become resurrected in the subconscious self of the grandson?

The abulia manifested by the patient no doubt took its origin in what may be termed the subconscious " grandfather cycle " of experiences. Other experiences belonging to different cycles have also co-operated subconsciously and have helped to give rise to the state of will-defect. In one of the hypnoidal states it has come to light that, when the patient was very young, probably not more than six, he was taken to the bedside of a child of twelve who was stricken down with some form of paralysis. Once the experience struggled up in the hypnoidal state it stood out clear and distinct. The patient could in his mind's eye see the courtyard, the house, the people and the paralytic child lying helpless in his little bed, a kind of a crib. Even now when the subconscious experiences have become identified not as his own, he still feels a sinking sensation " in the pit of the stomach " and nearly feels the helplessness of the paralytic child. We can realize what a deep and lasting impression such an experience may have on the tender mind of an extremely sensitive and highly imaginative child. The great sensitivity and impressionability of the child can be gathered from another fact that also became revealed in one of the hypnoidal states. At about the same age of six or seven, the period to which the cycles of dissociated experiences belong and which have later on given rise to most of the distressing symptoms from which the patient has been suffering, when the child was in school, a man with a paralyzed right hand happened to come into the schoolroom. The child represented to himself vividly this same condition of paralysis in his own hand; he felt his hand and fingers growing powerless and his arm hanging limp by his side. Finally the feeling of helplessness and mental anguish became so intense, the paralysis so real that, overcome by his emotion, he fainted away. He was then sick for a few days. There is little doubt that such experiences have largely contributed to the patient's abulic state in which his will to move his limbs and especially his hand is paralyzed.

Now as to the homosexual ideas, what was the cause of ideas of sexual inversion, unaccompanied by any desire, foreign to the patient's nature and associated with a feeling of almost "nauseating disgust"?

In one of the hypnoidal states subconscious experiences emerged which, after a little tapping and close following of the course of the warped train of subconscious associations, finally assumed the shape of the following connected account: When about the age of eight and a half he entered a private school in which there were also boys of the age of sixteen. Two of those boys gained his friendship and one day took him out for a walk into the woods. There they told him of a secret club they had formed and asked him to join it. The little boy was much pleased by an invitation to join a club of big boys. They then took him farther away into the woods into some lonely corner where they proceeded to enter into homosexual relations and urged him to imitate them, ending their urgings by forcible seizure. The little fellow got frightened and ran; the big boys gave chase, but they soon gave it up, as he hid himself in some thick bushes. He told his parents about it and was taken out of the school. This experience lapsed from his conscious memory, but remained firmly imprinted on his subconscious memory, giving rise to the apparently unaccountable homosexual ideas at which he felt so much disgust. The homosexual ideas were really foreign to his character and no wonder his whole nature felt revolting disgust toward them.

There are other ideas, some of an insistent, some of a pleasing character, some of an apparently persisting æsthetic type, deas and ideals, unaccountable on any other view, but on the theory of dissociated states and disaggregated subconsciousness. We cannot possibly describe here all of them, but we can bring a couple, typical of the rest. Why should the patient be pleased and even become sexually excited at the sight of a green petticoat? Why should the smell of heated iron, the sight and feel of starched clothes be so agreeable and even sexually exciting? Why should a prominent abdomen, large hips, long, pendulous breasts, a few small black patches, interspersed with some little red pimples on the face have a sexual attraction and possess the significance of sexual stimulations? Why, again, should his ideal of feminine beauty be jet black, curly hair; large, black, lustrous eyes; a pale, somewhat dark, skin; a pouting mouth; a low forehead and a slightly protruding chin? The method of hypnoidization and the hypnoidal states induced give an insight into those apparently unaccountable and whimsical mental states and reveal their origin in subconscious states of his early boyhood and childhood.

Now in the hypnoidal states the image of a female figure emerged, a figure which the patient recognized as a nurse of his whom he had up to his fifth year. She was a young woman of not more than thirty, of tall stature, with big hips and pendulous breasts, her face bearing the markings of small black plaster patches and red pimples. He sees her ironing some white goods while he tucks and pulls at her dress, at her green petticoat. She used to fondle him, kiss him, embrace him and press him to her breasts with which she often let him play. All those subconscious experiences of the patient's childhood have helped to endow definite sensations and peculiar physical characteristics with an otherwise unaccountable attraction and sexual significance. Likes and dislikes, however trivial, especially if they belong to the fundamental instincts, are not accidental matters of chance, with no reason and meaning, — they can be traced, if one is sufficiently persistent with the hypnoidal state and the method of hypnoidization, to definite dissociated, subconscious activities.

Similarly, in the case of the patient's ideal of feminine beauty, the method of hypnoidization and the hypnoidal states brought out the underlying subconscious states. When the patient was of the age of seven he lived in the same house with his maternal aunt who had a little girl who was his companion in his plays and games, whom he worshiped and adored. It was that little cousin of his that had possessed all those physical characteristics, — black, curly hair; large, black, lustrous eyes; a low forehead; a pouting mouth; a pale, dark skin; a slightly protruding chin, — characteristics which have formed the foundation of his ideal of feminine beauty. These subconscious states — the basis of the ideal of feminine beauty—gathered all the more latent force from the circumstance that the little girl fell a victim to an infectious disease, scarlet fever, and the little fellow stood at the deathbed of his little cousin.

All those experiences may be regarded as belonging to the patient's "sexual cycle" of subconscious life activity. We may turn now to other subconscious systems which may be designated as the "infectious cycle." What is the origin of the patient's mysophobia? Why and whence his fear of death and palpitation of the heart? As a very young child and at a very tender age he had a rather rich experience in witnessing death agonies. He was present at the deathbed of his great-grandmother just at the moment when she gave up her ghost in the arms of his grandfather; he also watched the death agonies of his aunt who died of tuberculosis. When at the age of seven and a half an epidemic of scarlet fever broke out in the house; his sister, his younger brother and the little girl, his cousin, fell victims to the contagious disease, and he was present at their deathbed. During the hypnoidal states an image of a figure suddenly appeared before the patient's mind, held the hand over the heart, then fell with blood gushing from its mouth. The patient could not identify the figure, but he felt it was some real experience. It is quite probable that this related to some actual event of his very early childhood. The fear of infection and of death, as well as the palpitation of the heart consequent on such fears, were, by means of the method of hypnoidization and the hypnoidal states induced, traced, as have been the rest of the recurrent psychomotor states, to dissociated subconscious experiences.

But why those insistent ideas about the eyes? For some time this could not be answered. One time, however, the patient happened to go into a deep hypnoidal condition, he fell into one of those intermediary states closely bordering on hypnosis. In this intermediary subconscious state new episodes from the patient's child-life emerged. We may characterize this cycle of subconscious experiences as "the great-grandmother episode." An ancient great-grandmother of his lingered in the same house with the patient. While in his deep hypnoidal state the patient could clearly see the tall figure of his great-grandmother. She was greatly emaciated, skin and bone, and he stood in awe of her. Now this great-grandmother of his suffered from inflammation of the eyes. In his hypnoidal state the patient could recollect the many different liquids she used as washes for the eyes. She lived in a dark room and complained she could not see, the eyes pained her so much. And now a new experience emerged. Once the patient happened to get an inflammation of the eyes. How he dreaded those great-grandmother's bottles! And now he had to undergo the ordeal of having his eyes bathed by his great-grandmother's various washes. He also remembers some horrible stories told of people who have pains in the eyes, how the eyes "swell and bulge and then crack and burst." He also recollects stories of people with "glassy eyes," who can take the eyes out and have them "crushed and cracked by passing objects." We can well imagine what a deep and lasting though subconscious, influence such gruesome tales may exert on the sensitive mind of a highly imaginative child.

Thus by means of the method of hypnoidization and of the hypnoidal or intermediary states the various threads of the complex web of insistent or recurrent psychomotor states with their concomitant symptoms have been traced to dissociated subconscious activities having their origin far back in the dim regions of the patient's child-life. The dissociated subconscious experiences, like the moment consciousness of low types, kept on recurring with the same or similar mental content and psychomotor reactions, giving rise to apparently unaccountable, irrational, insistent ideas and emotions, deeply affecting the patient's selfconsciousness.

(To be continued.)

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Seventy-fifth Birthday of Dr. S. Wier Mitchell. On Feb .15, Dr. S. Wier Mitchell celebrated his seventy-fifth birthday.

New Instrument.

A NEW OBSTETRIC FORCEPS.

BY FREDERICK L. GOOD, M.D.,
Former House Physician, Boston City Hospital, Gynecological Service; Former House Physician, Boston Lying-In Hospital.

After a service of six months as house physician at the Boston Lying-In Hospital, I feel that the several varieties of axis traction rods now in use are inadequate for best operating and that better results can be obtained if certain difficulties in the application and adjustment of the rods be eliminated.

The main difficulty with the present rods is that in certain varieties they are not permanently attached to the blades, and that in others, although attached, it often takes much time and assistance to secure their proper adjustment.

It is admitted by many obstetricians that some presenting heads, really low in the pelvis (the so-called intermediate heads), are best delivered by traction rods; for this reason it occurred to me that as an aid to the obstetrician, and consequently for the best interests of both mother and baby, the ideal forceps would be one with permanently attached rods which would come well down on the handles and could readily and with no loss of time, be utilized.

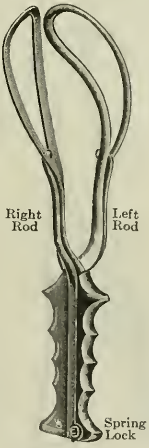

Plate 1. Rods attached showing how they will in no way interfere with low forceps operating.

Another objection to the present rods is their limited motion at the site of attachment — so limited that in some operative cases it is impossible to get the desired line of traction.

The forceps here presented, I believe, does away with the above mentioned difficulties and reduces the high forceps operation to a more simple procedure.

Plate I shows the traction rods already applied to the forceps, in grooves having the same axis as the handles, the left rod running down from the fenestrum, following practically the same line of direction as the blade itself and attached at the end of the handle and posterior by a spring-lock. The right rod is attached at the fenestrum, is then carried in front of the shank and follows the same general line of direction as the right blade — differing from the left only in its position — it being anterior instead of posterior. The spring-lock at the end of either handle, for retaining the rods in position, will be eliminated in other forceps; not because it is a bad feature, but it is not an essential one and the rods can be as well fastened by means of a pin lightly catching the handles. In order to bring the right rod down into the right handle it became necessary to cross over the lock, consequently decreasing the " depth " of the lock to a slight degree.

Plate II shows the rods free from their attachment to the handles and attached to the traction handle, the blades being locked by a T-shaped clamp passed through the handles and regulated by a thumb-screw at the opposite side. This apposition clamp will in no way interfere with making changes from one method of operative delivery to the other.

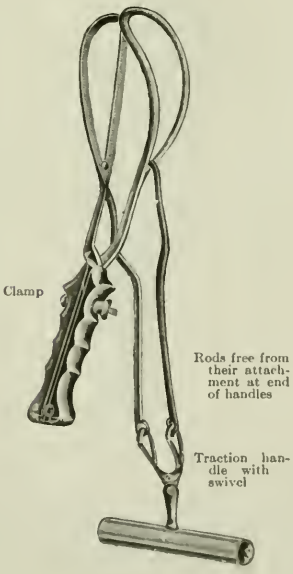
Clamp
Rods free from their attachment at end of handles
Traction handle with swivel

Plate 2.

After having applied and locked the forceps, one uses very little pressure on the thumb-piece of the left rod, thereby freeing it from its attachment and allowing it to drop back to be attached to the axis traction handle. The right traction rod is then lifted from its attachment by means of its thumb-piece, is carried over the left handle and dropped back as was the left. The rods are attached at the fenestra in such a manner that one can rotate them completely, and when attached to the handle allow of traction at an angle of 90°; they are so made to fit the fenestra that it is impossible for them to fall out, but they can be easily removed by the operator.

The traction handle consists of a modified Y-shaped apparatus, attached to the middle of a transverse bar, hook-shaped at either arm of the Y, and with a spring so attached that the rods cannot slip from the handle. The arms of the Y work on a swivel, thus assuring an equal pull on either rod. The instrument has been made according to my directions by Codman and Shurtleff.

I believe that the above described instrument will facilitate high forceps operations considerably, — facilitate it for the obstetrician because of its easy manipulation; facilitate it for the mother because of the lessened liability to do injury during the delivery; facilitate it for obstetrician, mother and baby because of the less time it will take to apply and utilize traction.

Medical Progress.

PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE.

BY HENRY A. CHRISTIAN, M.D., BOSTON.

THE CLINICAL DETECTION OF ALBUMINURIA.

" Albuminuria " as used clinically is not a very exact term, but refers to the presence in the voided urine of any albumin body which responds to the tests for albuminous material. Further, the sources of such substances may be any portion of the genito-urinary tract. As there is this possibility of variation both in the nature and source of the albuminous material, obviously the presence of it in the urine will be of a varying significance. Catheterization will exclude almost entirely the genital tract as a source, but it is hardly feasible to thus obtain all routine specimens, and even were it done, the bladder, ureter and hilum of the kidney remain as possible extra renal sources for the albuminous material. Fortunately, a determination of the nature of the albuminous material and its association with formed elements in almost all cases gives evidence as to the source and significance of the albuminuria.

Numerous albumin bodies may occur in the urine, but all except four, nucleo-albumin, serum-albumin, serum-globulin and Bence-Jones's albumin, may be neglected in the usual clinical examination. Nucleo-albumin, whether its source be renal, cystic, prostatic, testicular or urethral, occurs alone very frequently in the urine, appears to be non-nephritic in origin and so is to be excluded before using the presence of albuminuria as evidence of nephritis. Bence-Jones's albumin (albumosuria) apparently does not indicate a renal lesion but is of diagnostic importance in multiple bone tumors. Serum-albumin and serum-globulin usually occur together and their presence almost always indicates a damaged kidney. It is of particular importance to distinguish nucleo-albumin from serum-albumin or serum-globulin when the reaction is very slight. The failure to do this is largely responsible for the clinical uncertainty as to the significance of the report of the presence of the "slightest possible trace of albumin" in a specimen of urine.

For practical purposes what is needed is a group of tests easily carried out and requiring but few and stable testing fluids, which will enable us to determine the nature of the albuminous material. The two tests most generally used, the Heller nitric acid test and the heat acetic acid test, possess the advantages of simplicity, but have two defects in that they do not distinguish nucleo-albumin, which is of very little significance, from serum-albumin, which is of much import, and they fail to detect either when present in small quantity under conditions in which there is a urine of very low salt content. Hastings [1] has suggested simple tests which appear to possess the desired characteristics, and deserve a very general trial.

He suggests the following procedures: A test tube two thirds full of urine is heated in the upper third; a cloudiness may be due to nucleo-albumin, serum-albumin, serum-globulin, Bence-Jones's albumin, phosphates or carbonates. The addition of 2 to 5 drops of 50% acetic acid and second heating clears the solution unless the first three are present.

If the reaction is faint ("faint trace"), probably serum-albumin or nucleo-albumin or both are present. The presence of nucleo-albumin is tested for by diluting 3 to 5 cc. of urine with five to six times its volume of distilled water, adding to one half of this diluted urine 1 to 2 cc. of 50% acetic acid cold, not heating; a diffuse cloudiness in the acidulated one half is nucleo-albumin. (It may be mucin, but mucin will not respond to the first heat and acetic acid test.)

Nucleo-albumin is not precipitated by heat and acid in highly "salted" urines. To prove serum-albumin, therefore, to the urine add one fifth volume of saturated sodium chloride solution, heat upper third, add 2 to 5 drops of 50% acetic acid, heat a second time; a persistent cloud equals serum-albumin. (May be present with serum-globulin.)

If there be a massive reaction, usually serum-albumin with serum-globulin is present, or there may be albumose (Bence-Jones), or serum-albumin alone or with fibrinogen.

To separate serum-globulin and albumose (Bence-Jones): To the urine add one fifth volume of saturated sodium chloride solution and 2 to 5 drops of 50% acetic acid, without heating; a cloudiness may be due to serum-globulin or albumose (Bence-Jones) (rarely serum-albumin alone). Heat upper third; a heavy cloud followed by partial clearing suggests albumose (Bence-Jones); persisting cloud serum-globulin, or serum-albumin or both. Boil entire tube; filter; heavy cloud reappearing in filtrate on cooling is due to albumose (Bence-Jones). A faint reaction on cooling, due to deutero-albumose, often appears and this has practically no clinical value.

For serum-globulin: To a test tube of distilled water add urine, drop by drop to 8 or 10 drops; no heating; a cloud (cold) indicates serum-globulin. This cloud clears after addition of 2 to 5 drops of acetic acid (cold).

The most reliable test for serum-albumin in urine is that of "salting" the urine with a saturated solution of "salt" (sodium chloride) as described above, acidulating with 50% acetic acid and heating to boiling; this throws down all traces of serum-albumin and prevents a nucleo-albumin reaction.

It is important in all cases where there is a faint reaction to use fresh specimens, since in the presence of bacteria a positive reaction may be obtained as shown by Hastings, probably due to autolytic processes in dead bacteria.

Hastings and Hoobler [2] have used these tests in 3,089 urine examinations. Of these, 26.5% showed nucleo-albumin alone, and in none of these was there any clinical evidence of nephritis. In 14% the reaction for serum-albumin appeared only after salting. As a result of these examinations, Hastings and Hoobler regard albuminuria with casts as good evidence of nephritis, either temporary or permanent, but non-renal albuminuria is frequent, a fact more generally recognized by the genito-urinary surgeon than by the general practitioner.

PROFUSE HEMATURIA AND COLICKY PAINS IN NEPHRITIS.

These symptoms, so characteristic of stone in the kidney, may be very misleading. Besides nephrolithiasis, profuse hematuria occurs in tumor and tuberculosis and some rare conditions as telangiectasis of the pelvis of the kidney. Surgeons from time to time operating on account of these symptoms fail to find any cause for the hemorrhage and a number of such cases have accumulated in the literature. Moderate hematuria is of course quite common in cases of nephritis, even in the chronic varieties. In 562 cases of chronic nephritis studied in the Königsberg Klinik, Askanazy [3] found blood in the urinary sediment in 190 (35%), and in 11 of these the hemorrhage was profuse, in some accompanied by colicky pain. The diagnosis in three of these cases were confirmed at autopsy and in all the clinical symptoms were characteristic of chronic nephritis. Other observers have reported enough similar cases to make it certain that profuse hematuria with or without colicky pains may occur independently of such lesions as stone, tumor, tuberculosis and the like. Cystoscopic examination in some cases has shown the source of hemorrhage to be unilateral and the pain may be identical with that of renal colic, and accompanied by nausea, vomiting, chill and fever.

Askanazy believes this condition is most often associated with chronic nephritis, notwithstanding the fact that a number of observers have reported the kidneys to be normal. The condition is more common in males. It is clearly not an acute exacerbation of the nephritis as urinary analysis and absence of uremic symptoms show.

Several explanations of this condition have been given. Pel believes a urine rich in crystals without the formation of true calculi may cause it. Zondeck thinks that small calculi overlooked in renal calyces are responsible. Senator attributes it to adhesions about the kidney. Israel, and with him Askanazy agrees, explains the condition as the result of a paroxysmal congestion. The pain may result from the congestion or in some cases from the expulsion of blood clots. Askanazy states that ecchymoses are very common in the pelvis of the kidney in cases of chronic nephritis, without evidence of renal cyanosis or inflammation in the pelvis. From these facts he thinks that most frequently the source of the hemorrhage is in the renal pelvis and its cause the paroxysmal congestion intensified by heightened blood pressure and vascular alteration. Surgeons operating on these cases have often noted the great tension and congestion of the kidney.

Whatever the explanation of the condition, it is to be borne in mind that profuse hematuria and colicky pains may occur in the course of a chronic nephritis and without cause other than this renal condition and associated changes. When they occur they do not necessarily mean stone, tumor or tuberculosis.

UNILATERAL RENAL LESIONS.

Infection of the kidney may occur either as an ascending infection (urogenous) or by way of the blood stream (hematogenous). The former is usually associated with obvious lesions of the lower genito-urinary tract and is well recognized. The latter is more uncommon and is more apt to be overlooked. Both may be unilateral. Acute unilateral lesions of hematogenous origin have recently been discussed by Brewer, [4] Cobb [5] and Eisendrath [6] under somewhat different titles. Brewer terms them septic infarcts, Cobb hematogenous infections and Eisendrath septic pyelonephritis. The use here of the term "infarct" seems unfortunate, since the cases described by Brewer are anatomically quite different from infarcts as the term is ordinarily used. They are rather foci of inflammation, set up, it is true, by organisms brought in the blood stream; but were we to call them infarcts on this account, many other suppurative foci as well as tumor metastases would be entitled to the same designation. Pyelonephritis is an equally bad word for these cases, since in most of them the pelvis of the kidney is unaffected. Eisendrath, however, describes in his paper two cases, one of pyelonephritis, the other a hematogenous infection, apparently himself confusing the conditions. Acute hematogenous infection, as used by Cobb, is a preferable term, though Cobb himself does not entirely get away from the idea of infarct in describing the lesion.

The diagnosis of this condition is what interests the internist. Some cases show very slight localizing symptoms and are apt to be undiagnosed. In others with the high temperature, rapid pulse, leucocytosis and prostration of an acute septic process there is pain in the region of the kidney, often colicky in character, tenderness in the costo-vertebral angle and some regional muscle spasm, while urine examination shows albumin, pus and blood cells. If a cystoscopic examination is made, the pus and blood will be seen to have a unilateral source. Most of the reported cases have been women, and in the right kidney far more frequently than the left. The latter point leads to mistaken diagnosis of cholelithiasis or appendicitis, according as the pain radiates up or down.

To explain why one kidney is involved has been the subject of much speculation and some animal experimentation. It is believed that bacteria are quite often excreted through the kidney without damaging it. If, however, one kidney is already abnormal in some way, or if it has previously been injured by trauma, it seems that under these conditions the arrival of bacteria in the blood stream is likely to produce a lesion and this is the usual explanation offered.

Some of the mild cases may yield to urinary antiseptics and bland diluents, but the condition is essentially surgical and should be so treated either by nephrotomy or nephrectomy.

Nephrolithiasis, tuberculosis, pyonephrosis, hydronephrosis, pyelonephritis and tumor form a large group of cases in which a chronic renal lesion may be unilateral. There has been some clinical evidence adduced for the existence of a chronic unilateral nephritis, but in almost every case the proof is very insufficient. The diagnosis has been made in a number of cases by surgeons at operation, especially by those performing the decapsulation operation of Edebohls, but the difficulties of a diagnosis of the presence or absence of nephritis under these conditions is very great. The frequency with which at autopsy the diagnosis of the renal condition must be deferred until microscopic examination can be made, further attests the uncertainty that must surround such surgical diagnosis and this evidence alone cannot be accepted as of much value.

The very great rarity of a unilateral chronic nephritis is at once evident from an examination of autopsy statistics. That the condition may exist is shown by a case of Stich,[7] where in a woman of thirty who gave no history of previous renal disease, with bilateral acute ascending pyelonephritis, the left kidney showed no chronic lesions, while the right showed a marked chronic diffuse nephritis as proven by microscopic study. Stich, in a study of the German literature for the fifteen years prior to 1904, could find no other reported case of a demonstrated unilateral chronic nephritis. Rayer,[8] in 1894, however, had described a case in a man of twenty-six, with left-sided chronic nephritis and a normal right kidney, the diagnosis being based on the microscopic findings at autopsy. Other cases very probably have been observed but they are difficult to find in medical literature and the condition is at least very exceptional.

Two cases of chronic unilateral renal lesions which have come under my personal observation are of interest in this connection though they are not, strictly speaking, cases of simple unilateral chronic nephritis. However, they are closely allied to this condition and at operation would most likely be so classed. Both cases were autopsied by me several years ago at the Boston City Hospital. Both were females, aged thirty-six and sixty respectively. The kidneys are described as follows:

Case I. Right kidney, weight 170 gms. Cortex 7 mm. thick. Capsule strips off easily leaving a smooth surface. Kidney of a dark red color and stellate veins prominent. Cut surface very bloody and markings distinct. Microscopically kidney shows much cloudy swelling.

Left kidney measures 4 x 6 x 2 cm., embedded in a mass of fatty tissue. The capsule, which is ½ mm. thick, is stripped off with great difficulty leaving a fairly smooth surface. Over the kidney surface are many nodules (2 mm. to 1 cm. in diameter) of a yellow gray color and firm consistency. On section they appear homogeneous and of a yellowish gray translucent color. They project above the cut surface and are very elastic. On cross section the kidney substance measures only 2 to 4 mm. in thickness, is of a pale red color and dense consistency. In the kidney substance are many of the above mentioned nodules. The entire central part is replaced by fatty tissue. The hilum and ureters are patent. In the left renal artery, just at its origin from the aorta, is a yellowish, firm, irregular nodule about 3 mm. in diameter, projecting from the vessel wall into its lumen, and partially obliterating it. Beyond this the vessel wall is normal and the artery patent to its end in the kidney substance.

Case II. Left kidney weight 235 gm. Measures 14 x 6.5 x 4.5 cm. Is smooth. Capsule strips easily without bringing away any kidney substance. On section is pale. Glomeruli and markings of pyramids indistinct. Cortex 8 mm. thick. Teased specimen shows presence of many fat droplets in tubular epithelium.

Right kidney, weight 40 gms. Measures 9 x 2.5 x 2.5 cm. This mass is made up almost entirely of cysts from 1 to 2 cm. in diameter and filled with clear fluid. These are separated by only a thin wall of kidney substance. At the upper pole kidney tissue reaches its maximum thickness being there 1 cm. The hilum of this kidney is dilated but the ureter is patent, of normal caliber, and shows no evidence of obstruction. The right renal artery is about one third the size of the left but shows no thickening or obstruction.

THE DIAGNOSIS OF AMYLOID KIDNEY.

Since Lehmann [9] first demonstrated the presence of globulins in the urine, their diagnostic importance has been a subject of discussion. Hoffman [10] believed that the so-called albumin quotient of the urine (the relation of albumin to globulin) was of prognostic importance; the smaller the amount of globulin in ratio to the amount of albumin the better the prognosis. Csatary [11] pointed out that in amyloid kidney the globulin excreted in the urine was large in amount. Markus [12] showed later that globulin could be separated into two bodies,— euglobulin, insoluble in water, and pseudoglobulin, soluble in water. Wallerstein [13] and Joachim [14] found in amyloid kidney a considerable increase of euglobulin, while this was present in only very small amounts in nephritis unassociated with amyloid.

Zak and Necker [15] in a series of amyloid cases by one-third, one-half, and complete saturation of the urine with ammonium sulphate determined the amount of euglobulin, pseudoglobulin and albumin. They found that the relation of euglobulin to pseudoglobulin might show marked and rapid variations, but the finding of a rich excretion of euglobulin was diagnostic of amyloid kidney, though the converse was not true since in amyloid kidney there was an intermittent euglobulinuria. They express no opinion as to the relation of this excretory phenomenon to the renal lesion, but regard it as a valuable diagnostic aid.

URINE SEGREGATION BY MEANS OF KIDNEY MASSAGE.

A method suggested by Cowie [16] may prove of diagnostic assistance in some cases, especially in determining which kidney is diseased. It consists in washing out the bladder thoroughly, and then vigorously kneading and percussing the abdominal wall in the region of the kidney for about five minutes. After this the bladder is washed out and the fluid examined for cells and bacteria. Then the same process is repeated for the other renal region. The two bladder washings are compared. In this way a renal tubercular lesion may be accurately localized for subsequent nephrectomy, as in the case reported by Cowie.

EXPERIMENTAL NEPHRITIS.

In recent years a number of investigators have been successful in producing an experimental nephritis, and this has aided much in a clearer understanding both of the pathological histology and the pathological physiology of the disease as we see it in man.

Ophüls,[17] by feeding guinea pigs and dogs small amounts of lead carbonate, lead acetate or potassium bichromate over periods of a few weeks to one year, has succeeded in producing a condition of the kidneys quite similar to that found in chronic interstitial nephritis.

In the earlier stages there is a certain amount of degeneration and some necrosis and desquamation in the tubular epithelium. Cellular infiltration commences around the blood vessels near the glomeruli. Part of the cells which collect in the tissues are lymphocytes, the larger part, however, probably proliferated connective tissue cells. In the end the formation of quite a little new fibrous tissue may be the result of this proliferation. As a result of this study, Ophüls believes that the changes in the epithelium and the connective tissue are co-ordinate, not subordinate, to one another. They are the effect of the same cause acting simultaneously on different tissues, with different vulnerability and different reaction time, so far as visible changes are concerned. This view is opposed to the doctrine of Weigert, which is the one very generally accepted. Weigert believed that the epithelium is primarily injured and that the connective tissue growth is secondary.

Ophüls in the course of his experiments found no albuminuria or cylindruria, which suggests that in man the lesions of chronic interstitial nephritis may be developing for a long time before these clinical signs become evident.

Richter[18] has shown that subcutaneous injections of small doses of uranium nitrate will produce in animals a condition analogous to nephritis in man with albuminuria, cylindruria and hydrops. The production of hydrops is absent in the experimental nephritis produced by almost all other substances so far used, though the renal lesions may be quite similar. This is true for cantharidis nephritis. Georgopulos[19] gives the following description of the renal lesions produced in rabbits by doses of uranium nitrate, fatal in four or five days. In some cases degenerative processes in the tubular epithelium are most prominent, and vary between simple cloudy swelling and complete necrosis. Many casts and desquamated epithelial cells are present. In other cases especially the glomeruli are affected and some of these deserve the designation of a glomerulo-nephritis. There is also an intertubular and periglomerular infiltration of the connective tissue.

Wallerstein[20] has studied the origin of hyaline casts in experimental nephritis. Rabbits were given subcutaneous injections of neutral ammonium chromate, cantharidin or mercury bichloride. In others the ureters were ligated. In these ways albuminuria and cylindruria were produced. Cylindruria without albuminuria was produced in dogs as the result of icterus following ligation of the common bile duct, and in rabbits as the result of artificial coprostasis following closing the anus. The animals were killed after varying periods up to four days, and tissue from the kidneys studied histologically. In the urine of these animals epithelial casts preceded hyaline casts. In the kidney, casts in process of formation could be observed, and Wallerstein concludes from his studies that both granular and hyaline casts have a common origin from epithelial cells and that hyaline casts represent an end stage.

A number of Senator's pupils have studied various phases of the pathological physiology of nephritis by the experimental method, employing chiefly uranium nitrate in the production of the nephritis. Bibergeil[21] showed the regular presence of glucose in the ascitic and pleural fluids from such animals. This glucose could not be increased by giving phloridzin or sugar. Georgopulos[22] studied the question of the relation of chloride retention to edema, but found there was no constant relation. Hydremic plethora alone did not seem a sufficient cause for the edema, but some toxic substance acting injuriously on the blood vessels must be present in order that a transudation be produced. Blanck[23] obtained further evidence of the presence of such toxic substance by producing an experimental nephritis without hydrops and then inducing hydrops by the injection of blood serum from an animal in which there was an experimental nephritis with hydrops.

With these various methods of successfully reproducing in animals the conditions found accompanying nephritis in man, it is probable that a very much better understanding of the pathology and physiology of nephritis may be obtained than we have so far gained from post-mortem and clinical studies.

POLYURIA IN CHRONIC INTERSTITIAL NEPHRITIS.

A statistical study by Nagel[24] of 45 fatal cases of chronic interstitial nephritis observed in the clinic of Quincke at Kiel is of interest, because many of these cases failed to correspond with the clinical picture described as typical of this condition. The diagnosis in all of these cases was confirmed at autopsy.

Twelve of the 45 cases were in the hospital too short a time for observations on them to be of any value. Of the remaining 33, 14 had polyuria, *i.e.*, amounts in excess of 1,500 cc. in twenty-four hours; 12 oliguria, *i.e.*, 1,000 cc. or less; 7 a normal amount, *i.e.*, 1,000 to 1,500 cc. The cases of polyuria must be further reduced by the subtraction of 4 cases in which polyuria was the result of absorption of the edema and ceased with the disappearance of edema. The specific gravity of the urine in the cases of polyuria ranged between 1,009 and 1,012. Only 4 showed a night polyuria. In 11 of the 14 cases there was a heightened blood pressure, and in all heart hypertrophy, but heart hypertrophy may be present in chronic interstitial nephritis without there being polyuria. The specific gravity of the urine in the cases of oliguria averaged 1,019.

Nagel also studied 18 non-fatal cases which gave clinical evidence of chronic interstitial nephritis. Ten of these had polyuria, 5 oliguria, and 3 were normal. Of the total of 51 cases, there was polyuria in 47%, but this figure should be reduced to 33.3% since in 7 cases the polyuria was clearly the result of the absorption of edema; 33.3% had oliguria, and 19.6% a normal secretion of urine; 72.5 % had increased blood pressure; 93.3% of the fatal cases had heart hypertrophy and 83.3% of the non-fatal showed an increased cardiac dullness. In only 25.5% was there a night polyuria observed. In all cases there was uremia.

The most striking facts in this paper are that in one third of the cases of chronic interstitial nephritis there may be oliguria with a specific gravity of 1,019, while night polyuria occurred in only one fourth the cases. With regard to this last point, a comparison with ambulatory cases of chronic interstitial nephritis would be very interesting.

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Book Reviews.

Pulmonary Tuberculosis: Its Modern and Specialized Treatment. By Albert P. Francine, A.M., M.D., of the Staff of the Henry Phipps Institute, Philadelphia. Pp. 240 with 10 illustrations. Philadelphia and London: J. B. Lippincott Company. 1906.

This new book deals exclusively with the treatment of pulmonary tuberculosis under the following headings: Rest, Fresh Air, Exercise, Climate, Diet, Tuberculin, Serumtherapy, Drugs, Symptomatic Treatment, General Considerations, Prophylaxis. While not an exhaustive work, it is sufficiently comprehensive and detailed to serve as an excellent practical guide in home treatment. Its greatest defect lies in the absence of any account of the sanatorium care of the consumptive.

The various tuberculins and serums are very satisfactorily discussed in Chapters V and VI.

To the work are appended Dr. Minor's "Hints and Helps to Tuberculous Patients" and a brief account of the methods of study and treatment at the Phipps Institute.

Essentials of Medical Electricity. By Edward Reginald Morton, M.D., C.M., 12mo, pp. xi, 192. With 11 plates and 70 illustrations. London: Henry Kimpton. 1905.

This little book is one of a series and will prove a useful guide for the beginner in medical electricity. In the limited space at his disposal the author has not attempted to deal with all the later methods of using electricity in medical work, and has considered chiefly the employment of electricity in the better known forms for strictly medical purposes as distinguished from surgical work. He lays considerable stress upon the use of an alternating constant current for diagnostic purposes instead of the old Faradic coil. Within the limitations above mentioned the book may be recommended to the student as a clear and concise introductory manual.

Medizinische Annendungen der Elektrizität. By M. U. Dr. S. Jellinek. 8vo. Pp. xix, 458. With 149 illustrations. Munich and Berlin: R. Oldenbourg. 1906.

This volume is one of a projected series on the various uses of electricity in currents of moderate strength. If the rest of the series are like the volume before us, it is much to be commended. The present volume gives in concise form a very large amount of information in regard to the medical uses of electricity. About one third of the book is devoted to a consideration of the various forms of apparatus and devices employed in the use of electricity in medicine, and the rest of the book deals with electro-physiology, electro-diagnosis and electro-therapeutics. Few works on the subject give us so much information upon the various details, as, for example, the rarer forms of changes in the electrical reactions which, so far as we recall, are mentioned by no other writer except Cohn. The information is sometimes brief, but we know of no work which gives so varied information upon all matters pertaining to the medical use of electricity, and we would heartily recommend it to all interested in the subject.

Organic and Functional Nervous Diseases. By M. Allen Starr, M.D., Ph.D., LL.D., Sc.D. Second edition, thoroughly revised. 8vo. Pp. viii, 816. With 282 engravings in the text and 26 plates in colors and monochrome. New York and Philadelphia: Lea Brothers & Co. 1907.

The author has added to this second edition a section on functional nervous diseases, so that the work now becomes a complete treatise on diseases of the nervous system. A number of affections which are ordinarily discussed in the treatises on nervous diseases, such as the trophic disorders and diseases of the ductless glands, are omitted, as not being strictly nervous diseases. The "thorough revision" of the chapters which were included in the first edition still leaves much to be desired. Many of the typographical errors of the earlier edition remain uncorrected and the same unevenness of merit, which rendered the work unfitted for the student, still persists. As we indicated in a previous review, some of the chapters are merely an unsatisfactory repetition of the statements of the earlier textbooks, without any consideration of the recent work done on the subject, while other chapters are clear and concise expositions of the subject in hand, giving an excellent summary of recent investigations and enriched with the data of the writer's wide clinical experience. The additions are not considerable, except a section of about eighty pages on functional nervous diseases. This section shows the same uneven merit as the rest of the book. The chapters on chorea and epilepsy are of much value, while the chapter on spasmodic neuroses shows a lamentable falling off. In this chapter, for example, the carelessness of the author or the proofreader ascribes Gilles de la Tourette's disease to Guinon. It is certainly to be regretted that the author could not have put as much care into all the chapters of the book as he has into some; then he would have given us a very excellent and useful work on nervous diseases.

The Diagnosis of Nervous Diseases. By Purves Stewart, M.A., M.D., F.R.C.P. 8vo. Pp. xii, 380. With 2 plates and 192 illustrations. London: Edward Arnold. 1906.

It is a number of years since any manual of diagnosis of nervous diseases has appeared in English, and in that time many important methods of clinical investigation have been introduced, which have proved in some cases to be of decisive value. Dr. Stewart's new book gives us a clear account of many of these new methods which even the standard treatises on neurology in English only too often have neglected. Quinquand's sign, Oppenheim's and Gordon's reflexes, Babinski's "combined flexion," Grasset and Gaussel's phenomenon,the unilateral bulbar syndome of Babinski and Nageoth, the neurotonic electrical reaction and many other symptoms all receive their appropriate mention. The book is illustrated with many clear and excellent diagrams and representations of morbid conditions. The style is clear and scholarly. The author's statements are based on careful study of books and patients. It is an excellent manual for the student and physician. Although the somewhat limited compass of the work compels the author to touch rather superficially upon many topics, nevertheless, it contains enough to enable the physician to make a reasonably thorough and intelligent examination of a patient and to arrive at a correct diagnosis. The arrangement of the book is a little unsatisfactory. After a short sketch of the functions of the nervous system, the writer follows a scheme for examination which begins by a consideration of mental states, aphasia and other speech disturbances, and toward the close of the work deals with the simpler question of reflexes, sensation and motion. Each cranial nerve is considered by itself, and, finally, a chapter on hysteria is interpolated somewhat incongruously. For the student we believe the physiological method, proceeding from the simple to the complex, and grouping symptoms according to their effects upon function is of greater value than to adhere strictly to the convenient routine of a clinical examination. Such a criticism, however, detracts nothing from the value of the work, which is a welcome addition to our diagnostic aids.

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SOCIAL WORK AT THE MASSACHUSETTS GENERAL HOSPITAL.

An interesting experiment in social work, in direct relation with the medical problems which an out-patient department presents, has been carried on at the Massachusetts General Hospital for upwards of a year. The plan was developed by Dr. Richard C. Cabot, and it is largely through his energy and that of a band of workers which he has collected that the work thus far has been successfully prosecuted, making possible the first annual report, which is now in our hands.

Dr. Cabot himself writes this report, and the necessity of the work which it represents is perhaps best indicated by his own words in the opening paragraph:

"In the Out-Patient Department of the Massachusetts General Hospital (and I suppose in most other hospitals) there occurs many times each year a scene not unlike that described in 'Alice in Wonderland';

"'"Have some wine," said the Hatter.

"'"I don't see any wine," said Alice.

"'"There isn't any," said the Hatter.'

"Without any sense of the humor and pathos of the situation we say (in substance) to many patients: 'Take a vacation,' or 'Get a job,' 'Get a set of teeth,' or 'Get a truss.' There is none in sight and no means of getting any. What do we do then? We pass cheerfully to the next patient."

This gap it is the design of this department of the hospital work to fill, recognizing the fact that modern medical treatment nowadays goes far beyond the somewhat restricted limits to which it was confined not many years ago and demands a study of the patient from every point of view, social and mental, as well as physical. With this end in view the plan of work was begun in the simplest possible way, has demonstrated its usefulness and has gradually developed to such an extent that it now demands the time of upwards of a dozen workers, irrespective of the suburban tuberculosis class, also conducted at the Massachusetts General Hospital, which is essentially a part of the same general work.

Thus far the work has been divided into the following main divisions: tuberculosis, with special attention to the proper disposition of cases; hygiene teaching; infant feeding and the care of delicate children, with demonstrations and directions to mothers; vacations and country outings; the care of unmarried girls, pregnant, morally exposed or feeble-minded; help for patients needing work or a change of work; provision for patients sent to the hospital, and assistance to patients needing treatment after discharge from the hospital wards. Each of these special branches of the work was suggested by particular cases, and many others have already and will continue, no doubt, in the future to suggest themselves as the scope of the work widens.

The work in tuberculosis, here as elsewhere, has already attained wide proportions, and has extended to many suburban towns. The report of this work is given by Drs. John B. Hawes, 2d, and Cleaveland Floyd in a separate pamphlet under the heading, "First Annual Report of the Suburban Tuberculosis Class Conducted at the Massachusetts General Hospital." This is an admirable exposition of what may be done and of the best methods of procedure. It should have wide circulation. In each of the other divisions of the work to which we have alluded good progress has been made. Patients have been carefully followed, their real needs ascertained, and the best means of supplying those needs determined. This indirectly brings the hospital into closer relationship with other charitable institutions having, as a common aim, the relief of suffering and the alleviation of the conditions of life. At the end of the general pamphlet is detailed a large number of hospitals, general and special, nursing associations, homes, various relief associations, employment agencies, settlements and other institutions of a charitable sort. It is certainly well that physicians in general should know of these possibilities of relief, not only in their capacity as hospital physicians, but also in relation to their personal work.

There seems small reason to doubt that this work, auspiciously begun, with a record up to Oct. 1, 1906, of 684 cases investigated, will continue to develop in the future and ultimately, we hope, become an integral part of the hospital organization. As a rational means of meeting the problems, which a great out-patient service presents, it certainly should take its place among the many remedial agencies which the modern hospital is expected to supply.

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THE MILK SITUATION IN NEW YORK.

There is at present much agitation of the pure milk question in New York and the proposed compulsory pasteurization of the city's supply as bills demanding the latter measure have been introduced not only in the Board of Aldermen, but also in the legislature at Albany. On March 12, the meeting of the Section on Public Health of the New York Academy of Medicine was devoted to the subject, when papers were read on "Milk as a Carrier of Infection," by Dr. Charles Harrington, of Boston, "The Advantages and Disadvantages of Pasteurization to the Consumer," by Dr. Rowland G. Freeman, "Advantages and Disadvantages to the Municipality," by Dr. Joseph Roby, Deputy Health Officer of Rochester, N. Y., and "Current Misstatements and Fallacies regarding the Milk and Milk Supply of New York City," by Dr. William H. Park.

Dr. Roby strongly condemned commercial pasteurization, in which the milk was raised for a few seconds only to a temperature of 150° to 170° F., and stated that in Rochester the rigid inspection of the sources of supply had proved a much more efficient means for securing milk. Dr. Freeman contended that the main effect of commercial pasteurization was to keep "dirty" milk from souring on the dealer's hands, and that even real pasteurization, in which the high temperature was maintained for a sufficient time in order to be effective, must be practised just before the milk is to be consumed. At the same time, he did not think that the excellent results obtained in Rochester from the use of raw milk carefully inspected could be expected in New York, for the reason that Rochester was a city of but 156,000 population, deriving its milk supply from a restricted territory and using it within twenty-four hours, while in the case of the immensely larger city of New York, the supply necessarily came from a very wide territory and, as regards much the greater part of it, from forty-eight to seventy-two hours elapsed before the milk was used. Dr. Park expressed the opinion that most of the scarlet fever among children came from direct contagion in school, and inasmuch as diphtheria was prevalent principally in the winter, at a time when the diphtheria bacillus would not develop in milk kept at the average temperature, he did not attribute a large amount of this disease to infected milk. As regards tuberculosis, he said that while it was true that perhaps 10% of the cattle of the state were the subjects of tuberculous disease in one form or another, not 1% of these had udder tuberculosis, from which alone, as had been shown, the milk could be seriously infected.

In the discussion which followed the reading of the papers, Dr. L. Emmett Holt emphasized the fact that the city certainly could not wipe out all contagious diseases by the remedy proposed for the milk supply. In concluding his remarks he said, " As a matter of fact, hardly a baby in New York is now fed raw milk from the bottle. The mother pasteurizes the milk at home, the proper place to do it. All the mothers in the tenements know how. I tried recently for a certain demonstration to find some babies in tenement families whose milk had not been properly heated before feeding, and I had to give up the job."

In the meanwhile, the City Board of Health has continued active in its efforts to improve the character of the milk supply and, at its regular meeting on March 13, passed an additional series of regulations on the subject. One of these requires that on Monday of each week, every creamery or milk station shipping milk or cream to New York shall furnish to the Health Department a report stating the existence or non-existence of any one of the following diseases in the households of persons employed in the collection or handling of milk, either at the creamery or at the farms or dairies supplying it: typhoid fever, tuberculosis, scarlet fever, diphtheria, dysentery or any other infectious disease. Another regulation requires the farmers and dairymen to make similar reports to the creameries every Saturday; and a third demands the exclusion from the handling of milk of any employee in whose family such disease develops until such time as a licensed physician certifies that there is no longer danger of carrying the infection. Included also in the regulations is one requiring that when typhoid fever or dysentery exists in the household of any employee, no water from any well or spring within 100 feet of a dairy shall be used in the barns or for cleaning milk utensils without the consent of the New York Health Department. Failure to comply with any of these rules is to be regarded as sufficient cause for excluding from the city the milk or cream of the offending station or creamery.

PROFESSOR MULLER'S VISIT.

The Harvey Society and the Herter Lectureship Foundation have made us all their debtors, both by calling forth such excellent papers by our own countrymen, as well as by the influence they have exerted toward bringing so many men notable in medicine to the United States. Unfortunately, up to this time we in Boston have missed the opportunity of hearing many of these speakers. It is therefore with more than ordinary satisfaction that we call the attention of our readers to the meeting at the Medical Library on Wednesday, March 27, which is to be addressed by Prof. Friedrich Müller, of Munich.

Professor Müller stands for all that is best today in German clinical medicine, and the hospital and clinic of which he is the head are unsurpassed. It is refreshing to follow his career, because it so well exemplifies the system that has given Germany her leadership in this department of education. Born in Augsburg in 1858, he grew up in a medical atmosphere, as his father was the chief physician at the City Hospital. He was graduated at Munich in 1882, where he worked with Carl Voit, becoming Gerhardt's assistant in Würzburg a year later. When in 1885, Gerhardt was called to Berlin, Müller accompanied him and served as his assistant in the Second Medical Clinic at the Charité until 1889. He was then promoted to an Assistant Professorship (Extraordinary Professor,— our translation is not quite correct) at Bonn, only to be transferred a year later to Breslau, where in 1892 he became full professor and again moved on to Marburg for a stay of seven years. After a short term in Basel he was again promoted and accepted at his alma mater the professorship in Medicine left vacant by Ziemmsen.

Müller's researches have been as diversified as his homes, yet they have never wandered from the end in view. This is well illustrated by his work on sputum, which was begun in 1884 and carried on as opportunity offered until 1901. Only a fixed purpose and expert chemical training could have demonstrated an amido-carbohydrate group in mucin, and have recognized it as glucosamine, thus joining with Kossel and Fischer in the unravelling of the albumin molecule.

By his work on jaundice, cancer cachexia, the starving Cetti, and the various pathological aspects of digestion, he showed his appreciation of the need of study of that type of disease which attacks the last as well as the first half of life. As Professor Welch so ably pointed out at the dinner given in Professor Müller's honor in New York, the lengthening of life in the last century has been due to our better knowledge of those diseases which principally attack the young. Müller's articles on aphasia alone would give him a place with the leading neurologists. But his broad conception of medicine and the field of study it affords is best seen in his clinic, where he stimulates his associates and teaches his students to seek as far as possible themselves for the cause of disease before calling in the specialist.

With "Medicine and the Laboratories" as his toast, Professor Welch could well refer to Friedrich Müller as a worthy exponent of that modern clinical medicine which has brought the laboratory into the ward and made medicine more of a science, yet no less of an art. We hope the day is not far distant, when in the exchange of college professors between the German government and Harvard Unversity, Boston may repay New York for the privilege of knowing Professor Müller.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 13, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 27, scarlatina 51, typhoid fever 7, measles 15, tuberculosis 48, smallpox 0

The death-rate of the reported deaths for the week ending March 13, 1907, was 22.86.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 16, 1907, was 265, against 224 the corresponding week of last year, showing an increase of 41 deaths and making the death-rate for the week 22.95. Of this number 134 were males and 131 were females; 258 were white and 7 colored; 143 were born in the United States, 112 in foreign countries and 10 unknown; 38 were of American parentage, 191 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 48 cases and 2 deaths; scarlatina, 56 cases and 0 deaths; typhoid fever, 9 cases and 0 deaths; measles, 18 cases and 0 deaths; tuberculosis, 58 cases and 33 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 41, whooping cough 1, heart disease 28, bronchitis 8 and marasmus 3. There were 15 deaths from violent causes. The number of children who died under one year was 32; the number under five years 47. The number of persons who died over sixty years of age was 75. The deaths in public institutions were 84.

There were 9 cases and 3 deaths reported from cerebrospinal meningitis during the week.

Bequests. — By the will of the late Gen. Samuel E. Merwin, the New Haven General Hospital received $25,000 and the Yale Medical School $5,000.

Massachusetts General Hospital House Pupils Alumni Association. — The second annual dinner of the Massachusetts General Hospital House Pupils Alumni Association, was held on the evening of March 16, at the Hotel Vendome, Boston. Dr. James C. White, president for the year, presided, and Dr. Charles Harrington acted as toastmaster. Speeches were made by Drs. J. C. Warren, Abner Post, and Dudley P. Allen, of Cleveland. Dr. George L. Walton read a poem, and the proceedings were further enlivened by songs. Dr. C. Ellery Stedman was elected president for the ensuing year.

A Test Case in Relation to Vaccination. — For the last five years a case has been in litigation between the town of Hyde Park, Mass., and certain plaintiffs regarding the legality of excluding a minor from the public schools because of failure to comply with the school committee's regulations for vaccination. After passing through various courts a decision has finally been reached in the Supreme Judicial Court of Massachusetts for the defendant. This decision will be regarded with favor, both by those who believe in vaccination as a prophylactic measure, and also by those who desire to see law and order upheld.

Henry Francis Sears Fund for Pathology. — At a meeting of the President and Fellows of Harvard College it has recently been voted that

"*Whereas,* The Sears Pathological Laboratory has passed from the possession of the University with the Medical School building at the corner of Boylston and Exeter Streets, to which it was attached, that there be set aside as a permanent memorial from the fund created by the sale of that building, the sum of $35,000, the income of which shall be applied to the current expenses of the Department of Pathology, and the principal of which shall forever be preserved and recorded as the Henry Francis Sears Fund for Pathology."

NEW LABORATORY OF THE CARNEGIE INSTITUTE. — It is announced that the new laboratory of the Carnegie Institute, to be devoted to the study of the nutritive value of foods, will be erected on lands adjoining the new buildings of the Harvard Medical School in Boston. It is furthermore announced that the architects of this building are those who designed the medical buildings, which is matter for congratulation, since it insures harmony of design so far as the exigencies of building with other material will permit.

REPORT OF THE BUTLER HOSPITAL. — The report of the Board of Trustees and of the Physician and Superintendent of the Butler Hospital, at Providence, R. I., impresses one with the continued admirable and progressive work which is being done at this institution. One hundred and four patients were admitted during the year under consideration, and the total number under treatment was two hundred and sixty-seven. It is interesting to note that the percentage of voluntary admissions was upwards of 40%, and that of those discharged 19 were classified as recovered, 51 as improved, and only 27 as unimproved or dead. We cannot forbear to allude to the admirable literary style in which the yearly reports from this hospital are written.

INTERNATIONAL EXPOSITION OF SAFETY DEVICES AND INDUSTRIAL HYGIENE. — We have recently commented on the exhibit of industrial conditions to be held in Boston the week of April 8. To this exhibition is to be added a unique collection including a great variety of protective devices and health conservers, from marine distress outfits and machinery guards to ideal workmen's dwellings, showing the steady progress in the prevention of casualties in civilized countries. Protection is illustrated for those who travel by street car, railroad or on the sea, and especially for workers of all classes.

"The appalling list of railway and steamship disasters within the past few months," said a prominent Harvard sociologist recently, "makes this exhibit most timely. The fact that 500,000 men, women and children in the United States — one half our total annual immigration — are killed or crippled every year as a direct result of the occupations in which they are engaged, is rendered the more frightful when we consider that more than half of it is needless."

LABORATORY OF SURGICAL RESEARCH, HARVARD MEDICAL SCHOOL. — A laboratory of surgical research has been established by the Division of Surgery at the Harvard Medical School. The laboratory is in Building E, Room 309, adjacent to the Surgical Library, the secretary's room, and the rooms assigned to the Professor of Surgery.

Opportunity to work in this laboratory on problems in surgical research may be secured by members of the teaching staff of Harvard University, and by other qualified persons registered as special students in the Medical School.

Applications to work in the laboratory should be made in writing to Dr. J. C. Warren. Applicants should state the nature and purpose of the work to be undertaken, an estimate of the expenses of the research, and the time necessary for its completion. If an appropriation is desired to meet the expenses of the investigation, a request for such an appropriation should be made for a given amount, to be expended before a specified time.

Results of research work performed in the laboratory shall not be published without the approval of the Division of Surgery, and, when published they shall appear as "From the Laboratory of Surgical Research of Harvard University," and shall be available for publication in the *Bulletin of the Division of Surgery*.

For further information, application may be made to Dr. J. C. Warren, 58 Beacon Street, Boston.

The laboratory will be open daily from 9 to 12 and 2 to 5, and at other hours by special arrangement.

NEW YORK.

DEATH OF WILLIAM JOHNSON. — William Johnson, the oldest resident of Canarsie, Borough of Queens, N. Y., died on Feb. 23, at the age of nearly one hundred, having been born on Dec. 27, 1809. He was a native of Rahway, N. J., and at the time of his death had 166 descendants, including 9 children, 60 grandchildren, 90 great-grandchildren, and 7 great-great-grandchildren. It is an interesting fact in his life that he caused the arrest in 1831 of Gibbs and Wansley, the last pirates hanged in New York. In 1830 and the first part of the following year the police of New York were baffled by a gang of pirates, headed by these men, who infested the harbor and adjacent waters and committed many murders. On information furnished by Johnson, who, at that time had a fishing shack on Barren Island, Gibbs and Wansley were arrested and convicted of the murder of the captain and mate of the brig Vineyard, and on April 23, 1831, they were hanged on Bedlow's Island, where the Bartholdi statue of Liberty now stands.

Report of New York State Hospital for Incipient Tuberculosis. — The report of the board of trustees of the New York State Hospital for Incipient Tuberculosis, situated at Ray Brook in the Adirondacks, which has just been submitted to the legislature, shows the very gratifying result that out of a total of 114 patients admitted with incipient tuberculosis, 96, or more than 84%, were recorded as "apparently recovered" after an average stay of about six months.

Opening of Anna Ottendorfer Dispensary. — Governor Hughes was the principal speaker at the exercises attending the opening of the new Anna Ottendorfer Dispensary of the German Hospital, at 76th Street and Park Avenue, on March 16, and during the ceremonies Mrs. Anna Woerishoffer, the daughter of the late Mrs. Ottendorfer, after whom the dispensary is named, was presented with a gold medal by the physicians connected with the institution, in recognition of her generosity. The handsome new dispensary building, which is spacious and completely equipped for its purposes, adjoins the buildings of the German Hospital, which occupy the northern portion of the block. Many years ago the old German Dispensary, on lower Second Avenue, was established and endowed by Mrs. Ottendorfer, the wife of the proprietor of the *Staats Zeitung,* and some time since it was transferred to the management of the directors of the German Hospital. After the sale of the Second Avenue property, Mrs. Woerishoffer added a large amount to the proceeds for the erection and maintenance of the new up-town dispensary. This lady is also known as one of the principal benefactors of the New York Academy of Medicine and it was in part owing to her generous gifts that the latter was enabled to erect its present commodious building.

Public Health Defense League. — The Public Health Defense League, a body which resulted from the conference of physicians and others interested in opposing conditions dangerous to the public health and morals held in New York in November last, was incorporated in Albany on March 15, and among the directors named in the charter are Drs. Thomas Darlington and Ernst J. Lederle, of New York, Robert E. Belcher, of Boston, and Henry W. Cattell of Philadelphia. It has for its object the suppression of quacks and quackery and of the sale of dangerous nostrums, particularly those containing alcohol and narcotics.

Beth Israel Hospital. — At the large Purim ball which was given at the Madison Square Garden on March 13, and which was attended by Governor Hughes and his military staff, it is estimated that about $20,000 was netted for the Beth Israel Hospital.

Report of Hospital for Crippled and Deformed Children. — In the sixth annual report of the State Hospital for Crippled and Deformed Children, which has just been transmitted to the State Board of Charities, Dr. Newton M. Shaffer, surgeon-in-chief, urges the necessity for the erection of new buildings for the institution. This is located at West Havertraw, Rockland County, and the situation, Dr. Shaffer believes, is all that could be desired. He contends that for the successful treatment of bone tuberculosis an inland location is decidedly preferable to the seashore, and recommends a dry, though not a high, altitude.

Official Statistics for 1906. — The official statistics of the city for the year 1906 have just been issued by the Health Department. The total number of deaths reported was 76,203 and the total number of births 111,772. The death-rate for the entire city was 18.35 and for the several boroughs as follows: Manhattan, 18.32; The Bronx, 21.64; Brooklyn, 17.82; Queens, 17.09, Richmond, 20.06. It will thus be seen that the rate in Manhattan, with its enormous tenement-house population, was about the same as the general rate for the city. The comparatively high mortality in the Bronx is explained by the many large institutions in that borough. It is a little difficult to understand, however, why the rate should be so high in the Borough of Richmond, comprising the whole of Staten Island, which has a rather sparse population and an extended frontage on salt water.

Quarterly Report of Death-Rate. — The condensed quarterly report of the Bureau of Records of the Health Department for the quarter ending Dec. 31, 1906, shows that the death-rate was 17.14, as against an average of 17.02 for the corresponding quarters of the preceding five years, an increase of .12 of a point. Comparing the number of deaths from the principal causes with those of the preceding quinquennial averages corrected to correspond with the increase of population, the following decreases are found: typhoid fever, 15; malarial fevers, 11; smallpox, 8; measles, 53; scarlet fever, 52; diphtheria and croup, 109; apoplexy, 15; acute bronchitis, 170; lobar pneumonia, 289; Bright's disease and acute nephritis, 51; suicides, 29; under five years of age, 179. Those showing increases were, whooping-cough, 54; influenza, 1; pulmonary tuberculosis, 49; other tuberculous diseases, 10; cancer, 57; cerebro-spinal meningitis, 7; organic heart diseases, 141; broncho-pneumonia, 252; diarrheal diseases under five years, 115; accident, 133; homicide, 23; under one year, 162; from five to sixty-five years, 101; sixty-five years and over, 209.

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Current Literature.

The Journal of the American Medical Association, March 2, 1907.

1. Brown, P. K. *Coccidioidal Granuloma.*
2. *Schamberg, J. F. *Herpes Simplex and Its Diagnostic and Prognostic Significance.*
3. Zentmayer, W. *Some Unusual Ocular Manifestations of Arteriosclerosis.*
4. *Brown, G. V. I. *Conservatism in the Treatment of Harelip and Cleft Palate.*
5. Powers, C. A. *The Ischemic Paralysis and Contracture of Volkmann.*
6. *Murphy, J. B. *Surgery of the Spinal Cord.*
7. *Rochester, D. *A Case of Colon Bacillus Septicemia.*
8. *Fales, L. H. *Beriberi.*
9. Shimer, I. A. *Beriberi on the Isthmus of Panama.*
10. Kuyk, D. A. *Method for the Reduction of the Inferior Turbinate.*
11. Hitzrot. *Cellulitis and Myositis of the Abdominal Wall Simulating Intra-Abdominal Conditions.*
12. Woolley, P. G. *Some Tropical Cutaneous Ulcerative Conditions.*

2. Schamberg holds that herpes simplex and herpes zoster, while not clinically identical, are closely related; the histology of the cutaneous lesions and the observed nerve changes are practically the same in both. Both are due to a variety of causes, but he thinks that the vast majority of all cases are due to the action of a toxin, and this, of course, presupposes an infectious origin. The frequency of herpes simplex in certain diseases and its rarity in others suggest strongly that the toxin must have peculiar qualities to exercise such a selective affinity for sensory nerve structures. He holds, however, that this toxin cannot be the result of the action of any specific organism in the case of herpes simplex and by analogy not in zoster. The three diseases in which herpes occurs most frequently and in which it is therefore of diagnostic importance, are pneumonia, spotted fever and malaria. Schamberg does not commit himself as to its favorable prognostic significance in pneumonia, of which there is considerable evidence, but he does not credit it in spotted fever nor in malaria in this country. The liability of some persons to recurring attacks of herpes must be taken into account in estimating the diagnostic importance of its occurrence.

4. Brown disbelieves in the early operative treatment of harelip and cleft palate in infants, holding that the children thus deformed are apt to be otherwise defective and therefore less resistant to injury or disease than they will be at a little later period of life. Very early operation is, moreover, liable to affect injuriously the normal development of the other facial bones and to cause nasal stenosis, and is not more favorable to insuring better speech than are the later operations. The difficulty of taking nourishment can be met as well by the use of strips as by early operation and he would use these and change them from day to day, always endeavoring to increase the tension as tolerance is acquired. He advises beginning operative treatment at about four months, after the child has gained weight steadily and seems to be in good condition. He lays special stress upon preparatory treatment of the child's general condition before anything else is done. Operation in a number of sittings is advocated, closing first the lip, leaving the palate until later, even to the eighteenth month. A number of special precautions to be observed are briefly mentioned.

6. The surgical diseases and lesions of the spinal cord, contusions, concussions, punctured wounds, hemorrhage, fractures and dislocations, gunshot wounds, spina bifida, syringomyelia, etc., and their management, are reviewed by Murphy. He holds that when the axons and ganglion cells that make up the substance of the cord above the cauda are destroyed, regeneration is impossible and, therefore, in gunshot or stab wounds with immediate paralysis, operation is useless as regards hope of repair, except in the caudal zone, where the possibilities are the same as in the case of wounds of peripheral nerves. Hemorrhage, concussion and contusion without laceration may give rise to the same immediate symptoms as division, and a positive differential diagnosis is impracticable. The time and order of appearance of symptoms may be the only guides; there is no direct relation between the severity of the trauma and the degree of injury to the cord. Absence of immediate paralytic symptoms is not a guide; they may appear after days or weeks. Early spinal puncture may relieve paralysis due to hemorrhage which in some cases may be as complete as that due to division of the cord. Most patients with incomplete paralysis following fractures recover without operation, and when the displacement is not great the physician is justified in assuming that the cord is not suffering continuous compression and in refraining from operation. The special indications as regards operation in the various conditions above enumerated are pointed out and the technic of laminectomy is described. The danger of delay in conditions calling for operation, especially in non-malignant tumor, tuberculoma, etc., is emphasized. Late operations after necrosis in the cord has taken place are worthless. Surgery of the spinal cord, like surgery elsewhere, must be timely, *i.e.*, before the pathologic condition has passed the possibility of repair.

7. Rochester reports a case, with autopsy, in which cultures from the tissues, as well as of the blood during life, contained organisms at first suspected of being paratyphoid, but later developed the characteristics of the colon bacillus. The symptoms, temperature curve, sweats, splenic enlargement, anemia and leucopenia, strongly suggested malaria of the estivo-autumnal type, and the blood was examined for the plasmodium, and quinin was given, but without effect. The patient succumbed finally after a severe hemorrhage from the gums, against which the local use of adrenalin had very little effect. No pain was complained of by the patient at any time during his illness and no tenderness except to a slight extent over the liver.

8. Fales describes the disease beriberi as it usually appears, noticing briefly the serious character the disorder assumes in tropical regions and critically discussing the diverse theories that have been offered of the nature of the disease. He gives a history of the epidemic of beriberi in 1901-02 in the Bilibid prison in Manila, the beginning and ending of which were coincident with changes in the prison ration, while sanitary measures and disinfection were without effect on the progress of the epidemic. A study of the dietetic tables given suggests two theories of the cause. — (1), that nitrogen starvation, as claimed by Kakaki, is the cause of the disease; (2), that beriberi falls into the same category as scurvy, being due to a deficiency in vegetables

in the diet. Certain facts in the history of the Bilibid epidemic favor the vegetable deficiency theory. Individuals who had an opportunity to take more than their share of vegetables (kitchen workers) were exempt; the epidemic was at its worst when, for fear of cholera, the vegetable ration was restricted, the later occurrence of beriberi among prisoners employed in road building on a diet without vegetables and the simultaneous occurrence with the beriberi epidemic of cases of scurvy among the prisoners. With a too exclusively rice diet which seems to favor the occurrence of beriberi, there is a deficiency of the potash salts which would also favor the occurrence of scurvy. Fales does not combat the theory that beriberi is due to an infection, but thinks that both it and scurvy may be due to a condition produced by a lack of potash salts, causing the organism to be particularly susceptible to certain forms of infection.

The Journal of Experimental Medicine.

Dec. 21, 1906.

1. *Simon, C. E., et al. *Contribution to the Study of the Opsonins.*
2. *Wollstein, M. *The Influenza Bacillus in Inflammation of the Respiratory Tract in Infants.*
3. Meltzer, S. J., and Auer, J. *Intraspinal Injection of Magnesium Salts in Tetanus.*
4. Jobling, J. W. *Specific Immunity Principles in the Blood of Vaccinated Calves.*
5. *Crile, G., and Dolley, D. H. *The Resuscitation of Dogs Killed by Anesthetics and Asphyxia.*
6. Noguchi, H. *Thermostabile Anticomplementary Constituents of the Blood.*

1. Simon reviews Wright's method of determining the opsonic power of sera by counting the number of bacteria percorpuscle after serum, bacterial emulsion and washed leukocytes have been incubated together. This method is open to several objections. It does not measure the effect of various dilutions of serum; the bacteria are hard to count; the bacterial emulsions are of different concentrations and may be to some extent agglutinated by the serum. Simon believes that more significant results can be obtained by his own method in which several dilutions of serum are used and the percentage of leucocytes showing phagocytosis, without reference to the number of bacteria per corpuscle, is the result recorded. Various observations as to the occurrence of opsonins have been made, showing that they are more active in higher than in lower animals, that they vary in individuals of the same species of animal, as well as in healthy human adults. A rise of values occurred an hour after meals. Breast-fed babies showed exceptionally high readings. Investigations of various body tissues showed that opsonins are essentially components of the blood. Chemically they seem to belong to the group of the euglobulins. Finally the question is discussed as to whether the opsonins are specific for the different varieties of bacteria. Various observations, particularly a rise of opsonic power for staphylococci following injections of tuberculin, leads Simon to the conclusion that specificity of opsonins does not exist.

2. Wollstein has examined the throats and bronchial mucus of 229 infants for the presence of influenza bacilli. The results seem to show that the influenza bacillus is not found in the throats of children in whom lesions of the respiratory tract do not exist. They occurred in 17 out of 61 cases of pneumonia, in 11 out of 45 cases of bronchitis, 8 out of 26 of measles, 8 out of 24 of tuberculosis. When they were present the clinical course of the disease which they complicated was apparently influenced by them for the worse.

5. Crile and Dolley refer to the former's previous article upon resuscitation by heart massage, artificial respiration and saline infusion with or without adrenalin, and suggest a new method of giving the adrenalin infusion. Since the drug to have its principal effect must act upon the arteries, they conceived the idea of giving the adrenalin infusion through arteries, directing the current backward toward the heart so as to reach the coronary arteries. Their experiments include 60 observations upon animals. Animals after death from chloroform, ether or asphyxia, up to five minutes, were uniformly and readily resuscitated; up to ten minutes there was an occasional failure; beyond ten minutes consciousness was rarely restored. Resuscitation in the majority of successful cases occurred within one minute after the administration of adrenalin.

The Lancet.

Feb. 23, 1907.

1. Butlin, H. T. *The Hunterian Oration on the Objects of Hunter's Life and the Manner in which he Accomplished them.*
2. *Rogers, L. *The Milroy Lectures on Kala-azar, Its Differentiation and its Epidemiology.*
3. Beevor, C. E. *The Diagnosis and Localization of Cerebral Tumors.*
4. *Malcolm, J. D. *On the Condition of the Blood Vessels during Shock.*
5. *Barr, J., Bell, W. B., and Douglas, S. P. *A Case of Infective Endocarditis Cured by the Inoculation of a Vaccine Prepared from Organisms Found in the Patient's Blood, the Inoculations being Regulated by the Examination of Opsonic Power of the Patient's Serum.*
6. *Groves, E. W. H. *A New Method of Fixation of the Bones in Excision of the Knee.*
7. Phillips, S. *Some Affections of the Pancreas.*
8. Lake, R. *A Preliminary Note on Rinné's Test.*
9. Madden, F. C. *Cellulitis of the Spermatic Cord.*
10. Cullingworth, C. J. *The Obstetrical Society of London and its Examination for Midwives.*
11. Campbell, H. *The Role of the Blood Plasma in Disease.*

2. Kala-azar is a fever endemic in parts of India, which for the past thirty years has been spreading throughout the country, especially up the Assam valley. It is characterized by persistent intermittent and remittent fever, commonly mistaken for typhoid, but leading to great cachexia, extreme enlargement of liver and spleen with a mortality of 75% to 98%. It is constantly associated with a minute protozoal organism, the "Leishman-Donovan body," which is probably its cause. The greater part of this lecture is a detailed account of the epidemic itself, its spread and gradual decrease.

4. This is an argument against Crile's theory that in the state of shock the blood vessels are paralyzed throughout the body and that this is due to "an exhaustion or breakdown of the vaso-motor centers." Malcolm believes that the vessels are intensely contracted during shock and that this theory offers a full solution of all the questions not to be explained under Crile's theory. The conclusion that the vascular system is relaxed in shock, if it is founded on the single fact that the blood pressure is lowered, may be erroneous. As to treatment he believes in strychnia and warmth, that if salt solution is used it should be injected into the cellular tissues and not into a vein and that adrenalin, although it may be beneficial, is attended with considerable risk. The most important treatment is preventive.

5. The writers report this interesting case of endocarditis in detail. Anti-streptococcic serum was used for a considerable time with no benefit. After many negative results a pure culture of streptococcus was isolated from the patient's blood; from this organism a vaccine was prepared. After an inoculation of 10,000,000 dead streptococci the index rose to above normal, and the temperature fell for the first time. Nine inoculations in all were made during the month of March, and at the end of this time the patient's temperature fell to normal, albumin disappeared from the urine, and the heart, except for the damaged valve, returned to a normal compensated condition.

6. Groves describes a new method of knee excision, which, by means of a mortise joint instead of the old end-to-end apposition, brings about a far better union.

British Medical Journal.

Feb. 23, 1907.

1. Parsons, J. H. *The Treatment of Lacrymal Obstruction.*
2. Evans, J. J. *The Lacrymal Sac in the Economy of Vision.*

3. *Brockbank, E. M. *Merycism or Rumination in Man.*
4. Rogers, L. *On Kala-azar.*
5. Darling, J. S. *A Case of Cerebrospinal Meningitis, with Observations on a Pleomorphic Diplococcus Obtained by Lumbar Puncture.*

3. Rumination in man consists as in animals in the return of the food from the stomach into the mouth, where it is chewed and swallowed again. Brockbank reports a family consisting of father and six children, all of whom are ruminants. After a meal the food is regurgitated at frequent intervals, chewed and swallowed again. If the food is not chewed after regurgitation, dyspepsia is the result. There is evidence that rumination had occurred in five generations of this family. Rumination is probably a neurosis; the general health is usually good and the gastric secretions normal. Other gastric disturbances may be lacking.

The Edinburgh Medical Journal.
February, 1907.

1. *Thompson, H. P. *The Prophylaxis of Scarlatinal Nephritis: Observations on 300 Cases of Scarlatina Treated with Urotropine, Hexamethylene-tetramine and Metramine.*
2. Mummery, P. L. *The Diagnosis of Rectal Cancer.*
3. Smith, P. C. *Degeneracy.*
4. *Cammidge, P. J. *The So-called "Pancreatic Reaction" in the Urine.*
5. Morison, R. *Major Abdominal and Pelvic Operations.*

1. Thompson believes that scarlatinal nephritis is due to an irritation of the kidney caused by the organism of scarlatina itself, or by its toxins; that it may be caused by a secondary streptococcus infection with a much lowered resistance in the kidneys, or that the exciting cause may be one or a combination of all of the above-mentioned factors. In prophylaxis milk diet is important; hydrotherapy is used, especially in Germany. Serotherapy is as yet unsatisfactory. Urinary antiseptics are coming into vogue and seem to play a definite rôle in warding off nephritis. He describes his experience with urotropine and the two others above mentioned. In 5-gr. doses three times daily no untoward effects were found in 133 children. Urotropine alone seemed to be of definite value in preventing nephritis; the other drugs, while certainly doing no harm, did not lower the percentage of nephritis.

4. Cammidge, in this paper, asserts that his so-called pancreatic reaction in the urine is of definite value if done according to his new and modified technique. His paper is largely in answer to one of Holdane's in the November issue of this *Journal.* [Cammidge's figures and statements supporting his test are not conclusive.]

The Practitioner.
February, 1907.

1. Luff, A. P. *The Treatment of Some of the Forms of Gout.*
2. *Young, A. *Posterior Tarsal Resection of the Foot by the Method of Mikulicz and Wladimiroff with Report of a Case, and Remarks on the Operative Technique, and the Applicability of the Procedure.*
3. Crawford, R. *Valvular Disease of the Heart. Tricuspid Stenosis.*
4. Bishop, E. S. *Postpartum Hemorrhage.*
5. Lewis, T. *The Interpretation of Sphygmograph Tracings and of Tracings Produced by Compressing the Brachial Artery. The Factors which are Involved in the Production of Anacrotism.*
6. *Wyllie, J. *Intra-cranial Abscess: When, and When Not to Operate.*
7. Wellman, F. C. *On the Possibility of Two West African Diseases (Akatma and Vonulo), Being Malarial Paroxysmal Neuroses.*
8. Tubby, A. H. *Orthopedic Surgery.*
9. Bate, G. H. *The Relative Value and the Selection of Disinfectants.*

2. Young gives in detail the report of a case of extensive tuberculosis of the bones of the foot in which he did an operation modified from the one Mikulicz advised. He got a most satisfactory result. He discusses Mikulicz' operation and the cases reported in the literature in which this operation, modified or not, was used. The paper seems to be a thorough and careful review of this subject.

6. Wyllie says that there are three stages in the course of a cerebral abscess: (1) that of irritation with all that that implies; (2) that of pressure, and (3) pressure plus toxemia. The second stage, always short, lasting from a few hours to a few days, is the best time to operate. If operative procedures are delayed till the last stage there is little hope for recovery; in the first stage exact localization can rarely be obtained.

Deutsche Medizinische Wochenschrift, No. 8.
Feb. 21, 1907.

1. Neumann. *The Carrying Out of Breast Feeding.*
2. Kruse. *New Investigations on Dysentery.* (Continued article.)
3. Knauth. *Cerebrospinal Meningitis in the Bavarian Army.*
4. Breinl, A., and Kinghorn, A. *The Action of Atoxyl in African Relapsing Fever.*
5. Tollens. *Treatment of the Fever of Phthisis with Antipyretics.*
6. *Meisenburg. *A Case of Diverticulum of the Esophagus.*
7. Hoffmann, E. *Metastasis in Hypernephroma.*
8. Franck, E. *The Treatment of Hemorrhoids with Injections of Carbolic Acid and Alcohol.*

6. Meisenburg reports a case of diverticulum of the esophagus, which is interesting for the x-ray picture, and an unpleasant sequel of esophagoscopy, cutaneous emphysema resulting from laceration of the wall of the esophagus. The pouch was a small one, 2 cm. deep, and situated to the right of the median line, so that a sound introduced from the left corner of the mouth entered the diverticulum, while one from the right side passed into the stomach without difficulty. An important feature of the treatment consisted in taking food while lying on the left side; in this position the food passed by the pouch without sticking.

Berliner Klinische Wochenschrift, No. 2.
Jan. 14, 1907.

Dedicated to Johannes Orth on His Sixtieth Birthday, and Consisting of Researches from the Pathological Institute of the University of Berlin.

1. Kaiserling, C. *The Effect of Intravenous Injections of Suprarenin on the Aorta of the Rabbit.*
2. *Beitzke, H. *The Course of Inoculated Tuberculosis in the Guinea Pig.*
3. *Davidsohn, C. *Muscular Cirrhosis of the Lungs.*
4. *Rabinowitsch, L. *Latent Tubercle Bacilli.*
5. Bickel, A. *The Experimental Production of Tympanites.*
6. Schloss, O. *Is the Concentration of the Gastric Secretions Dependent upon the Concentration of Solutions Introduced into the Stomach?*
7. Pewsner, M. *The Secretion of Mucus in the Stomach.* (Continued article.)
8. Pincussohn, L. *On Pellotin.*
9. *Wohlgemuth. *Investigations on the Functions of the Human Pancreas.*
10. Salkowski, E. *On Chyluria.*
11. Neuberg, C., and Rosenberg, E. *Lipolysis, Agglutination and Hemolysis.*

2. Beitzke's article consists largely in the refutation of Weleminsky's claim that the bronchial lymph nodes constitute a sort of heart for the lymphatic system, into which all the lymphatics empty. Weleminsky drew this conclusion from the fact that after subcutaneous inoculation of guinea pigs with tubercle bacilli, the local lymph nodes first become diseased, next those on the way towards the bronchial nodes and, lastly, the bronchial nodes themselves. But, as Beitzke' shows, these facts are capable of being interpreted otherwise; for instance, the bronchial nodes may be infected through the blood current *via* the lungs, or by inhalation. (The abscess after subcutaneous

inoculation usually breaks through the skin, and the contents being distributed about the cage, offer opportunity for aërogenous infection.)

3. Under "muscular" cirrhosis of the lung, Davidsohn understands that rare variety in which the interstitial thickening is chiefly due to unstriped muscle fibers, a true "carnification." In Davidsohn's case the muscle tissue seemed to be derived from the muscle fibers present normally in small numbers in the interstitial tissue.

4. The question of latency of tubercle bacilli is discussed by Rabinowitsch, and interesting work on this subject is reported. It may be regarded as settled that virulent tubercle bacilli may be present in lymph nodes which show no evidence of tuberculosis, either to the naked eye or microscopically. It is difficult to say how long such bacilli may remain latent, but virulent bacilli were demonstrated by inoculation experiments by Rabinowitsch in completely calcified lymph nodes in four cases, although calcification is usually assumed to be a sign of complete cure of the tuberculous process.

9. Wohlgemuth adds important facts to our scanty knowledge of the pancreatic secretions in man. He studied the effect of various forms of diet on the amount and ferment content of the pancreatic juice of a man suffering from pancreatic fistula. His results agree in the main with those of Pawlow, who worked with dogs. The total amount was greatest after a meal consisting exclusively of carbohydrates and least after fats, proteids taking up an intermediate place; the amount secreted after a carbohydrate meal being double that after a meal of fat. The content in trypsin, diastase and steapsin was found to be greatest in the secretion after the fat meal, least after the carbohydrate and intermediate after the proteid meal. A mixed meal containing all three forms of food gives the greatest total secretion of all, and in marked contrast with the "carbohydrate juice," this secretion showed also the greatest ferment content. The administration of hydrochloric acid caused a marked rise in the amount of pancreatic secretion, while alkali escaused a fall. The practical deductions from this work are that patients with pancreatic fistulæ should be put on an antidiabetic diet and given alkalies, in order to reduce the secretion; digestion may be furthered by the use of pancreon (or pancreatin) by the mouth.

Therapie der Gegenwart.
February, 1907.

1. *Küster, E. *The Antitoxin Treatment of Tetanus.*
2. *Schoene, C. *A Report of Thirty Cases of Cerebrospinal Meningitis Treated with Meningococcus Serum.*
3. *Fränkel, A. *The Drug Treatment of Acute Cardiac Insufficiency.*
4. Moeller, A. *The Diet in Pulmonary Tuberculosis.*
5. Nuesse. *The Finsen Institute in Copenhagen.*
6. *Fischer, W. *The Diagnostic and Therapeutic Bearings of Recent Work in Syphilis.*

1. While the subcutaneous injection of tetanus antitoxin has achieved brilliant results as a prophylactic measure, as a cure it has proved disappointing, the mortality remaining still at the high rate of 72%. The results of intracranial injection are not much better, showing a mortality of 61%. Küster considers that the best prospects are offered by two methods of administration: (1) lumbar injections and (2) intraneural injections. The former are to be made after withdrawal of a considerable amount of cerebrospinal fluid, which is exceedingly toxic in this disease. The intraneural injections are suitable for those cases where there is local involvement, usually of an extremity. The wound at which inoculation has taken place should be rubbed out with antitoxin, and antitoxin should be injected into the neighboring tissues. A single injection should be made into each of the main nerve trunks which furnish twigs to the neighborhood of the wound. Küster reports a case in which the intraneural injection was followed very promptly by recovery, and warmly recommends this method of administration, the mortality of which up to the present is 25% of 4 cases.

2. Thirty cases of cerebrospinal meningitis treated by Schoene with Jochmann's meningococcus serum gave a mortality of 27%; that of those not treated with serum was 53%. These results would appear to encourage a further trial of the serum.

3. As is well known, the action of digitalis when given by mouth or subcutaneously does not appear for twelve hours or more. Many patients, however, with acute cardiac failure require more immediate stimulation, and this can be given, according to Fränkel, in the shape of intravenous injections of strophanthin. The effect is the same as that of digitalis, and begins to be apparent in ten minutes, while within two hours the full effect is evident; the pulse becomes slower, the general condition improves and diuresis begins. It is important not to exceed the dose of 1 mgm., not to give an injection if the patient has had digitalis within three days and not to repeat the injection inside of forty-eight hours; all this on account of the danger of cumulative action. It is essential to use a chemically pure preparation, such as that of Boehringer.

6. This article reviews the recent experimental work that has been done on syphilis, with regard to diagnosis and treatment. The spirocheta pallida is regarded as most probably the causative agent; the finding of spirochetes may be regarded as positive evidence of syphilis, but their absence is not to be taken as excluding it. The method of Neisser and Wassermann for the demonstration of specific antibodies is too complicated for general use, and the results while very striking, are, as yet, too few to draw definite conclusions. The main advance, according to Fischer, has been in the line of diagnosis of syphilis in the parents, by means of the demonstration of spirochetes in the placentæ or organs of still-born or macerated feti. He regards it as probably best to excise very early lesions in which spirochetes have been found, although Neisser has shown that in apes a general infection may have already taken place eight hours after inoculation. The question of commencing mercurial treatment in the case of primary lesions showing spirochetes is answered in the negative; one should wait until secondary symptoms haye appeared. The reason for this is that mercury apparently has no action in the first stage of syphilis and does not prevent the appearance of constitutional symptoms. Neisser was unable to prevent the appearance of secondary symptoms in apes although he began mercurial treatment immediately after inoculation; similar results have been observed in man by various writers.

The Early Diagnosis of Pulmonary Tuberculosis, with Special Reference to Symptoms. Coffmann (*New York Medical Journal*, Feb. 2, 1907) gives an account of the methods of diagnosis which should be applied in all cases where suspicion of pulmonary tuberculosis arises. The importance of an exhaustive history is especially emphasized. This should include inquiries as to physical conditions in parents at the time of the patient's birth, with reference to any chronic disease or conditions such as alcoholism. It should include an account of the patient's environment from birth with regard to sources of possible infection, conditions of hgyiene and habits, also previous illnesses and their convalescences. The first reported symptoms of a series of cases of pulmonary tuberculosis have been tabulated as follows: Cough first in 44%, loss of weight in 19%, hemoptysis in 8%, pleurisy in 7%, fatigue in 6%, nervous symptoms in 4%, digestive symptoms in 1.6%, laryngeal symptoms in 1.6%, night sweats in 1.2%. Hemoptysis is a symptom which justifies a positive diagnosis. Pain, as an early symptom, is seldom mentioned, but according to Upson is present in 45% of cases. Fever is an important indication. The temperature (rectal if possible) should be taken every two hours for several days. Observations of pulse and respiration are of little value in early diagnosis. A careful physical examination and examination of sputum must next be made; but if definite signs are not found there is no reason to question the value of the evidence of the history. In such cases the tuberculin test is resorted to, beginning with doses of $\frac{1}{10}$ to $\frac{1}{2}$ mgm. and watching for a local reaction in lungs or larynx as well as for rise in temperature and subjective symptoms. A negative reaction to doses of 5 mgm. excludes tuberculosis with great certainty. The serum reaction is mentioned with favor. [This reaction, according to most recent reports, is considered meaningless.] Fluoroscopy, the author believes, can rarely detect disease in advance of the auscultatory signs.

RECORD OF MORTALITY

For the Week ending Saturday, March 9, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,647	469	Quincy	7	1
Chicago	650	193	Waltham	2	—
Philadelphia . . .	—	—	Gloucester	6	2
St. Louis	—	—	Pittsfield	—	—
Baltimore	260	70	Brookline	4	—
Cleveland	—	—	North Adams . .	9	1
Buffalo	—	—	Chicopee	7	6
Pittsburg	—	—	Northampton . .	11	2
Cincinnati	—	—	Medford	9	1
Milwaukee	—	—	Beverly	11	—
Washington . . .	—	—	Hyde Park . . .	5	3
Providence . . .	84	27	Newburyport . .	—	—
Boston	262	57	Leominster . . .	5	2
Worcester	45	12	Melrose	3	1
Fall River	37	12	Woburn	4	—
Cambridge	29	9	Marlborough . .	3	0
Lowell	34	6	Westfield	5	2
Lynn	30	9	Peabody	—	—
New Bedford . .	31	10	Revere	5	—
Springfield	21	5	Clinton	3	0
Lawrence	28	5	Attleboro	9	2
Somerville	27	6	Adams	2	2
Holyoke	15	10	Gardner	—	—
Brockton	7	1	Milford	—	—
Malden	12	4	Weymouth . . .	3	0
Salem	13	5	Framingham . .	5	1
Chelsea	14	4	Watertown . . .	0	—
Haverhill	22	5	Plymouth	—	—
Newton	7	4	Southbridge . . .	7	2
Fitchburg	6	2	Wakefield	—	—
Taunton	11	—	Webster	—	—
Everett	10	1			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED MARCH 6, 1907.

Stoner, G. W., surgeon. Granted leave of absence for two days in February, 1907, under the provisions of paragraph 189 of the Regulations.

Rosenau, M. J., passed assistant surgeon. Directed to proceed to Harrisburg, Pa., for special temporary duty, upon completion of which to rejoin his station in Washington. March 2, 1907.

Burkhalter, J. T., passed assistant surgeon. Granted leave of absence for two days in February, 1907, under the provisions of paragraph 191 of the Regulations.

Salmon, T. W., assistant surgeon. Granted leave of absence for one day in February, 1907, under the provisions of paragraph 191 of the Regulations.

Frost, W. H., assistant surgeon. Granted leave of absence for one day. Feb. 24, 1907.

de Valin, Hugh, assistant surgeon. Granted leave of absence for one day under the provisions of paragraph 191 of the Regulations. Feb. 1, 1907.

Kennard, K. S., acting assistant surgeon. Granted leave of absence for one day in February, 1907, under the provisions of paragraph 210 of the Regulations.

McLarty, A. A. acting assistant surgeon. Granted leave of absence for thirty days from Feb. 26, 1907. March 4, 1907.

Stearns, H. H., acting assistant surgeon. Granted leave of absence for two days in February, 1907, under the provisions of paragraph 210 of the Regulations.

Wilson, J. G., acting assistant surgeon. Granted leave of absence for three days in February, 1907, under the provisions of paragraph 210 of the Regulations.

Wilson, R., acting assistant surgeon. Excused from duty for a period of fifteen days without pay from March 16, 1907.

Hall, L. P., pharmacist. Granted leave of absence for seven days from March 2, 1907, under the provisions of paragraph 210 of the Regulations.

PROMOTIONS.

Allen, G. C., pharmacist. Promoted to pharmacist of first class.

Rogers, E., pharmacist. Promoted to pharmacist of first class.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MARCH 16, 1907.

J. F. Urie, surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department.

F. W. Smith, assistant surgeon. Ordered to the Naval Hospital, New York, N. Y.

R. Hayden, assistant surgeon. Ordered to Naval Medical School Hospital, Washington, D. C.

E. V. Valz, assistant surgeon. Ordered to Naval Medical School Hospital, Washington, D. C.

RESIGNATION AND APPOINTMENT.

Dr. John Collins Warren has resigned from the Moseley professorship of surgery at the Harvard Medical School, the resignation to take effect Sept. 1, 1907.

From Sept. 1, 1907, Dr. Warren has been appointed Moseley Professor of Surgery *emeritus.*

SOCIETY NOTICES.

Boston Medical Library Meeting in Conjunction with the Suffolk District Branch of the Massachusetts Medical Society.—Meeting Wednesday, March 27, 1907, at 8.15 p.m., John Ware Hall. "Social Legislation in Germany and its Influence on the Care of the Sick," Hofrat Prof. Friedrich Müller, director second medical clinic in Munich.
Edwin A. Locke, M.D., *Secretary.*

Surgical Section of the Suffolk District Medical Society in Conjunction with the Boston Medical Library.—Meeting Wednesday, April 3, at 8.15 p.m., at John Ware Hall. "Surgical Treatment of Exophthalmic Goitre," by Dr. C. H. Mayo. Discussion by Drs. W. T. Porter, J. J. Putnam and J. C. Munro.
J. C. Hubbard, M.D., *Secretary.*
81 Bay State Road.

RECENT DEATHS.

Dr. William Lamb, a retired physician, seventy-four years old, died from cerebral apoplexy on March 14 in New York, where he had resided for some time past. He had practised in St. Catharine's, Ontario, Lockport, N. Y., and Swarthmore, Pa.

Dr. George Taylor Church, of Brooklyn, N. Y., died on March 10, from cardiac disease, at the age of forty-nine years. He was graduated from the Dartmouth Medical School in 1894, and for a number of years was one of the medical examiners of the Civil Service Board.

BOOKS AND PAMPHLETS RECEIVED.

The Johns Hopkins Hospital Reports. Vol. XIII, Studies in Urological Surgery. Vol. XIV, Studies on Hypertrophy and Cancer of the Prostate. Baltimore. 1906.

The Practitioner's Medical Dictionary. By George M. Gould, A.M., M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Catholic Churchmen in Science. Sketches of the Lives of Catholic Ecclesiastics who were among the Great Founders in Science. By James J. Walsh, M.D., Ph.D., LL.D. Illustrated. Philadelphia: American Ecclesiastical Review. The Dolphin Press. 1906.

The Cure of Psoriasis, with a Study of 500 Cases of the Disease, Observed in Private Practice. By L. Duncan Bulkley, A.M., M.D. Reprint.

Modern Ideals in Medicine. By Robert M. Green, A.B., M.D. Reprint.

The Service of Missions to Science and Society. By W. W. Keen, M.D., LL.D. Boston: American Baptist Missionary Union. 1906.

Tumors of the Carotid Gland. By W. W. Keen, M.D., LL.D., and John Funke, M.D. Reprint.

Original Articles.

THE CRUSADE AGAINST TUBERCULOSIS IN GERMANY.

BY EDWIN A. LOCKE, A.M., M.D., BOSTON.

The campaign against tuberculosis in Germany by reason of the magnitude and completeness of its organization as well as the valuable results already achieved, is the model of the world. To clearly describe any particular part of this splendid system is impossible without a consideration of its relations to the movement as a whole.

While Germany has for several decades made a vigorous scientific attack on the problem of tuberculosis, it has been only within the past fifteen years that general interest has been awakened in it as a great social and economic one. The object until recent years was practically restricted to the cure of the early cases of the disease, and but small effort was expended even in this narrow field. Now, besides the tremendous increase in the attention given to the treatment of the sick, even greater effort is put forth in the protection of the well. It seems profitable to consider somewhat in detail this great national movement which has claimed the unselfish labor of so many of Germany's most able minds, has enlisted the aid of all classes and necessitated the vast expenditure of hundreds of millions of marks.

Several fundamental considerations which make such a general movement possible should be borne in mind: First, the entire kingdom of Germany is under uniform laws, those pertaining to disease and the general health of the people being controlled by a national board of health presided over by a cabinet minister.[1] Through this imperial health bureau a most exhaustive investigation of the existing conditions has been carried out and relief measures promulgated; second, the admirable scientific spirit which permeates German medicine is largely responsible for the effectiveness of this organization in that it has, step by step, pointed the way to success; third, the compulsory insurance against sickness and invalidity has placed at the disposal of the authorities immense funds which could in part be directly applied to the erection and maintenance of sanatoria, convalescent homes, care of the consumptive's family, etc.

STATISTICS.

A few general statistics regarding the number of those suffering from tuberculosis, the mortality rates and results achieved will serve to make more evident the need, scope and justification for the marshalling of so many forces in the combat against a single disease.

According to the report of the Imperial Health Office, during the period 1894-1897 in an average population of 49,743,000 the yearly deaths from consumption were 111,067 (*i. e.*, 22.45 per 10,000 living) and the total number of living consumptives at least 1,000,000. During the years 1892-1900 in the ten states comprising Germany, 1,066,722 persons died of the disease, *i. e.*, an average of 118,525 yearly, or 24.2 per 10,000. Statistical studies have shown that of all persons dying between the ages fifteen and sixty, in one third the cause of death is tuberculosis. It is estimated (Blumenthal) that the yearly number of consumptives in Germany sufficiently advanced to require hospital treatment is at least 226,000. The accompanying chart (Fig. 1) shows in a striking manner the very gratifying diminution in the mortality from tuberculosis in the kingdom from the year 1875 to 1903. Blumenthal gives an interesting comparison of the number in every 10,000 of the population in large cities of Prussia dying from tuberculosis and those from other diseases of the respiratory tract. (See Table I.) It will be seen that while the fall in the mortality per 10,000 for consumption was from 35.31 in 1876 to 20.36 in 1903, or a diminution of 42%, the fall in the mortality per 10,000 for all other diseases of the respiratory organs was from 31.09 to 24.54, or a diminution of only 21%; in other words, the decrease in the number of deaths from lung tuberculosis was twice as great as in the case of all other diseases of the respiratory organs. The statistics for all German cities of more than

Table I.

Year.	Number Cities.	Number of deaths per 10,000 From Tuberculosis.	Number of deaths per 10,000 From all other diseases of the respiratory organs.
1876	6	35.31	31.09
1881	7	35.57	34.17
1886	12	37.36	32.70
1891	16	31.32	32.64
1896	18	26.05	29.93
1901	22	23.92	27.79
1902	24	21.01	26.67
1903	25	20.36	24.54

Table showing the number of deaths from consumption and other diseases of the respiratory tract per 10,000 inhabitants in the large cities of Prussia during the years 1876 to 1903.

Fig. I.

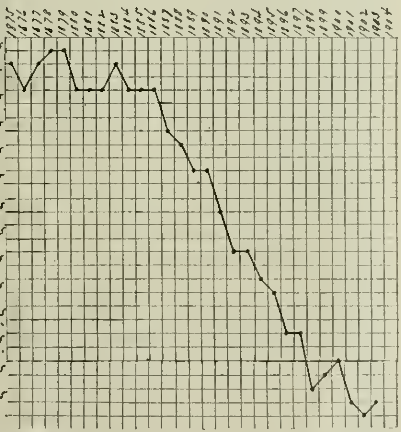

Fig. 1. Annual death-rate from pulmonary tuberculosis, per 10,000 inhabitants in Germany from 1875 to 1903.

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[1] Minister für Medicinal Angelegenheiten.

15,000 inhabitants show a diminution in the mortality from tuberculosis of the lungs from 35.77 per 10,000 in 1877 to 19.38 per 10,000 in 1903.

PART I. THE FACTORS IN THE CRUSADE.

1. The *state* has, in many ways, both directly and indirectly, constantly afforded the campaign the greatest aid. Through the Imperial Health Office (*Reichs-Gesundheitsamt*) and its associated corps of the most eminent medical authorities from the various states, exhaustive investigations have from time to time been conducted with the purpose of determining the extent of the scourge, its mode of spread and the effectiveness of many preventive and curative measures. As a result of these investigations uniform laws have been put in force. Most complete and vigorous measures have been taken in the army and navy. The state has made large appropriations for scientific studies, for aid in the building of sanatoria, for the "Krankenkassen," etc. Recently the great activity throughout the kingdom on the part of the state in the work of improving the dwellings of the poor has had a most beneficial, indirect influence in preventing the spread of tuberculosis. Of the greatest importance is the system of workingman's insurance which was called into existence by the law of 1881 (*vide infra*). The many prophylactic measures taken by the government fall within the following general groups:

(1) Restriction of spitting in all public places.

(2) Measures for the relief of the dangers to the workingmen while at work.

(3) Care in public conveyances of all sorts.

(4) Sanitary police inspection of all public places, including dormitories, etc.

(5) Care and inspection of food.

(6) Obligatory free disinfection of houses and furniture.

(7) Compulsory reporting by the physicians of all cases of tuberculosis of the throat and lungs.

2. The *cities* (and communities), especially of Prussia, have contributed largely to the work of healing and prevention along similar lines. In several a small tax is levied on each citizen for the support of the work undertaken. Nearly all the municipalities now require the reporting of all cases of tuberculosis, provide for free disinfection, examination of sputum and the general inspection of dwellings. Several have erected sanatoria (Berlin, Hamburg, Stettin, Halle, Strassburg and others). Polyclinics, especially for tuberculosis, are maintained as part of the university clinic in Berlin, Greifswald, Halle, Göttingen, Bonn, Marburg, Kiel, Strassburg, Heidelburg and Breslau, and in connection with hospitals in Frankfurt a. M., Hagenau, Aachen, Kassel, Wiesbaden, Magdeburg and Stettin. In the last-named city a special experimental laboratory and retention hospital is supported by the local "Fabrik-Krankenkasse," any member of the "Kasse" being allowed to remain one week for observation, during which time a benefit is given to the family. The activities of the cities in the establishment, through their local societies, of dispensaries, tuberculosis museums, forest convalescent homes, hospitals for the advanced cases and vacation colonies, are too numerous to mention.

3. The *workingmen's insurance* (*Arbeiterversicherung*) is probably the most powerful factor employed against this disease. With the enormous growth of this organization has come a new power which is largely responsible for the extraordinary development of the crusade in the past decade.

The present system of workingmen's insurance was established by a decree of Kaiser Wilhelm der Grosse, Nov. 17, 1881, a measure intended to further the welfare of the working people and as a partial remedy for the then existing conditions of want and distress among the poor, conditions which in a large measure are always unquestionably directly responsible for much of the sickness in the family. Through the influence of changed economic and industrial conditions the laboring man has become more dependent and more exposed to dangers to life and health.

By law every working man in Germany of the laboring or servant class must belong to the government insurance association and is thus insured against (1) sickness (*Krankenversicherung*), (2) accident (*Unfallversicherung*), (3) invalidity and old age (*Invaliden und Alterversicherung*).[2]

Under the provisions of the compulsory insurance the insured when incapacitated by sickness, accident, invalidity or old age, has a legal claim to assistance to himself and family and is thus kept from becoming an object of charity.

(1) *Sick insurance.* — To this belong practically all industrial and agricultural workers and officials without regard to age or sex, whose yearly salary is less than 2,000 marks. They are divided into five classes, according to the amount of salary received and the dues are adjusted according to the same standard, *e.g.*, Class I includes all those receiving a yearly salary up to 350 marks, and for these a weekly assessment of 14 pfennigs is made; Class V includes all those whose yearly salary is more than 1,150 marks, and here the assessment amounts to 36 pfennigs per week. In all cases the employer is held responsible for the payment of all premiums of which he contributes one third and the workman two thirds. In case of illness which renders the insured incapable of work for more than three days an allowance equal to one half his wages is paid him to the limit of thirteen weeks, and under certain conditions this may be continued in part or entire for a period up to one year. He further receives free medical attendance and hospital treatment if necessary, in which case his family is provided for during the period of his disability. Provision may also be made by which the patient may be sent to one of the many convalescent homes or "baths." In case of death an extra allowance equal to twenty times the

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[2] Note. — The existing insurance laws are as follows:
(1) das Krankenversicherungsgesetz, vom 15, Juni, 1883, mit der neuen Fassung vom 10, April, 1892;
(2) das Unfallversicherungsgesetz vom 6, Juli, 1884, mit verschiedenen Nachträgen uber die Einziehung der land- und forstwirthschaftlichen Arbeiter, die auf Bauten beschäftigten Personen und die Unfallversicherung der bei der Seeschifffahrt Betheiligten;
(3) das Gesetz über die Invaliden- und Alterversicherung vom 22, Juni, 1899, welches durch die Novelle vom 13, July, 1899, die Einfachere Bezeichnung "Invaliden-versicherungsgesetz" erhalten hat. (Jacob & Pannwitz,)

daily wage is made to the family of the deceased.

(2) *Accident insurance.*— This form of insurance is compulsory for the same class as in the previous form, but instead of one third the entire premium is paid by the employer. In case of bodily injury causing partial or complete disability, the insured is granted a benefit beginning in the fourteenth week, the amount depending upon the earnings of the insured and the severity of the injury, but in no case exceeding 66⅔% of his salary. He is also furnished with free treatment. Should death result from the accident the burial expenses are paid and a pension given to the family to the extent of one fifteenth of the salary formerly received.

(3) *Invalidity* and *old age insurance* is obligatory for all workingmen over sixteen years of age, including laborers, servants, officials, clerks, salesmen, apprentices and others whose yearly salary does not exceed 2,000 marks. The premiums, as in the other forms, are in proportion to the wages earned, the employer and employee contributing equally, while the government makes an allowance of 50 marks. The dues are levied in the form of stamps which are pasted to receipt cards by the employer when the wages are paid, the amount being deducted from the wages. Invalidity insurance renders aid as follows: (1) For continued disability, an allowance for twenty-six consecutive weeks up to 116 to 450 marks; (2) in old age (*i.e.*, with the beginning of the seventy-first year) an income up to 110 to 230 marks; (3) in case of marriage, accident or death, to a limit equal to one half the amount of premiums paid; (4) support of the family of the insured during his treatment.

Workingmen who for any reason are exempt from compulsory insurance may, under certain conditions, voluntarily enter any of the three forms of insurance.

Some idea of the extent of the state insurance can be given by the following figures taken from a recent census. Out of a total population of 56,000,000 more than 8,000,000 are insured against sickness, 17,000,000 against accident and 13,000,000 against invalidity and old age. The total accumulated funds amount to more than a billion marks.

The collection of premiums and disbursement of indemnities of the various insurance societies is managed by the "Krankenkasse," of which there are more than 5,000 branches, or "Ortskrankenkassen," in various parts of the kingdom. These "Krankenkassen" draw funds from other sources as well as the above and have the care of the sick and needy who are not insured besides many other duties.

These three forms of state insurance are virtually one organization, and their far-reaching combined influence has greatly raised the social status of the workingman. Besides caring for the needy insured and his family they have aided enormously in improving the dwellings of the poor, providing sanatoria and hospitals, vacation camps, convalescent homes, etc. To the end of 1904 the insurance societies had expended 33,000,000 marks for the erection of sanatoria alone, and for all institutions for the care of the sick more than 178,000,000 marks. In no field has this effort been more effective than in the struggle against tuberculosis, and here the invalid and sick insurance are especially concerned. The problem was early attacked from an economic standpoint, and a brief experience proved beyond a doubt that the most economical method of handling the consumptive is by providing for him sanatorium treatment. The cure of the sick is thus a natural economic outgrowth. Enormous sums have thus been devoted to the further extension and maintenance of institutions suitable for the treatment of the insured suffering from tuberculosis. Insurance statistics show that one half of all invalidity among workingmen past thirty years of age is due to tuberculosis.

Again, for economic reasons, much attention is given to general prophylactic measures looking to the raising of the general conditions of life through improvement of dwellings, food, home instructions as to the care of the sick, etc. Prevention of sickness is undertaken as an investment. Nearly 40,000,000 marks has been given by the insurance societies for the building of improved dwellings, and the exceptional condition of the houses of the working classes in the German cities is sufficient proof of the powerful influence of these agencies.

4. The *German Red Cross Society*, though primarily an army organization, has, since 1895, taken a very active part in this field. The organization is kept efficient and intact by this activity in times of peace and in readiness for immediate service in the advent of war. In 1897 an agreement was reached with the state insurance societies whereby the Red Cross nurses were placed at their disposal, the aim being to "organize municipal sick nursing adapted to local conditions." The main efforts of the Red Cross have been directed to the establishment of model sanatoria, convalescent homes, family dispensaries, employment bureaus, children's sanatoria and farm colonies. By means of cash boxes in public places and personal solicitation, large funds are raised yearly for the work. The first sanatorium with 190 beds was built at Grabowsee, near Berlin, in 1895, as an experiment. Here the "Döckerschen Borracken" (small portable buildings), now so much employed in Germany, were first used. During the years 1903 and 1904, 1,655 patients were treated at Grabowsee. In 1899 the "Heilstätte Vogelsang," near Magdeburg, with 220 beds for women, was built under the direction of the Red Cross by the "Vaterländischen Frauenverein der Provinz Sachsen." "Die Heilstätte zu Oberkaufungen bei Kassel," for both sexes, with 112 beds, was founded in 1900. "Die Sophienheilstätte bei Berka," opened by the women's association of the fatherland in 1898 for 136 patients, instituted an "employment cure." The total valuation of the Red Cross sanatoria is 974,000 marks.

One of the most important undertakings on the part of the Red Cross organization is the care of the families of the patients who are in the sanatoria. They are visited, aided, advised and sent to the various polyclinics for examination. In 1905, 915 families were thus cared for. The work of the Red Cross is entirely in conjunction with other organizations, and is made much more far-reaching through the many local societies under its control.

5. *The German Central Committee for the establishment of sanatoria for diseases of the lungs* (*Deutsches Central-Komite zur Errichtung von Heilstätten für Lungenkranke*).—A new epoch in the crusade against tuberculosis in Germany was begun with the organization of the Central Committee in 1895, a permanent organization with its headquarters in Berlin. The policy of the society is determined by a council and the plans of work carried out by a paid executive or general secretary (Professor Pannwitz) through its 85 committees and 1,500 members in various parts of Germany. It has thus spread like a net over the whole empire. General yearly meetings are held and comprehensive reports issued. The astonishing growth of sanatoria in Germany has been due largely to the activity of the Central Committee. Primarily founded to aid in the building of sanatoria, it has, through its association with other organizations, broadened its field of interest to include nearly every activity in the campaign. When aiding in the erection of sanatoria, the principle of the association is to furnish funds only when the remainder of the cost and funds for maintenance are assured. Through a special bureau direct supervision and control are exercised over the choice of location, type of buildings and all the details of construction. Eminent architects, engineers, builders and sanitary engineers as well as clinicians are members of the council. The sources of income are as follows: (1) dues from members, (2) private contributions, (3) a yearly grant of 60,000 marks from the government and (4) lotteries sanctioned by the state. From the last mentioned source alone nearly a million marks has already been realized, and in 1908 another lottery for 400,000 marks will be drawn. The total expenditures of the committee in the year 1905 were 321,833 marks. Since 1901 the Central Committee has done much through conferences with the directors of all the sanatoria to bring about the adoption of the best methods of administration and treatment as well as uniform statistics. It is in close touch with every sanatorium in Germany. Beginning with 1904 especial attention has been given to preventive measures, and now the paramount aim is to provide for the advanced cases. These efforts will be further described in part second of this paper.

6. *Private contributions* have played a less prominent part in Germany than in our own country, yet are an important factor. They are confined largely to the erection of sanatoria and other institutions for treatment.

7. *Societies and associations.* — In 1905 there were in the whole kingdom 120 societies of various character closely associated with the Central Committee whose purpose was to aid directly in combating tuberculosis. These have been largely the agencies through which the effective work has been accomplished. By raising funds for the erection of sanatoria, hospitals, convalescent homes, dispensaries and forest schools, land colonies, caring for the families of the afflicted, disseminating knowledge concerning the cure and prevention of the disease among the people, improving the dwellings of the poor, furnishing children with free vacation in the country, establishing tuberculosis museums, and in many other ways they have given a most powerful impetus to the movement. By the aid of such associations representing communities, the Central Committee aims to draw both funds and personal assistance from all classes in order that the burden may fall equally.

8. *Employers.* — The great activity of the workingmen's insurance associations in the efforts to stamp out tuberculosis has naturally brought the employer and great landowners in close touch with the work. Besides individual contributions of money and interest in one or another branch of the campaign, the employers have contributed considerably towards caring for the afflicted workmen and their families. Much has been accomplished in providing model dwellings for employees. A few employers have built up a sick fund for the benefit of their employees.

9. The *congresses*, both national and international, which have frequently convened during the past fifteen years, have done much to shape general policies and to arouse a deeper interest among the physicians and the general public. The Berlin Congress of 1899 (*Kongress zur Bekämpfung der Tuberkulose als Volkskrankheit*) was especially fruitful in the general interest which it aroused in the campaign against tuberculosis as a disease of the masses and is spoken of as a "milestone" in the crusade.

10. *Public education.* — The leaders in the German antituberculosis crusade have from the beginning fully realized that but little could be accomplished without the co-operation of an intelligent public. As above stated, the problem has been treated as a social and economic one. Many of the methods of reaching the people are familiar and I shall merely mention some of the more important without explanation or comment. The thirty or more thousand who are yearly treated in the sanatoria contribute greatly to the efforts to disseminate a general knowledge of the nature of the disease and the proper methods of treatment and prophylaxis. Many of the factors mentioned above, especially the insurance societies, Red Cross, Central Committee, state and various societies, have taken an active part in establishing exhibits and museums, arranging public lectures, distributing pamphlets and giving individual instruction in the family of the consumptive. The school affords another avenue through which the public can be reached.

11. *Scientific investigations.* — The contribution

of science to this movement as a direct guiding influence is probably greater than that to the struggle against almost any other disease. As early as 1865 the French physician Villamin demonstrated the transmissibility of tuberculosis from one individual to another, but the discovery of the specific cause (tubercle bacillus) by Koch in 1881, together with his masterly description of the pathological changes taking place in the lungs, illuminated the whole field of activity and marked a new epoch in the crusade. From this work and the investigations growing out of it date practically all the measures now in force for both the cure of the sick and the protection of the well. The numerous researches of recent years on bovine tuberculosis and immunity promise to further revolutionize the present methods of treatment. With this great campaign will ever be associated the names of Koch, v. Behring, Virchow, Aufrecht, Römer, Eber, Lorenz and others.

(To be continued.)

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DIFFUSE PERITONITIS FOLLOWING APPENDICITIS IN YOUNG CHILDREN WITH CLINICAL REPORTS OF SEVEN CASES.

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The following paper is based on the study of seven cases of acute diffuse peritonitis which were admitted to the service of Dr. H. L. Burrell at the Boston Children's Hospital, from Oct. 1, 1906, to Jan. 19, 1907. The writer is indebted to Dr. Burrell for the opportunity to operate on these cases, and for the privilege of reporting them. By a *diffuse peritonitis* is understood an inflammation of the peritoneum, starting from a definite focus, and not sharply limited by adhesions of the intestines at the margin of the inflammatory area which tend to limit further extension of the suppurative process.

In extent a diffuse peritonitis may vary from the involvement of a small area about the primary focus to the involvement of the entire peritoneal cavity and its contents. The latter condition is a true general peritonitis, a term which should be used only to express the extent of a diffuse peritonitis. Inasmuch as such a condition can rarely, if ever, be demonstrated at operation, it is better to use the term "extensive diffuse peritonitis" when, as far as can be demonstrated, the process appears to have invaded practically the entire peritoneal cavity. One of the cases here reported (4) does not, strictly speaking, come under the definition of diffuse peritonitis since there were found at operation multiple abscesses involving the pelvis, the entire right half of the abdomen, and extending well beyond the median line and above the umbilicus.

The cases reported were not selected from a large number but represent seven consecutive cases admitted to the hospital as "acute appendicitis" in a period of a little over three months. The observation and study of these cases has convinced the writer that appendicitis in children exhibits certain features not altogether common in adults, and not usually set forth in the works on the subject. The object of this paper is to call attention to these features, and to emphasize certain details in the diagnosis of the disease, its course and its treatment.

In the following case reports, the duration is reckoned from the appearance of the initial symptom, and in some of the cases it will be noted that this was some time before the child was actually confined to bed. In the histories only leading symptoms are given, and in the examinations only positive signs are mentioned. The details of the operations are omitted and only the pathological findings given. All of the cases were operated within an hour or two after admission to the hospital, and no case was refused operation on account of extreme condition.

The average age of the patients was four and one-half years, the youngest being three and the oldest eight years. In all of the cases the primary focus of infection was the appendix.

Case I. H. C., female, five years. Diffuse peritonitis; operation; recovery.

The child was brought to the hospital at 5 P.M. Forty-eight hours before she had vomited once, but complained of no pain. On the day before entrance, she went to school as usual, but that night began to complain of pain about the umbilicus, which continued up to the time of admission.

Her general appearance at that time was apathetic, her tongue dry. She was in fairly good condition, the temperature 102° and the pulse 130. The abdomen was rigid on the right side and moderately tender over its lower half.

On opening the abdomen over the right iliac region, there was considerable free sero-purulent fluid, and a diffuse reddening of the intestines extending well beyond the median line. There were no adhesions. A much swollen appendix, gangrenous at the tip, was removed, and a cigarette drain inserted.

There was no further vomiting; the bowels responded readily to enemata, she took food well from the time she was out of ether and had an uneventful convalescence.

Case II. W. B., male, five years. Diffuse peritonitis; operation; death.

For a week before admission to the hospital this boy had refused to take food; he had vomited frequently and complained of stomach ache. The bowels were very loose. His physician stated that there were no localizing signs until twenty-four hours before he was sent to the hospital, when the child seemed more tender over the appendix than elsewhere.

His general appearance at admission was one of marked prostration. His face was drawn and pinched, and his expression anxious. The tongue was dry and brown. The temperature 102° and the pulse 160, of low tension.

There was noticeable fullness over the right side of the abdomen, extending to the left well beyond the umbilicus. Tenderness and spasm were general and distention was marked.

On opening the abdomen over the appendix, there was immediate escape of pus, which filled the pelvis, and the entire right side of the general cavity. To the left of the umbilicus there were a few light adhesions. A perforated gangrenous appendix was removed. The abdomen was irrigated with salt solution and drainage was placed to the pelvis, the appendix stump, and the right loin.

The child was in profound shock at the close of the operation, but reacted well upon stimulation. He would not take food, however. Food was given by rectum, but he gradually failed and died fourteen hours after operation.

Case III. L. O., female, three years. Extensive diffuse peritonitis; operation; death.

The child was brought to the hospital at four o'clock in the morning. For four days she had refused all food and had complained of abdominal pain at intervals although she had been up and about until the day before, when she was kept in bed because her abdomen "swelled up" and she began vomiting. About twelve o'clock, four hours before she was brought to the hospital, she began vomiting greenish material. Her bowels had moved daily.

Her features were pinched, the eyes sunken, and her expression anxious.

The temperature was 104.6° and the pulse about 140, weak and thready. The abdomen was markedly distended. There was no muscular spasm, and only very slight tenderness located low down on the right side.

The abdomen was opened through the right rectus muscle and a diffuse purulent peritonitis, as far as could be made out through this incision and a counter-incision on the left side, general in extent, was found. The appendix was felt firmly adherent, deep in the pelvis, but on account of the child's condition, its removal was considered unwarrantable. The general cavity was flushed with salt solution. A convenient loop of distended ileum was opened and a tube tied in through the wound on the right side, with the escape of considerable gas.

The child stood the operation poorly; she was propped up in bed, but this posture proved exhausting and was discontinued. She did not recover from the shock of operation, and died six hours later.

Case IV. P. McT., male, three years. Multiple abscesses; operation; recovery.

Three days before admission, this boy was seized with an attack of vomiting. He was not sick in bed until two days later, but he complained of abdominal pain which was apparently general. The day before admission he vomited again. His bowels had not moved for two days. An enema given just before operation brought away a slight result.

He looked sick. He lay with both thighs flexed. Straightening the legs made him cry. The temperature was 100° and the pulse 140, of poor quality.

Spasm of the abdominal muscles was fairly well marked, especially on the right side. There was slight tenderness over the appendix and slight general distention.

On opening the abdomen, an abscess surrounded by light adhesions was found which filled the right lower quadrant. In exploring the extent of this abscess, the finger broke into an abscess which filled the pelvis, another to the left of the median line, and still another about the umbilicus. A perforated gangrenous appendix was found lying over the pelvic brim and was removed.

Following the operation, the bowels were moved with difficulty. There was persistent vomiting and high, thready pulse. Forty-eight hours after operation the child was in collapse. The local abdominal condition was satisfactory. There was a marked sweet odor to the breath and on examining the urine, a large amount of acetone was found present. Sodium bicarbonate was given by rectum and vomiting ceased in a few hours, and the pulse became lower, although traces of acetone were found in the urine for five days.

Three days after operation the temperature became elevated, and continued so for five days, when on exploring the wound a secondary abscess at the base of the cecum was found and drained. The temperature and pulse became normal. There was subsequently a fecal fistula, which closed spontaneously at the end of three weeks.

Case V. C. S., male, eight years. Diffuse peritonitis; operation; recovery.

Thirty-six hours before admission, this boy began to complain of stomach ache and would not eat breakfast. He vomited once or twice during the day and at night complained of considerable pain on the right side of the abdomen. About ten hours before admission the pain suddenly ceased.

His general condition at the time of admission was extremely poor. The pulse was 160, of poor quality; the temperature 102°. The facies was sunken and anxious. He lay with his right thigh flexed. There was general spasm and tenderness of the abdomen, most marked on the right side.

The abdomen was opened over the right iliac region with the immediate escape of free pus. A fibrinous peritonitis extended to the left beyond the median line, and involved the pelvis, with no walling off process at the margin of the inflammatory area. The appendix was perforated at its tip and at its base. There was a gray sloughing area in the cecum the size of a quarter-dollar, surrounding the base of the appendix. On account of the patient's condition the appendix was simply tied off and removed, no attempt being made to turn in the apparently gangrenous area. The pelvis and right side of the abdomen were irrigated and drained.

He reacted quickly from the shock of operation and made an uneventful recovery. There was no fecal fistula.

Case VI. J. A., male, six years. Extensive diffuse peritonitis; operation; death.

Forty-eight hours before admission, the boy vomited once and subsequently complained of pain in the stomach, which increased during the following day and was accompanied by vomiting. Twenty-four hours before admission he began coughing. The abdominal pain ceased about twelve hours before admission. The bowels had not moved for two days. The boy was sent to the hospital with the diagnosis of "Pneumonia or Abdominal."

At the time of admission, the child was in a condition of extreme prostration. His expression was anxious and the facies was drawn. The temperature was 102°, and the pulse 160, of poor quality. The heart action was weak, the respirations were fifty to the minute and shallow. There were a few râles to be heard at the base of the right lung. He lay on his right side with both thighs flexed.

The abdomen was moderately distended and there was slight general spasm and tenderness.

At operation, free pus filling apparently the entire peritoneal cavity was found. The appendix was gangrenous and perforated. The appendix was removed, the general cavity flushed, and the pelvis and both flanks were drained.

The child died one hour after operation.

Case VII. M. K., female, six years. Extensive diffuse peritonitis; operation; death.

This child was brought to the hospital at noon. She attended school the previous morning. At noon, twenty-four hours before admission, she first complained of pain in the right side of the abdomen. She vomited once in the afternoon, when the pain became general and more severe. The bowels had not moved for two days.

The facies was peritoneal, the general condition extremely poor, the pulse 160, weak and irregular. The temperature was 102°, the tongue dry and brown. The abdomen was considerably distended and there was slight general tenderness and spasm. Shifting dullness in the flanks was demonstrated.

The abdomen was opened twenty-six hours after the first symptoms, and extensive purulent peritonitis was found. The bowels were considerably distended. The appendix was much thickened and inflamed, but without obvious perforation. It was removed, a counter-incision was made in the left side and the general cavity washed out and drained.

The child stood the operation poorly and was in collapse at its close, but she reacted fairly well. The following day the abdominal distention became more marked and the child vomited once. Repeated enemata failed to produce results and in the afternoon enterostomy was considered. About this time, however, the child passed a small amount of gas by rectum and owing to this fact and also to her extremely low condition, any operative procedure did not seem justifiable. There were no further results from the bowels, however, and the following morning the distention was more marked and the child was vomiting.

Without anæsthetic one of the mass sutures in the wound on the right side was removed, and a distended loop of ileum which presented was opened, with the escape of a small amount of gas and fecal material and a glass tube was tied in. Irrigation of the bowel with salt solution failed to produce satisfactory results, and another enterostomy was done through the wound on the left side. This was followed by a copious escape of gas and greenish fecal material. A saturated solution of Epsom salts was run into the bowel and the tubes clamped. In the course of half an hour the clamps were removed and there was a considerable amount of fecal material and gas discharged. At the same time a small watery stool was passed through the rectal tube. The child improved, took milk in small amounts well during the afternoon. Late in the afternoon the pulse grew weaker and no longer responded to stimulation, and at half past five the child suddenly had a convulsion and died.

I. PROGRESS AND COURSE OF APPENDICITIS AND PERITONITIS IN CHILDREN.

Perhaps the most striking feature in the study of these cases is the fact that the pathological conditions found at operation were out of all proportion to the duration of the illness. Eliminating Case II which had been sick one week there were 6 cases with diffuse peritonitis, in three of which the peritonitis was so extensive as apparently to involve the entire greater cavity, with an average duration of less than forty-eight hours from the appearance of the initial symptom.

This disproportion between the duration of the illness and the condition found at operation may be due to one or both of the following reasons:

1. The course of appendicitis is more severe and more rapid in children than in adults.
2. The process had been going on for some time before the child manifested the first symptom, and hence the duration of the illness as shown in the history did not represent the true duration of the disease.

It is a well-known fact that children exhibit a marked indifference to pain. Their nervous sensibility is lower than that of adults, and they are not likely to complain unless for a definite reason. Examples of this fact are common. In the outpatient clinic of the hospital, for example, a child will be brought in for the first time because the mother has noticed a lump on the clavicle which proves to be a callus. This, or the fact that the child does not move one arm as freely as the other may be the first manifestation of trouble. It is noticeable that following surgical operations on children, the need of morphia for pain is the exception rather than the rule, and it is common to see a child amusing himself with toys an hour or two after he is out of ether. The writer recalls a case of severe and extensive diffuse peritonitis following a gangrenous appendix in a young boy operated on by Cotton at the Boston City Hospital. The duration of the symptoms was less than twenty-four hours. The boy was playing, fell down and turned his elbow under him, pushing it against his abdomen. He vomited and from that time, although suffering little pain, grew progressively worse. It is hardly reasonable to suppose that the trauma was the cause of the appendicitis and that he did not have a diseased appendix before he fell down. He made a good recovery. These are conditions which are not common in adults excepting in those of low nervous energy and possessed of a marked and unusual indifference to pain.

Therefore, it is the writer's conclusion that children are quite likely to carry an active process in the appendix for some time before they exhibit a symptom.

Once the appendix is ruptured, however, there is no doubt that the course of peritonitis is extremely rapid. In cases V and VI there is good clinical evidence of the time of perforation (less than twelve hours), and peritonitis in both cases was extensive. In Case VII, of twenty-four hours' duration, the abdomen was literally full of pus. The same relations between the virulency of the infecting organism and the resistance of the individual apply in the case of children as in the case of adults. The remark is often heard that "a child will stand anything." This is relatively true providing that the invading process, or the trauma, is of short duration, for children react more quickly than adults. A child, however, has a relatively smaller supply of fighting power. He is therefore less able to put up an effective resistance against a *progressing* and continued invasion of infection than an adult, and he is consequently more quickly overwhelmed by toxemia and is more rapidly prostrated.

In the series of cases here reported, at the time of admission to the hospital three of the patients were *in extremis*, three were in poor condition and only one was in fair condition.

It was a noticeable fact that in 5 out of the 7 cases, the perforation in the appendix was large, *i.e.*, as great in diameter as a split pea. Whether or not a large perforation is more common in children than in adults, is not within the writer's experience to say, although perforations of the appendix which he has seen in adults have, as a rule, been small. There can be no doubt that with a large perforation, and a consequent sudden outpouring of a large amount of fecal material into the peritoneal cavity, there will be less likelihood of the formation of a definite walling-off process. One reason why a large perforation might more frequently occur in children is that the appendix is small. When the organ is infected, therefore, the circulation may be cut off from a relatively larger area, and consequently a larger perforation will follow.

II. SYMPTOMS AND SIGNS.

One of the very earliest symptoms of abdominal mischief in children is a *disinclination to take food.* This occurs before vomiting in about half the cases. *Vomiting* is an early symptom usually occurring before *pain*, which is, as a rule, general. Frequently the child will be up and about during the early part of the disease and will be confined to bed only upon the onset of symptoms of the severest character. (*Vide* Cases I, III, IV and VII.) The *pulse* is almost invariably rapid and of low tension. The *temperature* is relatively low. The *facies* even early in the disease is drawn and pinched, and with the onset of spreading peritonitis become rapidly and markedly peritoneal. The *tongue* is dry and coated. The *respirations* are rapid. Children are likely to assume a characteristic *decubitus.* They lie on the right side with one or both thighs flexed.

The *abdominal examination* in this series was of special interest. *Tenderness* was as a rule general, although perhaps more frequently marked on the right side. *Spasm* was not present in 5 out of 7 cases. The amount of spasm seemed to bear an inverse relation to the severity of the illness. Distention was present in a greater or less degree in all cases except one. *Free fluid* was demonstrated before operation in one case (VII). Attempts to demonstrate free fluid in cases of peritonitis are not, in the writer's opinion, justifiable, inasmuch as such attempts are an additional trauma. Furthermore, the sign, when present, is of no consequence either in diagnosis or treatment.

III. COMPLICATIONS AND SEQUELÆ.

1. *Acetonemia.* — (Aciduria; acetonuria; acid intoxication.) It is not possible in the limits of this paper to consider this condition in detail. It is necessary only to mention its clinical significance. Occurring somewhat rarely in adults, it is a common complication in children, occurring apparently from various causes, but most commonly following surgical operations or the administration of an anæsthetic. The mere presence of acetone in the urine is of no particular clinical significance. In those cases, however, in which the intoxication is sufficient to produce symptoms, and such cases are fairly frequent, the recognition of this condition is of extreme importance. Briefly, the symptoms are *persistent vomiting, rapid low tension pulse*, the *characteristic sweet "chloroform" odor to the breath*, and the *presence of acetone in the urine.* The *temperature* is usually moderately elevated, and the face is pale. Unless the process is checked early, the child goes to pieces rapidly, and it is occasionally a cause of death, even after the simplest surgical procedures. When complicating acute abdominal disease, it is a grave condition. In the case of children, with persistent vomiting associated with high pulse, following operation, the condition should be suspected and the urine examined. The early administration of sodium bicarbonate either by mouth or rectum in doses of 15 to 30 gr. every hour, together with small, frequent doses of brandy, is usually effective in checking the process.

Acetonemia complicated Case IV of this series.

2. *Secondary abscess* is not common. A persistently high temperature or a fluctuating temperature should lead one to suspect inadequate drainage. Usually the exploring finger either through the wound or by rectum will locate the abscess which should be drained. Secondary abscess occurred in Case IV.

3. *Fecal fistula* also occurred in Case IV. It is not uncommon where there is extensive gangrene of the appendix. Secondary operation to close such fistula is rarely necessary as they usually heal spontaneously, although frequently after a long time. The fistula in this case was healed in three weeks.

4. *Inhalation pneumonia* may follow in cases associated with vomiting, especially if they are insufficiently or improperly etherized.

5. *Post-operative distention* is common in cases of extensive peritonitis. It is due to paralysis of the intestine from sepsis or trauma, and is one of the most serious conditions associated with peritonitis. Cathartics are useless and dangerous. Enemata should be tried, and if these fail, secondary enterostomy, an almost hopeless procedure, offers the only chance of relieving the distended bowel.

IV. DIFFERENTIAL DIAGNOSIS.

It must be remembered that in peritonitis, as in other diseases of children, the diagnosis may be difficult, because it must be made on objective symptoms.

1. *Lobar pneumonia.* — A right-sided pneumonia in a child may simulate appendicitis. The pain is sometimes referred to the abdomen, and the attack is ushered in by vomiting. The abdomen may be distended and tender, there may be voluntary spasm, and, especially if the pneumonic process be a central one, which is fairly common in children, with absence of physical signs in the chest, the diagnosis may be difficult or impossible to make. The possibility of pneumonia should always be borne in mind.

The initial symptoms may be similar in both conditions. The temperature in pneumonia, however, is usually high at the start, and the pulse, although rapid, is full and bounding. In peritoneal conditions, the temperature is not usually high and the pulse is of low tension.

Vomiting and pain may be present in both, and it must be remembered that the respirations are usually rapid in peritonitis, especially if the child is in much pain. The toxemia is more quickly overwhelming in peritonitis. Even early in the course of an appendicitis, the facies has the characteristic peritoneal appearance, and the child almost invariably lies with the knees drawn up.

Often the *general appearance* rather than any definite signs will determine the diagnosis.

Case VI is an illustration; acute onset, vomiting, abdominal pain, cough, rapid respirations (50), râles at base of right lung, slight general abdominal spasm and tenderness with moderate distention. The case was sent to the hospital with the diagnosis "Pneumonia, Abdominal." The symptoms and signs seem certainly to have justified the consideration of pneumonia in the diagnosis. The marked peritoneal facies and the decubitus led the writer to open the abdomen and an extensive diffuse peritonitis from a perforated gangrenous appendix was found. The writer has seen two cases of lobar pneumonia in children which were operated upon under the diagnosis of appendicitis. Both recovered.

The method of treatment to be pursued in such a case becomes a serious question. If the signs point to abdominal disease, and the general picture suggests it, it is probably safer to explore than to wait for more definite signs, even at the risk of opening a normal abdomen and giving ether to a child with pneumonia.

It should be remembered that death from lobar pneumonia is not common in children, but that peritonitis in children is *invariably fatal* if surgical interference is not undertaken *early*.

2. *Intestinal obstruction.* — In the later stages of an acute obstruction in a child, it may be impossible by examination to differentiate the condition from acute infectious perforating peritonitis. A mechanical obstruction may actually terminate in peritonitis, and peritonitis, especially if extensive, is usually accompanied by obstruction.

In either case the child presents much the same general appearance. The pulse is high and thready. The temperature may or may not be elevated, or may be subnormal. Vomiting, distention, paralysis of the intestine are common to both. Muscular spasm may or may not be present in either case.

The character of the pain in some acute obstructions is likely to be paroxysmal in the earlier stages. In the case of obstruction due to intussusception, there may be the history of bloody discharges. The localization of a mass or of areas of special tenderness in a much distended abdomen of a small child is a difficult matter. It may be easier to detect a mass by rectal examination than by abdominal examination and this procedure should never be omitted. Distention may be localized in obstruction, whereas it is more likely to be general in peritonitis. The sign is of doubtful value.

3. *Typhoid fever.* — Typhoid fever occurring in young children, as it sometimes does with acute onset, vomiting, fever, accelerated pulse and abdominal distention, has simulated appendicitis. Pain and tenderness, however, are unusual in typhoid of young children and the general appearance is one of apathy rather than of anxiety and restlessness. The Widal reaction may be an aid in the diagnosis. Typhoid fever could hardly be mistaken for an acute peritonitis.

V. TREATMENT.

Acute diffuse peritonitis is a surgical disease. The discussion of treatment in this paper is therefore limited to treatment by surgical measures. Operative treatment of acute diffuse peritonitis is directed to the attainment of three things:

1. The removal of the cause.
2. The cleansing of the peritoneal cavity.
3. The establishment of drainage.

1. *The removal of the cause.*— "The peritoneum will absorb or segregate by adhesion a certain quantity of infectious material, but if an indefinite supply is poured into the cavity by a necrotic perforated appendix, the peritoneum cannot take care of it."[1]

It is evident enough that operation will be of little use unless the source of infection is removed. There are certain very rare cases, however, in which the removal of the appendix by reason of its abnormal position may be attended by shock and trauma so great as to be unjustifiable. In such a case one must consider the relative danger of shock of operation with the danger of a continuance of the infection. The employment of drainage alone without the removal of the appendix may very rarely so decrease the amount of toxic material absorbed as to tide the patient over, and make a later removal of the appendix safer. To leave the appendix seems to the writer justifiable only in the avoidance of immediate death.

2. *Cleansing of the peritoneal cavity.* "The lethal issue of acute peritonitis is due to poisoning from toxins formed in and absorbed from the general peritoneal cavity."[2] The second object to be attained, therefore, is the thorough cleansing of the peritoneal cavity by the removal of such toxic material as is in a position to be absorbed. The procedure of cleansing the abdomen offers the greatest opportunity for the production of shock of any step in the operation. Therefore, that method should be selected which is attended with the least possible trauma. There is a wide divergence of opinion on what constitutes the best method. Those commonly employed are (*a*) evisceration and forcible "scrubbing" of the intestine; (*b*) sponging; (*c*) irrigation.

(*a*) The practice of pulling out loop after loop of bowel and forcibly sponging off the fibrin seems hardly justifiable. It is not only productive of tremendous shock, but by forcibly tearing up adhesions destroys nature's attempt to limit absorption. (*b*) Sponging, if it is to be thorough and the sponges are to be pushed into all the recesses of the abdomen, is attended with considerable friction to the inflamed serous membrane with consequent shock. Furthermore, it is questionable if it is as effective as flushing. (*c*) Irrigation seems to the writer to be the most commendable practice if properly carried out. With a soft rubber tube or a glass nozzle a stream of sterile water or salt solution can be gently made to reach nearly every part of the abdominal cavity, although, as Moynihan suggests, it may be necessary to make multiple incisions in order to reach every part of it. In a diffuse peritonitis from perforated appendix the practice of making a short counter-incision on the left side and irrigating from that side toward the incision over the original focus seems to the writer a logical one.

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[1] Lund: Boston City Hospital Reports, 1903.
[2] Mayo-Robson: Lancet, Dec. 29, 1906.

Antiseptics should never be used in irrigating the abdominal cavity as they irritate the inflamed peritoneum. The one object of irrigation should be to mechanically wash out whatever loose infected detritus exists, in the gentlest manner possible. It should be stopped when the washings come away clear for then all has been accomplished that is possible by this means. The practice of prolonged irrigation has been shown to be positively harmful on account of its exhausting effect on the patient. Some surgeons leave a considerable amount of salt solution in the abdomen, the object being to dilute the toxins and hasten their removal by absorption and to prevent adhesions. It is probable that more of it is immediately taken up by the dressings through the action of wicks and drainage tubes than by absorption. The chief value of this procedure seems to be that it starts the current of septic material into the dressings.

3. *Drainage.* — The question of the employment of drainage is one on which there is a wide divergence of opinion, both as to whether it should be employed at all and if so, in what manner. Murphy in his experiments on cats [3] has shown that no drain is effective as a drain of the general cavity for more than seventy-two hours. Clinical experience seems to show that the same condition prevails in draining the abdominal cavity of man. Even if effective for only a short time, the drains will cause much septic secretion, which would otherwise be in a position to be absorbed from the general cavity, to be discharged into the dressings.

An objection to drainage is that the presence of gauze or drainage tubes in the abdomen may distort the anatomical relations of bowel and omentum, and by the production of subsequent adhesions cause obstruction. This, however, seems to be of rare occurrence. Furthermore, the immediate emergency is the removal of the septic contents of the abdomen and not the preventing of future adhesions.

In the paper cited above, Murphy also showed that gauze and cigarette drains, *i.e*, gauze surrounded by rubber tissue, are effective as drains of the general cavity for not more than eighteen hours, while rubber dam and glass tubes were effective for about seventy-two hours, "the difference in time representing the difference in the stimulating effect of the various materials on the peritoneum."

It is the writer's practice in a diffuse peritonitis of small extent to use gauze or cigarette drains to the primary seat of infection in the hope of limiting the process. The pelvis which is usually the first region attacked by spreading peritonitis following perforation of the appendix is best drained by a glass or rubber tube. Drainage of the entire peritoneal cavity is impossible by any method, but the writer believes it is best accomplished by posture, *i.e.*, Fowler's position, when this does not prove exhausting.

The treatment of paralysis of the intestine associated with peritonitis. — Paralysis of the bowel sometimes amounting to obstruction is one of the most dreaded conditions complicating acute peritonitis. "Paralysis of peristalsis is due to inhibition, to toxic paralysis, and to paralysis of distention." [4] Moynihan points out [5] that after distention has passed a certain point the intestines are not likely to regain their power of contraction, and when this power returns there is also a return of the rapidity of absorption of intestinal contents which are of an extremely toxic character. "There can be no question," he says, "that in many cases a free evacuation of the stagnant gas and fecal material is entirely an advantage," and he advises emptying the intestine as an almost routine practice.

If enterostomy is done secondarily after adhesions have begun to form between omentum and coils of bowel, it is more than likely that only one small loop of bowel will be drained and little if any good will be accomplished. Enterostomy, at the time of the primary operation, affords the better opportunity for draining the bowel unless later there are not extensive adhesions.

In cases in which distended bowel escapes from the abdomen during operation, an accident which should be avoided if possible, but which nevertheless does occur, there can be no doubt that it is safer to open the distended gut before trying to replace it. To crowd back distended coils of bowel is to increase shock. The opening in the bowel can be quickly closed with one or two sutures.

General remarks on the operation. — Moynihan, in speaking of the treatment of peritonitis, says, "I do not think that in any abdominal operations ever undertaken by the surgeon the need for speed combined with aptness can be greater than in these. Slow operations mean death from shock; imperfect operations mean death from a continuance of the acute inflammation. Perfunctory work and slow work are both out of place. It must be the surgeon's duty, therefore, to insure that every precaution is taken to lessen or avoid the incidence of shock, and to see that absolutely everything needed in the operation is ready before the anæsthetic is administered."[6]

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[3] Murphy: Boston Medical and Surgical Journal, Jan. 12, 1905.

[4] Greenough: Boston Medical and Surgical Journal, May 19, 1904.

[5] Moynihan: Abdominal Operations, p. 84.

These then are the essentials to the operation, — speed, thoroughness, the avoidance of trauma. If these be necessary in adults they are even more necessary in children, who stand long anæsthesia poorly and in whom the shock of handling the bowel is markedly greater than in adults.

A word should be said about *anæsthesia* in these cases. Local anæsthesia, whatever its virtues, if there be any, in adults, has no place in operating for this condition in children. The anæsthetic should be general and ether is probably the safest. Much is said about "primary ether" and "light anæsthesia." The employment of light anæsthesia in cases of peritonitis is, in the writer's opinion, more poetical than practical. With a patient half under ether straining the abdominal muscles, no operator can work with speed or efficiency. Especially if distended coils escape from the wound as they will in spite of precautions, if the patient is straining, much time will be consumed and much shock will be added in pushing them back. Safety, therefore, lies in having the patient in complete narcosis. The shock of complete anæsthesia for a short time is much less than the shock of the more prolonged manipulations necessitated by a light ether. The danger of inhalation from vomitus is also lessened if the patient is completely anæsthetized.

If the patient is vomiting, it is well to wash out the stomach before starting the ether.

VI. AFTER-TREATMENT.

The slow *administration of salt solution* by rectum after operation stimulates the circulation and the kidneys, thereby aiding in the elimination of toxins. It should be made a routine practice.

Postural drainage (Fowler's position) which is usually of value in the treatment in adults proved exhausting in the cases in this series, producing circulatory failure.

The patient should be kept warm, and stimulants, strychnine, brandy and coffee, should be administered as indicated. Persistent vomiting after operation is relieved by washing out the stomach. Vomiting was not a troublesome sequel in any of the cases in this series excepting the case complicated by acetone. Attempts should be made early, within three or four hours, to move the bowels by enemata.

Feeding. — To have brought the patient safely through the operation and to have successfully combated shock is to have accomplished much but not all. Success is quite likely then to depend upon after care and nursing. In order to provide the materials for the repair of the diseased tissues, and to restore the organism to its normal condition, the patient must be fed. Stimulation is not feeding. It is not uncommon to see a patient successfully operated on and doing well for a few days, whipped on by stimulants and then gradually die from exhaustion and lack of nourishment. The importance of early administration of food in children cannot be overestimated. Young children depend upon food for their resisting power. Deprived of food their resistance is rapidly lowered, for they have no reserve to fall back upon. It has been noted that one of the earliest symptoms is the refusal of food and they are consequently suffering from the withdrawal of it.

Fortunately it is true that almost all children take food readily about as soon as they are out of ether. In children with acute abdominal disease accompanied by vomiting, the vomiting usually ceases at once after operation, and food can be given by mouth. The fact that they will take it readily is, in the writer's opinion, sufficient evidence that they can assimilate it. It proved so in the cases here reported. It should be given in small amounts and frequently. If the patient continues vomiting, however, food should be withheld by mouth and given by rectum, although with severe distention and paralysis of the bowel, the power of absorption will be greatly decreased. If enterostomy has been done, feeding can be put directly into the bowel.

No general rule can be laid down for each case must be considered by itself. It is sufficient to remember the importance of giving the child nourishment and to give it in whatever way seems best adapted to the individual case.

VII. PROGNOSIS AND RESULTS.

Cases of diffuse peritonitis following appendicitis usually terminate in death unless operation is done. Even in cases which are operated, the mortality is high. The mortality given by different surgeons is extremely variable, ranging from 28% to as high as 90%. This variance in results is accounted for by the variance of opinion of what constitutes a diffuse peritonitis, and also on what kind of cases are included in the statistics. The mortality is necessarily higher when cases of extensive or true general peritonitis, many of which are actually moribund when operated on, are included. The percentage of mortality is correspondingly lower if cases of encapsulated abscess are included. In the writer's series of cases the mortality was 57%, and this included three cases which he has defined as extensive peritonitis and one case of multiple abscesses. The mortality will be greater in children than in adults for two reasons: They are more quickly overwhelmed and have less resisting power against a continued infection than adults, and they stand abdominal manipulations poorly. In general it may be said that the prognosis will depend upon,

1. The amount of general intoxication;
2. The extent and severity of the inflammatory process;
3. The degree of resistance of the individual, and, if operation is done;
4. Upon the skill and speed of the operator.

Extreme cases should not, in the writer's opinion, be refused operation. While the general appearance and the general condition furnish an almost positive indication of the outcome the exact conditions can only be found by opening the abdomen. In cases with a considerable amount of distention, and with little abdominal pain and tenderness, and little or no spasm, the prognosis is most serious. The absence of spasm, pain and tenderness, as well as the presence of distention, the writer believes to be a part of a general paralysis due to toxemia. The absence of spasm was most noticeable in those children who were the sickest. The prognosis is invariably bad in those cases in which the bowels are moved with difficulty after operation, and in those patients who take food poorly.

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[6] Moynihan: Abdominal Operations, p. 80.

It is generally agreed that a certain number of cases which come to the surgeon late overwhelmed with sepsis are bound to die in spite of any surgical effort. There are also cases which would presumably recover, which die from the shock of protracted or clumsy operating. To quote the words of Dr. Joseph A. Blake, of New York, "We have then simply to weigh the dangers of toxemia and shock against the dangers of continued infection, both systemic and peritoneal, from the appendix itself or the escape of its contents," and success, if it is to be attained at all, will depend upon judgment equal to the solution of this problem, and skill adequate to carry out such operative procedures as are indicated.

AN EXTRAORDINARY BLOOD.

PRESENCE OF ATYPICAL PHAGOCYTIC CELLS.

BY F. VAN NUYS, M.D.,
House Officer, Massachusetts General Hospital.

J. G., fifty-five, married, Russian Jew, butcher by trade, entered Dr. F. C. Shattuck's wards, Nov. 28, 1906. He complained solely of swollen feet and a tapeworm.

His family and his own past history are unimportant. His feet began to swell six months ago on the steamer from Europe. Ever since his arrival he has been weak, short of breath on exertion, and more than usually constipated. Physical examination showed a small, thin man with a chronic bronchitis, and a fairly compensated aortic regurgitation. His liver and spleen were enlarged, the former extending three inches below the costal margin, and the latter nearly to the umbilicus. In the region of the descending colon were two hard masses, egg-shaped, deep and immobile. These later became less distinct, but never wholly disappeared. His fingers were markedly clubbed and his arteries tortuous. He had slight edema of feet and at bases of lungs. Rectal examination was negative. He suffered no dyspnea and very little discomfort.

On the day of entrance, he passed nineteen feet of the beef tapeworm after one dose of castor oil. Stools never contained blood (guaiac test). Eggs of trichocephalus dispar were always present.

Urine and sputum were negative: the former never contained albumose, and the latter showed influenza bacilli.

The blood was examined daily with great care. To verify the extraordinary changes in leucocytosis, control counts were made from the other ear and fingers. Likewise differential counts of 1,000 cells were made about once a week to control the daily ones of 200 cells. Nearly all the work was done between 11 A.M. and 2 P.M.

The leucopenia which follows the erysipelas (see chart) suggests some relation between this man's blood and that of the leukemias.

During his stay of forty days he had a normal temperature, save during an attack of erysipelas from Dec. 14 to 26, when it reached 105°. Pulse and respiration were never remarkable. He left the ward in about the same condition as when he entered. He died unexpectedly Jan. 20. Autopsy was refused.

The characteristic feature of the blood is the presence of large, basophilic, phagocytic cells capable of ameboid motion, and unlike those of any other blood I have been able to discover in medical literature.

There are two varieties of these abnormal cells. One is a large mononuclear, much like an overgrown transitional cell, with granular, fragile, often vacuolated cytoplasm. The nucleus is large, well stained, oval or bean-shaped, often vesicular and sometimes containing a pale yellow-brown nucleolus (Wright's stain). This form of cell occurs in plaques resembling endothelium. When single it shows every degree of ameboid motion, and is frequently phagocytic. In such case, a smaller cell is so distended by a large leucocyte that only a thin shell of cytoplasm incloses the captive. That these cells have a chemotactic influence on leucocytes is proven by the occurrence of a single one surrounded by leucocytes. Very rarely are red blood cells or lymphocytes inclosed. The average size of thirty of this type of cell was 23 x 16.9 μ. In warm sodium metaphosphate solution I have seen them undergo ameboid motion.

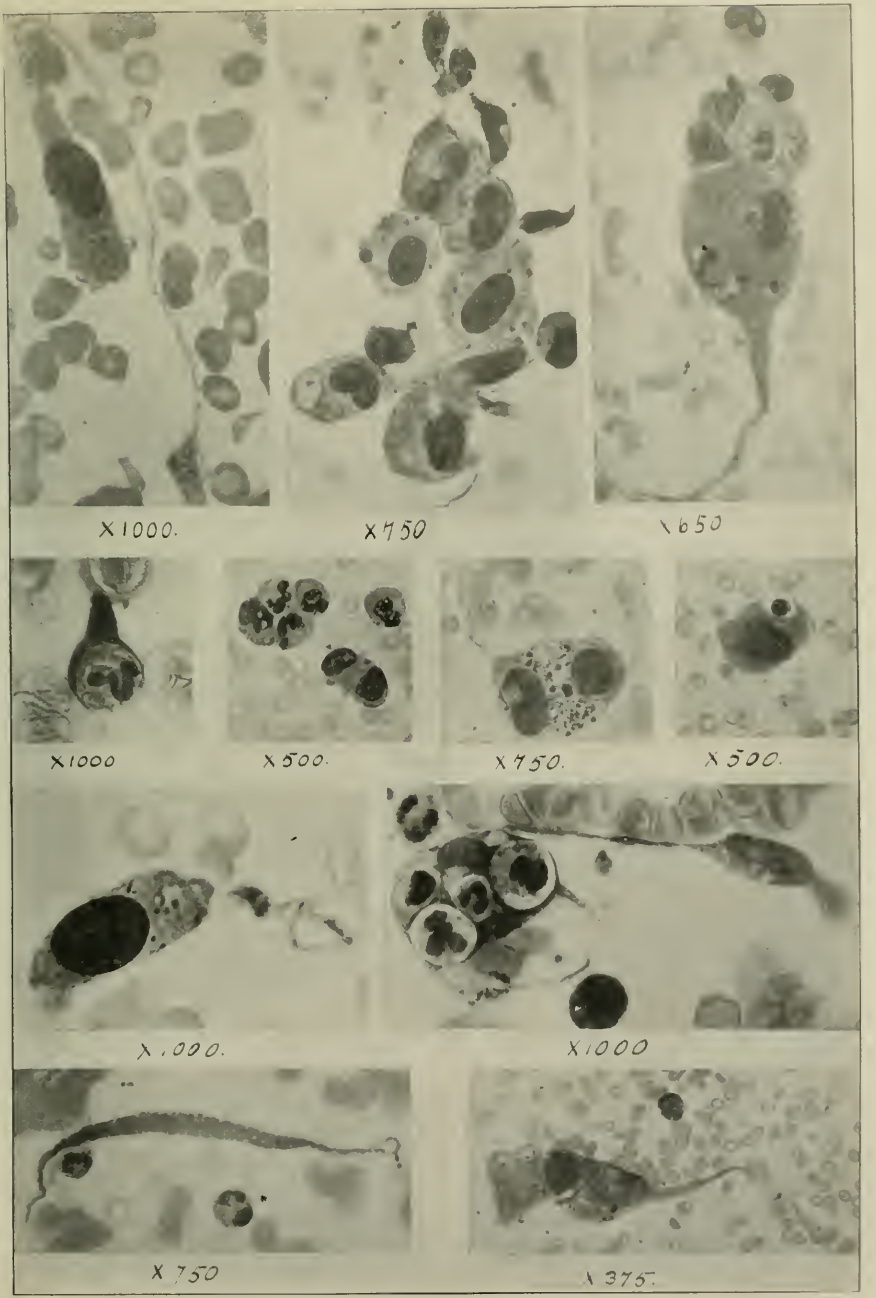
The other type of abnormal cell is a multinuclear, phagocytic, giant cell with long, fantastic streamers of protoplasm. These cells are rare, largely, I believe, due to the jelly-like fragility of their cytoplasm. The streamers cannot be artifacts because of their tapering graceful coils and the even distribution of coarse granules throughout the cytoplasm. In a few such cells, the granules suggest blood platelets forming or disintegrating.

The nuclei of the giant cells are exactly like those of the smaller variety. The cell membrane in both types is either absent or too delicate to be made out. Indeed, the two types differ only in size. Between them lie a number of large "whip-tail" cells which partake of the character of both.

In a few cases I have seen clearly the cell membrane of one of the smaller kind.

There is some evidence that the giant cells are relatively long-lived. The inclusions show all stages of decomposition, from the fresh, recently captured leucocyte to the ragged dot representing the remains of a previous victim. I believe also that the giant cell digests the leucocytes. Often it will stain as a shrunken blur contained in a clear space. However, this may signify an artifact, a shrinking of the protoplasm while staining.

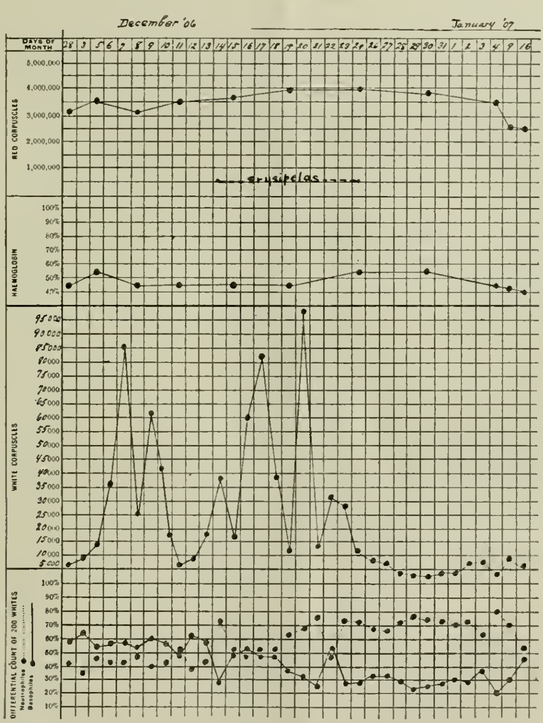
These abnormal cells vary enormously in numbers from day to day. Dec. 5, they consti-



Photographs by L. S. Brown, Clinico-Pathological Laboratory, Massachusetts General Hospital.

tuted about 40% in a count of 1,000 cells. The lymphocytes made up about 5%. After the erysipelas they almost disappeared from the blood, but began to recur before death. In my classification as basophiles they come under the same heading as lymphocytes and transitional cells.

At no time were eosinophiles, mast cells or myelocytes seen. Normoblasts were found very rarely. There was no polychromatophilia, no stippling, and only slight poikilocytosis and moderate achromia of the red cells. Blood platelets were twice counted, 391,700 and 276,000 per c.mm., but the technique was not certain. The specific gravity of the blood Dec. 13, was 1,044. The coagulation time (Brodie-Russell) was five and one half minutes.



On Dec. 20, when the white count was nearly 100,000, some of the sterile blood was placed on gelatine in a Petrie dish. Two other bloods, one normal and one of lymphatic leukemia, were likewise treated, as controls. In seventy-two hours there was no liquefaction of the gelatine. This would seem to indicate an absence of digestive ferments in the abnormal cells such as myelocytes are said to possess in myelogenous leukemia. Hence it is probable that these abnormal cells did not come from a tumor of the bone marrow. The absence of albumose in the urine strengthens the view, as do the blood findings of Schleip [1] and of Kurpjuweit.[2]

The morphology and the plaque formation strongly suggest that they are endothelial in origin. Undoubtedly, somewhere in the man's body a neoplasm was setting loose these cells into the blood, just where, it is hard even to guess. If the phagocytes arrived in the blood stream via the lymph channels, we might expect the inclusions to be lymphocytes. The enlarged spleen and mysterious abdominal lumps possibly hold the secret. The case might be considered a leukemia, meaning by this malignant disease of the blood.

There is at present in the male ward another Russian Jew with aortic disease, who has a very similar blood condition. Dr. W. B. Bartlett and I hope to report this case later.

I am indebted to Dr. F. C. Shattuck for the privilege of reporting this case and to Drs. R. I. Lee and F. B. Talbot for helpful suggestions, and to Mr. Brown for his care in taking the photographs.

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[1] Schleip: Zeit. für klin. Med., Bd. 59, heft 2–4, p. 261.
[2] Kurpjuweit: Deut. Arch. für klin. Med., Bd. 77, s. 553.

CERVICAL ADENITIS WITH REFERENCE TO MOUTH INFECTION.*

BY FRANCIS D. DONOGHUE, M.D., BOSTON.

As the treatment of cervical adenitis involves both the treatment of cause and effect, it is desirable, in many cases, for the general surgeon to call for assistance upon his more highly specialized brother, the doctor of dental medicine.

In turn better results would be obtained by the dentist if he called on the surgeon early, to remove nasal obstructions (adenoids, polypi, etc.) which cause faulty breathing, before attempting to treat irregular teeth resulting from these conditions.

The importance of a perfect chewing apparatus for proper digestion and the danger of chronic pus processes in the mouth, are not well known.

If the medical profession, as a whole, fully appreciated that a pus process with caries of the alveoli is no less dangerous because it attacks insidiously than a pus process elsewhere, which gives warning from its position, there would be fewer end results to treat, such as apparently unexplained anemias, endo- and peri-carditis, or local glandular swellings.

The cases of gastric ulcer and chronic gastritis reported by Colyer,[1] as following continued pyorrhea, are certainly startling and worthy of a great deal of consideration.

The experiments of Sanarelli,[2] fifteen years ago, showed " the power of the saliva to destroy the ordinary pus-producing bacilli," but when the mouth contains a large amount of decomposing organic pabulum, the most favorable conditions are furnished for rapid bacterial growth, the resulting irritation opening a wide door for infection through the mucous membranes. Rosé[3] in recent experiment has confirmed and Drs. Miller[4] and Power[5] have emphasized these deductions.

Even adenitis from decayed teeth, in children, is accompanied by marked constitutional disturbance, as is shown by the study of blood change by Wile,[6] who found, in a case of submaxillary adenitis, " a leucocytosis as high as 43,000."

Enlarged and inflamed glands in the neck or elsewhere are *not* idiopathic. Every enlargement of a lymphatic gland is preceded or accompanied by a cause. It is, therefore, absolute folly to treat a gland without treating the cause.

Inflammations of the lymphatic glands in the neck are primarily caused by pyogenic infection.

So-called tubercular glands of the neck are not tubercular except in so far as the tubercle bacillus may be found, living or dead, in conjunction with pyogenic bacteria and the decomposition products caused by their action.

The growing agitation regarding the danger of tuberculosis and the increasing rigidity of medical inspection in schools, both make for a proper understanding of adenitis in children. It will be criminal if suffering from this condition condemns children to be shunned as lepers or segregated, as dangerous to their playmates.

Even our preconceived ideas as to how the tubercle bacilli enter the body in cases of pulmonary tuberculosis appear, in view of recent investigation, to need readjusting.

For illustration I will quote a few of the more recent reports of investigations along this line.

ORIGIN OF PULMONARY TUBERCULOSIS.

Schlossmann and Engel[7] make out a strong case in support of the assumption that " tubercle bacilli ingested are taken up into the system by the same route as particles of food. The mesenteric glands are used for the passage through them of corpuscular elements, droplets of fat, etc., and their behavior during digestion indicates that they differ functionally from the other lymph glands in the body. The bacilli entering the mesenteric glands are passed along to the thoracic duct, and from here they can readily infect the lungs and bronchi. Ingested bacilli are able to pass through the intact intestinal wall, through the glands and into the thoracic duct as readily and as rapidly as the food particles follow the same route. The authors found the tubercle bacilli in the lungs in young guinea pigs a few hours after the bacilli had been administered in milk."

" A. Calmette and C. Guérin (Origine Intestinale de la tuberculose pulmonaire et mechanisme de l'infection tuberculose[8]), supplement their previous publications on experimental tuberculosis with the present article, which relates research with cows. The results show that adult cows, as well as calves, contract tuberculosis by the intestinal route, without any traces to be found in the walls of the intestinal tract revealing the passage of the tubercle bacilli through them. In younger animals the bacilli are retained more or less completely in the mesenteric glands. They may die off in the glands or may entail the formation of tubercles. In adult animals the defensive reaction on the part of the glands is much less pronounced, and the bacilli are generally swept along, with the leucocytes which have incorporated them, into the lymph circulation and through the pulmonary artery to the lung. Pulmonary tuberculosis in the adult, supposedly primary, is more often of intestinal origin. In experimental work, infection by way of the digestive tract is the most effectual and the one that conforms best to the normal conditions of natural infection."

A recent communication from the Copenhagen Institute of Pathologic Anatomy[9] continues Fibiger's research on primary tuberculosis in the digestive tract. " He found tuberculous lesions in 116 out of 213 cadavers, and in 13 they were primary in the digestive tract or connected glands. Among the 79 children, 25 were tuberculous, and in four of these the lesions were primary in the digestive tract. Ipsen has continued this research, the total material now comprising 600 autopsies. Tuberculous lesions were found in 311, and they were evidently primary in the digestive tract in 5.17% of the total cadavers, and in 10% of the tuberculous, that is, in 31 cadavers. Out of the 187 children's cadavers, 58 proved to be tuberculous, and the lesions were primary in the digestive tract in 10, that is, in 17%. These figures are manifestly too low, as they do not include those in which the tubercle bacilli passed through the intestinal walls without leaving any traces. The circumstances indicated infection from cow's milk in some of the cases, and from association with consumptives in others."

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* Read before the Harvard Odontological Society, at Young's Hotel, Sept. 20, 1906.

Dr. Frederic M. Briggs, of Tufts Medical School, has, for a number of years, called attention to the fact that in pulmonary tuberculosis, lymph glands of the neck are rarely involved, and evidence that they had ever been in a condition of acute inflammation is usually absent.

In a somewhat extended study of adenitis of the neck at the Boston Dispensary, extending over a period of seven years, I have found extremely few cases where the source of infection could not be demonstrated, and the failure in a few cases was due, I think, to incomplete examination. In all cases, where the gland had not reached the stage of disintegration, cure was obtained by treating the primary cause.

"The glandular apparatus of the head and neck presents a considerable degree of development. It is, moreover, in the cervical region that the first glands appear in the course of phylogenic development," the outpost sentries, as it were, to give timely warning of the enemy of disease.

The general arrangement of these glands may be classified, according to Poirier,[10] as follows:

"They form at first a kind of circle, a true glandular collar, placed at the junction of head and neck. From this runs on either side a vertical chain which stretches underneath the sternomastoid, and accompanies the vessels and nerves as far as the junction of the neck with the thorax. This principal chain is flanked by several secondary chains of less importance."

This glandular circle is divisible into a number of groups named from the region occupied, and drain certain well-marked areas. When a general enlargement of all lymphatic glands is noticed, it will be found to be a manifestation of a general constitutional infection.

"There are six general groups of cervical glands:

"*First. The suboccipital group* draining the occipital portion of the hairy scalp, and their efferent vessels run downward and terminate in the highest glands of the substernomastoid group.

"*Second. The mastoid group* draining the temporal region of the hairy scalp, the inner side of the ear, and from the posterior surface of the external auditory meatus."

The suboccipital and mastoid groups become inflamed from the irritation of pediculi, hair-dye, dirt and pus-processes, like boils and pimples.

Third. The parotid and subparotid groups. These are composed of deep and superficial glands. "They drain the skin of the temporal and frontal regions, from the eyelids and root of the nose." (Küttner.[11]) "They may also receive vessels from the mucous membrane of the nasal fossæ and from the posterior part of the alveolar border of the superior maxilla."

"Subparotid glands are placed between the parotid and the pharynx, and are the usual starting point of latero-pharyngeal abscess. They drain the nasal fossæ, the naso-pharynx, and the Eustachian tube." These are enlarged when there is pus-producing process in any part of the territory which they drain, especially in cases of tonsillar infection.

Fourth. "*The submaxillary group* receive the lymphatics of the nose, the cheek, upper lip, the external part of the lower lip, almost the whole of the gums and the anterior third of the lateral border of the tongue. Their efferent vessels terminate in the glands of the deep cervical chain."

Fifth. "*Suprahyoid median glands or submental.* These include the glands contained in the triangle bounded by the anterior bellies of the two digastric muscles and the hyoid bone. They receive their lymphatics from the integuments of the chin, from the central portion of the skin of the lower lip, from the corresponding portion of the alveolar border of the inferior maxillæ, from the floor of the mouth, and possibly from the tip of the tongue."

Enlargement of the submaxillary and submental groups calls for consultation with the dentist. In these cases it is necessary, in making a diagnosis, to differentiate from inflammation or obstruction of the lingual and submaxillary glands and from hyoid cysts. As a rule, however, the infection atrium is evident and definite, and may be caused by a decayed tooth, irritating deposits of tartar, loose teeth (especially in adults), and ill-fitting caps or plates. More than 95% of all anterior glandular enlargements are explained by one of these conditions.

Sixth. "*The retropharyngeal* glands are placed behind the pharynx and laterally. They receive, apparently, almost all the collectors coming from the mucous membranes of the nasal fossæ, and the cavities in connection with them, and from the nasopharynx."

The enlargement of these glands points to infection through adenoids, to frontal or sphenoidal sinusitis, to ulcerations of the nose, as well as to catarrh accompanied by a muco-purulent secretion.

From the glandular collar just described, a chain of glands detaches itself on either side and descends with the deep vessels as far as the root of the neck, and are known as the deep cervical chains.

This is the most important glandular region of the system. It comprises fifteen to thirty glands on either side, and in certain pathological cases there appears to be a considerable increase in number. They receive most of the efferent vessels of the glandular collar, together with many direct vessels, and in these are seen the final state of infection when the interrupting glands and nodules have been overcome by the inflammatory process.

Admitted then that these lymphatics drain well-defined areas, the first step in the treatment of an enlarged glandular station on the lymphatic route is to follow the line back to its source.

Syphilitic manifestations will be accompanied by general lymphatic enlargement. Cancer, occurring at an age when lymphatic glandular activity is at an ebb, will present, not so much an inflammation of the gland substance as a replacement of the gland by a definite new growth.

Without presenting the history of individual cases, I may state in a general way my conclusions, which are based upon a study of upwards of 300 cases:

1. Enlarged glands of the neck are not, primarily, tubercular, and bear the slightest relation, if any, to general or pulmonary tuberculosis.
2. They are due to a mixed infection of pus-producing bacilli.
3. They will quickly resolve if the source of the infection is removed before the glandular tissue becomes disorganized.
4. If disorganization takes place, the gland should be poulticed until the gland is practically liquefied. It should then be opened by a stab-puncture, emptied and drained by a " Briggs canula."[12]
5. Cases seen late, with a large mass of partially calcified and partially disorganized glands present, call for a thorough and extensive dissection.

The treatment by tonics, cod liver oil, iron, arsenic and the like, belongs to the age of " idiopathic inflammations," " slow fevers," and the " evil effects of the planets."

Treatment, other than local, should be food, fresh air and proper clothing.

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PRIMARY LIGATION OF THE VAS DEFERENS AND ITS ACCOMPANYING VESSELS BEFORE MANIPULATING THE TESTICLE DURING ITS REMOVAL FOR TUBERCULOSIS OR MALIGNANT GROWTH.

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A RECENT and somewhat exhaustive study of tuberculosis of the genito-urinary organs, particularly in reference to the pathology of the disease and its experimental production, has convinced me that, during the excision of a testicle, the squeezing and manipulation necessitated during the removal of the organ is more than likely to force some tubercle bacilli along the healthy vas and into the abdominal portion or drive the organisms into the blood or lymph vessels and thus produce a general infection.

In order to eliminate this danger an incision should be first made high in the groin and the cord (vas and vessels) ligated. After this the incision can be carried lower, if necessary, into the scrotum, and the organ freed in the usual way. The vessels should then be cut at the point of primary ligation and the cord should be freed still higher up and gently pulled as far as practicable out of the external ring before it is ligated and cut. The lymph channels accompany the blood vessels and will be tied along with them at the primary ligature.

A similar danger exists in the usual operation for removal of malignant growths, and I would suggest that the same procedure be carried out so far as the primary ligation is concerned.

In carrying out this modification one certainly can prevent the occurrence of any infection. The danger may be slight, but in view of the fact that this precautionary measure in no way complicates the operation or renders it more difficult, it should be carried out in every case.

STUDIES IN PSYCHOPATHOLOGY.

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(Continued from No. 12, p. 361.)

VII. CASE OF RECURRENT EPILEPTIFORM ATTACKS.

FROM the investigation of a case presenting a rich and highly-trained mental life we may, as a contrast, pass to one whose mental life and disaggregated subconsciousness are rather poor and meager.

M. L. is nineteen years of age, of a rather limited intelligence. He works as a shopboy amidst surroundings of poverty and leads a hard life, full of privations. He is undersized and underfed, and looks as if he has never had enough to eat. Born in New York, of parents belonging to the lowest social strata, he was treated with severity and even brutality. The patient has never been to any elementary school and could neither read nor write. His mathematical knowledge did not extend beyond hundreds; he could hardly accomplish a simple addition and subtraction and had no idea of the multiplication table. The names of the President and of a few Tammany politicians constitute all his knowledge of the history of the United States, the meaning of which is beyond his comprehension.

Family history is negative, as his parents died when the patient was very young, and he was left without kith and kin, so that no data could possibly be obtained.

Physical examination is negative. Field of vision is normal. There are no sensory disturbances. The process of perception is normal, and so also is recognition. Memory for past and present events is good. His power of reasoning is quite limited and the whole of his mental life is undeveloped, embryonic. His sleep is sound; dreams little, but wets his bed since his childhood. Digestion is excellent; he can digest anything in the way of eatable. He is of an easy-going, even gay disposition, a New York " street Arab."

The patient complains of " shaking spells." The attack sets on with tremor of all the extremities and then spreads to the whole body. The tremor becomes general and the patient is seized by a convulsion of shivering and tremblings and chattering of teeth. Sometimes he falls down, shivering, trembling and shaking all over. The seizure seems to be epileptiform, only it lasts sometimes for more than three hours. The attack may come any time during the day, but is more frequent at night. During the attack the patient does not lose consciousness, he knows everything that is taking place around him, can feel everything pretty well; he only chatters violently with his teeth, trembles and shivers all over and is helpless to do anything. There is also a feeling of chilliness, as if he is possessed by an attack of "ague." The seizure does not start with any numbness of the extremities, nor is there any anesthesia or parasthesia during the whole course of the attack. With the exception of the shivers and chills the patient claims he feels "all right."

Patient was put into a deep hypnoidal condition very close to the hypnotic state. There was some catalepsy of a very transient character, but no suggestibility of the hypnotic type. Now in this hypnoidal state it came to light that the patient "many years ago" was forced to sleep in a dark, damp cellar where it was bitter cold. The few nights passed in that cold cellar he had to leave his bed, and shaking and trembling and shivering and chattering with cold he had to go to urinate, fearing to wet his bed, in expectation of a severe punishment. The patient, while in that intermediary, subwaking, hypnoidal state, was told to think of that dark, damp, cold cellar. Suddenly the attack set on, — the patient began to shake and shiver and tremble all over, chattering with his teeth, as if suffering from great cold. The attack was thus reproduced in the hypnoidal state. "This is the way I have them," he said. During this attack no numbness, no sensory disturbances, were present. The patient was quieted, and after a little while the attack of shivering and cold disappeared. Now the room in which the patient was put into the hypnoidal state was very dark, and accidentally the remark was dropped that the room was too dark to see anything; immediately the attack reappeared in all its violence. It was found later that it was sufficient to mention the words "dark, damp and cold" to bring on an attack even in the fully waking state. We could thus reproduce the attacks at will, — those magic words had the power to release the pent-up subconscious forces and throw the patient into convulsions of shakings and shiverings, with feeling of cold and chattering of the teeth.

Thus the apparent epileptiform seizures, the insistent psychomotor states of seemingly unaccountable origin, were traced to dissociated systems of a disaggregated subconsciousness.

VIII. RECURRENT STATES WITH TROPHIC DISTURBANCES AND EPILEPTIC ATTACKS.

Mrs. L., sixty years of age; married. Family history is good. Parents died of old age; brother died of apoplexy. Patient had one daughter who died some fifteen years ago.

The patient complains of sensitiveness of the stomach, of kidney trouble and of nervousness. During the attacks of nervousness she is restless, sleepless and is undergoing "death agonies." The suffering is so intense that, in spite of her religious scruples, the thought of suicide forces itself on her mind. She has an insistent fear of getting insane; the fear is so intense that she paces the floor night after night, like an animal in a cage. She is unable to eat and hardly drinks anything when the attack is on. If she attempts to eat, she rejects it immediately, as the stomach seems to be then extremely sensitive, so that she cannot retain anything. "While my brain is perfectly clear to take up any intellectual pursuit, if I attempt, for instance, to purchase anything in the way of apparel, my brain gets on fire and I walk the floor in a frenzy of excitement, not having the least idea as to the choice I should make. I am not able to sleep or eat, and what little food I eat does not digest. Although so disabled in judgment as to myself, my friends often come to me to aid them in their decisions in matters of apparel, because they value my judgment, which is perfectly cool, when I am deciding for them." Though the oculists do not find anything special the matter with her eyes, she complains of weakness and occasionally of complete darkness settling on the eyes, at first in the form of a mist and then, becoming denser, ends in total darkness, a form of functional amblyopia. She also complains of severe headaches, — the head feels at first dizzy, sore, painful, throbbing, and very hot, as if it were on fire. Patient also complains of trophic disturbances, of a dry skin, of swellings and rashes on the body. For years she has been suffering from those trophic disturbances which she terms "erysipelas." When the attack sets on, the patient becomes greatly depressed, — the hands and the feet are cold; the bowels are constipated; there is irritation of the bladder; tinnitus aurium is present; there is a feeling of pressure in the head with dreams of a distressing character; then the headache grows in severity and becomes throbbing. After a time trophic disturbances appear, such as rashes in the form of "pimples and swellings," with edema of the legs, of hands and eyes. Now and then the patient has seizures of coughing spells and has insistent fears of some impending lung troubles. Occasionally she has epileptiform attacks with slight tonic and clonic convulsions, accompanied with unconsciousness or semi-consciousness. Some years ago she used to have "attacks of helplessness" and even of complete paralysis. She also suffered from tingling sensations in the extremities, "numbness all over," becoming fully anesthetic over the whole surface of the body.

An examination of the patient shows her to be greatly emaciated; poorly nourished; skin is dry and crackling. There are a few macules and papules, a few wheals and the remnants of dried-up vesicles and blebs. Near the margin of the mucous membranes some fissures and excoriations are found in various stages of healing and crusting. The tongue is coated, furred and there is a heavy smell from the mouth. The lungs are in good condition. The heart-beat is irregular, aortic second sound is slightly accentuated. Patellar reflexes are greatly exaggerated. The eyes do not accommodate well, — the left eye is somewhat defective in convergence during the act of accommodation. Pupillary reaction is rather sluggish. The tympanic membrane of the left ear is slightly thickened and hearing is defective on the left side. She also suffers occasionally from noises, "buzzing in the head" and dizziness. Motor activities and sensitiveness to all forms of sensory stimulations are in good condition. No edema could be found, except a slight puffy condition below the eyes. Several examinations of the urine showed the latter free from any trace of albumin. Patient can see well, but she gets easily fatigued when reading or sewing, — a darkness then comes over her and everything seems to be enveloped in a mist which is getting heavier and thicker. Field of vision is fully normal. No reversion of the color field is present. Memory for present and past events is excellent. Attention is very good, but she cannot keep up her concentration of attention for any length of time; she then begins to complain of fatigues and sometimes gets an attack of severe headache, with all the symptoms associated with it. Intellectual powers are well preserved and, in fact, are quite vigorous. Patient is well educated, writes well and has a deep interest in philosophical, especially in theological, problems. Hypnagogic and hypnapagogic hallucinations are well developed; field of vision on closure of the eyes is very rich in colors. Sleep is greatly disturbed, she suffers from insomnia, and when she falls asleep she has quite elaborate dreams, often of a distressing character. Once she had a visual hallucination of her daughter, and another time she had the peculiar hallucination of the reality of the presence of her daughter, who did not appear to the "bodily senses," but to the "inner mental vision," a form of pseudo-hallucination. She has a yearning after something, she does not know what, and is in constant fear of losing her mind. The fear of insanity is occasionally so intense that she suffers agony. Her general mood or affective state is one of great depression and misery.

The hypnoidal states revealed the following data: When at the age of five, the patient happened to see an insane woman in a maniacal condition. The image of that woman never left the patient's thought, conscious or subconscious, so deeply was her mind impressed with that event. She was greatly frightened and the thought kept recurring: "Do little girls get insane?" Since that time she became possessed by the fear of insanity. In her ardent imagination she actually felt that she was getting insane.

When asked about her dreams, the patient was unable to tell anything, but in one of the deeper hypnoidal states she remembered that she used to dream about that insane woman standing near her bed, bending over her and even touching her. Many times she was in such an agony of fear that she wanted to cry out, but was unable to do it. When she woke up, she cried in great terror. When the patient gave birth to her child, she was afraid the child would get insane; many a time she even had the feeling as if the child was insane. Thus the fear of insanity is traced to an experience of early childhood, an experience which, having become subconscious, is manifesting itself persistently in the patient's consciousness.

The patient's parents were very religious, and the child was brought up not only in the fear of God, but also in the fear of hell and the devil. Being sensitive and imaginative, the devils of the gospel were to her stern realities. She had a firm belief in "diabolical possessions" and "unclean spirits"; the legend of Jesus exorcising in the country of the Gadarenes unclean spirits, whose name is Legion, was to her a tangible reality. She was brought up on brimstone and pitch, with everlasting fires of the "bottomless pit" for sinners and unbelievers. In the hypnoidal state she clearly remembered the preacher who used every Sunday to give her the horrors by his picturesque descriptions of the tortures of the "bottomless pit." She was in anguish over the unsolved question: "Do little sinner-girls go to hell?" This fear of hell made the little girl feel depressed and miserable and had poisoned many a cheerful moment of her life.

What a lasting effect and what a melancholy gloom this fear of ghosts and of unclean spirits of the bottomless pit produced on this young life may be judged from the following facts: When the patient was about eleven years old, a young girl, a friend of hers, having noticed the patient's fear of ghosts, played on her one of those silly, practical jokes, the effects of which on sensitive natures are often disastrous and lasting. The girl disguised herself as a ghost in a white sheet and appeared to the patient who was just on the point of falling asleep. The child shrieked in terror and fainted. Since that time the patient suffered from nightmares and was mortally afraid to sleep alone; she passed many a night in a state of excitement, frenzied with fear of apparitions and ghosts.

When about the age of seventeen, she apparently freed herself from the belief in ghosts and unclean powers, but the fear acquired in her childhood did not lapse, it persisted subconsciously and manifested itself in the form of uncontrollable fears. Unless specially treated, fears acquired in childhood last through life.[5] She was afraid to remain alone in a room especially in the evening. Thus, once when she had to go upstairs alone to pack her trunks, a gauzy garment called forth the experience of her ghost-fright, — she had the illusion of seeing a ghost and she fell fainting to the floor.

When about the age of eighteen, she began to teach mathematics in a school and worked very hard. Being ambitious to advance, she studied assiduously after she was through with her school duties; she worked hard and worried much over her prospects of advancement. It was from that period that her headaches date as well as her first attack of nervous prostration. When she got married, the duties of housewife and of social relations made life still more strenuous. Motherhood served only to increase the nervous strain, all the more so as her child was constantly ailing up to the age of five. After years of devotion and of motherly self-sacrifice she succeeded in bringing up her daughter, who became the very soul of the patient's being. What a fearful blow it must have been to this frail woman when her only daughter, in the full bloom of her young womanhood, at the age of twenty, began to ail, to sink in health, and was declared an incurable case of tuberculosis. Day and night did the unfortunate mother watch in anguish over her only child. She actually lived through the distressing cough, the gastric and trophic disturbances, the loss of appetite, the nausea, the inability to retain food, the weakness, the helplessness and the complete prostration of her daughter who did her best to cheer her poor suffering mother who, with an aching heart, eyes blinded with tears and with a mind distracted by anguish and anxiety, felt her head in a whirl; choking sensations, darkness, fainting spells began to seize on her, spells of darkness against which she struggled in throes of convulsions. In one of the hypnoidal states I happened to press on the throat, accidentally producing choking sensations, when the patient began to feel faint and, losing consciousness, became convulsed with epileptiform tonic and clonic contractions. The state of unconsciousness, of semiconsciousness or of " Dämmerzustände," lasted about twenty-five seconds, the patient coming back with a deep sigh and with no memory of what had taken place during the attack. I was thus enabled to reproduce at will the original attacks.

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[5] "Every ugly thing," says Mosso, the great Italian physiologist, "told to the child, every shock, every fright given him, will remain like minute splinters in the flesh, to torture him all his life long.

"An old soldier whom I asked what his greatest fears had been, answered me thus: 'I have only had one, but it pursues me still. I am nearly seventy years old, I have looked death in the face I do not know how many times; I have never lost heart in any danger, but when I pass a little old church in the shades of the forest, or a deserted chapel in the mountains, I always remember a neglected oratory in my native village, and I shiver and look around, as though seeking the corpse of a murdered man which I once saw carried into it when a child, and with which an old servant wanted to shut me up to make me good.' Here, too, subconscious experiences have persisted throughout lifetime."

The patient told me that with all her "faith in the Lord" she rebelled against " Providence." " I have blasphemed the Lord, — He is worse than a loving mother." The daughter passed away in the arms of the mother, who from that time on had been living through the disease of her child with all the symptoms of trophic disturbances and death agony, but much more complicated and intensified by the agony which she herself had then undergone. Dress, receptions, visits became painful to her, because of the daughter with whom all those enjoyments have been associated. The whole life experience of that period of anguish has left but a vague trace, has apparently lapsed from the patient's consciousness, but has really persisted in her subconsciousness and has been forcing itself with all the more vehemence on the patient's personal self. All those symptoms, however, entirely disappeared during the treatment. Thus the whole symptom-complex of the disease could by means of the hypnoidal states be traced to dissociated, submerged subconscious experiences recurring in the form of attacks of insistent mental states or of recurrent psychomotor states.

IX. PERSISTENT FEARS WITH ATTACKS OF HEMICRANIA.

Mr. D., a young man of twenty-five. Born in Poland. Family history could not be obtained, but as far as it could be ascertained the parents as well as the brothers and sisters are all well.

An examination of the patient reveals nothing abnormal as far as physical and mental functions are concerned. Patellar reflex is but slightly exaggerated. There are no sensory, no motor disturbances. Hypnagogic and hypnapagogic hallucinations are rich and varied. The emotional side is fairly well endowed. He is a level-headed fellow, but unusually timid.

The patient complains of severe headaches, often setting on gradually and preceded by a feeling of indisposition, depression, vertigo and distress. During the attack there is hyperesthesia to touch, pressure, temperature and to visual and auditory stimulations; the body feels cold and ataxic, as if paralyzed. The patient shivers and looks very pale. The periphery of the extremities is bloodless, cold; the face is very pale, the lips are cyanotic, while the head throbs violently. The cold experienced is so intense that the patient has to wrap himself in many blankets, as if suffering from an onset of malaria.

Fears have a strong possession of the patient's mind. He seems to suffer from claustrophobia, — he is afraid to remain in a closed place at daytime and especially at night, but he is not afraid to be on the street, even when it is very dark. When he has to remain alone at night, he is in agony of fear and cannot go to sleep. Every passer-by is regarded as a robber or murderer, and he quakes at the least noise. When walking in the house in the dark, he has the feeling as if some one is after him, and occasionally even experiences the hallucination of some one tugging at his coat. He is mortally afraid of the dead and shuns a funeral, not on account of superstition; in fact, he is ashamed of it, but on account of some insistent fear that takes possession of him in spite of all his efforts to control it. He has a feeling of weakness almost of prostration, not unmingled with some unaccountable fear, when he has to visit a cemetery, even if it be in broad daylight and in the company of many people. Any strange object he suddenly comes across in the dark will give the patient the shivers. This fear is very intense, when he happens to notice in the dark a moving object. Besides the claustrophobia, the patient has also a fear of dogs, a kind of kynophobia, so to say, if we may be permitted to use such a term. The fear is irresistible and is almost as involuntary as a reflex.

The patient's sleep is restless and disturbed by many distressing dreams and nightmares. He dreams of fires, of great conflagrations in which he is in great danger and cannot find his way out of buildings enveloped in sheets of flame and dense smoke. He dreams of being captured by robbers and is in danger of being killed or even of being skinned alive. Occasionally he dreams of his parents captured and assaulted by brutal, terrible looking men. Thus in one of his recent dreams he saw his father seized by soldiers, imprisoned and condemned to be hanged. The patient often moans in his sleep, cries and wakes up with tears streaming down his cheeks. The anguish experienced in his dreams is intense. So vivid is the dream-consciousness that the patient cannot get over his anxiety for hours and he is sometimes affected by it throughout the next day. Occasionally the patient dreams that wild animals, such as wild dogs, attack him and he wakes up in great fright. So intense is the dream hallucination that the fear persists long after he is awake, and he feels as if he has actually gone through a real experience.

An investigation by means of the hypnoidal or intermediate states brought forth out of the patient's subconscious life the following experiences: When a child of three, the patient lived with his family in a small village near a large forest infested with wolves. In one of the intermediary states a faint memory, rather to say a vision, struggled up, — a vision of wolves and dogs. Some one cried out: " Run, wolves are coming! " Crazed with fear, he ran into the hut and fell fainting to the floor. It turned out to be dogs instead of a pack of wolves. It is that fright in early childhood which has persisted in the subconscious and, having become associated with subsequent experiences of attacks of dogs, has found expression in the patient's consciousness as an almost instinctive fear of dogs.

When about the age of four, the patient went through another experience which left an indelible impression on his subconsciousness. One winter night a fire broke out in the house and the little boy had to be taken out, shivering with fright and cold, into the open air of a frosty night. When about the age of eight, the patient, then living in a small provincial town, experienced another similar shock. A great conflagration broke out in the street where the patient lived. The fire, carried by the wind, spread rapidly, so that his house was soon enveloped in flames and smoke. The patient was so terrified that he was almost in a trance. He seized a saltcellar, rescuing it from the flames, and fled. For six hours his parents lost all trace of him. He himself could not remember where he had been. It was afterwards found that he kept on running through the streets, crying: "Fire, fire!" He was found by a relative of his who took away from him the saltcellar and quieted his agitation. Subconsciously the patient kept on living through those very experiences in his dreams. The experiences lapsed from his consciousness, but persisted in his subconsciousness and found expression in his dream hallucinations, which appeared as real experiences to his subconsciousness. The content of the dreams is varied, largely depending on the sensory content of the total moment-consciousness, but it refers to the same dissociated systems of the patient's child-life.

But why was the patient in such abject terror of dead people? This found its answer in the experiences and training of his early life and especially in a peculiar incident experienced by the patient in his childhood. When a very young child, the patient heard all kinds of ghost stories and tales of wandering lost souls and of spirits of dead people hovering about the churchyard and burial grounds; he heard grewsome stories of ghouls and of evil spirits inhabiting deserted places, dwelling in the graves of sinners and the wicked. He listened to stories of haunted houses and of apparitions stalking about in the dark, coming to visit the living in some lonely deserted places, especially in the stillness of the night. His social and religious environment has been saturated with the belief in the supernatural, as it is usually the case among the Catholic populations of Eastern Europe. We should not wonder, then, that an impressionable child brought up under such conditions would stand in mortal fear of the supernatural and especially of the dead. Now when he was about the age of nine, his mother noticed some prominences on his right chest; she was afraid that they might develop into something serious, requiring, possibly, hospital treatment and even a surgical operation, which the popular prejudice does not favor. It was then suggested to the mother that the hand of a dead person possessed the virtue of blighting life and of arresting all growth, and would therefore prove a "powerful medicine's charm" for undesirable growths. It happened that an old woman in the neighborhood died; the little boy was taken into the room where the dead body was lying and the cold hand of the corpse was put on the child's naked chest. The little fellow fainted away in great terror. One can well imagine what a shock such an experience was to the child. It is from that time that his frightful dreams date. The fear of dead people became subconsciously fixed and manifested itself as an insistent fear of the dead and, in fact, of anything connected with the dead and the world of spirits.

It is to the same period that the patient refers the onset of his headaches. Another experience, however, entered here and helped to form the complex manifestations of the dreams and the headaches. The patient had hardly recovered from the shock of the "dead hand," when he had to pass through a still more severe experience. A party of drunken soldiers stationed in the little town invaded his house and beat his father unmercifully, almost crippling him; they knocked down his mother, killed a little brother of his, and he himself, in the very depth of a winter night, dressed in a little shirt and coat, made his escape to a deserted barn, where he passed the whole night. He was nearly frozen when he was found in the morning, crouching in a corner of the barn and shivering with fear and cold. From that time on the headaches manifested themselves in full severity, with deathlike paleness and intense cold of the body.

Such incidents have been found in other similar cases, coming from that part of the country where social life is still primitive and is unfortunately disturbed by unfavorable political conditions. However this may be, one thing stands out here clear and distinct, and that is the fact that the various recurrent psychomotor states, otherwise unaccountable, could be referred, by means of the hypnoidal states, to dissociated systems having their origin in a disaggregated subconsciousness.

(To be continued.)

Clinical Department.

CANCER OF THE VULVA.

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Primary cancer of the vulva is rare. It assumes the form of epithelioma. Death usually ensues in one to three years. It usually occurs between the ages of forty-five and sixty. The usual course of the disease is up to the vaginal inlet, but not beyond it. Then it usually jumps across to the opposite side; if not checked, the growth always extends up into the groin. The usual experience is that the disease recurs promptly after operation; the glands in the groin soon become involved, and the patient dies as a consequence of the recurrence.

Dr. J. B. Hall reports operating on one case four times. The fifth time he removed the recurrence by an extensive operation, and it had not returned in two years.

Dr. Chas. P. Noble reports having seen 4 cases,

— 3 were operated on. Two died from recurrence of the disease, and one was well one year after operation.

April 12, 1899, Mrs. J. A. P., sixty-nine years of age, consulted me for a growth on the left labium, which, she said, had been there for seven or eight years, —but only during the past year had it given her any trouble. During the past year there had been more or less pain through the labium, and of late it had kept her awake nights. She said the growth had not increased in size, and there had been no discharge.

She had never been pregnant; menopause took place at forty-nine years of age. General health excellent.

An examination disclosed a diseased condition involving the whole labium majorum and clitoris, extending somewhat into the vagina, and up around the urethra on the left side.

April 15, 1899, the left labium majorum, clitoris and three fourths of an inch of the urethra were removed. Pathologist's diagnosis: Epidermoid carcinoma of labium and vulva, with metastases outside of excised portion.

The wound healed by first intention. There was no trouble during micturition.

May 2, 1906 (seven years after first operation), she again consulted me. For five years she had had absolutely no trouble, but during the past two years the "same disease" had begun on the right labium. There was soreness and pain and some discharge with a bad odor. It was found that the whole of the right labium was involved and there were enlarged glands in the right groin.

May 7, 1906, the right labium was excised and glands in the right groin removed.

Pathologist's diagnosis: Epithelioma of the labium, and inguinal lymph nodes. The wounds healed without any trouble.

Jan. 25, 1907, the patient wrote that all had gone well with her since the operation, and that she had suffered no inconvenience whatever.

◆

New Instrument.

A METHOD OF TREATING THE APPENDICULAR STUMP.

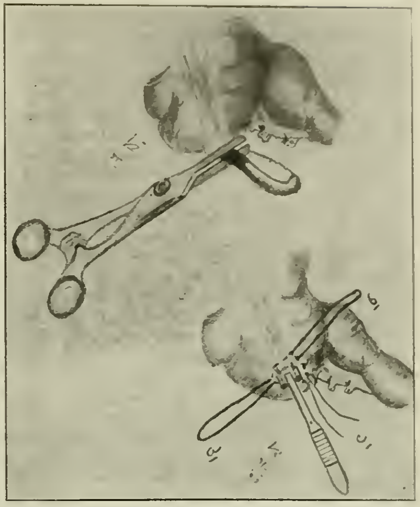
BY C. F. DENNY, M.D., ST. PAUL, MINN.

The method herewith given, while not original in its entirety by Dr. S. S. Hesselgrave, of St. Paul, Minn., whom I first saw use it, and have since used it myself, has so much to recommend it that no apology is offered for its publication. It commends itself in three ways: (1) Simplicity. (2) Rapidity. (3) Asepticity.

In all interval operations it can be used. In cases where the appendix forms a pus tube or sac it is useful. It is not recommended in abscess cases.

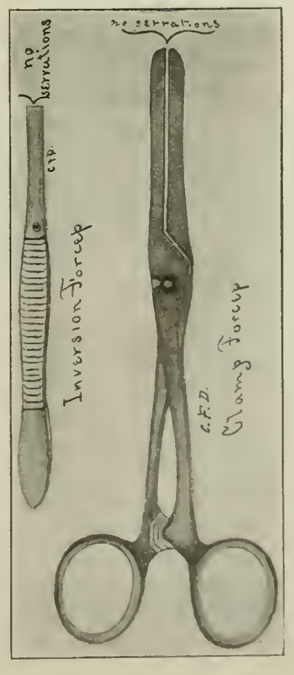
TECHNIQUE.

The appendix having been freed, and meso-appendix ligated, a purse-string suture is applied in the cecum in such a way that two loops are left, which with the two ends at the starting point divide the circle about the appendix into three



Upper cut. Thermocautery at shaded line, burnt even to blade of forceps, amputating appendix.

Lower cut. Purse string ligature; loops and free ends. Inversion forceps applied.



equal spaces. The clamp shown in cut, which has no serrations, is now applied to the appendix about one-half inch from the cecum. A moistened gauze compress is placed between the clamp and the cecum. A thermocautery is now applied to the appendix on the distal side of clamp severing it close to the blades. The gauze is now removed, and clamp unlocked. A thin parchment-like stump is left, bloodless, and crushed so that it completely seals the opening. The cut shows these loops (*a*), (*b*) and the free ends at (*c*). The clamp is shown *in situ*. The stump is now grasped with the inversion forceps shown in the cut. These are nonserrated allowing their easy withdrawal. The assistant holds the two loops one in each hand while the operator holds the two ends in one hand, and invaginates with the other. Gentle traction on loops, and ends, steadies the bowel, and creates a triangular space into which the stump is easily invaginated. The ends are gently pulled until the loops disappear, the invagination forceps are removed and the ends of suture are tied. The clamp is a Furgeson forcep with the serrations removed. Suture material has been No. I Ramsey Co. formalized pyoktanin catgut. The rest of the technique consists in a sero-serous suture covering the purse string, and the denuded surface of the meso-appendix.

Medical Progress.

PROGRESS IN SURGERY.

BY J. O. MUMFORD, M.D., BOSTON.

THE OPSONINS.

The past six months have seen a marked increase of interest in the use of opsonins for combating surgical infections, and a growing appreciation of the value of this remedy. One hears constantly inquiries as to the results being obtained, while there is still confusion in many minds regarding the nature of the agent, the technique of its production and the clinical indications for its use. It is well, therefore, to recall and summarize the facts briefly.

Opsonins are elements present in the normal blood, and their assigned function is to prepare invading bacteria for ingestion or destruction by the phagocytes in the blood. The word *opsonins* is somewhat fantastic when used in this connection, and is derived from the Greek *ὀψωνέω*, through the Latin *obsono*, I cater or purvey.

The proposition involved in the use of opsonins is by no means novel. In all time surgeons and laymen alike have recognized the fact that different individuals have different powers of resisting infections, and that a particular individual's resisting powers vary at different times. Formerly men, in their ignorance, said of a susceptible person that there was something wrong with his blood, and they called for a "blood tonic." Later, with the furor and confidence which resulted from the introduction of antiseptics, the condition of the individual patient came to be little regarded by the unthinking. Now, the trend of surgical opinion, instructed by our better understanding of surgical physiology, is turning us back to a more careful study of "condition" in individual cases. We see that certain patients are poor subjects for surgical operations because their resistance is lowered for specific infections; we have learned that wounds suppurate, or heal slowly, for the same reason; we are able in the case of certain obscure internal infections to arrive at the correct diagnosis by a study of particular elements in the blood, so that we are enabled in many instances to remedy these peculiar faults of "condition"; and it is especially interesting to observe, in connection with the subject of this article, that individual patients are found to have their resistance lowered for special invading organisms, so that special measures must be taken in each case to fortify that patient's resisting powers. We cannot roughly immunize with an unlimited amount of living serum, as did Jenner against smallpox, but we must use carefully graded amounts of our remedy so as to meet individual conditions. Coupled with the thought of thus fortifying the blood to combat infections, we are recognizing, as clinicians and dealers in surgical therapeutics, that the quantity as well as the quality of the blood delivered at the point of invasion has an important bearing on the progress of an infection. A congestion of the affected part favors the inflammation which is resisting the invading organisms. This explains the value of poultices, blisters and other counterirritants, and is the basic idea in the Bier treatment by passive hyperemia. Briefly stated, we encourage an abundant blood and lymph flow through the infected area, and we aim to supply to that blood a supplementary element which shall enable it more vigorously to rout the bacteria. If necessary in the opinion of the surgeon, we supplement these measures by appropriate operations.

The use of opsonins deals with the second portion of this rather complex proposition. Most readers doubtless are familiar with the names and achievements of Wright and Douglas,[1] the English investigators who developed further and brought to a practical working basis our knowledge of blood serum as it affects phagocytosis by leucocytes.[2] This work was published in 1903. Previously Metchnikoff and his followers had taught that the leucocyte is the only element in the blood, actively concerned in the phagocytosis of micro-organisms. Wright and Douglas demonstrated that leucocytes alone do not suffice for this germ-exterminating process, — the mere presence of leucocytes does not check a bacterial invasion; some other element in the serum is needed, that the leucocytes may be stimulated to beneficent activity. This other element is never entirely lacking, but it must be present in normal amount if the phagocytosis is to be effective. "The substance so essential to phagocytosis does not act upon the leucocytes (as a stimulant to the leucocytes for example), but it combines with the micro-organisms and prepares them for phagocytosis."[3] This substance, or these substances, are the opsonins. It appears that they are carried in the lymph to the field invaded by micro-organisms, and that there they unite chemically with them, by which uniting process they render the organisms a ready prey for the leucocytes, so that a patient's power of resisting bacterial invasion is measured by the amount of opsonins present in any particular serum rather than by the unstimulated vital activity of the leucocytes.

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[1] Proc. Roy. Soc., vol. lxxii, p. 357.

[2] H. B. Potter, N. E. Ditman and E. B. Bradley: The Opsonic Index in Medicine, Jour. Am. Med. Asso., Nov. 24, 1906.

These premises having been established, the practical surgeon asks how opsonins in sufficient amount may be supplied to a patient who lacks them. What are they, and how artificially may they be secured and employed? Wright and other investigators have shown that the desired substances, the opsonins, are produced by bacteria themselves; that in the case of every bacterial invasion a certain proportion of opsonins is produced, but that by a simple but ingenious laboratory technique, additional opsonins may be manufactured, so to speak, and may be employed as *vaccines* to supplement the deficiency in the patient's circulation.

Observe this important fact, that each form of infection requires for elimination its own appropriate opsonins. One may find in a given case a normal quantity of the opsonins required to combat a tuberculosis, but these are of no value if the patient be suffering from a staphylococcus invasion, with a diminished supply of the appropriate staphylococcus opsonins:

Briefly, then: in order to secure the proper opsonins, one takes cultures from the wound or discharges, sterilizes them at a temperature of 60° C., and from this product secures a vaccine to be used in the particular case.[4]

What are the indications for the use of opsonins, and how shall one measure the amount and frequency of the dosage? This is an interesting question, and brings us to a brief statement of Wright's much misunderstood and much quoted *opsonic index*.

The *opsonic index* of a given patient is the relation between the opsonins present in his serum and the opsonins present in the serum of a normal individual. For example, if we wish to measure the quantity of opsonins in the blood of a person suffering from boils, which are almost always due to the staphylococcus pyogenes, we need:

1. A few drops of blood from the patient, and a few drops from a normal individual. (From each sample of blood we can obtain easily serum enough.)
2. An emulsion of staphylococci in salt solution. (This may be prepared from a culture taken from the patient's own boils, or we may have it in stock.)
3. Leucocytes washed free from their plasma.

We mix equal quantities of the *patient's* serum with the staphylococci and the leucocytes, and place the mixture sealed in an incubator at 37° C. We then make another mixture of the blood from the *normal* individual with staphylococci and leucocytes, and place this mixture in an incubator. Both mixtures are incubated for fifteen minutes. The remainder of the investigation consists in examining under the microscope stained smears of these two mixtures, and observing the comparative action of the leucocytes upon the staphylococci in the two cases. If the mixture from the suspected patient shows leucocytes ingesting the same number of staphylococci as are ingested by the leucocytes in the normal mixture, we conclude that the patient's opsonic index is normal; but if the ingestion of leucocytes varies in the two specimens, we compare by figures the numbers ingested by the two sets of leucocytes and thus construct the patient's opsonic index. For example, taking the specimen of *patient's* serum: suppose we observe in it 40 leucocytes taking up 80 staphylococci,— we conclude justly that each leucocyte on the average takes up 2 micro-organisms. That is to say the "phagocytic index" of these leucocytes is 2. Observing now the *normal* serum mixture we see that 40 of its leucocytes take up 160 micro-organisms; from which we conclude the normal phagocytic index to be 4. From these two figures we can write the ratio, phagocytic index of the first specimen is to phagocytic index of the second specimen as 2:4; or, as 0.5:1.0.

For the sake of convenience the standard normal opsonic index has been set at 1.0; therefore the opsonic index of the patient under investigation is 0.5; and observe that this is his opsonic index for staphylococcus. So far as we know up to this point his opsonic index for other infecting organisms may be 1.0 or higher.

The value of the opsonic index has been questioned, and indeed there has seemed to be good reason for such questioning, because there is abundant opportunity for error through imperfect technique; and we find, moreover, that the opsonic index of a given individual may vary from day to day. It is essential, therefore, in the first place that competent technicians do the work. I have seen in the laboratory half a dozen students find a wide variation of indices in identical specimens of blood.

The question, therefore, arises at once, Of what value is the estimation of the opsonic index in a given case? We have come to doubt its constant value, but a considerable experience, at least in this country, has brought us to believe that a series of observations on successive days will lead to a final judgment. For instance, in a case under the observation of the writer, an open wound was found to be doing well, the cultures showing numerous staphylococci pure, the opsonic index being 1.4 — slightly above the normal. The next day the index was 1.2; and so it fell until it reached 0.75. Coincident with this fall in the opsonic index the patient's general condition gave cause for anxiety; the temperature crept up, the appetite failed and the wound began to look ugly. An injection of appropriate vaccines was then given, when, within twenty-four hours the temperature began steadily to fall and the other symptoms to improve. This case ran a long course with occasional increase in the severity of the symptoms. On each occasion the troublesome symptoms were found to coincide with a fall in the opsonic index; with every fall injections were given, and with each injection of vaccines the index rose from the neighborhood of 0.9 to the neighborhood of 1.4, with a corresponding improvement in the patient's condition.

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[3] G. W. Ross: The Opsonic Theory, Brit. Med. Jour., July 7, 1906.

[4] For an illuminating description of this technique, see article by John C. Hollister, in *Surgery, Gynecology and Obstetrics*, Dec., 1906.

We have thus outlined in general terms the manner of employing our opsonic remedy, but before this point was reached by the original investigators who had established their premises regarding the nature of opsonins, it was necessary for them to determine how to prepare the remedy. This was the all important therapeutic problem, and it was solved simply. Having determined by culture the nature of the organism or organisms which are causing the infection, one prepares a vaccine by inoculating a proper medium with the culture and obtaining the growth. The colonies are washed off in normal salt solution and sterilized at 60° C. for two hours. One has now a vaccine of unknown strength. This is standardized by diluting it with salt solution until each cubic centimeter contains a known number of organisms. For instance, the writer is using at present a streptococcus vaccine each cubic centimeter of which contains one hundred million organisms.

How is one to know the size of the dose to be employed in any given case? That is a question which is not yet altogether determined, but a considerable experience has taught us the safe average dose. We begin with that and work up to larger doses, guided by the reaction of the patient. The prepared vaccines may often be kept for many weeks or months even, as they are put up commonly in a weak solution of lysol. We are now encroaching, however, upon the field of technique, and the wide range of interesting special topics which this subject suggests to every reader.

A question which is frequently asked, and it is a practical question, is, How can the average busy practitioner employ these measures? Frankly, one cannot employ them unless he is in touch with a laboratory and laboratory workers especially equipped. The technique is laborious and time-consuming. Two or three cases may easily occupy all the time of one investigator, although it is becoming apparent that certain common infections, like boils and carbuncles, may be treated with stock vaccines kept for that purpose. Such rule-of-thumb work may answer in routine dispensary practice, but would be futile largely when one came to deal with more serious cases. Be it said, however, that average inoculations, even though given in error, are found to be harmless when given for localized infections.

There is the further question of the value of opsonins as a diagnostic agent. This is a matter which is still *sub judice*, though, as Ross states, certain general principles have emerged from the study of many cases:

1. Normal individuals not the subjects of any bacterial infection present a constant opsonic power to the various pathogenic bacteria. (This statement is still subject to question, probably on account of errors in technique.)
2. Individuals, the subjects of a strictly localized infection, due to any micro-organism, show a lowered opsonic index to that particular organism as compared with a normal person.
3. Individuals, the subject of systemic infection, show a high, or *fluctuating from high to low*, opsonic power.

This last condition of fluctuation is probably due to the "negative phase" and "positive phase" of which I have not yet spoken. The "negative phase" follows a vaccination for twenty-four hours. The index falls at first, and then ("positive phase") rises up to or above the normal. Ross quotes a case in illustration of the opsonic method as used in the diagnosis of an obscure case.

The patient entered the hospital with a provisional diagnosis of general tuberculosis. His tuberculo-opsonic index was found to be 1.0 (a figure slightly above the normal for tuberculosis, — an exception to the rule that 1.0 is normal). The physician suspecting the possibility of a gonococcal infection estimated the opsonic index to the gonococcus, with the result that it was found to be twice normal, a condition of the blood which is almost certainly associated with a gonococcal infection only, and indicates that the patient's own infecting organisms were over-supplying him with opsonins. Further investigation confirmed the diagnosis of gonorrhea with a general infection.

Surgeons are not especially concerned, however, with infections of that type which fall within the province of the internist, though we are coming to feel that certain properly surgical affections are yielding hopeful results when subjected to opsonic therapy: *furunculosis, pustular acne, chronic empyemata* (after drainage), *cystitis*, and especially the various *wound infections* due to staphylococci and colon bacilli. In this community we are by no means convinced of the value of opsonic treatment in cases of tuberculous adenitis, although Wright makes positive claims in such cases. It was hoped at one time that various obscure and obstinate joint infections would show positive results from opsonic therapeutic and diagnostic measures, but although a few encouraging cases have been encountered we cannot feel as yet that positive results have been obtained. This is true not only of tuberculous joint lesions but of joint lesions due to other organisms, and the probable reason is that we have not yet been able to isolate and study some of the organisms which we assume to be the causative agents in many obscure cases of arthritis.

The reader will see, therefore, that surgical progress in the use of opsonins is not yet in a positive position, — surgical progress in this community at least. One may describe our attitude towards the question as generally hopeful but still somewhat puzzled. There is no doubt that some cases, notably staphylococcus and colon cases, have been greatly improved or cured, but we feel that the whole subject is embryonic as yet, and that a deal of work remains to be done before we can record the opsonins invariably and confidently among the important agents at our command.

Book Reviews.

The Practitioner's Medical Dictionary. By George M. Gould, A.M., M.D. Limp leather. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Dr. Gould's preface contains this rather serious indictment: "Not a little of the modern publishing business consists in selling at an enormous profit a vast amount of book-paper of poor quality, large extent and useless thickness, upon which is sprawled a correspondingly exiguous text." This book is on the plan of the "Students' Dictionary" by the same author. It contains practically the same illustrations, has about one fourth more and slightly larger pages, and is published at double the price of that book.

We think that of new terms introduced, some, such as: "Clinotechny, the art of making and preparing beds for the sick," or "Cordite, a smokeless gunpowder," or the large number of names of organic compounds consisting of twenty-eight or more letters will not prove of much value to practitioners.

It is unfortunate that the pronunciation of the new word "opsonin" is wrongly given, and that the term "opsonic index" is omitted.

The illustrations are mostly the well-known cuts from Sappey. They are sometimes credited to that author, at times not credited at all, or wrongly credited to "Holden" or "Gould and Pyle." It would seem that, if it is useful to state the origin of these familiar pictures, it should be stated accurately.

The New Hygiene. Three Lectures on the Prevention of Infectious Diseases. By Elie Metchnikoff. With preface by E. Ray Lankester. Chicago: W. T. Keener & Co. 1906.

This small volume of 104 pages contains Metchnikoff's three Harben lectures on "The Hygiene of the Tissues," "The Hygiene of the Alimentary Canal" and "Hygienic Measures Against Syphilis." The lectures are eminently practical and are expressed in such a way as to be easily intelligible to the laity. Metchnikoff is always an entertaining writer, and these lectures certainly will not detract from his reputation in this respect. An appreciative preface is written by E. Ray Lankester who regards Metchnikoff with justice as one of the greatest living men of science and "above all an inquirer, filled with the consuming ardor of the *Curiosi Naturæ*."

THE BOSTON

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THE RELIEF OF CONSUMPTIVES.

In accordance with a resolve passed by the Massachusetts Legislature last year, the governor appointed a commission of five to investigate measures for the relief of consumptives and sites for state hospitals for consumptives. Dr. Henry P. Walcott, chairman of the Massachusetts State Board of Health, was appointed chairman of the commission, and although but a few months have elapsed since the investigation was begun, the report, dated January, 1907, is in our hands.

In order to determine the number of persons suffering from pulmonary tuberculosis in advanced stage in the state, circular letters were sent to every physician in the state, asking for information regarding the occurrence of tuberculosis in their individual practices. This method of securing information did not prove entirely satisfactory, however, and a further attempt was made to arrive at the information desired by selecting the counties of Bristol and Berkshire, differing somewhat in climatic conditions, and sending a reliable person to each physician in each county for the purpose of acquiring first-hand information. From this as a basis it has been possible to compile with a fair degree of accuracy statistics which will prove of positive value. These show that the total number of cases of pulmonary tuberculosis, as reported to the commission, was 7,779. Of these 6,376 were private patients of physicians who answered the circular letter sent out by the commission and 1,403 were either in private or public institutions located in the state. The number of incipient cases reported was 2,792, the number of advanced 2,339, and the number of far advanced 2,648.

It was also one of the functions of the commission to investigate appropriate sites for hospitals, to determine the cost and to report upon the general advisability of placing upon the state the responsibility for the care and treatment of tuberculous persons. Small difficulty was found regarding available sites for hospitals. Many such locations may easily be found in every county and in the neighborhood of nearly every town in the state. Regarding the probable cost of suitable buildings to be used as hospitals it is estimated that 100 patients may be accommodated in a frame construction building, properly equipped, at a cost of $50,000. If such a building were rendered thoroughly fireproof through the use of brick and concrete, $25,000 would be added to the cost. From various data obtained the commission concludes that the cost of maintenance in such public hospitals would be not less than $7 nor more than $9 a week for each patient. As to the responsibility for the care of persons suffering from tuberculosis, the commission, after due deliberation, reached the conclusion that some systematic plan for aiding persons suffering from the disease and for eradicating the disease, must be established by the Commonwealth. In order to obtain an expression of public opinion as to the most feasible methods a largely attended hearing was held at the State House in Boston, Dec. 10. Many ideas were expressed, differing somewhat in detail, but agreeing in the essential point, that the time has come for thorough and concerted action.

The commission finally advises that certain amendments be made to the statute relating to public health; that the law relating to expectoration in public places be enlarged somewhat in its scope and that the state erect three hospitals for the treatment of tuberculosis to be devoted chiefly to the treatment of advanced cases, one to be located in the Connecticut Valley, another in the northeastern part and the third in the southeastern part of the state, each to accommodate over one hundred and fifty patients. It is finally advised that proper legislation be enacted in order to provide for state medical inspectors. This succinct and practical report is signed by Henry P. Walcott M.D., chairman; Charles H. Adams, Jeffrey R. Brackett, Charles H. Porter, Adam S. MacKnight, M.D., and Charles S. Millett, M.D., secretary.

REWARDS FOR SCIENTIFIC ACHIEVEMENTS.

Each year the distribution of the Nobel prizes brings again to our attention the obligations which a country owes to its men of science. It is a somewhat anomalous condition of affairs that from Sweden should be dispensed rewards for scientific work to the whole civilized world, while individual governments sit supinely by and make no concerted effort toward the reward of their scientific men. We have in this country many instances of admirable work done which has saved much to the country in the way of commerce and ensured financial prosperity, but unfortunately we have few examples of national recognition of such work. Money is voted and appropriated for diverse objects of charity and many other less worthy causes, and at the same time it is almost impossible, without repeated solicitation, to secure a modest memorial for a man like Dr. Walter Reed. The situation is an interesting one and one which certainly permits discussion.

The whole matter has been admirably presented in a recent number of the *British Medical Journal* by an anonymous writer under the title, "A British Nobel Prize." This writer has evidently considered the subject from various standpoints and offers a very cogent argument in favor of the more generous recognition of the labors of scientific men. Attention is called to the somewhat extraordinary fact that England, for example, while neglecting to take action itself, is quite willing to recommend an Englishman for the reward which Sweden has to offer in the form of a Nobel prize. The obligation of the state to give pecuniary reward for scientific work was recognized when Parliament voted £30,000 to Jenner, but this attitude has certainly not been maintained since. The discoverer in science, although his results may be of far greater significance than that of those more prominently in the public eye, remains the least rewarded among those serving the state. It is useless to assert that the great worker in science does not and should not look for payment and that his merit is its own reward. This is not the issue. The real question is not what the worker in science expects, but what he deserves, and, further, not what a nation owes to him, but what it owes to itself. "If," the writer goes on to say, "the individual has duties to perform towards the public, has the public none towards the individual? On what grounds does it recompense the inventor, the politician, the statesmen and the soldier, and yet withhold it from those who are perhaps greater than these? Is there not something indescribably sordid in the history of the world's treatment of its benefactors — in life, penury; in death, a cheap apotheosis? To me it appears, and I say so with all due hesitation, because personal opinion so often proves to be fallacious, that the matter is one which concerns, not so much the welfare of the individual as the honor and integrity of the whole nation. If the individual shirks payment for work done for him, he is looked upon as dishonorable; by what right, then, does a nation seize the fruit of a man's life-work for nothing?"

The proposition is finally made that a British fund should be accumulated to pay medical workers who have actually achieved results of positive value to medical science without bringing pecuniary recompense to themselves. The suggestion is certainly a rational one and in these days of enormous benefactions to the cause of education in general, it would be fitting and proper that individuals or possibly governments should set aside a sufficient sum of money to accomplish for individual countries what the Nobel prize is accomplishing for the world at large. If such a movement were earnestly taken up, we have no doubt that the desired result could be accomplished of providing for men without injury to their self-esteem, who have really added to the advancement of scientific knowledge.

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PROCREATION OF DEFECTIVES.

We have before us a bill which has been recommended for passage by a Committee on Benevolent and Scientific Institutions of the Indiana Legislature. This bill involves a matter of so great importance and one about which there has been so much discussion that we quote it in full:

> A Bill for an act entitled An Act to prevent procreation of confirmed criminals, idiots, imbeciles and rapists, providing that superintendents and boards of managers of institutions where such persons are confined shall have the authority and are empowered to appoint a committee of experts, consisting of two physicians, to examine into the mental condition of such inmates.
>
> *Whereas*, heredity plays a most important part in the transmission of crime, idiocy and imbecility;
>
> *Therefore, be it enacted by the General Assembly of the state of Indiana*, That on and after the passage of this act it shall be compulsory for each and every institution in the state intrusted with the care of confirmed criminals, idiots, rapists and imbeciles, to appoint upon its staff, in addition to the regular institutional physician, two skilled surgeons of recognized ability, whose duty it shall be, in conjunction with the chief physician of the institution, to examine the mental and physical condition of such inmates as are recommended by the institutional physician and board of managers.
>
> If, in the judgment of this committee of experts and the board of managers, procreation is inadvisable and there is no probability of improvement of the mental condition of the inmate, it shall be lawful for the surgeons to perform such operation for the prevention of procreation as shall be decided safest and most effective. But this operation shall not be performed except in cases that have been pronounced non-improvable. Provided that in no case shall the consultation fee be more than three dollars to each expert, to be paid out of the funds appropriated for the maintenance of such institutions.

We have in the past so frequently commented on this subject that a detailed consideration of it need not here be given. Our attitude has been, and we see no reason to change it, that in the present state of our knowledge such legislation is uncalled for, that it might lead to serious abuses, and that it would probably do little toward accomplishing the results for which it is designed. Few physicians would take upon themselves the responsibility which this bill demands, and it is hardly to be questioned that the public welfare would suffer more from the enforcement of such a law than from the present state of affairs. Nature is the best safeguard for the public in these matters.

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MEDICAL NOTES.

The Last Harvey Lecture. — The last of the series in the Harvey lectureship course in New York was recently given by Prof. Friedrich Müller, of Munich, on the topic, "Some Neuroses of the Heart." The lecture was largely attended and was comprehensive in its scope.

Work of the Michigan University Pasteur Institute. — An excellent report is given of the work of the Pasteur Institute connected with the medical department of the University of Michigan. This institute was established in 1903, and during the four intervening years 246 patients have been treated, with no fatality. Of these cases about two thirds were from Michigan, and these, being residents of the state, were treated free of charge, except for the expense of board and room.

Death of Mrs. Osler. — Mrs. Osler, who will be particularly known in this country as the mother of Dr. William Osler, died recently in Toronto in her one hundred and first year. It will be remembered that in December of last year her one hundredth birthday anniversary was celebrated by the presence of her sons and many of her descendants. She was then in excellent health and, in fact, remained so up to within a few days of her death. Mrs. Osler's husband, the Rev. Featherstone G. Osler, died in 1895 at the age of ninety. Both she and her husband were devoted to good works during their long lives.

The Library of the College of Physicians of Philadelphia. — According to the annual report of the library committee of the College of Physicians of Philadelphia for 1906, the total number of volumes in the library is 73,507. In addition to these volumes there are nearly 100,000 unbound reports, transactions, dissertations and pamphlets of other sorts. More than 2,000 new volumes have been received during the year and a large number of pamphlets and medical periodicals. The growth of medical libraries, of which this is an example, is one of the most hopeful indications of medical progress in this country.

Hospital Abuse in Paris. — A correspondent writes as follows in the *Lancet* of the abuse of medical charity in Paris: "The directors of the Assistance Publique have just issued a poster in the following terms: 'Advice at hospitals and dispensaries is exclusively intended for the really poor and necessitous. Every one applying at a hospital must be prepared to prove his identity, to give his domicile in Paris and to show that he is really poor by a certificate from a *bureau de bienfaisance*, as well as a receipt for his rent. Except in the matter of urgent cases all the medical staff and the other employees of the administration of the Assistance are forbidden to give treatment to any one whose calling or the amount paid by him in rent appears to make it probable that he is not a fitting subject for hospital treatment. The Assistance will make inquiry into the truth of the statements of patients, and if they are found to be abusing the charity the expenses incurred by their treatment will be recoverable by law.'"

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, March 20, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 45, scarlatina 59, typhoid fever 4, measles 16, tuberculosis 68, smallpox 0.

The death-rate of the reported deaths for the week ending March 20, 1907, was 21.31.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 23, 1907, was 231, against 268 the corresponding week of last year, showing a decrease of 37 deaths and making the death-rate for the week 20.00. Of this number 109 were males and 122 were females; 223 were white and 8 colored; 138 were born in the United States, 91 in foreign countries and 2 unknown; 49 were of American parentage, 158 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 41 cases and 2 deaths; scarlatina, 61 cases and 0 deaths; typhoid fever, 4 cases and 0 deaths; measles, 13 cases and 0 deaths; tuberculosis, 58 cases and 27 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 40, whooping cough 2, heart disease 26, bronchitis 6 and marasmus 3. There were 23 deaths from violent causes. The number of children who died under one year was 40; the number under five years 54. The number of persons who died over sixty years of age was 56. The deaths in public institutions were 87.

There were 10 cases and 5 deaths reported from cerebrospinal meningitis during the week.

Smallpox at Lawrence, Mass. — It is announced that upwards of ten cases of small-pox have been discovered in the city of Lawrence and the State Board of Health has been called upon. Some of these cases are unfortunately of several weeks' duration.

The Spread of Rabies a Grave Danger to the Community. — At a meeting of the Boston Society for Medical Improvement, held on March 18, 1907, the following resolution was adopted:

"Be it resolved that the Boston Society for Medical Improvement recognizes a grave danger to the community in the spread of rabies, and is anxious that the influence of this society, and of its members individually, be earnestly directed toward the stamping out of this disease. To this end we commend the efforts now being made by Dr. Peters and his associates for the more watchful care of dogs in this state, believing that the course of action will result immediately in the better control of this disease and eventually in ridding the state of this unnecessary menace to human life."

Report of the Massachusetts Board of Registration in Medicine. — The thirteenth annual report of the Board of Registration in Medicine shows that 315 applied for registration during the year ending Dec. 31, 1906. Of this number 257 were graduates from medical schools authorized to confer degrees in medicine and 58 were non-graduates. Eighty-three per cent of graduates registered on the first examination and 27% of non-graduates. Tufts College heads the institutions in point of numbers examined, closely followed by the Harvard Medical School. In connection with the general matter of registration the following strong statement is made in the report:

> "If Massachusetts covets the reputation of aiming to uphold high standards in the medical school and in the medical profession, the laws of the Commonwealth should enable the Registration Board to conduct its examinations on lines followed by nearly all the other states. In one important particular the Massachusetts law is defective. It is obvious that examining boards should work in conjunction and in harmony with medical schools, in order to secure the best attainable results in their efforts to determine the fitness of applicants to serve the public professionally. But this is not the condition of affairs with us. Persons who have not pursued even a partial course of study in a reputable medical school, who have had no clinical instruction, who know nothing of laboratory demonstrations and who have had no practical experience in the hospital, are permitted to take the board examination in this state. Such applicants, simply from a superficial knowledge derived from medical compends, or by memorizing handbooks of answers to questions asked or likely to be asked by the examining boards, may succeed in passing an appropriate examination before any State Board, and yet be grossly unfit to assume the responsibilities of a physician. Herein lies danger to life and health. In forty states and territories this danger has been recognized, and guarded against by legislative enactments. Why should Massachusetts, in company with Arkansas, Mississippi and Tennessee, still loiter in the background of progress in the medical world?"

It is a matter of extreme regret that the present state legislature has seen fit wholly to ignore the suggestions and recommendations made in this paragraph.

NEW YORK.

Pasteurization Plant at Princeton. — With a view towards the prevention of epidemics, such as have occurred at various colleges recently, Nathan Strauss, of New York, has presented a pasteurization plant to Princeton University.

Diphtheria among House Staff at Bellevue Hospital. — During the past two weeks no less than three cases of diphtheria have developed among the house staff of Bellevue Hospital. Dr. Marcel W. Sherwood, the last one to take the disease, and who was removed to the Minturn Hospital on March 22, apparently contracted it from an ambulance patient who was taken to the hospital by him under a mistaken diagnosis.

Obituaries.

ERNST VON BERGMANN, M.D.

Prof. Ernst von Bergmann, who may with propriety be regarded as Germany's greatest surgeon, died March 25 at Wiesbaden at the age of seventy-one. It is reported that he died as a result of an operation for appendicitis and that he had previously been operated upon.

Professor von Bergmann was born in 1836, at Riga, of a Livonian family. He prosecuted his medical studies at Dorpat, Vienna and Berlin. After receiving his medical degree, he began his career as a teacher at the University of Würzburg. He was active in military affairs during the Austro-Prussian War, during which he served as the director of a military hospital, and later, in 1870, during the Franco-Prussian War, he had charge of hospitals at Carlsruhe and Mannheim. In 1876 he accepted the position of professor of surgery at the University of Dorpat and again entered upon a military life by joining the army of the Danube as a consulting surgeon. In 1878 he became chief surgeon of the Würzburg Hospital; in 1882 he went to Vienna as professor of surgery as the successor of Professor Langenbeck. From Vienna he finally went to Berlin, where for many years and until his death he filled the chair of surgery. Professor von Bergmann throughout his long and exceptionally active life was a prolific contributor to surgical literature, which bore evidence to the wide range of his interest in surgical matters. Not only was his own writing of great significance, but the interest and enthusiasm which he inspired in his students has led to the dedication of a number of valuable contributions in surgery to him. It will be remembered that on the celebration of his seventieth birthday, held last December, he was the recipient of as much recognition as, perhaps, has ever come to a German medical professor. On this occasion four important scientific works were published commemorative of the occasion. The eighty-fifth volume of the *Deutsche Zeitschrift für Chirurgie* for the year 1906 was dedicated to him as a *Festschrift*. It contained 812 octavo pages from the pens of thirty-five contributors. These articles were profusely and admirably illustrated, and preceding the titlepage of the volume was an excellent portrait of the distinguished surgeon. Other volumes were presented to him in commemoration of his varied activities on the same occasion, among which were Prof. Franz König's "Tuberculosis of the Human Joints and Skull" and Dr. Walter von Oettingen's "Studies in Military Sanitation during the Russo-Japanese War."

Apart from his activities as a teacher and practitioner of surgery in Berlin, von Bergmann was widely called upon by many of the reigning houses of Europe. He had attended the Czar and a member of the family of the Sultan of Turkey. His titles were many, among others Privy Councillor of the Russian Empire. He was an honorary member of the American Surgical Association and had twice declined calls to a professorship of surgery in St. Petersburg. He will, no doubt, by many be particularly remembered for his connection with the Mackenzie incident at the time of the illness of the Emperor Frederick. The strained relation which existed between von Bergmann and the English laryngologist is fresh in the minds of those who have followed medical matters in the last twenty years. Reasons of state, no doubt, had as much to do with the peculiar situation as reasons of science.

Although dying in the fulness of years, Professor von Bergmann's loss will be felt wherever surgery is taught and practised.

GEORGE G. WHEELOCK, M.D.

Dr. George G. Wheelock, for many years a prominent practising physician in New York, died on March 22, at the age of sixty-eight years. He was born in Boston and took his bachelor's degree at Harvard in 1860 and his master's degree in 1864. In the latter year he also took the degree of Doctor of Medicine at the College of Physicians and Surgeons, New York. He entered the government medical military service, and was in charge for a year of the General Hospital at Savannah, Ga. Later he served as interne at the New York Hospital; after which he studied for some time in Europe. On his return he began to practise in New York, and also became a teacher at the College of Physicians and Surgeons, acting as assistant demonstrator of anatomy and lecturer on physical diagnosis. Later he was elected one of the trustees of the college and registrar of its board, and for many years he served as treasurer of the Alumni Association. Among the hospital appointments he held were those of visiting physician to St. Luke's Hospital and to the Nursery and Child's Hospital. In 1891 he was made a manager of the Vanderbilt Clinic and the Sloane Maternity Hospital, and at the time of his death he was president of the last-named institution. In this year, while still in his prime, Dr. Wheelock retired from practice, and devoted himself exclusively to public work. His sound judgment, as well as his culture and refinement, rendered his services eagerly sought for, and his death will be severely felt among the various benevolent, scientific and social interests which were the objects of his attention.

JOHN H. BRINTON, M.D., LL.D.

Dr. John H. Brinton died in Philadelphia March 18 of cerebral hemorrhage. He was born in Philadelphia in 1832 and was a graduate of the Jefferson Medical School. He spent some time abroad in the study of his profession and then returned to its practice in Philadelphia. When the Civil War broke out he was appointed a brigade surgeon of volunteers and assigned to the Department of the West, where he served with General Grant in the Tennessee and Cumberland River campaign in 1862. He was subsequently ordered to Washington and given an appointment in the office of the Surgeon-General. At this time he did considerable work on the "Medical and Surgical History of the War of the Rebellion," and also in organizing the Army Medical Museum. Later he acted as medical director in the Missouri campaign under General Rosecrans, and was subsequently superintendent and director of hospitals in Tennessee and medical director of the army of the Cumberland. On returning to Philadelphia after the war he received the appointment of lecturer on operative surgery in the Jefferson Medical School, was appointed surgeon to the Jefferson Hospital, and subsequently professor of the practice of surgery and clinical surgery in this school. About a year ago Dr. Brinton was made professor emeritus of surgery.

Current Literature.

The Journal of the American Medical Association.
March 9, 1907.

1. *Sherman, H. M. *Technique of Laminectomy.*
2. Holt, L. E. *Medical Tendencies and Medical Ideals.*
3. *Grinker, J. *Multiple Neuritis Simulating Progressive Muscular Atrophy.*
4. Williams, C. H. *Some Legal Phases of the "Patent-Medicine" Question.*
5. *Heiser, V. G. *Cholera in the Philippines in 1905.*
6. *Fairbanks, A. W. *Cerebral Syphilis in Childhood.* (Continued.)
7. Todd, F. C. *The Ripening Operation for Immature Senile Cataract.*

1. Sherman reports a case in which he attempted to make an osteoplastic laminectomy of the cervical vertebræ in the removal of a growth producing pressure symptoms in that region. The difficulties of the operation are detailed, and he concludes from the results that a simple laminectomy in this case would have been the better operation, saving time and tissue. The operation which would be the better one in the kyphotic dorsal region is not so satisfactory in the lordotic cervical spine, where the preservation of the laminæ is not essential for the saving of the function of the extensor muscles. The impossibility of an accurate anatomic suture of the muscles that are divided in making the flap and the possibility of seriously interfering with their innervation, are matters also to be considered. The surgeons with whom he corresponded were all in favor of the simple laminectomy in this region. He still thinks, however, that an osteoplastic operation may have its place in case of vertebral tuberculosis in which the angular deformity is practically a right angle, in which the saving of the bone would prevent undue compression of the cord, otherwise unprotected, by the muscles.

3. Three cases, one of alcoholic polyneuritis, one of lead paralysis and one of progressive muscular atrophy, illustrating the futility of attempting to differentiate these conditions by objective symptoms alone, without study of the etiology and course of the disease, are reported by Grinker, who holds, nevertheless, to the advisability of clinically separating the cornual from the peripheral lower neuron disorders. His conclusions are given as follows: (1) Clinically, multiple neuritis may simulate a spinal atrophy as regards distribution of paralysis, absence of sensory symptoms and protracted course. (2) Progressive spinal muscular atrophy may resemble neuritis in the presence of pain, remission of symptoms and subacute course. (3) Etiology and course are still the best guides in the clinical diagnosis of the various muscle atrophies.

5. Heiser gives a history of the outbreak of cholera which started rather unaccountably in Manila in August, 1905, and seemed to spread without any direct connection between the cases. In the city of Manila there was a total of 255 cases and 200 deaths, foreigners (Europeans and Japanese) suffering most in proportion to their numbers, and the Chinese least (reported cases). The smallest mortality was among the Americans. Outside of Manila there were nearly 1,500 cases, with 1,150 deaths. The disease spread more slowly than in the preceding epidemic; the methods used to combat it were isolation of cases in the city cholera hospital and disinfection of the houses and effects of patients, protection of the water supply, prohibition of the sale of foodstuffs likely to be infected and protection of the remainder by fly screens, and education of the public as to prophylactic precautions. No attempt was made to quarantine contacts or to enforce a land quarantine. The conclusions reached from this experience were: (1) It is impossible, with the evidence, to say whether the disease was reintroduced from without or had been in a latent state since the former epidemic. (2) While there is no evidence that the disease spreads otherwise than does enteric fever, yet the rapidity with which it makes its appearance in widely separated localities puts it in a different class so far as combating it successfully is concerned. (3) Maritime quarantine can practically insure against its spread by sea. (4) Effective land quarantine is practically impossible, and the time and money it costs are better given to educational methods. (5) Public education is much more effective in suppressing the disease than measures requiring force. (6) To make future serious outbreaks of cholera in the Philippines impossible it will be necessary to replace the present unsanitary water supplies with artesian wells or other sources not infectible by surface drainage, or to correct the infection by filtering or other means when it does occur.

6. Fairbanks discusses the subject of cerebral syphilis in childhood without discrimination between true hereditary and early acquired cases, since clinically these cannot be distinguished. Hereditary syphilis, he states, is deserving of much more attention than it has received. The three principal pathologic conditions of cerebral syphilis are in the order of their apparent frequency of occurrence: Meningitis (principally leptomeningitis); arteritis (usually endarteritis); and syphilomata (usually of meningeal origin). All other changes are probaby secondary to these. The characteristic symptoms of syphilitic lesions are their multiformity, their usually subacute onset with occasional acute and severe individual symptoms. These latter often disappear unexpectedly and recur in the same or other localities, eventually becoming permanent. Lastly there is the striking amenability of some of the symptoms to specific treatment, while others are most resistant. The symptoms are manifold, but some one type usually predominates at some period of the disorder. Psychic changes occur early, but are often unobserved and lacking in the history. Other symptoms, motor and sensory, make their appearance before the psychic changes are fully recognized, such as vertigo, frequent speech aberrations, visual disturbances, and attacks of syncope. Later pupillary phenomena, epileptiform or hemiplegic attacks, appear. Early recognition of the condition is very important and evidence of hereditary syphilis in the family history should be diligently sought. The prognosis depends largely on the pathologic type, the determination of which is not always easy. The purely gummatous symptoms are usually amenable to specific treatment and simple meningeal conditions are also commonly favorable, while arterial lesions are the worst. External injury often precedes the outbreak and is considered the cause. While the author does not think this commonly the case, he admits the possibility that the impaired brain may be a point of least resistance.

THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES.
MARCH, 1907.

1. *CONNER, L. A. *Acute Dilatation of the Stomach.*
2. *VAUGHAN, G. T. *The Operative Treatment of Fractures.*
3. *SIMON, C. E. *Leukemic Blood Picture in a Case of Fracture of the Ankle.*
4. *BARRINGER, B. S. *The Luys Urine Separator.*
5. MARRIOTT, W. M., and WOLF, C. G. L. *Colloidal Nitrogen in the Urine.*
6. *COWIE, D. M. *A Comparative Study of the Occult Blood Tests.*
7. CARY, C. *Varicose Aneurysm of the Aorta and Superior Vena Cava.*
8. *EDSALL, D. L., and PEMBERTON, R. *The General Toxic Reaction Following Exposure to the X-Rays.*
9. *MACCALLUM, W. G. *Hypertrophy of the Islands of Langerhans in Diabetes Mellitus.*
10. MITCHELL, J. K., and ALLEN, A. R. *Universal Itching; Urobilinuria; Malaria; Erythrocytolysis.*
11. SCHUMANN, E. A. *Fibroid Tumors of the Vulva.*
12. *BLAKE, J. A. *Treatment of Diffuse Suppurative Peritonitis.*

1. Conner has collected 102 cases of acute dilatation of the stomach, which serve as a basis for his study. He has further conducted experiments upon the cadaver in the attempt to explain the mechanism by which the condition is produced. This mechanism, however, remains obscure. Acute dilatation of the stomach is a condition whose importance is not sufficiently realized. It is undoubtedly of more frequent occurrence than is known, since most cases that have been recognized have been reported by physicians who have previously seen the condition at autopsy. Almost half of the reported cases have occurred after operations under general anesthesia. Others have occurred during or after severe illnesses or injuries. Deformities of the spine have been present in 6% of the cases. The symptoms are vomiting, pain, distention, tenderness and rapid collapse. The temperature is almost always normal or subnormal. The distention occupies mainly the epigastrium and left half of the abdomen, sometimes extending down to the pubes. At autopsy the stomach is found distended into a cylinder, sharply bent upon itself, the cardiac portion forming a descending arm and the pyloric portion forming an ascending arm. In most cases the duodenum as well as the stomach is dilated, and in many cases it is obstructed by pinching of the gut between the tense mesentery with the superior mesenteric artery and the vertebral column. Obstruction of the cardia has been suggested as a necessary factor, but its importance becomes doubtful from the results of experimental work and from the fact that in most cases vomiting and eructation occur. The treatment is first to empty the stomach by stomach tube, after which body fluid and nutrition must be supplied by rectum. Operation has almost invariably proved fatal. Of the 102 reported cases, 74 have died, but there is reason to believe that many unrecognized cases recover, and that with prompt recognition and proper treatment a more favorable showing would be made.

2. Vaughan calls attention to the fact that although fractures under non-operative treatment almost always get well, there is almost always considerable malposition of the fragments, with more or less shortening and sometimes delayed union. Operative treatment, with wiring, insures more perfect position and more certain union. Against these advantages are to be weighed the dangers of operation, — anesthesia, fat embolism, too extensive separation of the periosteum and infection. The author operated upon 102 cases with 2 deaths, — one from either fat embolism or chloroform, the other from fat embolism alone. Both of these fatal cases were fractures of the neck of the femur. The technique is illustrated by diagrams.

3. Simon reports a case in which after fracture of the ankle the blood had the characteristics of that of myelogenous leukemia. Six months later, the blood had returned to normal condition.

4. Barringer describes the Luys urine separator, the technique of its use, and the results obtained in 14 cases. The instrument, he concludes, is of great value in cases where a knowledge of the condition of the kidneys is desired and the ureters cannot be catheterized. With it the dangers of infection of ureters is excluded, and less skill is required in manipulation. It can be used in all cases except those in which the capacity of the bladder is less than 20 cc., those in which the urethra is not penetrable, and those in which the base of the bladder is distorted, as by an enlarged prostate. Except in these cases there is no leakage from one side to the other. A full

description of cases is given in support of these conclusions.

6. Cowie proposes the following modification of the guaiac test for blood, which he finds much more delicate than the tests usually employed. The essential difference from other methods lies in the addition of distilled water to the ether extract before adding the turpentine. The test may be summarized thus: to 1 gm. of stool, softened if necessary by a little water, add 4 cc. glacial acetic acid and mix; extract with 30 cc. of ether; to 1 or 2 cc. of the extract add an equal amount of distilled water and shake; add a few granules of powdered guaiac and shake; add 30 drops of old turpentine and mix. One milligram of blood per gram of stool gives a distinct blue color. Smaller amounts give a smoky grass-green color. Cowie has investigated a number of questions bearing upon the clinical value of the guaiac test with the following results: 1. Individuals eating an ordinary meat diet seldom give a reaction in the stools; if such a reaction is present there is in all probability some lesion of the alimentary tract. 2. For a positive reaction from ingestion of uncooked meat, at least 10 grs. must have been eaten. 3. For a reaction to occur in the stools after a hemorrhage from the esophagus or stomach, 0.5 grs. is necessary for a faint, and 1 gr. for a decided, reaction. 4. The reaction always occurs in the first stool after the hemorrhage, seldom in the second. 5. All the guaiac tests are more sensitive than the aloin test; the water, guaiac and turpentine test is the most delicate of all. A gradually appearing and fading color is the crucial test of a positive reaction; any color from a pale green to a deep violet that develops and fades is positive.

8. Edsall and Pemberton, from observation of toxic reactions in two cases following exposure to x-rays, maintain that it is inadvisable, except for urgent reasons, to expose to the x-rays cases already subjects of an intoxication from infectious disease or metabolic disorder, especially nephritis.

9. MacCallum has observed in certain cases of diabetes in children a peculiar condition of the pancreas in which the islands of Langerhans are apparently increased in size and number. He regards the change as an effort at compensation.

12. Blake summarizes the operative treatment of diffuse peritonitis as follows: First, remove rapidly through a small incision the origin of the inflammation; second, wash or irrigate the peritoneal cavity; third, use as little drainage as possible, not attempting to drain the general peritoneal cavity. The washing, he maintains, is desirable to remove the extravasated gastric or intestinal contents; it is to be done in less than five minutes and with care not to injure the peritoneum. For drainage he advocates leaving only a small opening, the drain only passing through the wound, just entering the abdominal cavity. Irrigation, he believes, in addition to removing septic products tends to check exudation and to facilitate peritoneal absorption. In after-treatment, he lays stress upon Fowler's position and upon rectal salines, either by frequent intermittent irrigations (every three or four hours for thirty or forty minutes) or by Murphy's constant slow method. In his series of 78 cases of diffuse peritonitis caused by appendicitis, the mortality was 19.2%. Of 13 cases of gastric perforation he lost only 3, in all of whom the perforation had existed for over thirty-six hours.

Annals of Surgery.

March, 1907.

1. *Coley, W. B. *Sarcoma of the Long Bones.*
2. Goeltz, F. A. *Successful Anterior Thoraco-Bronchotomy for a Foreign Body Impacted in the Bronchus.*
3. *Lloyd, S. *The Surgical Treatment of Empyema.*
4. Fort, R. E. *Cysts of the Omentum.*
5. Walker, G. *Tuberculosis of the Bladder.* (Continued article.)
6. *Peck, C. H. *Drainage of the Knee Joint in Severe Infections by the Transverse Incision.*
7. Ashhurst, A. P. C. *Diffuse Cavernous Angioma of the Upper Extremity.*
8. Petty, O. H. *Fracture of the Coracoid Process of the Scapula Caused by Muscular Action.*
9. Deaver, J. B. *Operations at Public Clinics of German Hospital during 1905–06.*
10. Pilcher, J. T. *Glanders in the Human Subject. Clinical Report of Two Cases.*

1. Coley, in his report of 69 cases of sarcoma of the long bones, makes the following diagnostic points: (1) The patient will almost always be between ten and fifty years of age, the majority between twenty and forty. (2) General health will be perfect; there will be no family history of tuberculosis and no evidence of previous tubercular lesions. (3) There will be a history of local injury of some sort in one third to one half of the cases, occurring usually less than six months prior to the first appearance of the tumor. (4) The first symptom will be local pain or local swelling in about an equal proportion of the cases. (5) In upwards of two thirds of the cases of sarcoma of the long bones the tumor will be found located in one end of the bone, the lower end in the femur, the upper in the tibia and humerus, probably starting in the epiphysis, but very rarely invading the joint except in the later stages of the disease. (6) In nearly all cases the rate of growth is much more rapid than in either tuberculosis or syphilitic swellings. (7) The consistence of the tumor varies greatly; in the early stages it is often very firm; later on when the tumor has reached considerable size, the consistence may be soft and semi-fluctuating. (8) The contour of the tumor is of considerable importance; in tuberculosis starting in the epiphysis and soon involving the joint, the clinical picture is that of a swelling of the whole joint more or less symmetrical, while in sarcoma, especially of the femur the swelling is apt to be unilateral or more or less irregular, and does not extend into the joint, but further up the shafts of the femur than is seen in tuberculosis. In the treatment of a disease of such extreme malignancy as sarcoma, Coley has made a distinct advance by the use of the mixed toxins of erysipelas and the bacillus prodigiosus. He has collected twelve cases of sarcoma of the long bones in which the use of these toxins has rendered amputation unnecessary and the limb has been saved. Coley's attitude is as follows: "If we could offer the patient reasonable certainty of life by amputating the limb, there might be some ground for hesitating to try the toxin treatment before amputation; but, in the face of our inability to save the life of the patient except in a very small minority of cases, I feel that we are risking little in giving the patient the benefit of a brief trial with the mixed toxins. A period of three to four weeks will almost always be sufficient to determine the probable success or failure of the treatment. If a tumor continues to increase in size during this period, then I would not prolong it to the full four weeks but would amputate at once, and then as soon as practicable continue the toxins as a prophylactic against recurrence. With this important exception, I would limit the use of the toxins to *inoperable* sarcoma, which has always been my custom in the past."

3. Lloyd reports 225 cases of empyema operated according to his method. Of these 43% were cured, 20% died, while the remaining 37% were referred to the dispensary for dressing and the great majority of them completely cured. His operation is based on the following three facts experimentally demonstrated by him: (1) That the pleura in cases of empyema is not insensitive; (2) that the lung is still capable of expansion and (3) that under only partial anesthesia the lung will expand after the adhesions have been broken up, and will fill the pleura cavity. This last "is undoubtedly due to the healthy lung forcing a larger amount of air into the main bronchus than can escape through the partially closed glottis in the effort at coughing, so that the excess passes over into the bronchus of the collapsed side. In this way the healthy lung is used as an air pump to expand the collapsed one." The operative steps are as follows: (1) Under full ether narcosis resection of about 3 inches of as many ribs as may be necessary, — usually the sixth, seventh and eighth. (2) Withdrawal of ether, incision of pleura and gradual drainage of contained fluid. (3) Separation of adhesions with finger, or if necessary with curved periosteotome, keeping in contact as much as possible with the parietal pleura. (4) After lavage of cavity with hot saline solution, the lung having expanded, suture of the skin incision about a rubber drainage tube with spool flanges. (5) Use of water-bottle spirometer in the after-treatment.

Should the lung be torn during the separation of adhesions, a renewal of the anesthetic will cause it to collapse again when the bleeding will stop or can be controlled by a Paquelin cautery.

6. Peck advises a transverse incision in cases of very severe infection of the knee-joint, laying open the whole joint by dividing both lateral and crucial ligamenst. After the infection has subsided a resection is done, thus saving a leg which would otherwise often have to be amputated.

The Lancet.

March 2, 1907.

1. Shaw, L. E. *The True Aim of Medical Education and the Evil of the Examination Fetich.*
2. Gowers, W. R. *Faints and Fainting.*
3. Rogers, L. *Kala-azar, its Differentiation and its Epidemiology.*
4. Urquhart, A. R. *Insanity with Special Reference to Prognosis.*
5. Giles, A. E. *Some Observations on Uterine Fibroids.*
6. Baumann, E. P. *Two Cases of Intestinal Obstruction in Children.*
7. Cook, A. H., and McCleary, G. F. *A Case of Pneumococcal Cerebrospinal Meningitis Simulating "Spotted Fever."*

British Medical Journal.

March 2, 1907.

1. *Hawkins, H. P. *Remarks on Idiopathic Dilatation of the Colon.*
2. *Ashe, E. O. *Notes on a Case of Enterospasm.*
3. Maylard, A. E. *Simple Colonic Adhesions a Cause of Intermittent Attacks of Abdominal Pains.*
4. Eve, F. *Some Operations for Removal of Malignant Growths from the Naso-Pharynx.*
5. Bainbridge, W. S. *Trypsin in Cancer.*
6. Harris, W. *Influenza Commencing with Sudden Unconsciousness, and Excessive Dyspnea.*
7. Southam, F. A. *Two Cases of Cystin Calculi.*
8. Rogers, L. *The Milroy Lectures on Kala-azar.*

1. Hawkins believes that neuropathic dilatation and hypertrophy of the colon is a better name for this condition owing to its probable nervous origin. Early diagnosis is very important as life in all these cases is precarious. The important points in the history are (1) Constipation from birth. (2) Constipation alternating with diarrhea. (3) Abdominal enlargement variable or constant, especially in the left iliac region, with (4) alternations in shape. (5) The absence or rarity of pain or vomiting. A purely anatomical starting point for this condition, narrowing or a kink in the colon, etc., is impossible. "Congenital inertness of the colon" is probably as near as we can come to it. The dilatation usually begins above the rectum but may affect the entire colon and in a few instances, part of the rectum. Besides dilatation, there is a marked hypertrophy of the muscular wall of the colon. The contents of the colon are usually gaseous. Seven interesting cases are given in detail with the operative procedures and post-mortem findings.

2. Enterospasm is a nervous condition of the bowels about which little is known. Ashe's case was a woman who had for a long time complained of constipation and general abdominal pain coming in attacks and growing worse. A curious fact is that light abdominal pressure caused severe pain while deep palpitation did not trouble her. Exploratory laparotomy was decided on as medical treatment did no good. Part of the small intestine, about six inches long, was found to be in a marked state of contraction with nothing to account for it; as the wound was about to be closed it resumed its normal appearance again. The wound was sewed up and nothing done. Belladonna was started, three times a day which has gradually relieved the condition and the patient seems now to be in normal health.

Münchener Medizinische Wochenschrift, No. 8.

Feb. 19, 1907.

1. *Bach, L. *The Differential Diagnosis between Relative and Absolute Fixity of the Pupils.*
2. Müller, E., and Kolaczek, H. *Further Observations on the Proteolytic Ferment of the Leucocytes and its Antiferment.*
3. Dehne, R. *The Specific Solubility of Precipitins and its Significance in the Medico-legal Examination for Blood.*
4. *Salecker, P. *Blood Examinations in Asthma.*
5. *Neumann, H., *Impurity of the First Sound of the Heart in Childhood.*
6. Wendel. *The Operative Treatment of Stenosis of the Larynx.*
7. Garhammer, K. *On Appendicitis.*
8. Durlacher, S. *The Chief Cause of Retained Placenta and its Prevention.*
9. *Kolb, K. *The Collective Investigation of the Bavarian Cancer Committee for 1905.*
10. Liebers, M. *A Case of Progressive Muscular Atrophy with Exophthalmic Goitre.*
11. Urban, K. *Remarks on the Antitoxin Treatment of Tetanus.*
12. Hammer, F. *The Radio-activity of the Iron Springs at Steben.*

1. It is important to distinguish between relative fixity of the pupils (Argyll-Robinson pupils), *i.e.*, pupils which react to accommodation, but not to light, and absolute fixity. Relative fixity occurs almost exclusively in tabes and tabo-paresis, and is therefore of great diagnostic importance. Such pupils are almost always small, while the absolutely fixed pupils are usually large. The latter, while occurring also at times in tabes and paresis, may be caused by a variety of conditions.

4. Salecker made repeated examinations of the blood in seven cases of asthma. Shortly before or during the asthmatic paroxysms, he found the eosins much decreased and the polynuclears increased, with at times a moderate leucocytosis; after the attack, the eosins increased up to as high as 12%, and the basophiles became increased at the expense of the polynuclears.

5. Neumann has frequently observed in children a condition of the heart in which the first sound is either impure, or reduplicated. It is not due to endocarditis, for the heart does not become enlarged and the pulmonic second sound is not accentuated. It is, however, quite permanent, lasting often throughout childhood. Frequently at the beginning a murmur is heard, later only a reduplicated first sound. The condition occurs most frequently after infections of the air-passages or acute infectious diseases. The cause is uncertain.

9. This report consists of statistics concerning the cases of cancer observed in Bavaria during the year 1905.

Berliner Klinische Wochenschrift, No. 3.

Jan. 21, 1907.

1. *Baumgarten, P. *The Question of Ascending Tuberculosis of the Female Genital Tract.*
2. Leuchs. J. *The Specificity of the Complement Absorption Method in Typhoid and Paratyphoid.* (Continued article.)
3. Kromayer. *The Use of Light in Dermatology.* (Continued article.)
4. Senator, M. *Subglottic Laryngoscopy.*
5. Gierke, E. *A Criticism of the Silver Spirochete.*
6. Witthauer, K. *Noraspirin, an Improved Preparation of Aspirin.*
7. *Pewsner, M. *The Secretion of Mucus in the Stomach.* (Concluded.)

1. Baumgarten has shown by previous experimental researches that tuberculosis of the genito-urinary system takes a descending course, in the direction of the secretions, excepting in those instances where the outflow is obstructed, in which case the infection may spread upwards. Two gynecologists, however, Jung and Benneke, claim to have shown experimentally that an ascending infection may often take place in the female genital tract. The present article is a refutation of their statements. Baumgarten shows that a half of their positive results can be attributed to obstruction of the secretions, and that in the rest, infection through the blood current and lymphatics cannot be excluded. Baumgarten does not deny the possibility of an ascending infection under exceptional circumstances, but states that the descending form is the rule.

7. Pewsner experimented on dogs with a Pawlow pouch in the stomach (a pouch separated completely from the rest of the stomach and opening externally) as to the effect of corrosive substances introduced into the stomach on the secretion of mucus. He found that while the secretion of mucus in the stomach owing to the local irritating effect of the solution (silver nitrate) was greatly increased, the mucus in the isolated pouch was not increased. This fact favors the view that the secretion of mucus does not take place by reflex action, for otherwise the secretion in the pouch should have been increased also. Clinically the amount of mucus secretion is very hard to estimate, for the mucus of the stomach is hard to differentiate from that derived from the throat and gullet; it is difficult to remove all the mucus by lavage, and some of it is digested by hydrochloric acid.

Remarkable Blood Findings. Türk (*Wiener klin. Wochenschr.*, Feb. 7, 1907) reports a unique case in in which there was almost complete absence of neutrophiles both in the bone marrow and in the blood. A woman of forty-five years was brought to the hospital with high fever and the usual picture of septicemia due to the staphylococcus aureus. The white count was extremely low (940 per cm.); neutrophiles could be found only after prolonged search and in scanty numbers. Over 90% of the cells were lymphocytes, the remainder were large mononuclear cells and plasma cells. Eosinophiles and mast cells were entirely lacking. At autopsy the leucocyte-forming structures of the bone-marrow did not show the expected infiltration with lymphocytes, but were scantily developed, and, like the blood, contained only a very few neutrophiles. The case is interpreted as one of lack of development of the bone marrow as regards the formation of neutrophiles, so that the system was unable to respond with the usual neutrophilic leucocytosis to the acute infection. A somewhat similar case was seen by the author in which the clinical picture of enlargement of the lymph nodes and spleen with fever and a lymphocytosis of 84% led to the erroneous diagnosis of atypical leukemia. The patient recovered shortly, but a year after the neutrophiles were still quite low, 43%.

The Occurrence of the Meningococcus and Micrococcus Catarrhalis in the Nasopharynx, and the Action of Pyocyanase on these Organisms. This is the title of an interesting communication by Jehle (*Wiener klin. Wochenschr.*, Jan. 3, 1907). He found the meningococcus frequently present in the nasopharynx of patients with meningitis and of people who had been exposed to that disease, but never in others. The micrococcus catarrhalis was found in every case and often in pure culture in an epidemic among infants which resembled grippe. Pyocyanase promptly destroyed meningococci *in vitro* and also to a less extent in the sediment from the lumbar fluid obtained from meningitic patients. The same prompt action was manifest after instillations of pyocyanase in the nasopharynx of patients with meningococcus or micrococcus catarrhalis infections; one or at most two applications were sufficient to destroy the organisms. No effect was apparent in infections of the nasopharynx with streptococci, pneumococci, Friedländer's bacillus and other organisms.

The Etiology of Infantile Tuberculosis. Calmette (*La Presse Médicale*, Dec. 26, 1906) feels that wrong interpretation of his writings has given the impression that bovine tuberculosis by means of the intestinal tract is the only source of contagion to man. In this paper he corrects that impression, but maintains that in infants especially bovine tubercle bacilli are an important factor, and that infection through the intestinal tract is the commonest mode of entrance. In his report to the Hague Conference, Sept. 6, 1906, he deplored the fact that although in adults infection from tuberculous milk was three times less frequent than infection from human sources, yet the amount of money spent by governments in inspecting and protecting cattle was far greater than the sum spent in guarding the lives of humans. The child infects itself in its family, from soiled objects on the floor, from kisses from nurse or mother, from dust. The greater number of infections come from the intestinal tract, which in early life, is infinitely more permeable than in later years. Continued infection breaks down the barriers presented by the mesenteric glands, and allows the organisms to get into the blood stream. In every case the first lesion is always vascular. If infection is by means of dust going into the lungs, why is pulmonary and laryngeal tuberculosis so rare in children? No one can deny at present that bovine tubercle bacilli are harmful to man. That they, as well as mineral matter, and other organisms can pass through the intestinal tract without leaving any trace is a well known fact. However infants and children may be infected, by milk or by dust, through the lungs or the intestine, it behooves us to boil the milk of cattle which are suspected of being infected and to teach mothers the laws of hygiene and cleanliness and the dangers to their children of dirt in any form, and to show them that they can avoid all contagion by obeying a few simple laws of right living.

Miscellany.

AVENUE LOUIS PASTEUR.

The following editorial from the March issue of the *Interstate Medical Journal* of St. Louis proceeds, we suspect, from the pen of a graduate of the Harvard Medical School. However that may be, it is perhaps not unprofitable to see ourselves as others, with a large perspective, see us, and we reproduce the editorial for the instruction and welfare of those concerned.

"The powers that preside over the literary and scientific destinies of Harvard Medical School are evidently not in accord with the elder Disraeli, who said, in the 'Amenities of Literature,' that 'the author of "Piers Plowman" disdained their exotic fancies, their Latinisms, their Gallicisms, and their Italianisms.' Our inference is drawn from the fact that, quite recently, the street upon which the new group of medical buildings abuts has been named Avenue Louis Pasteur in honor of the celebrated scientist, and in slavish imitation of French street nomenclature.

"That Louis Pasteur was a beacon-light in the rather dark path of science; that medical progress to-day is indebted to him for its strength and virility; that the Pasteur Institute at Paris would be a credit to any country, are facts only the foolhardy would gainsay. But though this be truth in italics, the action on the part of Harvard University to perpetuate the name of the French scientist and to Gallicize a time-honored Anglo-Saxon expression, is so decidedly out of keeping with the spirit which should inform a representative American university, that condemnation ought to be meted out in no veiled terms.

"Harvard University has always strained a point to preserve its entity as the best expression of American thought; it has always stood for ideals peculiar to this country, and while a certain latitudinarianism is not wanting in the conduct of its affairs, its fundamental principles have always been of the Puritanic sort, — the sort which anywhere else would mean narrowness and self-concentration, but, in the case of so unique and excellent an illustration of our best intellectual and moral forces, spells progress on lines that should be an object lesson to all our smaller universities. And just because we have always regarded it in the light of the best that a Puritanic conservatism can produce, our sense of the understanding of these principles stands aghast at the sudden leap its stewards have taken, from the calm content of a New England security into the turbulent water of Gallicisms and those other isms which should find no place in our nomenclature.

"Avenue Louis Pasteur may mean much to French ears, but to ours it is a foolish, Gallic perversion of a simple English phrase. Pasteur Avenue, though plain and unadorned, is undoubtedly English with nothing objectionable to a purist, and although Paris boasts of many streets commemorative of her great men, such as Avenue Victor Hugo and Rue Gustave Courbet, this does not justify a rank imitation on the part of a representative American university which has always made for the purity of the Anglo-Saxon tongue. As well call our Washington and Lincoln streets, Street George Washington and Street Abraham Lincoln as tolerate the Harvard Medical School misnomer.

"The French word 'boulevard' has done much in this country to upset the tempers of our mildest citizens. Mud roads, unadorned with trees, have been dubbed 'boulevards,' and to cap the climax enterprising speculators have gone a step farther, just to show how they could improve on a perverted Gallic word, by naming certain streets, Lincoln Street Boulevard and Washington Street Boulevard. With these illustrations in mind we feel that our protest will be as vain as weaving ropes of moonshine, for the history of this country teaches us that when a mandate goes forth from a university such as Harvard, the little minds are ever ready to imitate, since pre-digested food means no labor on the part of man."

Correspondence.

CERTIFIED MILK.

Boston, March 22, 1907.

Mr. Editor: The Milk Commission of the Suffolk District Medical Society, which was organized last summer, drew up certain requirements for certified milk, of which the following are the most important:

"The milk taken from the delivery wagon shall be free from pus and pathogenic organisms, and contain not more than 10,000 bacteria to the cubic centimeter. It shall contain not less than 3% nor more than 4% of proteids, not less than 4% nor more than 4.5% of sugar and not less than 3.5% nor more than 4.5% of fat, but a milk may contain more fat and be certified as containing more than 4.5% of fat. It shall be free from preservatives, coloring matters and other contaminations, and it shall not have been subjected to the action of heat. It shall be cooled to a temperature of 45° F. within one hour of the time of milking, and shall be kept at this temperature up to the time of delivery; it shall not have been frozen. It shall be delivered in glass bottles, sealed in a manner satisfactory to the commission.

"The barn, the dairy and the surroundings shall be in a clean and sanitary condition, satisfactory to the veterinarian of the commission. The cows shall be healthy and free from tuberculosis, as shown by the tuberculin test. The employees shall be healthy and cleanly in their persons and habits. They shall not suffer from nor have been recently exposed to, any infectious disease."

The farm known as the Warelands Dairy, of Highland Lake, Mass., is now fulfilling all the requirements of the commission, and is having its milk certified. At present, however, the milk contains more than 4.5% of fat and is therefore not so well suited for infant feeding as a weaker milk would be. The Women's Educational and Industrial Union, 264 Boylston Street, is the agent for the Warelands Dairy. The milk at the last examination contained but 1,000 bacteria to the cubic centimeter.

Several other farms are preparing to furnish certified milk, and will probably be ready by the autumn.

Yours very truly,
John Lovett Morse, M.D., *Chairman,*
Suffolk District Medical Society Milk Commission.

RESOLUTIONS IN REGARD TO MILK BY THE NEW YORK ACADEMY OF MEDICINE.

New York, March 23, 1907.

Mr. Editor: I have the honor to inform you that the Section on Public Health of the New York Academy of Medicine passed the following resolution at its meeting of March 12, and that the resolution was presented to the New York Academy of Medicine at its meeting on March 21, and adopted:

Resolved, (1) That the Section on Public Health of the New York Academy of Medicine does not believe in the necessity of the compulsory pasteurization of all of the milk supply of New York City, but recommends for the present to all those whose milk supply cannot be proven to be thoroughly inspected and wholesome, and mainly the milk destined for the feeding of infants unless it is "certified," to boil their milk when delivered in the morning for three minutes.

(2) That the health of the city of New York demands a persistence in the policy of supervision of farms, dairies and creameries, supervision of the milk during transit and on delivery in the city and supervision at the points of distribution in the city to the consumer, whether the milk that is distributed has been pasteurized or not.

(3) That local and state health authorities and the Bureau of Animal Industry of the United States Department of Agriculture should co-operate with milk producers to prevent the occurrence of communicable disease in cattle and their care takers.

(4) That the Section on Public Health recommends that the New York Academy of Medicine adopt the above resolutions, and that a copy be sent to the members of the Committee on Public Health of the Board of Aldermen, to the Committee of the New York State Legislature having under consideration the Reece Bill, and to the medical and the lay press.

Respectfully submitted,
John H. Huddleston, M.D.,
Recording Secretary.

A NEW ORGANIZATION PROPOSED.

Mr. Editor: A meeting of physicians who regularly make examinations for life and accident associations and for the purpose of testifying in court was held at the Hotel Somerset on March 22, for the purpose of effecting a permanent organization.

A committee was appointed to draft articles of association and to receive the names of those who desire to join an organization of this kind. The next meeting will be held at the City Club on April 3, 1907.

The committee in charge is as follows:

Dr. C. O. Kepler, *Chairman,*
423 Shawmut Ave.
Dr. C. T. Cutting, *Secretary,*
Newtonville, Mass.
Dr. Harry H. Hartung,
Dr. E. M. Greene,
Dr. F. E. Allard,
Dr. F. D. Donoghue,

RECORD OF MORTALITY

For the Week ending Saturday, March 16, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,670	457	Quincy	—	—
Chicago	684	205	Waltham	9	3
Philadelphia	—	—	Gloucester	3	1
St. Louis	—	—	Pittsfield	12	2
Baltimore	234	69	Brookline	—	—
Cleveland	—	—	North Adams	5	0
Buffalo	—	—	Chicopee	4	1
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	4	—
Milwaukee	—	—	Beverly	2	1
Washington	—	—	Hyde Park	2	—
Providence	85	26	Newburyport	—	—
Boston	265	47	Leominster	7	2
Worcester	52	13	Melrose	5	0
Fall River	46	16	Woburn	7	1
Cambridge	24	7	Marlborough	5	2
Lowell	48	20	Westfield	6	—
Lynn	23	4	Peabody	—	—
New Bedford	29	19	Revere	6	1
Springfield	24	3	Clinton	2	0
Lawrence	29	9	Attleboro	6	1
Somerville	23	3	Adams	3	—
Holyoke	16	6	Gardner	—	—
Brockton	17	1	Milford	—	—
Malden	13	2	Weymouth	5	1
Salem	13	2	Framingham	2	1
Chelsea	12	6	Watertown	3	—
Haverhill	18	4	Plymouth	—	—
Newton	14	1	Southbridge	2	2
Fitchburg	8	2	Wakefield	—	—
Taunton	8	5	Webster	—	—
Everett	5	4			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED MARCH 13, 1907.

Kalloch, P. C., surgeon. Granted leave of absence for two days. March 12, 1907.

Amesse, J. W., passed assistant surgeon. Granted leave of absence for fourteen days from May 4, 1907. March 13, 1907.

Glover, M. W., passed assistant surgeon. Granted leave of absence for six days from Feb. 23, 1907. March 13, 1907.

Boggess, J. S., passed assistant surgeon. Granted leave of absence for seven days from March 17, 1907.

Ashford, F. A., assistant surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to San Juan, P. R., reporting to the commanding officer of the revenue cutter "Algonquin" for duty and assignment to quarters. March 12, 1907.

Goldsborough, B. W., acting assistant surgeon. Granted extension of leave of absence for two days from March 4, 1907. March 8, 1907.

Nute, A. J., acting assistant surgeon. Granted leave of absence for two days on account of sickness, from March 3, 1907. March 9, 1907.

Roehrig, A. M., pharmacist. Reassigned to duty at Stapleton, N. Y., effective Nov. 7, 1906. March 7, 1907.

Macdowell, William F., pharmacist. Reassigned to duty at Ellis Island, N. Y., effective Oct. 4, 1906. March 7, 1907.

La Grange, J. V., pharmacist. Reassigned to duty at Boston, Mass., effective Oct. 4, 1906. March 7, 1907.

Ryder, L. W., pharmacist. Reassigned to duty at the port of Washington. March 7, 1907.

Carlton, C. G., pharmacist. Reassigned to duty at Cairo, Ill., effective Oct. 4, 1906. March 7, 1907.

Hall, L. P., pharmacist. Granted leave of absence for two days from March 9, 1907. March 13, 1907.

Williams, Arza G., pharmacist. Directed to proceed to New Orleans, La., reporting to the medical officer in command for duty and assignment to quarters. March 11, 1907.

APPOINTMENTS.

Dr. Henry Goldthwaite was appointed an acting assistant surgeon, effective from date of oath. March 8, 1907.

Mr. Arza G. Williams was appointed a pharmacist of the third class, effective from date of oath. March 6, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MARCH 23, 1907.

T. W. Scott, pharmacist. Ordered to the Naval Academy.

H. C. Curl, surgeon. Ordered to the U. S. Naval Medical School, Washington, D. C.

F. H. Brooks, assistant surgeon. Detached Naval Hospital, Mare Island, Cal., ordered to the "Annapolis."

. **C. P. Bagg** and **A. R. Alfred**, surgeons. Ordered to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

R. C. Holcomb, passed assistant surgeon. Detached Naval Station, Culebra, W. I., ordered to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

H. Shaw, passed assistant surgeon. Detached Naval Hospital, Pensacola, Fla., ordered to Naval Station, Culebra, W. I.

J. R. Waggenor, medical director. Ordered to Naval Recruiting Station, Providence, R. I., April 1.

J. H. Payne, passed assistant surgeon. Detached Naval Recruiting Station, Providence, R. I., ordered to Washington, D. C., April 15, for duty on course of instruction at the U. S. Naval Medical School.

RECENT DEATHS.

Dr. Rodney C. F. Combes, of Brooklyn, N. Y., died on March 18, from typhoid fever, which he contracted while on a recent trip to Mexico. He was born at East Rockaway, L. I., and was fifty-one years of age. He was graduated from Bellevue Hospital Medical College, New York, in 1875, and was well known as a neurologist. For some years he was president of the Combes sanitarium for nervous diseases at Flushing, L. I.

The death is announced from Washington, on March 18, of **Brig. Gen. John Moore**, at the age of eighty years. He joined the medical corps of the United States Army in 1853. He rose to be surgeon-general, and was retired after a few years' tenure of this office in 1890, on account of the age limit.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Commission to Investigate Measures for the Relief of Consumptives. January, 1907. Boston.

Ohio Hospital for Epileptics at Gallipolis. Sixteenth Annual Report for the Year Ending November 15, 1906.

Pediatrics. The Hygiene and Medical Treatment of Children. By Thomas Morgan Rotch, M.D. Fifth edition, rearranged and rewritten. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1906.

Twenty-eighth Annual Report of the State Board of Charity of Massachusetts. 1907.

Insanity Cured by a New Treatment. Details of Twenty-one Cases. By C. W. Suckling, M.D. (Lond.) Birmingham: Cornish Bros., Ltd. 1907.

Fifty-first Annual Report upon the Births, Marriages and Deaths in the City of Providence for the Year 1905, Including Tables for Fifty Years. Providence, R. I. 1906.

The After-Treatment of Suppurative Abdominal Drainage Cases. By Charles T. Souther, M.D. Reprint.

Vaginal Tampons: Some Points of Practical Interest. By Charles T. Souther, M.D. Reprint.

Fundamental Principles that Persuade to a New Education of Medical Science. By W. R. Dunham, M.D. 1907.

Annual Report of the Library Committee of the College of Physicians of Philadelphia for the Year 1906.

An Account of the Library of the College of Physicians of Philadelphia. 1788–1906.

Annual Report of the Bureau of Health for the Philippine Islands. July 1, 1905–June 30, 1906. Manila. 1906.

Some Points in the Surgery of the Brain and its Membranes. By Charles A. Ballance, M.V.O., M.S., F.R.C.S. Illustrated. London: Macmillan & Co., Ltd. New York: The Macmillan Co. 1907.

Students' Aids Series. Aids to the Diagnosis and Treatment of Diseases of Children. By John McCaw, M.D., R.U.I., L.R.C.P. Edin. Third edition. New York: William Wood & Co. 1907.

Students' Aids Series. Aids to Medical Diagnosis. By Arthur Whiting, M.D., M.R.C.P. New York: William Wood & Co. 1907.

Original Articles.

OBSERVATIONS ON THE CAMPAIGN AGAINST UNCINARIASIS IN PORTO RICO.*

BY BAILEY K. ASHFORD, M.D.,
Captain, Assistant Surgeon, U. S. Army,
AND
W. W. KING, M.D.,
Passed Assistant Surgeon, U. S. Public Health and Marine-Hospital Service; Honorary Members of the Porto Rico Anemia Commission.

Gentlemen, It would be wasteful of your time should we review the history, the older and now discarded theories of the pathogenesis of this disease, its fairly well-known symptomatology, its method of diagnosis and the long list of more or less worthless drugs which, from their fancied effect on the parasitic worm or upon the course of the anemia, have been from time to time recommended to supplant those whose efficacy is believed to outweigh any objections thus far brought against them.

We purpose bringing before you some hitherto unpublished data in connection with the work of the commission against uncinariasis and some which may be of interest in connection with the very practical question, "How can the ravages of this disease in Porto Rico be controlled?"

The data here reported were collected conjointly by the three members of the Commission of 1906–7, the absence of Dr. Pedro Gutierrez, the chairman of the commission, preventing him from taking an active part in the preparation of this paper.

We will first invite your attention to what is, to us, of paramount importance in the control of a disease which has for years decimated that otherwise healthful and rich island, impoverishing its laboring classes and rolling up an unprecedented mortality from a rapidly curable and preventable scourge. We refer to the usual mode of invasion of Necator Americanus.

Uncinariasis in Porto Rico is not only an interesting medical question but an all-absorbing social and economic one whose effect reaches out in every fiber of the social and industrial life of the people. We base our statement on a careful study of the endemic in that island, an experience extending over a period of several years, and including thousands of cases from practically all parts of Porto Rico.

We estimate that about 750,000 of the inhabitants are infected and that 70% are suffering in some degree, greater or less, from the effects of such infection. By a long series of cases, now considerably more than the 600 blood examinations reported in 1904, we have established the fact that the average hemoglobin of those complaining of symptoms is from 40% to 45%. From 5,000 to 7,000 persons, at least, have succumbed annually to this terrible affection, thus increasing by from 20% to 25% the total mortality for the island from all causes.

Variously attributed in times, luckily past, to malaria, starvation, climatic influences, habits of life, etc., to-day rich and poor, educated and unschooled, are learning that this anemia which from all time has claimed so large a share of the public attention is the outward manifestation of an infectious disease in epidemic form, an epidemic of such unheard-of proportions and fatality as to astonish those who have heretofore considered it to be a comparatively benign affection, as far as a menace to life is concerned. The mode by which the parasite invades the human body is clear, however strange it may appear, and has been reduced to concrete facts:

The larvæ from ova deposited upon the earth in the feces of the host, developing under proper conditions of shade, moisture and temperature, penetrate the unbroken skin of the feet of unshod laborers. These larvæ enter the veins, are swept to the right heart and from thence to the pulmonary artery, to finally become arrested in the smaller vessels through which they are unable to proceed owing to their size. At this juncture they break through into the alveoli of the lung, ascend the bronchial tubes, descend the esophagus, pass the stomach and eventually find a resting place in their preferred feeding ground, the upper part of the jejunum.

Not only have we been able to experimentally corroborate skin infection but we feel justified in saying that this is practically the only way the worm enters the body. We have never found a case which was clearly due to ingestion of the larvæ. The inhalation of infected dust does not merit consideration, as drying almost instantly kills them. On the other hand we have seen that 96% of 18,865 patients have acknowledged to having had an affection known the length and breadth of Porto Rico as a special and peculiar condition, not confounded with any other by those exposed to it, always acquired from contact of the bare but healthy skin with mud or muddy water, "mazamorra" or "ground itch." The word, "mazamorra" is not employed in Spain with this meaning. It is a common expression in Porto Rico, employed just as our laity here refer to urticaria as hives, and it is really uncinarial dermatitis. A very short time, from some minutes to a half hour, after standing with bare feet in infected places, itching begins; in a day the part is covered with papules which later may become vesicles and, if conditions are favorable, but not necessarily as a distinctive part of the process, pustules and even ulceration may appear, the latter, of course, being due to concomitant infection by pus-producing organisms. This mazamorra and the anemia of Porto Rico are always found together, and both are seen in exaggerated degree where the most perfect conditions for the development of the larva from the egg and its subsequent desiderata, constant moisture and shade, are found,— the coffee plantation. On the other hand, both mazamorra and anemia are generally conspicuously absent among those who wear shoes.

The following experiment brings out in this connection a very interesting point and also demonstrates that we have in the guinea pig an animal capable of being infected by Necator Americanus, a fact likely to be of value in future experimental work.

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*Read before the Boston Medical Library Meeting in conjunction with the Suffolk District Branch of The Massachusetts Medical Society, Feb. 6, 1907.

On the 1st of March, 1906, the feces of a newly-acquired servant of the commission, heavily laden with eggs of uncinaria, was mixed in a Petri dish with such quantity of sterile sandy earth as to remove much of the offensive odor, a proportion of about one part of feces to two of earth. Water in sufficient quantity to give the consistency of mud was added, the dish covered and set away in the shade.

On the 4th of March larvæ were very plentiful to every field of a No. 3 Leitz objective. Some were moving lazily but the majority were apparently dead and lying fully straightened out. The immersion in excess of water of those which were before active brought all movement to a standstill. This effect was noted in about fifteen to thirty minutes.

On the 5th of March the dish having been slightly tilted overnight and about two tablespoonfuls of water added, all larvæ in the water which had collected at the lowest level of the dish, were motionless and straight, while those in the damp mud above this level were exceedingly active and encapsuled.

March 8 we found changes in the larvæ in the water which showed us that they were dead. Those in the damp earth were just as lively as before.

We took a four-day-old guinea pig, reared under conditions where infection by uncinaria was practically impossible, clipped the hair from its back without subsequently shaving the area, made a mud poultice in cheese cloth about the size of a silver dollar from the upper part of the contents of the Petri dish in which the larvæ were found so active and bound it gently on the animal's back, the pig being held for a half hour by the feet and head to avoid contact of its mouth with the mud. At the end of that time the spot was appropriately cleansed, rubbed well with absolute alcohol and the animal returned to its cage.

The behavior of the pig after the first five or ten minutes was remarkably suggestive as he squealed and squirmed with unmistakable desire to scratch. March 9 the same procedure was repeated, the gentleman who had stocked the culture officiating as guard over the animal's feet. The same struggling took place in about the same time, and the man remarked with an appreciative grin that the pig was suffering with mazamorra.

On March 10 the same application was made. The pig seemed well. *Absolutely no uncinarial dermatitis had developed in these three days.* That night the pig died; the jibaro said that he had noticed him about six hours before and that he had a very blue nose and seemed *triste* (sad).

Necropsy. — No edema; skin at site of infection, stomach, intestines, peritoneum normal. The kidneys and the liver were violently congested, but showed no larvæ. On opening the chest the cause of death was seen: the lungs were hemorrhagic. One lung was solid with blood and the other filled with dark red, almost black, spots. One of these spots was excised, crushed between two slides and examined with a No. 3 Leitz objective. *Ten encapsuled larvæ were found, all very active, wriggling with an exceedingly violent movement.* They seemed to overcome by their enormous strength all obstacles, breaking up lung tissue wherever it opposed them.

The larvæ seemed to be in the alveoli and are prone to seek little pools of blood.

The heart's blood was examined without result. Nothing else was found to be abnormal.

A very interesting deduction, among others more important and quite obvious, without any special attention being drawn to them in this paper, is that the so-called "natural cure," to us, a rather trying process with so sure and rapid a remedy as thymol, is possible in a heavily infected country, provided that stout shoes are worn and further uncinarial dermatitis avoided. The fact that the ova of uncinaria never develop into larvæ in the intestine of the host, coupled with the fact that we have not seen infection to occur save by the skin, not only explains why patients sick of anemia in the mountains gradually get well on taking up their abode in the cities of the island where the mud of streets, even though subject to occasional contamination, is subjected to drying fatal to the life of the larvæ. It explains why the soldiers of the Porto Rican regiment, almost universally infected on presenting themselves for their first enlistment, but not to an extent to be noticeable and thus to incapacitate them from acceptance in the physical examination for the service, are such perfect specimens of manhood after a few years, even in less time, from the day they were compelled to wear shoes and received the ample food and solicitous care bestowed upon them by their officers. Their alertness and physique are commented upon wherever they go, and they furnish excellent examples of what can be done by the redemption of the Porto Rican jibaro.

The pathogenesis of uncinariasis. — Those who have seen much of the disease in its more advanced stages, and especially those who have made a series of necropsies, are apt to feel that the most probable cause of the anemia is hemolysis. Those who believe that the reduction in red cells and hemoglobin results from hemorrhage should take seriously into account the fact that the appearance of a bloody stool is truly a rare occurrence in Porto Rico. Of the thousands upon thousands of specimens of feces personally examined by the members of the commission working in their own dispensary, under conditions where every visit of the patient called for a microscopic examination of feces, we can freely say that not more than 0.5 per thousand contained the slightest trace of blood that could be detected by macroscopic inspection. They usually showed nothing whatever that could be regarded as peculiar to the condition. A slightly greater proportion, but not over one per thousand, was found on microscopic examination to contain red blood corpuscles in appreciable numbers. We exclude, of course, cases of bilharziosis and amebic dysentery.

As to occult blood, there seemed to be no special reason to examine for it. Knowing the condition of affairs in the jejunum, we were satisfied that tests would reveal it. Should we prove this by the report of a series of cases we should not be able to claim that it was even a potent cause of the anemia. And all this is irrespective of the fact that, as a result of numerous other causes, occult blood can be detected in the extremely small amount which it is reasonable to suppose would be lost by the minute wound inflicted by so small a parasite. In our twelve necropsies of this year and those of the last, we have only once seen the rose-red ecchymoses described in the older works as occurring in the jejunum. In all save this one it would have been very difficult indeed to have found the point of attachment of a worm, after it had become detached.

In the case we were able to see the little red points, which were very small and only noticeable by holding the cleansed intestine against a good light and looking through it, the patient had not received any specific treatment. This case was the only one in this year's series in which no anthelmintic had been administered. Had we not held the intestine up to the light we probably would not have noticed these spots. A number of them were removed and were found to present very minute and superficial erosions with no invasion of the submucous tissue.

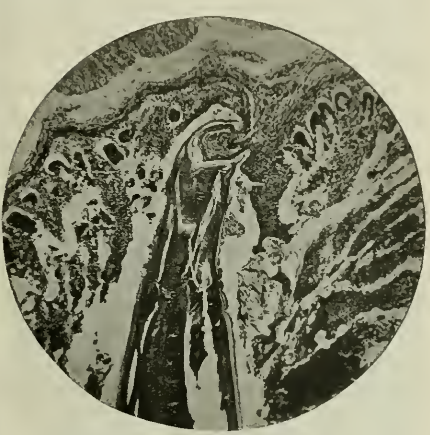
The point we wish to emphasize is that there is nothing distinctive about the stool of an uncinaria patient, at least as far as the presence of blood is concerned and as regards the gross appearance. This is not alone our experience but that of others, for the occurrence of bloody stools is denied by many Porto Rican physicians who are working on this disease, and we have yet to hear one state that he had found it a distinctive feature.

It is certainly a great error to designate this worm a blood sucker, for by using this expression we imply that not only is blood his normal food but that he abstracts a sufficient quantity to bring about in part the pronounced anemia of uncinariasis. That he does swallow, and even suck very small quantities of blood in feeding on so vascular a substance as the intestinal mucosa, we do not deny. Nor is there any doubt that an exceedingly small quantity of blood does reach the intestinal canal of his host and that it can be demonstrated as occult blood in the feces. In the rare instances, cited by various authors, of the loss of considerable amounts of blood, the animal probably punctured a large vessel.

We do not believe it possible that any degree of anemia could be produced by the loss of the small amount of blood ingested by these minute creatures.

The food of uncinaria is shown when we come to examine the beautiful, almost diagrammatic photograph of the worm *in situ*. This is a photograph of one of a number of uncinariæ which we removed from the cadaver, while the parasite was still alive and feeding, with a portion of the intestine to which they were attached. They were dropped immediately into alcohol. These specimens were imbedded and sectioned very skillfully by Dr. W. M. Gray at the Army Medical Museum and the accompanying photographs were also made by him, as were all others we take pleasure in being able to show you.

There are, at least, two valuable lessons to be learned from a careful inspection of these photographs of the worm *in situ:*



Photographed by Dr. W. M. Gray.

Fig. 1. Necator Americanus attached to the human jejuum. x 55 diameters.

(1) The lesion is practically confined to the mucosa. (2) Although the animal had drawn into his mouth the submucosa which has become completely denuded of epithelium, among the contents of the intestine of the parasite the conspicuous objects are epithelial cells, not red blood cells.

The picture here shown corresponds in every particular with a previous description and photograph published by Loos in " The Anatomy and Life-History of Agchylostoma duodenale," *Records of the Egyptian Government School of Medicine*, vol. iii, Cairo, 1905.

We feel obliged to conclude that the epithelium lining the intestinal canal of the host furnishes the normal food supply of Necator Americanus, just as he previously describes it to be that of anchylostoma duodenale.

In conclusion we wish to note that in the immense majority of about 80,000 uncinariæ counted personally by us in the stools of our patients after the administration of the anthelmintic, as well as in those attached worms found in the intestines at necropsy, the worms did not appear to contain blood but were generally grayish white. In fact this peculiarity was made use of in the device adopted for their recovery from the stools, which were washed slowly down a trough painted black, the stool having first been filtered through gauze. In a report on ankylostomiasis by Löbker and Bruns, 1906, we find the following:

"The views of Loos were substantiated by Schaudinn, after a careful re-examination of a large number of Leichtenstern's sections, when the intestinal contents of the ankylostoma were microscopically examined. Among 300 worms selected at random, he found 196 whose intestines contained cell fragments other than blood cells. In the remainder he found either nothing or else blood cells to a greater or lesser amount. Repeatedly long strips of intestinal membrane were traced, completely extending from the mouth through the alimentary canal into the intestine of the worm."

This is important information when we remember that Leichtenstern was the observer of all observers who was most identified with the teaching that ankylostoma duodenale was not only a blood sucker but was so prodigal of his food that he consumed blood entire to appropriate only the serum, evacuating blood cells practically unchanged. For this the noted authority dubbed the worm, "the luxurious parasite."

The urine in uncinariasis before and after treatment. — In the first report of the Porto Rico Anemia Commission it is stated that albumin is rarely found, although note is made that the kidneys may be very pale and slightly fatty, sometimes being the seat of parenchymatous or interstitial inflammation, sometimes of amyloid degeneration but, generally speaking, without marked involvement of these organs.

We would like to considerably modify our former opinion. It was based on the examination of a series of cases but was not made, as was the blood, a matter of special study, inasmuch as Heller's nitric acid test and the absence of clinical evidence gave us no clew to the real condition. It is significant that writers on uncinariasis make practically the same statement. As a matter of fact, the condition of the kidney in a well-marked case of uncinariasis is of the greatest importance, as will be shown. We noted the irritant effect of the anthelmintic drugs employed upon the digestive tract and found albuminuria after their administration, in accord with the experience of Loebker and Bruns, Calmette, Siccardi, and others with thymol and male fern.

Our plan for 1905, among other things, was to make a careful study of the therapy of uncinariasis and to that end a series of cases was studied in which the uncinariæ expelled were counted after each anthelmintic dose. This, together with manifold other duties, consumed about all the time available from the actual administration of so large a work as the treatment of some 25,000 persons.

From the first, however, our attention was attracted by one case to the immediate and imperative duty of more carefully investigating the urine. This was one in which nephritis occurred during treatment. Naturally, the first thought was, "Has the new anthelmintic, betanapthol, said to be at times a renal irritant, anything to do with this condition?" The second, "Is there a latent renal lesion present in the disease?" To determine these facts an additional series of cases were taken and our results follow with conclusions; but before considering these tables a few explanatory remarks should be made:

It was manifestly out of the question, for lack of time, to make complete quantitative urinalyses as we desired. The day was so split up by other work and other investigation that it was decided to elicit certain facts only, and these with great care, so that a definite conclusion could be reached.

It was evident that an examination of the urinary sediment, as well as a determination of the presence or absence of albumin, should be made. In order to offer a series of cases carried far enough to furnish evidence that would be satisfactory, the continued presence of the patients in hospital was necessary, and this was precisely the most difficult part of the problem, as when they felt better they clamored to go back to work and stood not on the order of their going but frequently went, spoiling for us many hours of toil. The original number of such cases is, therefore, reduced to twenty-four. The practical impossibility of obtaining the twenty-four hours' urine and the numerous time-consuming details to which we were obliged to attend personally, prevented us from making urea estimations. One of the occasions at which the urinary examination was needed was that at which purges had to be administered, and with the small force at our disposal collection of all the urine was impracticable. The invariable custom was to examine the urine on the day before and the morning of the day of treatment, before the anthelmintic was given; then the afternoon urine on the day of the specific drug and the morning after. Thus there were two examinations before and two after each administration of the anthelmintic and the samples were faithfully taken at the same time by our trustworthy nurses in the field hospital.

Albumin. — Three tests were always used at each analysis:.

(1) The boiling of urine with a drop of two or acetic acid to six parts urine and one part saturated salt solution, the test tube nearly full and the upper half boiled to compare with the unboiled lower half in a good light against a dark background. We were aware that a very faint clouding could be thus obtained in many normal urines. (2) The ferro-cyanide of potash test. (3) Heller's nitric acid test. When the first was faintly positive and the last negative, a slight trace was noted; when the latter was positive in a faint but characteristic ring, not disappearing on heating, a trace was noted. Only a very few times was albumin found in considerable amount. Ordinarily the amount was so small that its percentage could not have been determined by the Esbach albuminometer. The sediment was collected after

standing some hours in conical test glasses and the urine was not centrifugalized. The casts were generally of the smaller varieties, hyaline and finely granular forms predominating. Blood casts were not seen in this series and epithelial casts were uncommon. Fatty casts were quite often noted. The presence of polymorphonuclear leucocytes was at times discovered before the administration of the anthelmintic, and there was a tendency for them to appear, sometimes in fair numbers, afterwards. Renal cells were not a very marked feature and were almost always scarce.

Urobilin was almost always present, fluorescence by the zinc chloride test being elicited, but it was often remarkably slight.

Peptones in traces were found to be inconstant but often demonstrable.

Indican in abundance, as Siccardi recently states, was a very constant and persistent phenomenon.

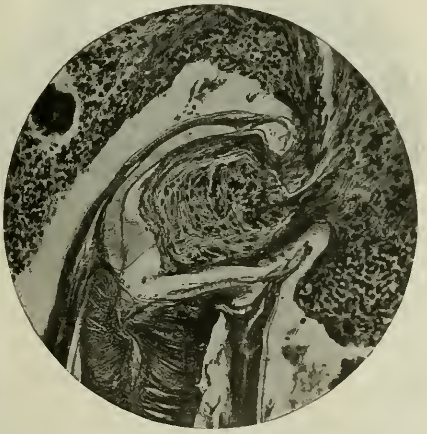
Bile pigment was relatively rarely found.

A most interesting fact was the invariable absence of the *diazo-reaction*, save immediately after the administration of beta-naphthol, in 1- or 2-gm. doses, *when it never failed.* Its presence was demonstrable three to four hours after the dose and its effect lasted five or six hours. The next day it was always absent. When it was present it was beautifully pronounced and was an unfailing evidence of whether or not the drug had been taken. The *color* of the urine was frequently some shade of olive after thymol, a color developing or deepening on standing in the open air. Apparently, beta-napthhol did not affect the color of the urine. The *reaction* was practically always acid, rarely alkaline or neutral, as Calmette found in his cases.

The *specific gravity* tended to be low but almost always increased under medication. *Sugar* was not found to be present.

From the tabulation of the twenty-four cases in which successive urinalyses were made the following condensed statement embraces the essential facts: 18 were males, 6 were females. Seven under fifteen years of age; 12 were between fifteen and thirty; 5 were over thirty. One case expelled no uncinariæ, had no symptoms of the disease but expelled 418 oxyurides in two doses of beta-naphthol (all she harbored). Two of the remaining 23 were suffering from a very light form of uncinariasis; 3 from a light grade; 4, moderate; 10, intense; 4, very intense. Thymol was the only drug employed in 10 cases; thymol and male fern in one case; beta-naphthol alone in 13. The total number of doses of thymol was 45 and of beta-naphthol, 62. The dose of thymol was 2 gm. in children, and from 3 gm. to 4 gm. in adults; that of beta-naphthol 1 gm. in children, and from 1 gm. to 2 gm. in adults. These doses were always preceded the night before by sodium sulphate and followed in two hours by the same drug. The anthelmintics were always administered by dividing the dose above mentioned into two equal parts, one given at 8 and the other at 10 A.M. Male fern was given but twice in this series. These two doses were given successively to the same patient, 2½ and 4 gm. respectively, and resulted in the expulsion of only two uncinariæ. The alcoholic extract was used in each instance and it was presumably fresh as it was employed immediately after it arrived by mail from one of the best known pharmaceutical firms in the United States. This was not the only occasion upon which we used male fern, and its failure to expel Necator Americanus was observed in several other trials where the preparations of other firms were used. In this particular case this observation was especially interesting as one week after the fruitless administration of male fern only 3 gm. of thymol were given and by this one dose 3,686 uncinariæ were expelled from the same patient.

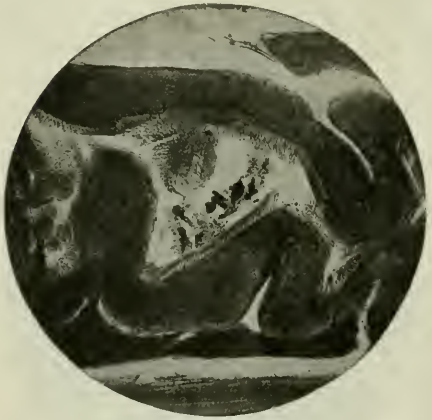
Of the 23 who expelled uncinariæ, in 1 case the worms were not counted. In the rest, 9 expelled less than 300 and of these 2 had no albumin in their urine before the administration of the anthelmintic; 5 had a slight trace; 1 a trace; 1 a considerable amount. Eight expelled between 300 and 1,000 uncinariæ and of these 1 showed no albumin before treatment; 6, a slight trace; 1 a considerable amount. Three expelled between 1,000 and 2,000 and of these 2 showed a slight trace and 1 a trace of albumin before the drug. Those who expelled more than 2,000 uncinariæ (one 2,749; the other 4,397, the largest number expelled in our series of worm counts) gave only slight traces of albumin before treatment, demonstrable solely by boiling.



Photographed by Dr. W. M. Gray.

Fig. 2. Necator Americanus attached to the human jejunum. x 200 diameters.

Of the total of 24 cases, 20, or 83.3%, are seen to have had albumin in the urine before the administration of anthelmintics. One of these cases was not one of uncinariasis and had no albumin nor casts, but developed a very slight trace of albumin under treatment. In 18 of these 20 cases, or 75%, casts were also demonstrated. Generally the casts were very few in number; in only 6 of the 18 were they at all abundant. The average hemoglobin in those persons showing albumin before the administration of the anthelmintic was 46.1%; that of the 4 who had no albumin before the dose was 80.5%. Sixteen of the 20 cases showing albumin before taking the specific drugs had but a slight trace; 1 a trace; 3 a fairly abundant amount. Albumin increased in amount under treatment in 15 cases and appeared for the first time after the anthelmintic in 4, a total of 19. Albumin did not increase under treatment in 5 cases, although it existed at the beginning. Finally, of the 220 urine records here recited, 118, or 53.63%, showed but a slight trace of albumin; 34, or 15.45%, a trace; 19, or 8.63%, a moderate amount; and 22, or 10%, much albumin. Twenty-seven, or 12.27%, showed no albumin. Hyaline casts were demonstrated in 133 of these examinations, in 100 of which they were few in number; granular casts in 103, in 71 of which there were few; epithelial casts in 21; fatty casts in 23. Of the 41 records of moderate or much albumin, about two thirds occurred after the administration of anthelmintic drugs.



Photographed by Dr. W. M. Gray.

Fig. 3. Contents of the intestine of the same worm. x 200 diameters.

Conclusions. — Our conclusions are not based alone upon this series of cases, but embrace a much larger number of observations, too scattered to place in tabular form. It is believed that the data contained in the series of 24 cases represent what is generally found before and after the administration of thymol and beta-naphthol.

1. Albuminuria with tube-casts is a very common phenomenon in uncinariasis.

2. It may be present in light or severe cases, more constant in the latter.

3. Albumin is present generally in very slight traces, not discernable by the Heller nitric acid test, but is usually accompanied by a few casts.

4. The casts are generally hyaline, finely granular and fatty; rarely epithelial unless the epithelial cells are very fatty when they are classed as fatty casts. Blood casts are very rare.

5. Albumin may be present in light and heavy infections.

6. Albuminuria with casts in uncinariasis should be regarded as the evidence of a degenerative process in the kidney, not as an inflammation or, more specifically, a nephritis.

7. Both thymol and beta-naphthol can act as renal irritants, especially in the presence of this condition of the kidney.

8. While ordinarily these drugs cause an increase in albuminuria and often bring it about where before it was absent, their effect is temporary, causes no symptoms in the vast majority of cases and is rarely of importance.

9. There is almost always an absence of inflammatory elements after the above-mentioned increase in albumin.

10. Very rarely they may set up a severe nephritis.

11. The cases herein cited show that both drugs seem to have an equal power to increase in albuminuria with tube casts, but our experience over a large number of cases demonstrates to us that, all things considered, beta-naphthol has a very much less favorable action on the kidney and that it is not as safe as thymol for this reason, although its depressant effect is not so marked. Thymol has not, in our experience, caused fatal collapse.

12. Albuminuria does not always seem to depend upon the grade of anemia.

13. Albuminuria and the changes found in the kidney after death may be due to a specific toxin elaborated by uncinariæ, but where severe anemia exists such an explanation for the condition is hardly needed.

14. Uremia in Porto Rico is not uncommon, but is rarely seen by a physician and is confused by the jibaros with "nervous attacks" of all kinds, particularly with the very common hysteria major. Epilepsy is not uncommon and we are persuaded that sometimes this diagnosis would suffer a change on examination of the urine. We know of several instances where there was good ground for believing that the attacks were uremic in character.

15. Emphasis must be laid on the fact that the albuminuria of uncinariasis is extremely irregular, coming and going without the slightest apparent reason.

16. Renal accidents from the use of the anthelmintics under consideration are not generally serious and are still more rarely fatal. The great severity of the present epidemic and the high mortality should make us disregard the remote danger to the patient from the use of thymol.

17. The use of beta-naphthol should be restricted to very few doses and its administration should be limited to patients in extreme grades of the disease, on account of its less depressing

effect on the vital centers, until enough uncinariæ are expelled to create a favorable reaction and enable us to use thymol. However employed, a dose of 2 gm. should not be exceeded and no more than three successive doses given, one each week.

In concluding this paper we desire to call attention to the possibilities for scientific investigation in the work which the Porto Rico Anemia Commission is now accomplishing.

The insular government is doing all in its power to conquer the reigning disease of its working classes but for some time this compaign must be vigorously pushed to restore health and to save life. Face to face with an enormous number of sick it would be manifestly impossible to divert funds for the further investigation of the diseases of the island in a well-equipped laboratory, yet such an institution is urgently needed, as none realize more fully than the commission itself. To the honor of the physicians of Porto Rico let it be said that they have equipped themselves with microscopes and a few of the more necessary clinical laboratory instruments, from their own personal resources. This is not confined to one or two but is general among the large number who see the necessity for recourse to so valuable an aid to diagnosis. This fact more than all others demonstrates the active and intelligent interest in medical progress in Porto Rico and bespeaks a spirit which merits support.

There is an aged physician in one of the small towns, all his life a scientist, who has secured a modern microscope from Germany a year ago at great personal sacrifice, that he might keep abreast of the advance of medical knowledge. This physician is now pursuing original investigation under conditions which would infallibly paralyze the ambition of the majority of young men and is setting an example to be emulated by all who bear the title of Doctor of Medicine in this country. The example is followed, however, and there are many who are making splendid use of the microscope in towns of the interior where one would least expect to find an instrument too commonly regarded as only fit for the laboratory.

Were a laboratory for research provided, it would be of incalculable value to the many who to-day have no adequate place where such scientific work can be done; the commission would receive a powerful weapon to advance its ever-widening sphere of action; and perhaps the foundation could be laid for a school of hygiene which would be valuable to American as well as to Porto Rican physicians, which may some day contribute to the knowledge of diseases affecting countries beyond its shores.

When we reflect on the real state of affairs, when we ask ourselves the question, " Where did ninety-nine of a hundred physicians practicing in the tropics receive their medical education? " we begin to see where the difficulty lies. Whether a man is an American or a Spaniard he has usually studied his profession in northern climates. The diseases seen in his clinical course were those of temperate zones and he is apt to explain the phenomena of disease according to the light he received.

There should be some way of acquainting American and Porto Rican physicians with special features of preventable disease in that island where such efforts are being made to carry the principles of the science of medicine into practice.

As it is, men who are not satisfied to trust to tradition to solve the problem arising in their professional life grope aimlessly about for some center where they may work out for themselves, or have worked out, those facts which alone can be resolved in a well-appointed laboratory.

Such a center, by interesting all physicians who come in contact with the poor on the one hand and local officials on the other, would be able to carry the authority derived from facts and figures into their great task of sanitary reform.

THE EFFECT OF INDUSTRY ON HEALTH.*

BY WILLIAM C. HANSON, M.D., CAMBRIDGE.

The recent investigation of health conditions of industrial life by the State Board of Health of Massachusetts is the first definite step in the development in America of industrial hygiene. For this step credit belongs to the promoters of the necessary legislation, to the legislatures of 1904 and 1905, to our efficient State Board of Health, but most of all to the secretary of the board.

No legal provision was made requiring the employment of scientific men for the investigation, but Dr. Charles Harrington, realizing the importance of preventive medicine and, therefore, of encouraging specialization in sanitary work, saw that just as an expert may trace typhoid fever to a polluted water supply of a workshop, so one versed in medicine and hygiene may trace chronic lead poisoning to improper devices for the removal of lead fumes from furnaces containing kettles of molten lead. In fact, Dr. Harrington even went so far as to announce to one of his classes in hygiene in the Harvard Medical School that only graduates of medicine or those receiving degrees on Commencement Day would be eligible for the work.

Moreover, no legal provision was made for the careful consideration of conditions from a commercial point of view in connection with the hygienic investigation, yet one of the points insisted upon by the secretary of the board was that no injustice should be done to employers.

In short, an attempt has been made to establish the factory inspection work on a scientific basis. In order to do this, it has seemed clear to the State Board of Health that special pains should be taken to assure the employers that the work is not only free from anything underhanded, but that it is of such a nature as to enlist their hearty co-operation.

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* Read at the regular meeting of the Monday Evening Club, Feb. 18, 1907.

The subject of industrial hygiene is at once broad and complex, and the brief time allowed for the investigation has permitted only a preliminary basis for further study and development. At the same time, a sufficient number of establishments has been examined in several industries to warrant certain definite recommendations to the legislature providing for a more efficient protection to the health of the operatives than now exists.

Without entering into details it is necessary before considering our subject to define carefully just what is meant by "dangerous trades." One of the first things which ought to be done for the good of all is to revise the lists of the so-called "dangerous trades." A feature strongly to be condemned is the enumeration of a large number of occupations as being more than others conducive to disease, without discriminating between an entire industry, the greater part of which may be conducted within reasonable limits of safety, and the few trades which from their very nature are intrinsically dangerous. Moreover, with any classification there is need of an accompanying table of some sort to show that other causes as well as occupations have to be reckoned with.

Charts are arranged, and are frequently placed in the most conspicuous parts of exhibition halls, to show by their hideous black lines the death-rate from consumption of men in various occupations. Do the persons responsible for such displays realize that they are producing mental pictures in the minds of the young which are immeasurably wrong and difficult to erase? Do they not forget that overcrowded localities, such as the slums of large cities, furnish all the conditions which favor a high mortality, *viz.*, "unsanitary dwellings, immorality, intemperance, high birth-rate, carelessness, ignorance, filth and improper and insufficient food"?

There is no question but some of the highest death-rates occur in manufacturing communities and that unsanitary conditions in industrial establishments are to a certain extent responsible; but it is undeniably true that the number of occupations, referring to the trade as a whole, which are directly accountable for ill-health and disease — at least in the State of Massachusetts — are few.

This fact by no means lessens the importance of protecting the health of our employees in workshops, and of protecting the public in their daily contact with the working people. It does, however, suggest that it is time to call a halt on the custom of stamping with condemnation many of our industries merely because of those trades which make up the dangerous minority and because of the recognized harmful conditions which, while existing, are readily amenable to law and an effective governing body.

From a sanitary point of view all industrial conditions may be classified for practical purposes into two main groups, as follows:

I. Conditions which arise from the industry.

II. Conditions which are in no way connected with the industry, — that is to say, conditions which are not indispensable to an industry.

Among the first group of conditions are dangers which are direct and obvious in their effects upon the health of the workers: some of these dangers, are avoidable; others are to a certain extent avoidable; while others are entirely unavoidable.

An example of unavoidable conditions may be found in the textile industry — an industry much abused by health critics who complain of the effects of textile processes upon the health and welfare of the workers. At times, for instance, in the carding-room of a cotton mill, the cotton dust, although always present to some extent, flies about the room like snowflakes and covers the hair and clothes of the workers. The reason is that the metal-toothed cylinders become clogged from time to time with waste fibers and need to be cleaned. It is the cleaning that scatters the dust. Attempts have been made, with more or less success, to obviate this objectionable feature, but until the machine manufacturers shall devise some practicable means for getting rid of the dust we must not blame the employers.

I am not saying that cotton manufacturers cannot improve present conditions; they can improve them, and they ought to be compelled to do so, but we must distinguish carefully between the changes which the employer cannot reasonably be expected to make for his employees at the present time and the changes which, regardless of his wishes, can be made and ought to be made.

It should be remembered that our best mills, with their large, well-ventilated workrooms, and the older mills which are under the ablest supervision, are progressively attacking from a commercial point of view the very problems which go hand in hand with improved hygienic conditions. The emphasis of danger, therefore, should be placed not upon the textile industry as an industry but upon those departments wherein the dangers arise.

An example of the *avoidable dangerous* conditions incident to an occupation was seen in a large wire manufacturing establishment containing, among other departments, a room for tempering wire. After the men harden the wire by running it into the crude oil, it is passed through kettles of molten lead inside the tempering furnaces to be "tempered." The lead is heated to the melting point and the wire is drawn through, heated red hot. In this room there were found a number of tempering furnaces where the work was conducted as described. The room was uncomfortably hot and was filled with a dense blue smoke arising from the furnaces. One employee, who had been here for thirteen or fourteen years, showed on examination distinct evidence of chronic lead poisoning, and on questioning him it was found that four years previous he had what is known as the "wrist drop," and that he had suffered from other symptoms of lead poisoning. Three or four other cases of lead poisoning were reported as originating in this room; one employee of five years' standing had been a lumberman, robust and healthy; he now presented symptoms of chronic lead poisoning. All of the employees in this room worked eleven hours a day and had irregular hours for eating. There were no rules concerning the duties of the employers or those of the persons employed in order to avoid this serious danger. On the contrary, the hoods and blowers and top ventilators for the lead and other fumes were found to be distinctly inefficient, and over one large furnace there was no protection of any sort, — the appliances having been broken years before and none renewed, so that all the fumes mingled at once with the air of the room.

The more important of the two groups of conditions for our consideration this evening is the second —which includes those conditions that may give rise to injurious results because of the disregard of proper hygienic precautions. It is this class of conditions which is mainly responsible for the means of spreading disease in our workshops; and it is this class of conditions, which exists more or less in every industry, which is responsible for branding so many trades as "dangerous," which so far as the processes are concerned are perfectly harmless! It is the very same group of conditions which exists in the homes of the working people.

The improvement of sanitary conditions in workshops is the great problem confronting us to-day. Its solution will prove to be the connecting link between the community work on the one hand and the social service and hospital work on the other; and equally energetic action is demanded for the protection of the working people in industrial establishments as for the protection against diseases caused by the distribution of impure and dirty milk. In both cases the welfare of the public is inevitably involved.

There is no better illustration of bad workshops, and of the unnecessarily foul conditions in the state of Massachusetts to-day than our bakeries. Bakers, again, are notoriously classed in the list of workers most subject to disease. But why? The reason is simply because the majority of rooms in which baking is done in our Commonwealth do not deserve the name of "bake-rooms." Cellars, back storerooms, rear tenement quarters and sheds are by no means the exception, and so many of these contain toilet and dressing-rooms that one accustomed to examining them carefully becomes compelled to think of dressing-room and bake-room as one and the same.

In some of the largest cities in this state two thirds of the bake-rooms exist under conditions which are decidedly unhygienic and unsanitary. In one city two fifths of the bake-rooms show conditions which are thoroughly bad, and half of these have water-closets which are literally within or communicate with the bake-rooms! It would not require much imagination to suggest the possibility of an outbreak of typhoid fever from direct infection through the food substances handled by an employee who had become infected by contact with the stool of the original case, or himself had become infected with the disease. Even if it is urged that baked goods have been subjected to a cooking process, the employee who handles them after they are cooked may have become infected through the original case. Outsiders, too, not uncommonly frequent the bake-rooms, and it is not too much to suppose that — as the water-closets are so handy — an epidemic might arise from such a source. At all events, a water-closet in or near a bake-room is positively uncalled for; it is filthy; and it is a gross violation of common decency.

Legislation should be enacted and enforced to remove not only all water-closets which are within or communicate with the bake-rooms in this Commonwealth, but those water-closets which lead out of bake-rooms, whether by one door or two doors, provided they are situated in close proximity to the bake-rooms.

The enactment of legislation, however, does not relieve us of our most important duty. It is by buying our bread of bakers who keep themselves clean and keep their rooms clean, and by refusing to patronize slovenly men who do their baking in rooms which are unfit for toilet-rooms, that we can do most to correct existing evils.

I recall a bake-room of the most deceptive type. A very attractive front store with its display of baked goods faces the sidewalk. As we enter the store the picture is a pleasing one. There is a new maple floor, the walls are sheathed with wood, and the ceiling is adorned with a fancy tin sheathing. Everything is in the open and is clean and neat. Now let us take a look into the room where the food products are kept and handled. It is situated in the rear in a back yard. It is an old room, low-studded, with a smoky and more or less broken plaster ceiling. The floor is old and dirty, and between the boards are large cracks filled with accumulated dirt and food materials. Beneath the oven and around and under the sink the amount of dirt is especially noticeable. A table near the sink is filthy. The light in the room is poor, and gas jets are made use of on cloudy days. The room is small and has several occupants. A trap door leads to the cellar, which contains — in addition to food stuff — thick masses of cobwebs, various kinds of dirt, and a foul water-closet.

It has been said that many conditions affect the health of bakers, *e.g.*, exposure to excessive heat, to the smoke in doughnut frying, to the constant smell of foods, the irregular hours for eating, flour dust, gas from burning coke, and the long indoor confinement. Any one who realizes that men are working under these conditions and in basements which are unventilated and absolutely foul need not wonder that bakers have a lowered resistance to disease and are especially prone to consumption.

Let us enter one of these bake-rooms; a subterranean kitchen which is, roughly, about 60 x 20 feet and low-studded. The poorly-lighted room necessitates the use of several gas burners throughout the day. The air is foul. In the room is a baker who has been in the business twenty-eight years, and in this shop thirteen years. He gives every appearance of a consumptive and admits that he has " some lung affection " and that he " raises something, " and he is seen to spit upon the bake-room floor. This man's mother, four sisters and two brothers, all died of consumption. He has a brother living. The man says that he works in this dark, unventilated cellar from half past four in the morning until three or four o'clock in the afternoon, and that he goes out-of-doors only for about one hour out of every twenty-four hours. There are in this same room four other men and a boy.

But I would not have you leave to-night without the knowledge that some of the bakeries present entirely satisfactory conditions from a sanitary point of view. Of over 500 bakeries and similar establishments visited, 55 are in this class, and 11 of the 55 deserve special commendation.

Throughout the investigation of the State Board of Health the underlying principle has been to condemn where there is wrong but to praise where good work is done, and in nearly every industry investigated, including those properly regarded as " dangerous," it was found that " one at least and sometimes not a few establishments were carried on with satisfactory regard for the health of the working people."

All the establishments visited have, so far as possible, been graded from a sanitary point of view. In one or two of the largest industries the plants have been compared and classified with reference to age and construction of buildings, the grade and amount of stock used in them and the processes in vogue.

There are four distinct grades of establishments: the excellent, the good, the moderately bad and the distinctly bad.

In addition to the examination of the factories, attention has been given to the welfare of the industrial community. Thus the attempt has been made to initiate a well-defined system of factory inspection resting upon a scientific basis.

To summarize briefly what has been said, you have had called to your attention three main points. The first is that the initial step taken in the study of industrial hygiene shows ample proof of the need of physicians to specialize in sanitary work. Disease may spread not only through water and milk, but through the overcrowding and otherwise bad and unsanitary conditions in homes, factories and workshops; and equally energetic action is demanded for the protection of the working people in industrial establishments as for the protection against diseases caused by the distribution of dirty milk, since in either case the welfare of the public is involved.

It is your duty to encourage specialization in sanitary work, for preventive medicine is of greater importance to the people at large than is curative medicine. I quote from a writer in the *American Journal of Public Hygiene:* " No such encouragement exists at the present time. The medical man who chooses to take up a special line of work should feel that he is making an upward step in his professional life. The medical man who is bold enough to step out of general professional work into the position of a sanitary executive — state or municipal — is, as a rule, placing himself in the hands of politicians who rarely appreciate the importance of the responsibilities resting upon them in dealing with sanitary problems."

The second point upon which emphasis has been laid is in behalf of the industries and the employers. The emphasis of danger in relation to a given industry should be placed where it belongs. If only one department of an industry is dangerous, the entire industry must not be condemned. Again, the harmful conditions commonly associated with many industries should not be so tabulated as to make it appear that the industries themselves are at fault.

So far as the employers are concerned, you should have the following considerations always before you:

First, that the employer, hampered by the nature and peculiarities of an industry and its processes, and by existing social conditions, may find that there are some things which he cannot do for his employees at the present time.

Second, that the employer finds that there are some things which he can do for the comfort of his employees to his own advantage, and

Third, certain conditions, regardless of the employer's wishes, directly or indirectly affecting the health or safety of the employees, can and ought to be changed.

Fourth, that while the employee is usually ignorant of the dangers to which he is exposed, and neglects to take necessary precautions, he may be subjected to conditions admittedly dangerous to health which though avoidable, are overlooked by his employer as well.

Finally (the third main point referred to) you must always consider whether outside influences may affect the health of an employee more than the conditions under which he is working.

In closing, I wish to add a few words from a physician's point of view. The physician can do more good to his patient and to the community if he keeps in mind his patient's work. At present he is unable to do justice to a large number of sufferers from want of a clear understanding of modern conditions in industrial establishments, — the effects of modern machinery and processes and of physical and mental labor upon the health of the workers. The whole nature of the individual needs consideration,—home life *plus* industrial life.

Social service work has, in one hospital, recently been made a part of the physician's duties in order to supply the missing information concerning the patient's home life, but as yet no opportunity exists for furnishing physicians with important data relative to the conditions of modern industrial life.

To diagnose and treat the disease is important, but to know the exact conditions under which the patient works for hours, days and years, and to know how he is treated as a human being, is of first importance.

I repeat, a proper development of this great branch of hygiene, now in its infancy, would encourage specialization in sanitary work. With a more thorough state organization, sanitary problems would be dealt with by specialists, free from political restraint, who could emphasize, as has never been emphasized, the enormous importance of preventive medicine to mankind.

THE TREATMENT OF CHRONIC URETHRAL DISCHARGE.

BY BENJAMIN TENNEY, M.D., BOSTON,
Surgeon to the Boston Dispensary.

THEORY.

Considering how difficult it is to grow them outside the body, how short their natural life is in the incubator, and how easily their artificial growth is stopped by slight accidents of various sorts, it has always interested me to theorize as to how the gonococcus can exist so long and so prolifically in a canal which is thoroughly flushed with urine every few hours.

The most reasonable explanation to my mind is that within a very short time after infection, probably within a few hours, some of the bacteria which are very motile have penetrated some tiny duct where they are safe from the frequent flood of urine and can increase and spread to other ducts between urinations. In other words that there is a para-urethritis almost from the start.

Starting with the proposition that it is a possibility for a man in ideal health and surroundings and with a urethra of proper sort to acquire a specific urethritis for the first time and be free of all symptoms within three weeks, we are immediately faced by the fact that he has many brethren who are less fortunate, and the conclusion is plain that there must be a chemical or mechanical factor to account for the difference or else a combination of the two. Either the body fluids are lacking in the power to throw off the bacteria faster than they form or, in modern language, " the opsonic index is low " or else there is some mechanical obstruction to their escape.

That the former condition obtains with some patients I like to believe, because occasionally symptoms persist after weeks of attempt to smooth the way for the most remotely hiding diplococci to float away.

That the second is the almost universal cause for persistent urethral discharge as it is for persistent discharge from other and unnatural sinuses, I do believe, and so do most men if I understand their treatment correctly. A sliver, a silk ligature, a bit of necrotic bone or other tissue may keep up a continuous small discharge because the opening is not large enough for it to float out bodily. Enlarge the sinus or make a new opening through which the irritating foreign body escapes or remove it by pressure and the sinus closes and the discharge stops.

The analogy is not solely with the urethra which serves as a grand canal for the hundreds of little canals leading to the para-urethral glands, but with these canals and the ejaculatory ducts, the prostatic ducts, and the canals from Cowper's glands all of which drain into the same channel. At the beginning of any of these canals the desquamated cells destroyed at the first invasion by bacteria may form necrotic masses too large to pass through the natural exit without greater force than the gentle urging of the leucocytes which are themselves of a size to pass out and attract attention.

The idea of a vaccine by which the removal of bacteria may go on more rapidly than their increase is fascinating. Could the masses of dead and dying cells be rendered sterile, the blood currents would doubtless build a wall about them or carry them away; but the essential element in the new therapy is the handicapping of a definite bacterium by a vaccine prepared from the dead bodies of his own kind, and it is by no means certain that any one bacterium is the cause of all the long-standing para-urethral inflammations. It is not very uncommon to find a smear without Gram decolorizing diplococci and Dr. Charles Duval assures me that many intracellular Gram decolorizing diplococci will show luxuriant growth on agar.

After the well-meant efforts of ourselves and our patients and considering the varied and abundant flora of the normal urethra it would not be surprising to find that some other organism was trying to fill the place once occupied by the gonococcus, and can we have a vaccine for each infection? Until we do we must continue to work along lines which have given results satisfactory though often slow in coming.

With the chemical treatment of chronic urethral discharge in the way of drugs swallowed or used by the patient, this paper has nothing to do because I seldom order them, and in my office I only use silver nitrate in very weak solutions, hot salt solution, and occasionally cocaine and adrenalin.

PRACTICE.

The first ground to cover is to find the highest point from which the discharge can come and the rectal examination is the first one to be made after inspection of the urine. Rarely does one of these patients fail to show some signs of a past acute and present chronic inflammation in prostate or vesicle or both.

The nodular feel of an infected vesicle, and the masses of cells, cell membranes, and motionless spermatozoa in the washings after gentle massage are evidences which cannot be mistaken. The unilateral enlargement, difference in consistency between the two lobes, and the smaller plugs and shreds with large numbers of mononuclear leucocytes in the expressed contents are the main points in locating the prostate as a constant source of discharge.

If either of these conditions has been present for six months or more we may expect to find the membranous urethra contracted. I was taught that stricture formation never followed the first infection. This is a mistake. Stricture formation is often very slow. In one case of mine where the membranous urethra accepted only a bougie No. 8 French, the patient had a single gonorrhea twenty years before, and had been happily married for eighteen years. During this time he had been free from symptoms and consulted me only on account of shreds noticed by an insurance examiner.

It is my belief that the location of the greater proportion of real strictures in the membranous urethra is due to the continuous irritation produced by the constant out-pouring of a purulent discharge from the prostate or vesicle which oozes down between urinations and keeps the mucous membrane hyperemic, even if it does not always cause actual destruction of tissue.

If prostate, vesicles and membranous urethra do not seem to afford sufficient reason for the existing discharge a possible source may be found in some para-urethral gland or glands which have never been completely drained, or in a small meatus which interferes with the free flushing of the urethra.

In my hands the prostatic infection has been much the most frequent of all, then the infected vesicle, then para-urethral glands, and tight meatus least frequent. The strictures I regard as sequences of some of these other conditions and as occasional causes of a continued discharge after a later infection simply because they interfere with perfect flushing and drainage of the canal.

With each and all of these conditions the endoscope will show inflammatory redness of the general urethral mucous membrane which is a symptom of a constant supply of irritating material from some definite source or sources and does not indicate that the whole mucous surface is one granulating area exuding leucocytes. On the contrary if careful search is made one can often find tiny dark red dots chiefly on the floor of the anterior urethra from which droplets of white secretion can be pressed between endoscope and outside finger and these droplets spread about are sometimes the cause of the general redness of a nearly normal mucous membrane.

The chronic prostatic inflammations vary much in the ease with which they will clear up. Some will drain out if the urethra is properly dilated, some will clear up under rectal massage, and some seem to be favorably affected by deep silver injections. Some improve with hot water lavage of the rectum and others so annoy their possessors that they gladly allow the surgeon to remove them.

With any form of treatment except the last with which I have no acquaintance, the time required to accomplish a cure is discouraging to all concerned. Occasionally it is a matter of weeks, but often it must be counted in months. The most obstinate case that I have yet handled required three months of attention, but at the end of that time, the patient passed a clear urine after coitus and the beer test and his condition has remained the same for at least two years more.

Some one has recently proposed an external urethrotomy for these cases followed by curetting and packing the prostatic urethra with gauze. If the curetting is very gentle and the packing generous it may be useful in some cases by encouraging free drainage from the long and tortuous prostatic ducts. It is an addition to our means of treatment which has yet to prove its value. To the writer the curettage seems unnecessary and likely to do permanent damage to this very sensitive region. Packing is a reasonable procedure which I intend to use on an occasional obstinate case.

Vesicular infections vary greatly in the care and time required for cure. Rectal massage clears up most of them; rectal lavage with hot water helps some of them; some remain for incision and drainage according to the plan of Fuller and a few for total removal.

The two latter operations are so rational and satisfactory that the chronic vesicular infection with its attendant maladies is definitely curable and within a few weeks, excluding the tubercular cases.

Another recent suggestion of Belfield's is the injection of the vesicle through the vas deferens, hoping thereby to flood the vesicle with a mild antiseptic and wash out all the dead and infective material. Anatomically this is possible and a simple proceeding after the canal has been found within the vas. The few reported results are all favorable and indicate that the canal remains patent after the washings are over.

If a case of infected Cowper's glands has passed through my hands I have not recognized it. It ought to be possible to see the orifices of their ducts when inflamed but I have never identified them in the living urethra. Considering the rather long duct one would expect an acute tumor rather than a chronic discharge as a result of infection here and several such cases are reported.

A cross section of the urethra anywhere between the triangular ligament and the glans shows two columns of glandular tissue. The smaller one lies above the urethra and rather between the two corpora cavernosa and the larger lies along the floor. The ducts leading from these glands open into the roof and floor of the urethra and are easily identified. Through these ducts the glandular masses are infected and in about half of my chronic cases those on the under side of the penis can be felt hard, often tender, and pretty freely movable against a sound.

At one time I thought these could be reduced by massage and used a special sound flattened on its convex surface for this purpose. The results were disappointing and I have given it up. Occasionally I have dissected out some specially large nodule and thought the discharge was diminished thereby.

The most effective treatment of this condition in my hands has been the sound of large diameter or some form of dilator. The effect of these instruments is to put the whole circumference and thickness of the corpus spongiosum on the stretch, dilating the little canals and compressing the glands at the same time. I think it is this effect rather than the stretching of " strictures of large diameter" so often spoken of which assists in drying up the chronic discharge, and the instrument which will accomplish this with the least mechanical damage to the mucous surface is the best. Provided there is no continuous reinfection from above, these cases usually dry up within a few weeks.

The cutting of a small meatus is always desirable when it is tight for a 20 French calibre, but there is no necessity of giving the patient a hypospadias.

The treatment in every case is to be directed to the highest possible source of pus. A chronic urethritis may be and usually is present but it is a result of some localized infection outside the canal, a para-urethritis.

It is not perfectly easy to explain the action of washes on these cases. The urethra is normally washed several times daily and the mechanical effect of another wash cannot help much. That there is a bactericidal effect on the really infected para-urethral tissues is hard to believe, no matter what antiseptic is used, unless it be so powerful as to destroy the living urethral cells which no one would desire. If the fluid be hot or otherwise slightly irritating it probably produces a hyperemia about the infected portions which assists in the process of repair as elsewhere in the body, and this I believe to be their real value.

When our patients allow us to discharge them "cured" we ought to be able to guarantee them against stricture formation and I think we can if vesicles, prostate and urethral glands have resumed normal function and size. When the patient insists on stopping treatment at his own pleasure he must assume the risk of this personal accident as well as the social risks which make the saddest chapter in the study of genito-urinary diseases.

The source of a chronic urethral discharge fortunately is not difficult to find in the great majority of cases, and when found its removal is a matter of ingenuity and patience. The rare cases are becoming less rare as we know more about the embryology and irregular anatomy of these parts, and here the skill required to find the source of the pus is the great thing. The treatment is developed on well settled surgical principles which apply as well to the male urethra as to any other part of the human body.

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THE CRUSADE AGAINST TUBERCULOSIS IN GERMANY.

BY EDWIN A. LOCKE, A.M., M.D., BOSTON.

(Continued from No. 13, p. 383.)

PART II. CARE OF THE SICK AND PROPHYLACTIC MEASURES.

The struggle against tuberculosis in Germany naturally began with the attempt to cure the sick, but little by little the fact has become evident that hand in hand with this should go the more important measures for the protection of the well. The motto of the modern campaign has thus become "Heilung der Erkrankten und Schutz den Gesunden."

A. Sanatoria (Heilstätten).

Beginning as early as 1855 with the establishment of Dr. Brehmer's sanatorium in Goerbersdorf, the movement gained but moderate headway until 1896, as shown by the fact that in that year the total number of beds in all the "Heilstätten" was but 750. The formation of the "Deutsches Central-Komite zur Errichtung von Heilstätten für Lungenkranke" marked the beginning of the modern movement for the erection of "Volksheilstätten," or sanatoria for the poor. Two years previously v. Leyden in an important communication, "Ueber die Versorgung der tuberkulösen Kranken seitens der grossen Städte," read before the Eighth International Congress of Hygiene in Budapest, had prepared the way for this awakening. With v. Leyden are associated the names v. Ziemssen, Gerhard, B. Fränkel, v. Leube, Pannwitz and others in this early work. The rapid growth of the sanatoria movement in recent years is strikingly shown by the following figures: in 1896 there were in these institutions a total of 750 beds; in 1900, 3,700; in 1905, more than 8,000. There are at present nearly a hundred sanatoria with approximately 10,000 beds. The sources of the funds for erection and maintenance are various, and include the State Insurance Societies, the Red Cross Society, the cities or communities, corporations, societies and individuals. In all cases, however, the general supervision of erection is in the hands of the "Central-Komite." Acting upon the principle that "the best is the cheapest," these institutions have been built in a most complete manner at great cost. The largest and most elaborately built are the insurance sanatoria.

Disregarding climate and elevation, that location is considered best which is not too far removed from the place where the patient is accustomed to live, is protected from wind by woods or mountains, has a sunny exposure, in an atmosphere free from dust and smoke, and with good water, dry soil and effective drainage. A large tract of land is desirable in order that long walks may be possible without going from the sanatorium grounds. The building is most commonly of such type as to give the maximum of exposure to the sun, *i. e.*, in the form of a blunt angle or with wings and of not more than three stories. The single large building is less expensive to erect and maintain than the one-story pavilion type. All the service rooms, dining-hall, machine shop and laundry are placed at the back. A few are constructed with large wards, but as a rule the sick rooms are small, holding only from one to six beds. Every "Heilstätte" is provided with balconies for the rest cure. Much attention is given to beautifying the immediate surroundings of the institution. The details of the toilet and administrative rooms need not concern us here. Ample provision is made for special examination and treatment rooms (including hydrotherapy) and, in some instances, for laboratories and gymnasia. A few possess workrooms for the use of those sufficiently benefited to be able to perform a small amount of work. In addition to the balconies, open-air rest-halls (*Liegehallen*) adjoin the main building. These are long, shed-like structures entirely open to the sun in which the patients recline during the day. For the most part, provision is made for not more than one hundred patients, though a few can take from 150 to 200, and one, Berlitz, near Berlin, has a total of over 600 beds. Since the total number of beds in the sanatoria is about 10,000 and the average length of treatment 3 months, the total number of consumptives yearly treated in the German sanatoria is approximately 40,000. Following the principle laid down by Brehmer, as a result of his experiences at Goerbersdorf, only first-stage or slightly advanced cases are admitted. Those considered suitable for admission are (1) those with a catarrhal affection of one apex or affection of one apex without catarrh, (2) the same in one apex and changed breathing in the other, (3) altered breathing sounds in both, (4) infiltration of the upper lobe to one half its extent with or without catarrhal signs (Moeller). The general method of treatment is the so-called "hygienisch-diatetisch-hydriatische" treatment. The details of this need not be given here, as the general plan differs only in individual respects and in the wider use of physical therapeutics from that generally adopted in this country. Tuberculin is used very generally in Germany for all first- and second-stage cases who do not promptly yield to the influence of the hygienic-diatetic treatment. Definite comparative statistics prove the advantage of its use in such cases.[3]

Notwithstanding the relative uniformity of methods used in the German sanatoria, a general summary of the results obtained is a most difficult task, especially with reference to the duration of apparent cures. In the past ten years, however, much has been accomplished by the Invalid Insurance and the "Central-Komite" in the establishment of special statistical investigations with regard to this point. The success of treatment must always depend largely upon the duration of the stay in the sanatorium, and in most instances the three months' limit (the rule in the "Landesversicherungsanstalten") is not sufficient for real healing. Many other factors also affect the results, but chiefly the care in selection of cases for admission. The following table (Table II), compiled from the statistics of the Imperial Board of Health and the State Insurance by Englemann and Hamel and based upon 8,883 cases, probably gives a reasonably accurate idea of the results of sanatorium treatment. A second table (Table III), composed of statistics from eight of the best German sanatoria of various types (Grabowsee, Planegg, Ruppertshain, Weicker's Krankenheim, Friedricksheim, Albertsberg, Belzig and Sülzhayn), give still more accurately the results obtained.

Favorable results, both from the point of view of the conditions in the lungs and the influence on the capability for work, are obtained in a constantly diminishing percentage of cases with the advance of the disease and speak most definitely for the treatment in the sanatoria at the earliest possible period. Continued investigations as to the permanency of the so-called cures and duration of the improvement fail to justify the expectations at first entertained for the successful results of sanatorium treatment. The term "healed" must be used much more reservedly. Only the earliest stages can with certainty be cured. Yet the results obtained by this means are good and the sanatoria must remain the most valuable means at our command for handling the early cases. As above stated, from the beginning of the modern crusade against tuberculosis in Germany the problem has been approached from an economic as well as an humanitarian point of view. The fundamental question has been, does it pay to spend the relatively large amount necessary to restore the sick laborer to a condition in which he is able to work? The Invalid Insurance has investigated the economic side most deeply, and the conclusions are emphatically that from a business standpoint the cheapest method of caring for the sick insured is to give him the best possible treatment. But the importance of the sanatoria in this fight against tuberculosis must not be judged solely or even largely from the results obtained in the cases treated. The patient during his treatment in the "Heilstätte" is receiving instructions in the proper methods of living, and must to a greater or lesser degree carry these ideas to his home and the community after discharge. These institutions, furthermore, contribute largely to the relief of distress in the family. Approximately 100,000 have been treated during the last decade, and 30 to 40,000 enter yearly. The benefits to the community at large cannot be overestimated.

Table II.

Results.	1896–98.	1899–1900.
Healed or improved	84.6%	87.7%
Unimproved	9.0%	8.8%
Discharged worse	3.7%	3.1%
Died	2.6%	0.5%
Results at discharge of same cases with reference to ability to work, exclusive of fatal cases.		
Fully capable of resuming former work	65.7%	67.3%
Fully capable of performing other work	6.5%	7.1%
Partially capable of work	12.8%	14.6%
Incapable of work	15.1%	11.0%

Table showing the results of sanatorium treatment in 8,883 cases. (Gebhard.)

B. Convalescent Camps (Erholungsstätten).

The sanatoria will always remain one of the most important factors in the anti-tuberculosis campaign and the sanatorium treatment the most effective method of curing the early stages, but such provision in consequence of the great expense and the large number of early stage cases must ever be inadequate. Provisions are especially needed for those waiting to enter the sanatoria. These facts long ago made evident the necessity of some provision supplementary to the sanatoria. Drs. Weber and Lennhoff organized a most thorough investigation into the conditions of the workingmen, especially the sick, in various places in the empire. Their report, containing an exhaustive study of the conditions found, was made to the Berlin Tuberculosis Congress of 1899, together with recommendation for the establishment of *convalescent camps* for day residence. The advantages as outlined by them are: (1) that they afford excellent opportunities for the observation of cases, (2) that they are suitable institutions for the care of those not admitted to the sanatoria, (3) that they serve as transfer stations and (4) that they are places of refuge and for the study of doubtful cases. In the following year (1900) the first was established near Berlin by the "Volkheilstätten-verein vom Roten Kreuz." Almost immediately many such camps sprung up through the aid of the Red Cross, the Invalid Insurance, Central Committee, various local societies, business firms and the large cities. At the present time more than fifty are to be found scattered all over the kingdom, especially in the immediate vicinity of the large communities. The type of construction and method of maintenance are essentially uniform in all. At first designed only for occupation during the day, several later made provisions whereby the patients were enabled to spend the nights also, during the winter as well as the summer. The location is most commonly in the forest (*Walderholungstätten*), accessible to some convenient means of transportation. The construction is the simplest and consists in the day camps of a central administration building, a large shelter-hall and wash-room. The cost of construction varies from 5,000 to 10,000 marks. Here the patients lead an out-of-door life, resting or exercising as their condition indicates, and are furnished with the best of simple nutritious food at the trifling charge of 20 to 50 pfennigs daily, or free in the case of the very poor. Special rates or free tickets for transportation are usually furnished by the railroads. The camp is in charge of a nurse under the direction of a visiting physician. These cheap, accessible and simple institutions have given most satisfactory results and care for many thousands yearly.

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[3] Turban, Kremser, Petruschky, Krause, Götsch, Donitz, Möller and others.

The workingmen's gardens (*Arbeitergärtens*), managed for the past six years by the Red Cross Society in the suburbs of Berlin and Charlottenburg, have aided along lines similar to the convalescent camps just described. The purpose of these gardens is to provide a suitable place where the families from the poor districts may build up their health and strength by means of a pleasant life in the open air. There are in all 12 garden fields with a total of about 700 individual gardens ranging from 250 to 300 square meters each. The allotment and management of the gardens is in the hands of overseers appointed from among the workingmen. Each garden-field is provided with a common recreation ground fitted with gymnastic apparatus and arrangements for out-of-door games. Milk and non-alcoholic drinks are sold at cost. Though not established solely for the families of the tuberculous workingmen, they are almost wholly of this class. The Red Cross is thoroughly convinced of the great practical benefits of these gardens.

Table III.

Total number of cases treated in the eight sanatoria.	Completely healed. %	Relatively healed. %	Improved, in a more favorable stage. %	Improved, in the same stage. %	Unchanged. %	Worse, in same stage. %	Worse, in a less favorable stage. %	Dead. %
Total, 11,935	3.4	11.9	41.0	28.7	9.8	2.5	2.4	0.4
(*a*) Men, 9,975	3.0	10.1	41.8	30.3	9.5	2.4	2.6	0.4
(*b*) Women, 1,960 .	4.7	17.0	38.3	24.4	10.7	2.8	2.0	0.3

Table giving the results obtained in 11,935 cases treated in eight of the German sanatoria, according to the conditions in the lungs at the time of discharge. (Gebhard.)

C. *Farm Colonies* (*Ländliche Kolonien*).

A fact familiar to all workers in this field is that many of the workmen who have been discharged from the "Heilstätten" as apparently cured, returning to their former way of unhygienic living and heavy or unhealthy work, sooner or later suffer a relapse. The establishment of these farm colonies is due to the activity of Dr. Liebrecht, of Hannover, and Professor Pannwitz of Berlin. Their conclusions regarding these colonies are briefly as follows:

(1) They form an important link of the china in the crusade.

(2) In these colonies the patient should regain normal working power through gradually increasing labor and should then be transferred to a less dangerous occupation than that previously engaged in.

(3) The patient must perform work according to his health and strength, with corresponding salary. His family, if necessary, must also be supported.

(4) The farming should be so arranged that the patient does only light work in the gardens, orchard and forest, while the heavy work is done by paid servants.

(5) The colony should be in a locality where such work is needed in order that the workman when fully restored to health may be encouraged to become a settler and find a place for his family. The amount of work required is determined by the physician and falls in one of three grades: (1) four hours, (2) six hours, and (3) eight hours of

work daily. The payment for such work is usually 10 pfennigs per hour. As a rule the workman remains not more than two months. The results so far as those treated are concerned have been fully satisfactory, 78% being completely restored to working power. A practical difficulty has been found in getting those discharged from the sanatoria to undergo a "nachkur" in the farm colony, and in consequence but two have thus far been established, "Ländliche Kolonien Stübeckshorn, bei Soltau" and "Ländliche Kolonien Sannum, bei Oldenburg," both insurance institutions.

D. Care of the Advanced Cases and General Prophylactic Measures.

Experience has shown the futility of the attempt to stamp out tuberculosis by treating the sick alone, and more and more the importance of prophylactic methods for the protection of the well has come to the front. The sanatoria, in which all interest was first centered, are for but one class of cases, and that a relatively small one. The advanced and hopeless stages form the largest class, probably 80% of all cases in Germany or approximately 800,000. Tuberculosis is a house disease, and prophylaxis in the home stands as the keynote in the modern crusade. Our chief duty is to limit the spread of tuberculosis. In this new field of activity several types of institutions have figured prominently.

(1) *Polyclinic.*— The establishment of the polyclinic was due to the efforts of Prof. B. Fraenkel, who founded the "Königliche Polyklinik für Lungenleidende" in Berlin in 1899. The earliest possible diagnosis is made by the use of the most approved laboratory and clinical methods. When suitable the cases are at once sent to some sanatorium or other special institution for treatment, but if the patient is not suitable or for any reason is unable to go he is treated in the polyclinic. Those previously discharged from the sanatoria are likewise watched and supervised. Strict attention is also paid to prophylaxis and to aid to the family when in need. The limited funds will not permit of that strict supervision of the patient in his home which is possible in the case of the dispensaries, to be described later. A complete organization prevails and the standard of work is the highest. During the year 1903, 9,000 patients received treatment and in all, since its beginning, 29,000. As mentioned above, many of the other cities have similar polyclinics either associated with the general hospitals or university clinics.

(2) *The inquiry bureaus and dispensaries* (*Auskunft und Fürsorgestellen*) were first organized in Berlin in 1904, but already nearly fifty have sprung into existence and many more are being founded. While the highest aim of the polyclinic is early diagnosis, the purpose of the inquiry bureau and dispensary is to reach all classes of cases and especially to care for the advanced patient in his home. The nature of the clinic is quite similar in both. The "Auskunft and Fürsorgestellen," because of their wide scope of activity and direct method of attack, will in the future doubtless occupy a very prominent place in the crusade. Financial support is drawn from (1) the Workingmen's Insurance Associations, (2) the "Krankenkassen," (3) the poor funds and (4) private benefits. The broad scope of the activity of these establishments necessitates the closest association with the sanatoria, antituberculosis societies, charity organizations, "Krankenkassen," "Central-Komite," convalescent homes, farm colonies, seaside hospitals,—in act, every factor in the great struggle. As in the polyclinic, every effort is made to reach an early diagnosis. First- and second-stage cases, *i. e.*, those offering hope of cure or permanent improvement, are transferred to special institutions, being cared for by the dispensary only while waiting for a place. The far-advanced cases must for the most part be treated in their homes. The dispensary aims to care for these dangerous foci that they may be rendered innocuous to their surroundings; in other words, to "eradicate the existing epidemic centers and to prevent the formation of new ones" by the "permanent sanitation of the tuberculosis family in its own home." Dr. Kayserling has called attention to the inadequacy of ordinary statistics of the cause of death in determining the number of cases of tuberculosis in a given community, and has proved by actual experience in the dispensaries in Berlin that the only trustworthy method is by medical examination and inspection. The medical inspection and examination of the families of the consumptives has brought to light the astonishing fact of the frequency of tuberculosis in children, involving the bronchial glands or lungs, but without symptoms, and Dr. Kayserling considers these children of tuberculous parents to be the chief bearers of the bacilli. Another striking condition revealed by this systematic examination is the fact that in the majority of instances in the families among the poor where one member has open tuberculosis, one or more other members are found infected, though usually unrecognized.

The colossal work undertaken by the inquiry bureau and dispensary is worthy of close study. The city of Berlin, for example, is divided into districts, each of which is assigned to one of the five dispensaries. Each dispensary is under the charge of a physician and his assistants who act under the direction of the general secretary (Dr. Kayserling). When a new patient enters the dispensary a most exhaustive history is taken and thorough examination made and recorded. On the following day his home is visited by the district nurse and an exhaustive report of the condition found is made to the physician in charge. If suitable, the case is sent to one of the many institutions described above. The work in caring for the sick in the homes and protecting the well is done by especially trained nurses under the close supervision of the physician in charge of the dispensary. Every detail is personally supervised and the family instructed by them. Aid is furnished in many ways, even to the supplying of food, clothing, rent, beds, etc. Besides the routine of treatment and prophylaxis every member of the family is sent to the dispensary for examination, where the most exact methods are employed to detect any tuberculous process. Following the initial examination the patient is re-examined every six weeks.

It is impossible to measure the results attained by these dispensaries, much less express them satisfactorily. In the Berlin institutions alone there were examined during the first eighteen months 15,000 persons, and in all more than 50,000 examinations were made. From September, 1904, to April, 1906, 7,500 families were examined, and during the same period 1,077 persons were transferred to homes and sanatoria and 1,014 to convalescent institutions. The eleven district nurses employed in the work made 18,540 house visits to April, 1906. In conclusion, it may be said that the Inquiry Bureau and Dispensary has demonstrated its great usefulness and promises to become the most effective weapon in the battle against tuberculosis.

(3) *Special institutions for the far-advanced cases* (*Invalidenheime, Heimstätten*). — At present one of the most crying need in Germany is for hospitals or asylums for the advanced cases where strict isolation can be carried out. Professor v. Leube has recently advocated the forcible removal, if necessary, of all such from their homes to institutions especially provided for them. Three types of institutions have been suggested: first, especial hospitals exclusively for this type; second, special wards or pavilions (strictly isolated) as part of the general hospitals; and third, where these are not possible, the setting aside of special rooms. Several hospitals have already been erected and the hospitals of the cities are rapidly following out the second and third suggestions. The funds are raised chiefly by the Insurance Associations, the Red Cross and the various societies.

E. Dwelling-house Reform.

In the improvement of the homes of the poor lies one of the most important prophylactic measures. Tuberculosis is essentially not only a disease of the masses but a house disease as well. Investigation has repeatedly shown that the mortality from tuberculosis is greatest in the poorest and most densely populated districts. The explanation is evident, for here along with a lessening of resistance on the part of the well as a result of the unhygienic conditions, goes an increased possibility of infection due to the overcrowding which brings the sick and well in closer contact. Furthermore, the dampness, filth and lack of sunshine favor the maintenance of foci of infection. Many interests, as the state, insurance, cities, employers and societies, have in the last semi-decade combined to relieve these unfortunate conditions. Since 1899 the Workingmen's Insurance Institutions have loaned more than 30,000,000 marks for the building of model homes. The state has also made large loans for the same purpose. Many communities and the state, in some cases, have erected houses for their officials. The power given the authorities in some cities to condemn unhealthy dwellings and to erect in their place model houses has aided much.

F. The Crusade against Tuberculosis in Children.

Until within a few years almost no attention was given to this important part of the problem, but at the present time the movement has become a significant one. In spite of the early activity in the erection of sanatoria for consumptives, no provision was made for children until 1903, when the "Kinderheilstätte," in Belzig, with 30 beds, was opened. Up to 1905 only two others had been founded. The beginning of the movement really dates from the Berlin Tuberculosis Congress of 1899, where this subject was discussed.

Greater activity has been shown in the establishment of *convalescent camps* and *forest schools* (*Waldschule*) for children of both sexes in the vicinity of the large cities. The former are essentially the same as those for adults described above, with few exceptions, being only for day patients during the summer months. The *régime* of treatment consists in a maximum of fresh air, nourishing food, regulation of rest and exercise and training in general hygiene. In 1904 the "Vaterlandische Frauenverein," in Charlottenburg, established the first forest school near the city, with a capacity of 120 children of both sexes. The routine is the same as in the convalescent camps, except that provision is made for regular study from two and a half to three hours daily in the open air. The excellent results soon led to the opening of others in different parts of the kingdom.

Seaside hospitals. — These came into existence through the activity of the "Verein für Kinderheitstätten an den Deutschen Seeküsten," founded by Professor Beneke, of Marburg, in 1880. This society now controls four seaside hospitals, with a total of over 500 beds. Funds are raised largely through branch associations in various cities and the women's socieites. More brilliant results have been obtained in these seaside hospitals than in the other sanatoria, and it seems to have been conclusively shown that tuberculous children do best in those institutions on the sea coast. The stay in the German seaside hospitals for children usually lasts for five or six weeks. Exact statistics of the results of the treatment cannot be obtained, for the reason that the results must be tested for a long period of years to be of value, but reports of various institutions during the last ten years indicate that from 50% to 60% are cured. A longer stay would doubtless aid materially in increasing these percentages.

About one third of the children sent to the different *baths* are tuberculous, hence these merit passing mention, as they yearly treat many thousand children.

The most direct prophylactic means for children exists in the *vacation settlements* (*Ferien-Kolonien*). Children from ten to fourteen years are admitted to the holiday camps, where they are kept under close supervision by a teacher or nurse during their stay. By means of good food, rest and play in the open air, the general health is raised. One hundred and ninety active societies in 119 cities furnished during the year 1902 1,118,000 marks and sent 30,000 children to these vacation colonies.

G. Tuberculosis in the Army.

The careful medical examination of recruits and the close medical inspection of soldiers on service has naturally resulted in keeping the number of cases in the German army comparatively small. The cases are found chiefly in the large garrisons and among the corps from those parts of the kingdom where tuberculosis is common. Immediately following the discovery of the tubercle bacillus by Koch in 1881, strict measures were adopted in the army to further restrict the entrance and spread of tuberculosis. The present measures may be grouped under four headings, as follows: (1) the thorough medical examination of all recruits with special reference to tuberculosis; (2) the closest inspection during service; (3) regulation of the daily life according to those rules which increase the general health and strength; (4) immediate isolation and treatment of the consumptive in the army hospital as well as the most thorough disinfection of his surroundings. All doubtful cases are carefully observed either in the hospitals or in a convalescent home, of which there are some 113 in the kingdom with over 700 beds. Early cases are transferred to some tuberculosis sanatorium or to one of the government sanatoria, as at Münich, Münden or Saarbrücken. At Arco, in the southern Tyrol, is a special convalescent home, " Villa Hildebrand," founded in 1901 by the Kaiser for German army and sanitary officers suffering from pulmonary tuberculosis.

H. Tuberculosis in the Navy.

The number of cases of tuberculosis in the navy is slightly greater than in the army, but varies much with the type of service, being more frequent in the land than in the sea service and in the home than foreign service. The same care is exercised in the physical examination of recruits as in the army, and similar precautions taken with reference to the general health of all in the service and to prophylaxis. The strictest rules of general hygiene are enforced. When a case of pulmonary tuberculosis is discovered the patient is immediately isolated and thorough disinfection carried out. When possible, he is sent to one of the marine hospitals or to a sanatorium. Officers are admitted to " Villa Hildebrand " from the navy as well as the army.

Note. — In the preparation of this article I have drawn freely from the following sources: Kurze Übersicht über die Tätigkeit des Central-Komites in den Jahren 1896 bis 1905; Der Stand der Tuberculose-Bekämpfung in Deutschland, B. Fränkel, 1905; Das Deutsche Rothe Kreuz und die Tuberkulose, 1905; Entstehung und Bekämpfung der Lungen-tuberkulose, Jacob u. Pannwitz, 1901; Die soziale Bekämpfung der Tuberkulose als Volkskrankheit in Europa und Amerika, Blumenthal, 1905; and many reports of individual institutions besides personal notes.

It is said that a compromise has been effected by which the city of Philadelphia will receive $1,000,000 from the estate of Dr. Thomas W. Evans for the establishment of a dental institute and museum. — *Science.*

STUDIES IN PSYCHOPATHOLOGY.

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(Continued from No. 13, p. 398.)

X. CASE OF RECURRENT EMOTIONAL STATES.

The following case may be of interest from the fact of the insistence of the recurrent emotion which it presents:

Mrs. J. A., age thirty-eight. Married. Parents were of nervous temperament. Sister is well. Patient is of Irish descent, born in United States. She had a common school education and is not very intelligent.

A physical examination shows the patient to be poorly nourished; she experiences peculiar noises in the right ear, and when she falls asleep she hears occasionally voices. As far as she can remember this persisted since her childhood. Pupils react well to light and accommodation; patellar reflexes are greatly exaggerated. She sees spots before her eyes and has vivid visual dreams. Menstruation normal, regular and not painful. Sensibility to touch, pressure, pain and temperature is in good condition. She has no headaches, no tremors, no motor disturbances.

Patient complains of a painful and very distressing sexual affection in the presence of men. The excitement is sometimes very intense and she is then in agony over it. She is ashamed of it and is disgusted with herself, but the feeling is sometimes sweeping over her with such force that she has great difficulty in suppressing it. The " evil and disgusting " thoughts and feelings torture her and she thinks that death is preferable to such a " miserable " life. She would commit suicide if not for religious fears. The torture of the sexual possession is so intense that she has to shun the presence of men. Curiously enough, it is always the presence of strange men that affects her; the presence of her husband has on her no influence whatever. Even in the church this sacrilegious feeling comes over her and that often in the very middle of the prayer, especially when she happens, to be surrounded by men she does not know. She thinks she defiles the church by her impure thoughts and feelings. She cannot be in the company of men on account of those " horrible " feelings over which she has so little control. She is all the more pained by the perversity of her feelings, as she gets affected in the presence of persons whom she would expect least to arouse in her such " abominable " feelings: a priest will excite them and even a negro. Moreover, she somehow has the feeling that in her presence the men who see her seem to experience the same " baneful " excitement; it is a kind of sexual " telepathy." Occasionally she is seized with unaccountable feeling of fear and is not conscious of what that fear is in particular; she is just afraid and does not know of what, — it seems as if she feels the presence of invisible spirits.

By the method of hypnoidization the patient was put in the hypnoidal state. It took some time to quiet her and compose her, as she felt intense anxiety. At last she became soothed and sank into a deep hypnoidal state; but, as it is characteristic of this state, it is varying in its depth from moment to moment and is very unstable. The instability was specially characteristic of this patient, on account of the nature of the case. Still, even under such unfavorable conditions, the hypnoidal state yielded some definite and interesting results, revealing some subconscious systems of experiences which gave an insight into the nature of the symptoms.

The patient has been a very sensitive and nervous child. She liked to listen with trepidation and shivers to all kinds of stories about spirits, hobgoblins and ghosts, and used to be in mortal fear of goblins. Darkness threw her into great fear, because she suspected the presence of all kinds of mysterious beings and spirits, especially evil ones. She used to hear very strange noises in her ears and was afraid of them and ascribed them to the action of evil agencies. All the dark nooks and corners, cellar and loft and every lonely room and place were peopled by her with ghostly shapes and ghastly figures, — with demons, devils, sprites and gnomes. In her sleep she did not fare any better, since she suffered from frightful dreams and nightmares. The patient thus passed her childhood in continuous fear of unknown and mysterious powers surrounding her on all sides. The child lived in constant terror of things she could not give an account of; she was afraid and did not know of what. It was really a cultivated form of panophobia developed in a timid and nervous child. Later on the fears apparently lapsed, but really did not disappear, — the fears became subconscious. It was those dissociated subconscious fears of something indefinite and intangible of early childhood that were manifested in fully developed womanhood as an inexpressible, unaccountable fear of some impending evil; in short, as panophobia.

But how about the sexual affection? In one of the hypnoidal states I at last discovered the subconscious source of the trouble. As a young girl the patient was very emotional, highly excitable, an ardent temperament, with strong passions which she had some difficulty to control. The sexual instinct was awakened rather early and the patient had some difficulty to subdue it. She felt, however, quite safe, as the instinct was kept well under control. When about the age of eighteen she had to return home from a visit to a girl friend of hers. It was late at night; the car she boarded was rather deserted, with only one passenger, a young man, sitting opposite her. Gradually an intense sexual feeling stole over her and seized on her; she felt like one stunned. It seemed to her as if some frenzy got hold of her. The barriers of the pent-up passion evidently seemed to give way. She felt mortified and humiliated at her weakness. At the same time she knew that the man was also sexually affected. She was in agony, and when she left the car the patient was all broken up and prostrated for several days. After a few days she recovered and then the whole incident faded from her memory. The affection, however, really did not disappear, — it only lapsed from personal consciousness; it became dissociated and subconscious, to come once more to the surface of consciousness on subsequent favorable occasions. Thus the hypnoidal states have disclosed the presence of subconscious states, the working of dissociated moments-consciousness in a disaggregated subconsciousness.

XI. CASE OF INSISTENT STATES WITH GYNOPHOBIA.

Mrs. C. C., thirty-five years old; married three years. Father is of neurotic, passionate temperament; mother is very nervous, seems to suffer from some kind of epileptiform attacks and periodically from severe hemicrania. Brother and sister are well, though also very nervous and excitable.

Patient is quite intelligent, but very emotional, — cries at the least provocation; her attention is easily distracted; mental processes are normal. Desultory memory for numbers and syllables is poor, but logical memory for events past and present is well preserved. There are no perceptual disturbances, — no illusions, no hallucinations. Sleep is light and is disturbed by dreams.

Physical examination is negative; except for the fact of marked ill-nutrition and flabbiness of muscles, nothing special could be observed. Patellar reflex is exaggerated. Pupillary reaction and accommodation to light and distance are normal. Field of vision is normal. No motor disturbances. She complains of creeping sensations in the extremities, in the hands and legs, also of tingling sensations and numbness in the body and of pains in the back. An examination, however, shows that the patient's sensitivity to all forms of stimulations is normal. Still at times she suffers much from pains in the back, from paresthesia, tingling sensations and numbness of the extremities and from paresis of the whole body. Motor imitation is very marked, so that the patient frequently copies and imitates motor habits that specially impress her. During the course of her life patient has taken up all kinds of motor habits and twitchings, although she succeeds in arresting them. The motor automatisms are not of an insistent character.

What the patient, however, specially complains of is insistent ideas and feelings which torture her, and from which she is unable to free herself. Thus, she has an extreme abhorrence of women. Woman to the patient is impurity, filth; woman to her is the very incarnation of degradation and vice. She would not pass a woman if she could help it. Patient tells me she would not have come up to my office had a woman been standing on the steps. She cannot pass a woman without a sense of nauseating disgust. The house-wash must not be given to a laundry where women work.

The patient's husband corroborated the general symptoms and gave additional data. They had to break up house and remove to another one because carriages opposite their window happened to be hitched in knots and in angles which the patient could not tolerate. Pencils, sticks, books and other objects must be put parallel to the wall and not so as to form an angle or be brought in relation with any of the angles of the room. In kissing her, the husband must be careful that the kisses should not be in a vertical position, nor form any angles, but all must be arranged in rows, parallel to the wall. When dining in a restaurant, should a gentleman and a lady happen to come near them, the table must be immediately left in the very middle of the meal. Patient has certain formulæ and phrases which she seems to regard with superstitious awe, although she is conscious of their absurdity. She insists that the husband should repeat verbatim the phrases, and if he happens to substitute another word, or phrases the terms differently, she is much disturbed; he has to help himself out with a dictionary, as she is not supposed to tell him the words. When she attempts to counteract her insistent ideas and impulses, she has crises of crying and of intense depression and suffers agony. Patient feels very unhappy and is distressed over the misery she is in, and of the pain she causes her husband. She bewails her lot, regards herself as insane, but the ideas and impulses are irresistible and uncontrollable. Mr. C. tells me that his wife experiences horror and disgust at the touch, at the mere sight of a woman. He must be on the lookout not to be in one line with a woman, even if the woman be two or three blocks away. Nothing must be picked up on the street, not even the most valuable object, perchance it might have been dropped by a woman. A woman once happened to visit his wife, who could not help herself and had to admit her female guest. The visitor was sent off by some excuse or other. Unfortunately, the woman before leaving stopped on the threshold of the house for a few moments. The house was at once washed, cleaned, scrubbed and purified as after a pest. The husband was not admitted to enter that door for a week, until the threshold was ripped up, another new one made, and the position of the door changed. Patient has also fears, unaccountable fears; she does not know what it is she is afraid of; she is only conscious that, when she remains alone, especially in the evening, a fear suddenly seizes her.

The hypnoidal state brought out the fact that the patient, who was educated in a convent, was easily frightened and was specially afraid of the dead and of the devil. While in convent she used to have frightful dreams in which the devil played the chief part. Thus once she dreamed that the devil pinched her ear; she cried out and woke up in great fear. The nun upbraided her, because the devil could not possibly visit such a holy institution as a convent. Once the devil threw her out of bed and threw the mattress after her. The people in the convent became very much frightened and the girls screamed and prayed. The priest was called for and he asked the patient whether she had been praying for the lost souls in purgatory. On being answered in the affirmative the priest advised her not to pray any longer, as the souls from purgatory troubled her. She stopped praying for the lost souls and the trouble completely disappeared. It is the fear of devils and of lost souls that keeps on persisting in the subconscious life of our patient and is now and then giving rise to indefinite fears of the unknown, to panophobia. The foundation of this panophobia was laid in the patient's tender childhood, and, although she no longer believed in diabolical agencies, in fact even ridiculed them, still the fear did not fully lapse, — it became dissociated and subconscious.

The patient's motor automatisms and imitativeness can be readily traced to her childhood. As a young child patient was very impressible, highly suggestible, more so than any other child of her age, — she suffered then from habit-tics and from choreic-like movements and twitchings. The suggestibility of the patient's waking state is now greatly reduced, but the subconscious suggestibility is possibly as strong as ever. She can, however, easily free herself from such subconscious motor suggestions and imitations, so that they do not trouble her much. They are but transient and soon tend to disappear.

Some twelve years ago the patient had a bad all and hurt her spine. It is to that fall that the ubjective paresthesia in the extremities, the ingling sensations, numbness, paresis and pains in the back can be traced, — the patient passes at each attack through the original experiences of the accident of the fall.

When about the age of eighteen the patient suffered a great shock, — one of her near relatives attempted to assault her at night. This accident threw her into a series of attacks which she characterizes as "hysterical attacks." She really never got fully over it, and the incident, though apparently but faintly present in her conscious memory, has remained active in her subconscious life.

The patient's gynophobia or hatred of women, may be traced to her training received in the convent. While there she was impressed with the belief that woman is a vessel of vice and impurity. This seemed to have been imbued on her by one of the nuns who was very holy and practised self-mortification. With the onset of her periods, and with the observation of the same in the other girls, this doctrine of female impurity was all the stronger impressed on her sensitive mind. This, however, lapsed from her conscious memory and did not come to the foreground of consciousness until later in life when she was fatigued and exhausted by the strain of office work, toiling many days at a stretch. Still this dissociated, subconsciously buried prejudice of youth might have never come to the surface had not another factor favored its forthcoming and resurrected an experience that had apparently long gone from her active life. Three years ago the patient married a man somewhat younger than herself. Being of a highly sensitive mind and of a suspicious disposition, she developed an intense feeling of jealousy in regard to her husband. It was under these conditions of jealousy that the long-buried and dissociated belief in the impurity of woman came to life again. Curiously enough, instead of applying it to herself, the feeling of gynophobia was applied by her to others. This is due to the emotion of jealousy which called forth that subconscious atavistic belief of the patient's religious youth. The magic formulæ and phrases belong to the same subconscious stratum. The avoidance of formation of angles and the arrangement of kisses had a purely sexual significance.

(To be continued.)

Massachusetts General Hospital.

CLINICAL MEETING OF THE STAFF, MARCH 8, 1907.

UNUSUAL PUPILLARY PHENOMENA IN HYSTERIA.

BY JAMES J. PUTNAM, M.D.

A rare form of hysteria was demonstrated, of which the main features were dilatation, with complete immobility of the pupil of one eye, associated with spasm of the ciliary muscle of the other eye, the pupil of which was rather small habitually, but responded to light and with convergence. The fundus was normal on both sides, but the vision of the eye with the spastic ciliary muscle was considerably reduced, both as regards acuity and size of field, while the vision of the eye with the immobile pupil was normal both for distant and for near objects.

The patient was a young girl of nineteen, an operative in a mill. She had been subject, ever since infancy, to occasional attacks which seemed to be of an epileptic character for the most part, and it was on the day following one of these attacks, six months ago, that one of her companions noticed the change in the size of the pupil for the first time.

The patient then applied for treatment at the Eye and Ear Infirmary, and was kindly referred to the Massachusetts General Hospital by Dr. Edmund W. Clap, under whose care she had come.

Further examination then showed that the patient was anesthetic over the entire half of the body on the side of the spastic ciliary muscle and contracted field of vision, and this anesthesia included the eyeball and mucous membrane of the nose, as well as the trunk and limbs on the same side. Other marks of hysteria were also present. Suggestion in mild hypnosis had failed to remove the anesthesia or to modify the eye symptoms, but the vision has improved through training.

The case was considered as important not only because of a rare sort and one with regard to the genuinely hysterical character of which much doubt had been expressed, but also because, if genuine, it indicated how deeply the hysterical tendency may strike among the reflexes ordinarily considered as beyond the reach of will.

A more extended report will be given in another issue of this Journal.

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HYSTERICAL TRUNK DEFORMITY.

BY MAX BOHM, M.D.

The case which I am presenting to you to-night, on request of Dr. J. J. Putnam, represents a somewhat rare condition, namely, an hysterical trunk deformity.

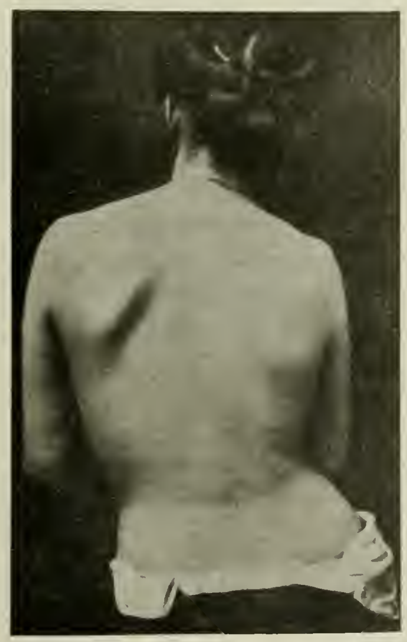
There is nothing remarkable in the patient's previous history, particularly no heredity as to nervous diseases in her family.

She was perfectly well up to 1905. In October, 1905, she noticed that her right hip was growing large. Two weeks later she began to have sharp shooting pain in her right hip, running down her leg; she began to limp and had to go to bed. Then she went to two hospitals and was treated at both places for tuberculous hip disease. Plaster spicas were applied. After the plasters were removed, she had to walk stiff-legged. In June, 1906, her hip was cured; but now her back became crooked and painful. She had to stay all summer at home, most of the time in bed. She says the end of her spine was so painful that she could not lie on her back nor sit down. She went to a hospital, where a plaster jacket was applied on her back, which she wore for six weeks. After this was removed, her back was worse, she says, and massage and electricity were given for two months. In February, 1907, she entered the out-patient department of this hospital.

The photograph shows the conditions which were present at that time. The spine offered a marked distortion and the question came up to determine the nature of the deformity. For many reasons we came to the conviction that it did not represent an ordinary lateral curvature. For in the first place there was no rotation present, which accompanies the lateral deviation of the ordinary spinal curvature in such a typical way.

Furthermore it was remarkable to see how the rather severe deformity disappeared under extension or even in recumbency, which never can happen in a case of spinal curvature with structural change in the vertebræ.

Thus we had to consider the type of deformity, offered by this girl, as different from the ordinary lateral curvature and to search for other etiological factors than those which we associate with the latter.



There are a few cases described of hysterical scoliosis in the literature, which offer very similar conditions to our case. Most of the authors mention the presence of general hysterical stigmata, furthermore, of contraction or relaxation of the back muscles as points which the diagnosis must be based upon. Since these conditions are present in our case, hysteria offers the best explanation for the deformity. The assumed hip disease also seems to be of hysterical nature, since no trace of it whatever can be found.

The diagnosis is of some importance, for the prognosis and treatment of an hysterical curvature is naturally entirely different from that of an ordinary lateral curvature. For the former can be absolutely cured, the latter only partly improved.

There are several means for *treatment* of this hysterical deformity. More severe forms of treatment are, stretching under ether, application of plaster, etc., but the simplest form of treatment is psychotherapy. And this was applied in our case. What needs most consideration is the fact that these cases have lost the consciousness of the normal trunk attitude. Asked to stand straight they will not do so, even if they are physically able to. That is where the treatment has to start; the patients have to be taught with the help of a mirror how to take the proper attitude until they learn it.

Besides this special treatment general hysterical treatment naturally is indicated, which must involve some unpleasantness. This was done in our case by head suspension.

The case is still under treatment and so far markedly improved. But the time, which she is under observation is too short to allow us to speak of a permanent correction.

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FEIGNED ERUPTION IN AN HYSTERICAL MAN.

BY CHARLES J. WHITE, M.D.

THE subject of this remarkable condition is a coachman, forty years of age, whose previous personal and family history is so good that they have no direct bearing upon the present state in which we now find him.

In December, 1905, he burned the right middle finger while shaking down his furnace. The wound became septic, involving the bone, and in consequence the distal and middle phalanges were amputated. The stump healed in the course of six or seven weeks but almost immediately became sore again, thus necessitating a second amputation at the metacarpophalangeal joint. In six weeks this second wound healed when there appeared at its site a thick crust, the size of a five-cent piece. At the same time a major portion of the back of the right hand and a half of the extensor surface of the forearm became involved by diffuse crusting lesions similar to the one just described. Dr. Drew, the attending physician, describes the condition as septic, and the resulting scar, though to us not suggestive of a typical previous septic state, reveals the depth and destructive action of the process. Most of the summer of 1906 was required to heal this serious wound.

In November, 1906, a Boston surgeon incised the arm in the anterior axillary line and stretched the nerves hoping to relieve the deplorable condition of the patient. The resulting scar can be seen at the junction of the arm and the chest.

After this operation there was quiet until about five weeks ago when the man noticed itching in the arm and then appeared small red spots on the skin which, before attaining the size of a large bean, became covered with brown crusts and then slowly developed in size until they reached the present area, some two inches in long diameter.

To-day the arm presents ten lesions, round or oval in shape and covered with thick, brownish crusts with depressed centers and concentric ridges like the lamellations of an oyster shell. Around these crusts appears a fine halo of pinkish skin, while from the lower edges of several of the larger lesions can be seen one or two linear streaks of slightly ulcerated, greenish or pinkish-red skin terminating in drop-like enlargements. These linear ulcerations are very important from a diagnostic point of view, and a careful observer will be impressed by the fact, I think, that they correspond well with the course of a caustic liquid influenced by gravity. On the dorsum of the right foot there are, in addition, several small lesions covered with blackish crusts. The crust at the site of the second phalangeal operation is blacker than the others and presents a deep crateriform surface, while from underneath pus can be expressed. This lesion, the man states, has persisted from the time of the second excision.

Physically the patient is well except for certain nervous symptoms which are highly interesting in their bearing on the case. The dermatological department wishes to acknowledge its indebtedness to the neurological staff for the demonstration of these facts. Over the whole right half of the body the man is anesthetic, even the bulbar conjunctiva and nostril being insensitive to severe irritation. Motion of the right arm is much impaired while the right patellar reflex is decidedly exaggerated.

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DEMONSTRATION AND CLASSIFICATION OF BENIGN BREAST TUMORS.

BY CHANNING C. SIMMONS, M.D.

THE demonstration is designed to illustrate the various forms of benign tumors and the different types of disease of the breast. The nomenclature employed is that suggested by Dr. J. C. Warren in his article on the classification of benign breast tumors, read as the Oration in Surgery at the Portland meeting of the American Medical Association in 1905.

The chief object in this classification is to give a nomenclature which is clinically descriptive but at the same time correct from a pathological standpoint and thus acceptable to both the surgeon and the pathologist. The surgeon wishes to know in regard to a given breast tumor whether it is sufficient to remove the growth alone or whether it is best to amputate the breast.

The gross appearances of all these breast tumors is characteristic and the surgeon who is familiar with their gross pathological appearances can in nearly every instance make the correct diagnosis without having recourse to the pathologist and the microscope.

In making the classification it seemed best to separate at once the discrete encapsulated tumors from the more common diffuse condition affecting usually the greater part of one or both breasts, to which the name "Abnormal Involution" has been applied. This condition was formerly called "cystic disease" or "chronic mastitis."

The tumors are subdivided to distinguish those in which the overgrowth of the fibrous tissue is the chief characteristic from those in which the epithelial proliferation plays the important rôle.

The classification as adopted is as follows:

Tumors (fibro-epithelial).
(1) Fibrous group:
  Periductal fibroma.
  Periductal myxoma.
  Periductal sarcoma.
(2) Epithelial group:
  Fibro cyst-adenoma.
  Papillary cyst-adenoma.

Abnormal involution.
(1) Cystic type.
(2) Epithelial type.
  (*a*) acinal.
  (*b*) papillary.
  (*c*) adenomatous.

Tumors: fibrous group. The periductal fibromata are the tumors often termed "simple fibromata" or "intracanalicular papillary fibromata," the term periductal being employed to designate the point of origin of the tumor from the fibrous tissue immediately surrounding the ducts.

The periductal myxomata are similar but contain myxomatous tissue and are usually of larger size. The history usually given by the patient is that a small tumor has existed for some time but has suddenly taken on a rapid growth. These tumors are not clinically malignant in any sense and a large number of them are not true myxomata but only edematous fibromata.

The periductal sarcomata are similar to the above-mentioned tumors, their point of origin being the same, but they are very cellular and grow more rapidly. They are indigenous to the breast and are not particularly malignant, metastases being rare, if ever occurring. They have been called adeno-sarcoma, or cystosarcoma in other classifications. Sarcomata, such as are seen in other parts of the body, are also occasionally seen in the breast and should not be confounded with the periductal sarcoma.

Epithelial group. — The fibro-cyst-adenomata are tumors similar to the periductal fibromata but differ in that the epithelial elements are markedly increased. In gross they often contain cysts and the new formed acini are seen as whitish or glistening translucent points in the dull gray-white, fibrous tissue.

The papillary cyst-adenomata are either single or multiple and are usually situated near the nipple. They are seen as cysts of varying size from the walls of which project soft, friable, papillary ingrowths which fill the cavity to a greater or less extent. These ingrowths are often necrotic or hemorrhagic. The fluid contained in these cysts is almost invariably bloody and a bloody discharge from the nipple is the most common clinical symptom of this condition. As would be expected in a tumor in which the epithelium shows such a marked tendency to grow, retrograde changes into malignant disease are not uncommon. Thus in a series of twenty cases of these tumors, three were associated with adeno-carcinoma.

Abnormal involution. — (Cystic disease, chronic mastitis.) The disease is seen commonly at the time of the menopause and signifies that the involution changes which occur at this time of life are not progressing in a normal manner.

Two main types are recognized,— the cystic and the epithelial. In the cystic type the change in the gland is chiefly fibrous and numerous cysts are formed by the contraction of the ducts at different points. These cysts vary greatly in size, form, and number, but are most commonly seen in the outer upper quadrant of the gland. The reason for this is obvious when we consider that, roughly speaking, at least one half of the mammary gland is located in this quadrant. This form of abnormal involution rarely undergoes retrograde change into malignant disease.

In the epithelial form of abnormal involution cysts are found as in the simple cystic variety, but the chief characteristic of the condition is the proliferation of the epithelium lining the cysts and ducts and acini. At times there appears also to be an actual new formation of these acini. In other cases the epithelium, within the cysts and ducts is heaped up, forming papillary ingrowths, while in the most extreme cases this epithelium has an adenomatous arrangement. This is the type of abnormal involution most often associated with cancer, the proportion of the cases varying from 10% to 12% according to various observers. It must be understood, of course, that any degree of abnormal involution between these two extreme types may be seen.

Specimens of the following tumors were shown: (1) Periductal fibroma, (2) periductal myxoma, (3) pariductal sarcoma, (4) fibro-cyst-adenoma, two cases; (5) papillary cyst-adenoma, four cases, one associated with cancer; (6) abnormal involution, three cases illustrating the various types.

◆

A CASE OF GASTRIC ULCER. PERFORATION; OPERATION; RECOVERY.

BY FRANKLIN G. BALCH, M.D.

A. J., thirty-five, single, entered the Massachusetts General Hospital on the service of Dr. A. T. Cabot, Feb. 16, 1907. She was brought to the Accident Room at 6.50 P.M. with the following history:

Family history not obtained.

Personal history: No similar attack previously; catamenia and bowels regular. One year ago she had an attack of pain in the right hypochondrium lasting one week and accompanied by jaundice. Her doctor said she had gallstones.

Present illness: Three days ago she began to have indefinite pains in the epigastrium, shooting up into the chest and back. Her appetite was poor and what food she took distressed her. Eight hours before entrance she was seized with a sudden, severe prostrating pain in the epigastrium. She was nauseated and vomited several times. The pain continued very severe, mostly in the epigastrium and uncontrolled by morphia. Bowels had not moved for two days.

Present examination shows a well-developed and well-nourished woman. The pupils are equal and react. Nothing abnormal is found in the chest. The abdomen is not distended but is tympanitic throughout. There is slight general tenderness, most marked in the epigastrium, and slight general spasm and rigidity. Vaginal examination shows nothing remarkable. Reflexes normal.

Temperature 98°, pulse 96. White count, 25,000.

Operation by Dr. Balch. Patient in dorsal position, usual local preparation. An incision was made in the right border of the rectus and the muscle retracted. The peritoneum was opened with the escape of a small amount of gas. The stomach was very slightly adherent to the peritoneum, but was covered with fibrin on its anterior surface, where a small punched-out perforation was seen near the pylorus. The peritoneal cavity was filled with turbid fluid; no adhesions or fibrin in lower part. The stomach was drawn up into the wound and the perforation closed with two rows of continuous Pagenstecker sutures. There was moderate induration about ulcer. The stomach was examined but no other perforations were found. The peritoneal cavity was washed out with normal salt solution. A small piece of omentum was sutured over the site of the perforation for reinforcement. A cigarette wick was placed to the right flank, to the region of the ulcer and to the lower abdomen. The wound was partly closed with chromic gut sutures in the muscle and peritoneum and silkworm-gut suture in the skin. The patient was sent to the ward in good condition.

She made a good recovery from ether. The wicks were all removed within the next forty-eight hours and the further progress of the case was uneventful. The principal points of interest in the case are the fact that the stomach contents were as nearly as possible sterile. The patient had eaten nothing on the day the ulcer perforated and almost nothing the day before. Then the operation was only about twelve hours after perforation. The suturing of the bit of omentum over the line of sutures in the stomach offered an additional safeguard against leakage. Washing the peritoneal cavity thoroughly with salt solution seemed wise in view of the general diffusion of the stomach contents. The partial suturing of the wound and the early removal of the wicks allowed of prompt healing and the wound, nineteen days after operation, looks as if it had healed by first intention.

CASE OF ACUTE GANGRENOUS PANCREATITIS.

BY D. F. JONES, M.D.

L. L., forty-four, female. Lodging-house keeper, was transferred to the South Surgical service from the East Medical on July 4, 1906.

History. — Habits: Three whiskies a day for about three months, six cups of tea daily.

Family history: One brother and one sister died of "phthisis."

Personal history: For three months she has had attacks of vomiting followed by pain in the epigastrium, occurring about once a week. They usually occur before breakfast and last two to three hours. Pain in the epigastrium, extending into the back, and rarely into both shoulders, with general abdominal soreness. The pain always follows the vomiting. She says she has not been jaundiced. In the intervals between the attacks she is perfectly well.

Three days before entrance she ate cucumbers at night. In the morning she vomited; this was followed by pain as in former attacks. She has continued to vomit almost continually ever since, with constant severe pain in the epigastrium, so severe that she has been unable to sleep. Has lost considerable weight.

Physical examination: Well developed, rather fat woman. Heart sounds faint. Abdomen full and rigid in upper right quadrant. Tenderness most marked here, but it extends across whole abdomen. Dullness in right upper quadrant and down the right side. Liver dullness from the fifth interspace to four inches below the costal border. A distinct tender mass can be felt in the region of the gall bladder, extending downward nearly to the umbilicus. Slightly jaundiced.

Operation July 5, 1906. Incision through the right rectus from the costal border downward. Gall bladder and stomach normal. The bile ducts could not be thoroughly explored because of the mass. Just below the border of the liver is a mass adherent to the anterior abdominal wall and extending posteriorly to behind the stomach. This mass is made up of gray necrotic fat tissue into which the finger can be pushed with ease. It extends to the region of the pancreas and across the spine over the pancreas. The whole mass was broken up with the finger and packed with several strips of gauze with a tube in the center. The condition of the patient was so bad that posterior drainage was not attempted.

The convalescence was long and tedious, but the patient was immediately relieved of pain except at intervals when she would have considerable pain with an increase of temperature. The temperature during the greater part of the time was between 99° and 100°.

She left the hospital in eight weeks with a small sinus which closed in a short time, since when she has been perfectly well.

Book Review.

The Operative Treatment of Prolapse and Retroversion of the Uterus. By J. Inglis Parsons, M.D., M.R., C.P., M.R.C.S., Physician to the Chelsea Hospital for Women, Late Surgeon to the Royal Maternity Charity, Fellow of the Royal Medical and Chirurgical Society, Obstetrical Society of London, British Gynecological Society, etc. London: John Bale, Sons & Danielsson, Ltd. 1906.

This is an attractive little red book of 90 pages with 26 illustrations in the text and six plates. It represents the author's conclusions as to the etiology, pathology and treatment of prolapse and retroversion after twenty years' experience on the staff of a special hospital for women.

In the portion devoted to prolapse, much stress is laid on the supporting action of the uterine ligaments, and the author calls attention to the importance of examining the woman in the upright posture in order to make a correct diagnosis of the degree of prolapse. The description of the anatomy and mechanics of prolapse is somewhat inadequate. The author's operation of injecting the bases of the broad ligaments with quinine in solution is described with care and a table of cases is given.

The chapters devoted to retroversion and retroflexion are very sketchy and unsatisfactory and embody nothing that is new.

Solid ground is reached, however, in the closing paragraphs, on the discussion of the relative value of ventrosuspension and Alexander's operation and shortening of the round ligaments. Here the twenty years' experience counts at its full value.

[Through an oversight this review has been delayed in publication, though mention was made of the book in the review column of a previous number of the Journal. Ed. —]

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SOCIAL LEGISLATION IN GERMANY.

During the visit of Prof. Friedrich Müller in Boston he read a paper at the Boston Medical Library on "Social Legislation in Germany and Its Influence on the Care of the Sick." As Dr. Richard Cabot said, in introducing Professor Müller, the subject was something of a departure from the papers ordinarily read at such meetings. The importance which the relation between the medical profession and the people at large has assumed in Germany, outside of what we should call strictly professional lines, will, no doubt, before long have its counterpart in America. It is evident, as we have repeatedly had occasion to observe, that the scope of the physician is widening in this country, and that his connection with the great social questions of the time is becoming more intimate. It was, therefore, a peculiarly happy choice of subject that an American audience should have had an opportunity of hearing from an authoritative source the situation regarding these matters in Germany where, no doubt, such legislation has developed more completely than in any other country.

In 1883 national German legislation was started to provide for three kinds of compulsory industrial insurance: First, against disease; second, against invalidism and old age; third, against accident The bearings of these forms of insurance Dr. Müller dwelt upon at length.

It appears that fifteen million people in the German Empire have the first form of insurance, namely, against disease. Every one who works for wages pays two thirds of the cost of his insurance, the other third being paid by the employer. Under these conditions insurance corporations are formed under municipal control. The advantages to the employee resulting from this arrangement are that he receives free medical treatment and medicine at home or in a hospital for six months in case of illness; that he has daily alms equal to one half of his wages, and finally that something is paid at his death, if he dies within the limit of six months. Some companies go even further than this,— build convalescent homes and, in addition, care for the wives and children of the sick. By this first form of industrial insurance, therefore, the employee is assured of medical care through any acute illness he may have, and in some instances his family becomes the beneficiary at his death. This, however, does not provide for more chronic invalidism and the advent of old age.

The second form of insurance, that against invalidism and old age, provides for this large contingent of the working population. Through this all over seventy receive a dole, and many younger persons, if disabled. Chronic disease, also, as, for example, affections of the heart, kidneys, tuberculosis or tabes, entitle holders of the insurance to an invalid benefit provided he is pronounced incapable of earning one third of his former wages. This type of insurance is at the present time held by twelve million people, the amount paid to each being from forty-five to one hundred and twenty dollars yearly, one half by the employers' premiums and one half by the employees'. It thus clearly becomes the interest of insurance corporations to prevent illness, and to this end they build sanatoria and see that the sanitary conditions of tenement houses are satisfactory.

Finally, the third form of insurance is that against accident. This is paid wholly by the employer; hence he naturally takes every means to guard his machinery and to prevent accidents to his employees. Carelessness on the workman's part is disregarded. Both physical and psychical traumata are subject to benefit, the exact amount of which in individual cases is carefully worked out. A specified sum, for example, is given for the loss of an eye, right hand, left hand, etc., and about such crippling injuries there is little controversy. This system, particularly in relation to minor accidents, naturally leads to much malingering and exaggeration on the part of the workmen. There is also much perfectly innocent auto-suggestion. The significance of nervous disorders resulting from slight traumatisms was fully recognized by Professor Müller, who even went so far as to say that the traumatic psychasthenia thus produced may result in genuine arteriosclerosis. It is clearly understood that this form of insurance may and actually does do much harm, but it is also felt that the good out-balances the harm and that in spite of the rapid growth of German industries the number of accidents has actually decreased. Naturally, the lower courts and the higher courts of appeal are kept busy deciding disputed cases as to the presence or degree of injury from accident, injury or from chronic disease. This throws a peculiar responsibility, not only upon the courts, but particularly upon the examining physician, which we in this country have not, as yet, been obliged to meet, but which in some modified form, will, in all probability, be forthcoming.

The sick benefit insurance laws at first met considerable opposition from physicians who were practically forced either to be insurance doctors or to reduce their ordinary fees. This fee cutting actually led at one time to a reduction to five cents a visit. Under the insurance laws the patient could call a doctor as often as he wished, and the doctor also could make as many visits as he chose. These difficulties finally led to a strike of the doctors against corporations which resulted in higher and more appropriate fees. It also led to the right of a patient to choose his own doctor which previously had not been possible. As the matter now stands, the doctors are satisfied, but the corporations suffer a certain hardship from the occasional unscrupulousness of physicians who, through good nature or for other reasons, may make unnecessary visits or certify to disabling illness.

The lesson which all this has for us is, perhaps, not immediately apparent. Our form of government is different; our institutions have grown up in a wholly different soil from that of Germany, and there is a certain individual independence which is, perhaps, more marked here than there. At the same time, fundamentally, industrial conditions are the same the world over, and it is altogether probable that we in America will sooner or later come to some such systematized method of dealing with this great social problem, although it will probably be in our own way. In the meantime much is to be learned from the wide experience of Germany. We call attention in this connection to an article by Dr. Edward O. Otis, which appeared in this Journal for March 24, 1898, on "Hospitals and Sanatoria for Consumption Abroad," and to a valuable paper by Dr. E. A. Locke, now being published, on "The Crusade against Tuberculosis in Germany."

RENAL CYSTS AND CYSTIC KIDNEY.

The origin and mode of formation of cysts in the kidney are frequently the subject of discussion. Numerous theories have been advanced to explain them, and all of these theories find both advocates and opponents. For fifty years interest in this subject has been maintained and its final solution has, perhaps, not yet been reached.

It is common in considering cysts in the kidney to separate the occasional renal cyst from the multicystic kidney, usually bilateral, and to regard these two groups as somewhat different in origin. Then the rather frequent small cyst, associated with chronic interstitial nephritis, is commonly explained as a result of the changes in the interstitial tissue, leading to an obstruction of a urinary tubule with retention of secretion and consequent dilatation. On the other hand, Aschoff and his pupil Ruckert[1] have supported the view that all cysts in the kidney are congenital and all owe their origin to retardation of development in an earlier or later stage of fetal life. Busse[2] believes that the cystic kidney is the result of developmental disturbances in which defective, deficient or excessive growth of elements already present in the kidney play a part. This view does not, however, support the idea of a neoplastic nature, an origin from misplaced germ cells, as believed by many. Bramwarth[3] has studied the kidney cysts in a large number of cases and also the kidneys from nineteen newborn children. In the latter he finds cysts in 50% of the cases without any evidence of a past or present inflammatory process. Much more frequent than true cysts are slight irregularities in the formation of tubules or glomeruli that might result in cysts later. In adults he finds that there is no constant association of cysts with inflammatory processes even in chronic interstitial nephritis. So Bramwarth believes that the cysts are due to developmental errors, and that in inflammatory conditions cysts develop more rapidly and so are more commonly macroscopically evident. He draws no sharp distinction between renal cysts and cystic kidney.

Bunting[4] has studied two cases of cystic kidney in the new born. In these he finds evidence of an epithelial hyperplasia in ducts which otherwise appear normal. This he believes leads first to a general cylindrical increase in the size of the ducts, but gradually there is a greater

[1] Festschrift. für Orth., 1903, cited by Bramwarth.
[2] Virch. Archiv., 1904, clxxv, 442.
[3] Virch. Archiv., 1906, clxxxvi, 341.
[4] Jour. of Exp. Med., 1906, viii, 271.

dilatation at points in the ducts less fixed by the architecture of the organ, and cystic tubules are the result. That cysts not intratubular ingrowths thus result Bunting explains by assuming that the normal urinary pressure within the tubule exceeds the resistance offered by the supporting kidney framework. While primary hyperplastic in nature, Bunting does not consider cystic kidney as truly neoplastic.

The trend of this recent work is against the retention theory of the formation of renal cysts and places their origin in the period of fetal life. Inflammatory processes are regarded as associated, not causative, though they may exert a stimulative action and render potential cysts macroscopically evident. Some believe them purely the result of errors in renal development; others give them a modified neoplastic origin. Cystic kidneys also have a clinical interest. To both physician and surgeon they present a problem in diagnosis. More frequently it is the presence of tumor rather than the existence of symptoms that brings the patient to the physician. Lund [5] has recently discussed cystic kidney from the surgical view point. The pain and discomfort due to their size and mobility present themselves as a surgical problem. For these Lund recommends free incision and puncture of the larger cysts and suturing of the organ in position. Recognition by the surgeon of the almost constant bilateral occurrence of cystic kidney is essential to prevent removal of one kidney when its fellow is already insufficient for the burden of a double duty. In their later stages most cases come to the physician for treatment of symptoms essentially those of a chronic nephritis. With cystic kidney, cystic liver and various developmental anomalies are frequently associated, but this seldom is an aid in diagnosing the renal condition

"LETTERS ON PSYCHOTHERAPEUTICS."

The interest which is now everywhere apparent regarding the general subject of psychotherapeutics is still further exemplified by the recent publication in translation of a small German brochure by Professor Oppenheim entitled, "Letters on Psychotherapeutics." It is evident to those who have followed the trend of thought in this subject during the last few years that what we now most need is a clear and common sense presentation of certain principles of treatment by which practitioners in general may make use of mental methods in suitable cases. The difficulty up to this time has been largely the lack of methods. It is a common enough assertion on the part of intelligent physicians that they have always practised psychotherapeutics, and that the recent movement is merely the rehabilitation of an old doctrine. This is, of course, perfectly true in one sense, but the indefiniteness of the whole matter has been a distinct bar to progress. It is well, therefore, that methods should be discussed and particularly simple methods which practitioners may put into immediate practice.

A somewhat justified criticism of Dubois' much-talked-of book on psychotherapeutics is that it gives no distinct rules by which others may profit. The book has brought clearly to the forefront the fact that psychotherapeutic measures are frequently useful and indispensable in certain cases, but beyond this it gives the author's personal method of dealing with patients rather than distinct directions which may be followed by others. On the other hand, certain other writers on the subject have gone so deeply into the psychological aspects of the problem and have elaborated their methods to such a degree that practitioners in general are wholly unlikely to profit by their writings, except in an indirect way.

It is, therefore, with a certain sense of satisfaction that we take up the simple letters to patients which Oppenheim has written and which he proposes further to enlarge at a later date. Dr. Alexander Bruce, of Edinburgh, has made an admirable translation from the German which he has seen fit to undertake in the belief that the letters give much valuable information not to be found in the ordinary textbook concerning the rational treatment of various forms of functional and nervous derangement. It is, however, not Oppenheim's intention to limit the possible usefulness of this method to the neuroses, recognizing, as he does, the fact that psychotherapy has a word to say in every case. Oppenheim strikes the keynote of the situation when he says in the preface, "To those of my young colleagues especially, who desire to occupy themselves with psychotherapy — and that is almost equivalent to saying with treatment in general — I hope that these letters will afford some guidance which in some respects may be more welcome to them than many of the writings which deal theoretically with the indications and the nature of psychotherapy." The value of these letters lies in their simplicity and in the demonstration which they give of a practical means of approaching an often extremely difficult problem. The letters are addressed to patients and are in great part, at least, a reproduction of letters actually written. The method could not be more direct and cannot fail to interest practitioners of whatsoever sort. In general, we trust that this rather original plan which Oppenheim has adopted may lead to further writing of the same sort on the part of those who may speak with authority in these matters. We need to popularize these methods of treatment among physicians, and there can be no better means of accomplishing this end than by the publication of such simple and practical propositions as are brought forward in this pamphlet.

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[5] Jour. of A. M. A., 1906, xlvii, 479.

MEDICAL NOTES.

Closing of the Paris Morgue. — The Paris morgue is apparently no longer to be open to visitors. This is in accordance with good public morals.

Death of O. Israel, M.D. — The death is announced of Dr. O. Israel, professor of pathological anatomy at Berlin, at the age of fifty-three. Israel was formerly an assistant of Virchow, and for some years past has been editor of Virchow's *Archives*.

Folia Urologica. — With Prof. James Israel, of Berlin, as editor-in-chief, Prof. A. Kollmann, of Leipzig, Dr. G. Kulisch, of Halle, and Dr. W. Tamms, of Leipzig, as associate editors, and the other principal urologists of Europe as collaborators, these new international archives are announced by the house of W. Klinkhardt, Leipzig.

Sterilization of Criminals. — The Portland *Medical Sentinel* reports that the bill providing for the sterilization of certain classes of criminals and the hopelessly insane, which was championed by Dr. Owens Adair, of Astoria, was killed in the House of Representatives of the Oregon legislature at Salem. It was a little too far advanced for the legislature of to-day.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 3, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 32, scarlatina 45, typhoid fever 0, measles 14, tuberculosis 51, smallpox 1.

The death-rate of the reported deaths for the week ending April 3, 1907, was 20.52.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, March 30, 1907, was 234, against 222 the corresponding week of last year, showing an increase of 12 deaths and making the death-rate for the week 20.26. Of this number 130 were males and 104 were females; 228 were white and 6 colored; 136 were born in the United States, 89 in foreign countries and 9 unknown; 36 were of American parentage, 167 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 40 cases and 1 death; scarlatina, 46 cases and 3 deaths; typhoid fever, 4 cases and 0 deaths; measles, 9 cases and 0 deaths; tuberculosis, 56 cases and 15 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 39, whooping cough 1, heart disease 13, bronchitis 7 and marasmus 0. There were 15 deaths from violent causes. The number of children who died under one year was 42; the number under five years 57. The number of persons who died over sixty years of age was 53. The deaths in public institutions were 82.

There were 6 cases and 6 deaths reported from cerebrospinal meningitis during the week.

Smallpox in Chelsea, Mass. — It is reported that seven cases of smallpox have appeared in Chelsea, Mass., all of which had recently come from Lawrence where cases of the disease have been under observation for some time past. Immediate measures will be taken to prevent the possible spread of the disease, for which five hundred dollars has been voted by the City Government.

A Verdict Against an Osteopathist. — A case has recently been tried in Burlington, Vt., in a suit to recover damages from an osteopathic practitioner for alleged malpractice. The jury, after four hours' deliberation, brought in a verdict for the plaintiff. It was alleged that the plaintiff had become a confirmed invalid and unable to walk as a result of the treatment which had been instituted.

NEW YORK.

Bequests. — By the will of the late Francis P. Furnald, of New York, his large estate is to be divided on the death of his wife and $600,000 devoted to benevolent purposes. Of this amount Columbia University is to receive $300,000 for the building of a dormitory in memory of his deceased son, and the Presbyterian Hospital $100,000.

Water Filtration. — The presence of typhoid fever at Katonah, Westchester County, in the Croton watershed, will, it is hoped, give a desired impetus to the project which has been talked of for some time of installing a great filtration plant at the Jerome Park reservoir. Since the first three cases of typhoid at Katonah were made known several new cases and two deaths from the disease have been reported. It is now nearly two years that the report to the Mayor, of Health Commissioner Darlington, urging filtration for New York, has been on file. While much has been done in the last few years to protect the watersheds supplying Manhattan and the Bronx, Dr. Darlington in his report pointed out that these extended over three hundred and sixty square miles, and that within such an area, where there were many inhabitants, the task of giving absolute protection from pollution was impossible. Furthermore, a part of the water supply comes from the state of Connecticut, which is quite out of the jurisdiction of New York City and State. It is gratifying to learn from a recent report of Chief Engineer De Varona that 70 per cent of the water supply of the borough of Brooklyn is now subject to effective artificial and natural filtration. He also strongly recommends the filtration plant at the Jerome Park reservoir, where the Manhattan and Bronx supply debouches directly into the city's pipes, estimating that it can be established at a cost of $7,600,000 and be completed, at the latest, in 1908.

Recovery from Traumatic Aphasia by Operation. — An interesting case of recovery, through operation, from complete aphasia, due to traumatism, is reported from Bellevue Hospital. The aphasia resulted from a blow on the head three months ago, made by a blackjack in the hands of a negro in an attempt to rob the patient, who is thirty-seven years of age. While he recovered from the other symptoms due to the assault, the aphasia persisted. The presence of a fracture of the skull having been demonstrated, an operation was undertaken for the purpose of removing the bone believed to be pressing upon the brain, with the gratifying result that as soon as the patient came out of the anesthesia he was able to talk once more.

A Large Heart. — A heart stated to be the largest on record was found at an autopsy made on March 30, by coroner's physician Philip O'Hanlon and Prof. John C. Larkin, of the College of Physicians and Surgeons, on the body of a prisoner in the Tombs awaiting trial on a charge of perjury. It weighed no less than four pounds and two ounces, and will be placed in the pathological museum of Columbia University Medical School. This enormous hypertrophy of the organ had developed in connection with chronic Bright's disease, and in consequence of it the left lung was compressed into a small compass and pushed far over to one side.

"Brainstorm." — Three boy burglars, each of whom is fourteen years old, were recently caught in the act of looting the unoccupied house of Dr. Austin Flint, in East 19th Street. When arraigned before the sergeant at the police station, and asked what he had to say for himself, the leader of the gang, who had evidently been reading the newspaper accounts of the Thaw trial, in which Dr. Flint is one of the prosecution's expert alienists, replied: "I guess I had one of them brainstorm feelin's."

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Obituary.

ARTHUR E. SANSOM, M.D. Lond., F.R.C.P. Lond.

Dr. A. E. Sansom, consulting physician to the London Hospital, died at Bournemouth, England, March 10, at the age of sixty-nine years. He was born in Wiltshire, and graduated from King's College, London, after having studied for a time in Paris. On account of failing health he retired from the practice of medicine two or three years ago. His name is probably associated in the minds of our readers with his book on "The Physical Diagnosis of the Diseases of the Heart," and also with his contributions to "Quain's Dictionary of Medicine," to the "Twentieth Century of Practice of Medicine" and to Allbutt's "System of Medicine."

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Current Literature.

The Journal of the American Medical Association.
March 16, 1907.

1. Jackson, E. *The Organized Medical Profession and Some of its Enemics.*
2. Jordan, E. O. *The Place of Pathology in the University.*
3. *McCampbell, E. F. *The Adjuvant Action of Quinine Hydrochlorate in Infections by the Bacillus of Tetanus.*
4. Fairbanks, A. W. *Cerebral Syphilis in Childhood.* (Concluded.)
5. Stevenson, M. D. *Considerations in the Extraction of Cataract.*
6. *Verhoeff, F. H. *Cataract Extraction with Modified Iridotomy.*
7. Black, M. *Use of the Secondary Cataract Knife.*
8. *Coffey, R. C. *Principles and Mechanics of Abdominal Drainage.*
9. *Krauss, W. *Problems and Duties in Relation to Malaria.*

3. McCampbell has repeated the work of Vincent, to which he refers, as to the danger of tetanus from the subcutaneous use of quinine. Vincent held that the injection of quinine had a favoring action on the development of tetanus. This McCampbell can in no way confirm. He has been able to gather but few cases in this country where tetanus has developed after quinine injections, and believes that in all the cause was imperfect asepsis.

6. Verhoeff offers the following method of cataract extraction as having special advantages: he makes the usual corneal incision; then, grasping the iris as near its root as possible, he cuts a small hole in it with the scissors and it returns spontaneously to the anterior chamber. Small blunt-pointed scissors (de Wecker's) are introduced through the corneal opening and one blade passed downward through the hole till its point projects below the pupillary margin. The blades are then quickly closed, making a clean cut through the iris. With the cocain mydriasis the cut edges separate at once, usually as widely as after ordinary iridectomy. The lens capsule can then be opened and the lens extracted in the usual way. In the toilette, care should be taken to free the pillars of the coloboma from the incision, and it is probably best to instill atropin immediately after the operation. He claims for this operation the advantages of both the simple and combined operations without their disadvantages.

8. Coffey has experimented with the various methods of abdominal drainage, more especially the physics of tubal and capillary abdominal drainage. By making careful sections of a cast of the abdominal cavity he demonstrated that the deepest situated portion of the abdominal cavity, in the supine position, is in the flank, and that to drain properly from this into the pelvis would probably require the raising of the trunk at an angle of 60 or more degrees, while to drain the pelvis into the flanks would require the raising of the feet very high. In the lateral position, however, almost all the cavities can be drained. His general conclusions are stated by him substantially as follows: 1. Gravity is the chief factor in peritoneal drainage, therefore drainage must reach the most dependent portions. 2. Gauze or capillary drainage is the most widely applicable and useful of all drains, if used in sufficient quantity to preclude its being choked by *débris*, and provided the drain is as large in circumference at its exit as at any point within the cavity and provided it is in contact with abundant dressings on the outside. 3. Gauze drainage is a very dangerous agent if the above principles are not kept in mind. 4. If a surgeon remembers that his drain ceases to be effective in a few hours, he places it with the idea of removing septic fluid in the shortest possible time according to the principles of drainage, and generally gets results. 5. If he has the delusion that his drain will continue to work for days and that the fluid will flow up hill to get it, he will probably be disappointed. 6. If he habitually removes gauze drains before they are naturally loosened, many of his patients will have secondary septic or post-operative hernia or obstruction. 7. Drainage (except a small precautionary cigarette or tubular drain) can rarely be safely removed before the fifth or sixth day. 8. Capillary drainage is inefficient for defined abscess cavities. 9. Tubular drainage is suitable for defined abscess cavities, and may be used for gravity drainage from the peritoneal cavity, but is an uncertain drain in the peritoneum. The article is illustrated.

9. Krauss maintains that there is opportunity for great improvement in the measures employed to stamp out malaria. No region should be uninhabitable on account of malaria. Malaria is too much dreaded since it bears the blame of many fatal cases which are not malaria. In infected regions cases from tuberculosis and sepsis and malignant disease are believed to be due to malaria, and it is from these that the high mortality of supposed malaria results. True malarial fever is extremely amenable to treatment, and probably a spontaneous immunity develops. Chronic malaria, Krauss believes, is a state of relative immunity in which repeated reinfections occur. In acute cases, such as are met in the spring, quinine is efficient; in later cases, however, it may induce hemoglobinuria, and if hemoglobinuria is present, its use is dangerous. Krauss urges that an effort be made to stop the occurrence of malaria by routine blood examinations in the inhabitants of malarial regions. Prevention o. malaria may be accomplished in part by the screening of houses and by destruction of breeding places of mosquitos, but mainly by early diagnosis and thorough treatment of the human host of the parasite.

Bulletin of the Johns Hopkins Hospital.

March, 1907.

1. *Emerson, C. P. *Acute Leukemia.*
2. Rotch, T. M. *Necessity of a More Uniform Nomenclature of Diseases.*
3. Riley, I. W. *Benjamin Rush as Materialist and Realist.*
4. Cullen, E. K. *A Case of Multiple Tumors in a Dog.*

1. Emerson discusses the nature of acute leukemias in connection with three cases of special interest which he reports. The first case was one of acute lymphatic leukemia without enlargement of lymph glands or spleen, but with localized involvement of the bone marrow; many of the white cells of the blood were soluble in the dilute acetic acid used in blood-counting. Death occurred two months after the first symptoms were noticed. There was severe anemia and slight elevation of temperature. This case illustrates the fact that acute leukemias do not always present the typical appearances of chronic leukemias. The condition cannot be diagnosed without blood examination; without this it may simulate many diseases from typhoid fever and septicemia to purpura hemorrhagica and pernicious anemia. In origin, acute leukemias of all types are probably myelogenous, the lymphoid cells of the so-called lymphatic leukemias being more probably primitive marrow cells or myeloblasts. The second case is one of acute leukemia, resembling a septicemia, in which the leukocytes were peculiarly resistant to all staining methods and could not be classified. The third case probably belonged to the class of "aplastic leukemias," perhaps as the final stage of an acute leukemia previously of the ordinary type. The case presented appearances typical of acute leukemia except that the blood picture was that of severe aplastic anemia.

The Lancet.

March 9, 1907.

1. *Goadby, K. W. *Pyorrhœa Alveolaris.*
2. *Rogers, L. *Kala-azar.*
3. Urquhart, A. R. *Insanity, with Special Reference to Prognosis.*
4. Clarke, J. J. *The Post-Operative Treatment of Congenital Dislocation of the Hip-Joint.*
5. Giles, A. E. *Some Observations on Uterine Fibroids.*
6. Hollander, B. *Operative Treatment of Traumatic Psychosis.*
7. *Garland, C. H., and Lister, T. D. *A National School for Consumptives: A Study of the Relation of the Sanatorium to the Problem of the Working Class Consumptive.*

1. Goadby describes the history of this condition and the local condition in the mouth. The disease has been known to occur in epidemics in Switzerland and among the American troops in Cuba. The general constitutional disturbances resulting from Rigg's disease are far more important than any local trouble. Infection into the body takes place by direct continuity of tissue, by the swallowing of bacteria, and from the gums into the blood stream. A secondary anemia is the commonest manifestation; gastro-intestinal disturbances, skin eruptions and joint trouble may result. A number of different organisms have been found more or less constantly, chiefly spirochetes and comma-shaped bacilli. Many eosinophiles may be present. He gives several tables showing what organisms were found in his cases. In a few, the same organisms that prevailed in the pus around the teeth were also cultivated from the gums. The treatment is local, careful cleansing with removal of teeth, if necessary, and general, to combat the anemia or other complications. In many cases the opsonic index was taken for the germ found in the mouth.

2. In this paper Rogers discusses the infectiousness of kala-azar and then considers the parasite and its distribution in the human body. To W. B. Leishman and C.

Donovan belong most of the credit for the discovery of the parasite. J. H. Wright, of Boston, described similar bodies in a case of Delhi boil, but this is now proven to be a distinct disease. Fresh unstained blood smears give the best results. The organisms can be found, if care is taken, in practically every case of the disease in almost every organ and tissue of the body, but especially in liver and spleen. Rogers was the first to grow the organisms outside the body. This had to be done at a low temperature, 27° C. He describes his methods and the parasite itself in detail. It is similar to but *not* identical with the trypanosome, being characterized by an extra corporeal flagellate stage. He describes the cultural characteristics, feeding experiments and the measures taken to prevent infection and the spread of the disease to other villages.

7. To control consumption among the working classes a combination of medical, charitable, social and administrative efforts is necessary. In most instances outpatient "treatment" of consumption is a farce. Education among the poorer classes is the great need, and the poorer classes must be taught that they must help themselves and not sit back and let others do the work. Sanatoria should be simplified and made educational and not purely medical. The spirit of laziness there inculcated is a grave danger. Early diagnosis must be taught the profession. Graduated employment for those leaving or about to leave sanatoria is very important. This paper is an excellent presentation of some evident evils in the present treatment of consumption among the poor and of what should be done for the future.

British Medical Journal.

March 9, 1907.

1. *Griffith, T. W. *A Series of Five Cases of Friedreich's Ataxy Occurring in Two Families.*
2. White, E. W. *The Treatment of Incipient Insanity and Borderland Cases of Insanity in General Practice.*
3. Rawling, L. B. *A Case of Cerebellar Abscess; Evacuation. Recovery.*
4. Freyer, P. J. *Total Enucleation of the Prostate for Radical Cure of Enlargement of that Organ.*
5. Hall, W. W. *Cases of Tetanus Treated with Antitetanic Serum. Recovery.*
6. Hall, I. W. *The Staining of Animal Parasites.*
7. Rogers, L. *Kala-azar.*

1. This is an interesting consideration of this disease from a clinical point of view. Several cases are cited. It is a family disease, with etiology still obscure and treatment unavailing.

The Practitioner.

March, 1907.

1. Young, M. *The Diagnosis and Treatment of Infective Throat Conditions.*
2. Ball, A. *Sphincteric Control of the Male Bladder and its Relation to Prostatectomy.*
3. *Hichens, P. S. *Some Remarks on Hemoptysis and its Treatment.*
4. Wallace, A. J. *A Note on Cæsarian Section, based on an Experience of Sixteen Cases.*
5. Tweedy, E. H. *Post-partum Hemorrhage.*
6. Hall, A. *Some Points Connected with Embolism.*
7. *Leedham-Green, C. *The Antiseptic Action of Metallic Sutures.*
8. Pringle, J. H. *Remarks on the Measurement of the Neck of the Femur.*
9. Bennett, A. G. *Physical Methods of Treating Heart Disease.*
10. Moore, F. C. *Diseases of the Stomach. A Review of Some Recent Work.*
11. Fowler, F. *The Treatment of Sciatica.*

3. Hichens details several causes of hemoptysis not due to pulmonary tuberculosis. Among these are cases of neurotic and anemic young women with carious teeth and pyorrhea alveolaris; others are pharyngitis and tracheitis and slight nasal hemorrhages. In heart disease, especially mitral stenosis, it is common, as well as in late stages of interstitial nephritis and arteriosclerosis. The majority of cases, of course, are due to tuberculosis. As regards treatment of hemorrhages in phthisis, he considers the subject under the heads of posture, diet, purgatives, vasodilators and drugs to increase the coagulability of the blood.

7. Leedham-Green has made some interesting experiments on the comparative power of inhibiting bacterial growth of various metallic sutures. He concludes that gold, platinum, tin, aluminum, magnesium and nickel, and, to a slightly less extent, lead and silver, have no inhibitory action. Iron varied according to the amount of oxidation that took place. Copper had by far the greatest bactericidal power. Bronze wire (copper, 95 parts; aluminum, 5 parts) is by far the best and is rapidly supplanting silver wire in all suture work on the continent of Europe.

Deutsche Medizinische Wochenschrift, No. 9.

Feb. 28, 1907.

1. Ribbert, H. *Human Tissue Cells as Parasites.*
2. *Bonniger, M. *On the Pathology of the Cardiac Rhythm.*
3. Rumpf, E. *The Prognosis of Pulmonary Tuberculosis.*
4. Spengler, C. *New Staining Methods for Bovine and Human Tubercle Bacilli and Their Differential Diagnosis.*
5. *Kruse. *Some New Investigations on Dysentery.* (Concluded.)
6. Freund, R. *Use of Benzosalin.*
7. Oppenheimer, H. E. *Progress in the Making of Spectacles.*

2. Bonniger relates the great advances in the knowledge of the physiology of the heart, resulting from experimental studies of the heart in animals, and consequently our widened conception of the function of the heart in disease. Out of the many varieties of arrhythmia he considers especially that group in which the auricles and ventricles contract synchronously for considerable periods of time. Mackenzie and others have observed and reported such cases. The author has seen in Kraus's clinic a number of cases of this "ventricular" type of rhythm, often lasting months. Out of sixty cases of systolic venous pulse, which he observed, one third were of this variety. The pulse picture is naturally much like that of tricuspid regurgitation, but the records obtained from artery and venous tracings do not show any sign of auricular contraction, as in tricuspid disease, therefore the auricles must contract synchronously with the ventricles or not at all. That the former was the case the author proved by observing active auricular contraction through the fluoroscope. The clinical symptoms associated with this type are also different and are, in brief, marked irregularity of rhythm, systolic venous pulsation, no liver pulsation, and slight general disturbance without signs of the passive congestion so marked in tricuspid disease. In such cases it is evident that the auricle and ventricle both respond to stimuli received from the auricular-ventricular bundle, and for the time being these stimuli dominate the cardiac rhythm. The importance of these cases, aside from constituting a sharply defined group among the many irregularities of heart rhythm, lies in the therapeutic reason that digitalis would only increase the irregularity and tachycardia and therefore do harm.

5. Kruse reviews the etiology of the dysentery group of diseases, urges the need of a more exact classification of the different forms, and discusses some animal experiments undertaken to determine the toxic powers of the different organisms, their pathogenicity, and finally some of the various immunity conditions. He distinguishes two groups, (1) the true dysentery or Shiga bacillus, found all over the world, mostly in large and small epidemics, and the pseudo dysentery group, which the author first described in 1901. This group is made up of a number of nearly related organisms, one of which is the variety described by Flexner in 1902. These bacilli resemble the true Shiga in most respects, but do not give the specific serum reactions. They are apt to be found in asylums among the insane, and cause follicular enteritis, which has a better prognosis than true dysentery. The diagnosis between the true and pseudo types can be made with comparative certainty by agglutination tests. The organism does not secrete a soluble toxin and is not motile. Aside

from this it is evident that dysentery-like disorders are often caused by mixed infections. Kruse maintains that the dysentery serum acts, in three ways, — antitoxic, bacteriocidal, and by increasing the opsonins, with the principal action bacteriocidal. Good results from the use of serum have also been obtained in pseudo and mixed infections.

Berliner Klinische Wochenschrift, No. 4. Jan. 28, 1907.

1. Fibiger, J., and Jensen, C. O. *The Significance of Infected Milk in Primary Intestinal Tuberculosis of Children.* (Continued article.)
2. Ascoli, and Izar. *The Effect of Colloid Metals on Liver Autolysis.*
3. *Langstein L. *The Significance of Albumin which can be Precipitated by Acetic Acid in the Urine of Children.*
4. Friedenthal, H. *The Silver Spirochete Question.*
5. Brodzki, J. *Investigations on Liton Bread, a New Food for Diabetics.*
6. Kromayer. *The Use of Light in Dermatology.* (Continued article.)
7. *Leuchs, J. *The Specificity of the Complement Absorption Method in Typhoid and Paratyphoid.* (Concluded.)

3. As the result of a study of the urine in over 100 cases of orthotic (or "cyclic") albuminuria, Langstein makes the following statements: (1) Albumin precipitable by acetic acid is present in every case; (2) cases in which *only* such albumin is present are never due to chronic nephritis; (3) in chronic nephritis of children such albumin is either entirely absent, or present in smaller amount than other albumin.

7. In this article Leuchs shows that Wassermann's complement-absorption method of demonstrating the presence of antibodies or bacterial substances is reliable in the case of typhoid and paratyphoid. The negative results with these bacteria recently reported by Moreschi are ascribed by Leuchs to faulty technic; Moreschi worked with bacterial suspensions instead of with bacterial extracts. A comparison with agglutination tests and Pfeiffer' experiments showed that the reaction is yet more delicate than these, and specific for the bacteria employed.

No. 5. Feb. 4, 1907.

1. Fraenkel, C. *Investigations on the Spirillum of Obermeier.*
2. *Schütze, A. *Researches on the Wassermann Method in the Diagnosis of Syphilis.*
3. Bauer, S. *Hemiathetosis During Child-birth.*
4. *Ullmann, B. *Juvenile Physiological Albuminuria.*
5. Kromayer. *The Use of Light in Dermatology.* (Concluded.)
6. *Fibiger, J., and Jensen, C. O. *The Significance of Infected Milk in Primary Intestinal Tuberculosis of Children.* (Concluded.)

2. Schütze's researches offer further confirmation of the value of the Wassermann method of demonstrating specific bacterial substances (antigens) and antibodies. Of 12 cases of tabes, 8 were known to have had syphilis, and all of these showed positive reactions for syphilitic antibodies in the cerebrospinal fluid; the remaining 4 were negative. The method is of value only in the hands of experts, for it demands skill and ample laboratory facilities.

4. The study of physiological albuminuria is important, for such cases may easily be mistaken for nephritis. Ullmann found albuminuria in 33⅓% of 42 healthy school girls, ranging from a slight trace to 1% in amount. The appearance of albumin was often capricious and not dependent exclusively on posture. Casts were found in but one case, and then only at a single examination, and other signs of nephritis were absent. [It is to be regretted that the author employed only the nitric acid test, so that the kind of albumin was not determined. Nucleoalbumin is often found in such cases.]

6. Fibiger and Jensen, of Copenhagen, report 2 more cases of primary intestinal tuberculosis due to bovine bacilli, and discuss the importance of this mode of infection; out of 7 cases observed by them up to the present in children, no less than 5 proved to be of bovine origin, as shown by the extreme virulence of the bacilli for calves and rabbits, and by the fact that all the children had been fed on raw milk. In one instance the milk was derived from a herd containing a cow with manifest tuberculosis of the udder. In view of their experience and the recent literature, they conclude that milk infection is a comparatively frequent cause of primary tuberculosis of the intestine in children, a form of the disease which has recently been shown to be far from rare. [There is now little doubt but that milk infected with tubercle bacilli constitutes a real danger in the case of children, and therefore there is no indication to relax the present strict measures against tuberculosis of cattle.]

No. 6. Feb. 11, 1907.

1. Veit, J. *The Indications for the Induction of Premature Delivery.*
2. Edens. *Primary and Secondary Tuberculosis in Man.* (Continued article.)
3. *Skschivan, T., and Stefansky, W. *Serum Treatment in Dysentery.*
4. *Rheinboldt, M. *A New Sphygmoscope.*
5. Rülf, J. *The Cancer Problem.*
6. Lewin, W. *Infant Feeding.*
7. Kuhn, P. *Southwest Africa as a Resort for Consumptives.*

3. Skschivan and Stefansky review the literature on the serum treatment of epidemic dysentery, and report on the results in 15 cases of their own. The results both in their cases and in those of Shiga, Kruse, Rosenthal and others have been very satisfactory. If possible the pathogenic organisms should be cultivated from the stools, as the serum usually employed is only effective against that form due to Shiga's bacillus. The dose is 20 to 100 cc., depending upon the severity of the case, and is given subcutaneously; it may be repeated in two or three days, if necessary. No bad effects have resulted other than those common after the injection of any form of serum, *i. e.*, urticaria, erythema, joint pains and transient fever. The good effects are usually apparent within twenty-four hours, the number of stools decreases rapidly, tenesmus diminishes and the general condition improves. The effect of the serum is compared by the authors with that of antitoxin in diphtheria. These statements apply only to the dysentery of adults, for in the case of children the etiology is more complicated and data are fewer.

4. Rheinboldt describes a simple apparatus to render visible the arterial increase of volume of the finger tip. This has proved of advantage in measuring the blood pressure by the Riva-Rocci method, enabling one to substitute the more reliable sense of vision for the palpating finger.

Deutsches Archiv für Klinische Medizin, Bd. 89, Hft. 1–4, 1906.

Festschrift Herrn Geh. Rat Prof. Wilhelm Ebstein in Göttingen.

1. Beck, C. *Value of Early Symptoms in Inflammation of the Appendix.*
2. Becker, E. *Operation on a Tumor in the Cerebellopontine Angle.*
3. *Bickel, A. *The Pathological Physiology of Gastric Catarrh.*
4. *Deneke, T. *The Rontgen Diagnosis of Rarer Cardiac Lesions.*
5. *Ebstein, E. *The Clinical History and Meaning of Club Fingers.*
6. Fraenckel, P. *Investigations on the Origin of So-called Spontaneous Rupture of the Stomach.*
7. *Grützner, P. *Observations on the Meaning of the Musculature of Blood Vessels and Their Nerves.*
8. Jolly, I. *Indian Priority Claims.*
9. Lépine, R. *The Role of the Secretions in the Pathogenesis of Diabetes Mellitus.*
10. *Mendel, E. *Gout and Psychosis.*
11. Nicolaier, A. *The Synthesis of Uric Acid with Formaldehyde.*
12. *Rauchfuss, C. *Paravertebral Dulness on the Sound Side of the Thorax in Pleural Effusions.*

13. Samuely, F. *Metabolism in Experimental Anemia.*
14. Schittenhelm, A. *Remarks on Nuclein Metabolism.*
15. *Schreiber, E. *Heart Block in Man.*
16. *Tintemann. *Arthrogryposis.*
17. Tjaden. *Diphtheria as a Scourge and the Fight against It.*
18. *Waldvogel. *I. Accidents of Thoracocentesis; the Origin of Albuminous Expectoration. II. The Pathogenesis of Obesity.*
19. Wyss, O. *Percussion and Auscultation of the New Born; the Symptoms of Pulmonary Tuberculosis in the first year.*
20. Ebstein, E. *The Work of Wilhelm Ebstein from 1859 to 1906.*

3. It is well known that in most cases of subacute and chronic gastritis the stomach contents are abnormally rich in mucus and poor in hydrochloric acid. However, very little is known about the laws governing secretions in these conditions. The pupils of Pawlow have shown that the formation of mucus follows other laws than those governing the secretion of the gastric juice. Freund working in the author's laboratory has shown that the direct stimulation of the gastric mucosa by an electric current causes the secretion of mucus but not of gastric juice. The same is true of the action of nitrate of silver, but both act only on the mucous membrane with which they come in contact and there is no reflex secretion of mucus in an artificial secondary stomach. No secretion of mucus is produced by stimulation of the vagus. Mucus appears to act there as a protective mechanism against substances coming in contact with the gastric mucosa. The hypoacidity associated with the hypersecretion of mucus is probably more the result of hyposecretion of gastric juice than of the neutralization of acid after secretion.

4. Deneke points out that fluoroscopic examination may give a correct diagnosis in some of the rarer cardiac lesions. As one example he cites a case of Adams-Stokes disease (heart block) in which the different rhythms of auricular and ventricular contraction could easily be seen. He says that x-ray apparatus is more generally present now in hospitals than recording tambours with which to make tracings of cardiac and venous pulsations, and should be used in diagnosing these cases. His second case is an interesting one of defective interventricular septum and transposition of aorta and pulmonary artery. The case was in a boy of eighteen, with cyanosis, club fingers and precordial bulging. Auscultation revealed no murmurs but an accentuated second sound at the base. Fluoroscopic examination showed synchronous ventricular-like contractions at both right and left cardiac borders and no evidence of any auricular type of contraction on the right border where it is usually found. On these observations the diagnosis was made and its correctness subsequently proven at autopsy.

5. E. Ebstein considers at some length the history of club fingers and the various clinical conditions under which they occur. He points out that the Hippocratic finger with its curved claw-like nails is to be distinguished from the club finger with its swollen end and associated changes in the nail. Closely allied to the latter type is the pulmonary hypertrophic osteoarthropathy of Marie which perhaps has the same underlying causes. At any rate many regard club fingers as an early stage of it. Club fingers occur in various chronic pulmonary and pleural diseases, especially those with which suppuration is associated. They occur also in hepatic disease, enterogenous cyanosis, myxedema, intrathoracic tumors, heart disease, especially congenital lesions, and some other conditions. Rarely the condition is unilateral. Little is known of the pathology. Soft parts rather than bone are usually most affected. The condition may appear or disappear in the course of a few weeks. For etiology cyanosis, absorbed toxins and trophic disturbances have been advanced, but for none is there much proof. The paper closes with a bibliography containing 220 titles. It is a *résumé* rather than a contribution of any new fact.

7. Grützner attributes to the muscular layer of the blood vessels a distinct action in addition to their function of controlling the blood supply of the organ to which they bring blood. This latter they do by their contraction or expansion, so diverting blood from or to the organ. Besides they act to maintain blood pressure. In addition Grützner believes the blood vessels have an independent pumping action whereby they materially aid the heart in maintaining the circulation. This action is, of course, far less powerful than the pumping action of the heart. In this sense arteries and also capillaries and veins are to be regarded as accessory hearts sharing in the activity of the great heart.

10. Mendel points out that there is an apparent antagonism between gout and the psychoses, for gout is infrequent among the insane. In very rare cases, however, acute psychoses in the nature of delirium hallucinatorium follow a severe febrile attack of gout. Rarely an acute psychosis takes the place of an attack of gout. Very rarely it seems that an attack of gout will serve to cure a psychosis. However, there is no justification for the term gouty psychosis since the conditions rarely occur together.

12. Rauchfuss considers this subject especially in reference to children. He points out that the sign is demonstrable when fluid reaches the level of the eighth dorsal vertebra. With larger amounts of fluid usually a lateral displacement of the heart and vessels at its base can be made out, sometimes a deviation of the trachea. Frequently the height of the paravertebral triangle is several vertebræ below the level of fluid though often the two correspond. In pneumonia a band of paravertebral dulness can be made out on deep percussion but this differs from the triangle accompanying fluid. The cause of the paravertebral triangle of dulness was studied on the cadaver by filling the pleura with fluid and by displacing the heart by means of a metal sound introduced into the heart through the jugular vein. Rauchfuss found the latter produced a slight triangle of dulness but displacement of the posterior mediastinal organs and crowding over of the distended pleura were the main causes. Displacement of the esophagus was shown by a fluoroscopic examination after the introduction of a filled bougie. Since displacement of the mediastinum is the chief cause the sign only gradually disappears after removal of fluid with the return of the mediastinum to its normal relations.

15. Schreiber reports a case of heart block in a man of forty-four, studied by means of tracings of arterial and venous pulsations, and of intra-esophageal pulsations; also by radioscopic examination. The cause of the condition in this case is unknown as the patient did not die.

16. A symptom complex is described under the term arthrogryposis, a term first used by Niemeyer. It occurred in a child of nine months. After a slight attack of gastro-enteritis which had apparently run its course, there was a rise in temperature accompanied by tonic contractions especially of the extremities. The muscles were tender and the skin over them was swollen. This condition continued several days without intermission and disappeared without leaving any paralysis. There was no increased excitability of nerves and muscles, and the reflexes were not increased. Trousseau's sign was absent. The condition differs from tetany in the fact that the contractions were not intermittent, there was no increased irritability of nerves and muscles and there was no laryngeal spasm. Tintemann suggests myositis as the cause.

18. Waldvogel among other accidents of thoracocentesis considers albuminous expectoration. In his case the expectoration was in several respects similar to the fluid withdrawn from the pleura. He believes that the albuminous fluid of the sputum is derived from the pleural cavity, but not as the result of rupture into the lungs. Instead he thinks the fluid is absorbed from the pleura and resecreted into the bronchi and alveoli. He supports this view by animal experiments. He injected various substances into the pleural cavity of animals, and noted the rapidity with which they disappeared. Moreover, he found that they would appear in the sputum. Violent coughing and cardiac weakness he considers important determining factors. Consequently it is important to control the cough after thoracocentesis, and to stimulate the heart in order to prevent the occurrence of albuminous expectoration, a complication which not infrequently results fatally.

Miscellany.

A MEMORIAL TO DR. JAMES R. CHADWICK.

The bronze memorial tablet to the late Dr. James R. Chadwick, for thirty years librarian of the Boston Medical Library, has been placed upon the walls of Holmes Hall in the library building on the Fenway. As will be seen from the accompanying cut, the tablet has a plain classical border; a wreath inclosing the medallion portrait modelled some years ago by Brooks (considered by Dr. Chadwick a most excellent likeness) and a Latin inscription. The tablet was modelled and cast by T. F. McGann & Sons Company, of Boston.

At the time when the Medical Library voted to erect this tablet, it also voted to establish a fund to be known as the "Chadwick Book Fund," and authorized the committee to solicit and receive subscriptions for this purpose. The committee feels that such a fund, while of the greatest service to the library, would be a most fitting memorial to one whose individual efforts are largely responsible for the very complete files of the periodical literature of the past. Some subscriptions have already been received for this purpose, but the committee considers the amount on hand as insufficient and urges all those interested to contribute.

Subscriptions of any amount may be sent to the members of the committee, which consists of Drs. W. L. Burrage, C. J. Blake, C. M. Green, J. G. Mumford and E. B. Young.

◆

Correspondence.

PARIS LETTER.

[*From our Special Correspondent.*]

Treatment of Excessive Arterial Pressure by High-Frequency Currents.

Paris, March 19, 1907.

Mr. Editor: Three months ago, one of the best organs of the Paris daily press appeared one morning with a flamboyant article occupying the first two columns of its leading page, the most conspicuous position in the entire paper, wherein was announced that, thanks to the discoveries of two *savants*, whose likenesses were reproduced at the head of the sheet, arteriosclerosis, that curse of the human race and synonym of old age, had at last been conquered, and that physicians would henceforth be in a position to handle it as they liked.

Now the proprietors of the paper in question are not running an institution of charity, exactly; this article must, therefore, have been paid for, and paid for in good round thousands. One of the two *savants* mentioned is a general practitioner little known to the scientific world; but the other is d'Arsonval, professor at the Collège de France! That a man occupying his position should have allowed such a cynical advertisement as this to appear, together with his photograph, in the daily public press, and at the same time that the whole transaction should have aroused no protest on the part of the medical profession at large but have been looked on as a natural occurrence, throws light on the present state of medical deontology in this country.

The article related in vivid terms that most of the ills of advancing years are due to arterial high pressure and vessel hardening; but that now, by means of merely a few *séances* of high-frequency treatment, this pressure can be rapidly reduced to the normal and kept there; that old age and most of its attendant infirmities can henceforth be banished from our preoccupations, etc.; the usual song, which appears destined to crop up at certain regular intervals just about so often, the most celebrated instances during recent years having been the Brown-Séquard injections, Huchard's formic acid and Metchnikoff's fermented milk.

To begin with, a good deal of careless terminology seems to be employed in connection with this subject. The word most commonly used is hypertension, arterial tension, etc. Now as we are dealing with liquids, substances incompressible, I cannot see how with them there can be any question of tension, a term usually applied to compressible substances, such as gases. Pressure is therefore the term that ought to be exclusively used, and not tension.

Again, this article brings up anew the aged controversy as to the relation between high arterial pressure and vessel degeneration, about which so much has been argued in the past, and will, I suppose, continue to be argued in the future, the subject being apparently an inexhaustible one. And yet, the question does not seem so very complicated. Let me, with becoming deference to the learned authorities who have already treated the subject, show in a few words how it appears to me.

The heart and arteries seem to work on the same plan and to the same end as the ordinary steam fire-engine. The heart is the piston, the elasticity of the arterial walls the air chamber and the capillaries the resistant nozzle, — the whole system being devised for the purpose of transforming a quick, intermittent and energetic force into a continuous, even and moderate one. So long as the air-chamber has the requisite dimensions, the machine will work satisfactorily. But suppose that for some reason the cubic area of the air-chamber be gradually and steadily reduced in size, the machine will equally progressively cease to act properly, get out of order and ultimately burst some part of its mechanism on account of the disappearance of the cushion constituted by the air-chamber for the protection of the remainder of the apparatus against the piston's energy. Is not this exactly what happens when in advancing years, whatever may be the cause, the arteries begin to lose their elasticity and harden? Arterial pressure is a corollary of arterial elasticity; the moment the elasticity begins to fall off, pressure follows suit. So that we are inevitably brought to the conclusion which will surprise some people, that the more pronounced the degree of arteriosclerosis, the lower the arterial pressure of the individual.

This does not mean for a moment that any attempt is being made to deny the existence of cases of high pressure, which every one has met in his practice; what is meant is that with them the over-pressure is not a function of arteriosclerosis, but of some other condition. It may be due to a glutinous state of the blood owing to accumulated uric acid, according to Haig; or to capillary spasm, according to Huchard; to nephritis; to circulating toxins, or to other causes. The type of the advanced case of arteriosclerosis is not the apparently healthy man with voluminous and bounding pulse, but the cadaverous individual with tissue-cachexia, fat all gone, muscles wasted and parchment skin stretched over withered limbs, beneath which can be descried pumping at each stroke of the piston, the nodular, serpentine, pipe-stem arteries, elongated and inextensible, back of which is laboring a distended, hypertrophied and degenerated heart-muscle with intermittent or irregular rhythm. There is no excess of pressure here, far from it. Besides, how could we with our apparatus, based on vessel compressibility, measure such a coefficient with a hardened artery? What has been taken for excessive pressure in such cases is the thrust against the finger that each heart-beat necessarily gives through the right artery, which, no longer able now to dilate transversely through loss of its elasticity, expresses the impulse of the central motor by a longitudinal movement of its substance now stretched out far beyond its original length. Excessive pressure, then, and arteriosclerosis are two distinct things, not to be confounded; and on this particular the writer of this newspaper article has conspicuously wandered afield.

No sooner had the article referred to seen the light than Huchard, a man who has written a great deal on the heart, girded on his armor and proceeded to do its tenets battle. And for the last three months, before the learned societies, *Académie de Médecine*, *Société de Thérapeutique*, etc., we have had an avalanche of papers from him on arterial high pressure and its treatment. Huchard is a man who all his life has ridden but three or four horses, but these poor jades he has pushed well-nigh to death. It would have been advantageous to him if early in his career he had taken to heart the caution contained in the lines of your immortal philosopher, Hosea Biglow, which with the alteration of one word read as follows:

> " A ginooine doctor should be on his guard,
> Ef he *must* hev beliefs, nut to b'lieve 'em tu hard."

Well, one of these favorite war horses of Huchard's has always been this same arterial high pressure and its treatment, his theory, in a word, being that arteriosclerosis is produced by an antecedent phase of high pressure, due to capillary spasm produced by toxins. Now after having had the field pretty much to himself for years in this department, here suddenly arises before him a younger competitor in this special branch, and a competitor with the pretension of *curing* the disorder by means of a few *séances* of electricity, he, Huchard, having spent his life in demonstrating the condition to be everything that is chronic, constitutional and incurable. Hence this deluge of papers, and the general outburst of choler in the Huchard camp.

It is not easy to ascertain just where the exact truth lies as regards this new treatment. Not being an electrician myself I cannot speak from experience; and when you apply to others you are immediately confronted with so many rivalries, and the different cliques into which professional men are divided here, which defend their own adherent, " right or wrong," and conversely will not hear of any good whatever coming out of a competing band, that the goddess Truth seems to have descended so far down into her well this time as to be no longer discernible to the naked eye.

The subject is not exactly a new one. Moutier, the leader of the high pressure crowd, has worked at it for many years, but not to his full satisfaction until 1902; since that date, however, he considers that his method and apparatus have been fully perfected and that his results can be judged.

He never claimed to cure arteriosclerosis directly as a lesion; what he does claim is to be able to reduce excess of pressure with perfect ease, and that this reduction is to a certain degree a definite one. His apparatus is thus described: a Ruhmkorff coil giving a 25 cm. spark, fitted with a Contremoulins-Gaiffe interrupter, connected with the city cables by a rheostat; a d'Arsonval petroleum condenser, and a large solenoid cage with continuous wire and no door, the hoops being hoisted up to let the patient in. The treatment is supposed to be given at about 500,000 interruptions per second. By means of high-frequency currents of high tension applied in a solenoid cage in *séances* of five minutes each three times a week, he claims to reduce high pressure and thereby to ameliorate many symptoms — vertigo, tinnitus, palpitations, irregularities, etc,— connected with developing arteriosclerosis, and also probably to retard the said development itself by removal of pressure. In parenthesis an important point is not to apply this treatment to tubercular patients, as with them it may give rise to acute accidents. Moutier claims to have been obtaining results such as these for fully five years now; there would, therefore, appear to be grounds for believing that with that length of experience back of him his thesis would by this time either have been triumphantly demonstrated, or have fallen ignominiously to the ground.

And yet, what do we find? In the discussions that took place on the occasion of Huchard's recent communications to the various medical bodies, several points appear to have been clearly shown. *First:* That the generality of authorities here do not at all accept Huchard's theory that arteriosclerosis is preceded and produced by a long antecedent period of high pressure due to capillary spasm. *Second:* That clinical practitioners in general place no faith in the lasting benefit of high-frequency currents on high pressure; the most that they will grant, and this in a questioning and grudging spirit, is that they reduce pressure for a few moments, hours or days. Among these men are Albert Robin, Huchard, Widal, Vaquez, etc. To them, however, Moutier's answer is only too easy: that they do not know anything about the method themselves, and that those who have tried it on their behalf have had neither the apparatus nor the experience necessary for the purpose; that his results for five years are there to speak for themselves, *facts*, that cannot be demolished by mere beliefs.

Moutier's ideas, however, have received a more serious check, possibly, in the opinions of them expressed by his colleagues in electricity. This opposition is more difficult for him to overcome, for he is here confronted with his peers, and in some instances with men of greater experience in this specialty than himself.

Naturally these men, both for themselves and at the request of general practitioners and heart specialists, have tested the method, and a number of opinions on the subject emanating from them have appeared in print. I think that it is not unfair to say that even Moutier will acknowledge that the general consensus of the electric fraternity is adverse to him. Some of them say that they have obtained no results whatever from high frequency in arterial high pressure! Others that they get a few, but that these have not proved lasting. A few only substantiate more or less Moutier's contentions.

So there the question stands for the time being. It should be remarked in closing, and without any *animus* being implied, that Moutier is a relatively unknown man in the scientific world. This is no reason why he should not make a discovery just as well as any one else; still, such an important affair as would be this one should it turn out to be true, coming from an unknown source, is naturally looked at with greater suspicion than if it came from some acknowledged authority. D'Arsonval, being a laboratory man, has taken no part in the clinical side of this question.

Time then alone will settle the matter, and show us where the truth lies. Such wide attention has now been drawn to the subject in France, owing to Huchard's communications to the various societies, that every electrician in the country will now be certain to test the method for himself. For little by little the electric specialists over here are putting forward the claim to be the sole path to salvation in *all* diseases! But about this I hope to have occasion to speak at greater length in some future letter.

On general principles only, Moutier's claims appear absolutely untenable. If there was one type of incurable chronicity in medical matters it was the condition of the vessels in advancing years. And now to come forward and pretend that all this accumulation of personal and hereditary sins of omission and commission can be set straight by a few *séances* of high frequency, is simply to claim to have discovered an elixir of longevity, and I am afraid that the times are not such as that — *just yet*.

" Spectator."

RECORD OF MORTALITY

For the Week ending Saturday, March 23, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,571	465	Quincy	12	5
Chicago	—	—	Waltham	5	—
Philadelphia	—	—	Gloucester	11	1
St. Louis	—	—	Pittsfield	—	—
Baltimore	244	62	Brookline	9	3
Cleveland	—	—	North Adams	9	0
Buffalo	—	—	Chicopee	12	8
Pittsburg	—	—	Northampton	8	1
Cincinnati	—	—	Medford	7	—
Milwaukee	—	—	Beverly	4	1
Washington	—	—	Hyde Park	5	—
Providence	102	28	Newburyport	—	—
Boston	231	54	Leominster	2	2
Worcester	56	14	Melrose	2	0
Fall River	27	7	Woburn	3	—
Cambridge	33	11	Marlborough	4	3
Lowell	44	10	Westfield	5	—
Lynn	36	7	Peabody	—	—
New Bedford	29	10	Revere	2	—
Springfield	22	6	Clinton	4	1
Lawrence	44	15	Attleboro	5	0
Somerville	20	6	Adams	6	3
Holyoke	17	10	Gardner	—	—
Brockton	15	2	Milford	—	—
Malden	7	—	Weymouth	3	1
Salem	9	5	Framingham	5	—
Chelsea	10	2	Watertown	2	0
Haverhill	11	1	Plymouth	—	—
Newton	8	2	Southbridge	4	1
Fitchburg	—	—	Wakefield	—	—
Taunton	7	1	Webster	—	—
Everett	3	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MARCH 30, 1907.

W. C. Farwell, assistant surgeon. Detached from the "Worden" April 15, and ordered to the "Lancaster."

L. H. Schwerin, acting assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the "Worden."

A. Hammar, pharmacist. Ordered to the Naval Hospital, New Fort Lyon, Col., for such duty as he may be assigned.

J. H. Holloway, passed assistant surgeon. Detached from duty with Naval Recruiting Party No. 4 and ordered to the "Indiana."

C. E. Ryder, passed assistant surgeon. Detached from duty at Naval Recruiting Station, Omaha, Neb., and ordered to the "Vermont."

C. St.J. Butler, passed assistant surgeon. Detached from duty at the Naval Hospital, San Juan, P. R., and ordered to attend course of instruction at Naval Medical School, Washington, D. C.

E. M. Brown, passed assistant surgeon. Detached from duty under the department of government and sanitation, Canal Zone, Isthmus of Panama, and ordered to the Bureau of Medicine and Surgery, Navy Department, for special duty.

F. M. Bogan, passed assistant surgeon. Detached from duty at the Naval Recruiting Station, Baltimore, Md., and ordered to attend course of instruction at the Naval Medical School, Washington, D. C.

H. A. May, assistant surgeon. Detached from the "Indiana" and ordered home to wait orders.

J. L. Belknap, assistant surgeon. Detached from duty with marines in Cuba, and ordered to the "Kentucky."

W. F. Schaller, assistant surgeon. Detached from the Naval Medical School, Washington, D. C., April 3, and ordered to the "Brooklyn."

H. L. Brown, assistant surgeon. Detached from duty with Naval Recruiting party No. 3, and ordered to attend course of instruction at the Naval Medical School, Washington, D. C.

F. M. Shook, assistant surgeon. Detached from duty at the Naval Hospital, Mare Island, Cal., and ordered to duty under the Department of Government and Sanitation, Canal Zone, Isthmus of Panama.

F. M. Munson, assistant surgeon. Detached from Naval Proving Ground, Indian Head, Md., ordered to attend course of instruction at Naval Medical School, Washington, D. C.

F. D. Chappelear, acting assistant surgeon. Detached from Naval Medical School, Washington, D. C., ordered to Naval Hospital, Pensacola, Fla.

D. H. Casto, acting assistant surgeon. Detached from Naval Medical School, Washington, D. C., ordered to duty at Naval Recruiting Station, Baltimore, Md.

E. E. Curtis, acting assistant surgeon. Detached from Naval Medical School, Washington, D. C., ordered to duty at Naval Hospital, Norfolk.

A. McK. Jones, acting assistant surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to duty with recruiting party No. 4.

RESIGNATION.

Dr. Arthur T. Cabot has resigned from the position of visiting surgeon to the Massachusetts General Hospital.

RECENT DEATHS.

Dr. Robert Stuart MacGregor, of New York, died from pneumonia on March 23, in the thirty-ninth year of his age. He was of Scotch descent and was a native of St. Andrews, Province of Quebec, Canada. He was graduated from the medical department of the University of New York in 1897, and had spent his professional life in New York City.

Dr. Otto Albert Weigand, of Jersey City, N. J., died from pulmonary tuberculosis on March 24. He was thirty-eight years of age, and was graduated from the College of Physicians and Surgeons, New York, in 1890.

Dr. George Warren Bartow, of Three Bridges, Hunterdon County, N. J., died on March 28, at the age of sixty-three years. When a young man he served in the Civil War, in the Fifteenth Regiment, New Jersey Volunteers, and was wounded at the battle of Petersburg. At the close of the war he studied medicine, and was graduated from the College of Physicians and Surgeons, New York, in 1872. He had practised in the village of Three Bridges for thirty-four years.

Dr. Reed B. Bontecou, of Troy, N. Y., died at an advanced age on March 28. He was graduated from the Medical School at Castleton, Vt., in 1847. He was one of the well-known field surgeons of the Civil War, throughout which he served in the medical corps of the army, and for faithful and valued services he was brevetted lieutenant-colonel and colonel of volunteers. In 1863 he was placed in charge of the Harewood United States General Hospital at Washington, D. C. At the time of his death he was consulting physician and surgeon to the Marshall Infirmary of Troy.

BOOKS AND PAMPHLETS RECEIVED.

Students' Aid Series. Aids to Dental Surgery. By Arthur S. Underwood, M.R.C.S., L.D.S. Eng., and Douglas Gabel, M.R.C.S., L.R.C.P. Lond., L.D.S. Eng. Second edition. New York: William Wood & Co. 1907.

Histological Observations on Sleeping Sickness and Other Trypanosome Infections. By F. W. Mott, M.D. F.R.S. (From the Pathological Laboratory of the London County Asylums). New York: William Wood & Co. 1907.

The Nursling. The Feeding and Hygiene of Premature and Full-Term Infants. By Pierre Budin. Authorised Translation by William J. Maloney, M.B., Ch.B. With an Introduction by Sir Alexander R. Simpson, M.D., LL.D., D.Sc. Illustrated. London: The Caxton Publishing Co. 1907.

Green's Encyclopedia and Dictionary of Medicine. Vol. III. Chicago: W. T. Keener & Co. 1907.

Remarks on the Modern Treatment of the Toxemia of Pregnancy. By John F. Winn, M.D. Reprint.

Joint Diseases, Especially Those of Children. By DeForest Willard, M.D. Reprint.

Psychology Applied to Medicine. Introductory Studies. By David W. Wells, M.D. Illustrated. Philadelphia: F. A. Davis Co. 1907.

Principles and Application of Local Treatment in Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D. New York: Rebman Co. 1907.

Surgery of Genito-Urinary Organs. By J. W. S. Gouley, M.D. New York: Rebman Co. 1907.

Dining and Its Amenities. By a Lover of Good Cheer. New York: Rebman Co. 1907.

Anatomical Terminology with Special Reference to the [BNA]. By Lewellys F. Barker, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Manual and Instrumental Dilatation of the Pregnant and Parturient Cervix. By J. Clifton Edgar, M.D. Reprint.

The American Society of Tropical Medicine. Papers Read before the Society and Published under Its Auspices. Vol. 2, 1905–1907.

Original Articles.

THE BIOGRAPHY OF MICHEL SERVETUS, THE DISCOVERER OF THE PULMONARY CIRCULATION.

BY CHARLES GREENE CUMSTON, M.D., BOSTON,
Member of the Medical Historical Society of France, etc.

To which is appended the text of that passage of his work relating to this discovery, followed by an English Translation of the Same and Notes.

Michel Servetus, in Spanish Micael Serveto, was born at Villanueva (Aragon) in 1509. He left Spain at the age of nineteen years. His father, fearing that his independent character and his open opposition against scholastic theology might bring him into the notice of the Inquisition, sent him to the University of Toulouse to study law. Here he became intimate with some young men who were preoccupied with the new religious ideas of Luther, and after a few months of study, which was more given up to Biblical than judicial subjects, he started for Germany in order to enter into relationship with the chiefs of the Reformation. Received in the first place with the greatest favor by Œcolampadius at Bâle, he was not long in alarming the reformer by his antitrinitarian doctrines. For the same motive he was repulsed at Strasburg by Bucer and Capito and, like the former, Zwingli complained of the " wicked Spaniard."

Far from giving into the disapprobation of the official chiefs of the Reformation, Servetus placed the matter before public opinion. In 1531 he published his celebrated treatise at Haguenau, entitled " *De Trinitatis Erroribus Libri VII.*" A few months later he developed his ideas in a second publication entitled " *Dialogorum de Trinitate Libri II de Justitia Christi Capitula Quatuor.*" This treatise on the errors of the Trinity, or, more correctly speaking, the variations of the Trinity, and his dialogues on the same subject, exposed, in a manner far too obscure for the present time, but which was quite sufficiently so for his contemporaries, the philosophical and theological system of Servetus. The success of his writings, without being enormous, was, however, quite sufficient to scandalize and cause uneasiness among theologians.

Suddenly, either from prudence or from capriciousness, Servetus left Germany, bidding leave to theology, and came to Paris to study medicine under the two most illustrious masters of the time, Sylvius and Fernel. After brilliant and rapid studies he took the bonnet of doctor and professed for some time at Paris. As a physician he acquired great celebrity and was one of the most profound *savants* of the century. The discovery of the pulmonary circulation and the part played by the lung in the modifications of the blood is certainly his finest bit of work. He also mentions the part played by the cardiac valves in diastole and systole, which does not take place during intra-uterine life, but commences as soon as the child is born. In these studies, as in the questions of theology, Servetus is himself, that is to say, giving evidence of an exuberant, unequal and orderless mind, quite as profoundly sagacious on certain occasions as it was chimerical upon others, and always greatly attached to his own opinions. Very little desire to respect tradition is shown; for example, in his treatise on syrups (*siruporum universa ratio*) he adds these most significant words: " *Ad Galeni censuram diligenter exposita.*" This work was a blow directed against the Faculty and proposed in its pages to substitute a pretended superior method to the old medical errors. The dispute became so intense that it necessitated the interference of Parliament.

In the midst of these scientific struggles which it would seem might have absorbed all the thoughts of young Villeneuve (the name which Servetus had adopted in France), he nevertheless secretly returned to his favorite passion. He wrote to Calvin in order to obtain a conference, or discussion (*disputatio*), on theological questions. According to Théodore de Bèze, it would appear that although the place and day for the conference had been fixed, Servetus did not appear, but it may at any rate be supposed that it was not from any fear on his part of appearing before the great reformed theologian. Pressed by his needs he went to Lyons in 1534 and entered as a proofreader in a printer's, where he published, with notes by himself, the " Géography of Ptolémy," a Bible also with notes, arguments for the theological writings of St. Thomas and some other compilations. He returned to Paris in 1537 and obtained a decision from Parliament, which put an end to the law procedures directed against him by the Faculty of Medicine. In 1538 he established himself as a physician at Charlieu, a town near Lyons, and finally in 1541 he had the good fortune to meet at the latter city Pierre Paulmier, Archbishop of Vienne (Dauphiné), a kindly man, most liberal and favorable to *savants.* In order to free Servetus from his persecutions, the Archbishop offered him the hospitality of his own palace as his physician. In this safe asylum, Servetus was able to follow his profession and to continue to work for the publishers. Sought for by the first families of the province, greatly esteemed as a physician, honored as a friend of the Archbishop, beloved for his agreeable and kindly nature, he would have been able to pass many happy years at Vienne, if his restless disposition and his passion for militating theology had not again thrown him into religious discussions. His ardent desire of going himself to the very foundations of these then burning questions drove him to undertake a more complete and logical reformation than that given forth by Luther and Calvin, the reconstitution of pure Christianism, that is to say, what was, according to him, the primary and authentic religion of Christ.

Confident in what he believed to be the truth, he did not suspect that it would become too evident to everybody, and he had no greater desire than that of proving it to the chief of the French reformation, namely, Calvin. Placed in relationship with the latter by Frellon, a publisher at Lyons, he wrote him, sending him some manuscripts, in which Calvin discovered quite a different affair than a restoration of Christianism, because he there saw a very characteristic pantheism.

Servetus exposed his views to Calvin, treating him on an equal if not his inferior, and this arrogance contributed considerably to irritate the reformer, who broke off all relation with his adversary in February, 1546. At this time (Feb. 13, 1546), Calvin wrote to Farel, in which letter very sinister words are to be found, a paragraph of which I quote: "Servetus has sent me an enormous volume of his reveries, at the same time advising me with fabulous brazenness that I would therein find unheard-of marvels. He offers to come here [at Geneva] if agreeable to me, but I do not wish to give my word, because, if he came I would not suffer him to leave alive if my authority has any power."

Abel Popin, a preacher at Geneva, and Pierre Viret, a reformer at Lausanne, to whom Servetus again addressed himself, also rejected him, and finally he was obliged to try alone the radical reform to which mission he thought he had been called. After having been refused by a publisher at Bâle, Servetus finally overcame the hesitations of two printers at Vienne, who at last consented to occupy themselves with his work, and it was then that the famous "*Christianismi Restitutio*" appeared.

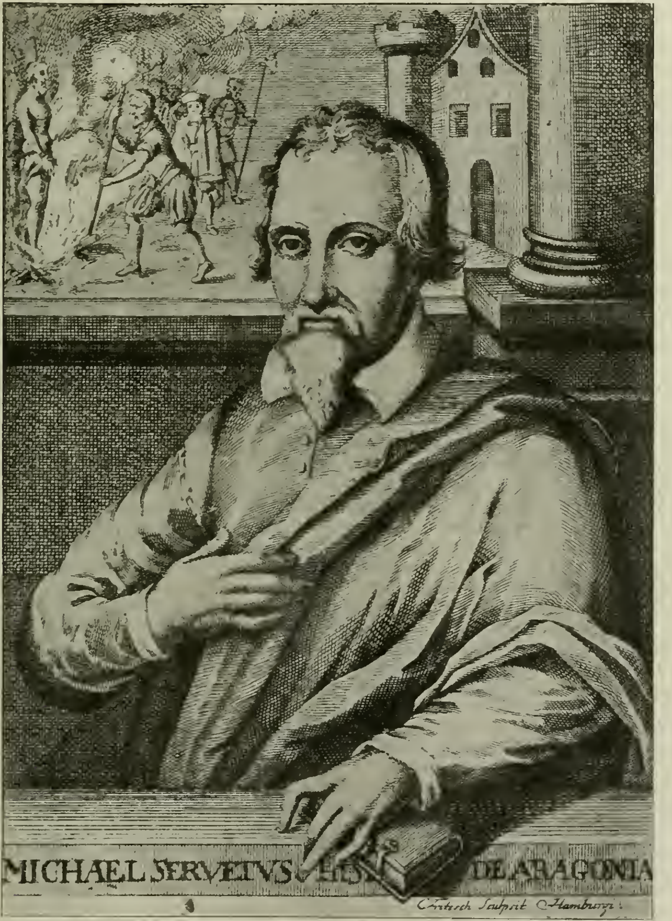
This work was less an exposition of a limited heresy than a complete plan of reform; if it had become circulated its effect might have been immense and Servetus would not have been considered as a simple anti-trinitarian, but rather as a reformer. However, the breath of ardent pantheism, which animated the entire work, shocked Christians of the sixteenth century, more especially because this pantheism was applied to transform or, rather, overthrow orthodox christology.

The work had hardly been issued from the press and had not as yet been put on sale, when a copy arrived at Geneva, and it was this copy which, denounced to the Catholic authorities in France by a Protestant hand of Geneva, resulted in Servetus' condemnation. Was Calvin implicated in this denunciation? An attempt has been made to deny this by Guyzot, Paul Henry and Rilliet de Candolle; Eugène Rambot and some other Swiss writers have left the question in doubt, but Galiffe, of Geneva, and Emile Saisset in his articles which appeared in the *Revue des Deux Mondes* do not hesitate to admit Calvin's culpability, and here are the facts which have been collected to prove this.

There was at Geneva, among the French refugees who formed Calvin's party, a man who came from Lyons, whose name was Guillaume Trie or de Trie, "who, from religious zeal and also on account of some bad affairs," was expatriated and had embraced the reformed religion. He kept up a constant correspondence with one of his relatives, Antoine Arneys by name, who was established at Lyons and an ardent Catholic, who saw with the greatest displeasure a member of his family engaged in heresy, and he endeavored with all his might to bring him back in the clutches of the Church. It was these two men that Calvin used. He alone had in his hands the work which had as yet not been placed on sale and which bore no signature, he alone knowing the author, and sometime afterwards Antoine Arneys denounced the book at the Inquisition of Lyons, giving the name of the author and accompanying the denunciation with the index and the first four pages of the "Restitution of Christianism."

At this time Lyons had Cardinal de Tournon as governor and as Archbishop, a man celebrated by his ardent zeal against heretics. In order to back up his views he had requested from Rome an inquisitor by the name of Father Mathieu Ory, who took the title of penitentiary of the Pope and general inquisitor of the kingdom of France and of all the Gauls. The inquisitor and cardinal enjoined upon the Lieutenant-General of the King in Dauphiné, Monsieur de Maugiron, to arrest Michel Servetus. The latter, being immediately requested to appear before the Lieutenant-General, tried to free himself of the accusation and requested that his house should be searched; this was done and nothing was found. The same unsuccessful result occurred at Arnollet's printing house and, although all the workmen were closely questioned, not one of them admitted that they had worked on the book, two or three pages of which were shown to them.

From the want of proof the inquest aborted, but the inquisitors did not renounce the hunt after their prey. Mathieu Ory dictated a letter to Arneys which was destined for Guillaume Trie, a letter in which he ordered him to set aside all generalities and to send to Lyons the entire treatise instead of the first four pages. Trie did not, however, send the book, which in reality would have done no good, because Servetus and his printers could always deny any knowledge of it, for it bore no name indicating the author, the printer nor the town where it was published. He did better than this; he sent the letters written by Servetus to Calvin, in which were to be found the same heretical propositions, and he replied to his friend whom he knew to be the confident of the inquisitors: "I will place in your hands, in order to convince you, a couple of dozen of written pieces from the person of whom it is question, in which a portion of his heresies is contained. If the printed book was placed before him he might be able to deny his connection with it, a thing he cannot do when his own handwriting is shown. From this the persons to whom you refer, having the affair completely proven, will have no excuse if they continue to dissimulate or if they defer attending to it. . . . But I must confess one thing to you, namely, that I had considerable difficulty to obtain what I send you from Calvin; not that he is not desirous of having such fearful blasphemies repressed, but because it appears to him that his duty is, since he does not hold the sword of justice, to rather convince the heresies by doctrine than to chase them down by such means; but I influenced him so much, remonstrating the reproach of lightness on his part, which might be brought up against him if he did not aid me, that finally he agreed to accord me that which you will see."


MICHAEL SERVETUS ... HIS ... DE ARAGONIA
Cnitsch Sculpsit Hamburgi.

It is consequently positive that it was Calvin who furnished the letters without which Servetus could not have been convicted of being the author of the "*Restitutio Christianismi.*" Now, this giving them over to Arneys simply meant that it was to hand its author over to the executioner, as has well been said by Saisset when he writes: "The hypocrisy of Calvin making it appear that he was obliged to give up by force that which he was burning to deliver, still more adds to the odiousness of his conduct, but at the same time it gave him an opportunity of hiding his identity in the matter."

During the developments of his trial, Servetus, having accused him of being an instigator and the true author of his arrest at Vienne, Calvin replied: "There is no necessity of insisting any more lengthily in trying to deal with such frivolous calumny, which will fall low when I shall have said in a word that there is nothing in it." Calvin's partisans in this affair, those who believe that he had absolutely nothing to do with the condemning of Servetus at Vienne, found their idea on this affirmation and which they say would be temerity to incriminate its veracity.

The envoy of Guillaume Trie, when he arrived at his destination, was Servetus' loss, and in order not to alarm him he was begged to come hastily to give his medical care to some sick prisoners in the city prison. Servetus immediately fell into the trap without any suspicion and was thus easily arrested. Interrogatories followed and were carried out with great craftiness. In the first place, he was shown a few quite insignificant lines written by him, and he admitted that it was his handwriting, hoping that he would be pardoned for the slight heresies which they contained, but the next day he was shown the entire package of his letters written to Calvin which he could not disown.

After several days of imprisonment Servetus escaped by way of the garden, probably the result of the interference of some of the high personages of the locality, whose physician and friend he had been. The procedure, however, continued and finally ended by a sentence of death (Note 1) from which Servetus escaped only by leaving French territory after having wandered on the frontier for three months.

Upon leaving France he knew not where to go. He, in the first place, thought of Spain and then Germany, and finally decided to leave for Italy, where the advanced religious ideas had less likelihood of being so soon prosecuted than elsewhere. Unfortunately, he set out by way of Switzerland, arriving at Geneva on July 17, 1553. For three weeks he remained unknown, but was finally arrested on Aug. 13. It has been said that he went to hear a sermon preached by Calvin, forced to do so by a very rash curiosity. Whether or not this occurred because there was some delay for his embarking on Lake Léman, as Servetus himself has said, or whether it was with the intention of provoking a quarrel with Calvin, which decided him to come and remain at Geneva at the peril of his life, is a problem which probably will never be solved. It is probable, however, that this is not a simple matter of chance; and it is likely that Servetus, who had not profited by his imprisonment at Lyons, wished to come to Geneva and brave Calvin even in his stronghold, and engage in a public discussion with him. At this time the reformer had been vigorously handled and defeated by certain of his adversaries, so that his position was tottering. Servetus wished to profit by this favorable occasion, but, on the contrary, Calvin became stronger at the latter's expense, for the simple reason that Servetus' pile caused terror in all minds.

As soon as Calvin was informed of his presence in Geneva, he neglected nothing in order to carry out what he had already announced seven years previously, and he states in the work, which he published a few months after the last act of the drama, that he "would in no way deny that he had been made prisoner by my own instigation."

The laws of Geneva were framed in such a way that whoever accused a man of no matter what crime should be placed in prison with him so that he might be punished by the same sentence that the accusation would have caused the accused, if he had in any way calumniated him. Calvin declared that his time was far too precious to allow him to fulfill this formality so that his Secretary, Nicolas Delafontaine, took his place. The procedure commenced immediately and was conducted regularly for the two following months. Calvin drew up an extract of the contents of Servetus' books and even his manuscripts, to serve as a guide to the interrogation of the prisoner, as well as to bring out the principal points. Servetus vainly demanded that the trial should be public, and after the second hearing, Berthelier, son of the heroic liberator of Geneva and the chief of the anti-Calvinistic party, appears to have tried to defend Servetus against minister Colladon, who had just taken the place of Delafontaine. The next day Calvin himself entered directly into the arena.

In order to give an idea of the details of the trial which were ridiculously atrocious, where the life of a man depended on the most misty subtilties of scholastics, let it be recalled that Servetus was, among other things, accused of impiety for having translated Ptolemy's geography, a work in which the Holy Land is, contrary to what is said in the Bible, presented as a sterile country. Calvin says: "The wretched dog was thus thrown down by such evident reasons that he only wiped his muzzle, saying, 'Pass that over, gentlemen, there is no evil there.'"

At the bottom of all Servetus' heresies there was only one, namely, pantheism, and it was in this way that Calvin snatched the decisive admission from the courageous sincerity of Servetus. Calvin writes as follows: "As he pretended that all creatures are of God's substance and full of God, myself being anchored by such a heavy absurdity, replied: 'How, poor man, if somebody struck this bread with the foot and that he says he struck thine God, would you not be horrified with having subjected the majesty of God to opprobrium?' Then he replied: 'I in no way doubt that this bench and table and everything else that could be shown is God's substance.' In reply when it was objected that according to his idea the devil should be substantially God, he laughed and resolutely replied: 'Do you doubt it?' As to myself I hold this as a general maxim, but all things are a part and portion of God and that all Nature is his substantial spirit."

On Aug. 21, the Lower Council, considering "the case important to entire Christianity," removed the trial from the lower courts. It decided that, in the first place, information should be sought for at Vienne and, that secondly, the opinion of the other Swiss churches should be asked. From this resulted other theological interrogatories, but so vague that one can hardly discover the sense of the distinctions made by the theologians of the epoch. Servetus replied with a great presence of mind, without trying to hurt the feelings of his judges, but in every instance he maintained everything which related to his essential convictions.

It was then understood that it would be altogether too monstrous a thing to condemn a man for his beliefs, and his enemies then attempted to insinuate that he had tried to disturb the city and Church of Geneva and he was called the "disturber of heresies." The reply from Vienne soon arrived, relating the condemning of Servetus and demanded that he should be returned into the hands of the French authorities. He, however, was retained at Geneva, as the people of the latter town were desirous of having the privilege of giving a great example of Christianity, flattering themselves to thus prove the rigid purity of their doctrine.

A serious incident for a time seemed to indicate that Servetus might be saved; this was the quarrel which Calvin had with Berthelier and the Council relating to the law of excommunication. The Council was partly composed of Calvinists, partly by Calvin's enemies and finally by neutral and undecided magistrates, so that the fluctuations in their feelings might be favorable to Servetus' cause. It was during one of these moments of defiance respecting Calvin that it was decided to leave aside his accusation and ask advice from other Swiss churches. Calvin struggled with his usual energy and, resorting to the pulpit, he there profited by the occasion to thunder against Berthelier and others and finally against Servetus himself, whom he pictured under the most fearful traits to his auditors. At the same time he wrote to the churches which had been consulted, begging them to reply favorably; this request was all the more necessary, because in a preceding affair, namely that of Bolsec, the churches of Berne, Bâle and so forth, had advised moderation and had condemned the use of force. This time it was no longer the same. Without pronouncing themselves in favor of the sentence of death, the churches recognized Servetus' culpability, the atrocities of his heresies and the danger of impunity. While waiting the arrival of this decision the Council authorized Servetus to uphold a written discussion against Calvin. One of the most remarkable passages of the memoir of the accused, confirmed by other extracts from his works, is that where he advises, in principle, that one should not persecute and especially not put to death any man for his theological opinions, although they might be erroneous, all this being the proclamation of the principal of the liberty of conscience.

While in prison Servetus was treated with the greatest cruelty. Not content with having him insulted and attacked by his friends during the interrogatories, to treat him as an ass, pig, etc., Calvin wished him to taste, in a filthy cell, the anticipation of the supplicant. The unfortunate Servetus wrote to the members of the Council as follows: "He wishes me to decay here; lice eat me alive, my footwear is torn and I have no change of dress. Three weeks ago I demanded to have an audience, but was unable to obtain one. The cold greatly torments me on account of my colics and hernia, which results in other troubles that I am ashamed to write you about. This is very great cruelty. For the love of God change the condition of affairs, either from pity or duty."

Upon reading this request the Council wished to order some change of linen sent to Servetus, but Calvin strongly opposed it. The former also asked to have a lawyer sent him, but Calvin replied that it was quite useless; in point of fact he had already been judged and condemned.

Finally the letters from the churches of Berne, Bâle, Zurich and Schaffhausen arrived and put an end to the Council's hesitations. Calvin and his followers had completely used up both possible and impossible questions. The most minute details had been gone into; they had even questioned why he had been able to contain himself for so long a time without marrying on account of his age, and other questions which could only be expressed in Latin.

There was nothing left but to announce the sentence, which was already amply prepared by this voluminous mass of derogatory evidence. It was pronounced at the *séance* of Thursday, Oct. 25, 1553. The few friends belonging to Servetus in the Council were kept away, and Calvin on this occasion only allowed his creatures to come, as well as those who, during the trial, had given evidence of animosity towards the accused. According to the sentence Servetus was convicted for having "proffered blasphemy of the most scandalous nature against the saintly and undivided Trinity, persevering in his false error and infecting several countries with them; that he had secretly had printed another book at Vienne in Dauphiné filled with the same horrible heresies and execrable blasphemy; to have called the Trinity a Cerberus or a monster with three heads; to have upheld that the baptism of little children was merely devilishness or witchcraft; the whole being a cruel onslaught, perdition and ruin of several poor souls." This curious document ends as follows: "It has been shown to us that thou, Servetus, hast for a long time put forward a false and fully heretical doctrine and this, placing aside all remonstrances and corrections, to have had a malicious and perverse obstinacy, perseveringly scattered and divulged until the printing of public books against God, the Father, the Son and the Holy Ghost, in short against the true foundations of the Christian religion, and by those means thou hast tried to cause a division and disturbance in the Church of God, by which means many souls might have been lost and ruined, a thing horrible and fearful, scandalous and infecting; thou hast had little shame nor horror to raise thyself against the Divine Majesty and the Holy Trinity, as well as to have greatly endeavored and obstinately employed in infecting the world with thine heresies and stinking heretical poison, the case and crime of heresy most shameful and detestable, meriting a serious corporal punishment. To these and other just causes, we, being desirous to purge the Church of God from such infection and to remove from it such a putrified member; having had a good participation of the Council with our citizens, and having invoked the name of God in order to substantiate the judgment, . . . having God and his Holy Scriptures before our eyes, we say in the name of the Father, the Son and the Holy Ghost that this is our final sentence which we here give in writing, thou, Michel Servetus, we condemn to be tied and led to Champel and there to be attached to the stake and burned alive with thine book, both written with thine hand and printed, until thine body is reduced to cinders; and thus shall finish thine days in order to give an example to others who might wish to commit similar acts." (Note 2.)

This judgment rendered by ignorant laymen against a theologian accused of metaphysical errors would be of the greatest ridiculousness if it were not a monument of cruel and barbarous iniquity. Servetus was executed on the next day, Oct. 27. Some few protestations were raised among the people and even in the Council. An Italian lawyer, by name Gribaldo, nearly paid with his life this courageous act in which a small number of bold men joined. But these few and weak voices were unable to save the unfortunate prisoner. He might, perhaps, have been able to escape death had he wished to, because all that was necessary for him to do was to retract what he had said, as Bolsec had done before, and as was done five years later by Valentine Gentilis. Servetus had more courage, and in spite of all that Calvin has written to blacken the last few hours of his victim, although he gave vent to cries of distress when his sentence was announced and when he saw the stake, he nevertheless persisted in his courageous refusal of any retraction. Nothing was neglected, however, to force one from his lips. Calvin went to the prison with two councillors and begged him to repent. Servetus in his nobleness told the former that he had pardoned him and even asked that he might be pardoned for the violent language which he had emitted against his accuser. Shortly afterwards Farel, the reformer of Neuchâtel, arrived in order to assist the unfortunate prisoner during his last moments. Even to the foot of the pile the theologians remained inflexible and pitiless. Farel demanded Servetus to admit his errors and his lies, to which Servetus replied: "I am perhaps mistaken, but I have neither lied nor sinned." Farel insisted and begged him to ask those present to pray for him, to which Servetus consented with an humble and true piety. But Farel wanted him to retract; he threatened Servetus that he would not follow him to the pile if he persisted to uphold his innocence. Servetus remained silent. The procession having crossed through the city left through the gates of Saint Antoine and reached the plateau of Champel. Here Servetus cried: "Oh! Jesus, Son of Eternal God, have pity on me." The theological subtilty reappeared in this supreme moment; they tried to force him to say "Eternal Son of God instead of Son of God Eternal," but he persisted in refusing. Then, addressing the people, Farel cried: "Behold the strength possessed by Satan when he possesses a soul! This man was very *savant*, and he might have been able to walk in the right road, but Satan has possessed him; be careful that the same thing does not happen to you."

Finally Servetus was tied by the executioner to a post placed on the pile; on his head had been placed a crown of heather saturated with sulphur and the "*Restitutio Christianismi*" was tied on his thigh. The stake was composed of green branches and consequently ignited slowly, but the people present threw dead wood upon it in order to shorten the suffering of the victim; after having given vent to a piercing cry and reciting a prayer to the end, he died.

Tradition represents Calvin hidden behind a window in order to satisfy his eyes by the tortures of Servetus, a distinct and symbolic image of the passionate and cruel persecution of his victim. Servetus' death did not put an end to his persecution, for a few months later Calvin published a book in which he exposed the abominable errors of Servetus and covered his memory with ignominious and mean calumny.

On account of the rarity of this work, there being only three (Note 3) copies extant, I have not been able to consult the original, but the text has been correctly reproduced in a work by Dutens entitled "*Des Origines des Découvertes attribuées aux modernes*," Paris, 1776. The author of this book received an original copy from Abbé Rive who was the librarian of the *Duc de la Vallière*, and sent it upon the request of the former. Following this I will give the English translation, but must crave pardon for the elegance of the English, because this has been sacrificed in order to give the author's correct idea.

"Ut vero totam animae et spiritus rationem habeas, lector, divinam hinc philosophiam adjungam, quam facile intelligas, si in anatome fueris exercitatus.

"Dicitur in nobis ex trium superiorum elementorum substantia esse spiritus triplex: naturalis, vitalis et animalis, tres spiritus vocat Aphrodisaeus; vere non sunt tres, sed duo spiritus distincti.

"Vitalis est spiritus, qui per anastomoses ab arteriis communicatus venit, in quibus dicitur naturalis,

"Primus ergo est sanguis, cujus sedes est in hepate, et corporis venis. Secundus est spiritus vitalis, cujus sedes est in corde et corporis arteriis. Tertius est spiritus animalis, quasi lucis radius, cujus sedes est in cerebro et corporis nervis, in his omnibus est unius spiritus et lucis Dei energia.

"Quod a corde communicatur hepati spiritus ille naturalis, docet hominis formatio ab utero.

"Nam arteria mittitur juncta venae per ipsius foetus umbilicum; itidemque in nobis postea semper junguntur arteria et vena. In cor est prius, quam in hepar, a Deo inspirata Adae

anima, et ab eo hepati communicata. Per inspirationem in eos et nares, est vire inducta anima; inspiratio autem ad cor tendit. Cor est primum vivens fons caloris, in medio corpore. Ab hepate sumit liquorem vitae quasi materiam, et eum vice versa vivificat; sicut aquae liquor superioribus elementis materiam suppeditat et ab eis juncta luce ad vegetandum vivificatur.

"Ex hepatis sanguine est animae materia, per elaborationem mirabilem quam nunc audies. Hinc dicitur anima esse in sanguine et anima ipsa esse sanguis, sive sanguineus spiritus. Non dicitur anima principaliter esse in parietibus cordis, aut in corpore ipso cerebri, aut hepatis sed in sanguine, ut docet ipse Deus. (Genes. 9, Levit. 17, et Deut. 12.)

"Ad quam rem est prius intelligenda substantialis generatio ipsius vitalis spiritus, qui ex aere inspirato et subtilissimo sanguine componitur, et nutritur, vitalis spiritus in sinistro cordis ventriculo suam originem habet juvantibus maxime pulmonibus ad ipsius generationem. Est spiritus tenuis, ut sit quasi ex puriori sanguine luciduc vapor, substantiam in se continensa quae, aëris et ignis. Generatur ex facta in pulmonibus mixtione inspirati aëris cum elaborato subtili sanguine, quem dexter ventriculus cordis sinistro communicat. Fit autem communicatio haec, non per parietem cordis medium, ut vulgo creditur; sed magno artificio a dextro cordis ventriculo, longo per pulmones ductu, agitatur sanguis subtilis; a pulmonibus praeparatur, flavus efficitur, et a vena arteriosa in arteriam venosam transfunditur.

"Deinde in ipsa arteria venosa inspirato aëri miscetur, et expiratione a fuligine repurgatur. Atque ita tandem a sinistro cordis ventriculo totum mixtum per diastolem atrahitur, apta suppellex, ut fiat spiritus vitalis.

"Quod ita per pulmones fiat communicatio et praeparatio, docet conjunctio varia, et communicatio, venae arteriosae cum arteria venosa in pulmonibus. Confirmat hoc magnitudo insignis venae arteriosae, quae nec talis, nec tanta facta esset, nec tantam a corde ipso vim purissimi sanguinis in pulmones emitteret, ob solum eorum nutrimentum, nec cor pulmonibus hac ratione serviret: cum proesertim antea in embryone solerent pulmones ipsi aliunde nutriti ob membranulas illas, seu valvulas cordis, usque ad horam nativitatis nondum apertas, ut docet Galenus. Ergo ad alium usum effunditur sanguis a corde in pulmones hora ipsa nativitatis, et tam copiosus.

"Item, a pulmonibus ad cor non simplex aer, sed mixtus sanguine mittitur, per arteriam venosam: ergo in pulmonibus fit mixtio. Flavus ille color a pulmonibus datur sanguini spirituoso, non a corde, in sinistro cordis ventriculo non este locus capax tantae et tam copiosae mixtionis, nec ad flavum elaboratio illa sufficiens. Demum, paries ille medius cum sit vasorum et facultatum expers, non est aptus ad communicationem et elaborationem illam licet aliquid resudare possit.

"Eodem artificio, quo in hepate sit transfusio a vena porta ad venam cavam propter sanguinem, sit etiam in pulmone transfusio a vena arteriosa ad arteriam venosam propter spiritum. Si quis hoec conferat cum iis quae scribit Galenus lib. 6 et 7, de usu partium, veritatem penitus intelliget, ab ipso Galeno non animadversam.

"Ille itaque spiritus vitalis a sinistro cordis ventriculo in arterias totius corporis deinde transfunditur, ita ut qui tenuior est, superiora petat, ubi magis adhuc elaboratur, praecipue in plexu retiforme, sub basi cerebri sito, in quo ex vitali fieri incipit animalis, ad propriam rationalis animae sedem accedens: iterum ille fortius mentis ignea vi tenuatur, elaboratur, e perficitur, in tenuissimis vasis, seu capillaribus arteriis, quae in plexibus choroidibus sitae sunt, et ipsissimam mentem continent, hi plexus intima omnia cerebri penetrant, et ipsos cerebri ventriculos interne succingunt, vasa secum complicata, et contexta servantes, usque ad nervorum origines, ut in eos sentiendi et movendi facultas inducatur. Vasa illa miraculo magno tenuissime contexta tametsi arteriae dicantur, sunt tamen fines arteriarum, tendentes ad originem nervorum ministerio meningum.

"Est novum quoddam genus vasorum. Nam sicut in transfusione a venis in arterias, est in pulmone novum genus vasorum, ex vena et arteria: ita in transfusione ab arteriis in nervos, est novum quoddam genus vasorum, ex arteriae tunica et meninge: cum praesertim meninges ipsae suas in nervis tunicas servent. Sensus nervorum non est in molli illa eorum materia; sicut nec in cerebro, etc."

THE ENGLISH VERSION.

In order to make thee understand exactly the cause of the soul and the spirit, I will here, reader, cause divine philosophy to intervene so that you will comprehend it the easier if thou art expert in anatomy. It is said that in us is found a triple spirit, proceeding from the substance of three superior elements, namely the natural, vital and animal spirit. Aphrodiseus calls them the three spirits; in reality there are not three, but only two, quite distinct. The vital spirit is that which by the anastomoses passes from the arteries into the veins, where it takes the name of natural spirit. The first of these spirits is consequently the blood whose seat is to be found in the liver and the veins of the organism.

The vital spirit is the second, it has its seat in the heart and in the arteries of the body. The third, lastly, is the animal spirit which, comparable to a ray of light, resides in the brain and in the nerves; the force of the unique spirit of God and of his light exists in these organs. The formation of man by the uterus teaches us how the natural spirit is transmitted to the liver by the heart. At this time the artery united to the vein, passes by way of the umbilicus to the fetus; and thus from here afterwards our veins and our arteries will be in communication. The heart possesses the soul inspired by God in Adam before the liver, and it is from it that the latter

receives it. It is, thanks to the inspiration, effected by the mouth and the nostrils that the soul is in reality introduced, and as the products of the inspiration are directed towards the heart, it is this organ, the true source of heat, in the midst of the body, which lives the first. It receives from the liver the liquid which is, so to speak, the matter of life and vivifies it itself in its turn. Thus, in plants, the aqueous liquids provide for the superior elements materials of nutrition and receive life from them with the aid of light. From the hepatic blood consequently comes the matter united to the soul, and this takes place by an admirable elaboration, that thou wilt now hear actually exposed. From all this it is said that the soul resides in the blood, still more, that this constitutes the soul itself it is, so to speak, a spirit of a sanguineous nature. It is impossible to pretend that the soul preferably resides in the walls of the heart or in the deep mass of the brain or liver; it is seated in the blood as God himself teaches.

In order to reach this point, it is necessary in the first place to understand the genesis of the vital spirit itself, whose constitution and nutrition are derived from the inspired air and from the most subtle blood that can be seen. The vital spirit takes its origin from the left ventricle of the heart, the lungs contributing to the greatest extent in its formation. It is a subtle spirit, similar to the clear vapor of blood, too pure, so to speak, and containing in it its own substance, that is to say, air and heat. It arises from a mixture which takes place in the lungs between the inspired air and the subtle and improved blood that the right ventricle passes over to the left heart. This encounter does not take place through the interventricular wall, as has been vulgarly thought. This subtle blood, from the marvelous action of the ventricle and by a long circulation in the lungs is greatly agitated; it is prepared by these organs, rendered clear and transmitted by the arterial vein to the venous artery. It is afterwards, in the venous artery itself, mixed with the inspired air and purified of the smoke by expiration. And lastly, this entire mixture, formation apt to fulfill its functions, is drawn during the diastole by the left ventricle. Thus is formed the vital spirit.

The various anastomoses and communications which unite the arterial vein and the venous artery in the pulmonary tissue make evident that it is certainly thus by the intermediary of the lungs that the passage and preparation of the blood is effected. The very great size of the remarkable arterial vein confirms this fact. It is not thus formed, and with such very large dimensions, any more than it sends out of the heart such a large quantity of pure blood into the lungs only with the single end to accomplish their nutrition. The heart would not serve even for this end, for the reason that in the embryo the lungs are obliged to look elsewhere for their elements of nutrition, on account of the presence of small membranes and the valves of the heart, which, as Galen teaches, only open at the time of birth. It is consequently with another end, that at the time of birth, the blood flows in such great quantity from the heart into the lungs. In the same way, it is not simply air which is sent from the lungs to the heart by the venous artery, but a mixture of air and of blood; it is consequently in the lungs that this takes place. The light colored hue which characterizes the spirituous blood, is given to it by the lungs and not by the heart. The left ventricle is not in fact a sufficiently large cavity to allow such a considerable mixture of such abundant elements, and this elaboration would be insufficient to produce the light color of the blood. Lastly, the intraventricular wall, being deprived of vessels and any property whatsoever can in no way serve for the communication of air with the blood, no more than to the elaboration of this, since nothing can transude. The same mechanism which presides in the liver over the passage of blood from the portal vein to the vena cava, also presides in the lung over the passage of the spirit of the arterial vein into the venous artery. If one will compare what I have just said with that which Galen has written, in his VI and VII books, on the use of different parts, one will easily understand that this writer did not pay attention to this truth.

The vital blood is afterwards transported from the left ventricle into the arteries of the entire body, in such a way that that which is the lightest reaches the highest regions, where it must undergo a still more perfect elaboration. This will be principally in the retiform plexus, situated under the base of the brain, where from vital it will commence to become animal, in approaching the domain proper of the reasoning soul. Again this blood is still more completely refined by the ardent force of the spirit, it is still elaborated and improved in these exceedingly narrow vessels, similar to arterial capillaries and which, situated in the arterial capillary plexuses contains the intelligence itself. These plexuses penetrate all the most intimate regions of the brain and surround the ventricles which are found in its interior. Rolled up on themselves and massed together, they go up to the origin of the nerves, from which the latter receive their faculty of feeling and of moving. Although these vessels, interwoven in the finest fashion possible are still called arteries, they nevertheless form the termination of the latter, extending to the origin of the nerves by the intermediary of the meninges. There is still another kind of vessel. Just as in the case of the passage of the blood from the vein into the artery, there is a new type of vessel in the lung proceeding from the two others; and just as the blood is allowed to go from the arteries to the nerves, so one encounters canals of a new specie. They arise from the arterial tunic and the meninges, since the latter contain nerves within their interior. The sensibility of the nerves is not seated in their soft substance any more than in the brain.

NOTES.

Note 1. The following is the exact copy of the death sentence rendered against Servetus at Lyons, which I have textually copied from Allwoerden's Historia Michaclis Serveti. Helmstadii, no date of publication. However, this work is a theological thesis which was upheld on Dec. 19, 1727.

" Entre le Procureur du Roy Daulphin demandeur en crime d'heresie scandaleuse, dogmatisation, composition de nouvelles doctrines & livres heretiques, schsime & perturbation de l'union & repos publiques, rebellion et desobeissance aux ordonnances faictes contre les heresies, effraction & evasion de prisons royalles Delphinales, d'une part; & Mre. Michel de Villenevfve medecin; parcy devant prisonnier aux prisons du Pallaix Delphinal de Vienne, & a present fugitif a cause desdits crimes, d'autre.

" Veu par nous les pieces justificatives desdites heresies, mesmes les Epistres & Escritures de la main dudit Villenevfve Adressées a Mre. Ieh. Calvin prescheur de Geneve & par ledit de Villenevfve recogneues, ses reponces, confessions & negations, les reponces & autres procedures concernantes Balthasard Arnollet Imprimeur, certaines basles & livres imprimez, desquels l'intitulation est Christianismi Restitutio, les tesmoings examinez sur ce que ledit de Villenevfve avoit composé & faict imprimer ledit livre a ses despens, les rapports des Docteurs eu Theologie & autres personnes notables sur les erreurs contenus audit livre & Epistres. Et lesquels erreurs & heresies sont d'ailleurs manifestes par la lecture d'yceux . . . faictes sur l'evasion des prisons & diligences de apprehender ledit Villenevfve, Adjournemens a trois briefs jours & defaults sur iceux obtenus, recollemens des tesmoings, conclusions diffinitives dudit Procureur du Roy Daulphin, & tout ce qui a été remys par devers nous; le tout consideré; nous avons dict & disons lesdicts defaults avoir esté bien & deuement obtenus, pour le profit desquels nous avons forclos & forcluons ledit de Villenevfve de toutes exceptions & defences, declairé & declairons atteint & convaincu des cas & crimes a luy imposez, pour reparation desquels nous l'avons condamné & condamnons, assavoir pour le regard de l'amende pecuniaire en la somme de mille livres tournois d'amende envers le Roy Daulphin, cela estre, incontinent qu'il sera apprehendé. conduyt sur un tumbereau avec ses livres a jour & heure de marché des la porte du Pallaix Delphinal par les carrefours & lieux accutumés jusques au lieu de la Hale de la presente Cité, & subsequemment en la place appellee de Charneve, & illec estre brusle tout vif a petit feu, tellement que fon corps foit mis en cendre. Cependant sera la presente Sentence executée en Effigie, avecques laquelle seront lesdits livres bruslez. Et si l'avons condamné & condamnons es despens & frais de Justice, desquels nous reservons lataxe, declairans tous & chacun ses biens acquys & confisqués au proffit de qui appartiendra, lesdits frais de Justice & amende sur iceux biens au prealable livrés & payés. De la Covr Vybally & Juge Delphinal. Grater Assesseur. Carver Assesseur. Pvtod Assesseur. Dv Prat Assesseur. Adebais Assesseur. Berand Assesseur. Phineret Assesseur. Tamptesiev Passard Assesseur. Bertier Assesseur. P. le Covrt Assesseur. Loys Marcel Assesseur. Christoffle Assesseur. Publiée ladite Sentence en plein jugement a l'audiance dudit Procureur du Roy Daulphin. Nous Vybally & Juge susdit seans dans l'Auditoire du Pallaix Delphinal de Vienne le dix septieme jour du mois de Juing l'an mille cinq cens cinquante troys. Presens a ce Mes. Philibert Collins, Alexandre Rolland, Clavde Magvin, Charles Perdomey, Pierre des Vignes, & plusieurs autres Practiciens de Vienne illec estans, & moy Gressier soubsigné, Chasalis.

" Dudit jour enuiron l'heure de mydy aprés que l'Effigie dudit Villenevfve avoir esté faicte au devant dudit Pallaix Delphinal, icelle Effigie par Francois Berode, Executeur de la haute Justice, lequel l'on a envoyé querir à ces fins, a esté mise sur untumbereau avec cinq basles des livres composés par icelluy Villenevfve, & aprés, ledit tumbereau, chargé desdits Effigie & livres, a esté conduit & mené par ledit Executeur des la porte dudit Pallaix par les carrefours & lieux accoutumés jusques au lieu de la Hale de la presente Cité de Vienne, & subsequemment en la Place appellée la Charneve, dans laquelle ladite Effigie a esté attachée à une potence expressement erigée, & après bruslée avec lesdits livres à petit feu par ledit Executeur, le quel a mis à deue & entiere execution ladite Sentence pour le regard de ladite Effigie, felon la forme & teneur, en presence de Gvigves Ambrosin crieur & Trompette de Vienne, Clavde Reymet, Michel Basset Sergens Royaulx Delphinaulx, Sermet des Chams, . . . de Vienne, & de plusieurs aultres gens illec assembles pour voir faire ladite execution. Ainsi a esté procedé, & par moy Greffier soubnommé receu, Chasalis. Extrait des Registres de la Cour du Balliage de Vienne par moy Greffier soubnommé receu, Chasalis. Extrait des Registres de la Cour du Baliage de Vienne par moy Greffier soubsigne, Chasalis."

Note 2. Cl. Michael de la Roche (Memoirs of literature containing a Weekly Account of the State of Learning, both at Home and Abroad, vol. I. For the years MDCCX and MDCCXI. London, printed by J. Roberts, and sold by A. Baldwin, near the Oxford Arms in Warwick-Lane, MDCCXII gives a correct copy of the original legal process and sentence which I here transcribe:

" Proces
fait & formé par devant Nos très redoubtés
Seigneurs, Sindiques, Juges des causes criminelles de ceste Cité, à la poursuite & instance du Seigneur Lieutenant de ceste
dite Cité, des dites causes instant
contre
Michel Servet de Ville-neuve au Royaume
d'Arragon en Espagne.

" Lequel premierement est esté atteint d'avoir, il y a environ 23. a. 24. ans, fait imprimer un Livre Agnon en Allemagne contre la sainte & Individue Trinité, contenant plusieurs & grands Blasphemes contre icelle grandement scandaleux és Eglises des dites Allemagnes: lequel livre il a spontanément confessé avoir fait imprimer, non obstant les remonstrances & corrections a luy faittes de les faulses opinions par les scavans Docteurs Evangelistes des dites Allemagnes.

" Item. Et lequel livre a esté par les Docteurs d'icelles Eglises d'Allemagne, comme plein d'heresies, reprouvé, & ledit Servet rendu fugitif des dites Allemagnes a cause du dit livre.

" Item, & non obstant cela ledit Servet a perseveré en ses faulses erreurs, infectant d'icelles plusieurs a son possible.

" Item. Et non content de cela, pour mieux divulguer & espancher son dit venin & heresie, depuis peu de temps en ça il a fait imprimer un autre livre à cachette dans Vienne en Dauphine, rempli des dites heresies, horribles & execrables blasphemes contre la Sainte Trinité, contre le Fils de Dieu, contra le Baptesme des petits Enfans, & autres plusieurs saints passages & fondemens de la Religion Chrestienne.

" Item, A spontanément confessé qu'en iceluy livre, il appelle ceux qui croient en la Trinite, Trinitaires & Atheistes.

" Item, Et qu'il appelle icelle Trinité un D —— & monstre a tr—st—tes.

" Item, Et contre le vray fondement de la Religion Chrestienne, & blasphemant detestablement contre le Fils de Dieu, a dit Jesvs Christ n'estre Fils de Dieu de toute éternité, ains tant seulement depuis son Incarnation.

" Item, & contre ce que dit l'Escriture Jesvs Christ estre Fils de David selon la chair, il le nie malheureusement, disant ecelui estre crée de la substance de Dieu le Pere, ayant receu trois Elemens d'icelui, & un tant seulement de la Vierge: en quoy meschamment il pretent abolir la vraye & enticre Humanité de Nostre Seigneur Jesvs Christ, la fouveraine consolation du poure genre humain.

" Item, Et que le baptesme des petits enfans n'est qu'une invention Diabolique & Sorcellerie.

" Item, Et plusieurs autres points & articles, & execrables blasphemes desquels ledit livre est tout farci grandement scandaleux, & contre l'honneur & Maiesté de Dieu, du Fils de Dieu, & du Saint Esprit: quil est un cruel & horrible meurtrissement, perdition & ruine de plusieus poures ames, estans par sa dessus dite deloiale & detestable doctrine trabies. Chose épouvantable à reciter.

"Item, & lequel Servet rempli de malice intitula iceluy son livre, ainsi dressé contre Dieu & sa sainte doctrine Evangelique, Christianismi Restitvtio, qui est à dire, Restitution du Christianisme; & ce pour mieux seduire & tromper les poures ignorans, & pour plus commodément infecter son malheureux & meschant venin les lecteurs de de son dit livre, sous l'ombre de bonne doctrine.

"Item, Et outre le des susdit livre, assaillant par lettres mesmes Foy, & mettant peine icelle infecter de sa poison, a volontairement confessé & reconna avoir escrit lettre à un des Ministres de cette Cité, dans lequell entre autres plusieurs horribles & enormes blasphemes contre nostre sainte Religion Evangelique, il dit nostre Evangile estre sans foy & sans Dieu, & que pour un Dieu nous avons on C—re à tr—ts—tes.

"Item, Et a davantage voluntairement confessé qu'au dessus dit lieu de Vienne, à cause d'icelui meschant & abominable livre & opinions, il fut fait prisonnier; les quelles prisons perfidement il rompit & échappa.

"Item, & n'est seulement dressé ledit Servet en sa doctrine contre la vraye Religion Chrestienne; mais comme arrogant innovateur d'heresies, contre la Papistique, & autres; si que à Vienne, mesme il est esté brusle en Effigie, & de ses dits livres cinq bales bruslées.

"Item, Et non obstant tout cela, estant ici ès Prisons de cette Cite detenu, n'a laissé de persister malicieusement en ses dites meschantes & detestables erreurs, les taschant soustenir avec injures & calomnies contre tous vrais Chretiens & fideles tenementiers de la pure immaculée Religion Chrestienne, les appellant Trinitaires, Atheistes & Sorciers, non obstant les remonstrances a luy deja dès long temps en Allemagne, comme est dit, faites, & au mepris des reprehensions, emprisonnemens & corrections a luy tant ailleurs qu'icy faites. Comme plus amplement & au long est contenu en son Proces.

SENTENCE.

"Novs Sindiques, Juges des Causes criminelles de cette Cité, aians veu le Proces fait & formé par devant Nous, à l'instance de nostre Lieutenant és dites causes instant, contre toi Michel Servet, de Ville-neuve au Royaume a'Arragon en Espagne, par lequel & tes volontaires Confessions en nos mains faites, & par plusieurs fois reiteréesm & tes livres devant Nous produits, Nous conste & appert Toy Servet avoir dès long temps mis en avant Doctrine fausse & pleinment hereticale & icelle mettant arriere toutes remonstrances & corrections, avoir a'une malicieuse & perverse obstination, perseveremment femée & divulgée jusques à l'impression de livres publics, contra Dieu le Pere, le Fils, & le Saint Esprit; bres contre les vrais fondemens de la Religion Chrestienne, & pour cela fasché de faire schisme & trouble en l'Eglise de Dieu, dent manites ames ont peu estre ruinées & perdues (chose horrible & épouvantable, scandaleuse & infectante) & n'avoir eu honte ni horreur de te dresser totalement contre le Maiesté Divine et Sainte Trinité; ains avoir mis peine, et t'estre emploie obstinement, à infecter le monde de tes heresies et puonte Poison hereticale, Cies et crime d' heresie grief et detestable, et meritant grieve Punition corporelle.

"A ces causes, et autres justes à ce Nous mouvantes, desirans de purger l'Eglise du Dieu de tel infectement, et retrancher d'icelle tel membre pourri, aians eu bonne participation de conseil avec nos Citojens, et aians invoqué le nom de Dieu, pour faire droit jugement, seans pour Tribunal au lieu de nos Maieurs, aians Dieu et ses saintes Escritures devant nos ieux, disant, Au now du Pere, du Fils, & du Saint Esprit, par cette nostre definitive Sentence laquelle donnons ici par Escrit. Toy Michel Servet condamnons à devoir estre lié et mené au lieu de Champel, et là devoir estre à un pilotis attaché et brusle tout vif avec ton livre, tant escrit de ta main qu'imprime, jusques a ce que ton corps soit reduit en cendre; et ainsi finiras tes jours, pour donner exemple aux autres, qui tel cas vodroient commetre. Et à vous Nostre Lieutenant, commandons nostre presente Sentence faites mettre en Execution."

Note 3. The work to which Servitus owed his death has an exact title: "*Christianismi restitutio. Totius ecclesias apostolicoe ad sua limita vocatio, in integram restituta cognitione Dei fidei Christi, justificationis nostrae regenerationis baptismi, et coenoe Domini manducationie.*" It is a book of 734 pages and almost anonymous, since *in fine* is only signed by the initials M. S. V. [Michaelus Servetus, Villanovus]. Servetus met with almost insurmountable difficulties in the printing of the work, because the fear of possible punishment made the various publishers very circumspect. One of them at Bâle, who was first approached by the author, fearing the sanctions of the Reformation, would not undertake the work. The French printers also showed little enthusiasm in the new work for fear of arousing the anger of the all-powerful Inquisition. Servetus, however, finally prevailed upon two printers of Vienne [France], where he lived, Balthazar Arnollet and Guillaume Guéroult to establish a clandestine workshop, and thus the famous treatise saw the light of day only a few months before the death of its author. The judgment which condemned the latter to the flames was also applied to his work and both were doomed to disappear. The zeal carried out in the application of this sentence was such that out of the eight hundred copies of the work which existed at this time, three only escaped the search of the fanatic executioners. In the book already referred to, Dutens pretends that only one copy of the book was saved, for he says: "Le soin que l'on prit d—en bruler tous les exemplaires à Vienne, dans le Dauphiné, à Genéve et à Francfort, a rendu ce livre d'une si grande rareté qu'il n'en existe qu'un qui étoit autrefois dans la bibliothèque du landgrave de Hesse-Cassel et qui est à présent dans celle du duc de la Vallière."

Two other original copies unknown to Dutens are mentioned by Hoefer in his "Biographie générale" and in the "Nouveau Dictionnaire bibliographique" by Théodore Graesse. The latter authority expresses himself as follows: "On ne connait plus que deux exemplaires du livre, l'un dans la Bibliothèque impériale, à Vienne, et l'autre vendu à la Vallière. Un troisième conservé dans la Bibliothèque de Cassel, parait avoir péri."

One of the original copies is now preserved at the National Library of Paris and is the one that the authors alluded to mentioned as having been acquired by the Duc de la Vallière. It belonged in the first place to Colladon, one of the judges of Servetus, and was placed with him on the pile from which an unknown hand withdrew it. Some of the pages still show the traces of the flames. The first accuser of Servetus who used the work in order to edify his accusations has covered the pages with written remarks which are everywhere to be found along the margins.

Under what circumstances this precious document afterwards found its way to England is still obscure, but at all events it finally fell into the hands of the illustrious Dr. Mead, who, in his turn, made notes. The letter that Abbé Rive, librarian of the Duc de la Vallière, wrote to Dutens, shows the successive sales of which it was the object. The document published by Dutens in his work already referred to thus relates the facts: "Le livre avoit autrefois appartenu au docteur Mead qui en présent à M. de Boze, secrétaire de l'Academie des Belles-Lettres et Inscriptions; ou qui le troqua avec lui pour des médailles. A la mort de M. de Boze, M. Boutin, ancien intendant des finances, et M. le Président de Cotte, ayant acheté sa bibliothèque, ce livre échut en partage à ce dernier, qui le vendit ensuite à M. Gagnat, à un prix exorbitant. C'est du cabinet de M. Gagnat qu'il est passé dans notre bibliothèque (celle du duc de la Vallière); je l'ai payé 3,810 livres."

Thus Servetus' work remained for some time in the library of the Duc de la Vallière and when in 1783 the celebrated bibliophile sold his collection it was among those that the Count d'Artois bought in the name of the King and paid £4,120 for it alone. Since this time it has been in the National Library of Paris.

The copy which disappeared from the Library of Cassel belonged to a private party in Geneva, who sold it to the library at a very high price.

This most celebrated work has been reprinted twice only and that which Dr. Mead of London undertook was never finished. It was commenced with the text which is now in Paris, as original, this being the conclusion that one may draw from the opinion emitted by Dutens, when he says: "L'édition contrefaite de Londres, l'a été probablement sur ce même exemplaire (celui du duc de la Vallière), dans le temps qu'il étoit entre les mains du docteur Mead. L'évéque de Londres obtint du gouvernement qu'on en défendit l'impression. Ce qui fit qu'il n'y eut que la moitié de l'ouvrage d'imprimé." What was wanting of the text was added in manuscript.

The second reprint, which was made at Nuremberg in 1790, under the direction of Murr, faithfully reproduces the original.

From what has been said all commentary is unnecessary, but it will at once be seen that from the medical view point this work is of great historical and scientific value, and in it is found an exact explanation of the pulmonary circulation described one hundred years before Harvey demonstrated the general circulation.

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EMPYEMA AND ABSCESS OF THE LUNG AS SEQUELS OF ACUTE SUPPURATIVE APPENDICITIS.

BY HOMER GAGE, M.D., WORCESTER, MASS.

The important position which appendicitis occupies on the borderland of medicine and surgery, and the frequency with which its problems are presented to the general practitioner, as well as to the surgeon, keep it constantly before our medical societies and in our medical journals as a subject of the deepest interest.

The discussions in regard to its diagnosis, the operative or non-operative treatment and the time of operation have all brought out a great variety of opinion, and the brilliant results of surgical interference have hitherto occupied the chief place in these discussions.

It is inevitable that the pendulum of medical opinion should swing backward, and we see an important indication that the time for such a movement is near at hand, in a late discussion of the subject before the French Academy, in which the present wholesale removal of appendices was strongly condemned as unscientific and unnecessary.

These criticisms apply, of course, chiefly to the treatment of the chronic forms, and with especial force to those in which the symptoms are chiefly reflex. For the acute suppurative forms of appendicitis, the consensus of medical as well as surgical opinion is and will, I think, remain strongly in favor of prompt and early operation. Until we discover some means of distinguishing at the outset those processes which are destined to spread from those that are likely to resolve the safest rule will be to operate in all cases of acute appendicitis as soon as the diagnosis is clear, and, as in the treatment of irreducible hernia, in case of doubt, operation is probably safer than delay. I question if a better rule is ever formulated.

But aside from these general questions, which have been the subject of so much discussion, there are many other points still to be studied and made prominent, and I am thinking particularly of those presented by the various complications and sequelæ of appendicitis, and propose to ask your attention for a moment to those cases in which the pleura and the lung are secondarily involved.

In his monograph on the "Pathology of the Vermiform Appendix," published in 1893, Kelynack[1] says, that "occasionally, as a result of appendicitis, subphrenic abscess may be formed, and in several instances perforation through the diaphragm has followed, setting up a purulent pleurisy and most fatal form of suppurative penumonia."

In 1895 Hawkins[2] refers to two cases in which a definite right-sided pleurisy developed in the course of a simple perityphlitis, and Lockwood[3] refers to a case in which pus was obtained by aspirating through the eighth intercostal space behind, and at autopsy the appendix was found inflamed and surrounded by an abscess which had tracked up behind the peritoneum to the under surface of the diaphragm.

Deaver,[4] in 1900, speaks of purulent pleuritis, which may or may not be accompanied by inflammation, abscess or gangrene of the lung; relates an unoperated case in which at autopsy a perforated appendix was found lying just below the diaphragm, the abscess around which had perforated through the diaphragm into the lungs; and adds that, in addition to this case, "I have encountered several others in which the pus from a peri-appendiceal abscess was evacuated through the mouth." Kelly[5] also mentions empyema as commonly a sequel of subphrenic abscess.

Among the earlier references to the subject in the medical journals is an account of a case presented at a meeting of the New York Pathological Society by Thacher[6]; it was a case of appendicitis with perinephritis and subdiaphragmatic abscess with perforation into the lung, and he referred to a similar case presented to the same society several years before; in both the abscess reached along the front of the kidney to the under surface of the liver, then formed a pocket between the diaphragm and liver, whence it perforated into the lung.

Fowler,[7] in an article entitled "Observations on Appendicitis," in 1894, mentions among its complications and sequelæ, "purulent pleuritis, or purulent pericarditis," referring to them as possible results from hepatic abscess. He says that "large collections of pus situated superiorly or posteriorly within the liver will tend to find their way through the diaphragm," and does not seem to differentiate between hepatic and subphenic abscess.

In the course of the discussion on appendicitis, before the Société de Chirurgie of Paris, in 1894, Terrillon[8] called attention to an accident quite rare in suppurative perityphlitis, viz., purulent pleurisy; and related three cases, in one of which recovery followed successive operations for the relief, first of the appendiceal abscess, then of the pleural empyema, while in the other two cases death followed failure to interfere. A case of recovery after operation is recorded in the Reports of St. Thomas Hospital[11] for 1899.

Christian and Lehr,[9] in 1903, reported seven cases of subphrenic abscess occurring as a complication of appendicitis, and in four of these the process had extended into the pleural cavity. In none of these was there a direct perforation of the diaphragm, but an extension of the process by way of the lymphatics.

Sonnenberg[10] found lung complications in 5% of 740 cases of appendicitis, but these were chiefly the result of thrombosis and embolism, and there were only 7 cases of pleurisy. In a thousand cases collected from the statistics of the London Hospital,[13] there were 7 cases of empyema and none of pulmonary abscess.

Elsberg[12] collected 73 cases of subphrenic abscess, of which 68% arose from abscess about the appendix, and in 25% of these the diaphragm was perforated. He mentions three ways in which a subphrenic abscess, secondary to appendicitis, may occur:

1. By localization in the right or left subphrenic region of a general systemic infection.
2. By localization, with foci of suppuration in various parts of the abdomen.
3. By direct extension.

This latter is by far the most common method of origin, and the extension may occur intraperitoneally, as by direct force of gravity, or extra-peritoneally, in which case the track lies behind and above the kidney and causes little or no downward displacement of the liver. Once established in the subphrenic space, the further extension of the suppurative process through the diaphragm to the adjacent pleura is easily accomplished; the contiguous portion of the lung is next attacked, communication with a bronchus follows, and the abscess is frequently evacuated through the mouth.

Such is the ordinary sequence by which suppurative appendicitis results in empyema and abscess of the lung. Both may be present as the result of a general systemic infection, in common with multiple pyemic abscesses in other regions, and it is possible that a single abscess of the lung may be met with, in which infection has been transmitted through the circulation, though this is yet to be demonstrated by post-mortem examination.

In regard to the frequency with which these conditions occur, the most astonishing statement is that of Volbrecht, quoted by Kelly, who claims to have found evidence of pleuritic involvement in 38% of the cases in Gerhardt's clinic, but this seems so entirely out of accord with the experience and opinions of others that there must have been some error in observation or quotation.

Sonnenberg tabulated the relative frequency of perforation into different tissues and organs in 424 cases of appendicitis, and found that the pleural cavity was involved in six. From my own records I am able to find 6, or a little less than 1% of all cases, or a little over 2% of the suppurative cases in which a secondary involvement of pleura and lung was clearly established, and one other doubtful case, to which I shall refer later.

It is quite possible, as suggested by Kelly, for a pleural empyema to be discovered and operated upon, while the primary cause, a suppurative appendicitis, has been overlooked. One instance of this has occurred in my own experience. In January, 1905, I was called upon to operate on a man forty-five years old, who had pain, with the physical signs of effusion in the lower part of the right chest, a foul purulent expectoration, and the escape of gas, with a distinctly fecal odor in the breath, whenever he coughed.

I removed a portion of the seventh rib in the post-axillary line and evacuated about 4 oz. of pus, which was dark brown in color and had a distinctly fecal odor, similar to that so commonly observed in abdominal suppuration. On further questioning, it developed that three weeks before he had abdominal pain, tenderness in the right iliac region and well-marked symptoms of appendicitis. The local signs had rapidly improved, and although he had not at any time recovered his health, the original trouble had been apparently so insignificant that it had been lost sight of.

Such instances, however, are unusual. The primary lesion is generally much more severe, almost always associated with a suppurative process that has compelled incision and drainage, and seldom heals before the complications are recognizable.

The only other instance in my experience where pulmonary complications have occurred after the appendix abscess has healed was in a child of six years old, whose case was of especial interest to me, and its proper classification has always been in doubt. An abscess of three days' duration was opened, the appendix removed and the wound drained. The discharge cleared, the wick had been removed and the wound healed without any evidence of abdominal infection. On the third day he developed a right-sided pneumonia with a high temperature, but in the course of a week both physical and constitutional signs had disappeared, the temperature was normal for several days and the child was sitting up in bed.

The temperature then returned, associated for the first time with abdominal pain and distention. He died six days after the appearance of these symptoms, on the nineteenth day of his illness. At the autopsy by Dr. Baker, there was found an abscess of the right lung, pus in both pleural cavities, but more abundant in the right, and a general suppurative peritonitis, chiefly noticeable in the upper part of the abdomen.

The region about the cecum showed no evidence of fresh infection, no pus, and the stump of the appendix was smooth, thoroughly healed and not even injected. I regret that no culture was taken at the operation; at the autopsy the infection was found to be a pure streptococcus. I have always felt that the pulmonary complications may have been purely accidental, and due to the inhalations of vomitus while under the influence of the anesthetic, that the patient recovered from the appendicitis, but died from the effects of an inhalation pneumonia.

If he did not, the case will have to be classified as one of infection through metastasis, and not by direct extension, a condition that may obtain, but must be very rare. I have seen no other case that could be so classified.

I have had one other serious lung infection, which is also the only case in which the left side of the thorax was involved primarily. It occurred in a young male, twenty-one years old, who was operated on five days after the onset of the disease. A perforated, gangrenous appendix was found and removed, but there was already present a general suppurative peritonitis.

The abdomen was thoroughly flushed with salt solution, and large quantities of pus removed from the upper part of the abdomen from both right and left sides. His respirations were, from the outset, rapid (30 to the minute) and shallow, but there was nothing abnormal to be discovered on auscultation or percussion, and I attributed the condition to the presence of the general peritonitis.

On the sixth day, he began to complain of pain in the left upper quadrant, followed on the next day by pain in the left chest with signs of consolidation in the back. On the tenth day he had a severe collapse, and coincidently began to expectorate large quantities of foul-smelling pus. He rallied slowly, and for five weeks lay in a most critical condition with temperature ranging from 100° to 102°, pulse from 130 to 150 and respirations from 30 to 40. The cough and foul expectorations continued, and were accompanied by progressive and extreme emaciation.

At no time were there any signs of a pleural effusion, but there were unmistakable indications, on physical examination, of a large cavity in the lower lobe of the left lung, extending almost to the anterior line, and as high as the sixth rib, with a limited area of consolidation around it.

Meanwhile his abdominal wound had closed, and his ability to take and assimilate nourishment continued almost without interruption. His temperature ranged from 99° in the morning to 101° or 102° in the afternoon; and at the end of two months he was able to be carried to his home, weighing just ninety pounds, having lost forty-five pounds in the eight weeks.

The cough and expectoration remained unchanged however, and the physical signs of the lung cavity were still present. He gained slowly but steadily, was finally able to go to the high hills of Vermont; whence I learn that now, after a lapse of six months, his cough is nearly gone, he has gained thirty pounds in weight and feels encouraged to believe that his recovery may be complete. Tubercle bacilli were repeatedly sought for, but never found in the sputum.

In this case I think the infection of the lung came from the extension of an abscess in the subphrenic region on the left side, passing through the diaphragm to the lung, which had become adherent to its upper surface. It is the only one of my cases in which the left thorax was invaded primarily, and the only one n which the subphrenic abscess was not in direct communication with the primary focus.

In the great majority of cases the right side is the one involved, and the usual history is that of an abscess in the right iliac region, above the brim of the pelvis, extending to a greater or less distance along the outer side of the ascending colon.

Under such conditions gravity often favors the extension of the abscess to the subphrenic region; the continued rise of temperature, after an initial fall, with the presence of pain and soreness in the region of the liver, even a good while after the primary operation, affords good reason for suspecting that such an extension has taken place; and when, after a short interval, the pain is felt higher up, under the seventh to tenth rib, is especially marked on inspiration, and is associated with a short, hacking cough, one feels confident that the pleura is involved.

It seems to be characteristic of these effusions that they never become very large in amount, and that they usually form a communication with a bronchus and find an outlet through the mouth. In one instance, to which I shall refer again, after the discharge from the bronchus, which was always small, fluctuation appeared in the back, and the abscess was evacuated by an incision near the inferior angle of the scapula, one inch behind the posterior axillary line. In the three other cases, which constitute my experience with these complications, no surgical interference was attempted, with the result that two recovered and one died.

The patient whose abscess pointed in the back had an especially interesting and unusual history. She was operated on in May, 1901; the appendix was removed, and a large localized abscess, reaching up to the under surface of the liver, was exposed.

She recovered with a fecal fistula, and a sinus extending up along the track of the original abscess, from which pus was still discharged. In August she began to have pain in right side with cough and, finally, purulent expectoration; and one month later, in September, a swelling appeared just below the angle of the scapula and behind the posterior axillary line which was opened and drained. The pus was of the same character and odor as that from the old sinus.

She now had two sinuses and a fecal fistula, none of them discharging constantly; the fecal fistula would often stay closed for a week at a time, and never discharged a great quantity except when the bowels were very loose. The sinus in the back and that at the upper end of the anterior incision would close for longer times, but every now and then she would be seized with violent pain, the relief from which was always associated with a free discharge of pus from front or back or both.

In January, 1903, I operated for the closure of the fecal fistula and repair of a ventral hernia. Both were successfully accomplished, but although I made an effort to clean up the other sinuses by dilating and curetting them, they continued to gather and discharge periodically, the gatherings always associated with great pain and distress, but as soon as the discharge appeared the pain was relieved and she resumed her regular habits of living.

In January, 1905, she sought relief again and this time I succeeded in establishing a direct communication between the sinus in the back and the one in front, passing a long sound through and then laid the track freely open by an incision, which began just below the inferior angle of the scapula and behind the posterior axillary line to a point just below the border of the ribs and about two and one-half inches to the right of the median line in front. The sinus passed beneath the tenth rib which was stripped of its periosteum, and at a point about three inches from the anterior opening, communicated with a cavity as large as a hen's egg, containing 3 oz. of foul-smelling pus.

By the removal of the tenth rib from the posterior axillary line to the costo-chondral junction and the eleventh rib entire, the track of the sinus and the pus pocket were perfectly exposed, thoroughly cleaned out and packed with iodoform gauze. Thus treated the wound granulated from the bottom and the patient was discharged well in six weeks. The contraction of the cavity has destroyed the symmetry of the waist line, but she has ever since remained perfectly well.

The three other cases were similar, in that there was direct extension of the suppurative process from the region of the appendix to the right pleural cavity through the diaphragm, but the escape of pus in each was through a perforation into the lung. Two of them made perfect recoveries, without further surgical interference; and one, a boy of nine years, died from general sepsis and exhaustion.

From a consideration of these cases it would seem as if the mortality was but little greater than that of the average case of suppurative appendicitis, being only one in six, or 16⅔%, omitting the case in which the infection was of doubtful origin.

I am inclined to believe, however, that this is not a statement of the real mortality attendant upon these cases, and I cannot help feeling that if I could have had autopsies on more of my fatal cases, it would be found that pleural infection was not only more fatal, but more common, and that the relatively favorable cases are those in which evacuation takes place through a bronchus.

This view is further supported by the fact that Elsberg found the total mortality of his 73 cases of subphrenic abscess to be 40%, and that Christian and Lehr found subphrenic abscess present in 7 out of 86 autopsies, after suppurative appendicitis. Under these conditions it would seem as if in some of my fatal cases, at any rate, the complication must have been overlooked.

As regards treatment, there is really very little to be said. I believe much may be done in the way of prevention, by more efficient drainage of those abscesses which extend back into the flank; this many be accomplished by leaving a large opening in the abdominal wall, high enough up to be directly over the upper part of the abscess, or by making a counter opening in the loin; in other words, providing for a drainage that will prevent the backing up of pus toward the liver and diaphragm.

When a subphrenic abscess or pleural empyema is suspected and confirmed by the physical signs, I should adopt the method of Elsberg, removing two inches of the ninth and tenth ribs between the scapula and anterior axillary line. If pus is believed to be in the pleural cavity, aspirate; and if found, open and drain. If the pus is believed to be below the diaphragm, wall off the upper part of the wound with gauze and aspirate below the reflexion of the pleura; and if a subphrenic abscess is found, open and drain as before; but avoid, if possible, any contamination of the pleura.

In conclusion, I would direct your attention to the following points:

1. That abscess of the lung and pleural empyema are not infrequent sequels of appendicitis, being present in not less than 2% or 3% of all suppurative cases.

2. That the source of infection may occasionally be overlooked.

3. That they may occur, although rarely, as true metastasic processes, more commonly as a result of a collection of pus in the subphrenic space in the course of a general purulent peritonitis; but by far most frequently of all, as the result of a direct extension of an abscess along the outer side of the ascending colon to the right subphrenic space, and thence to the pleura and the lung.

4. That these complications are by no means necessarily fatal; on the contrary, in those cases where the pus finds an outlet through a bronchus, and is discharged from the mouth, a favorable result may be expected.

5. That much may be done to prevent such an accident by more efficient drainage of those abscesses which lie on the outer side of the cecum, above the brim of the pelvis, and which, by their position, would naturally gravitate toward the loin.

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THE OPERATIVE TREATMENT OF HEMORRHOIDS, INCLUDING A BRIEF CONSIDERATION OF THE DIFFERENT OPERATIONS, CHARACTERISTIC ARRANGEMENT OF THE TUMORS AND THE TECHNIQUE OF THE LIGATURE OPERATION UNDER LOCAL ANESTHESIA.*

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In looking over the literature referring to hemorrhoids during recent years, one cannot help being impressed with the diversity of opinion that exists among surgeons as to the best methods of treatment. There is no doubt that nearly, or quite, all of the operative measures, such as the clamp and cautery, the Whitehead operation, excision of the tumors separately with or without suture, as well as various combinations of the foregoing, when properly carried out, as advised by the originators, are eminently satisfactory, so iar as radical cure is concerned. Yet the profession as a whole has not manifested any decided preference for any of these operations, and the reason seems to be that their advantages are more than counter balanced by the fact that it is practically impossible to perform any of them without first subjecting the patient to a profound general anesthesia.

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Notwithstanding that many of the former objectionable features of ether and chloroform narcosis have been greatly minimized by the skillful administration of these agents in combination with nitrous oxide gas, ethyl chloride, etc., there yet remain many patients who regard all operations as portentous, which require general anesthesia.

The question is always asked after the completion of the examination if it is necessary to take ether; and I venture to say that should the answer be affirmative, not over 25% of the cases that apply for treatment at my office, or at the dispensary, would submit to operation, even though suffering the most distressing symptoms.

It is truly remarkable and hardly conceivable the inconvenience that will sometimes be endured and even the distasteful duties that patients will perform for themselves rather than submit to an operation which requires for its performance general anesthesia.

The replacement of internal hemorrhoids after each act of defecation, the soiling of undergarments from hemorrhages, the pain incident to strangulation, when griped by the external sphincter, the soreness and pain at other times, are among the annoyances which these patients will endure for years, getting only temporary relief from the numerous pile salves, lotions, suppositories, etc., which are at the present time so widely advertised.

It has been abundantly demonstrated during the last few years that nearly all of those afflicted with hemorrhoids can be relieved just as radically and safely by means of simpler measures, provided the operation is undertaken by one who has had the patience to master thoroughly the principles of infiltration anesthesia, and familiarize himself with the difficulties encountered in applying these principles to this operation.

To digress for a moment, let us note the position of internal hemorrhoids, and their various combinations. The drawing (see Fig. 1) shows the characteristic arrangement of internal hemorrhoids as they may be observed in most individuals. The drawing is made to represent the patient lying on the right side (the position for operation), with the internal hemorrhoids prolapsed. No attempt was made to represent the external hemorrhoids, which, although they often co-exist, may yet be absent entirely, and when present, vary greatly in size and shape, and may assume any position in the anal circumference.

Seven internal hemorrhoids are the most that I have ever observed in any single individual. My observations are based upon 256 cases of my own, in which the number and exact location were recorded, and upon probably as many more seen while in attendance at various rectal clinics.

Mr. W. Ernest Miles, of London, first called my attention to this interesting arrangement. When seven hemorrhoids are present in a given case they assume the arrangement set forth in the illustration.

The right anterior pile is invariably alone. This pile is the first to develop, and always may be demonstrated, except in those cases in which it may have sloughed in consequence of a previous strangulation.

The right and right posterior are coalesced. The left posterior and left are also coalesced.

The posterior pile and left anterior are distinct and much smaller than the others. The anterior pile is seldom met with. The highest number frequently met with in any single case does not exceed five, and they usually assume the position of the larger hemorrhoids in the drawing. Occasionally the right and right posterior are distinct, and likewise the left and left posterior.

In case only two or three piles have developed, they are generally distinct.

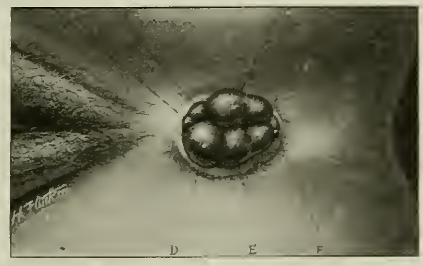

Fig. 1. — A, anterior pile. B, left anterior pile. C, left and left posterior piles coalescing. D, right anterior pile. E, right and left posterior piles coalescing. F, posterior pile. Patient is represented lying on the right side, with internal hemorrhoids protruded. The three smallest hemorrhoids are not often present.

Bearing in mind these considerations, and by referring to the illustration, it can be readily understood that in the ordinary case of four or five internal hemorrhoids, the tumors may be removed in three separate masses, because of the fact that two of the hemorrhoids on each side almost invariably develop as one.

CHOICE OF OPERATION.

It is the writer's opinion that the ligature, the foundation stone upon which all other operations are based, with the single exception of the Whitehead (circular incision), is the operation of choice, where local anesthetics are employed. Furthermore, it is very doubtful whether any of the numerous modifications are of much practical utility, owing to the character of the tissues and the peculiar anatomy of the anal canal.

When it is recalled that the sphincter muscles act as purse strings, constricting the anal canal, and also that when internal hemorrhoids are present there is considerable redundancy of mucous membrane, it can be readily understood that when the hemorrhoidal tumors are removed by the method presently to be described, that the action of the sphincters, both external and internal, serve the purpose of very accurately coapting the edges of the wound. This anatomical feature explains why the ingenious modifications of the ligature method are so often discarded by those who operate considerably on this class of patients.

Not infrequently we see reports of some new operation, and occasionally they are exploited by surgeons of wide reputation, in which the only modification of this old procedure is that the wound is closed with immediate suture after the pedicle has been ligated. This addition to the original operation requires for its performance careful preparation of the patient for operation, profound general anesthesia, a tedious operation, the use of opium for confinement of the bowels for five or six days, a limited diet and detention from business for from two to four weeks.

And yet, notwithstanding all this technique, careful after-treatment, etc., the question may reasonably be asked, Is primary union often secured? The wound is not examined; how, therefore, is one to say positively that there has not been a small slough at the seat of the ligated pedicle? Certainly, after the simple ligature, when properly applied, there is but little evidence of ulceration, of any amount of discharge, or of any considerable gaping of the wound.

Another disadvantage of the excision method is that there is always some danger of infection following the closure of wounds in the ano-rectal region, whereas such is not the case if the wound is left open so as to secure drainage.

OPERATION.

With this rather cursory reference to the different surgical procedures I wish to call attention to the operation known as Allingham's, which can be performed safely and with but little discomfort to the patient under local anesthesia.

The success of the operation depends, as is the case when operating in other cavities of the body, upon a certain amount of manual dexterity and careful attention to the details of producing thorough anesthesia of the field of operation.

An operation for hemorrhoids, unless it is rendered practically painless, is much better performed under general anesthesia.

A careful preliminary examination is important to accurately determine the exact situation and size of the tumors which require removal, as well as to ascertain whether any other condition, such as fissures, fistulæ, ulcers, or polypoid growths, are co-existent. Failure to make this preliminary examination not infrequently will lead one to attempt cases which had much better have been subjected to general anesthesia. On the day before operation the bowels should be moved by a laxative. Purgation is by no means necessary, as it is likely to lead to movements during or immediately following the operation.

In case immediate operation should seem desirable, the patient can be quickly prepared by giving an eight-ounce enema of boric acid solution, which will effectually clear out the ampullæ of the rectum of any retained feces. The patient is now placed in the right semi-prone position, since the greater number of hemorrhoids will usually be found on this side. If the external sphincter muscle is found to be spasmodic and hypertrophied, so that the hemorrhoids cannot be readily prolapsed, the operation may still be performed by making use of a procedure suggested by Dr. James P. Tuttle, of New York. Tuttle has demonstrated that the sphincter muscles can be dilated with comparatively no pain by the injection of a few drops of cocaine solution into them at the point of entrance of the lesser sphincteric nerves. The needle is inserted in the posterior commissure three fourths of an inch from the anus, from which single puncture of the epidermis the nerve supply of the anal circumference may be effectually blocked. The divulsion of the sphincters is now carried out in the same manner as though the patient were profoundly etherized, and the small amount of discomfort occasioned by gently and gradually dilating even the most rigid of sphincters is quite surprising to one who sees it for the first time. The hemorrhoids now being prolapsed, they are operated on in rotation, beginning with the most anterior one on the right side. (See Fig. 2.) The others are taken in order, those on the lower side being first removed. By observing this order, the free oozing of blood which takes place upon separation of the hemorrhoid from the bowel will not obscure the field of operation in the manner in which it would were the superior ones first removed. Each tumor is now in turn moderately distended with one tenth of 1% solution of cocaine, then seized with a pair of pile forceps, and while gently elevated, the hemorrhoid is dissected upward until it is attached by a narrow pedicle which contains its main blood supply. There is very little danger of hemorrhage in this step of the operation, as the central artery and vein lie very superficially under the mucous membrane, and if the hemorrhoid has been elevated as just described, it is hardly possible to wound any large vessel. Carelessness, however,

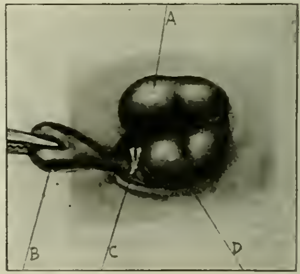

Fig. 2. — A, left and left posterior piles coalesced. B, right anterior pile. C, ligature. D, right and right posterior piles coalesced.

Shows right anterior hemorrhoid dissected free and ligature in place just before it is cut away. The four other hemorrhoids (two of them coalesced) may be removed with two ligatures. This figure illustrates the usual number of hemorrhoids and their most common arrangement in the anal circumference.

in observing this small detail might result in a troublesome hemorrhage.

A ligature is now tied about the pedicle as high up as possible, and the hemorrhoid is cut off below the ligature, leaving sufficient stump to securely retain the ligature.

After the internal hemorrhoids have all been ligated, any folds of anal skin that are clearly redundant should be removed. If these ragged tags are allowed to remain they may prove of considerable annoyance to the patient, by his inability to properly cleanse the anal region after defecation. The persistent fecal soiling often causes pruritus in persons predisposed to its occurrence, and when inflamed they are excessively painful and render walking and sitting difficult. Their size and location should be made out before beginning the operation, because after dilatation of the sphincters and the manipulations incident to the operation it is often difficult to estimate clearly the amount of tissue that requires removal.

After infiltration with a one-tenth of 1% solution of cocaine, they may be easily and painlessly removed with a pair of curved scissors, and the resulting wound allowed to heal by granulation. If the base of the external hemorrhoid is quite broad, it is best to unite the edges with a catgut suture; yet this is rarely necessary because of the constricting action of the corrugator cutis ani muscle. When the folds are very numerous not more than three should be removed at one time, lest anal contraction take place.

AFTER-TREATMENT.

It should also be emphasized that the after-treatment of these cases requires careful attention. The bowels, as a rule, should act on the second day, and daily thereafter, a suitable laxative being resorted to as required.

The anal region should be kept scrupulously clean, and protected by wearing an anal pad of sterilized gauze. After the ligatures have separated, stimulating topical applications of 15% balsam of Peru in castor oil, or ichthyol and glycerin, 15%, should be made to the anal canal to secure raipd healing of any lesions which may remain.

Should there be much soreness or pain when at stool or otherwise (which is rarely the case), it can usually be relieved by the injection of an ounce of sterilized olive oil at night, which, aside from its local beneficial action, will secure an easy action of the bowels the following morning.

CONCLUSION.

In conclusion the writer wishes to reiterate that the great majority of cases of hemorrhoids, of whatever form, can be treated radically, satisfactorily, and with but little discomfort to the patient, without the use of general anesthesia. The practice of operating in one's office is greatly to be deprecated, except in cases of mild severity, where only one or two piles are to be removed.

While in a number of instances rather extensive operations have been performed in the office, and no serious mishap has ever occurred, yet much unnecessary discomfort and even suffering was occasionally caused by spasmodic contractures of the sphincters, due principally to allowing the patient to be about immediately after an operation of this importance.

As a result of certain published articles on the subject of regional anesthesia in the treatment of ano-rectal diseases, the impression prevails among many that it is only necessary for patients suffering with hemorrhoids to drop into a specialist's office, have his piles removed and then proceed down town to take up his usual daily routine.

To illustrate what may be expected in the way of detention from business or social engagements, the histories of five rather typical private cases that have recently undergone operation are here recited:

Case I. Mr. A., age fifty-six; occupation novelist; residence, New York City; referred by Dr. F. Because of his great dread of general anesthesia, he had been treated " off and on " for the past six years by the method known as punctate cauterization with the galvanic cautery, although advised to have a radical operation. The treatment with the cautery knife had resulted in a partial destruction of two of the hemorrhoids. When I first saw him he was suffering much pain and soreness caused by the internal hemorrhoids being strangulated and firmly grasped by the sphincters. The peri-anal folds were swollen and edematous. The external sphincter rigid and hypertrophied. Immediate operation was advised and accepted.

Operation at private hospital. The sphincter muscles were prepared for dilatation as previously described. After divulsion, the right anterior, the right, the left and left posterior piles coalescing were removed with three separate ligatures.

Three large folds of edematous redundant skin (external piles) were cut away. This patient suffered no pain during or after the operation though there was soreness about the anal region for a week. He was in the hospital ten days, though up and about after the first three days. This case is cited especially to controvert the accepted opinion held by some, that inflamed and strangulated hemorrhoids should be treated by palliative measures and the radical operation undertaken later after the acute symptoms have subsided. It has been my experience that the patient loses as much time from temporizing, with rest in bed, lotions, etc., as would be required for a radical operation which would spare him much suffering.

Case II. Mr. B., age thirty-one; traveling salesman. Diagnosis: Internal hemorrhoids with anal fissure. Duration, two years. Considerable pain when at stool which lasts for one-half hour after. Very little hemorrhage. Protrusions from anal orifice at each act of defecation. Very constipated. For the past two years has been using ointments night and morning.

Examination: External sphincter rigid and hypertrophied. Posterior linear ulcer at anal margin extending one-half inch upwards. Three internal hemorrhoids.

Treatment. At my office under local anesthesia the sphincters were thoroughly dilated and the three internal hemorrhoids removed with separate ligature. The fissure was excised. There was no pain during the operation. The patient was sent home in a carriage and walked up two flights of stairs, to which may possibly be attributed a severe throbbing pain which lasted three hours, requiring the use of opiates. Three days later he called at my office feeling very comfortable and was able thereafter to attend his usual duties at a down-town house. The operation was on Saturday and only one day's detention from business resulted.

Case III. Mr. N., journalist, age thirty-six. Referred by Dr. M. of Allston. He had had protruding internal hemorrhoids for ten years.

Rectal examination: External sphincter contracted but easily dilated. Large right anterior pile and three smaller ones, two of them coalesced.

Operation in office. The spincters were easily dilated without previous anesthetizing, and the internal hemorrhoids removed with three ligatures. Absolutely no pain during the operation. For a short time after the operation he complained of an ache about the anus, and of a weak feeling but soon returned to his home with Dr. M. in an automobile. Five days later he reported at my office feeling very comfortable, from which day he resumed his usual work.

Case IV. Miss M., age forty-one. Referred by Dr. B. In 1897 she underwent ether operation for anal fissure. At the present time there are four internal hemorrhoids.

At a private hospital the hemorrhoids were removed with three ligatures. The sphincters were easily dilated, as much as required to place the ligatures in position without resort to regional anesthesia. No pain during and but little following operation. She remained in the hospital seven days.

Case V. Mr. C., age sixty-nine; real estate business. Referred by Dr. G. Diagnosis: Internal and external hemorrhoids. Operation at residence. Sphincters dilated without anesthesia. Two internal hemorrhoids were ligated and the two external hemorrhoids removed. No pain during or following operation.

An annoying diarrhea set in on the fourth day which retarded his convalescence somewhat. Notwithstanding this complication he was able to go to his office in nine days.

After operation, absolute confinement to bed is unnecessary; in fact, these cases do better if on their feet somewhat, but they will hardly be able to attend their usual avocations in less than three or four days to a week, depending on the personal equation of the patient.

At the Boston Dispensary it has been my practice for the past three years to operate upon nearly every case of hemorrhoids, no matter how extensive, and the patients report daily thereafter for treatment, without seeming to experience any great inconvenience; but the application of these methods to more susceptible private cases has not proved equally satisfactory.

The operation is radical, and the only argument of importance I have ever heard against the ligature method is that it causes considerable pain until the stumps have sloughed away. This is due to the fact that the hemorrhoid has not been carefully freed from its muscular attachments, but has been strangulated almost *en masse*, without the previous dissections which I have described.

It is quite impossible to conceive that a ligature tied around the pedicle of a hemorrhoid would cause any more pain than if it were removed by any of the other methods commonly employed.

HEMORRHOIDS AND THEIR TREATMENT.*

BY CHARLES S. OILMAN, M.D., BOSTON.

The subject of hemorrhoids and their treatment is an old one, but is of interest to medical men of to-day on account of the newer methods of treatment.

The term "hemorrhoids" or "piles" denotes a form of disease which originates in an altered or varicose condition of the veins of the lower rectum or anus. The change is not one of varicosity or dilatation alone; there is always some thickening of the vein wall, and a section of a hemorrhoid shows a large admixture of connective tissue elements around and between the dilated veins. This increase is more marked when the hemorrhoid is of long standing, or has been the seat of repeated attacks of inflammation, the resulting exudation leading to induration and thickening. "In some cases the proliferation of connective tissue has been so great that the veins have been nearly obliterated, the larger part of the hemorrhoid being of fibrous tissue." [1]

Classification. — Hemorrhoids are classified, according to their location, as external and internal. The former are covered with integument, and are located externally around the anal margin. The latter are covered with mucosa and are always found in the anal canal. Often hemorrhoids are seen with characteristics of both varieties, which are called externo-internal, or combination hemorrhoids, their lower portion being covered with skin, the upper with mucous membrane.

The external variety is divided into two classes, — cutaneous, or hypertrophied folds of skin; and venous, or thrombotic.

The internal variety is classified as venous and capillary.

Causes. — The causes of hemorrhoids are both predisposing and exciting. Among the predisposing causes are heredity, sex (more common in the male), age (during the most active period of adult life), occupation (those who lead a sedentary life and those doing heavy lifting are more commonly afflicted), manner of living (more common in higher walks of life), climate and season (some authorities claim that hemorrhoids are more common in the tropics), erect posture, absence of valves in the hemorrhoidal veins and the peculiar office of the rectum.

Anything which causes obstruction to the circulation, or induces straining, may result in a varicose condition of the veins of the lower rectum, and so we find among the exciting causes, diseases of the prostate, bladder, urethra, intestines, pelvic diseases, tumors of the abdomen or pelvis, obstructive hepatic diseases, tight lacing, pregnancy, diarrhea and constipation.

The injudicious use of drastic purges and of enemata tend to cause hemorrhoids, owing to straining and tenesmus produced at stool.

Symptoms. — The symptoms of hemorrhoids vary in different subjects. Some cases are seen where but little discomfort is caused, even when the patient has a well-developed case.

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* Read before a meeting of N. E. Alumni of Baltimore Medical College, Nov. 7, 1906, and reread by request before the Norfolk South District Medical Society, Dec. 6, 1906.

[1] Goodsall and Miles, Part 1, p. 252, 1900.

The cutaneous variety, when not in a condition of inflammation, causes but little trouble, except more care in keeping the parts clean. They are usually in the form of distinct tags of skin at the anal orifice, or may be a proliferation of skin extending entirely around the anal margin. This condition favors an inflammatory attack, which may be caused by the use of rough paper as a detergent, by an attack of diarrhea or dysentery, by constipation, by abnormal discharges from the vagina or rectum, by friction of wearing apparel; in fact, by anything which may produce an irritable condition of the parts. They then become inflamed, enlarged and painful.

The thrombotic variety usually occurs in robust, active persons. They are a condition of a blood clot around the anal margin. Whether the condition is due to a rupture of the vein wall, which allows the blood to escape and coagulate in the tissues, or whether the blood coagulates in the vein itself does not matter as far as diagnosis and treatment are concerned. Any force or exertion which would break the vein wall or cause stasis in the vein, may produce this condition. During straining at stool, while lifting a heavy weight, or during violent exertion, a sensation of something giving away is felt, and, upon examination, a painful swelling, varying in size from one sixteenth of an inch to one inch or more in diameter, is found at the anal margin; it is usually single, but may be multiple. The writer has seen as many as eight present in one case. The swelling is usually oval in shape and is, as a rule, dark purple in color. When seen immediately after its appearance, it is tense and cystic, but after a few days the appearance changes; the skin becomes loose, and the clot feels like a pea or bean beneath the skin. Defecation is difficult and painful, due to spasm of the sphincter, and there is discomfort when walking or sitting. Pain may be very acute, or dull and heavy, and may be referred to the sacrum and down the thighs.

Internal hemorrhoids are more serious than the external variety. In some cases severe hemorrhage has occurred when the patient has been previously unaware of the existence of any rectal disease. Besides the danger of hemorrhage, there is the inconvenience and discomfort which may occur from the protrusion and strangulation of the hemorrhoidal mass, and many cases are accompanied with severe pain.

The capillary form consists of a small raspberry-shaped development of the arterial capillaries close to the surface of the rectal mucous membrane; they are covered with a very thin layer of epithelium, which is easily ruptured, and are the source of frequent hemorrhages.

This form does not protrude and can be detected only with the aid of the speculum, unless the sphincter is greatly relaxed, when it is possible to evert the mucous membrane sufficiently to enable them to be observed. They bleed easily — the blood is of a bright, arterial character and oozes after the act of defecation. The amount of blood lost at one time is not very great, but often marked anemia is caused on account of the frequency of the bleeding. "When they have been in existence for some time the mucous membrane becomes thickened, hemorrhages cease, and eventually they resolve themselves into the venous variety."[2]

The venous variety is seen in three stages of development. In the first stage, the presence of the hemorrhoidal tumor can be detected by digital examination, with the aid of the speculum, or by everting the membrane of the anal canal; it does not protrude and is often present without causing the patient any discomfort.

In the second stage there is an increase in the size of the tumor, and a stretching of the mucosa, so that there is often protrusion through the anal orifice at defecation. During this stage there is a spontaneous return of the tumor into the anal canal as soon as expulsion has ceased.

In the third stage the hemorrhoidal tumor constantly protrudes unless the patient remains in the recumbent position for some time.

The chief symptoms of internal hemorrhoids are hemorrhage, pain, protrusion and a discharge of mucous.

In many cases bleeding is the first symptom noted by the patient. The hemorrhoid occurs at first only when the bowels are relieved, and varies in quantity from a few drops to a considerable loss of blood. The quantity of blood depends in a measure upon the consistency of the stools, hardened feces causing far more hemorrhage. When the hemorrhoids protrude after stool, but return spontaneously into the rectum, the bleeding may be profuse. In the third stage, when the hemorrhoids do not return spontaneously, but require manual manipulation (the protrusion occurring upon exertion, or while standing or walking), or during strangulation, there is not bleeding as a rule, but a discharge of mucus.

Pain is usually reflex in character, and may be referred to the dorsal surface of the sacrum or to the lower lumbar region. When there is protrusion or strangulation, the pain is localized at the anus and is then of a throbbing character, which is relieved after reduction, if no other disease complicates the case. When complicated by other diseases, local pains persist for some time after reduction has taken place.

The protrusion of hemorrhoids does not occur during the first stage, although it may be the first symptom noticed by the patient. The occurrence of protrusion marks the beginning of the second stage. During this stage they are reduced spontaneously and cause little inconvenience unless they become strangulated; then, if not reduced artificially, they will become painful, gangrenous and partially or completely slough.

During the third stage the sphincters are usually relaxed, and the protrusion is almost constant during defecation, active exercise, or prolonged standing.

The discharge of mucus is present chiefly during the third stage. The quantity is much in excess of the normal secretions from the rectum and may be due to "reflex hypersecretion consequent upon the irritation and congestion of the mucous coat when constant protrusion is present."[3] This causes very great discomfort to the patient by adhering to the underclothing, and in many cases the peri-anal skin becomes irritated by the constant escape of mucus.

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[2] Tuttle: Diseases of Rectum, Anus and Pelvic Colon, page 611. 1902.

Diagnosis. — The diagnosis of both varieties of hemorrhoids is comparatively easy, and yet every known tumor which occurs around the ano-rectal region has been called hemorrhoids, and they have been often confused with other rectal diseases which are accompanied with hemorrhage and pain. The diagnosis of the external and externo-internal varieties can readily be determined by inspection.

In most cases of the internal variety there is no external evidence of the disease, and an attempt to examine the anal canal with a bivalve speculum is usually unsatisfactory, because when the blades are open the pile tumors are flattened out. The same condition obtains when a fenestrated glass speculum is used.

A good way to locate hemorrhoids when no protrusion is present is to give the patient a small enema of glycerin and water, which causes straining and engorgement of the tumors; then, by everting the anal canal, the hemorrhoids are brought into view.

Hemorrhoids can be distinguished from villous growths by the broad base of the latter, their slow growth, spongy feeling, bright color and frequent hemorrhages.

Malignant growths occur as hard, nodular growths on the side of the rectal wall; they grow larger and break down.

Venereal warts can be distinguished by their number and circumscribed location; they are soft, pedunculated, fragile, bifurcated and give off a disagreeable odor.

Pruritus ani is frequently called "itching piles." This condition is not a condition of hemorrhoids — there is absence of both tumor and hemorrhage — and is usually due to some irritating rectal discharge, seat worms, ulceration in the anal canal, enlarged papillæ, neurosis, or eczema of the skin. In many cases of hemorrhages, where no hemorrhoids can be found, bleeding is due to ulceration, injury or fissure. Because of protrusion, procidentia recti and polyps have been mistaken for hemorrhoids. The polyp is recognized by its pedicle, and the rectal prolapse by its even protrusion, color and soft, velvety feeling.

Prognosis. — The prognosis of hemorrhoids is always good, if the condition is recognized and intelligently treated.

Treatment. — The treatment of hemorrhoids is both palliative and operative.

The palliative treatment of the cutaneous variety consists in regulating the bowels, cleansing the region frequently with hot water, adjusting the clothing so that it will not irritate the parts, and the use of ointments or powder containing zinc oxide or carbonate of bismuth and camphor. This method is rather unsatisfactory and slow.

The operative treatment is simple and the results are sure; it consists of the removal of the tags or hypertrophied folds of skin, under local anesthesia, with the scissors, the excision being made at about one-eighth inch above the base. This allows the sides of the resulting wound to come together without causing much contraction of the anal skin, and there is no discomfort to the patient after the first few hours. This should be dressed with a sterile pad of gauze, held in place with a T bandage, and the wound kept clean and dusted with some antiseptic powder until healed.

In cases of the thrombotic variety, where the skin over the clot is not tense and where inflammation is not present, the palliative treatment is often successful. A soft movement of the bowels should be secured once or twice daily, by the use of the compound licorice powder at night, or a mild aperient, as sulphate of magnesia, Carabana or Hunyadi water before breakfast. The patient should be kept quiet and in the recumbent position for the first few days, and the lead and opium wash U. S. P. should be applied continually to the anal region by means of a thick pad of gauze, which should be moistened frequently during the first few days, and then less frequently until complete absorption of the clot takes place. The operative treatment of this variety of hemorrhoids is much quicker in results than the above method. It removes the clot at once; it can be done at the office painlessly, and, in the writer's experience, pain and soreness disappear immediately, and the condition is less troublesome to the paitent, for he is able to assume his business and social obligations. It consists in making an incision into the tumor and turning out the clot under local anesthesia. The incision should be made in the center of the swelling, beginning at the outer margin and in a line radiating from the anal canal. After the clot is removed, the cavity should be packed with a small piece of gauze, which should be allowed to remain twenty-four hours and should not be renewed. The wound should be cleansed daily and stimulated with a 10% to 15% solution of ichthyol in glycerin, or dusted with aristol or some similar antiseptic powder.

The palliative treatment of internal hemorrhoids is often successful in the incipient stages. The exciting causes should be removed as far as possible, *i. e.*, constipation should be relieved, any urethral, prostatic, pelvic or other diseases attended to; the diet should be restricted, and the use of condiments and stimulants should be prohibited; the external parts should be kept clean, and the patient should be kept in the recumbent position. If there is strangulation, spasm of the sphincter and pain, the application of the ice bag to the parts, or applications of hot water compresses or hot poultices give relief. Suppositories containing morphine, cocaine or eucaine may be used if needed. In cases where there is much hemorrhage, a thin strip of gauze moistened with weak solution of nitrate of silver (2% to 4%), or 10% solution of ichthyol in glycerin, or 50% solution of balsam of Peru may be placed in the anal canal, where it should be allowed to remain several hours, or the bleeding points may be cauterized.

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[3] Goodsall and Miles, Part I, p. 281. 1900.

In some cases a suppository containing extract hyoscyamus gr. 2; ext. belladonna gr. $\frac{1}{8}$ to $\frac{1}{4}$; iodoform gr. 1; oil eucalyptus gtt. 1, with or without morphine gr. $\frac{1}{4}$ to $\frac{1}{2}$, according to the amount of pain present, has given temporary relief, as has also an ointment containing cocaine hydrochloratis gr. iii; sol. adrenalin chloride ʒss; bismuth sub carbonatis gr. x; vaseline ℥i, applied by means of a hard rubber pile pipe morning and night and after stool.

In most cases an operation becomes necessary eventually.

The operative treatment of internal hemorrhoids is the more satisfactory to both patient and physician, and with the recent introduction of local anesthesia in the treatment of ano-rectal diseases, the discomfort is not as prolonged as when the palliative measures are used, and an immediate, permanent cure can be obtained.

The operations practised oftenest are the clamp and cautery, the ligature, the excision and the injection methods. Many other operations have been suggested and have met with more or less favor, such as sub-mucous ligation, divulsion of the sphincter muscle, removing by écraseur, or the wire loop, puncture or linear cauterization by means of caustics or the galvano-cautery, and excision and suture of the wound. Probably the most popular methods in use to-day are the clamp and cautery and the ligature methods.

Dr. S. G. Gant, of New York, favors the clamp and cautery operation when a general anesthetic is given,[4] while Goodsall and Miles practise the ligature method almost exclusively at St. Mark's Hospital in London.[5]

The excision method, known as Whitehead's operation, in which the entire pile-bearing area is excised and the rectal mucous membrane is sutured to the skin at the anal margin, is a very difficult operation to perform successfully, and many grave complications and conditions have resulted from this method, such as incontinence, ulceration, stricture, abscess, proctitis and other forms of rectal disease.

Earle's modification of Whitehead's operation is one of the most reliable and safe methods when a complete excision of the pile-bearing area is desired.

In operating after this method the skin is caught at each quadrant of the anal orifice, just at the white line of Hilton, with hemostatic forceps, and with them the skin and mucous membrane are pulled down. This brings into view any hemorrhoids which may exist, when they are also caught with hemostats and drawn well down. An incision is made at the center of the anal orifice posteriorly, sufficiently deep to allow Earle's clamp forceps to be applied at right angles to the long axis of the rectum, and at the same time to include in the forceps the amount of tissue to be removed from this part of the anal canal, care being taken to include more mucous membrane than skin. Before applying the clamp forceps, the first two stitches to draw together the skin and mucous membrane should be taken at the bottom of the incision. With forceps now applied and held in position, the tissue above the forceps is cut away and a running suture is made by passing it first under, then over, the forceps until the end of the forceps is reached, when the forceps are withdrawn and the suture is made taut. Another similar bite of the redundant tissue is taken until the entire hemorrhoidal area is removed.[6] Of course, a general anesthetic is necessary, and the patient must be confined to bed for several days.

There is another method of excision practised by some surgeons, in which an elliptical incision is made sufficient to remove the tumor; the edges of the incision are sutured and healthy strips of mucous membrane are left between the points of incision.

There are many advocates of the injection method, and, in the hands of some surgeons, good results have followed this line of treatment. It consists of the injection of caustics, astringents or antiseptic fluids into the hemorrhoidal tumor, and it is claimed that a cure results with but little pain, without causing detention from business and without the use of a general anesthetic. Most of the prominent rectal surgeons who have given this method a thorough and complete trial agree that although cures are occasionally obtained, yet in most instances the method is unsatisfactory in that the relief is only temporary, and because the injection of carbolic acid and similar agents may produce much pain, inflammation, swelling, extensive sloughing, abscess, fistula, phlebitis and resulting absence from business. Cases of death from embolism have been reported as a result of this method.

Most surgeons insist that patients suffering with hemorrhoids shall give up all social and business engagements and take a general anesthetic for the purpose of having them removed, no matter what the number, size or condition of the hemorrhoidal tumors. In many cases this is unnecessary, for nearly all uncomplicated cases of hemorrhoids of whatever variety can be radically operated upon in the office or at the patient's home, under local anesthesia, with very little pain or discomfort and but slight, if any, interruption in the daily habits and engagements of the patient.

The use of local anesthesia in the ano-rectal region has been the subject of much discussion among the most prominent rectal surgeons during the last two or three years. There have been many advocates of cocaine, eucaine or stovaine and ethyl chloride as being suitable agents, with which local anesthesia of this region could be secured. The degree of anesthesia produced by these drugs is very satisfactory and it admits of a sufficiently long operative period, but their use is frequently followed with toxic effects. There is distinct shock and always considerable bleeding, and often prolonged post-operative pain.

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[4] Gant: Diseases of Rectum and Anus. 1902.

[5] Goodsall and Miles, Part I, p. 288. 1900.

[6] Taken from lectures by Professor Earle at Baltimore Medical College during course, 1895–96.

In the spring of 1903, Dr. S. G. Gant[7] reported a series of several hundred cases of ano-rectal diseases, in which he had used the injection of sterile water into the tissues to secure local anesthesia. Since that time nearly all of the prominent rectal specialists and many other surgeons have tried that method, and after becoming familiar with the technic, have been favorably impressed with the results.

During the past eighteen months the writer has operated upon 23 cases under sterile-water anesthesia, and upon 16 cases with the combined use of ½ of 1% eucaine in 2% boric acid solution and sterile water. By the combined use is meant the use of the eucaine solution to anesthetize and secure divulsion of the sphincter muscle, and the use of sterile water to anesthetize the hemorrhoidal tumor before ligation.

The technic of the ligature operation for the radical cure of hemorrhoids under the combined use of eucaine solution and sterile water is as follows:

The patient is given an enema of one pint of warm water to clean out the rectum; then a small enema — four to six ounces — of equal parts of warm water and glycerin is thrown into the rectum, the passage of which causes straining and a resulting engorgement of the hemorrhoidal tumors. The external parts are scrubbed and made as aseptic as possible; then the eucaine solution should be used to anesthetize the sphincter muscle. A sufficiently long anesthetizing needle should be used, and one point of entrance selected in the median line at 1 to 1¼ inches from the posterior anal margin. With one finger in the anal canal as a guide, the needle can be directed along either side of the anal wall, thus anesthetizing the muscle thoroughly. The sphincter should be carefully divulsed when the engorged hemorrhoids are brought into view. These are now anesthetized with warm sterile water; the needle point is thrust into the center of the tumor and the water is slowly forced into the tissues in sufficient quantity to distend them until they are of a glassy, white appearance, when anesthesia is complete. The pressure exerted upon the terminal nerve filaments is sufficient to prevent cutting pain, although some patients complain of discomfort for a moment, due to distention, which is entirely relieved as soon as the tissues are cut. The tumor can now be grasped with a hemostat and pulled down. A U-shaped incision is made at the mucocutaneous junction, and a stout linen or silk ligature is placed around the entire tumor and is securely tied. The part outside the ligature is excised, care being taken to leave a stump of sufficient size to prevent slipping of the ligature, or when the tumor is very small it can be left to slough. This method should be followed until all of the hemorrhoids have been ligated. Then a thick, wedge-shaped pad of gauze should be applied firmly to the ano-rectal region under a T-bandage. Laxatives should be given to produce a semi-solid stool each day. The anal canal should be cleansed thoroughly, and an application of 10% solution of ichthyol in glycerin, balsam of Peru 50%, or 2% to 4% solution nitrate of silver made daily until sloughing is completed and the resulting ulceration healed.

The points in favor of local anesthesia in the operative treatment of hemorrhoids are many. It is safe and effective; it can be easily and quickly applied; it simplifies the work and takes away the fear which most people have of taking a general anesthetic. Pain at the time of the operation is rare. Post-operative pain is less than under the old methods, and is very slight when sterile water is the agent used. The period of detention from business is greatly reduced and often patients can go about their usual occupations, as confinement to bed is not an absolute necessity. It affords relief in some cases otherwise unsuitable for an operation, and takes many cases from the hands of the quack and itinerant. It enables the operator to secure permanent results and, if properly applied, admits of as thorough and complete work as can be done under a general anesthetic.

STUDIES IN PSYCHOPATHOLOGY.

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(Concluded from No. 14, p. 434.)

XII. CASE OF INSISTENT STATES WITH SUBCONSCIOUS TRANSFORMATION OF PERSONALITY.

SHERMAN, age thirty-one. Russian. Father is very nervous; mother is also nervous and suffers from severe headaches, so does his sister, who is otherwise quite well. Physical examination is negative; reflexes are normal; memory, attention, recognition, are good; no sensori-motor disturbances.

Patient suffers occasionally from severe attacks of headache accompanied by vomiting; he has very depressing nightmares and cries out in his sleep. He is very timid and keeps away from company, communing with himself. In his childhood patient made the round of child diseases. He is physically well, but rather slightly built. Patient is very religious and has "never masturbated." About the age of eighteen he developed contrary thoughts in regard to God; he could not pray without associating in his mind the words of the prayer with filthy words and curses. Unaccountable fears took possession of his mind. At the same time sexual desires became developed and his mind began to associate them with all kinds of improper relations, even with his sister and with his mother. He is very miserable about these ideas as he is very religious, and the thoughts are not only repugnant to him, but simply torture him by their very presence. Since last year the patient has become worse, — his sexual and contrary religious ideas have become more insistent.

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[7] N. Y. Med. Jour., April 18, 1903.

The insistent ideas have gained such a hold on the patient that he is distracted with mental anguish, with intense pangs of conscience. He can carry on the work of cigar making with great difficulty, and when he comes back from his work, he sits all by himself and is not doing anything, avoids company and keeps on brooding. Occasionally he gets irritable, cries and claims that the "evil one" has gotten possession of his heart and conscience. He is very nervous, suspicious and gets easily frightened. The mental anguish and the struggle with the insistent "evil" ideas become at times so acute that the patient is like one "crazy," yells and screams like one possessed. Occasionally he experiences the sensation of some one pulling at his clothes. When on the point of falling asleep he hears "evil" voices. At night, when on the point of waking up, he is tortured by fearful nightmares, cries and moans before he can arouse himself, or be aroused. Patient wants to leave the city, wants to get away from himself, wants to commit suicide. What keeps him back is his intense religious belief. The insistent sexual ideas have taken such a hold on his mind that patient is afraid to remain alone with his sister and even with his mother.

In one of our conversations the patient was asked the reason why he troubled himself about the thoughts when he was fully conscious that they were but nonsense, he replied: "I cannot help it; my head gets depressed and heavy; I should prefer to be in hell than to have this kind of nonsense. When I have these ideas my head is dark; all looks dark. When I attend to my natural wants I think of God and associate Him with it to anger Him. When I spit, for instance, I cannot help thinking 'I spit on God.'"

Patient has bad nightmares. He feels that something is lying on him and pressing him; he is afraid of death. He has his eyes open, but he cannot move. On falling asleep, or rather when he finds it difficult to fall asleep, he can hear voices distinctly. The voices talk to him as one man to another; he cannot remember what the voices say. He can hear the voices near the ear, not inside. When patient walks in the street "dreams come to him," then he seems to wake up and does not remember anything. When he goes to bed he talks to himself and is even conscious that he answers questions. When he wakes he sometimes is under the impression that the "evil one" has gotten a firm hold on him. There is some one, the evil one, who laughs and jeers at him.

When a boy of fifteen, he used to have very vivid dreams, could hear steps of "spirit people" in the room. He used also to be frightened by shadows, a fear which dates far back to his early childhood. When about the age of twenty he was pursued by the idea of death, though not of suicide, represented to himself the angel of death very clearly, and the fear made him feel faint. Last summer, to counteract the sexual thoughts and excitement, he attempted to revive the image of the angel of death in order to feel faint, but he did not succeed.

About six years ago patient worked on the sewing machine; one day he suddenly lost the power of movement in the legs. This paralysis lasted three days. He improved and went to his work. Two years ago patient suddenly lost the use of the right hand and right leg. It was not so much an actual paralysis as an intense pain in moving the leg and hand. He could not raise the elbow and dragged the leg. This lasted from April, 1900, to February, 1901. A year ago a young girl came to visit the family and was placed to sleep in the adjoining room. This developed an intense sexual excitement, with thoughts of sexual character. When this developed, the pain and paralysis ceased. One was substituted for the other. When one trouble began, the other disappeared. The sexual thoughts are accompanied with "burnings" which cause the patient great sufferings. These thoughts come periodically. The evil and "nonsense" thoughts are almost always present and give him no rest. Patient feels dazed; does not know where he is, what he is doing, whether he lives at all. Everything is "like nonsense." His hypnagogic and hypnapagogic hallucinations consist of very ugly faces of women, of images of women without hands and feet and of other grotesque visions. The insistent ideas are somewhat like "voices," — they call him names, they laugh at him, at his religious beliefs, at all that he regards as moral and sacred. He feels that there is another person in him that instils in his mind those evil ideas against everything that is holy. The more he fights the more that evil person confuses his thoughts with "unholy ideas," and finally even paralyzes his body. Patient can read well "profane writings," such as newspapers, novels, but a religious book, and especially the scriptures, awaken in him the evil one who makes him suffer untold agonies, intolerable pangs of conscience.

I may add the following interesting letter written to me by the patient:

"I give a short account of my life so as to help the doctor to form an idea of my condition. I hope you will pardon me for putting you to so much trouble.

"In my early childhood and youth I suffered a good deal and many times I had to go without food. When I was about fourteen, I lost two brothers, one younger and one older than myself. The younger brother, a boy of three, I used to take care of and instructed him. I loved him more than my own life. Besides, my parents were at that time in very bad circumstances. I was greatly upset and felt deprived of bodily and mental strength.

"I began at that time to learn the trade of jeweler, but as my mind was very weak I could not do the work, and after ten months of great suffering I fell sick and had to give up the work altogether.

"I then obtained a position as clerk in a small store and had trouble. I have suffered greatly and still continue to suffer. You can see, therefore, that up to the time of my coming to this country I have suffered greatly and still continue to suffer.

"I shall now describe the silly, evil thoughts that torment me so fearfully.

"When I was eighteen years old it suddenly occurred to me to curse the Creator. The curses were awful. Since then my *personality has changed.* Intense sexual passion took possession of me with frequent nocturnal emissions. Confusion came into my mind. Evil thoughts got hold of me. I began to substitute contrary sentences; thus, instead of 'The earth is full of His glory,' I substituted 'The earth is full of his filth." During prayer these thoughts would come to me. The most indecent filthy thoughts would come to torment me. I would cry for hours and struggle against them, but of no avail. The more I tried to drive those thoughts from my mind, the more persistent and unholy would they become. Since then I have become depressed and melancholy. I have lost all desire for life. I feel as if I would like to go into a desert and there die. I want to live and have a quiet undisturbed mind. I am a human being; I cannot hide myself. I have eyes and ears, but everything I see and hear is transformed into evil.

"I cannot undertake to describe all the bad thoughts that enter into my mind. If you could drive all this nonsense from my mind without weakening my love for my people or my religion, if you could bring it about that I could read the Bible without changing the thoughts into evil and my mind should be clear, you would save my life. Oh! if light should dawn upon me and my mental darkness should disappear!

"I have confessed to you everything, more than I would to my father and mother."

The condition of this case can be understood in the light of the patient's childhood, revealed by means of various intermediary states and by means of indirect inquiry of the patient's parents and sister. The patient passed his childhood and youth in extreme poverty and misery, in the midst of social, political and religious oppression. Living from his very babyhood in misery, extreme poverty and squalor, often enduring cold and the pangs of hunger, surrounded by disease, sufferings, pains due to starvation, by sickness and death of those near and dear to him, the patient, with all his natural intelligence, had been fostered in the strict religious belief of a beneficent Providence. The contrast between the ideal Providence and the real misery was too great. With all his needs, desires and instincts suppressed, thwarted and mocked at by the merciless conditions of life, subconscious protests began gradually to form in the patient's mind; the protests, gathering force, finally burst forth with the crisis of adolescence. It was a protest of subconscious mental activity against a life of misery hallowed by religion. It was the protest of the subconscious against the teachings of religion, a subconscious revolt against Providence and all the religious and moral institutions. Out of the chaos of discordant, dissociated elements we see the formation of an ill-shaped, maimed, but defiant subconscious secondary personality of nihilistic tendencies, — a state through which his country and countrymen are now passing. We witness here a struggle full of anguish and agony between a shattered personality and a newly-forming self out of a chaotic disaggregated subconsciousness. Like the demoniacal possession of the Middle Ages, it is the reading of the sacred scriptures that throws the patient into a condition of distress and of inner combat of the discordant elements. The patient is not fully aware of the why and wherefore of the "pangs of his conscience," but still he seems to have some dim suspicion of the nature of his malady, when he asks for help "without weakening my love for my people and my religion." The patient's condition is the agony of a mortally wounded self struggling against the merciless onslaughts of a pitiless, nihilistic secondary self forming out of chaotic states of a disaggregated subconsciousness.

XIII. THE MOMENT THRESHOLD AND DYNAMOGENESIS.

In concluding this paper it may be well to point out some principles, important in many respects, but which at the present moment are of interest from a psychopathological as well as from a practical therapeutic standpoint.

Living tissue can only be set into activity by stimuli of certain minimal intensity; should the stimulus fall below that minimal intensity, the living protoplasm will not react. This holds true of all cells, from the lowest to the highest, — from the bacterium and infusorium to the highly differentiated cell, such as muscle cell or neuron. The reaction of the living protoplasm to the stimulus shows the irritability or sensitivity of the cell. This sensitivity has its physiological threshold, so that a stimulus falling below a certain intensity cannot call forth any reaction in the cell. The rise or fall of the threshold would mean an increase or decrease of the minimal intensity of the stimulus requisite to bring about a cellular reaction. By varying the conditions of sensitivity, such as mechanical, thermal, electrical, chemical and nutritional, the physiological threshold can be raised or lowered. The same holds true of a whole psychophysiological system,—there is a threshold of sensitivity below which the minimal stimulus cannot fall, the latter will not awaken any reaction in the system. All the senses reveal the presence of such thresholds which are also present in the case of all the higher psychophysiological systems. If we term the stimulus which can just bring about a reaction in the system the stimulus threshold, we can say that a given system can only be thrown into activity by a stimulus rising in intensity above the stimulus threshold. Intensity of stimulus, then, is an indispensable condition of the functioning of a psychophysiological system.

In highly differentiated cells, however, it is not only the quantity or intensity of the stimulus that is to be considered, but also the quality. The visual sense organ is not affected by auditory stimuli nor can the auditory sense organ be affected by visual stimulations. Similarly, in the functioning of the higher psychophysiological systems the quality of the stimulus should not be overlooked. Systems that remain inactive under one set of stimuli, however intense, will respond to another set of a different quality. The same holds true of that synthesis of mental systems which we term moment consciousness. To set the moment into activity, the moment threshold must be passed, and not only the intensity of the stimulations should be taken into consideration, but also the qualitative aspect of the stimuli. Ideas, emotions and feelings which apparently remain dormant at the action of one set of excitations will respond readily to the action of excitations of a different nature. Habits, habitual movements, habitual thought, depend entirely on the qualitative character of the excitations, on the combinations of special objects, circumstances and times. It will take too much place to develop here this principle, as we expect to work it out in full elsewhere. Meanwhile, we can simply point out here that the quality of the stimulus is one of the important factors in the activity of a psychophysiological system, or of a moment consciousness.

Besides those two factors of intensity and quality, another factor, that of inhibition, plays quite a *role* in the variations of the threshold. We are acquainted with inhibitions in physiology, such, for instance, as the inhibitions exercised by the pneumogastric nerve on the heart, or the arresting of the activity of glands or of the peristalsis by the stimulation of afferent nerves. We know also of central inhibitions, such as fear, distress, pain, acting as so many inhibitions on the peripheral organs and serving to arrest functioning activity. Similarly in mental life, complex as it is, the highly organized psychophysiological systems, with their concomitant moments consciousness, still fall under the same general physiological laws of inhibition. In the course of associative activity systems and moments become organized into more complex groups, into more complicated systems or constellations of systems which, to maintain their functioning equilibrium, keep one another in check or under inhibitions. Such a formation of checks and inhibitions is just what takes place in the training and the education of the individual and the race. Every psychophysiological system or moment entering into relations with other systems and moments is bound in the course of its associative activity to form inhibitions to its function by the direct influence of external or internal excitations. In other words, there is a rise of threshold due to inhibitory associations.

Inhibition and rise of threshold may also result in a different way in the process of association. We may possibly lay it down as a law, which plays no small *role* in the interaction of systems and moments, that in a series of aggregation of various systems or moments, forming a more complex organized whole, due to association and synthesis of the component systems, having various thresholds, the ones having the higher thresholds will raise the thresholds of the moments having a greater sensitivity. This, however, may be counterbalanced by the lowering of the moment threshold by associations with moments of great sensitivity, that is, with low moment thresholds

While on the one hand the inhibitions and the consequent rise of threshold go along with the complexity of systemic structure and as well as with the increase of associative activity, both in extension and intension, there is at the same time an advantage gained for the system, inasmuch as it really has now more chances to become active, on account of the greater number of systems with which it has become associated. The threshold of the associated system rises, but on the other hand, the chances for activity increase, while the liberation or discharge of energy with the consequent evil effects of extreme fatigue, exhaustion and ill-nutrition are checked and guarded against by the inhibitions and the rise of threshold.

What happens now when a psychophysiological system becomes dissociated? The inhibitions become removed and the threshold falls. The system is no longer checked by inhibitions or by other systems, and hence, with a lowering of the threshold, becomes sensitive, reacting to any slight, passing stimulus, manifesting or liberating all the energy it possesses until fatigue and complete exhaustion set in. From this vantage ground we can understand the fact of the extraordinary energy which the dissociated subconscious systems manifest, so much so that the unusual energy appears almost supernatural and has on that account been ascribed by the superstitious to diabolical possession.

To quote from a former work of mine:

" When a system present in the upper personal consciousness is to be disintegrated, the suggestion given should be kept out of the patient's personal memory. One can observe this fact clearly in post-hypnotic suggestions. If a post-hypnotic suggestion is fully remembered, it usually miscarries, — the suggestion loses its efficacy and often comes up as a word-memory without the stringency of realization. When, however, amnesia is enforced, the post-hypnotic suggestion is fully realized. A dissociated system present in the subconscious, when coming to the surface of the upper strata of consciousness, becomes manifested with intense sensori-motor energy. *Dissociation gives rise to greater dynamogenesis.* This principle of dynamogenesis is very important, and cases of so-called impulsive insanities and ' psychic epilepsy ' are really due to this cause.

" A system entering into association with other systems is set into activity, not only directly by its own appropriate stimuli, but also indirectly through the activities of the various systems associated with it. These associative interrelations bring about an equable and normal functioning activity, controlled and regulated by the whole mass of associated systems. The mass of associated systems forms the ' reductives ' of each individual system. In dissociated systems the controlling influence of the ' reductive mass ' is lost and the result is an over-activity, unchecked by any counteracting tendencies.

" This relation of *dissociation* and *dynamogenesis* is closely related to *periodicity* of function, with its concomitant manifestation of psychomotor activity characteristic of all passions and periodically appearing instincts. Dissociated systems present impulsiveness, because of lack of associated counteracting systems. The only way to diminish the overpowering impulsiveness with which the dissociated subconscious systems make an onset in their rush into the personal consciousness is to bring about an association, to work the dissociate systems into the tissue of the patient's consciousness.

" Physiologically, it may be said that a neuron aggregate, entering into association with other aggregates and being called into activity from as many different directions as there are aggregates in the associated cluster, has its neuron energy kept within the limits of the physiological level.[6] A dissociated neuron aggregate, on the contrary, is not affected by the activity of other aggregates; it is rarely called upon to function and stores up a great amount of neuron energy. When now an appropriate stimulus liberates the accumulated energy, the activity is overwhelming and is very much like the eruption of an underground volcano, giving rise to temporary attacks, to ' seizures ' by subconscious states of the whole field of the upper consciousness, — ' seizures ' which, being really of the nature of post-hypnotic automatisms, are generally mistaken for epilepsy, the attacks being regarded as epileptic manifestations, as ' larval epilepsy,' as ' epileptic equivalents,' as ' psychic epilepsy.' With the restoration of the equilibrium of the neuron aggregate, with the synthesis of the associated systems, a synthesis which can be brought about by different methods, the subconscious eruptions, the attacks, or ' seizures ' vanish, never to return." [7]

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[6] See Sidis, Psychopathological Researches: also Neuron Energy and its Psychomotor Manifestations. Archives of Neurology and Psychopathology, 1898.

XIV. THE PRINCIPLE OF RESERVE ENERGY.

We have pointed out the significance of inhibitions in keeping back the systemic neuron energy from fully being discharged under normal conditions of life, and we have also shown that the removal of inhibitions results in the full liberation of the accumulated neuron energy. This fact, so striking in the domain of recurrent psychomotor states, almost forces itself on the attention of the student of abnormal psychology. From such a fundamental fact of abnormal mental phenomena, we may draw some conclusions in regard to mental life in general. For, after all, the laws of pathology do not differ from those of physiology in general, the pathological really being the physiological under special conditions. The normal is either the usual, the habitual, the customary, or is, at best, an ideal construction of the variations of life more or less successfully adjusted to the conditions of the external environment. This adjustment, however, keeps on constantly shifting ground, continually changing the relative position of the normal and the abnormal. From this standpoint pathology is of the utmost importance in the study of organic life. The pathological being the normal out of place, the so-called normal under special conditions, pathology that deals with the abnormal gives us a deep insight into the general laws of normal physiological activity. All the experiments in physiology consist practically in the production of so many pathological conditions and states. When the physiologist makes injections, sections and stimulations by various agencies, what else does he effect if not the production of the pathological, in order to learn the physiological action of the various tissues and organs? In our psychopathological study we have really followed the interrelations of mental phenomena under special conditions; it is the physiological method of experimentation by production of pathological variations; the conclusion arrived at in psychopathology should apply to mental life in general. What is this conclusion? It is the principle of potential subconscious energy or, more briefly stated, *the principle of reserve energy*.[8]

The moment thresholds of our moment consciousness, or, put in physiological terms, the thresholds of our psychophysiological systems, are usually raised, mental activity working in the course of its development and growth of associative processes under ever-increasing inhibitions with ever-higher thresholds. It is enough to compare the educated, the civilized, with the uneducated or with the barbarian and the savage, to realize the truth of our statement reached from a study of psychopathological facts. On account of the threshold and inhibitions, not the whole of the psychophysiological energy possessed by the system or moment is manifested; in fact, but a very small portion is displayed in response to stimuli coming from the habitual environment. What becomes of the rest of unused energy? *It is stored, reserve energy.*

Biologically regarded, we can well see the importance of such stored or reserve energy. In the struggle for existence, the organism whose energies are economically used and well guarded against waste will meet with better success in the process of survival of the fittest, or will have better chances in the process of natural selection. The high thresholds and inhibitions will prevent hasty and harmful reactions as well as useless waste of energy, unnecessary fatigue and states of helpless exhaustion. Moreover, natural selection will favor organisms with greater stores of reserve energy which could be put forth under critical conditions of life. In fact, the higher the organization of the individual, the more varied and complex the external environment, the more valuable and even indispensable will such a store of reserve energy prove to be.

The course of civilization and education, by continuously raising the thresholds and inhibitions, follows the line of natural selection and keeps on increasing the disposable store of potential subconscious or reserve energy both in the individual and the race. It is in this formation of an ever-greater and richer store of disposable, but well-guarded, reserve energy, that lies the superiority of the educated over the uneducated and the supremacy of the higher over the lower races.

Civilization and education are processes of economy of psycho-neural force, savings of mental energy. But what society is doing in a feeble way natural selection has done far more effectively. What education and civilization are doing now on a small scale and for a brief period of time the process of survival of the fittest in the ever-raging struggle for existence has done for ages on a large scale. We should, therefore, expect that the natural reserve energy would far exceed that of the cultivated one. The brain and mind of the ancient German differed in nothing from his modern descendant, the German professor, and still what a difference in the manifestation of mental energy. The savage brain and mind do not differ from those of their civilized descendants, and still what an ocean of mental life separates the civilized man from his savage progenitor.

It is against the evidence of biological sciences to suppose that the acquisitions of the cultivated brains have actually been transmitted from generation to generation. It is not likely that acquired characteristics brought about by social life will change so radically the brain in the course of some forty or fifty generations that separate the civilized man from his savage progenitor, and the trend of biological evidence hardly favors the transmission of such acquired characteristics.

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[7] See Sidis, Psychopathological Researches, ch. " Dynamogenesis and Disintegration."

[8] When this paper was already in the hands of the editor, Prof. William James sent me his article, " The Energies of Men," in which he developed a similar point of view, though on widely different lines. Nothing gives me more pleasure than to find myself in accord with the great American psychologist and philosopher.

"There sits the savage," once exclaimed an eminent pathologist, "with three quarters of his brain unused." Yes, there sits the savage with a brain far surpassing the needs of his environment, harboring powers of a Socrates, Plato, Aristotle, of a Shakespeare, Goethe, Darwin and Newton. The ancient German and Briton hardly differed in their mental powers from their contemporaries, the civilized Egyptian and Babylonian. What, then, did those Aryan savages do with their richly endowed mental energies? Nothing. The mental energy was lying fallow,— it was reserve energy, — energy for future use, for the use of future ages of coming civilization.

But what about the cultivated man? Does he suffer from neurasthenia, from nervous impotence, because, as some would have it, on account of the strain of civilized life he has exhausted his store of nervous energy ? One may well ponder over the significant fact that it is the neurasthenic, the "psychasthenic" who is doing the world's work. We must remember that civilization is but of yesterday and that the reserve energy is hardly touched upon.

In the treatment of the phenomena of psychophysiological dissociation, in the protean symptoms of nervous and mental exhaustion we should not forget this biological principle of reserve energy and should make attempts to use it. In many cases the inhibitions become too heavy and the thresholds too high. We must loosen the grip of some of the inhibitions and lower the thresholds, thus utilizing a fresh supply of reserve energy.

It is certainly a great pity that the medical schools have until now ignored the whole domain of psychopathology and have left psychotherapeutics in the hands of the superstitious and the unscrupulous, — of the mental healer and Christian scientist. Medical colleges are justly proud of their laboratories, but thus far not a single medical school has considered it important enough to establish a psychopathological laboratory. Is the study of the phenomena of abnormal mental life of little or no consequence to medical science ?

Unusual combinations of circumstances, great radical changes of the environment, often unloosen the inhibitions and, overstepping or lowering the thresholds, release some of the reserve energy. Critical periods, great dangers, wars, revolutions, often make man rise to the occasion, so that apparently insignificant and worthless individuals display an energy unforeseen and unsuspected and which makes of them heroes and heroines. There is a rise in intensity and a qualitative change in the stimuli, an unloosening of some of the inhibitions with a consequent release of some of the bound-up reserve energy.

In this respect wars and revolutions may be regarded as important factors in the manifestation of human potential energy. The Persian and Peloponnesian wars unloosened some of the energies of Greece, giving rise to great thinkers, scientists and artists, having a lasting influence on the destiny of humanity. The constant wars and national misfortunes of the Jews released their reserve energy and made of them a race of prophets, apostles and martyrs, deeply affecting the course of human civilization. What about the wars of the Reformation, with which opens the new era of the free development of modern European civilization? What about the English, American and French revolutions which have released new supplies of energies and have opened a new arena for the free development of political, social and industrial forces? In our own times we meet with the example of the Japanese, who, under the strain of great national danger, have released a reserve energy unsuspected in races of the Mongolian stock.

Reserve energy becomes manifested under the influence of radical changes in the environment, just as we have found that psychophysiological systems react and start into function under the influence of special conditions and special appropriate qualitative stimuli. In the therapeutic treatment of functional nervous and mental diseases, in the treatment of neurasthenia, or psychasthenia, hysteria and insistent or recurrent mental states, the physician should fall back on this natural stored-up reserve energy. I find this principle specially successful in my treatment of so-called functional and habit psychoses, in various forms of insistent psychomotor states, in the whole domain of mental dissociations, and in cases of alcoholism where an almost complete moral transformation of the personality is observed through the liberation of some of the patient's subconscious reserve energy.[9]

The method of hypnoidization with its induced hypnoidal states may help out in reaching this source of reserve energy. The hypnoidal states, being intermediary in character, form a common meeting ground of the conscious and the subconscious, and it is in these states that we often can catch glimpses of the individual's stored-up energy. By means of special qualitative stimuli and by the reduction of the inhibitions and of the moment thresholds we are able to utilize energy out of the patient's reserve energy for the reestablishment of disturbed inner relations and dissociations. The Hanna case as well as many other cases have been practically treated by me on this principle by means of the hypnoidal or intermediary states. Most of my work is now being carried out on these lines. The hypnoidal states may be modified, the methods of their induction may be varied, and again the whole method of treatment may be carried out on different lines, according to the nature of the case and character of the individual, but all the variations in the method of treatment are based on one fundamental principle, — the principle of reserve energy. For, as one studies mental life with its infinite variety of mental dissociations and subconscious activities, one becomes more and more impressed with the fact that beyond the psychophysiological limits of energy, available for the habitual adjustments to the ordinary external conditions of life, there is a vast store of reserve energy whose depths one cannot gauge, — but

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[9] The principle of reserve energy is of great importance in education. I hope to work out this subject elsewhere.

> *"Aus dem Kelche dieses Geisterreiches*
> *Schäumt ihm seine Unendlichkeit."*

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Book Review.

Extra Pharmacopeia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H. Twelfth edition. London: H. K. Lewis. 1906.

The twelfth edition of this volume, although an addition of over two hundred and fifty pages has been made, bringing the pages up to ten hundred and forty-five, appears as a book which may easily be carried in the pocket. The subject matter has been brought down to the time of publication through reference to current literature in relation to therapeutics and to organic and inorganic pharmaceutical chemistry. The book is certainly of much value for purposes of reference, and in spite of its small size contains a large amount of information.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University, and Tracy C. Becker, A.B., LL.B., Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo, with the aid of eighteen collaborators. Second edition. Vol. I. Pp. 996. New York: William Wood & Co. 1906.

The first volume of the second edition of this monumental work is in our hands. Although under the immediate editorial supervision of Dr. Witthaus and Mr. Becker, the book is really a composite product, as shown by the fact that there are eighteen collaborators in addition. This series of books aims to give a comprehensive account of the relation of medicine to the law, of the rights and duties of medical witnesses and of the various circumstances in which the medical and the legal profession come in contact. The first volume concerns itself with an historical introduction, a table of cases cited in the volume, a discussion of medical jurisprudence in its various aspects, forensic medicine and matters of medicolegal interest relating to dead bodies. The book is encyclopedic in character and contains a fund of information which should be of vital interest to physicians in general, and particularly to those whose duties bring them into close relations with the courts. The treatise is already well known to the medical profession, and this second edition is sure to meet with a hearty reception.

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ANNUAL REPORT OF HARVARD UNIVERSITY, 1905–6.

This annual report appears later than common this year, but makes up in size what it lacks in punctuality. Of the president's introductory pages a certain number, as usual, are devoted to the Medical School. A brief rehearsal of the ceremonies at the opening of the new buildings of the school last September leads up to the following statements:

"Up to Oct. 1, 1906, the land on which they stand has cost, with interest, approximately, $371,000, and the buildings have cost with interest, approximately, $2,492,000, including the grading of the grounds and the cost of the fixtures and furniture to that date. Four of the five buildings may properly be called laboratories; the fifth is devoted chiefly to administration and to the Warren Museum. They were brought into existence by the prophetic insight and the zeal of a few of the university's teachers of medicine and by the public spirit and intelligent generosity of a few score men and women who welcomed the opportunity to do some lasting and far-reaching good in the world; and the great achievement was made possible by the high standing of the medical profession in Boston and the vicinity for more than a hundred years. They are devoted to the teaching of the medical and surgical arts and to the pursuit of the biological and medical sciences. In the near future these buildings for teaching and research will be surrounded by four new hospitals, this grouping of the school with active hospitals having been part of the original plan at the time the purchase of the land was made by the university. Three of these hospitals take each a portion of the land which the university originally bought between Huntington and Longwood avenues. The buildings of the school have been very thoughtfully adapted to their uses. Doubtless some changes of detail will need to be made and some new constructions, not of large amount, may prove to be desirable, but it will doubtless be possible to close the construction accounts before the end of the current academic year."

The Corporation, Mr. Eliot tells us, hope that the additional endowments which came to the school with the new buildings will prove to be sufficient for carrying on the school in a modest way in the new buildings; "but it is already plain that to utilize thoroughly the ample equipment with which the school is now furnished, additional endowment will be indispensable. All the activities of the school, and especially its activity in medical and surgical research, ought to be greatly enlarged; but these enlargements cannot be effected without considerable additions to the existing endowments of the school."

The Faculty of Medicine took an important step when they decided in the year under review to open all their courses of instruction to special students and to students in other departments of the university.

Mr. Eliot is of the opinion that the papers published by the teachers and students of the Medical School during the year 1905–6 will convince any one who examines them that medicine and surgery for human beings are hereafter to be furthered largely by the study of the other animals with which man is in contact, the other animals ranging from bacilli and microscopic parasites to large mammals. Mr. Eliot is evidently a friend of laboratories and of such departments as those of comparative anatomy, comparative physiology and comparative pathology.

He states that "the briefest examination of the report of the dean of the Medical School will satisfy any one that the school is now putting a large part of its energy into medical research. All departments of the school, including clinical medicine and clinical surgery, exhibit this tendency. The diminution in the number of students attending the school, consequent on the requirement of a degree for admission, has enabled all the teachers, but especially the laboratory teachers, to give less time to direct teaching and more to investigation. Taken in connection with the fact that far the greater part of the instruction which a medical student now receives is given in laboratories, including the laboratories connected with hospitals, this new development of medical investigation fully accounts for the proportion of laboratories in the new buildings of the Medical School."

If the president had confined his statement that, far the greater part of the instruction which a medical student now receives is given in laboratories, to the first year and a half or possibly two years of the four years' course, it seems to us it would have been more nearly correct.

It is true that a clinical laboratory has been established in the division of medicine for the special training of students and practitioners in the chemical, microscopical and bacteriological methods employed in the practice of medicine.

When, however, we turn to the report of the dean of the Medical School we find the following striking statement: "In my last report for the year 1904–5, I spoke of the somewhat surprising result of the choice of studies by the fourth-year men of 1905–6, when the new elective curriculum for the fourth year first went into effect, and showed by a comparative table that the students chose to continue practically the same work that had been previously required; that they had not elected specialties or laboratory courses to any extent, but preferred rather to continue their training for general practice by the pursuit of general clinical work. In other words, that the fourth class believed for the most part that it was too early in their education to begin to specialize." The dean goes on to state that this attitude is still more forcibly shown in the choice of work by the fourth class of 1906–7. A table of the half-courses elected by this class shows that 80% of these half-courses were in the fundamental subjects of anatomy, general medicine and surgery, pediatrics and obstetrics. The dean thinks it fair to conclude from the experience of the last two years that the students believe four years not too long a time to devote for the most part to preparation for general hospital work and subsequent general practice, and that specialized work in narrow fields had best be left for graduate study.

An analysis of the courses taken in the summer school seems to throw some light on this question, the conclusion being drawn that research and advanced courses attract but few students in summer.

In response to a communication, the faculty of medicine advised the corporation of the university that in their opinion it was impracticable at present to admit women to the regular curriculum of the Medical School.

The great need of the Dental School is a new building. For this land has been bought near the new buildings of the Medical School. The teachers have made renewed sacrifices in carrying on the school, and have continued their efforts to secure a building fund. These sacrifices and efforts deserve more recognition than they have received, especially in view of the public services which the school renders. The school is forty years old and its permanent funds amount to only about forty thousand dollars.

The question of athletic sports receives more than usual attention in this annual report. As a new feature there is a distinct report, covering twelve pages, from the chairman of the Committee on the Regulation of Athletic Sports. Four of these pages are devoted to tables giving details of the receipts and expenses of the various sports. Those who are interested in intercollegiate athletic sports will find many instructive and some curious items therein. President Eliot in his introductory pages again pays his respects to foot-ball and especially to intercollegiate foot-ball. He admits that the game was somewhat improved by the working of the new rules "extorted last year from its creators and managers by the pressure of public opinion," but he holds that the spirit of the game remains essentially the same and may be properly described by the adjective "fierce," a term which he thinks is commonly applied to the game by its advocates. It is, therefore, he believes, an undesirable game for gentlemen to play, or for multitudes of spectators to watch. We imagine the term "fierce" as used in the undergraduate vernacular has taken on a somewhat modified meaning. It might be applied to an article of wearing apparel or even to a tea-party.

Mr. Eliot considers that from the educational point of view, the value of any sport is to be tested chiefly by the number of persons who habitually take part in it for pleasure during the educational period, and enjoy it in after life; and, tried by this test, that foot-ball is the least valuable of all college sports. What the president has to say on the subject of athletics this year is really summed up in the following closing paragraphs of this section of the report which immediately precede a more peaceful consideration of the "Agamemnon" of Æschylus as presented in the Stadium last June:

> "It is high time that the whole profession of teaching in school, college and university united to protest against the present exaggeration of athletic sports during the whole period of education, and especially to bring competitive sports between schools and between colleges within reasonable limits, and to establish the supremacy of intellectual and moral interests over physical interests in all institutions of education. The object of attack should be, not athletic sports, but the gross exaggeration of them."

MEDICAL INSPECTION OF SCHOOLS.

Under the title: "Suggestions to Teachers and School Physicians Regarding Medical Inspection," the Massachusetts Board of Education has recently published a pamphlet, small in size, but giving much evidence of careful preparation. This pamphlet is an outgrowth of the work of a committee appointed by Governor Guild to prepare a circular of advice to the school physicians and teachers of the state. Various interests in the community were represented on this committee, which consisted of nine persons, a majority of whom were physicians. The committee, through a sub-committee, conferred at length with a large number of physicians representing the various branches of medicine which might in any way have bearing upon the health of school children. The result of the painstaking method employed to arrive at the facts, and also to secure suggestions of value, certainly shows itself in the succinct and clear statement which makes up the body of the pamphlet. A manifest difficulty in issuing directions of this sort is that too great elaboration may lead to a failure to impress important points. This danger has been entirely avoided. It has evidently been the aim of the compilers to draw attention essentially to matters which may be observed without detailed physical examination, and that teachers as well as physicians may intelligently appreciate. As a matter of fact, certain of the sections concern themselves, as is proper, entirely with directions to teachers, as, for example, "General Symptoms of Disease in Children," the recognition of which should lead to medical attention. Under this heading such signs as emaciation, puffiness of the face, shortness of breath, lassitude, eruptions, nasal discharges, coughs, vomiting, are briefly discussed. Conditions of the nervous system occupy upward of half a dozen pages, and here also the effort has evidently been to call attention to certain easily observable mental and physical defects, which may be of significance, and to draw attention also to the recognition of epileptic or other convulsive attacks.

In general, it is not to be doubted that this little statement placed in the hands of teachers and school physicians cannot fail to be of much value in developing a closer habit of observation on the part of those having children in charge, and thereby ultimately improving the public health.

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STREET CLEANING AND HEALTH.

The general subject of street cleaning and health formed the topic of discussion at the meeting of the New York Academy of Medicine on April 4, and in accordance with a suggestion made by Dr. William Gilman Thompson, in an address on "Street Dirt and Disease," a resolution was adopted to request the mayor to appoint a special commission to study the existing conditions in New York and report upon them and such measures as it deemed necessary to secure an improvement, especially as regards the prevention of defilement of the streets. In the course of his remarks Dr. Thompson said, "Dirt begets dirt. Articles of food, such as fruit, which are exposed to the air, soon become coated with bacteria through the disease-laden dust which is constantly blowing off the streets. The good effect of outdoor life for convalescents is prevented by the same cause. After a few days of wind in New York there is an epidemic of coughs and colds. The difficulty in maintaining cleanness of the streets is in the multiplicity of officials. One who makes a protest is referred from one to another. It leaves a loophole of escape, this shifting of the responsibility from one department to another." Capt. F. M. Gibson, U. S. Army, retired, who was appointed deputy commissioner of street cleaning by the late Colonel Waring, under the Strong administration, and who was retained in that position under the various administrations until a short time since, discussed the "Practical Difficulties in Cleaning the Streets of New York City." Among these difficulties, he said, was the fact that the people themselves were too often violators of the city ordinances, instead of co-operating with the street cleaning department. This lack of co-operation was also shown by the city magistrates, who were in the habit of treating offenders far too leniently. The ordinances could be better enforced, he thought, if the police captains were permitted to have charge of such cases. Other difficulties met with were the too restricted use of water allowed the department and the lack of power to interfere with the dirt and dust production of building operations. "Practical Ideals of Street Cleaning" was discussed by Rudolph Hering, the sanitary engineer.

No doubt the situation differs in some respects in New York from that in other cities; but the fact remains that in any large center of population where there is constant traffic on the streets the question of dust and its accompaniments becomes a problem of pressing importance. In Boston we probably suffer from more frequent and violent winds than in many other cities, and it is certainly true that the problem of clean streets is one of vital interest to its citizens. An investigation some years ago was made into the facts, with special reference to the bacteria contained in ordinary street dust. It was found, if our memory does not fail us, that unpleasant and obnoxious as city dust may be, it does not under ordinary circumstances contain to any extent pathogenic organisms. The comfort derived from this is, however, tempered by the fact that it is quite impossible to exaggerate the irritating qualities of the particles composing dust driven at high velocity through the air and continually inhaled. There is small question that coughs, colds, and various disorders of the respiratory tract are directly induced by flying dust, but that there is a distinct menace to health from the more dangerous infectious diseases from this source is not yet proved. The esthetic side of the question is also not to be ignored. Dust, dirt and unclean streets are at best unpleasant and should not be tolerated if there is any remedy at hand. The problem needs further investigation, but it is perfectly apparent to the most superficial observation that more could be done than is now done, and that public opinion should demand the maximum of efficiency on the part of those whose duty it is to direct the work of street cleaning.

MEDICAL NOTES.

International Congress of Physiotherapy. — The Second International Congress of Physiotherapy will be held in Rome, Italy, on the 13th, 14th, 15th and 16th of October, 1907, under the presidency of Hon. Prof. Guido Baccelli; secretary, Prof. Carlo Colombo, Via Plinia, 1, Rome. The American Committee has been appointed with Dr. Francis B. Bishop, Washington, D. C., as president, Dr. Wm. Benham Snow, 347 West 57th Street, New York, secretary, and Dr. Albert C. Geyser, New York, as treasurer, with a special committee as follows: Dr. Fred H. Norse, mechanotherapy; Dr. Margaret A. Cleaves, phototherapy; Dr. Geo. C. Johnston, radiotherapy; Dr. M. H. Kissabian, radiography; Dr. Wm. James Morton, radium-therapy; Dr. Morris W. Brinkman, rhythmotherapy; Dr. Chas. Denison, climatology; Dr. G. Betton Massey, massive cataphoresis; Dr. David E. Hogg, thermotherapy; Dr. Edward C. Titus, electrotherapy.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 10, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 53, scarlatina 33, typhoid fever 4, measles 10, tuberculosis 64, smallpox 0.

The death-rate of the reported deaths for the week ending April 10, 1907, was 21.48.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, April 6, 1907, was 248, against 247 the corresponding week of last year, showing an increase of 1 death and making the death-rate for the week 21.48. Of this number 135 were males and 113 were females; 244 were white and 4 colored; 148 were born in the United States, 95 in foreign countries and 5 unknown; 50 were of American parentage, 161 of foreign parentage and 37 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 38 cases and 1 death; scarlatina, 45 cases and 1 death; typhoid fever, 4 cases and 1 death; measles, 17 cases and 0 deaths; tuberculosis, 62 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 30, whooping cough 0, heart disease 29, bronchitis 5 and marasmus 2. There were 23 deaths from violent causes. The number of children who died under one year was 43; the number under five years 55. The number of persons who died over sixty years of age was 66. The deaths in public institutions were 82.

There were 18 cases and 7 deaths reported from cerebrospinal meningitis during the week.

Bequests. — By the will of the late Mrs. Eliza T. Dodge, the bulk of her estate, amounting to $200,000, is left to the charitable and educational institutions of Worcester, Mass. Among the beneficiaries are the Worcester Society for District Nurses, $2,000, and the Memorial Hospital, $5,000.

Smallpox in Chelsea. — Owing to the appearance of smallpox in Chelsea, Mass., three of the public schools have been temporarily closed to guard against the further spread of the disease. This seemed advisable, because many of the pupils in these schools lived in the district in which smallpox has appeared.

Consecration of New England Deaconess Hospital. — The new hospital of the New England Deaconess Association in Boston was formally opened April 8. Many persons availed themselves of the opportunity to inspect the building, which is located in the neighborhood of the new Harvard Medical School buildings. The new hospital is commodious and admirably adapted to the purpose for which it is to be used. It will be open for inspection each afternoon this week.

Examining Physicians and Surgeons Meet. — A large gathering of Examining Physicians and Surgeons of Boston and vicinity met April 3, 1907, at the Boston City Club, to perfect an organization to be known as the Boston Society of Examining Physicians and Surgeons. A committee of five, appointed on the evening of March 22, at the Hotel Somerset, for the purpose of drafting by-laws and constitution, consisting of Drs. Allard, Donoghue, Greene, Cutting, Hartung and Kepler, made a report.

It was voted to call the organization the Boston Society of Examining Physicians and Surgeons, the objects of the society being to establish more intimate acquaintance and social relations between physicians who regularly make examinations for life or accident associations or who testify in court.

There will be three meetings a year. All physicians and surgeons who do examining regularly for some association or corporation, and who have untarnished records, will be eligible. Noted experts and alienists from all over the country will be invited to join, as honorary members. The committee of five had the assistance of a prominent Boston attorney in the drawing up of the agreement of the association and constitution.

The officers elected were: Dr. Francis D. Donoghue, president; Dr. Frank E. Allard, first vice-president; Dr. Edward M. Greene, second vice-president; Dr. Chas. Theo. Cutting, secretary; Dr. Charles O. Kepler, treasurer.

Numerous committees were appointed for special work.

It is hoped that the effect of this organization will be to bring the examining physicians and surgeons of Boston in touch with experts all over the country, and will aid in raising the standard of expert testimony in this state.

NEW YORK.

Sale of Cocaine without Prescription Prohibited. — The lower house of the legislature has passed by a unanimous vote the bill which prohibits the sale in the state of New York of cocaine and all preparations containing the drug, except upon a physician's prescription. The bill was strongly opposed by the patent medicine interests and by some of the drug houses.

American Society of Tropical Medicine. — The third annual meeting of the American Society of Tropical Medicine was held at the New York Academy of Medicine on March 29. On this occasion a lecture on "Observations of Health and Disease in East Africa" was delivered by Dr. Louis L. Seaman, of New York, who went to the East coast last summer with Dr. Nicholas Senn, of Chicago, for the purpose of making a study of the existing health conditions. In the course of it he stated that the vast majority of diseases in the tropics resembled those of this and other temperate countries. The difference there was that the intense heat promoted the development of micro-organisms and hastened the resulting changes, so that the reaction of the diseases was more severe and prolonged than in climates where the patient had the benefit of a cooler atmosphere. The sleeping sickness, he said, had proved uniformly fatal to the natives. Incidentally Dr. Seaman related that he himself was once bitten by the tsetse fly, which produces this disease, but, aside from the painfulness of the sting, like that of the bee, he experienced no ill effects.

Jewish Communal Institutions. — At a meeting held March 17, by a vote of 79 to 15, the plan of the recently organized Federation of Contributors to the Jewish Communal Institutions of New York was approved. The federation is intended to serve as an administrative body to have charge of the collection and distribution of all contributions, thus relieving the several institutions of financial cares. At the meeting a number of hospital and asylum directors expressed themselves as opposed to the plan on the ground that under it the lack of special interest in individual institutions would tend to diminish contributions. On the other hand, it was asserted that the federation had proved very successful in other cities, more money being obtained for each and every institution, without individual effort on its part. It is stated that those present at this meeting appeared simply as individuals, and that the vote taken does not bind the various institutions represented at it by members of their boards of management. It was merely an expression of opinion as to the advisability of the proposed plan. This having been in its favor, the federation would continue its work, hoping to demonstrate its usefulness.

Current Literature.

The Journal of the American Medical Association.

March 23, 1907.

1. *Herter, C. A. *Common Bacterial Infections of the Digestive Tract, and the Intoxications Arising Therefrom.*
2. *Brawley, F. E. *Relation of Diseases of the Nasal Accessory Sinuses to Disease of the Eyes.*
3. *Henry, W. U. *To What Extent Can the Gynecologist Prevent and Cure Insanity in Women?*
4. Tucker, E. F., Marcy, H. O., and Clark, J. G. *The Nomenclature of Endometritis.*
5. Weisenberg, T. H. *Conjugate Deviation of the Eyes and Head.*
6. *Toms, S. W. S. *The Relation of Eye-Strain to Chronic Headaches.*
7. Posey, W. C., and McKenzie, R. S. *Results of the Examination of Students' Eyes.*
8. Homan, G. *The Danger of Dust as a Cause of Tuberculosis.*
9. *Sollman, T., and Brown, E. D. *The Value of Sulphates in Carbolic Acid Poisoning.*
10. *Walker, G. *Simple Ulcer of the Bladder.*
11. *Senn, E. J. *Etiology and Pathology of Traumatic Rupture of the Abdominal Viscera.*

1. Herter's Harvey Lecture upon the bacteriology of the intestinal tract is reported in abstract. Herter does not consider conclusive the experimental studies as to the necessity of bacterial action in the digestive tract for the maintenance of health in the higher mammals. The obligate bacteria of the intestines are not ordinarily harmful to man, and their value to him is probably in checking the development of the more injurious ones. Herter discusses the effect of aërobic and anaërobic conditions and shows that the larger number of anaërobic organisms are found in the large intestine, where there is most pronounced evidence of intestinal putrefactive action. The conditions are not the same at all ages. In infancy there are fewer bacterial species and these vary somewhat in bottle-fed and breast-fed infants. During childhood and adolescence there is a gradual change, and in later adult life the number of putrefactive anaërobes is increased and, while the general health may not appear to suffer markedly, there is more or less intoxication from putrefactive processes which aid in bringing on senility. The differences of individual susceptibility and the effects of various putrefactive products are discussed. Some of these, such as ammonia, putrescin and cadaverin, are produced in such small quantities as hardly to be of much importance. Others, such as the sulphur compounds, phenol, cresol, skatol, and indol, are of more importance and may produce observable toxic effects. The individual cellular reaction of the patient is probably more responsible than the poison for the differences and effects sometimes observed in individuals, as in the idiosyncrasies observed in different patients in certain kinds of foods. Herter suggests the recognition of three types of chronic excessive intestinal putrefaction, *viz.*, the indolic type, marked by striking indicanuria; the saccharo-butyric type, due apparently to the anaërobic forms; and the combined type of the two former. In the latter there is more rapid advance of invalidism than in either of the other two. There are earlier and more prominent nervous symptoms, mental depression and irritability, and quick fatigue, sometimes ending in a picture of pernicious anemia or pronounced melancholia. The therapeutic indications are, first, avoidance of reinfection by special attention to the diet and care of mouth and teeth; second, the aiding of digestion; and third, the reduction of putrefactive organisms in the colon. The prognosis is least hopeful in neurotics and best when the condition is obviously due to gross errors in life which can be corrected.

2. Brawley calls attention to what he considers a practically unrecognized condition, rarely attributed to the nose and almost always to the eyes, and the fact that glasses will sometimes give temporary relief tends to confirm the error. The origin of the trouble generally dates back to an attack of grip or a hard cold, and the headache.

when it first appears is often unilateral, though later becoming general. It occurs both by night and day, often beginning and ending at regular hours. During the attacks the use of the eyes is almost impossible, as it intensifies the symptoms; insufficiency, both of accommodation and convergence, is usual, and distant vision may be reduced. There is often unilateral lachrymation and local pain and swelling about the eyes. Stooping over especially aggravates it, and it is affected by jarring, circulatory disturbances of any kind, excesses of eating, etc. As a rule, there is no history of nasal disease. A close examination will reveal a swollen, boggy turbinal or one so closely applied to the lateral nasal wall as to press on the hiatus semilunaris and to interfere with the interchange of air and exit of normal secretions from the frontal and anterior ethmoidal cells. If the use of suprarenalin and cocain to the middle turbinal and infundibulum relieves the attack, a resection of the hypertrophied anterior end of the middle turbinal is indicated to restore normal conditions of air interchange and exit of secretions. The technic of the operation is given and the author reports ten cases. The point he specially emphasizes in his paper is the absence of all definite nasal symptoms and the apparently normal nose. There may be more serious conditions, however, such as acute suppuration of the sinus producing these symptoms. It is in the milder non-suppurative case that the real cause of the condition is likely to be overlooked.

3. Henry reviews the literature of the subject of insanity in connection with pelvic disorders, quoting the opinions of various authorities and criticising some of them who have minimized the value of gynecologic operations for the cure of insanity in women. He gives very brief reports of 28 cases, in which he operated on such patients; of this number he claims that 16 recovered from their mental disorders, 3 of them having remained well nine, ten and eleven years, respectively. He thinks that there is a vast amount of undiscovered pelvic disease in insane women, the relief of which by operative methods would be possible. He insists on the necessity of radical work in these cases so as to leave no possible source of irritation that might perpetuate the insanity.

6. Toms claims that 90% of all those suffering from reflex or neuralgic headache have ocular defects. Over 600 of the patients examined were altogether unaware of their defect. Fully half the cases were of only slight refractive errors or muscular imbalance, and it is in these cases in which ciliary spasm is the direct factor in causing headache in persons whose occupation calls for near vision, that accommodative asthenopia results. While there were occasional complications, only 5% of the patients had discoverable organic lesions that possibly intensified, or were partly to blame for the head pain. Of those who were relieved of their headaches, 75% had no other treatment than properly adjusted glasses or appropriate treatment for their muscular anomalies. The types most frequently met are the occipito-cervical, fronto-temporal and the hemicranias. There is no apparent relation between the severity of the headache and the degree of the ocular defect and nothing especially characteristic except, perhaps, the patient's non-suspicion of the cause. Sickness or health impairment may be the first inciting factor in some patient with considerable ocular defects which gave no trouble before. In this connection, the author mentions, as an ocular condition that does not receive the attention it deserves in young subjects, subnormal accommodation or premature presbyopia, which may be the cause of alarming symptoms of headache and insomnia. Such patients often have a very acute vision for distance, with a slight muscular trouble of exophoria or esophoria, which is a misleading condition. They refuse all distance lenses or prisms, but find immediate relief when a presbyopic correction is made.

9. Sollman and Brown summarize the results of their investigation as follows: 1. Chemical combination between phenol and a sulphate does not occur outside of the body, neither in neutral nor in weakly acid nor in weakly alkaline solution. This excludes at once all possibility of chemical combination in the alimentary canal or in the blood. 2. The blood pressure and convulsive effects of phenol are not modified in the slightest degree by intravenous injection of liberal quantities of sodium sulphate under any of the following conditions: (*a*) When phenol, even in sublethal doses, is introduced into the stomach and is followed within fifteen minutes by intravenous sulphate injection. (*b*) When sublethal doses of phenol are injected intravenously and followed promptly by the sulphate. (*c*) When sublethal doses of phenol are injected intravenously after the sulphate injection. (*d*) When an incubated mixture of phenol, sodium sulphate and sodium bicarbonate is compared with a solution of phenol in sodium chlorid solution. (*e*) When the sulphate is injected immediately after cardiac stoppage from lethal doses of phenol. The conclusion that sodium sulphate, however administered, is not a chemical antidote, as suggested by Baumann, for acute phenol poisoning, follows clearly from the above. Details of the experiments, which were made on anesthetized dogs, are given. The apparent beneficial effects of intravenous sulphate injections observed clinically in some less severe cases is attributed by the authors to saline stimulation, as chemical combination could not have taken place in the time reported. They think that the method may have some value and deserves trial.

10. Walker gives a report of two personal observations of this comparatively infrequent condition, which he defines as a single non-inflammatory ulcer of the mucous membrane of the bladder, occasionally penetrating the entire wall, and due probably to local disturbance in, or complete blocking of, the terminal artery, or by an interference with the trophic nerves, and never produced by infection of the bladder, though in its second and third stages it becomes infected with the ordinary pyogenic organisms. Two types are recognized: the simple chronic form leading to cystitis, and the acute perforating ulcer. The early symptoms of the chronic type are those of irritation; increased frequency of micturition, scalding, pain, etc., and later, cystitis with aggravation of all the symptoms; finally, bladder paresis; and the patient, unless relieved by operation, succumbs to exhaustion or ascending infection. In case of the acute perforating ulcer there are no symptoms whatever until perforation occurs. In the earlier stages the cystoscope affords the only means of diagnosis, and shows a simple ulcer with clean-cut and slightly indurated edges surrounded by normal mucosa. It is distinguished from tuberculous ulcer by its clean, not undermined edges, the appearance of its base, the absence of surrounding tubercle and of tuberculosis elsewhere. Only in this early stage can it be distinguished from the ulceration of the various forms of cystitis, and Walker believes that many cases of diagnosed healed tuberculous cystitis were primarily this disease. The prognosis of simple ulcer in the early stage is good if proper treatment is given. In the second stage, when lime salts have been deposited and the ulcerations are exaggerated, curetting and drainage will generally effect a cure. In the third stage when there is great interstitial change, the prognosis is grave, and the acute perforating ulcer is usually fatal, practically always so when the peritoneum is involved. One very early recognized case is reported by Harrison, in which the patient was cured by operation. Silver nitrate irrigations, from 1 to 10,000 up to 1 to 5,000 every second day will usually cure in the first stage. In the second stage curetting and cauterization with prolonged supra-pubic drainage are generally necessary. In the third stage, drainage, irrigation and gradual bladder distention are all that can be done.

11. Senn describes the conditions of traumatic injury to the abdominal organs and their causes in detail, taking up each organ separately. A healthy spleen is seldom injured, the organ is usually already enlarged by some pathologic process or infection. Slight injury may cause only an absorbable hematoma or, if infected, an abscess and adhesions which may discharge through adjacent hollow organs. Such outcome, however, is rare; the tear is usually through the capsule, and rapid hemorrhage, calling for quick surgical intervention, occurs. The pancreas is seldom directly injured, and its rupture without implication of other organs ought to be one of the greatest rarities. The relation of slight injuries to pancreatic cysts is probably intimate. The liver is the most frequently injured abdominal organ and its rupture favored by pre-existing tuberculosis, syphilis, and amyloid degeneration. The gall bladder when distended is easily ruptured and gives rise to violent symptoms, especially if already in-

fected, septic peritonitis being inevitable. The stomach is evidently rarely damaged by direct force, but intestinal traumatisms are more frequent, and Senn goes at some length into the discussion of the mechanism and pathology of intestinal injuries. These may be contusions, or complete or incomplete ruptures. The former cause frequently no untoward symptoms. Incomplete ruptures involving one or more tunics, he thinks, are probably more frequent than has been supposed. Complete rupture always occurs opposite the mesenteric junction and leakage is largely prevented by the close packing of the abdominal contents and in minute tears, by the contractility of the intestinal tunics. Even in large complete ruptures there may be no visible escape of the contents. The kidneys are not properly abdominal organs, being extraperitoneal, but their injuries are comparatively frequent, especially in young males owing to the greater exposure. The mechanism is usually a bending or fracture of the lower ribs. Senn suggests that one cause of the infrequency of the accident in women may be the mode of dress, the corset protecting the organ, though the greater thickness of tissues and the wider spread of the iliac crests are also suggested as factors by Küster. Injuries of the bladder are also most frequent in males, and this is not altogether due to greater exposure, but is probably due partly to anatomic causes. Distention is one of the main factors; an empty bladder is rarely injured, except with fracture of the pelvis. The majority of bladder tears are intraperitoneal, and rapid progressive peritonitis results unless prevented by radical surgery. Virulent sepsis follows the extraperitoneal rupture.

Surgery, Gynecology and Obstetrics.

March, 1907.

1. *Kelly, H. A. *Surgical Treatment of Tuberculosis of the Kidney.*
2. Byford, H. T. *Vaginal Section as an Operation of Choice.*
3. Noble, C. P. *Tuberculosis of the Kidney.*
4. Bovée, J. W. *Hysterectomy and Removal of the Body of the Uterus.*
5. Logan, J. C. *Comminuted Fracture of Both Ends of the Radius.*
6. Sharpe, N. W. *Foreign Bodies within the Vagina.*
7. Sheldon, J. G. *Occlusion of the Femoral Vein.*
8. *Bürger, L., and Churchman, J. W. *The Cœliac and Mesenteric Plexuses and their Role in Abdominal Shock.*
9. Long, J. W. *Surgery of Typhoid Perforation.*
10. *Reynolds, E. *Primary Operations for Obstetrical Debility*
11. Sellig, M. G. *Reticulum in Small Round Cell and Lympho-Sarcoma.*
12. *Meyer, W. *Akanthosis Nigricans.*
13. Moran, J. F. *A Study of Vaginal Cæsarean Section.*
14. *Theilhauber, A. *Symptoms of Versions and Flexions of the Uterus.*

1. Kelly bases his discussion of the surgical treatment of tuberculosis of the kidney on 57 nephrectomies with 4 deaths, giving a primary mortality of 7%. He makes the following points: (1) Tuberculosis of the kidney, not including general miliary tuberculosis, is always unilateral at the start.. (2) It is practically always hematogenous in its origin. (3) Primary tuberculosis of the bladder is rare. (4) Although a bladder tuberculosis cannot heal while there is a tubercular kidney above, it does respond to suitable treatment after a nephrectomy. (5) Nephrectomy is the operation of choice, and the proper time to do it is as soon as possible after the diagnosis has been made. (6) Involvement of the bladder is not a contra-indication to nephrectomy, nor is tuberculosis elsewhere in the body unless extremely active. As regards concomitant involvement of the other kidney, Kelly says that where the worst kidney is not secreting at all or very little, its removal seems to benefit the sounder one and to help the general condition remarkably, though only temporarily. Hyaline casts and albumin in the urine from the second kidney are no contra-indication to nephrectomy. Cases where the ureter can be removed respond more quickly to bladder treatment than do those where it is allowed to remain.

8. In a series of animal experimentations the authors were unable to produce a condition of shock by section or electrical stimulation of the mesenteric and celiac ganglia. In the presence of a peritonitis due to moderate doses of turpentine, however, stimulation of the ganglia was regularly followed by marked evidences of collapse and death, either during the experiment or shortly afterward.

10. Reynolds believes that when pregnancy occurs in a neurasthenic woman with little nervous endurance or capacity for bearing pain, with poor muscles, heart muscle and lung capacity, and with ill-trained and usually deficient eliminative system, her habits and general condition should be most carefully regulated during this period. When such an obstetrically weak woman has steadily retrograded during pregnancy the inevitable fatigues of natural labor are more than the disadvantages of operative delivery. He therefore advises that at the calculated date of term or with the advent of the first pains of labor, such cases should be carefully prepared, fully etherized, and either instrumental delivery or Cæsarean section carried out.

12. Meyer presents a valuable colored plate of the skin condition known as akanthosis nigricans which frequently accompanies intra-abdominal carcinoma.

14. Theilhauber concludes a rather scholastic address on versions and flexions of the uterus with the following statement: "Every position of the uterus within the true pelvis is normal: abnormal is the position of the uterus outside of the pelvis — the prolapse of the uterus."

The Lancet.

March 16, 1907.

1. Buzzard, E. F. *Certain Acute Infective or Toxic Conditions of the Nervous System.*
2. Walker, J. W. T. *The Renal Function in its Relation to Surgery.*
3. Beevor, C. E. *The Diagnosis and Localization of Cerebral Tumors.*
4. Urquhart, A. R. *Insanity with Special Reference to Prognosis.*
5. *Sutherland, G. A. *The Medical Treatment of Congenital Pyloric Stenosis.*
6. *Weber, F. P. *On Tertiary Syphilitic Fever and the Visceral and Other Changes Connected with It.*
7. Morton, R. *A Radiographic Survey of 170 Cases Clinically Diagnosed as Colles's Fracture.*
8. Ibotson, E. C. B. *Note on the Use of Aceto-Salicylic Acid in Rheumatic Endo-Pericarditis.*
9. Campbell, H. *The Role of the Blood Plasma in Disease.*

5. Sutherland reports three cases of congenital pyloric stenosis and comments on the medical treatment. He believes that as knowledge and experience of this disease and its medical treatment increase, there will be fewer and fewer cases in which surgical intervention is called for. The object of medical treatment is to remove and prevent any source of irritation in the stomach which may cause spasm, and to restore the function of relaxation of the pylorus, which has been in abeyance owing to the more powerful action of the constrictor muscular fibers. He discusses the proper food in these cases. The stomach should be washed out once a day and the residue carefully studied. Drugs are of no avail.

6. Weber discusses tertiary syphilitic fever, its treatment and diagnosis. It is often mistaken for tuberculosis and not until some bone lesion or other unmistakable evidence of syphilis develops is its true nature made clear. Tuberculin is of little value in distinguishing these cases and may be dangerous. There may be enlargement of the liver and spleen which will make the condition simulate other diseases.

British Medical Journal.

March 16, 1907.

1. Oliver, T. *Thoracic Aneurysm.*
2. Rankin, G. *Aortic Disease.*
3. *Groves, E. W. H. *The Surgical Aspects of Hemophilia.*
4. *Mann, J. D. *Cor Triloculare Biatriatum.*

5. Brunton, L. *On the Use of Calcium Salts as Cardiac Tonics in Pneumonia and Heart Disease.*
6. Renton, J. C. *Delayed Chloroform Poisoning.*
7. Bernstein, J. *Chronic Peritonitis Causing Elephantiasis.*
8. Fordyce, A. D. *The Relation of Diet to Thyroid Activity.*
9. Heron, D. *Note on Class Incidence of Cancer.*
10. Savage, G. H. *Insanity, Its Causes and Increase.*

3. Groves discusses some cases of hemophilia with a consideration of the evidence of this disease in other members of the family, and takes up the surgical aspects. These consist of arthritis of the elbow and knee due to hemorrhage into the joint with subsequent organization of the blood, and Volkmann's contracture of the muscles of the palm and of the forearm. This results in a claw-hand and actual shortening of the muscles of the forearm. The atrophy of the muscles is in these cases probably caused by hemorrhage into the muscle sheath, with later organization.

4. Mann describes an interesting case of a three-chambered heart. He discusses the question of congenital cyanosis and its relation to some cases of polycythemia with enlargement of the spleen. He concludes that any condition giving rise to prolonged cyanosis tends to produce polycythemia.

Deutsche Medizinische Wochenschrift. No. 10.
March 7, 1907.

1. Hoffa. *The Treatment of Tuberculous Coxitis.*
2. Pels-Leusden. *Madelung's Deformity of the Hand.*
3. Jellinek, S. *Pathology, Treatment and Prophylaxis of Electrical Shock.*
4. *Eber. *Two Cases of Infection of Cattle with Human Tuberculous Material.*
5. *Weber. *Remarks on the Foregoing Article of Professor Eber.*
6. *Loeb, L., and Fleischer, M. S. *The Influence of Iodine Preparations on the Arteriosclerosis Produced by Injections of Adrenalin.*
7. Barth, A. *Diplakusis.*

4. Eber reports two very interesting experiments from the veterinary institute of Leipzig, whereby tubercular material from two adult cases of pulmonary tuberculosis, after passage through guinea pigs, was successfully innoculated into calves, causing typical bovine tuberculosis in one case, and in the other a bovine and acute miliary tuberculosis of lungs, liver and spleen. These experiments, Eber thinks, disprove the positive statements of the Koch school, and especially the recent conclusions of Professor Weber, reported in No. 49 of this Journal (abstracted Jan. 3, 1907), in which he reaffirms the duality of the two varieties of the tubercle bacillus.

5. Weber briefly refutes the conclusions of the foregoing article, that bovine and human tubercle bacilli have a single etiological cause. He criticises Eber's experiments because no effort was made to determine whether, in the two cases of phthisis, there was not present a double infection with the bovine bacillus, and because when such large amounts of the material were used, a bovine infection might easily have taken place.

6. Loeb and Fleischer have carried on some investigations on rabbits, first producing an arteriosclerosis by means of injections of adrenalin, and then determining the action of various iodine preparations. They conclude that iodine preparations have no beneficial effect on arteriosclerosis thus produced, and when large doses of iodine were given the adrenalin seemed to produce greater effects. Potassium sulphocyanide, on the other hand, seemed to have a preventive effect on the adrenalin and to limit the arteriosclerosis.

Münchener Medizinische Wochenschrift, No. 9.
Feb. 26, 1907.

1. *Hochhaus, H. *Abortive Heart Beats.*
2. *Volhard, F. *The Examination of Pancreatic Juice in Man, and a Method for the Quantitative Estimation of Trypsin.*
3. *Lewinski, J. *A Comparison of Sahli's Desmoid Reaction and A. Schmidt's Connective Tissue Test.*
4. *Mulzer, P. *Thrombosis in the Blood Vessels of Internal Organs after Ether and Chloroform Narcosis.*
5. Vohsen, K. *Passive Congestion and Suction Therapy Applied to the Ear and Upper Air-Passages.*
6. Muck, O. *The Suction Treatment of Otitis Media.*
7. Kreuter. *Experiences with Scopolamin-Morphin-Chloroform Narcosis.*
8. Peters. *The Sedimentation of Sputum by the Hydrogen Peroxide Method.*
9. Lengfellner, K. *Flat-foot Plates.*
10. Hofmann, A. *A New Extension Apparatus.*
11. Heine, O. *Celluloid Wire Bandages.*
12. Boas, J. *Nervous Eructations.*
13. Kolb, K. *The Collective Inquiry of the Bavarian Cancer Committee for the Year 1905.* (Concluded.)

1. "Abortive" (frustrane) cardiac contractions are those that give rise to no palpable pulse in radial or carotid. A slight pulse wave may be visible, however, in a sphygmographic tracing. The apex beat is often increased in force, in striking contrast to the absence of pulse in the peripheral arteries, and the first sound may be very sharp, like that in mitral stenosis. The condition is regarded by many writers as identical with extra systole, where the extra contraction occurs at too short an interval after the normal systole. Hochhaus cannot agree to this, for in some cases the normal interval is met with after the abortive contraction. The cause, as he believes, lies in a qualitative change in the muscle contraction, and probably also in an abnormal point of origin, usually the ventricle itself, instead of the normal place, the point of entrance of the veins into the auricles. It seems probable that abortive contractions may also arise directly from nervous influences. The treatment is that of the underlying condition, which may be either cardiac neurosis or organic heart disease.

2. Volhard publishes a method to obtain pancreatic juice for clinical examination, based on Boldireff's observation that pancreatic juice and bile pass into the stomach when the latter contains much fat. Two hundred cubic centimeters of olive oil are administred fasting, and the gastric contents are expressed one half hour later. By this method Volhard obtained pancreatic secretion in 85% of normal persons. In a case of pancreatic diabetes with fat stools he was able to demonstrate the absence of pancreatic secretion by this method. At autopsy, the parenchyma of the pancreas was almost totally destroyed and the ducts stopped with calculi. The fat-splitting ferment found in the stomach contents in this case must therefore have come from the stomach itself, and not from the pancreas as has been supposed by some. He gives the details of a test for the presence of trypsin which may be used also quantitatively. It rests on the fact that the compound formed by HCl and casein is precipitated by sodium sulphate, while the compound of HCl with caseoses is not precipitated.

3. Schmidt's connective tissue test consists in the search for macroscopic bits of connective tissue in the feces after the administration of the Schmidt test diet. Normally the connective tissue contained in the meat should be digested in the stomach, and the appearance of undigested fibers in the stools shows a deficiency of this function. Sahli's desmoid reaction also depends upon the digestion of connective tissue in the stomach; a small rubber bag is filled with methylene blue and tied up with catgut; if the secretory and motor functions of the stomach are normal the catgut is digested, and the methylene blue will appear in the urine within a certain time. Lewinski made a comparative test of the two reactions and found that in one half of his cases they did not agree. He attributes this to changes in the catgut brought about in the process of manufacture. He was able to confirm Saito's statement that catgut may be digested by pancreatic and intestinal secretions. For these reasons, he considers the Sahli test as of little value.

4. Mulzer reports interesting experimental work on the effects of ether and chloroform narcosis on rabbits. He found in animals which were subjected to long periods of narcosis thrombi in the small arteries of the lungs, and to less extent in the liver and kidney. He proved that these changes took place during life, by finding them in tissue excised before the death of the animal.

Berliner Klinische Wochenschrift, No. 7.
Feb. 18, 1907.

1. Tavel. *Artificial Thrombosis of Varicose Veins.*
2. Karewski, F. *On Subcutaneous Injury to the Pancreas and Its Treatment.*
3. *Weber and Krause, M. *The Treatment of Experimental Trypanosome Infections with Dyes.*
4. Maas, O. *The Prognosis of Multiple Sclerosis.*
5. *Edens. *Primary and Secondary Tuberculosis in Man.* (Concluded.)
6. Rülf, J. *The Cancer Problem.* (Concluded.)

3. Weber and Krause experimented with various aniline dyes as to their effect on the trypanosoma Brucei. They found fuchsin to have the most marked action on this organism, especially as a prophylactic. Mice and rats receiving simultaneous injections of fuchsin and trypanosomes did not sicken, and their blood remained free from the organisms, while the controls all died. If the injections were made later, several days after infection, the effect was only temporary, for after a few weeks the trypanosomes could be found again in the blood, and the animals died. It is interesting to note that aniline dyes which have a marked destructive effect on one kind of trypanosome may have very little on another; for instance, trypan-red, which is very effective against the trypanosome of *mal de Cederas*, was found to have little effect on the trypanosoma Brucei.

5. Edens reports 9 cases of primary tuberculosis of the intestines, under which he includes also tuberculosis of the mesenteric glands. All ages were represented from infancy to old age. It is usually stated that the reason why intestinal tuberculosis is usually localized in the mesenteric glands in children, but in the intestinal mucous membrane in adults, is because the lymph vessels are broader in children. Edens does not believe this, but thinks that the true reason is that in the case of children it is a primary infection, while in adults the patient has been previously infected with tuberculosis. He believes in Behring's statement that patients who have never had tuberculosis before will acquire on infection a glandular tuberculosis, but if they have been previously infected and have become hypersensitive to tuberculin, they tend to have tuberculous disease at the point of entry of the bacilli. This theory would explain the frequency of scrofula and tuberculosis of the mesenteric glands in children, and the preponderance of lesions of the lungs and intestinal mucous membrane in adults. He gives the protocols of a number of autopsies which may be taken as bearing out his views.

No. 8. Feb. 25, 1907.

1. Hirschberg, J. *The Use of Electro-magnets in Ophthalmology.*
2. *Orth, J. *On the Statistics of Primary Tuberculosis of the Intestine.*
3. *Joachim, G. *Registration of the Contractions of the Left Auricle in a Case of Adams-Stokes Disease.*
4. Bang, I. *A New Method for the Estimation of Sugar in the Urine.*
5. Mühlmann, M. *Observations on the Granules of Leucocytes and on Hemoconia (Blood-dust).*
6. Lyritzas. *The Estimation of Hypermetropia without Skyoscopy.*

2. Orth's paper is to correct a mistake in a recent article by Edens, who stated that the statistics from Orth's institute showed a percentage of 23% primary tuberculosis of the intestine out of 44 tuberculous children. This figure according to Orth should be reduced to 10%.

3. Joachim in a typical case of Adams-Stokes disease obtained a tracing of the contractions of the left auricle by the use of an apparatus introduced into the esophagus (Minkowski's method). By comparison of this with tracings from the jugular vein he proved that both the auricles contracted at the same time in this case, and therefore excluded the possibility of hemisystole, *i.e.*, a different rate of contraction of the two sides of the heart. The esophageal method causes too much distress to the patient to be of general application, but it offers the only possibility of obtaining tracings from the left auricle.

Therapie der Gegenwart.
March, 1907.

1. *Senator, H. *The Treatment of Arteriosclerosis.*
2. Janowski, W. *Intercostal Neuralgia.* (Continued article.)
3. *Clemm, W. N. *Resinous Wine.*
4. *Löbel. *The Effect of Yoghurt on the Intestinal Flora.*
5. Wohrizek, R. *Therapeutic Notes on Pediatrics.*
6. Fellner, O. O. *Psychosis and Pregnancy.*
7. Berg, G. *Remarks on Erb's Article on the Statistics of Gonorrhea.*

1. In the treatment of arteriosclerosis, Senator lays much emphasis on the diet, which should consist chiefly of milk, vegetables and fat. Animal proteids and extractives are to be avoided, especially red meat. The reason for this, according to Senator, is that meat increases intestinal putrefaction and therefore the danger of absorption of toxic material. The vegetable diet has yet another advantage, for it decreases the viscosity of the blood, and therefore the work of the heart and arteries. Potassium iodide has the same effect, and is best given as iodipin or sajodin; it can be advantageously combined with one of the nitrites. Hydrotherapy, massage and gymnastics may be of benefit, but must be used with caution owing to the danger of overstraining the heart. Various preparations have lately been put on the market under the name of antisclerosin, regenerol, etc., containing various mineral salts in the proportions in which they occur in normal blood serum. The use of such preparations appears to have some justification, for it has been shown that in arteriosclerosis the salts in the blood are diminished.

3. Clemm praises the action of the resinous wine used by the Greeks as a table wine. It has an excellent effect on the appetite and owing to the turpentine it contains, it possesses all the numerous actions of that drug.

4. The bacteria of the intestine consist chiefly of two varieties, the colon bacillus and the lactic acid bacillus; the latter is of great physiological importance but never pathogenic. The colon bacillus on the other hand is often harmful to man, and is apparently of little use to the economy. Yoghurt, a form of sour milk used in Turkey, has the effect of greatly diminishing the numbers of colon bacilli in the intestine. This is due to the fact that it is prepared from a pure culture of lactic acid bacilli and does not contain butyric and acetic acids, which are uniformly present in common sour milk. Yoghurt is indicated, therefore, in all intestinal conditions in which the colon bacillus may be supposed to be instrumental, and especially in intestinal indigestion and catarrh. It may be given in tablet form.

Experimental Purpura. Heyrovsky (*Wiener klin. Wochenschr.*, Feb. 28, 1907) reports the production of experimental purpura by means of the injection of filtrates of cultures of the pneumococcus and of streptococcus mucosus. These organisms grow profusely in glucose bouillon, but die out very rapidly so that after twenty-four hours they can no longer be cultivated. Mice injected with the filtrate of such a culture did not usually die, but showed a purpuric eruption in various parts of the body and hemorrhages in various internal organs. Cultures and microscopic sections showed the absence of bacteria in these lesions.

Salt-free Diet in Chronic Parenchymatous Nephritis. Peabody (*Med. Rec.*, March 9, 1907) urges a more general trial of the limitation of salt in the diet of nephritics. The theory upon which the treatment is based is that in parenchymatous nephritis the kidney becomes less permeable to sodium chloride, which therefore accumulates in the body. Increase of salt in the tissues, according to the laws of physiology, necessitates an increase of water also in the tissues to prevent an increased percentage of NaCl in the body fluids. Thus edema and anasarca result. The results of treatment have given this theory strong confirmation. Peabody and his colleagues have tried the salt-free diet in cases of anasarca from various causes. In anasarca due to heart insufficiency or to interstitial nephritis the limitation of salt had little effect. In parachymatous nephritis, however, their results were striking, the edema diminishing rapidly as the sodium chloride was reduced in the diet, and returning as it was increased.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MARCH 30, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,631	472	Quincy	5	—
Chicago	744	237	Waltham	6	—
Philadelphia . .	—	—	Gloucester	—	—
St. Louis	—	—	Pittsfield	6	1
Baltimore	257	56	Brookline	7	1
Cleveland	—	—	North Adams . .	7	1
Buffalo	—	—	Chicopee	13	2
Pittsburg	—	—	Northampton . .	8	1
Cincinnati	—	—	Medford	6	1
Milwaukee	—	—	Beverly	6	—
Washington . . .	—	—	Hyde Park . . .	2	1
Providence . . .	69	17	Newburyport . .	—	—
Boston	234	57	Leominster . . .	5	3
Worcester	46	10	Melrose	6	2
Fall River	45	15	Woburn	—	—
Cambridge	23	2	Marlborough . .	4	1
Lowell	37	8	Westfield	3	1
Lynn	25	6	Peabody	—	—
New Bedford . .	32	10.	Revere	6	1
Springfield	29	8	Clinton	2	1
Lawrence	32	4	Attleboro	4	2
Somerville	23	5	Adams	—	—
Holyoke	32	12	Gardner	—	—
Brockton	9	4	Milford	—	—
Malden	9	2	Weymouth . . .	2	0
Salem	17	4	Framingham . .	5	—
Chelsea	21	6	Watertown . . .	5	3
Haverhill	10	4	Plymouth	—	—
Newton	8	3	Southbridge . . .	1	—
Fitchburg . . .	8	4	Wakefield	—	—
Taunton	12	2	Webster	—	—
Everett	10	3			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED MARCH 27, 1907.

PETTUS, W. J., assistant surgeon-general. Granted leave of absence for four days from March 27, 1907. March 27, 1907.

STONER, G. W., surgeon. Granted leave of absence for four days from March 18, 1907, under paragraph 189 of the Regulations.

BANKS, C. E., surgeon. Leave of absence granted for fourteen days from Feb. 21, 1907, revoked. March 26, 1907.

CARRINGTON, P. M., surgeon. Granted leave of absence for three days from March 23, 1907, under paragraph 189 of the Regulations.

LUMSDEN, L. L., passed assistant surgeon. Granted leave of absence for one month from March 18, 1907, on account of sickness, with permission to leave his station. March 21, 1907.

FOX, C., passed assistant surgeon. Granted leave of absence for one month from March 28, 1907. March 27, 1907.

COLLINS, G. L., assistant surgeon. Granted leave of absence for one day. March 22, 1907.

LONG, H. D., assistant surgeon. Relieved from temporary duty at the Government Hospital for the Insane, Washington, D. C., and directed to rejoin his station at Ellis Island, N. Y. March 22, 1907.

GUTHRIE, M. C., assistant surgeon. Relieved from temporary duty at the Government Hospital for the Insane, Washington, D. C., and directed to proceed to Ellis Island, N. Y. March 22, 1907.

PORTER, J. Y., sanitary inspector. Directed to proceed to Pensacola, Fla., for special temporary duty. March 22, 1907.

JACKSON, J. M., Jr., acting assistant surgeon. Granted leave of absence for eleven days from March 11, 1907. March 25, 1907.

STANTON, J. G., acting assistant surgeon. Granted leave of absence for three days from March 20, 1907. March 26, 1907.

SAFFORD, M. V., acting assistant surgeon. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station at Boston, Mass. March 22, 1907.

SMALL, E. M., acting assistant surgeon. Granted leave of absence for eight days beginning April 15, 1907. March 21, 1907

THURSTON, E. J., pharmacist. Relieved from duty at Gulf Quarantine Station and directed to proceed to Mobile Quarantine Station, reporting to the medical officer in command for duty. March 26, 1907.

LA GRANGE, J. V., pharmacist. Relieved from duty at Boston, Mass., and directed to proceed to Savannah, Ga., reporting to the medical officer in command for duty and assignment to quarters. March 26, 1907.

MCKAY, M., pharmacist. Relieved from duty at Savannah, Ga., and directed to proceed to Gulf Quarantine Station, reporting to the medical officer in command for duty and assignment to quarters. March 26, 1907.

HOLT, E. M., pharmacist. Relieved from duty at Wilmington, N. C., and directed to proceed to New Orleans, La., for duty at the New Orleans Quarantine Station. March 21, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., March 28, 1907, for the purpose of making physical examination of an alien. Detail for the Board: Assistant Surgeon H. G. Ebert, chairman; Acting Assistant Surgeon F. R. Underwood, recorder.

APPOINTMENTS.

DR. CHARLES A. PORTER has been promoted to the position of Surgeon to the Massachusetts General Hospital.

DR. FRED T. MURPHY has been appointed Surgeon to Out-Patients at the Massachusetts General Hospital.

LECTURE.

MEDICAL OFFICERS OF THE ORGANIZED MILITIA: THEIR DUTIES IN WAR.

MAJOR CHARLES LYNCH, surgeon, General Staff, United States Army, will give a lecture for the benefit of the medical officers of the Massachusetts Volunteer Militia on Wednesday, April 17, at 3 P.M., in the Board of Officers' room, South Armory, Irvington Street, Boston. His subject will be "Medical Officers of the Organized Militia: their Duties in War." Physicians who are interested in this work, although they may not be militia officers, are invited to attend the lecture.

SOCIETY NOTICE.

THE NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — This Society will hold its regular meeting at Hotel Nottingham, Huntington Ave., Thursday, April 18, 1907, at 7.30 P.M. Section of General Medicine. Dr. S. Justina Ermentrout, chairman. Papers: 1. Diabetes, Dr. Ermentrout; 2. Cutaneous Complications of Diabetes, Dr. Edith R. Meek; 3. Pathology and Blood Tests in Diabetes, Dr. Elizabeth Morse; 4. Pulmonary Complications in Diabetes, Dr. Margaret L. Noyes; 5. Eye Complications in Diabetes, Dr. Marguerite S. Cockett; 6. Urinalysis in Diabetes, Dr. Blanche A. Denig; Report of a Case of Splenectomy, with specimen, Dr. Mary A. Smith.

BLANCHE A. DENIG, M.D., *Secretary*.

RECENT DEATHS.

AMOS B. PAUN, M.D., M.M.S.S., of Middleboro, Mass., died at Onset, April 6, at the age of sixty years. After graduating in medicine, he practised first at East Taunton, and later at North Middleboro.

DR. ROBERT FARRIES, of New York, died on March 31. He was graduated from the Long Island College Hospital, Brooklyn, in 1865. For a number of years he maintained a large practice in the Yorkville district of the city, but for some time past had been obliged to practically retire on account of failing health.

DR. JOHN MUNRO CAMPBELL, of Greenpoint, borough of Brooklyn, N. Y., died on April 2, at the age of seventy years. He was a native of Scotland, and was graduated from the medical department of McGill University, Montreal, in 1869. A great part of his life was spent in Canada.

DR. GEORGE R. SHEPHERD died, April 6, in Hartford, Conn., at the age of sixty-five years. He was graduated from the Yale Medical School in 1864 and remained associated with the school as a lecturer. At the time of his death he was medical director of the Connecticut Mutual Life Insurance Company, on the advisory staff of the *Yale Medical Journal*, and a member of various medical societies.

BOOKS AND PAMPHLETS RECEIVED.

Official Register of Harvard University. Reports of the President and the Treasurer of Harvard College. 1905–6.

Trypsin in Cancer — A Preliminary Statement. By William Seaman Bainbridge, M.S., M.D. Reprint

Original Articles.

DISEASES OF THE NASO-PHARYNX IN INFANCY.*

BY JOHN LOVETT MORSE, A.M., M.D.,

Assistant Professor of Pediatrics, Harvard Medical School; Assistant Physician at the Children's Hospital and at the Infants' Hospital; Visiting Physician at the Floating Hospital, Boston.

My experience leads me to believe that the importance of the diseases of the naso-pharynx in infancy and the frequency of their occurrence are not appreciated by the general practitioner, and that they are often either entirely overlooked or insufficiently and improperly treated. It would be impossible for me, even if I desired to do so, to take up all of these diseases, even cursorily, in the time at my disposal; consequently I shall speak only of those with which I am most familiar and which seem to me to be the most important. I shall consider them, moreover, entirely from the point of view of the pediatrician and general practitioner, which is the only way in which I am competent to consider them, and not from that of the nose, throat and ear specialists.

Before speaking of the diseases of the naso-pharynx in infancy, it will be well to run over the anatomy of this region at this age.

Nose. — The nose is relatively small and the respiratory portion very small. The height of the posterior nares at birth is from 6 to 7 mm., and the breadth between the pterygoid processes at the hard palate 9 mm. The nasal cavity consists of an upper olfactory region occupying the ethmoidal portion of the cavity, and a lower respiratory region occupying the maxillary part. The nasal cavity at birth is relatively long and shallow and the respiratory portion is very narrow. The whole opening of the posterior nares on either side is just large enough to admit the end of a medium-sized male catheter. The nasal cavity begins to increase in height directly after birth, increasing pretty rapidly during the first six months, but very slowly during the rest of infancy. The size of the posterior opening doubles in six months, after which it remains stationary until the end of the second year. At the end of the seventh month the nasal cavity begins to approach the adult shape, though it is still relatively broad.

Vomer. — The posterior edge of the vomer is nearly horizontal at birth and remains very oblique throughout infancy.

Naso-Pharynx. — The naso-pharynx is very low at birth, but is relatively long from before backward, the distance from the hard palate to the soft parts of the back of the pharynx being nearly as great at birth as in the adult. The naso-pharynx at birth is, therefore, merely a narrow passage running obliquely backward and downward from the constricted opening of the posterior nares. The soft palate is placed more horizontally than in the adult. The height of the naso-pharynx increases in the same way as that of the posterior nares.

Eustachian tubes. — The Eustachian tube is nearly horizontal at birth, but slants a little during the latter part of infancy. The opening at birth is at the level of the hard palate. It remains at this level for nine months, but later becomes distinctly higher. The tube is not only relatively, but absolutely, wider at its narrowest point at birth and during infancy than in the adult. (This may explain the ease with which catarrhal processes travel to the middle ear in infancy.) The prominence at the back of the pharyngeal opening of the tube is but slightly developed in infancy, and the fossa of Rosenmüller is therefore almost imperceptible. (Catheterization of the tube at this age is, therefore, practically impossible.)

Ears. — At birth and during infancy the external auditory canal runs inward and downward, and the membrana tympani is almost horizontal. In introducing the aural speculum, therefore, the ear must be drawn forward and downward instead of upward and backward, or the canal will be bent on itself. The petrosquamosal suture is open at birth, allowing, therefore, a close connection between the blood vessels of the brain and those of the middle ear. It is said to close at one year, although this is somewhat doubtful. The mastoid antrum is present at birth, but the mastoid cells very seldom develop during infancy. The maxillary sinus is well developed at birth. The frontal sinuses are not developed either at birth or during infancy.

Pharynx. — The connective tissue between the pharynx and the spine is very lax. The naso-pharynx is extremely vascular, and there is an abundant supply of lymphatic glands and vessels, especially in the posterior wall. The retro-pharyngeal lymph nodes form a chain on both sides of the median line of the pharynx, extending from its upper portion to its junction with the esophagus. They lie between the prevertebral aponeurosis and the muscles of the pharynx.

The lymphoid ring is well developed at birth and often more so during infancy.

Acute rhinitis. — The first disease of which I shall speak is acute rhinitis, or the common "cold in the head." This, while merely a disagreeable incident in childhood and adult life, is often a serious and sometimes a fatal malady in infancy, especially in the early months. Owing to the anatomical peculiarities already mentioned, a comparatively slight swelling of the nasal mucous membrane completely closes the nose and entirely prevents nasal respiration. This, of course, necessitates oral respiration which the young infant performs very imperfectly, especially when asleep. In fact, sleep is so broken in many instances that the baby gets little, if any rest, and on this account loses strength very rapidly. The occlusion of the nares also prevents proper sucking and interferes a great deal with swallowing, even when the food is given with a spoon or dropper. Consequently, the infant takes but little food or refuses it entirely, even if very hungry. The temperature in these cases is always elevated, usually irregular and often very high. Loss of weight and strength is very rapid, as the result of the insufficient supply of fresh air, lack of sleep and deprivation of food, and in feeble babies may be so great as to cause death.

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* Read before the Boston Society for Medical Improvement, March 4, 1907.

The following case is an example of a moderately severe case of acute rhinitis in an infant of three months that was in poor general condition as the result of an acute attack of gastric indigestion. She began to snuffle during the night of Jan. 23 and slept poorly. Her temperature was 101° F. on the morning of Jan. 24, but rose to 103.4° F. during the day, the pulse going to 160 and the respiration to 70. Nasal respiration was completely obstructed and she lay with her mouth open and her tongue out. She was able to swallow, but took almost no food and slept scarcely at all. There was no improvement during the night of the 24th. The next morning the temperature was still high, while the pulse had risen to 180 and the respiration to 80. She was very weak and slightly cyanotic. In short, her condition was such as to justify great anxiety. Fortunately, improvement began at this time and continued to recovery.

The treatment of acute rhinitis may be divided into local and general, the latter being merely supportive. Internal medication in my experience is of little use, although I think that tincture of euphrasia, in doses of two or three drops every hour, is of some benefit in the early stage of watery secretion. Liquid albolene or albolene combined with menthol and camphor in the proportion of one grain of each to the ounce is the most useful local application. It is best introduced with a dropper, with the infant on its back. In more severe cases a 1–5000 solution of adrenalin chloride introduced in the same way helps a good deal. It is rarely, if ever, justifiable to use cocaine at this age. In the severest cases it may be necessary to introduce a small rubber catheter into each nostril in order to keep the passage open and to enable the infant to breathe. I am sure that in one of my cases this procedure saved the baby's life.

The general treatment consists of fresh air, food and stimulation. Pure fresh air not only does not do a rhinitis any harm, but does it much good, the general superstition to the contrary. If the infant cannot suck it must be fed with a spoon or dropper. If it does not take enough in this way it must be fed through a stomach tube. Strychnia and brandy are the best stimulants.

A complicating inflammation of the middle ear is very common in acute rhinitis because of the anatomical peculiarities already mentioned. Suppurative inflammation of the maxillary antrum almost never develops. It is impossible to tell, however, how common milder grades of inflammation may be. The frontal sinuses, not being developed, are, of course, not involved.

Acute rhinitis is, in my opinion, a contagious disease, communicable from one person to another. Since it may be such a serious and dangerous disease in infancy, babies should be kept away from adults and older children suffering from "colds" almost as carefully as from those with the eruptive diseases. Fresh air, either in the house or out of doors, does not cause rhinitis, but is, next to the avoidance of exposure to other cases, the best preventive. A draught is hardly more dangerous. Babies that get plenty of fresh air both day and night and who are accustomed to go out in all sorts of weather have fewer "colds" than any others and bear them better when they do have them.

Diphtheritic rhinitis (membranous rhinitis). — Diphtheritic rhinitis is much more common in infancy than is usually supposed. It is generally of a very mild type and is usually not suspected until other children come down with pharyngeal or laryngeal diphtheria, and often not even then. It is, perhaps, the most common source of the epidemics of diphtheria which develop in hospitals and institutions for infants and children. My experience at the Infants' Hospital has taught me to suspect every nasal discharge in an infant, especially if it is irritating. In spite of the greatest care in the admission of cases we found it impossible to avoid epidemics of diphtheria in the hospital from this cause until routine immunization was adopted. The babies now receive 500 units of antitoxin on admission and every three weeks afterward. Since this practice was begun six years ago but one case of pharyngeal diphtheria has developed in the patients in the hospital although many unimmunized nurses and nursery maids have come down with it and many cases of diphtheria have been discovered.

The symptoms of nasal diphtheria in infancy are, as a rule, very mild. There is usually a little snuffles with a slight nasal discharge and a little nasal obstruction. There is no glandular enlargement and the constitutional symptoms are wanting or very mild. The nasal discharge, however, is often rather characteristic, being thin, watery and acrid, but, contrary to the usual statements, rarely bloody. It frequently irritates the upper lip, causing crusts about the nares and on the lip. A thin, watery, nasal discharge which irritates the lip should in an infant always be regarded with great suspicion. Such discharges should always be examined bacteriologically. The amount of the discharge varies markedly in different cases. There is almost never any membrane visible unless the speculum is used, and even then it may not be seen. The diphtheritic process practically never spreads backward and downward to the pharynx and larynx. The diagnosis must depend, therefore, in most cases on the bacteriological examination of the nasal discharge.

These cases must be isolated in the same way as cases of pharyngeal and laryngeal diphtheria. They should be given antitoxin freely. Alkaline washes introduced with a dropper, or in more severe cases with a syringe, are of some use. Strong antiseptic solutions should not be used.

In some cases, however, even in infancy, nasal diphtheria takes a more severe form. Even in these cases, however, the symptoms are due largely to nasal obstruction and not to toxemia, and resemble very closely those of acute rhinitis. One of my cases, in an infant of three months, died in four days, apparently solely as the result of nasal obstruction and not of toxemia. No membrane was seen either by myself or by a throat specialist on several examinations. The true condition was not suspected and no bacteriological examination was made. The diagnosis of nasal diphtheria seems justified, however, from the fact that two or three days later the mother developed a very severe case of pharyngeal diphtheria.

Adenoids. — While the frequency and importance of adenoids in childhood is well recognized and their symptomatology pretty generally understood, this is not the case in regard to adenoids in infancy. They are supposed to be uncommon and of little importance, and their symptoms are very commonly overlooked or misinterpreted. They are, however, very common in infancy, and of great importance. Their symptomatology, while in many ways different from that in childhood, is, nevertheless, fairly characteristic. The evil results which they produce are, moreover, even greater in infancy than in childhood. There is, unfortunately, a general feeling in the profession, even among the throat specialists, that adenoids should not be removed in infancy, because they are liable to recur later. For this entirely insufficient reason the unfortunate babies are allowed to suffer, to have their development seriously or irreparably interfered with, and even to die. The fact is that in the majority of cases the adenoids do not recur, but even if they do and a second operation is required, that is no reason why the poor babies should be subjected during the interval to all the evils which adenoids produce when they might be avoided by an early operation. The removal of adenoids in infancy is not a difficult operation and is practically devoid of danger. Certainly there is no danger connected with the operation which should be considered for an instant in comparison with the evil and even dangerous results which adenoids may and often do produce at this age.

On account of the small size of the superior pharynx and post-nasal opening, even a small amount of adenoids may cause marked obstruction to nasal respiration. The seriousness of any interference with nasal respiration in the infant has already been noted in speaking of acute rhinitis. The constant deprivation of a sufficient supply of oxygen produces a condition of malnutrition which no method of feeding or mode of life influences in any way. No improvement can take place until the adenoids are removed or nature partially relieves the obstruction by the growth of the parts. Rickets is especially prone to develop in these cases and considerable deformities of the chest are sometimes produced. These are unimportant, however, compared with the general disturbance of nutrition. Another very serious result of the nasal obstruction is the interference with sucking. It is such an effort to suck that these babies take only enough food to satisfy the acute pangs of hunger. Lack of food, therefore, also interferes with their nutrition and development. The difficulty in nasal respiration makes them restless at night and interrupts their sleep, which again disturbs their nutrition. It is surprising how quickly and markedly they will improve in general condition after the adenoids are removed.

The following case shows most strikingly how much adenoids may disturb the nutrition in infancy and how great the benefit may be from their removal. This baby began to have snuffles when he was about three months old and soon after to have a little difficulty in breathing, especially at night. He took his food fairly well, but ceased to gain when he was four and a half months old. He managed to sleep pretty well. His head began to sweat freely at four and a half months, and a week or two later the mother noticed that his head was "soft." About the same time he began to have frequent attacks of laryngismus stridulus, especially when taking his bottle. At five months he began to have convulsions. He was seen when six months old. He was then rather poorly developed and nourished. He was moderately pale and there were circles about his eyes. His mouth was open and but little air passed through the nose. There was marked craniotabes and a moderate rosary. The throat was normal to inspection, but adenoids were felt with the finger. These were removed a few days later. He began to improve almost immediately. He had no convulsions or attacks of laryngismus after the removal of the adenoids. He took his food better and soon began to gain in weight. Two months later he was in splendid condition, the head solid, the color good, the mouth shut and the breathing quiet.

Adenoids are one of the commonest, if not the most common, cause of chronic "snuffles" in infancy. They are also almost always present in those babies that are subject to frequent "colds in the head," and are of great etiological importance in this connection. They are usually overlooked, however, because the baby does not keep its mouth open, snore at night or have the typical facies of adenoids in later childhood, there being apparently a very general impression that there can be no adenoids, or at any rate no adenoids of importance, unless these symptoms are present. This is not so, of course; frequent colds and chronic snuffles being almost as suggestive and characteristic of adenoids in infancy as these more marked symptoms are in childhood. The treatment of these affections is most unsatisfactory, moreover, unless the underlying condition is recognized. When this is done and the adenoids removed, the "colds" and "snuffles" cease almost immediately. Operation is not always necessary, however, as mild cases often yield to local astringent and stimulating treatment. I have found the following mixture very useful:

R	Iodine,	gr. ¼ to gr. ½
	Camphor,	gr. 1
	Menthol,	gr. 1
	Benzoinol,	oz. 1

Five to ten drops of this mixture are put into the nose with a dropper every three or four hours. This, by the way, is the best method of making applications to the nose and naso-pharynx in infancy. Sprays are of little use at this age because of the fright and struggling which they induce. The drops are best put in with the baby lying on its back so that they may run through into the naso-pharynx. Although these cases are so common and the relief from proper treatment, especially from operation, is so striking, it hardly seems necessary to give illustrative cases, as the condition is easily recognized if it is only borne in mind.

Adenoids not only cause " snuffles " and " colds," but also very frequently an irritating cough without physical signs. This cough is especially troublesome at night. Here again, treatment, unless the real source of the trouble is recognized, is of no avail. Cough mixtures and throat sprays are useless. The cough can only be controlled by stupefying the infant with bromide or paregoric. Treatment of the adenoids or their removal, however, is almost immediately successful. The following case is an example:

A baby, five and a half months old, that had never gained very well and had taken her food poorly, began to have snuffles which were soon followed by a cough at night which kept her from sleeping. The throat and lungs showed nothing abnormal. Nasal respiration was fairly free and the discharge from the nose was insignificant. The adenoids were removed when she was seven months old. The cough ceased after twenty-four hours and never recurred. Improvement in her general condition also began at once and continued.

Adenoids are, either directly or through the colds which they induce, undoubtedly the most common cause of otitis media in infancy. Repeated attacks of otitis media are almost invariably due to adenoids, and the attacks continue to recur until the adenoids are removed. The symptomatology of otitis media in infancy will be referred to later.

Adenoids are also a very common cause of sleeplessness and restlessness at night in infancy, even when there are no marked symptoms, like mouth breathing, snuffles or cough. They should always be thought of when babies sleep poorly.

The development of adenoids opens the doors of the lymphatic ring of the pharynx still wider for the entrance of bacteria and their toxic products. They are, therefore, often accompanied by and are undoubtedly frequently the cause of enlargement of the cervical lymph nodes in infancy. These nodes are not infrequently tubercular. Tuberculosis of the middle ear may also be secondary to adenoids, whether they are or are not themselves tubercular. That tubercle bacilli may be present in and pass through adenoids at this age is shown by one of my cases in which, through a mistake in diagnosis, the adenoids were removed from an infant of five months during the early stage of tubercular meningitis, tubercle bacilli being found in the adenoid tissue. The danger of tubercular infection from adenoids is, therefore, a real one and furnishes another reason for their removal.

Pharyngitis. — There is another condition in infancy which I have seen very often and which I have found very difficult to treat satisfactorily, and about which I hesitate to speak because I have never heard any one else mention it, presumably because they have not thought it worth while. For lack of a better term, I am in the habit of calling it " acute pharyngitis." The pharynx and fauces are usually only moderately reddened, but considerably swollen and markedly edematous. The condition never goes on to abscess formation. It is usually associated with a slight nasal irritation and snuffles. Cough is very troublesome especially during sleep, which is usually much disturbed. Paroxysms of difficult breathing, at times amounting to orthopnea, sometimes occur at night. Sucking and deglutition are interfered with and but little food is taken. The larynx is never seriously involved, but a secondary bronchitis is not uncommon. The temperature is always elevated, usually moderately, sometimes considerably. The usual course is from a few days to a week, but it sometimes drags on for several weeks. Recovery is the rule, but death sometimes occurs, apparently from exhaustion. Treatment is unsatisfactory. The iodine mixture, already spoken of, in the nose is of some benefit. Glycerite of tannin applied locally with a swab has seemed to do more good than anything else. Drugs internally have proved useless. The chief reliance must be placed, however, on feeding, with the tube if necessary, and stimulation.

Retropharyngeal abscess. — The retropharyngeal lymph nodes drain the cavities of the cranium, pharynx, nose and middle ear. They are, therefore, liable to infection from any of these cavities. Infection results, as with other lymph nodes, in simple adenitis or suppuration. Several nodes are usually involved in simple adenitis, but suppuration rarely takes place in more than one. Suppurative inflammation is accompanied by a cellulitis of the surrounding tissues. Owing to the looseness of the connective tissue between the pharynx and the spine, large accumulations of pus are possible. Any of the pus-forming organisms may cause suppuration and the tubercle bacillus has been found in a few cases. Retropharyngeal adenitis always precedes retropharyngeal abscess. The symptoms of retropharyngeal adenitis are, however, not characteristic, being very similar to those of a pharyngitis. Inspection shows nothing definite, but the enlarged nodes can usually be easily felt by the finger. Adenitis usually results in resolution, but occasionally goes on to suppuration. Originating as it always does in a single laterally placed node, the abscess is situated to one side of the median line and is in the lateral wall rather than in the back of the pharynx. It may be high up or low down, according to the location of the node which is involved.

The first symptom of retropharyngeal abscess is usually unwillingness to take food or difficulty in swallowing. In the beginning this is probably due to pain, later to the mechanical obstruction of the tumor. Modification of the voice and difficulty with respiration next develop. These vary according to the location of the tumor. If the abscess is in the upper portion of the pharynx the cry is nasal and nasal respiration is chiefly disturbed. The mouth is kept open and the breathing is snoring and snuffling. If the abscess is low down the cry is laryngeal and the respiration is stridulous, like that of laryngeal spasm or stenosis. In these cases the respiratory murmur is diminished and many moist râles are heard. These may be due to a complicating bronchitis, but are usually the result of the interference with respiration. In the acute cases the head is held in a most characteristic position from the first, the neck being extended and the head turned to one side. In the subacute cases this may not appear for some time. Swelling of the lymph nodes at the angle of the jaw on the affected side soon develops and may become very marked. The temperature is usually high and irregular.

The following case in an infant of nineteen months, which developed under my observation, is fairly characteristic, although the swelling in the external lymph nodes appeared earlier than is usual. It was noted Nov. 10 that he was feverish, did not care to eat and kept putting his hands in his mouth as if it was sore. Careful physical examination, including inspection of the mouth and throat, showed nothing abnormal except slight enlargement of the lymph nodes about both sternomastoids. The temperature was 103° F., the pulse 160 and the respiration 56. The next day he held his head rather rigidly and cried if it was moved. The cervical lymph nodes were rather more swollen, especially on the left. The throat was still negative to inspection. The next day the head was held very rigidly and bent toward the left shoulder. The swelling of the lymph nodes was larger but the throat was negative both to inspection and palpation. The temperature ranged between 101° F. and 104° F. On the 13th he began to have a good deal of mucus in his throat, and digital examination showed a little indefinite soft swelling in the left side of the pharynx. The condition was otherwise unchanged. On Nov. 14 there was much difficulty in swallowing. The swelling of the cervical lymph nodes and the position of the neck remained unchanged. The swelling in the pharynx gradually increased but did not become distinctly elastic until the 18th, when it was opened and a teaspoonful of pus let out. The opening closed during the night and the swelling was much larger on the 19th. It was then opened very freely and two teaspoonfuls of pus let out. He slept all the next night and began to take more food almost immediately. The abscess continued to discharge for three or four days longer, and the swelling was entirely gone on Nov. 26.

This case was operated on as soon as enough pus had formed to show where to make the incision, and none of the severe symptoms of retropharyngeal abscess had time to develop. The following case, seen in consultation, in which the condition was unrecognized and untreated, illustrates the symptomatology of neglected cases:

Five weeks previously an enlarged lymph node was noticed in the right side of the neck of a nine months' old boy. This node gradually increased in size and others appeared. At the same time he began to take his food rather poorly, as if swallowing was difficult and painful. Finally, he began to have some little trouble in breathing. The difficulty in swallowing and in breathing had steadily increased, so that during the last forty-eight hours he had been unable to swallow at all. When he lay down he immediately choked up, so that he had to be held in a sitting position. At times the difficulty with respiration became so great, even when sitting up, that it was feared that he would suffocate. He had taken no food by the mouth for thirty-six hours. Rectal feeding had been attempted, but the enemata were not retained. He had lost some weight and much color. The temperature had been moderate. There had not been much cough. There was no cyanosis when he was quiet, but when he cried it was marked. He could not lie down at all, but was fairly comfortable sitting up. His mouth was wide open; the respiration, however, was not noisy. There was slight retraction of the epigastrium and supraclavicular spaces even when he was quiet. There was marked swelling of the lymph nodes on the right side of the neck, but no involvement of the surrounding tissues, fluctuation, redness or heat. The whole right side of the throat was filled up with a large red mass. The tonsil and soft palate were pushed well forward. Palpation showed that this mass reached high up into the naso-pharynx, filled up the whole right side of the pharynx and extended downward over the larynx, leaving merely a chink through which the air entered. The larynx itself was normal, as were the heart and lungs.

The abscess was opened by a long, deep incision, the finger being used as a guide. Nearly two tablespoonfuls of dirty green pus were obtained. Relief was almost immediate. He began to breathe at once with his mouth shut, lay down and went to sleep. A few hours later he began to take food. Recovery was rapid and complete.

Although the symptoms of retropharyngeal abscess are usually so characteristic, they are very frequently misinterpreted. If the obstruction is high up, they are most often mistaken for those of a simple pharyngitis or rhinitis, although diphtheritic paralysis is sometimes suspected. If the obstruction is low down, they are often ascribed to laryngitis, either catarrhal or diphtheritic. In others, in which the signs of bronchitis are marked the primary condition in the throat is entirely overlooked and the diagnosis of bronchitis or bronchopneumonia made.

The chief reason that a retropharyngeal abscess is so often overlooked is that it is not thought of, and hence is not even considered in the differential diagnosis. Another reason is that inspection of the throat is trusted and palpation omitted. Inspection, however, is often insufficient and may lead to grave errors in diagnosis. In the majority of cases the tumor is visible, but not infrequently, especially if low down, it cannot be made out. It can always be felt if present, although if it is situated low down the finger must be introduced very deeply. In no case in which the symptoms in any way suggest a retropharyngeal abscess should palpation of the pharynx be omitted. In fact, it should always be done in every case in which there are symptoms of respiratory obstruction and also in all cases in which the symptoms point to the respiratory tract, but in which the physical signs do not satisfactorily account for the symptoms. It causes the infant only temporary discomfort and may prevent very serious mistakes in diagnosis. The swelling is usually situated in the side of the pharynx, but may be at any level. It is either tense and elastic or fluctuating. The examination of the throat thould be made with a tongue depressor and not with a gag, as immediate death has in several instances followed the introduction of a gag. Death under these circumstances is probably due to some disturbances of the vagus from the pressure of the abscess.

A sudden attack of dyspnea may sometimes be the first symptom to call attention to the local condition in the throat. In feeble infants a small abscess may develop so insidiously as to cause neither general nor local symptoms.

The prognosis of retropharyngeal abscess depends largely on the treatment. The usual termination in untreated cases is in death. This may occur slowly as the result of progressive weakness or asphyxia, but more often suddenly from laryngeal spasm or some disturbance of the function of the pneumogastric nerve. The abscess seldom opens spontaneously. If it does, and the opening is into the pharynx, death may result from suffocation or from a consecutive inspiration pneumonia. The pus may burrow in various directions, sometimes opening externally, and occasionally into the middle ear or external auditory canal. In a few instances the carotid artery has been opened. The prognosis in cases which are properly treated, that is, by incision, is very different, however, the mortality in such cases being only about 5%.

The true condition is seldom recognized early enough to have cold applications externally do any good. It is much more reasonable to endeavor to hasten suppuration by the use of poultices and hot applications to the throat. Spontaneous evacuation should never be awaited. The abscess should be opened as soon as the evidences of suppuration are present. It does no harm to make an incision even before this happens. Incision through the mouth is much preferable to incision through the neck. The drainage from the internal incision is almost always satisfactory, and, if not, can be made so by another incision or by dilating the original one. Secondary infection through the wound, while possible, is so unusual that it ought not to be considered in any way to contra-indicate the internal incision. The external operation is a delicate one and requires a skillful surgeon and assistants, while the internal operation can be performed by any physician at any time without skilled aid. The external operation, moreover, requires dressing and leaves a scar, while the internal calls for nothing but cleansing of the mouth and the occasional expression of the contents of the abscess with the finger.

The incision is best performed with the infant in the upright position. If it is tipped forward the instant the incision is made there is no danger of the pus entering the air passages. The knife should be guarded except at the point. A gag should never be employed because of the danger of sudden death from its use, but the mouth held open with the finger or a tongue depressor. With these also care must be taken not to open the mouth too widely. It is usually well to enlarge the incision with the finger in order to favor thorough drainage. The abscess should be squeezed once or twice a day with the finger in order to keep up drainage and to prevent the opening from closing. The mouth should be washed out from time to time with some mild antiseptic solution.

Otitis media. — While, strictly speaking, otitis media is not a disease of the naso-pharynx, yet it is in infancy so almost invariably secondary to diseases of the nose and naso-pharynx that it seems justifiable to speak of it in this connection. The anatomical peculiarities of the nose, naso-pharynx and Eustachian tube in infancy, already referred to, explain the frequency of otitis media at this age. In some cases the catarrhal inflammation undoubtedly extends directly up the Eustachian tube, while in others the primary lesion is probably a blocking of the tube with a secondary inflammation. There is no condition in infancy, I think, regarding which there is a more general lack of knowledge among the profession as a whole and a more general misapprehension as to the symptomatology than otitis media. Very few physicians seem to realize the frequency of this condition in infancy and its importance in differential diagnosis. I have learned to look for it in all cases of doubtful diagnosis and to consider it as a possible cause for any symptoms not otherwise easily explainable in the course of other diseases. No physical examination in infancy, in which other definite signs sufficient to account for the symptoms are not found, should be considered complete without an examination of the ears. They should be considered especially when there have been, or are, diseased conditions of the nose or naso-pharynx present, even if these are very slight.

One reason why otitis media is so frequently overlooked is, as already stated, the general misapprehension as to the symptomatology of the disease at this age. Physicians are constantly on the lookout for earache and tenderness over the mastoid and, if they do not find them, rule out trouble in the ear without further investigation. On the other hand, they rarely think of inflammation of the ears as the possible explanation of an obscure fever or of peculiar symptoms without obvious cause. Many infants with acute inflammation of the middle ear, however, show no signs of pain at any time, and many others, who evidently have pain somewhere, show nothing by their actions which will attract the attention of the physician to the ears. Babies with earache rarely put their hands to their ears. On the other hand, sick babies are very likely to wave their arms about, to grab at their ears and pull their hair. The usual symptoms of earache are sharp cries, restlessness and inability to sleep. Apparent tenderness on pressure over the mastoid is another most unreliable guide. Tenderness over the mastoid is very unusual in simple acute inflammation of the middle ear, and on the other hand, most sick babies will cry out if firm pressure is made on any part of their body. Mastoid inflammation is very rare at this age on account of the undeveloped condition of the mastoid cells. Tenderness over the mastoid can, therefore, hardly be expected. In fact, in most of the cases of otitis media in infancy there are no symptoms which attract attention directly to the middle ear as the cause of the trouble. Acute inflammation of the middle ear is usually, but not always, associated with fever, which is often very high. It is also very commonly associated with reflex nervous symptoms which direct attention away from the ears to other parts of the body. Among the more common of these reflex symptoms are rapid respiration, vomiting and tenderness and rigidity of the neck. Convulsions are not very infrequent. On account of these reflex symptoms almost every disease but the right one is suspected, among which may be mentioned meningitis, pneumonia, gastritis, worms and dentition.

The following is a fair example of the ordinary case of acute otitis media, there being nothing about the symptoms to direct the attention to the ear except a slight " cold in the head."

An infant, thirteen months old, had had a slight " cold in the head " with loss of appetite for several days, but no fever until the day before. During the previous night she had been hot and restless and in the morning was somewhat drowsy and stupid. She coughed a little as if her throat was sore and refused her food. Careful examination showed nothing abnormal except slight enlargement and reddening of the tonsils. The temperature was 103° F., the pulse 160 and the respiration 60. Further examination showed reddening and bulging of both ear drums. The ears were opened in the afternoon with a free discharge of pus from both. The temperature dropped to 99° F. and the pulse to 120 during the next twelve hours.

The following cases show how marked and how confusing the reflex symptoms of otitis media may be and how easily they may draw attention away from the real seat of trouble.

A six months' old baby was taken suddenly sick Feb. 18 with fever, cough and difficulty in breathing. He lost his appetite, but showed no other symptoms of gastro-enteric disturbance. He was taken to a physician Feb. 21, who found the temperature 104.2° F., the pulse 160 and the respiration 52. He sent the baby to the Infants' Hospital with the diagnosis of pneumonia. The physical examination was not made until the next day. The temperature was then 100° F., the pulse 115 and the respiration 38. The physical examination was entirely negative, and while the picture was not that of a pneumonia and the lungs were negative, the disproportion between the rate of the pulse and that of the respiration pointed to a certain extent to some pulmonary trouble. That night the temperature and pulse rose rapidly while the rate of the respiration remained the same, thus pointing much less strongly to the lungs. The next day, the 23d, the ears were examined and considerable reddening of the right membrana tympani was found. Bulging occurred the next day. Paracentesis was performed and a small amount of pus let out. The left drum was also reddened, but did not bulge. The temperature immediately dropped and showed a tendency to run lower. On the 26th, however, it rose again, as did the pulse and respiration, the respiration rising again out of proportion to the pulse. Nothing could be found in the lungs, however. Examination of the ears showed that the right ear was not discharging freely and that the left drum was bulging. Paracentesis was done on the left ear and the discharge re-established in the right. The temperature and pulse dropped immediately and were followed in twenty-four hours by the respiration, all remaining normal afterward. In this case the onset and general picture in the beginning were those of pneumonia, and although nothing abnormal could be found in the lungs, the disproportion between the pulse and the respiration continued to point strongly toward them. The diagnosis would have remained obscure without the examination of the ears.

A baby, six and a half months old, was very fussy for twenty-four hours, was constantly putting her hands in her mouth, cried if her hand was taken out of her mouth and acted as if her mouth was painful. The temperature was 105.2° F. The physical examination, which did not include the ears, showed nothing abnormal except a slight swelling of the gum over the lower middle incisors. A diagnosis of difficult dentition was made and the gum lanced over the lower middle incisors. Lancing the gums was followed by temporary relief, but within twenty-four hours the temperature was up again and all the symptoms had recurred. The ears were then examined and reddening and bulging of the left drum found. Paracentesis was followed by a profuse sero-sanguinolent discharge with marked relief of the symptoms and a rapid fall in the temperature, which did not rise again. In this case it would have been very easy to have continued to attribute all the symptoms to difficult dentition, as was done when the infant was first seen.

In the following case the symptoms were most unusual and misleading, all pointing to some obscure cerebral condition, either acute or chronic. The true condition was not suspected, although the patient was seen by a number of men, all of whom were well aware of the importance of ear disease in infancy as well as of the variety of its symptomatology.

A baby, aged fifteen months, had a good family history. There was no history of nervous or mental disease or anything to suggest syphilis. She was delivered by instruments, the head presenting, and was normal at birth. She had always been well except for chicken-pox at thirteen months. Her parents said that she was unusually bright mentally. She had walked alone for a month or more.

On Dec. 13 she tripped on the floor and fell, striking her head on the chair. She did not appear to be much hurt. Dec. 22 she began to have " convulsions," which continued up to the time of entrance to the Infants' Hospital, Dec. 30. She had a slight cold and vomited several times daily. The bowels moved daily and the movements were normal. She was in good general condition, but there was moderate pallor of the skin and mucous membranes. There were no evidences of rickets. The fontanelle was 1½ cm. in diameter and slightly depressed. She did not open the left eye quite as wide as the right, but closed both vigorously. The motions of the eyes were normal and the pupils reacted quickly to light. She both saw and heard. There was no rigidity of the neck or back. There was no spasm or paralysis of the extremities. The knee-jerks were equal and somewhat exaggerated. Kernig's sign was absent. All the organs were normal. The urine was pale, acid, of a specific gravity of 1,008 and contained no albumin.

She slept well and was perfectly quiet when asleep. When awake there was almost always tremor of the head and arms, although she was sometimes quiet for a short time. This tremor was rhythmic and very rapid. It was most marked in the head and arms, although it was also present in the body and legs. She was very easily excited and frightened. She then became rigid and threw herself about, crying loudly. The cry was interrupted at short intervals, but the rhythm was much less rapid than that of the tremor. In these attacks the tremor was much more marked and more rapid. In some of the attacks there was also nystagmus, usually lateral, but sometimes vertical. The temperature was normal at entrance and never went above 99.6° F. The pulse and respiration were somewhat rapid for the first two days, but afterward showed nothing worthy of note.

Her stomach was washed out and her bowels moved with castor oil. The vomiting ceased at once and did not recur. The movements were normal. Moderate doses of bromide and chloral had no effect. Her condition continued unchanged and there was no change in the physical signs. The fundi of the eyes showed nothing abnormal.

She was seen by three specialists in nervous diseases, all of whom agreed that the fall was a coincidence and that there was no acute cerebral process. They said that the history of normal mental development must be wrong and that only a congenital cerebral defect could account for the symptoms. The medical men who saw her did not agree with this diagnosis, but also ruled out meningitis and injury as the cause of the symptoms. They were, however, unable to make any diagnosis.

Her ears were examined Jan. 4 as part of a routine examination of all the babies in the hospital. Both drum membranes were generally reddened and bulged in their upper posterior portions. Paracentesis showed pus on both sides. Improvement was almost immediate, and after the first few days was very rapid. The ears were normal on Jan. 14, and she was discharged well a few days later. There has been no return of the symptoms.

In the following case the location of the reflex symptoms led to a diagnosis of cervical Pott's disease and later to one of meningitis.

This baby, sixteen months old, had a good family history, had always been well and had never been exposed to tuberculosis. She began to be fretful and irritable Aug. 9. She did not move about as much as usual and preferred to lie as quiet as possible. She cried out when moved and also many times in the night. Her appetite became poor and she lost weight steadily. There was a slight diarrhea at first, but after a week the movements became normal in number and character. Aug. 21 she began to hold her head backward and the neck rigid and tender. She was sent to the Children's Hospital Aug. 22, with the diagnosis of cervical Pott's disease. During the next two days her temperature ranged between 103° F. and 104.6° F., the pulse between 120 and 130 and the respiration between 25 and 30. She continued to hold her head backward and rigidly and movements of the head caused pain. No new symptoms developed. The surgeons ruled out cervical Pott's disease, but suspected meningitis.

She was in good general condition. She looked and acted sick, but although very fretful was perfectly conscious. The anterior fontanelle was 1½ cm. in diameter and level. The pupils were equal and reacted to light. The throat was slightly reddened. All the organs were normal and there were no evidences of rickets. There was no spasm or paralysis of the extremities. Kernig's sign was absent. The knee-jerks were not obtained. She held her head a little backward, and motion forward was resisted and seemed to cause a little pain. The cervical lymph nodes were slightly enlarged. The urine was normal. The white blood count was 20,000.

Examination of the ears showed reddening and bulging of both drums. Paracentesis was followed by a free discharge of muco-pus, with almost immediate relief of the symptoms.

Since there is so little characteristic about the symptomatology of otitis media in infancy, and since the symptoms are so misleading, this condition should be considered in every acute illness at this age and the ears examined. The only way to determine satisfactorily whether or not there is inflammation of the middle ear is to examine the ear with a speculum. All other methods of examination are incomplete and necessarily misleading. The examination of an infant's ears is not, however, a simple matter and requires considerable experience. The results, however, are well worth the time required to master the technique. The method of introducing the speculum rendered necessary by the anatomical peculiarities of the external auditory canal at this age has already been referred to. A smaller speculum than comes with most sets is necessary. The infant should be held firmly in the nurse's lap, sitting sidewise, with the head against the nurse's breast. Unless there is plenty of daylight, a kerosene lamp will be found more satisfactory than anything else in examining the ears.

In cases of a more subacute type, the symptoms are mainly those of confined pus, and the hectic temperature, often associated with chills, and the apparent absence of a local cause often lead to the diagnosis of tuberculosis or malaria. The following case of this variety was mistaken for malaria:

A boy, twenty-two months old, who lived in a malarial district, had always been delicate and pale. He had had a cough since an attack of bronchitis three months before, and had also had a slightly elevated temperature during this time. During the last two weeks he had seemed worse and the temperature had ranged higher. The night before he was seen he had had a chill, followed by a temperature of 105° F., and sweating. Nothing abnormal had been found on physical examination except pallor and slight enlargement of the spleen. The urine showed nothing abnormal.

An almost positive diagnosis of malaria had been made on the basis of the chills, fever and sweating, the enlargement of the spleen, the pallor and the apparent absence of any other cause for the symptoms. Examination of the blood showed no plasmodia and 30,000 white cells, a finding entirely inconsistent with malaria.

An examination of the ears, which had hitherto been overlooked, disclosed the seat of the trouble. Pus was found on both sides and evacuated. Improvement was continuous and rapid from that time.

In other cases the inflammation may run its course with little or no rise in temperature and with very slight constitutional, local or reflex symptoms, a discharge from the ear being the first thing noted. This is especially likely to be the case in feeble babies, the amount of reaction apparently depending a good deal on the general condition of the infant. The following cases are examples:

A boy, three and a half months old, had always been improperly fed and had always had colic, vomiting and diarrhea. He had recently lost weight very rapidly. He was admitted to the Infants' Hospital March 12.

He was fairly developed and nourished, but rather pale. Physical examination was negative except for a slight rosary. A routine examination of the ears a few days after entrance showed nothing abnormal.

He responded very quickly to proper food, stopped vomiting and after a few days had normal movements, but did not gain in weight. On March 26 the temperature suddenly rose to 102.8° F. The pulse and respiration did not rise, however, and no other symptoms developed. Nothing abnormal was found on physical examination until the ears were reached, when both drums were found slightly inflamed. No treatment was instituted. The inflammation in the ears rapidly subsided in the next twenty-four hours, and with it the temperature fell to normal and remained there.

A three months' old baby entered the Infants' Hospital March 7. No history came with her. She was emaciated and the skin was mottled. The anterior fontanelle was small and depressed and there was a slight rosary. The physical examination was in other respects negative. She took her food well, seldom vomited, had nearly normal movements and gained in weight. She had no fever at any time and showed no symptoms pointing to aural trouble. Nevertheless, a discharge from the right ear appeared March 16.

Much has been written as to the importance of the patency of the petrosquamosal suture in infancy, as favoring the extension of inflammation from the middle ear to the meninges. This danger has, in my experience, been very much overestimated, and can, to all intents and purposes, be disregarded. The mastoid antrum is present at birth, but the mastoid cells are almost never developed during infancy. Mastoid inflammation is, therefore, infrequent in connection with inflammation of the middle ear at this age, and if it occurs is usually not as serious as in later life.

The proper treatment of otitis media in infancy requires more knowledge of the ear than is possessed by most general practitioners. It requires special knowledge to determine whether or not a given case requires paracentesis or whether it will quiet down under simple measures. In general it is far wiser in a doubtful case to err by doing an unnecessary paracentesis than by letting it go without operation. Local treatment should be extremely simple: irrigation with warm water, heat externally, bromide internally. Under no conditions should oily substances be introduced into the ear, and it is rarely advisable to use any local medication. Paracentesis is not a difficult operation, providing the drum membrane can be distinctly seen. It is almost impossible to do any harm by a paracentesis, if reasonable care is exercised. It is, therefore, a safe operation for the general practitioner. He should be prepared for it and ready to do it whenever necessary.

SOME SURGICAL ASPECTS OF EMPYEMA.*

BY F. B. LUND, M.D., BOSTON.

There are numerous fallacies regarding the treatment of empyema, which during my period of surgical activity have been exploded. I well remember a period when it was believed that empyemata due to the pneumococcus got well with repeated tappings without permanent drainage, while those due to the streptococcus required opening of the chest, so that patients were kept in the medical wards of the hospital after the needle had revealed pus, until cultures had been made and the exact nature of the organism determined. This procedure caused delay which was often prejudicial to the patient. Whether or not an occasional pneumococcus empyema in a child will recover without operation I do not know, but certainly in adults they all had to be operated upon after repeated tappings and in a condition both as to the danger of the operation, and the probability of a long, slow convalescence infinitely worse than it would have been with early operation, for there is every reason for early operation in empyema.

In the first place, the patient is usually attacked by the disease directly on the heels of a severe and exhausting pneumonia, and is in no condition to stand the drain of a long continued infection; in the second place, every day that passes after the development of pus in the chest exhausts the patient by the absorption of toxins; in the third place, the lamentable accident of bursting into a bronchus is, as time goes on, increasingly likely to occur; in the fourth place, in case the abscess becomes walled off and the toxic absorption is thereby lessened, those very protective adhesions, while admirable for the purpose for which they are intended, as they become firmer with time and more completely organized, serve in a most efficient manner to prevent expansion of the compressed lung after the chest is opened. All this takes no account of the increasing embarrassment of the respiration and heart's action which accompanies the filling up of the pleura with pus, and the danger that long continued compression of the lung may so consolidate it as to permanently obliterate many of the air cells and put an end to the possibility of expansion.

Even if successful lung expansion is ultimately attained, it is at the expense of dangerous and mutilating multiple rib resections, and decortications, operations to which the names of Estländer, Schede, and De Lorme are attached, operations which while invaluable in the cases which require them, one can only wish to avoid the necessity for if in any way possible.

If an empyema is operated upon and properly drained early, before extensive adhesions have formed and the lung has been anchored in its contracted position, it is a not uncommon experience for the surgeon to feel the lung expand at once, and as the fluid escapes come right up against the opening in the chest wall, a most satisfactory and pleasing experience to the surgeon, and greatly to the benefit of the patient.

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* Read before the Boston Society for Medical Improvement, Jan. 21, 1907.

In regard to the diagnosis of empyema, the surgeon is largely dependent upon the medical man, who sees the case before he does, usually makes the diagnosis and very likely has confirmed it by the exploring needle before the surgeon is called to operate for the provision of adequate drainage, so that it is perhaps to points in the technique and after-treatment that a surgical paper should be confined; but the writer feels there are certain points in the diagnosis, some in which he himself, perhaps, has been misled, to which he should allude. It is a well-known fact that in certain empyemata, especially encysted empyema, and others walled off by adhesions where the fluid is under high tension, we may get on auscultation the bronchial breathing and voice sounds ordinarily characteristic of consolidation of the lung. Delay in exploration with a needle under these circumstances nearly cost the life of a patient who was referred to the writer last summer after an erroneous diagnosis of tuberculosis of the lung, when the real lesion was an empyema of that dangerous class in which the infection of the right pleura was secondary to an intra-abdominal infection, in this case, an acute appendicitis which had recently been operated upon. Another misleading condition which occurred once in the writer's experience depends upon the fact that in a pneumococcus empyema, the leucocytes gravitate to the bottom of the cavity, so that a tapping over the upper level of the fluid may give clear serum. Misled by this condition the writer once refused to operate in a case seen in consultation, and learned afterward that the case had been successfully operated by another surgeon, who found plenty of pus.[*]

In the operation of tapping the chest, the needle should be introduced opposite the middle of the area of flatness, and should go in exactly vertical to the chest wall, so as to go straight for the fluid. If entered obliquely it may go a long way in the chest wall without even entering the pleura. If entered close to the bottom of the chest cavity, however, it should go slightly upward or it may hit the diaphragm or even the liver. The needle may pass through a thin layer of pus and hit the lung, which occludes it, so that the pus does not flow, or it may enter a thick layer of fibrin or the solid lung at the margin of the pus cavity. Therefore if pus does not flow at first, the needle should be slowly withdrawn until the point is disengaged, when the pus may flow, and if it does not the trocar should be pushed through it so as to push the lung tissue or fibrin out of the way. In the presence of convincing physical signs, if the first tapping is negative, the case should not be given up till the tapping has been repeated several times in the near neighborhood, varying the direction of the needle slightly.

The statement above that the needle should be put in opposite the middle of the area of flatness applies to encysted empyema or lung abscess. In the ordinary empyema which fills the whole lower part of the chest and in which the flatness naturally covers the widest area in the back, whether or not it extends upward into the axilla, the tapping is best done at the point of election for drainage of the chest which the writer has found after an experience of a large number of cases to be the eighth interspace just below and in front of the angle of the scapula, which is close to or just behind the posterior axillary line. A brief review of the literature of empyema will show the greatest diversity of opinion as to where the chest should be opened, some advising the anterior, some the mid-axillary and some the posterior axillary line. A considerable experience extending over fifteen years has shown the writer that while many cases will recover if opened in the anterior axillary line, or mid-axilla, these parts do not afford dependent drainage in the recumbent and semi-sitting positions, as does the point recommended by the writer. While the lung will expand and success will follow in cases opened toward the front in a certain percentage of cases, others, where perhaps the lung contraction and pleural adhesions are more decided, will not get well with anterior drainage, even supplemented by frequent washing out, and the writer has in several instances been forced to operate secondarily to secure dependent drainage of the chest where the anterior route had been followed at the first operation. The rib interspaces are wider in the anterior route, the ribs are flatter, and the operation is a little easier. In the back the ribs are rounder, thicker and close together, but there is so little difficulty about the operation wherever performed, that these arguments should not weigh against the posterior route.

It will be noted that the point recommended by the writer is not at the very bottom of the chest in the sitting position, the pleural reflection extending as low as the twelfth rib behind, the ninth or tenth rib in the axilla, and the seventh rib in front. The writer at one time in a considerable number of cases attempted to make the opening at the very bottom of the pleural reflection, and found that in certain cases the diaphragm came up against the opening and adhered, closing it off in some instances before the lung expansion took place, so that re-accumulation of pus took place and re-opening was necessary. In opening at the very bottom of the pleura also, the tubes run obliquely upward, and have to be bent outward when they go through the abdominal wall, so that the drainage tube has to be long and is difficult to manage. With the opening in the situation advised the tube should go straight into the cavity, and be only long enough to go just through the thoracic wall. If it projects into the cavity it will not drain the pus which lies below the level of its upper end, and may be hit and disturbed by the expanding lung. The flanged tubes now sold for draining empyemata, self retaining *à la* collar button, are usually too short, so that the flange is doubled up in the wound, and they are also too small caliber. A double tube made by folding a half or three-quarter inch tube, with a hole cut where folded so as to present two full caliber openings inside, which we used to use fifteen years ago when we were internes, is the best arrangement. It does not do to forget to attach a transverse tube or a safety pin to prevent the tube slipping inside. This may seem an elementary matter to speak of, but I presume most of us in operating for a persistent sinus following an empyema operation have removed a drainage tube which had slipped in, usually at some time during the dressings. The removal of a tube from the chest cavity may be difficult on account of the size of the cavity and require rib resection additional to that done at the former operation.

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[*] In the discussion of this paper Dr Percy Musgrave made the excellent suggestion that in case there is doubt whether to open the chest, when clear or fairly clear serum is obtained on tapping a microscopical examination of the serum should be made, and the leucocyte content determined, a high count deciding in favor of operation. This procedure would be especially valuable in the cases we are able to help the most, namely, the early cases, where the fluid would be most apt to be serious, at least in the upper part of the chest. Dr. Musgrave also spoke of the fact that in streptococcus infections the fluid was apt to be rather serous than purulent, a condition which the writer has also observed.

Is rib resection to be done as a routine procedure or is it not? On looking over the literature we find many advocates of simple incision, backed up by reports of successful cases. There can be no question that many of the cases, especially of pneumococcus empyema, get well with almost any kind of drainage, but the cases of streptococcus and mixed infection, old cases with adhesions, and cases secondary to abscess of the lung require a good free opening in a dependent position. As has been shown the most favorable point for drainage, namely, close to the angle of the scapula, is in the back where the ribs are near together so that there is no room for a large drainage tube between them, so it becomes evident that that rib resection is necessary and should be performed. It takes but two or three minutes more time, is not difficult or dangerous and provides a much more satisfactory opening. If openings in front where the ribs are wide apart were efficient rib resection might not be so necessary. Rib resection may be safely performed even upon very sick cases of empyema, and may be done under cocaine, but the writer prefers a general anesthetic.

In only one case in a very large number has the writer felt that rib resection was too much of an operation. That case was an elderly patient with an empyema resulting from the bursting of an old bronchiectatic cavity into the pleura. His pulse was hardly to be felt, he was cyanotic and his condition in every way most wretched. He was operated upon in the semi-recumbent position by a simple incision in the mid-axillary line under cocaine anesthesia, drained with a large tube and ultimately made a complete recovery.

In empyema the management of the general anesthetic is of the very greatest importance. With only one available lung, with high fever, and often in case the cavity has communicated with a bronchus so that there is danger of coughing up the inhaling pus, the dangers of unskilled or careless anesthesia are evident. Ether should be the anesthetic. It should never be given in an adjoining room and the coughing, struggling patient be brought into the operating room and arranged on the table, as I have so often seen in some hospitals. The patient should be etherized on the table, with everything in readiness, the patient in the semi-recumbent position and turned slightly, not completely, on the sound side. The patient should not be turned completely on the sound side on account of the compression of the healthy lung and consequent embarrassment of respiration. The preparation of the skin, what little is necessary, should be carried out before the patient is brought into the operating room. I do not know a more depressing sight than one I have sometimes witnessed of a cyanotic patient struggling for breath, while a nurse more than wastes time rendering the skin scrupulously aseptic, preliminary to the flooding of the skin of the patient, the operator, assistants, and the entire room with the foulest kind of infected pus; yet sometimes is common sense so lost sight of amid the mazes of hospital routine that this very thing has happened.

The moment the primary stage of anesthesia is reached the chest is tapped in the eighth interspace, about one inch below and in front of the angle of the scapula, measured with the arm at the side. The reason for this is that if the point is chosen with the arm elevated above the head the scapula might occlude the opening when the arm is lowered. An incision three or four inches long over the eighth rib and parallel to it is made and carried directly down to the rib and through the periosteum. The periosteum is then quickly removed, first from the superior, and then from the inferior, surface of the rib with a sharp periosteal elevator, sticking close to the rib on the under side, and working from the inferior margin upward, so as to avoid wounding the intercostal artery. The rib is then cut through (with ordinary bone cutting forceps having a narrow inferior blade) at the anterior portion of the incision and again about three inches back, the divided anterior end being lifted up by holding forceps so that the forceps may be slid under. The rib having been removed, the thickened pleura is divided by an incision about an inch long, and this is torn open by the fingers the full length of the incision. All this takes much less time to do than to tell about. As the pus begins to flow the opening is partly closed by the hand so as to avoid the too rapid evacuation with its danger of syncope or perhaps death on the table from the sudden flopping over of the mediastinum from the abnormal position into which it has been pushed by the effusion. This danger is only present in large effusions, but in them is a very real one. After the first sudden relief of tension has taken place the hand may be removed, the patient gradually rotated on to the back with the wound projecting slightly over the edge of the table, and all the pus allowed to escape. If it is clean, white, odorless pneumococcus pus we may look for a smooth convalescence. The foul stinking pus of an old mixed infection must put us on the lookout for trouble. The finger is introduced into the openings, the extent of the cavity is ascertained if possible, also the condition of the pleura as to fibrin deposits, thickness, etc., and sometimes at this point the lung may be felt in fortunate cases to expand and come down to the chest walls. Every effort is made to get out the thick flakes of fibrin which so often lie in the lower chest cavity, and if left behind may later block our drainage tubes and cause trouble. The anesthetic should have been removed the moment the pleura was opened, and the violent coughing which usually takes place as the last of the pus is expelled is the most effective agent in getting this stuff out. As it comes to the surface it should be caught before it drops back, and eased out by the surgeon. In case there is a good deal of this material which has not come out with the pus, I see no reason (" tell it not in Gath ") why gentle irrigation with 2% boric acid solution should not be employed unless there is connection of the cavity with bronchus, as will have been evidenced by previous coughing up of fetid pus. I am aware that irrigation is frowned upon, but used, as every procedure must be, with common sense, I have found it useful and have never seen harm from it. Of the drainage we have already spoken. Irrigation through the tube may be useful at the subsequent dressings if the tube becomes plugged with fibrin. As to the time of the removal of the tube, that, as one of my honored seniors in the profession used to remark, " requires a thousand times more surgical judgment than the performance of a laparotomy, and in those old days the simplest laparotomy" was a serious matter. The tube should be removed as soon as the lung has expanded to fill the cavity, the chest has fallen in to fill the cavity, or the cavity has been contracted by any means down to a small pocket around the end of the tube. Normal or but slightly diminished percussion note, diminution in the discharge to the amount which the irritation of the tube alone will occasion, but above all the evidence gained by introducing the finger into the opening, are, aside from the general condition of the patient, a few of the aids as to determining this point. It may be three days or six months, but tube drainage should not be prolonged a moment longer than necessary. Each surgeon must determine it for himself, which is one of the reasons why it is worth while to get a good surgeon, one who has had at least a moderate amount of experience and interest in these cases, to perform the simple operation of rib resection. A practitioner whose work is chiefly concerned with medicine is apt to make fewer mistakes in the operation than in the after-treatment of these cases. And after all it is nearly as much a part of the doctor's duty to save time and expense to his patient as to save his life.

In regard to after-treatment we must speak of the various arrangements of rubber tissue valves over the tubes, etc., designed to use the pumping action of the chest to create negative pressure and promote expansion of the lung. I have never been able to make them work, in the first place because the tubes could not be made to fill the opening or stay in position, and the coughing or movements of the patient could be counted on to loosen the tissue either from the skin or end of the tube. They require a lot of time and pains even to apply them and keep them partly in position. They do no good unless working perfectly and never do work perfectly. Therefore their use is a waste of time.

Brinkman has suggested and practised the the drainage of the chest in empyema without the use of a tube, ensuring the patency of the opening by suturing the pleura to the skin around the wound. He recommends excision of three or more ribs for his operation, which seems an unnecessarily radical procedure in ordinary empyema, however well it may be adapted to the old cases to which multiple rib resection (Estländer), excision of the entire rib between the angle and costal cartilage from the third rib to the bottom of the pleura (Schede) or decortication (de Lorme) might be considered as alternatives.

Some genius has advocated placing the empyema patient in a bath tub and letting the respiratory movements of the chest pump the water in and out and clear out the pus. The effect on the lung of constant water pressure seems to be forgotten. I would as soon have pus in my chest as water, as far as the compression of the lung is concerned. But I have always found it hard to keep patients dry and comfortable, which is so necessary to their recovery, when they were under water.

Richter has advocated simple incision of the chest as employed in Van Hook's clinic with intermittent siphon drainage such as we have all tried in suprapubic cystotomies. I should describe this drainage as complicated and unnecessary.

The use of respiratory measures to promote expansion of the lung, especially the blowing over of water from one bottle to another through a tube I have found valuable.

Of the various procedures of extensive rib resection, or decortication of the pleura, which are so interesting and important in the treatment of old rebellious cases of empyema, and which are planned to allow the chest wall to fall in or the lung to come out, it is beyond the scope of this paper to treat. If we get our cases early enough these measures are not necessary.

It is a fact noticeable in my experience that certain early cases, presumably on account of the virulence of the infection, do badly and are slow in healing, while certain of the later cases, notably those in which the effusions are walled off or encapsulated and not very great in amount, do extremely well. As a general rule, however, the early cases do better than the late in every particular.

The results of vaccination with dead bacteria for the purpose of raising the opsonic power of the blood have recently been favorably reported on by those versed in this method of treatment in these cases. I hope that this method will be a valuable aid, but feel that the drainage of pus will still remain of primary importance.

In empyema, as a general rule, pure pneumococcus cases do well, mixed infections worse, and tuberculous cases — also invariably mixed infections — worst of all, which means as badly as possible. They are operated upon, not with a view to cure, but for the temporary relief of the lung from pressure and the system from septic absorption. They rarely heal.

Infections of the right pleura, secondary to infections in the abdominal cavity, such as appendicitis, followed by retroperitoneal infection, subpleuritic infection and abscess of the pleura either due to bursting through the diaphragm or extension through the lymphatics, are of the most serious character and are frequently fatal. Such an infection following a successful operation for acute appendicitis, and erroneously considered an acute tuberculosis of the lung, presumably on account of the fact that bronchial respiration was heard over the flat area, has been already referred to above. The lateness of the operation and reduced condition of the patient under these circumstances rendered the case most serious, but drainage of the chest by a quick operation and the devoted care and nursing of the boy's father, a brother practitioner of medicine, brought the boy through the shock and collapse which followed the operation, and he is now well.

Nursing does much for or against these very sick patients, as all well recognize. They should sit up in bed from the first, both because respiration is easier thus and drainage better. They should be carried out in the fresh air and sunlight as soon as possible, even in the New England winter.

The writer is aware that in this brief discussion he has contributed nothing new to the subject, but he feels that a review of the methods which experience and trial in the treatment of this disease have proved to his satisfaction the best, may be not without interest to his fellow practitioners. He has not attempted to deal with the statistics as to age, sex, relative proportion of infection, or had time even to look up the number of cases on which this paper is based. Statistical articles may be found in the appended bibliography. A considerable number of cases, however, come under observation in a hospital where we have so large a medical service as the City Hospital in Boston, and one has a chance to try his hand in a good many, first and last, so that he ought to get a good general idea of what procedures give him the best results.

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EMPYEMA FROM THE PHYSICIAN'S STANDPOINT.*

BY HERMAN F. VICKERY, M.D., BOSTON,

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Although the treatment of empyema is now universally acknowledged to be exclusively surgical, if we except the possible value of opsonic treatment of the sinus, yet sufferers from this condition are at first almost always under medical care and their welfare depends upon the vigilance and skill of the physician. Early diagnosis means a timely operation and speedy recovery; delayed recognition may mean not only prolonged suffering, but permanent damage or even death.

With regard to etiology, pneumonia is the most frequent antecedent; others are bronchopneumonia, sero-fibrinous pleurisy (perhaps in some cases from imperfect asepsis during tapping), pulmonary tuberculosis, typhoid, scarlet fever, septicemia, ulceration of the esophagus, subdiaphragmatic abscess or a wound. Children are often affected. Bilateral empyema [1] is rare, occurring almost always in children under ten years, and is preceded by bilateral pneumonia, the interval being usually only a few days, but exceptionally two months. I saw a case in 1905 with Dr. Cassidy of Norwich, Conn., in which empyema following pneumonia occurred first on one side and then on the other, with a favorable termination.

Heberden Beall [2] reports a case of empyema due to the influenza bacillus, and refers to another published by Boggs. Others have been observed.

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* Read before the Boston Society for Medical Improvement, Jan. 21, 1907.

[1] Hellin: Berl. klin. Wochenschr, Nov. 6, 1905.

[2] Jour. Am. Med. Asso., 1906, May 12

The ordinary story of an empyema is that the patient has had pneumonia and then got better, but not entirely well, and has since been growing pale and weak, or the symptoms of pneumonia may have largely disappeared for a time and then more or less reappeared. Sometimes the empyema is apparently primary, with symptoms like pneumonia. In looking up the cases I have had at the Massachusetts General Hospital in the ten years from 1896 to 1905 inclusive, in all 21, I find that the interval between the first thoracic symptoms and the discovery of pus was less than twenty days in but 3 cases, averaging 49; while the stay in the hospital before pus was found averaged only four days. For 17 cases the average time after entrance when pus was found was one and one-half days. Of course, cases which are actually proved to be empyema before entrance are put at once under surgical care. The above figures tend to confirm what my experience has led me to believe, that there is often deplorable and unnecessary delay in recognizing this disease. A natural inquiry would be, How soon after the onset of a pneumonia which is followed by empyema is it possible to detect this complication? I do not feel able to answer this question, but whatever it may be at the present time, it is to be hoped that eventually the diagnosis will be still more speedy. As Musser recently said in an inspiring paper on Acute Infections of the Thoracic Cavity,[3] " It is no credit to the profession at the present time to send to the surgeon a patient with the chest half filled with pus or even with half a pint or a pint of such accumulation." In three cases, however, I had opportunity to watch the whole process.

One was a negro male, aged twenty-five, who entered the hospital on the sixth day of a pneumonia. On the twenty-eighth day of his illness he was tapped with a negative result. One week later he was tapped twice, the second time successfully; but the amount of pus was shamefully large, about three pints in all, including what the surgeon, Dr. Conant, got the same day.

A woman, aged twenty-six, entered on the sixth day of what seemed like a bronchopneumonia, complicated by pleurisy. On the next day, twelve or fourteen ounces of a rather turbid but sterile fluid were removed; two days later, there was a dry tap, but the needle passed through thick material before entering the pleural cavity. On the twenty-first day of her illness pus containing pneumococci was obtained, and the surgeon, Dr. Balch, immediately furnished exit to one and one-half pints.

A boy of five years entered on the sixth day of a pneumonia, had a rapid lysis on the eleventh and twelfth days, fever again on the thirteenth and pus on the twentieth, Dr. A. N. Broughton giving vent to twelve to fifteen ounces the same day.

These few experiences would suggest the necessity for great vigilance in regard to suppuration in acute thoracic cases lasting over two weeks.

With regard to diagnosis, this is not the place to enter on an indiscriminate enumeration of textbook facts. The disease may be insidious and hence escape detection, unless the physician is faithful in physical examination. Marked pallor, vomiting, sweating, a frequent dry choking cough are common symptoms. Pain may not be present. An infant, says Parrish, may be pretty comfortable in bed, without pain, cough, dyspnea or fever and yet have empyema. The white count is important, being usually high. In 7 of my cases over fifteen years old it averaged 14,590; and in 6, aged from two to twelve years, 36,100.

One boy, five years old, on the sixth day of pneumonia, had a leucocytosis of 20,800, got better, then had fever again and on the second day of this relapse had a white count of 36,400, six days before pus was found.

The only two exceptions to this rule of leucocytosis were both interesting cases.

Mrs. C. B., an Italian, aged twenty-six, for ten days before entrance had some pain in the back on taking a deep breath, but no dyspnea nor cough. When first seen, her only complaint was slight abdominal pain, perhaps accounted for by retroversion and a prolapsed ovary. White count, 8,400. Three days later pus containing staphylococci was found in the right chest. She was operated on by Dr. Brewster, and fit to be sent to the Convalescent Home thirty-two days after her first symptoms.

Mr. T. V., aged twenty-nine, was perfectly well till two weeks before entrance, when he had chilliness, perspiration, dyspnea and a catch in the right chest. He vomited once. The heart was displaced to the left, the liver dullness was increased downwards, the white count was 7,600. There was distinct whispering pectoriloquy over the fluid in the right chest. Tapping removed thick pus, but surgical treatment (Dr. A. T. Cabot) evacuated both pus and echinococcus cysts.

Localized tenderness and localized edema are important guides to a correct diagnosis. Some authors, including Musser, speak of friction as an important early sign, to be sought particularly along the margin of the lobes. In regard to this I confess inexperience. According to Holt, loud pleuritic friction may also be heard over abscess of the lung. Fremitus and râles[4] may persist in spite of empyema. Vesicular breathing is almost always abolished. There is often a distant, ghostlike, bronchial respiration and voice. Whispering is seldom conveyed distinctly through pus, yet I have heard it more than once, as, *e. g.*, in the hydatid case above related.[5]

As Musser points out, if we are to detect intrathoracic infections early, we must go over the chest in a painstaking and minute way.

The x-ray is worth employing in a doubtful case. Recently it gave me distinct help. Thickening of the pleura may give a shadow simulating or obscuring a collection of pus, but yet this method should not be discarded.

Exploratory puncture remains as the nearly decisive test of the condition under discussion. Certain practical suggestions may be worth while in this connection. It should be absolutely certain that the apparatus used is in perfect working order. I once saw a case of pleurisy with effusion which had been twice tapped, at intervals, first by the attendant physician and then by a consultant, both using an impervious instrument. If the apparatus is capable of compressing air as well as rarefying it, we should make sure that the valves are properly arranged. I nearly lost a patient once because an assistant forced air into his chest. An arrangement with trocar and canula, yet with aspiration unimpeded, seems to me the best. In case of doubt we can make sure that the canula is not plugged. The canula should be of large caliber. A negative tap with a small needle is inconclusive. In case fluid does not at once appear, it is well to wait a little while, maintaining a good vacuum meanwhile. We may thus obtain at last a little viscid pus.

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[3] Trans. of the Section on Practice of Med., Am. Med. Asso., 1906.

[4] Dr. J. W. Parrish: Brooklyn Med. Jour., Feb., 1905.

[5] Also in two cases seen since this paper was read.

In December, 1905, I saw Mrs. A. in Wolfboro, N. H., with Drs. Getchell, Scott and Cotton. Eight weeks before she had bronchitis which lasted three weeks, then for two weeks she was pretty well, when three weeks before I saw her she grew worse and now for three days had been very ill. The day before my visit she had been tapped three times with a negative result. We all agreed that the story and the signs pointed to empyema, so that it seemed proper to explore once more, using the largest aspirating trocar. At first no pus appeared, but after a minute or two a very small quantity was obtained. Upon surgical operation, no real collection of pus was discovered, but an infected area with thick masses of fibrin. Drainage was instituted, and the patient recovered.

In serious cases showing strong signs of intrathoracic suppuration and yet yielding nothing upon aspiration, after careful deliberation, it may be justifiable to invoke surgical exploration just as we do when we suspect a deep cervical abscess. Dr. G. M. Garland of this city reported to me verbally years ago a case in which he urged this procedure, with a happy result.

As to the exact place in which to tap, if one has the choice it is best to go in where the surgeon would naturally institute drainage, *e. g.*, the seventh or eighth space in the posterior axillary line. It has seemed to me that doctors are more apt to put in their needle too low than too high. When pus is found, unless there is a very large amount, it is probably more convenient for the surgeon if we do not draw off more than is needed for diagnosis. Operation should follow a successful aspiration, if possible, the same day, because of the chance of infection along the track of the physician's instrument as it is withdrawn. This suggestion is fully warranted by actual observation.

Employing aspiration in the manner indicated, and of course with due aseptic precautions, I have never yet had reason to regret its use.

With regard to results in my 21 cases, 17 did well, including 1 case of pulsating empyema necessitatis, who was tapped and also operated upon two months after his illness began, and in less than two months later had the sinus healed and good respiration; 2, aged two and eight years respectively, were taken home against advice shortly after operation "not relieved"; 1, aged sixteen, did well, but ten months later had symptoms of a pulmonary abscess, although he looked well, and the wound was firm; and a fourth, aged seventy-one, who had an old neglected affair, when last seen was failing, with unexpanded lung, although his life has been preserved for six years by an excision of portions of nine ribs, (Dr. E. A. Codman).

Cases of Empyema Recorded on the Surgical Side of the Massachusetts General Hospital for the Ten Years, 1896–1905, Inclusive.

Males,	193
Females,	60
Total,	253
Not treated,	1
Discharged well,	14
Discharged relieved,	209
Discharged not relieved,	5
Died,	24

PERIDUCTAL MYXOMA OF THE BREAST.

BY W. P. GRAVES, M.D., BOSTON,

First Assistant Visiting Surgeon, Free Hospital for Women; Assistant in Gynecology, Harvard Medical School.

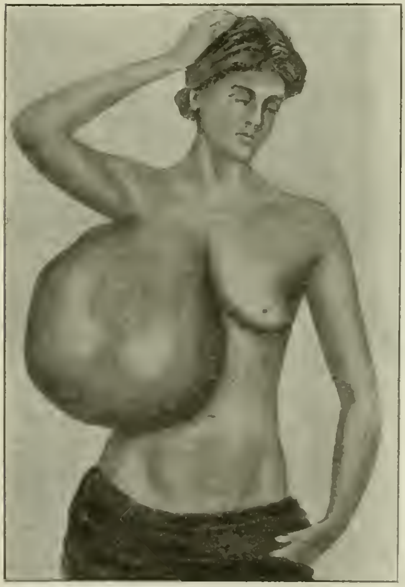
The tumor described in the following case is reported on account of the somewhat unusual pathological condition found and on account of the extraordinary size to which it was allowed to grow before surgical intervention.

Mrs. M., thirty-eight years old, entered the Free Hospital for Women Jan. 24, 1907. Three years before entry she had noticed a small lump in her right breast, and was advised by her physician, Dr. Hubert T. Holland, to have it surgically removed immediately. Fearing to undergo an operation, she then consulted a cancer healer, who treated the tumor with pastes and other methods commonly employed by such practitioners. The tumor continued to grow slowly and steadily until the fall of 1906, when it began to increase in size with great rapidity. So rapid and marked was the enlargement of the breast that the patient finally began to distrust the assurance of her adviser that the medical treatment which he was applying was drawing the poison from her system, and that the tumor would soon burst and dry up, and in real alarm again consulted Dr. Holland, who at once sent her to the hospital. The patient, on examination, appeared to have suffered some, but no great, loss of weight. The right breast was occupied by an enormous tumor somewhat nodular in contour, and rather soft, but not cystic in consistency. The tumor was so large and cumbersome that the patient when sitting down was obliged to rest it on a table or on the arm of a chair. It was not apparently attached to the pectoral muscles, and there was no glandular involvement of the axilla. The left breast was entirely negative, being somewhat emaciated. The tumor seemed vascular and transmitted a well-marked pulse throughout its substance. The patient's temperature was about 102°, the pulse 120, and there was a systolic murmur at the apex of the heart. Menstruation had ceased two months before entering the hospital, but there was no sign of pregnancy.

The operation performed on Jan. 29, 1907, was a comparatively simple one, consisting merely in amputation of the enlarged breast. The tumor was entirely discrete, and was readily peeled away from the fascia covering the pectoralis muscle, Convalescence was rapid and uneventful, excepting for the fact that the patient ran a subnormal temperature and pulse for several days following the operation, doubtless due to a change in the blood pressure.

The following is the pathological report of the case:

Macroscopical. — The specimen consisted of a semi-solid tumor partially covered by the skin of the breast. The largest circumference was 26 in., the weight 16½ lb. The contour was in general spheroidal, with some irregular nodulation. Section of the tumor mass showed it to be made up entirely of discrete semi-solid fibrous nodules, the nodules averaging from 2 to 3 in. in diameter. The entire tumor was invested with a colorless, albuminous-feeling fluid which could be squeezed out of every portion of it. Small specimens cut from the tumor mass when placed in water floated out like jelly. Careful search for cystic formations revealed only one thin-walled cyst about 1 in. in diameter.



Periductal myxoma. Sketch showing the proportions and general appearance of the tumor.

Microscopical. — Many sections were taken from various parts of the tumor. They showed numerous variations of a distinctly fibromatous process. In some places there was a pure fibrous structure, with only here and there a cell. The greater number of the sections, however, showed a very cellular fibromatous growth, in which there was a marked separation of the fibers by edema, so as to give it the appearance of a myxoma. This type of cell was so prevalent as to give the tumor the general character of a myxoma, and to cause me to call it by that name. Numerous areas, however, were found scattered throughout the myxomatous portions where the cells showed an extreme degree of proliferation, with the appearance of giant fibroblasts and mitotic figures, in every way resembling the process which takes place in the so-called sarcomatous degeneration of uterine myomata and pelvic fibromata. Some of the sections showed spaces completely filled with the bluish staining mucoid fluid, which was so apparent on cross section of the gross tumor. One portion of the tumor which showed a distinct reddish discoloration macroscopically, revealed under the microscope a well-marked telangiectatic appearance, the blood being contained in thin-walled sinuses, while the lymph spaces were greatly hypertrophied and showed an hyperplasia of the lining endothelial cells. A large number of sections were made with the special purpose of discovering if possible any epithelial elements. The search, however, was fruitless, all glandular structures having evidently been completely obliterated by the rapid and extensive proliferation of the periductal fibrous tissue.

DISCUSSION OF THE CASE.

Thanks to the excellent classification of benign tumors of the breast which Dr. J. Collins Warren has recently contributed to the profession,[6] it is an easy matter to trace the histogenesis and life history of this interesting tumor. The growth undoubtedly started as a fibro-epithelial nodule in which the fibrous type was predominant, and would have been classified at that stage as a periductal fibroma. As the tumor gradually increased, the periductal fibrous tissue eventually encroached upon and completely obliterated the epithelial gland structure. The steady uninterrupted increase in size and weight in time obstructed to a certain extent the circulation of the tumor, with a resulting general edema, which separated the individual fibromatous cells in such a manner as to give them a myxomatous appearance. A searching study of these cells leads me to corroborate the statement made by Dr. Warren that most of the periductal myxomata are in reality edematous fibromata. Only in rare instances did the individual cells under high power have the characteristic spider-web arrangement of the true embryonic myxomatous cell, and it was only under the low power of the microscope that the process appeared truly myxomatous. This is entirely analogous to the edematous change in fibro-myomata of the uterus, which is so frequently described as myxomatous degeneration. I have, however, adhered to the term myxoma in order to conform closely to the recent classification.

The last and most interesting stage in the life history of this tumor is its sarcomatous metaplasia. To quote from Dr. Warren, "The periductal sarcoma arises . . . as a very cellular fibroma. It is for all practical purposes nonmalignant, and is distinct from the non-indigenous sarcomata of the breast." Scattered throughout the tumor and seen in practically every section which was cut for examination were areas of extremely rich cell proliferation, in which the cells showed great variation in size, contour and staining properties, many of them reaching gigantic proportions, and could only be classified as sarcomatous.

It is to this metaplastic change that I ascribe the final enormous and startlingly rapid growth of the tumor which took place in the last two or three months. This is a conclusion which I make by analogy from the study of a number of cases of uterine myomata undergoing sarcomatous change and of pelvic retroperitoneal fibro-sarcomata. In these cases to which I refer tumors which had previously not been noticed by the patient took on an extraordinary growth in a few weeks, until they reached such dimensions as to endanger the life of the patient merely by obstructive pressure. In these cases the microscopical appearance showed the same irregular and scattered sarcomatous proliferation of the fibrous or myomatous cells that has been described in this case. In one of the cases, namely, a post-rectal fibro-sarcoma, there was an eventual fatal recurrence, and cases are on record of a recurrence of sarcomatous myomata. If such recurrences take place in the pelvis, it is not unreasonable to assume the possibility of a recurrence in a periductal sarcoma of the breast, which has reached the proportion of the case under discussion, inasmuch as the metaplastic process is undoubtedly identical in character with that seen in the pelvic tumors.

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[6] Boston Medical and Surgical Journal Vol. clv. No. 20. Nov. 15, 1906.

The size of this tumor is undoubtedly very exceptional. The literature on neoplasms of this particular type is meager, and though occasional mention is made that they may attain enormous size, few individual cases have apparently been reported. Many of the textbooks mention the famous case reported by Dr. C. B. Porter, of a diffuse hypertrophy of both breasts, one of the breasts reaching a size considerably larger than the one described in my case. This case of Dr. Porter's, reported both as diffuse hypertrophy and as diffuse intracanalicular fibroma, probably represents a process similar to the growth here described.

In summing up it may be said that the tumor under consideration contained all three forms of the fibrous type of fibro-epithelial growths, namely, periductal fibroma, periductal myxoma, and periductal sarcoma, each process representing a different stage in the development of the tumor.

Clinical Department.

A CASE OF PLEURISY WITH EFFUSION, TREATED BY INTRAPLEURAL INJECTION OF FORMALIN.

BY LAURENCE D. CHAPIN, M.D., SPRINGFIELD, MASS.

Charles D., twenty-nine years old, married, came under the observation of my father, Dr. Frederick W. Chapin, on Oct. 5, 1906. There was nothing of importance in the family history or the habits. Never robust, he had for the past five years suffered much with "asthma." The present illness was of about five weeks' duration. He complained of almost constant shortness of breath, and of severe coughing spells, accompanied by marked expiratory dyspnea. On physical examination there was evidence of a diffuse bronchitis and the left pleural cavity was full of fluid. Three days later my father aspirated and obtained about three quarts of turbid straw-colored fluid. The patient's general condition was much improved and the dyspnea much relieved for several days, but the fluid reaccumulated rapidly and one week after the first tapping three quarts more were removed. The pain and dyspnea were only slightly relieved after this aspiration and the fluid again accumulated.

Nine days later, on Oct. 24, 1906, a third paracentesis was done and three quarts of orange yellow, turbid fluid, slightly alkaline in reaction, of specific gravity 1,018, containing a large amount of albumin and a faint trace of sugar, were obtained. The fluid became gelatinous very promptly on exposure to the air. The sediment contained many red blood corpuscles (this blood came from the skin wound); a differential count of the the leucocytes gave:

Polymorphonuclear neutrophiles,	40%
Lymphocytes,	54%
Endothelial cells,	6%

Two guinea pigs were inoculated with the fluid by Dr. H. P. Loomis, of New York, and no tubercular lesions were found when the animals were killed two weeks later. No tubercle bacilli could be found in this fluid nor in the sputum. The urine at this time contained a very slight trace of albumin, but nothing else abnormal. The tuberculin test was not tried.

While these investigations were being made, the patient's condition was very unsatisfactory. The periods of coughing were frequent and exhausting, the appetite failed and he seemed to be losing ground daily. Morphine gr. ½ (subcutaneously) was required every evening to keep him comfortable. There was a continuous irregular pyrexia, ranging from 99° to 102°, the evening temperature being generally higher than the morning. The fluid reaccumulated rapidly and another three quarts were removed one week later, on Oct. 31, 1906. A fifth tapping was necessary on Nov. 8.

On Nov. 10 my father met at dinner Dr. John B. Murphy, of Chicago, who suggested for this obstinate case the intrapleural injection of a 2% formalin solution in glycerine. This was tried four days later when, with the assistance of Dr. W. H. Pomeroy and myself, the chest was tapped for the sixth time. As soon as the fluid had ceased to run out, we injected from a sterile metal syringe through the aspirating needle one ounce of glycerin containing ten drops of formalin. At first the fluid reaccumulated as rapidly as after previous tappings, but after a few days its height remained stationary and then began gradually to decline. On Nov. 25, the dose of morphine was reduced to gr. ¼ and a few days later to gr. ⅛; on Dec. 7, the drug was dispensed with altogether. The general condition and appearance improved rapidly, the temperature fell to normal, and on Dec. 12, just four weeks after the injection, the fluid had disappeared entirely from the chest.

A few days later the patient left for Lakewood, N. J. A letter dated Dec. 27, 1906, stated that he still had bronchitis but was gaining in strength daily. On Jan. 11, 1907, he wrote that he had gained eleven pounds in weight.

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A Memorial Hospital to be Built at Atlanta.—It is reported that the officers and employees of the Southern Railway will build in Atlanta a hospital costing $200,000, for the treatment of railroad men and their families, as a memorial to the late Samuel Spencer, president of the road. The money has nearly all been raised by subscription, and it is reported that J. P. Morgan, of New York, has donated $10,000.—*New York Med. Jour.*

Medical Progress.

PROGRESS IN GASTRO-INTESTINAL DISEASES.
GASTRO-ENTEROSTOMY.

BY ELLIOTT P. JOSLIN, M.D., AND HARRY W. GOODALL, M.D., BOSTON.

GASTRIC CHEMISTRY AND MOTILITY AFTER GASTRO-ENTEROSTOMY. INFLUENCE OF THE OPERATION UPON THE HEALING OF GASTRIC ULCER. JEJUNAL ULCER. INFLUENCE OF GASTRO-ENTEROSTOMY UPON GASTRIC CANCER. LONGEST INTERVAL OF HEALTH AFTER GASTRO-ENTEROSTOMY? SECONDARY OPERATIONS DUE TO THE GASTRO-ENTEROSTOMY OR TO THE RECURRENCE OF THE ORIGINAL DISEASE. SUBSEQUENT HEMORRHAGES NOT NECESSARILY DUE TO GASTRIC ULCER. DIARRHEA. STATISTICS.

Operations for ulcer and cancer of the stomach have added much to our knowledge of the processes of digestion; they have frequently produced relief or cure for entirely different reasons from those on which they were planned; unfortunately they have also led to the production of at least one new disease, jejunal ulcer. Katzenstein [1] has recently studied the alterations in the chemistry of the stomach after gastro-enterostomy, and the influence which this operation exerts upon gastric ulcer and cancer. His paper summarizes much of the literature on the subject and is most suggestive.

The original purpose of the operation of gastro-enterostomy was to allow the food to pass more easily into the intestine, and it was natural that the changes in digestion which were found later to take place were explained on this basis. The study of patients both before and after they have successfully passed through this operation shows that the changes produced are by no means so simple. The chemical as well as the motor functions of the stomach are affected, and the relief or non-relief which is experienced comes quite as much from the former as from the latter.

The first method, namely, the study of metabolism, has shown conflicting results. Heinsheimer found that the digestion of albumin took place within normal limits, but that there was an increase of fat in the stools. Joslin, and later Rosenberg, met with essential changes in the absorption of nitrogen, but the lack of digestion of fat was still more marked. Thus, in the case of one patient who had undergone a partial resection of the stomach for cancer, it was noted that the loss of nitrogen in the stools was 12.7% and 9.7% respectively at two observations in contrast to a normal loss of 6%. On the other hand, the loss of fat was 18.7%, which would be about four times the normal quantity; and in still another patient, after gastro-enterostomy, this loss of fat in the stools reached the large proportion of 31.2%.

Just as the studies in metabolism have shown varying results, so has been the case with the examination of the gastric contents. Some investigators have observed no essential departure from the normal, others have found bile in the stomach and still others have noted its absence. In general, the hyperacidity has been believed to be overcome by a removal of the stagnation of the contents, but two writers have found the acidity normal when it was normal or diminished before operation. One author among 31 cases found the acidity increased in 5 instances, in 10 it was normal and in 16 it was diminished. These conflicting results are, perhaps, due to poor and insufficient methods of examination. Katzenstein has approached the question from another and more comprehensive point of view. He has studied the results of gastro-enterostomy in 7 dogs; in 5 the anterior operation was performed and in 2 the posterior. In 2 of the 5 operations a button was used. The variety of operation had no influence upon the result. His results are of much value because they explain how patients with gastro-enterostomy can digest food so well.

An essential change in motility after gastro-enterostomy did not take place in any of Katzenstein's dogs. Naturally this does not apply to those cases with complete obstruction of the pylorus. Münz found the motility after operation remained normal. Instead of being hastened by the operation, Jaworsky and Rydygier found it even slowed. These observations certainly upset our preconceived ideas as to the manner in which gastro-enterostomy favors a cure of gastric-ulcer, and show that other factors than motility become effective as a result of the operation. It is, therefore, logical to conclude that not alone those ulcers of the stomach which interfere with its motor function will be benefited by such an operation.

Katzenstein found bile and pancreatic juice in the stomach in abundant quantity in all of his dogs. Immediately after the operation the presence of these secretions is constant. Gradually this condition changes, and at the end of six months, an hour and a half may elapse before these appear. The conditions which control the flow of these juices are most interesting and represent a distinct advance in our knowledge of digestion. They explain why some writers have found bile present and others the reverse. It was discovered that the introduction of fat into the stomach of a dog after gastro-enterostomy was followed by a flow of bile and pancreatic juice within half an hour, but that after a meal of meat the interval was greater — one hour and a half. Water acts similarly. These results were confirmed by experiments upon a man four months after gastro-enterostomy for cancer of the stomach. This reflex stimulation of secretions by way of the stomach itself was not supposed to exist by Pawlow. It is of great importance, because it has been shown that although acids in the duodenum stimulate the secretion of bile and pancreatic juice, they are of no effect when introduced into the jejunum. Kelling's statement was erroneous that the difference between the normal course of digestion and digestion following gastro-enterostomy lay in the fact that the reflex for the flow of bile and pancreatic juice was lost.

The unusual presence of intestinal juices in the stomach has been supposed to be harmful, but before accepting this conclusion it is well to consider how these secretions affect the pepsin hydrochloric acid digestion, and are in turn influenced by it.

Pepsin becomes inert if exposed even for a short time to an alkaline medium. It is therefore evident from what has already been stated that pepsin hydrochloric acid digestion ceases or is diminished at once after gastro-enterostomy, since the alkaline intestinal juices are then constantly present in the stomach. After some months it is possible that gastric digestion may again become active, but only to a modified degree. The alkaline reaction of the intestinal juices directly lowers the acidity. It is also lowered reflexly. The presence of even a small quantity of bile and pancreatic juice in one portion of the stomach inhibits gastric secretion from the remainder of the organ. On the other hand, it is possible to increase the pepsin hydrochloric acid secretion even to normal limits by feeding appetizing foods to a hungry animal or by the feeding of meat. These facts explain the diversity of results which have been obtained through chemical observation.

The ferments of the pancreatic gland, on the other hand, are far more resistant to changes in reaction than pepsin. Trypsin is not destroyed by remaining in an acid fluid for twenty-four hours, though its action becomes weaker the longer the exposure. Tryptic digestion takes place only in neutral and alkaline solutions. The other pancreatic ferments, amylopsin and steapsin, not only resist the effects of an acid solution, but are able to act if the acid solution is mild.

These alterations in the chemistry of digestion in the upper part of the alimentary tract must have a profound influence for good or bad upon the course of ulcer and cancer of the stomach. Ulcer of the stomach, according to Katzenstein, is due to three factors: a local disturbance of circulation, the corrosive quality of the hydrochloric acid and the digestive power of pepsin. One of these factors may predominate to such an extent as to render unnecessary much change from the normal on the part of the other two. The chief characteristic of gastric ulcer, however, is its failure to heal in the presence of hydrochloric acid. Yet it would appear that some variation existed in the power of stomachs of various individuals to resist hydrochloric acid, because some heal while others do not. It is this corrosive action of hydrochloric acid which gastro-enterostomy tends to prevent. The operation, therefore, represents far more than it was originally designed to accomplish. It is not done for a betterment in the motility of the stomach alone, but for a lowering of the acidity. The subsequent appearance of bile and pancreatic juice in the stomach is by no means harmful (*Cf.* also Dastre [2] and Moynihan [3]), but it is a direct aid on account of its alkalinity to the healing of the ulcer, and is also a protection to the mucous membrane of the intestine.

Ulcers of the jejunum were practically unknown until the operation of gastro-enterostomy was introduced. Gould [4] has collected twenty-four cases, to which number we are able to add eleven more. They have apparently occurred because the jejunum has been less able to resist the action of hydrochloric acid than the stomach itself. This explanation receives confirmation from the fact that they have been reported two and three years after, and in one case eight years after gastro-enterostomy for ulcer,[5] but never when this operation has been performed for cancer of the stomach. Katzenstein showed experimentally the sensitiveness of the jejunum, and was first to artificially produce a jejunal ulcer. He caused this to appear in two dogs upon whom gastro-enterostomy had been previously performed. The mucous membranes of both stomach and jejunum were similarly injured with a glass rod which had been dipped into hydrochloric acid. The lesion of the stomach subsequently healed, but perforation of the ulcer of the jejunum followed. It is obvious that disturbance of the circulation in the walls of the jejunum must often be considerable and thus another cause for the formation of ulcer becomes operative.

Perforation of jejunal ulcers is common. Gosset [6] reports "a case of pyloric stenosis treated by posterior gastro-enterostomy. Two years later a peptic ulcer of the jejunum perforated into the transverse colon. The jejunum and transverse colon were isolated and ileosigmoidostomy done, followed by complete recovery of the patient, a man of forty-two."

The table on page 508 includes all cases of peptic ulcer of the jejunum which we have found reported. Undoubtedly, many others have occurred.

The following data collected from this table are of interest:

Sex.	
Male,	27
Female,	4
Undetermined,	4

Age.	
4 months,	1
20–30 years,	7
30–40 years,	8
40–50 years,	6
50 + years,	3
Undetermined,	10

Operation.	
Anterior gastro-enterostomy,	20
Posterior gastro-enterostomy,	9
Y of Roux,	3
Undetermined,	3

Time after Operation.	
Under 1 year,	9
1–2 years,	8
2–3 years,	4
3–4 years,	4
4–5 years,	4
5 + years,	2
Undetermined,	4

Gastric Acidity.	
Normal,	3
Increased,	23
Diminished,	2
Undetermined,	7

Operated upon,	24	cures,	22
		deaths,	2
Unoperated upon,	10	cures,	2
		deaths,	8
Undetermined,			1

No.	Year.		Sex.	Age.	Operation.	Indication for Operation.	Time after Operation.	Gastric Acidity.	Condition Found.	Result.
1	1899	Braun[1]	M	25	Post.	Dilated stomach.	1 yr.	N	Perforation. Peritonitis.	Death.
2	,,	Hahn[2]	M	?	Ant.	Pyloric stenosis.	1 yr.	+	,, ,,	,,
3	,,	Mickulicz[12]	M	32	,,	,, ,,	16 mo.	+	Ulcer. Operation.	Cure.
4	1900	Körte[4]	M	30	,,	Gastric ulcer.	3 yr.	+	Perforation. Peritonitis.	Death.
5	,,	Steinthal[5]	M	44	Murphy Button, Post.	Pyloric stenosis.	10 days	+	,, ,,	,,
6	1901	Mickulicz[13]	M	25	Ant.	,, ,,	18 mo.	+	Ulceration. Adhesions. Operation.	Cure.
7	1902	Hahn[3]	?	?	,,	,, ,,	?	+	,, ,, ,,	,,
8	,,	Hahn[3]	M	?	,,	,, ,,	?	+	,, ,, ,,	,,
9	,,	Neuman[6]	M	24	,,	Functional pyloric stenosis.	13 mo.	+	Perforation. Abscesses. ,,	,,
10	,,	Kocher[7]	M	?	Y of Roux	Gastric ulcer	1 yr.	—	,, ,, ,,	,,
11	,,	Heidenhain[8]	M	Adult	Ant.	Gastric ulcer. Pyloric stenosis.	4 mo.	N	,, Adhesions. ,,	,,
12	,,	Goepel[9]	M	?	,,	Pyloric stenosis.	13 mo.	+	,, ,,	Death.
13	,,	Goepel[9]	M	?	,,	,, ,,	4 mo.	+	,, ,,	Cure.
14	,,	Goepel[13]	M	34	,,	,, ,,	9 mo.	+	,, Peritonitis. ,,	,,
15	,,	Quenu[13]	M	29	Y of Roux.	,, ,,	4 yr.	+	Ulceration. ,,	,,
16	,,	Mickulicz[12]	F	2 mo.	Ant.	Congenital pyloric stenosis.	3 mo.	+	Perforation. ,,	,,
17	,,	Kronlein[10]	?	?	?	Duodenal ulcer.	4 yr.	?	Ulceration. Adhesions. ,,	,,
18	,,	Czerny[14]	M	59	Post.	Pyloric stenosis.	9 yr.	+	Ulceration.	Death.
19	,,	Czerny[14]	M	42	Murphy Button, Post.	,, ,,	6 mo.	N	,,	,,
20	,,	Czerny[14]	M	36	,,	Gastric ulcer.	2 yr.	+	Ulcer. Gastro-colic fistula. Operation.	,,
21	1903	Mickulicz[15]	M	53	Ant.	Pyloric stenosis.	4 yr. 4 mo.	+	Ulceration. Adhesion. ,,	,,
22	,,	Mickulicz[12]	M	33	,,	Gastric ulcer.	3 yr. 2 mo.	+	,, ,, ,,	Cure.
23	,,	Brodnitz[11]	M	58	,,	Pyloric stenosis. Dilatation.	3 yr. 9 mo.	+	,, ,,	,,
24	,,	Schloffer[16]	F	33	?	Pyloric ulcer.	?	?	,, ,,	,,
25	1904	Robson[17]	M	44	Y of Roux.	Gastric ulcer. Hematemesis.	3 yr. 4 mo.	+	Perforation. ,,	,,
26	,,	Tiegel[12]	M	41	Ant.	Pyloric stenosis. Dilatation.	2 yr.	+	Ulcer diagnosed. Medical treatment.	,,
27	1905	Kaufman[18]	M	44	Post.	Pyloric stenosis.	4 yr.	+	Gastro-colic fistula.	Death.
28	,,	Von Cackovic[19]	?	?	Ant.	Tumor of pylorus.	3 mo.	?	Ulceration. Operation.	Cure.
29	,,	Jahr[20]	M	29	,,	Pyloric stenosis.	1 yr. 10 mo.	—	Ulcerations. Adhesions. ,,	,,
30	,,	Eiselsberg[21]								
31	,,	Herczel[22]	M	37	Post.	Gastric ulcer.	8 yr.	?	Ulcer. Gastro-colic fistula. Operation.	Cure.
32	1906	Gosset[23]	F	42	,,	Pyloric stenosis. Dilatation.	22 mo.	+	Ulcer. ,,	,,
33	,,	Battle[24]	M	30	Murphy button, Ant.	Pyloric obstruction.	7 mo.	?	Perforation. Adhesions. ,,	,,
34	,,	Battle[24]	F	37	Ant.	Ulcer with obstruction.	1 yr.	?	,, ,, ,,	,,
35	,,	Lyle[21]	M	26	Post.	Gastric ulcer.	6 mo.	+	Ulcer diagnosed. Medical treatment.	,,

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[1] Verhand. der deut. Gesellschaft für Chir., 1899, p. 95.
[2] *Idem*, p. 74.
[3] *Idem*, 1902, p. 114.
[4] *Idem*, 1900, p. 137.
[5] *Idem*, 1900, p. 139.
[6] *Idem*, 1900, p. 139.
[7] *Idem*, 1902, p. 103.
[8] *Idem*, 1902, p. 103.
[9] *Idem*, 1902, p. 108.
[10] *Idem*, 1902, p. 110.
[11] *Idem*, 1903, p. 77.
[12] Mitt. a. d. Gyn. d. Med. und Chir., 1904, xiii, p. 909.
[13] Bull. et Mém. de la Soc. de Chir., Paris, 1902, p. 250.
[14] Beiträg. für klin. Chir., 1902, xxxix, p. 98.
[15] BOSTON MED. AND SURG. JOUR., 1903, p. 608.
[16] Wien. klin. Wochenschr., 1903, p. 492.
[17] Ann. of Surg., 1904, p. 190.
[18] Mitt. a. d. Grenz. d. Med. und Chir., 1905–6, xv, p. 151.
[19] Wien. klin. Wochenschr., 1905, p. 379.
[20] Berlin klin. Wochenschr., 1905, xviii, p. 379.
[21] N. Y. Med. Jour., 1906, lxxxiv, p. 1230.
[22] Cong. Internat. Surg. Soc., 1905.
[23] La Presse Médicale, 1906, no. 66, p. 525.
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The diet for ulcer of the stomach should, therefore, be arranged so as to prevent the secretion of hydrochloric acid and pepsin. Little albumen should be given, but the quantity of fat and carbohydrate must be large. The stomach should not be allowed to be free from food, if only thus the presence of hydrochloric acid can be avoided. Meals should be given every two hours and water drunk freely. Katzenstein has observed that the giving of much fat soon after operation prevents discomfort arising from bile, and therefore advises milk and cream at the end of one day. Bile alone in the stomach may cause symptoms, but the emulsion produced by bile and fat does not.

Gastro-enterostomy in cancer of the stomach was originally performed only to prevent starvation. But the good effects of the operation can by no means be wholly explained by the betterment of the gastric motility. Many surgeons have seen cases free from obstruction, which were benefited for years by the operation. Various explanations have been offered, among them being the freedom from irritation of the growth which the operation affords. With our present knowledge that gastric motility is not greatly, if at all, influenced by gastro-enterostomy, another explanation must be sought. Katzenstein suggests that the source of the improvement may be found in the action of trypsin. There is no reason to doubt the digestive action of trypsin on the necrotic surface of the cancer, and the operation affords a most favorable opportunity for this to take place. Trypsin will digest cancer tissue because the reaction of the tissue is alkaline, though pepsin for this same reason will be without effect. The action of trypsin in cancer of the stomach will certainly be watched with interest, particularly because of the observations now being accumulated concerning its action on cancer in general. The indication for gastro-enterostomy in cancer of the stomach may thus soon become far more general than in gastric ulcer.

The value of gastro-enterostomy in the treatment of diseases of the stomach cannot be determined for many years. It is not enough that immediate results be brilliant; their permanency must be assured. Recurrences of the original disease for which the operation was performed have been reported and serious disturbances of function due to the nature of the operation occur. This operation is performed on young individuals. In what condition will they be after twenty, thirty or forty years? Will the digestive tract permanently accommodate itself to the artificial changes produced? This seems not improbable from experiments on animals. Czerny's dog lived to a ripe old age after complete removal of the stomach. Nevertheless, it would be interesting to have more reports of the results of gastro-enterostomy ten years after operation. What is the longest interval of good health after gastro-enterostomy?

It would be unjust to consider present statistics upon the value of the operation as the best to be attained in the future. The operation is still in an experimental stage, and experience on the part of the operator will certainly count.

Secondary operations are not uncommon, due either to improper functioning of the loops or the new opening. It should be remembered that such operations are on account of the gastro-enterostomy, and not because of the symptoms of gastric ulcer. Obstruction may occur within two weeks [7] and be of such alarming severity as to demand immediate surgical interference. Even a second operation may not suffice to correct the faulty action, and a third operation may be necessary at the end of a year.

These cases are to be distinguished from those of gastro-mesenteric ileus and acute dilatation of the stomach,[8] which at once supervene upon the operation. Such may follow any laparotomy, and do not necessarily imply defective surgical technique. The prognosis of these cases is extremely grave, however, and relief is to be sought by raising the hips, keeping the patient on the right side, frequent lavage of the stomach, and possibly the use of large enemata to alter the relations of the various portions of the alimentary tract to one another. Strychnine and atropine may be given in large doses.

Hemorrhage, pain and vomiting — symptoms of a recurrence of the ulcer — may appear, although a second operation discloses no serious impairment in function of the original gastro-enterostomy.[9] The operation thus at times fails to cure the ulcer, and a second operation is of as little advantage as the first. Paterson [10] reports a second operation for recurrence of the ulcer two years after the first operation, and with a fatal result. He has found no case in which relapse occurred after the patient had remained well for a period of eighteen months after operation. Writing subsequently, Robson [11] mentions recurrence of ulceration with death from hematemesis after four years of good health following gastroplasty for ulcer. On the other hand, a second perforation [12] is not an argument against the usefulness of gastro-enterostomy because Mayo [13] found multiple ulcers in 20% of his cases. Cuff [14] records the history of a patient who was operated upon twice for the perforation of two totally distinct ulcers of the stomach. Repeated attacks of gastric pain and vomiting occurred during the interim of four years.

Sudden hemorrhages may occur many months after apparently successful gastro-enterostomies, and Munro [15] records two such after an interval of nine and fifteen months from the time of operation. In one instance the result was fatal. Other similar instances are cited by Rodman,[16] whose experience corresponds with Mayo, Deaver, Kocher and other surgeons. But such hemorrhages are not necessarily due to a recurrence of the ulcer. Data is steadily accumulating which go to show that profuse hemorrhage in the upper alimentary tract frequently occurs, and yet no source of the blood can be found. W. Hale White has recently discussed this question,[17] and Busse, in an exhaustive article,[18] called attention to post-operative gastric and intestinal hemorrhages following laparotomies of every description, and even after any operation upon the body.

Diarrhea may follow gastro-enterostomy. It is especially frequent when the operation is performed for cancer of the pylorus. Anschütz [19] says this is almost invariable in malignant stenosis of the pylorus, if a loop is taken for anastomosis at a distance of more than forty to fifty centimeters from the plica duodeno-jejunalis. Diarrhea may begin as late as ten days after the operation, and may resemble a severe dysentery or diphtheria of the intestines. It is remarkable that this symptom does not develop until the patients are well on the road to recovery. Treatment must be prompt and energetic. "Since this rule has been adopted in Anschütz's clinic, no threatening diarrheas have developed. When there is an excess of hydrochloric acid he neutralizes it with an alkali; when it is deficient he supplies the normal amount. He also strives to empty the intestines of harmful contents by powerful purgatives, — castor oil, calomel or Carlsbad salts, — with astringents and possibly subcutaneous nutrient injections of sugar, fat and salt. The first indication of diarrhea is met by giving 1 gm. (15 grains) bismuth, with an astringent and 10 drops of opium, repeating this dose every one or two hours. If this is not successful, he increases the dose of opium, giving as much as from 80 to 100 drops of the tincture of opium. Some individuals require more than others to put the intestine at rest. If the diarrhea is checked a little the opium can be dropped and the astringent continued; but at every new fluid passage the attendants are instructed to give from 10 to 20 drops of opium. If there is a possibility that a loop of intestine too low down has been used by mistake, a secondary laparotomy should be done and conditions righted, or a wide entero-anastomosis made to enable the contents of the intestines to be mixed with the digestive juices more thoroughly. An artificial anus may prove of service if made in time. It is important also to learn the previous history of these patients before operating on the stomach. If a tendency to diarrhea exists, the patient should be supervised with exceptional care."

Pneumonia should be considered as one of the complications which may especially follow a gastro-enterostomy, but hernia of the abdominal wound is not unusually frequent. Jejunal ulcer has already been mentioned.

Statistics upon the results of gastro-enterostomy are most peculiar. Thus one writer reports 110 cures or apparent cures out of 112 cases operated upon, in contrast with another writer who found recurrence of symptoms in 40 cases out of 72 operated upon. Those interested will find summaries of recent work on gastric ulcer by Robson [20] Hewes,[21] Paterson,[22] Rodman,[23] Bruning [24] and Robson.[25]

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[6] Gosset: Rev. in Jour. Am. Med. Asso., 1906, Oct. 6, p. 1140.
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[10] Paterson: *Loc. cit.*
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[13] Mayo: Jour. Am. Med. Asso., 1906, pp. 915, 931.
[14] Cuff: Brit. Med. Jour., 1907, Feb. 2, p. 255.
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[16] Rodman: Jour. Am. Med. Asso., 1906, Sept. 15, p. 842.
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[18] Busse: Arch. für klin. Chir., 1905, Bd. 76.
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[22] Paterson: Lancet, Feb. 24, 1906, p. 491.
[23] Rodman: Jour. Am. Med. Asso., Sept. 15, 1906, p. 842.
[24] Bruning: Deut. Zeitsch. für Chir., 1905, lxxx, nos. 1, 2, p. 96.
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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

Regular Meeting, Monday, Jan. 21, 1907.

President, Dr. Henry Jackson, in the chair.
Daniel Fiske Jones, M.D., Secretary.

Dr. Herman F. Vickery read a paper on

EMPYEMA FROM THE PHYSICIAN'S STANDPOINT.[1]

Dr. F. B. Lund read a paper on

SOME SURGICAL ASPECTS OF EMPYEMA.[2]

Dr. F. T. Lord: I have been much interested in the two papers of the evening. Concerning the frequency of pleural effusion in pneumonia, the autopsy records of the Massachusetts General Hospital afford some interesting data. Of 154 cases of lobar pneumonia which have come to autopsy, pleural fluid was found in varying and usually small amounts in 57 cases. This fluid was serous in 13, sero-fibrinous in 42, purulent in only 2 cases. The large proportion of fatal cases of lobar pneumonia which show inflammatory pleural fluid at autopsy suggests that spontaneous recovery from such effusions is frequent in similar cases with a favorable termination. Clinical experience also confirms this, for exploration with the needle for suspected effusion complicating pneumonia at times results in the aspiration of a small amount of sero-fibrinous fluid with considerable cellular sediment collected by the centrifuge. This sediment may show an excess of polynuclear leucocytes on microscopical examination, pneumococci may be demonstrated by culture and yet recovery may follow without resort to operation. The purulent effusions should always be opened and drained, and we should strive to detect them at the very earliest part of their course.

The physical signs of empyema have already been so well described by Dr. Vickery that only one or two points occur to me to mention. Brief reference to a procedure which has been of service to me may not be without interest. I refer to the careful determination of the cardiac limits. An accurate record of the cardiac boundaries when a patient with pneumonia first comes under observation may prove of unexpected value, when later in the course of the disease a complicating empyema is suspected. A slight deviation from the originally recorded position of the heart may be a deciding factor in the diagnosis of an effusion otherwise doubtful because of existing pulmonary changes.

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[1] See page 501.
[2] See page 497.

A second sign which may be of importance in differentiating pneumonia with a thickened pleura from a pleural effusion is Grocco's sign of relative dullness in a triangular area along the spinal column on the side opposite the suspected effusion. This sign is absent in pneumonia, but was present in 30 of 32 cases with pleural effusion, recently published by Thayer and Fabyan.[3]

The use of the exploring needle is rightly, I believe, regarded as a most valuable and usually harmless procedure in the diagnosis of empyema. There are, however, one or two limitations and possible dangers in its use, which I should like to consider for a moment. The aspiration of a considerable quantity of clear pus in uncomplicated cases is practically conclusive evidence of empyema. A small amount of pus, however, may be withdrawn from a dilated bronchus or a focus of pulmonary abscess if the case is thus complicated. It should be remembered, too, that when foci of pulmonary suppuration are present they are usually near the pleural surface. On the other hand, a negative exploration with the needle should never be regarded as an assurance of the absence of empyema, as Dr. Vickery has already emphasized. In cases in which tapping has been negative and in which from the clinical symptoms and signs pus is still suspected, it is, I believe with Dr. Vickery, the duty of the physician to advise exploration with the knife.

In regard to the dangers of thoracentesis, I may refer to two accidents of which I have known. The first was in a case of suspected empyema. Exploration was done in the left lower thoracic region. Pus was found and later evacuated. Recovery was interrupted by the development of subdiaphragmatic abscess, and post-mortem examination showed that the exploring needle had probably perforated the diaphragm. Such an accident is more likely to occur in chronic cases with firm pleural adhesions. The second instance was in a patient who had suffered from pneumonia for three and one-half weeks and in whom a cavity in the left superior lobe and a left-sided empyema was suspected. Exploration with the needle in the third left intercostal space was followed by hemorrhage from the mouth and oozing from the wound of puncture and proved fatal in twenty-four hours. In patients the subject of chronic pulmonary suppuration, so frequently associated with chronic interstitial pneumonia and single or multiple abscesses, exploration with the needle is attended with considerable danger. In the case just mentioned autopsy showed an abscess cavity of the left superior lobe, surrounded by vascular granulation tissue, the puncture of which had caused the fatal hemorrhage. Blood vessels of considerable size may line the walls or traverse the lumen of abscess cavities, and their injury with the needle may lead to alarming or even fatal hemorrhage.

In acute cases suspected of uncomplicated empyema, an exploration with the needle is practically without danger, if done with due precaution. In general, I would not be understood as speaking in condemnation of the procedure, but in patients with chronic pulmonary disease, in whom we may suspect interstitial pneumonia, with foci of abscess or gangrene, the operation is not without danger.

Dr. E. A. Codman: I should like to congratulate Dr. Vickery on the excellence of the results in his cases As I understand it, in twenty-one cases there was no mortality.

One of the cases which he alludes to as not doing well was a case which I myself operated on for him. As he has said, this case was a neglected one in which the pus had been present for a long time before it was evacuated, and when the pus was withdrawn there seemed to be no tendency for the lung to fill the cavity. I have twice since operated on this patient by removing portions of his ribs so as to allow the chest wall to sink in towards the lung. I have been unable entirely to obliterate his chest cavity, but have succeeded well enough to reduce the suppurating surfaces to a comparatively small area so that the poor old man, although not healed, has lived for six years. I am afraid he has cost the hospital a good deal for dressings in that time.

In this case and in another similar case, which is also living, I did an operation for resection of the ribs which I have not seen described. This operation consists in removing portions of most of the ribs at their angles through an extra-pleural incision at some distance from the wound of the original operation. By careful asepsis in both of these cases I succeeded in getting primary union after the resection of nine ribs through one long incision. The result has been gratifying in that it immediately reduced greatly the extent of the suppurating internal surface of the cavity. If I should do this operation again, I should do it both in front and behind so as to allow the chest wall still further to sink in. This case also illustrates another point mentioned by Dr. Lund, the danger of losing drainage tubes in the pleural cavity. At the second operation on this case I was told by the out-patient dresser that a tube had been lost. An x-ray taken to determine the whereabouts of the tube to my surprise showed three tubes instead of one! At the operation I was able to recover all three.

I also want to speak of a case which I operated on recently for Prof. Frederick Shattuck at the Massachusetts General Hospital. The empyema in this case appeared in the convalescence from typhoid. Dr. Shattuck had made the diagnosis and withdrawn pus with a needle. Thinking that there must be pus below the point where he had tapped and wishing to make the drainage at as low a point as possible, I resected a portion of the tenth rib in the posterior axillary line. The patient was very sick, so I used cocaine. On removing the rib I tore into an apparently healthy serous cavity which was separated from the rib practically by only the thickness of the periosteum, showing that I could not have gone through the diaphragm into the abdomen. I did not feel sure at the time whether I had entered the abdomen or a portion of the pleural cavity below an encysted empyema. On thinking it over afterward I felt sure that I must have been in the pleural cavity, but as the patient was under cocaine at the time I did not feel like exploring, knowing that the thing to do was to close the wound and later search for the pus at the point at which Dr. Shattuck had tapped. Two days later Dr. Harrington under ether resected the rib at the latter point and had no difficulty in evacuating a considerable amount of pus. The patient recovered unusually rapidly. This case interested me very much because I had previously thought that encysted empyemata must be very rare and that if pus was obtained at a certain level it must extend at least from there downwards to near the limits of the pleural cavity. In one case I remember that the bottom of the cavity was at the twelfth rib.

I was interested to hear that Dr. Lund had also given up a lower opening for another reason, because he found that the diaphragmatic pleura closed the wound too soon. Certainly most surgeons would prefer to have their drainage at the most dependent part of the cavity. Some even resect one rib and, having passed their finger into the pleural cavity, feel down for the lower limit and then resect another rib. The only objection I can see to this procedure is that two wounds would be more troublesome to close than one in order to obtain the bellows action which helps the lung to expand.

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[3] Am. Jour. Med. Sc., Jan., 1907.

Another point which Dr. Lund has mentioned I should like to ask him about. He spoke about feeling the lung come down on his finger in certain cases. I have never myself seen the lung fill up the cavity when the pus is drained, although I have seen the parietal pleura on the diaphragm come very close to the opening. When I have seen the collapsed lung at all, it has collapsed towards the median line, not towards the apex of the pleural cavity. I think it would be more correct to speak of the lung coming out than coming down. I should like to ask whether any of the other gentlemen have had the same experience.

I was also interested to hear Dr. Lund say that he had had no satisfaction with the various appliances for producing a valve-like action of the dressing. I believe that such a dressing was originally invented by Lister, but at the Massachusetts General Hospital a dressing of rubber tissue applied so as to act like a valve was introduced by Dr. Arthur T. Cabot. Until Dr. Cabot showed me how to apply it, I got little satisfaction from it, but since I have known how to apply it, I have thought that a good deal of help was obtained from it.

I should also like to ask Dr. Lund what he thinks of a suggestion which I made to Dr. Shattuck in regard to another of his patients. The patient had a very large empyema cavity of some years' standing. There had been no operation, but at intervals of many months the patient had been tapped and large quantities of pus were drawn. In this case it seemed to me that since the disease had existed so long a time that the prognosis of operation would be poor at present, even though the patient's general condition was very good. I suggested that the patient should be tapped for several times at short intervals so as to decrease the size of the cavity and allow the mediastinal tissues to return to their normal places as nearly as might be. If the cavity could be kept small by repeated tappings for a while, it seemed to me that the prognosis of an operation would be better than if the operation were undertaken at once.

Note. There is still another point which I have not heard spoken of to-night which is of great interest. I refer to the prognosis in cases of pyopneumothorax. In these cases, if there is a communication between the empyema cavity and a bronchus, it would seem to me that the chances of expansion of the lung are greatly diminished. This condition was present in both the cases to which I alluded above as being benefited by resection of the ribs.

I was told a short time ago by Dr. J. H. Pratt that he had been able to cause the disappearance of a pyopneumothorax by repeated tappings and systematic hygienic treatment in a tubercular case. If so much can be accomplished in this way, I am inclined to think that I should advise a case of pyopneumothorax to be treated in this manner rather than by operation, for it seems to me that the chances of expansion of the lung in such cases are very much reduced.

Addendum. Since the meeting at which Dr. Lund read his paper I have operated on another case of empyema in which I had the misfortune to again resect a rib at too low a level. On this occasion I resected a small portion of the eighth rib in the posterior axillary line and found the diaphragm adherent to the pleura. I then resected a small portion of the sixth rib in the same line. This proved to be at the lower limit of the empyema cavity. In this case, which was a girl of about ten years of age, it was very easy to make out the position of the lung. Its lower border was adherent to the diaphragmatic pleura and it was collapsed toward the mediastinum. The diaphragmatic and parietal pleuræ were adherent as far as the sixth rib.

I think that the reason that I never have seen the lung come out to the wound may be that I have had never the opportunity to operate on a very recent case in a young child before adhesions had formed. Possibly in such a case the lung might expand or rather the flexible chest wall might collapse so as to obliterate the cavity.

Dr. Percy Musgrave: I have been very much interested in hearing both of these excellent papers. There are one or two points which have interested me especially. Dr. Lund spoke of a source of error in diagnosis; namely, where the true pus had gravitated to the lower angle of the pleura and the fluid withdrawn at a higher level was serous.

Examination of the stained sediment in these cases I think would have shown over 90% of polynuclear leucocytes and probably bacteria. There are a considerable number of cases which are on the border line of empyema, where paracentesis is done, and empyema can usually be predicted when stained coverslip preparations of the sediment show a great predominance of polynuclear leucocytes, and this is especially true where bacteria are found as well. This is well illustrated in a case of metapneumonic pleurisy which I saw, where the fluid was serous, the temperature only slightly elevated and the leucocyte count of the blood was falling, the stained sediment showed over 95% of polynuclear leucocytes and occasional pneumococci. On account of the clinical picture it was not deemed advisable to interfere. Several days later, on account of the signs of reaccumulation and slight rise in temperature, the patient was tapped again showing pus, which gave pneumococci in pure culture.

The streptococcus cases are also misleading at times, as the fluid may be only slightly turbid, although the stained sediment shows over 98% of polynuclears and often numerous cocci. This last class of cases is especially liable to subcutaneous abscesses arising from the course of the original paracentesis wound, although often several inches from it. It is always well to think of this when the chest is draining well and signs of reaccumulation are absent, but the temperature has risen and the appearance of the patient is bad.

In reply to Dr. Codman's question, I remember a case where there was encapsulated empyema immediately adjacent to the pericardium, but with no infection of that membrane. The case was proved at operation.

Dr. Charles P. Sylvester: I have occasionally suspected loculated empyema either of chest wall, interlobar, or between the lower lobe and diaphragm, as modifying the termination of some of my pneumonia cases, and since hearing Dr. Musser's excellent paper on that subject at last June's session of the American Medical Association, have sought with more confidence to detect signs leading to such a diagnosis.

Two weeks ago I made the diagnosis on the appearance of hectic fever, sweats, incessant cough and localized edema of chest wall in a patient recovering from pneumonia.

A woman, sixty-five years old, whom I had tapped three times within last two years for right-sided hydrothorax and once for ascites secondary to endocardial and myocardial disease, developed three weeks ago pneumonia of left lower lobe. Temperature remained for seven days between 100.5° and 102.8°, then fell to 96.5°, with clearing up of lungs. Two days later temperature became hectic, reaching 102.5° each night, and accompanied by severe night sweats and incessant cough and edema of right chest wall in axillary space between fourth and eighth ribs.

Three examinations of sputum for tubercle bacilli were negative. Hyperresonance of the right lung dependent upon the pneumonic condition in the left rendered it difficult to detect a small area of impaired resonance, and the breath-sounds, likewise modified, were negative. Dr. Withington later went over the case carefully with me, but was also unable to confirm the diagnosis from physical examination.

I believe that autopsy, however, would show a localized empyema not far from the seat of the edema.

Dr. John Lovett Morse: The thing which has struck me most forcibly about the papers of the evening is how much better the prognosis of empyema in adults is than it is in infancy and early childhood. In them empyema is a very serious and fatal disease. The prognosis at this age seems to depend more on the time of the operation than on anything else, delay making the prognosis much worse. I have found a marked sense of resistance one of the most important diagnostic signs between solid lung and fluid in infancy. I depend on this and the displacement of organs more than on all other signs together. The exploring needle should be introduced where the signs are most suggestive of fluid without regard to any theoretical considerations as to the point of election. I have seen encapsulated empyema in both infants and young children and have several times seen an interlobular empyema.

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COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Stated Meeting, Wednesday, Feb. 6.

The President, Dr. Arthur V. Meigs, in the chair.

INFECTIONS WITHIN THE THORAX-EMPYEMA.

Dr. John H. Musser gave some statistics showing the frequency with which empyema followed pneumonia, and called attention to some points for the early recognition of the condition that recourse might be had to early operative procedure. The diagnosis, he said, must be made in great part from a full understanding of the antecedents of the infection. In a large majority of cases this antecedent condition is pneumonia. The physician should be on his guard for the development of the general phenomena of infection after the pneumonic process has apparently subsided. He called attention to the significance of minor local symptoms during the convalescence of pneumonia and the early period of a beginning empyema. Pain of the steady, persistent type was significant, also the localized tenderness. The physical sign of impaired expansion and the presence of Litten's sign were mentioned as valuable diagnostic points. Little reliance can be placed upon fremitus, as it is variable. The voice sounds were said to be not usually different from those found in the presence of effusion. Localized friction was regarded as a valuable guide regarding the position of the abscess when it is between the lobes and under the diaphragm. Some value was attached to the x-ray in the recognition of abscess within the thorax. He urges exploratory operation by resection of the rib for the speedy detection and immediate cure of these abscesses.

Dr. Frederick P. Henry agreed with Dr. Musser in the importance of early diagnosis and in the points brought out in making that diagnosis positive.

Dr. Judson Deland spoke of the well-known dangers of the dry tap and the mistaken conclusion sometimes taken that no pus is present.

Dr. Arthur V. Meigs spoke of the difficulty in diagnosis, but thought it was usually as well made by the physician as the surgeon.

Dr. R. G. LeConte, for the surgeon, claimed that he was not a wizard and, seeing a patient for a few moments, should not be presumed to be able to localize pus which the attending physician was unable to do after having the patient under observation for several weeks. He cited one case in which he had opened the chest without finding pus. Dr. Packard had withdrawn pus by the needle. Dr. LeConte had then opened the chest at the site of puncture to find that all had been withdrawn. Uninterrupted recovery followed the resection.

Dr. S. Solis Cohen heartily indorsed the advice given by Dr. Musser to open the chest fearlessly even when a dry tap is made. He recalled one case in which three dry taps had been made but in which, upon rupture of dense adhesions, a pus cavity was revealed. In still another case seen in consultation, the needle removed no pus, but resection of the rib showed that pus was present.

Dr. A. A. Eshner said that in the presence of the signs of pleural effusion and in cases of dry tap, with the persistence of the symptoms, resection of the rib is entirely justifiable.

ON THE TREATMENT OF CHRONIC DISEASES OF THE HEART.[1]

Prof. Theodor Schott, of Nauheim, in accordance with an invitation to lecture in the United States, spoke upon this subject. He mentioned that the former method of treatment with rest and digitalis had been inadequate. Even many of the newer remedies were unsatisfactory, which had led to a search for other means and the finding of physical methods. These were said to be principally the Swedish and Oertel's methods, as well as the balneological gymnastic treatment devised by himself conjointly with his late brother, August Schott. He spoke first of the Oertel Cure. Oertel's theory, however, concerning the limitation of the supply of liquids proved to be erroneous. Mountain climbing is only notable in a limited number of cases of heart affections, and should really be resorted to towards the end and not at the beginning of the treatment. The Swedish method was said to be principally used in the form of Zander's mechanical contrivances. These do not, however, render the patient independent either of his momentary physical condition or of continued medical supervision. It should not be overlooked that with Zander's machinery the patient is dependent upon time and locality, and above all that it is a very difficult matter to attain a precise degree of individualization in the measurement of the resistances.

The lecturer then described his balneological-gymnastical treatment, depicting the physiological action of the baths, their influence upon the heart, the vascular system, blood-pressure. The baths and gymnastics were said to be tonics for the weakened heart, the baths working by means of the sensory, the gymnastics by means of the motor, nerve-treatments. He then described the course of the bath-cure in heart diseases. The treatment begins with the use of simple saline baths, especially in severe cases. The strength of the baths is then gradually and systematically increased until finally the strongest mineral water with the highest percentage of natural CO_2 is resorted to. The full details of the Nauheim baths were given, their solid and gaseous (CO_2) constituents, temperature, duration, etc. The lecturer then spoke of the mode of preparation of artificial Nauheim baths as devised by his late brother and by himself. He also pointed out how their usefulness may be imperiled through not properly preparing them.

Gymnastics are used in two forms: Resistance gymnastics and exercise with self-resistance. In the first of these forms the resistance is offered by an assistant; in the second, by the tensifying (contraction) of antagonistic groups of muscles on the part of the patient himself. The manner of performing these exercises was described, and also the cautionary measures which they require. He further mentioned massage, the application of heat and cold, the use of electricity and the diet. In conclusion, a large number of drawings were exhibited showing heart limits, radiograms, pulse-tracings with relative blood-pressure. In this way, he said, might be illustrated the results obtained in cases of heart disease by the balneological-gymnastical treatment.

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[1] Dr. Schott's paper will later be published in full in this Journal.

Dr. S. Solis Cohen spoke of his experience with the method with which Dr. Schott and his brother had enriched therapeutics. He was glad to note the emphasis placed by Dr. Schott upon individualization. The special difficulty he had found in training operators to administer the Schott system of exercises was to have them properly understand the meaning of the word "gentle" in the employment of the gentle resistance exercises. The question of diet, he agreed, was also of great importance. As with the baths and exercise, there should here be strict individualization.

Dr. James M. Anders agreed with Dr. Schott that more is gained in chronic cardiac disease from the physical methods than from the use of drugs alone. He spoke of his personal observation of cases under the author's care and of the efficacy of the methods of treatment. The most marked effect had been in the lessening of the size of the heart. He had more than once been able to note after the application of the resistance exercises the decrease of the heart's transverse diameter by half an inch. The principal factors in the increased vigor of the heart were said to be the indirect influence of the saline baths acting upon the cutaneous sensory nerves and the stimulation of the peripheral motor nerves by the resistance exercises.

Dr. Judson Daland spoke of a method of estimating the condition of the cardiac muscle in its reaction before applying the resistance movements. It consisted in certain muscular movements of the body and noting the force of the first sound of the heart.

Book Reviews.

Tropical Medicine, with Special Reference to the West Indies, Central America, Hawaii and the Philippines, including a General Consideration of Tropical Hygiene. By Thomas W. Jackson, Lecturer on Tropical Medicine, Jefferson Medical College, Philadelphia; Member of the American Society of Tropical Medicine, etc. Philadelphia: P. Blakiston's Son & Co. 1907.

The author's purpose in this volume is to describe the diseases of the American tropics and to limit himself to such diseases as are found within our own territory, *i. e.*, the southern portion of the United States, Cuba, Porto Rico, Hawaii, Guam and the Philippine Islands. There would seem to be a need for such a book.

Two considerations have been kept in view by the writer: utility and simplicity. Complexity in terminology and classification has been avoided, and tropical diseases not occurring in the above-mentioned regions are not included. Suggestions as to general hygiene in the tropics precede the description of the diseases. In this is included a concise consideration of some of the insects, especially mosquitoes. Then follows the description of the various diseases. The book is well printed on good paper and is well written in a somewhat narrative style, especially those parts in which the author details his own experiences. The subject matter is well arranged and is illustrated by cuts culled from various sources, all well chosen to illustrate a definite thing. The book appears to contain much information of great value to the medical man in the tropics. For the physician in temperate climates it is a very readable book and one from which he may gain valuable information, for with the possession of tropical colonies and increasing communication with them, the diseases of the tropics become of actual importance to the medical man at home. That this is no theoretical consideration is shown by the fact that the reviewer in the past few years has seen in the general hospitals of Boston examples of eight of the diseases described in Dr. Jackson's book, notwithstanding that Boston is almost as remote from our tropical possessions as any city in the United States.

Treatise on Orthopedic Surgery. By Royal Whitman, M.D. Philadelphia and New York: Lea Brothers & Co. 1907.

This volume which is a revised and enlarged edition of the former well-known work by the same author describes all the diseases and deformities known to orthopedic surgery, in a most interesting manner. Each chapter is written in its own way, and there is no attempt at similarity in the method of treatment of the different subjects. In the beginning of the book, tuberculous diseases of the spine are treated, then non-tuberculous diseases of the spine. After this, curvature of the spine and deformities of the chest. Then diseases of the bones and joints, and following are the deformities and injuries of the lower extremity and upper extremity, a very interesting chapter on congenital and acquired deformities leading to general distortions, congenital hip, coxa vara, nervous diseases, torticollis, most interesting and detailed, ending with four chapters on the deformities and disabilities of the foot. In those subjects to which the author has devoted especial personal study, he becomes most interesting, direct, concise and forcible.

Paraffin in Surgery. A Critical and Clinical Study. By William H. Luckett, B.S., M.D., Attending Surgeon, Harlem Hospital, and Frank I. Horn, M.D., Assistant Surgeon, Mt. Sinai Hospital Dispensary. New York: Surgery Publishing Company. 1907.

This little book of 118 pages, including a satisfactory index, is a good book. The authors have presented their subject in logical and forceful fashion. Especially interesting to the casual reader is the introductory chapter on the history of the use of paraffin in surgery, — a chapter which clears up many misconceptions and explains cogently the *rationale* of this procedure. The subsequent chapters discuss the chemistry of paraffin, its early disposition in the tissues, its physical states and its ultimate disposition. Then follow chapters on technique, results and accidents. The book is one which every careful surgeon may read with profit.

THE BOSTON

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CENTENARY OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF NEW YORK.

IN June of this year the College of Physicians and Surgeons, now affiliated with Columbia University, will celebrate the one hundredth year of its existence. The history of medical institutions in this country is becoming increasingly interesting, and many have attained an age which make a rehearsal of the events which have led up to their present condition a matter of more than passing significance. The last number of the *Columbia University Quarterly* is given up entirely to questions of medical education in New York as exemplified by the development of the College of Physicians and Surgeons. It is particularly significant that the celebration about to take place is to be under the auspices of Columbia University, exemplifying as it does the strongly marked tendency to associate as closely as possible medical departments with university foundations.

The first class was graduated from the College of Physicians and Surgeons in 1811 and consisted of eight men, three of whom were bachelors of arts of Columbia. The original school of medicine in New York in connection with the college had begun teaching in 1767, and again in 1792, after a long cessation resulting from the War of the Revolution. The College of Physicians and Surgeons had been founded in rivalry to this Columbia school, but in 1813 the faculty of medicine of Columbia College ceased to exist, and the College of Physicians and Surgeons became the center of medical education in the city. Later it was affiliated with Columbia University, and in 1891 became an integral part of that institution. The history of struggle, and final survival under the best possible conditions for advance is characteristic of the best medical schools of this country. It now has many rivals in its own city, schools associated with universities, but for many years in its earlier life the small faculty of the College of Physicians and Surgeons stood almost alone, and with the exception of the parent school in Philadelphia, the Harvard School in Boston, and a few others, it drew students from widely separated parts of the country.

The various articles in this volume of the *University Quarterly* from the pens of such men as Drs. L. Emmett Holt, Frederic S. Lee, Walter B. Jones, M. Allen Starr, George S. Huntington, and others, are extremly suggestive, not only of the progress which has been made in the past, but also of the hopes and tendencies of the future. On this occasion a certain self-satisfaction is perhaps not to be criticised, but we question whether the following statement, for example, by Dr. Starr will meet with universal acceptance: "That New York City is at present the most advantageous in which to pursue the study of medicine in the United States needs no argument." We have no intention of quarrelling with this statement, but it should certainly be borne in mind that size, multiplicity of hospitals and of medical schools do not necessarily determine the advantages to be derived from medical study in their midst. It is well to look to the German universities, which afford an admirable example of the advantages to be gained from study in small areas of population provided the system of education is above reproach. Mere size certainly has certain positive disadvantages, and in general we must come to recognize in this country that men rather than extraneous circumstances, in last analysis, determine the character of the medical school. In this latter respect the College of Physicians and Surgeons stands well among the leaders, but it is still open to question whether New York is at present the most advantageous place in this country in which to pursue the study of medicine.

We have, however, no desire at present to discuss this question. It should be a source of congratulation to all who are interested in the higher medical education that the medical department of Columbia University has completed one hundred years full of honor and accomplishment, and we beg to refer our readers to the unusual series of articles which commemorate the event in this current issue of the *Columbia University Quarterly*.

SUPERVISORY NURSES FOR THE BOSTON PUBLIC SCHOOLS.

A bill (No. 981) relative to the physical condition of children in the public schools of Boston was presented Jan. 24, in the Massachusetts House of Representatives and referred to the Committee on Cities and Towns. This committee after a hearing, at which there was apparently no opposition, reported the bill to the House, but without one of its most important and vital provisions. The sections of the bill which immediately concern us read as follows:

"Section 1. The school committee of the city of Boston shall appoint one supervising nurse and as many district nurses as in their opinion are necessary. Said nurses shall hold office for such terms as said school committee may determine and shall perform such duties as said school committee may designate, but more particularly such duties as rendering assistance to the medical inspectors in connection with their work in the public schools of said city, seeing that the directions given by the said inspectors are carried out, and giving such instruction to the pupils as will enable them better to promote their physical welfare.

"Sect. 2. No person shall be appointed as one of said nurses unless she holds a diploma showing that she has taken a course of instruction in, and has graduated from, some institution giving a course of instruction in nursing at least three years in length, and has presented to the school committee satisfactory evidence that she possesses good character and health, and unless in addition she shall have passed an examination given under the direction of said school committee and designed to test the applicant's training, knowledge, character, experience and aptness for the work."

The important provision which has been omitted is the one which stipulates that such nurses shall hold a diploma showing that they have taken a course of instruction in, and graduated from, some institution giving a course in nursing at least three years in length. The bill as originally presented was favored by its sponsors, by other competent medical opinion, by the Boston school committee and by the Public School Association. We believe that all the original supporters of the bill feel that it would be on the whole better to have no legislation rather than to leave so large a latitude in regard to the appointment of nurses in the hands of a school committee. It might be that evidence of a two-years' course of instruction in nursing in a recognized institution would be sufficient to safeguard the interests of the measure proposed, but without this provision at least, it seems to us, that the passage of this bill would be an unfortunate step. It is well known that in New York they have at present a supervising nurse and fifty-four school nurses who are doing good work in aiding the regular medical inspectors. It may not be so well known that certain public spirited organizations in Boston, impressed by the work done in New York and its value, have been furnishing, at their own expense, nurses for work in certain districts of this city. At the present time three of these assistant medical inspectors are being furnished and paid for by the Instructive District Nursing Association, by the Fathers and Mothers Club, and by Mt. Sinai Hospital. These associations consider that they have demonstrated the value of the work and think the city should now take it up. The school committee apparently shared these sentiments and, therefore, approved of the movement which resulted in the bill to which we have above referred.

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BUREAU OF HEALTH FOR THE PHILIPPINE ISLANDS.

The annual report of the Bureau of Health for the Philippine Islands for the year July 1, 1905, to June 30, 1906, has recently appeared. It is, as usual, a pamphlet containing many facts and much useful information which we are not likely to obtain in other ways. The fact that stands out most prominently, as one looks over the pages, is the conviction that not only is progress being made in solving the great medical problems which the islands present, but also that before many years have passed many diseases hitherto feared and rightly so will be practically exterminated. Tuberculosis, typhoid fever, malaria, beriberi, amebic dysentery, leprosy, plague, and various other conditions peculiar to the tropics, are being vigorously attacked and unquestionably with success. Along with the individual work which is being done, medical teaching is not being neglected. A new medical school is about to be established in Manila under government auspices, instruction in which will be given in English. It is designed to model this institution after the medical school of the Johns Hopkins University, and it is expected that forty will be able to matriculate when the school is formally opened. Both sexes are to be admitted, and no discrimination will be made on the part of color or nationality. With such a school established and turning out trained men and women on the spot, there should be no lack of workers in the future, particularly if the intelligent persons among the native population form an increasing proportion of the medical graduates. A large part of the pamphlet is taken up with statistics, and an admirable series of photographs, many of them illustrative of the Culion Leper Colony, which is being established and which should go far toward the solution of the problem of leprosy in the islands.

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MEDICAL NOTES.

Another Misfortune for McGill University. — On April 5, the McDonald engineering building connected with the McGill University was destroyed by fire at a loss of nearly $750,000. On April 16, the medical building, one of the largest composing the university, was also totally destroyed, at an estimated loss of $500,000, together with its equipment, which will be most difficult to replace. The cause of the fire is not known.

Reception at the White House for the Congress of Physicians and Surgeons. — President Roosevelt will receive the members and the ladies, guests and visitors of the Congress of American Physicians and Surgeons, at the White House on Tuesday, May 7, at 2.30 p.m.

Cards of admission will be required at the White House door which may be obtained upon registration at the time of the meeting.

A New Journal. — The first issue of a new journal, to be known as the *Proctologist*, has appeared under the editorship of Dr. Rollin H. Barnes, of St. Louis. The first number contains several original articles, a number of abstracts from other journals bearing on the general subject, together with an introduction by Dr. Joseph M. Matthews and editorial comment.

Ohio Hospital for Epileptics. — Since the opening of this hospital in 1893, according to the last annual report of its superintendent, Dr. William H. Pritchard, 146 men and 102 women have been discharged recovered, making a percentage of 7.3% of the total number under treatment during thirteen years. Such figures are altogether encouraging. In treatment stress is laid upon employment, systematic life, care of the diet, and a moderate use of drugs. Insistence is laid upon the fact that the bromides relieve a symptom, but do not reach the seat of the disease. A certain number of autopsies have been done at the hospital during the year, but no results of significance have been obtained through pathological study.

Leprosy in the Philippines. — According to the last quarterly report of the Bureau of Health of the Philippine Islands, a most remarkable change seems to have come over the people in reference to their attitude toward the leper hospital. It is almost a daily occurrence for persons to apply voluntarily to this Bureau for hospitalization. Many have come from the provinces and requested that they be admitted to San Lazaro Hospital until they could be sent to Culion leper colony. These facts are significant and point to an improvement in the attitude of the people.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 10, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 53, scarlatina 33, typhoid fever 4, measles 10, tuberculosis 64, smallpox 0.

The death-rate of the reported deaths for the week ending April 10, 1907, was 21.48.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, April 13, 1907, was 203, against 234 the corresponding week of last year, showing a decrease of 31 deaths and making the death-rate for the week 17.58. Of this number 105 were males and 98 were females; 199 were white and 4 colored; 107 were born in the United States, 92 in foreign countries and 4 unknown; 30 were of American parentage, 142 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 46 cases and 4 deaths; scarlatina, 40 cases and 2 deaths; typhoid fever, 5 cases and 0 deaths; measles, 9 cases and 0 deaths; tuberculosis, 59 cases and 22 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 26, whooping cough 0, heart disease 29, bronchitis 6 and marasmus 5. There were 13 deaths from violent causes. The number of children who died under one year was 33; the number under five years 48. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 70.

There were 11 cases and 10 deaths reported from cerebrospinal meningitis during the week.

Opsonins in Surgery. — At a meeting of the Rochester, N. Y., Academy of Medicine, held April 17, Dr. James G. Mumford read a paper on "Opsonins in Surgery."

Death from Electricity. — A young woman was found dead last Sunday, sitting beside a telephone instrument at her home in Marlboro, Mass. Examination showed a slight burn on the wrist, indicating that a metallic cuff button had touched the switch as she turned on the electric light, allowing the current to pass through her body into the telephone instrument which she touched with her other hand, on which there were also two burned spots. The accident will be reported on by the medical examiner of the district.

Long Island Hospital. — The tenth annual report of the Pauper Institutions Department, which includes the hospital and almshouse at Long Island, has recently appeared. The Hon. John B. Martin, official in charge of the department, in his report, speaks appreciatively both of what has been accomplished in the past and of the needs of the future. He draws special attention to the problem occasioned by the presence of tuberculous patients at the hospital, and the overcrowding which necessarily results therefrom. The insufficient provision for the corps of nurses now required is also a matter demanding immediate attention. Mr. Martin is in accord with the visiting medical staff in these and other recommendations. The necessity for the further development of the hospital is acknowledged, a matter to which we have often had occasion to refer.

Report of the Boston Lying-In Hospital.— The current report of the Boston Lying-In Hospital is this year of special interest because of certain changes which have taken place in its staff. Dr. William L. Richardson retires from the position of visiting physician after an active and peculiarly useful service to the institution of thirty-four years. Dr. Charles M. Green takes Dr. Richardson's position as visiting physician, and Dr. Franklin S. Newell becomes assistant visiting physician. During the year 1906 the number of mothers cared for at the hospital was 785, and 781 children were born and cared for. The daily average number of patients was slightly over 36, with an average stay in the hospital of 17.2 days. In the Out-Patient Department, 1864 women were attended in confinement, with a total number of visits of 27,667. These figures show the active work which the hospital is doing, serving not only as a valuable public charity, but also as an admirable source of instruction for medical students and recent graduates.

NEW YORK.

Mortality Statistics. — The weekly reports of the Health Department show that the mortality in the city during the month of March represented an annual death-rate of 19.84, as against 20.46 in February and 20.06 in March, 1906. Among the diseases in which there was a diminished fatality were the following: the weekly average of deaths from diphtheria and croup decreased from 51.5 in February to 35.25 in March; the weekly average from acute bronchitis, from 34.25 to 25.25; from pneumonia, from 191.5 to 184; from bronchopneumonia, from 137 to 134.75; from apoplexy, congestion and softening of the brain, from 62.75 to 50.25; from organic heart diseases, from 158.5 to 147.5; and from Bright's disease and acute nephritis, from 128.25 to 121.25. Among the diseases in which there was an augmented mortality were the following: the weekly averages of deaths from measles increased from 6.75 to 11.25; from scarlet fever, from 16 to 18.25; from whooping-cough, from 5.75 to 9.5; from epidemic cerebrospinal meningitis, from 12.5 to 19.5; from pulmonary tuberculosis from 202.75 to 206; from diarrheal diseases, from 49.25 to 54.75; from diarrheals under five years of age, from 41.75 to 47.75; from cancer, from 66.75 to 69; and from cirrhosis of the liver from 21.25 to 22.5.

A Means of Typhoid Infection. — The danger of the possible contraction of typhoid fever from typhoid patients long after the cessation of the disease seems to have been clearly demonstrated in the case of Mary Ilverson, a cook, who has recently been under the observation of Drs. Briggs, Bensel and William H. Park of the Health Department. The attention of the department was directed to it by Dr. George A. Soper, the well-known sanitary expert, who had made a careful investigation of the facts. It appears that six years ago this woman had an attack of typhoid, and although she recovered perfectly and has been in excellent health ever since, her intestinal tract has continued to be a very active culture ground for the development of the typhoid bacillus. As a result, cases of the disease, amounting in all to thirty-eight, are stated to have occurred in nearly every family in which she has lived since her recovery.

Special Medical Milk Commission. — Mayor McClellan has appointed a special medical milk commission, consisting of the following eminent physicians: Joseph D. Bryant, T. Mitchell

Prudden, Rowland G. Freeman, Abraham Jacobi and L. Emmett Holt. In announcing his action he issued this statement: "In view of the recent discussion on the subject of New York City's milk supply I have to-day (April 2), on my own responsibility and with a view to settling authoritatively this very important matter, appointed a commission of five members to look thoroughly into the entire subject and recommend what steps, if any, are necessary to insure the city an abundant supply of absolutely pure milk."

A Test Case of Responsibility. — A test case fixing the responsibility for negligence on the part of those conducting blasting operations has just been decided in the Court of Appeals. The wife of Julius Hacker, an engineer, who was killed by a piece of rock from a blast during excavations at the Grand Central Station, brought suit against the O'Rourke Engineering and Construction Company for damages. The contention was that the blast was not properly protected, as provided by the city ordinances, and at the trial the jury found a verdict for $8,000. The company having appealed, the Appellate Division of the Supreme Court affirmed the judgment, and the Court of Appeals has now sustained both the trial court and the Appellate Division.

A Centenarian. — John O'Keefe, of Brooklyn, died on April 2, at the reputed age of one hundred and eight years. He was born in Connaught, Ireland, and had lived in Brooklyn for seventy years. He appears to have continued remarkably vigorous to extreme old age, as for the past ten years he had been able to work as an employee of the Greenwood Cemetery Company. He dropped dead from cardiac disease while engaged in mending the gate in front of his house.

Obituary.

GEORGE F. GALE, M.D.

Dr. George F. Gale, well known as a surgeon in New England in his early life, died at his home in Brattleboro, Vt., on Sunday, April 14, after a critical illness of one week. Dr. Gale had practiced in Brattleboro longer than any other doctor who ever lived there, going to Brattleboro in 1858. He was the youngest of eleven children of Jesse Gale and was born in Petersham, Mass., May 19, 1827. After attending Petersham Academy and Middlebury College he was graduated from the Berkshire Medical College in Pittsfield, Mass., in 1855. Before going to Brattleboro he practiced in Cummington and Deerfield, Mass., and Janesville, Wis., and for a time had charge of a smallpox hospital in San Francisco. He was first surgeon of the Eighth Vermont Regiment in 1861 and 1862, and after the battle of Gettysburg he responded to the call for additional surgeons. He was on the first board of bailiffs elected in Brattleboro, a charter member of Beauseant Commandery and the Vermont Wheel Club, President of the Cemetery Association and also of the Society for Prevention of Cruelty to Animals ever since it was formed. He married Vesta Richards Orcutt in Cummington in 1849. She died in May, 1903. Two daughters survive, Miss Martha Clara Gale, of Brattleboro, and Mary Holland, wife of George A. Briggs, of Claremont, N. H. The funeral was held in St. Michael's Episcopal Church, Brattleboro, on Wednesday, April 17.

Current Literature.

The Journal of the American Medical Association.

March 30, 1907.

1. *Councilman, W. T. *Changes in Lymphoid Tissue in Certain of the Infectious Diseases.*
2. *Jackson, C. *Meningism as Distinguished from Meningitis.*
3. Allport, F. *The Radical Mastoid Operation.* (Continued.)
4. *Greenberg, H. *Spina Bifida.*
5. Weisenberg, T. H. *Conjugate Deviation of the Eyes and Head.* (Concluded.)
6. *Jones, N. W. *Arseniuretted Hydrogen Poisoning.*
7. Hirschfelder, A. D., and McCaskey, G. W. *Inspection of the Jugular Vein and Visual Methods in the Diagnosis of Heart Block.*

1. Councilman recalls to attention the foci of cellular infiltration in the kidney in acute infections, described by him in 1898. In routine examination of tissue since then he has observed similar interstitial cell accumulations in other organs, most frequently in the adrenal glands, occasionally in the pancreas and in the lungs. He has made a minute study and classification of the forms of cells occurring in these foci. The cells, he concludes, must reach the tissues from the blood, since there are no local cells near where they are found which could give rise to them, and since they are also found in the blood vessels. To discover their ultimate origin, however, we must turn to the lymphoid tissues of the body. In infectious diseases, such as diphtheria, scarlet fever and smallpox, changes consisting essentially in necrosis and following proliferation take place in the lymph nodes, and to some extent in all lymphoid tissue. The new cells formed in this proliferation are at first cells of an indefinite character, some growing into plasma cells, others even resembling myelocytes. These newly formed lymphoid cells enter the blood by the lymphatics, but for some reason show a tendency to leave the blood vessels and to collect in the foci of interstitial infiltration in the kidney and elsewhere. The meaning of this process is a question of pathological physiology which cannot yet be answered. Why the process is more marked in some diseases than in others, and whether the activity of the lymphoid tissues bears any relation to the production of immunity must be determined by further study.

2. Jackson favors the use of the term meningism, introduced by French writers to designate a syndrome with most of the earlier symptoms of meningitis, but without lesions of the meninges and of more favorable prognosis. Any of the symptoms of meningitis may occur, but the erethistic rather than the depressive predominate. The full development of pressure symptoms, paralysis or other indications of actual organic disease,

will usually exclude meningism. He recognizes as etiologic types the toxemic, the reflex and the irritative; in all three there are circulatory changes and in many cases direct action on the cortical cells. In the toxemic cases the noso-toxins in the blood act similarly to toxic drug doses on the cerebrum. The readiness with which the symptoms of meningism can be quieted by small doses of morphin is remarked on by Jackson as an important diagnostic point. These cases are distinct from Quincke's serous meningitis inasmuch as there is no serous involvement. Looking at the condition from the otologist's point of view, the irritative and toxemic cases, he says, when occurring in the course of middle-ear disease, are of the utmost importance as regards diagnosis, and often call for radical operation even if the mastoid is yet uninvolved.

4. Greenberg pleads for the more extended use of operative methods in the treatment of spina bifida, and reports a case, calling attention to certain points in the technique. He employed the muscle flap method of Bayer, improving on it, however, by utilizing the aponeurosis of the latissimus dorsi. A longitudinal incision of sufficient length to cover the defect was made over one side of the spinous processes above the cleft, thus freeing a section of the aponeurosis at its origin on that side. Another longer oblique downward incision was made from the upper point of the first, thus making a triangular flap of aponeurosis free at all points except the apex. Using this apex as a center, the whole flap is rotated downward until it covers the defect of the vertebra on that side. The same procedure is followed on the other side, and the borders of the flaps are united with chromicized catgut directly over the defect, giving a covering next to bone in strength and consistency. His patient, who had been getting steadily worse, began to improve and was nearly well in two months. The pressure on the cord, which had lasted for sixteen years, and had suspended the function of the cord, had not so impaired its tissue as to prevent a speedy alleviation of symptoms and restoration of function. The article is illustrated.

6. Jones gives the history of five cases of poisoning by arseniuretted hydrogen in workers with the cyanide process of gold extraction from low grade ores, and also tabulates fifty-five other cases of poisoning from this gas collected in medical literature. Considering the very common presence of arsenic in the materials used in this process a rather frequent occurrence of such poisoning might be looked for, but these cases seem to be exceptional. It seems rather remarkable that so few cases of this poisoning from all sources are on record in view of the numerous possible sources in the arts and manufactures. Jones discusses the pathology, symptomatology and treatment and reviews the literature in regard to the effects on the system. The poison acts differently from the other salts of arsenic. The blood and kidneys are principally involved, the hemoglobin and red cells being attacked and the kidneys undergoing an intense degenerative process mainly involving the convoluted tubules, and the glomeruli least. The three characteristic symptoms are pain in the region of the kidneys, hemoglobinuria, which is a constant symptom, and jaundice, probably obstructive, though the disturbed liver cell function may play a part. Death, when it occurs, is undoubtedly largely due to acute urinary suppression. Some patients have shown uremic symptoms, but the majority do not. Twenty of the cases tabulated were fatal, death occurring in from two to thirty days, the average being 8.2 days. The chief indications in treatment are: First, abundant fresh air and administration of oxygen. Second, the production of free diuresis to prevent blocking of the uriniferous tubules with disintegrated blood cells and epithelium. Saline enemas and warm baths may also be useful. General supportive treatment is of course required. Active diuresis is a very favorable sign, as the majority of patients with polyuria recover. [F. W. P.]

The Journal of Experimental Medicine.

March 14, 1907.

1. *Flexner, S. *Biology of Diplococcus Intracellularis.*
2. *Flexner, S. *Experimental Cerebro-Spinal Meningitis in Monkeys.*
3. *Flexner, S. *Serum Therapy for Experimental Infection with Diplococcus Intracellularis.*
4. *Beattie, J. M. *Bacteriology of Rheumatic Fever.*
5. Opie, E. L., and Barker, B. I. *Leukoprotease and Anti-Leukoprotease.*
6. Field, C. W., and Teague, O. *Electrical Charge of Native Proteins and Agglutinins.*
7. *Carrel, A. *Heterotransplantation of Blood Vessels Preserved in Cold Storage.*
8. *Sweet, J. E., and Levene, P. A. *Nuclein Metabolism in a Dog with Eck's Fistula.*

1, 2 and 3. Flexner's three articles on the results of his work as a member of the commission appointed by the Health Department of the city of New York in 1905, to investigate the epidemic of meningitis. The first article is a detailed account of observation upon the biology of the organism of the disease. The second is a report of his experience in obtaining experimental infections closely resembling meningitis in man, in lower animals, particularly in monkeys. The third article describes his experiments with antitoxic sera in cases of experimental meningitis in these animals. The articles as a whole are of too technical a nature to admit of brief summarization. Their main practical interest lies in the fact that by the employment of the anti-diplococcus sera distinct results were obtained both in immunization and in combating the infection. By means of the serum treatment several infected monkeys were saved from death when they would otherwise have died. The curative action of the serum, however, was not sufficiently constant or striking to give immediate hope for the establishment of a serum therapy for human cases of meningitis.

4. Beattie describes the organism, probably the same as that of Wasserman and others, which he believes to be the cause of rheumatic fever. He meets the objections raised by opponents of his views, and gives in a somewhat condensed form the evidence upon which his views are based. The organism has been isolated from definite cases of acute rheumatism, has been cultivated outside the body, hss produced in rabbits and in monkeys polyarthritis, endocarditis and other manifestations of rheumatic fever, and has again been isolated from the lesions in these organs. The principal objection raised by those who believe that acute rheumatism is simply an attenuated pyemia is that the organism isolated is an ordinary streptococcus. But acute rheumatism differs from even mild pyemias in its lack of pus formation. That the *micrococcus rheumaticus* differs from any ordinary streptococcus is shown by certain cultural properties, and also by its behavior in inoculation experiments. Beattie injected rabbits with twelve different strains of streptococci and with three strains of his own organism. Of the streptococcus animals 18% showed arthritis and 2% endocarditis; of the *micrococcus rheumaticus* animals, 60% showed arthritis and 3% endocarditis. In the streptococcus cases the arthritis was in every instance purulent. In the *rheumaticus* cases the arthritis was never purulent. The *micrococcus rheumaticus* has been obtained from the blood in life, but in some cases it is not demonstrable either in the blood or the joint fluid, but only in the synovial membrane. He concludes that from the difference in results of injection experiments with the *micrococcus rheumaticus* and with streptococci the *micrococcus rheumaticus* cannot be regarded as an attenuated streptococcus, nor acute rheumatism as an attenuated streptococcal pyemia.

7. Carrel succeeded in replacing an excised portion of the abdominal aorta of a cat by a segment of carotid artery removed from a dog twenty days before and kept in salt solution at about 32° F. Forty-eight days after operation the abdomen was opened, and the inserted segment found to be doing its work as a part of the aorta. The animal is alive and well, with normal pulsations in the femoral arteries, at the date of this paper.

8. The work of Sweet and Levene is of interest rather to the physiologist and the physiological chemist than to the clinician, since the questions with which it deals are as yet too uncertain to serve as the basis for practical deductions. Their object is to obtain some measure of the proportion of the total nitrogen excretion which is due, not to the metabolism of food-stuffs, but to the destruction of cellular substances. There is reason to believe that the

cellular nitrogen is metabolized through nucleins and purin bases to uric acid, which is changed in the liver to urea. To prevent the action of the liver upon uric acid, an anastomosis was made in a dog between the portal vein and the inferior vena cava, so that the portal blood would discharge into the vena cava without passing through the liver (Eck's fistula). Analysis of the excretions of this dog showed an abnormally high output of uric acid, even on a diet free from purins. The giving of nucleoproteids further increased the uric acid excretion. Starvation in this dog, contrary to observations in normal dogs, also increased the uric acid excretion, supposedly from destruction of cellular tissues. These results are a strong confirmation of the truth of the suppositions which suggested the experiment, and further give quantitative data as to the amount of cellular metabolism in this dog. [F. W. P.

The Lancet.

March 23, 1907.

1. Abrahams, B. L. *The Permanent Defences of the Body.*
2. Buzzard, E. F. *Certain Acute Infective or Toxic Conditions of the Nervous System.*
3. Walker, J. W. T. *The Renal Function in its Relation to Surgery.*
4. Bashford, E. F., and Murray, J. A. *Carcinoma Mammæ in the Mouse.*
5. *Bunch, J. L. *On Opsonins and Immunity.*
6. Jacksontaylor, B. J. F. *A Note on Tests for Acetone in the Urine.*
7. Campbell, H. *The Rôle of the Blood Plasma in Disease.*

5. This is a short but clear presentation of the opsonic theory and its technique and practical application. Bunch discusses what the practising physician can and cannot do in this line. [J. B. H.]

British Medical Journal.

March 23, 1907.

1. *Barker, A. E. *A Report on Clinical Experiences with Spinal Analgesia in 100 Cases, and Some Reflections on the Procedure.*
2. Arnold, G. J. *Infiltration Anesthesia in Major and Minor Surgery.*
3. Bishop, E. S. *An Address on Cholelithiasis.*
4. Maclaren, R. *The Removal of Enlarged Tonsils.*
5. Moynihan, B. G. A. *A Case of Gastro-Enterostomy, Combined with Gastrostomy, for Ulceration of the Stomach, Caused by Swallowing Hydrochloric Acid.*
6. Savage, G. H. *Insanity, its Causes and Increase.*

1. Barker emphasizes the fact that he does not recommend spinal anesthesia as a general routine in surgery, but does think that it should be given a thorough trial before discarding it as worthless. The results in his series of 100 cases show clearly that in certain instances, at least, where a general anesthetic was impossible, this method has been perfectly satisfactory and has been a means of saving life. The discovery of stovain has rendered the procedure much less dangerous than when cocaine was used. The time of anesthesia was from twenty-three minutes to two hours; the ages of the patients varied from fifteen years to seventy years; the operations were of all kinds. He believes that there is a place for spinal anesthesia in surgery, but only when used by careful and experienced men. The greater part of the paper is taken up with a discussion of the effects during and after operation, the technique and precautions to be observed, etc.

[J. B. H.]

The Edinburgh Medical Journal.

March, 1907.

1. *Osler, W. *Cerebro-Spinal Fever.*
2. Urquhart, A. R. *On Insanity, with Special Reference to Heredity and Prognosis.*
3. Marshall, F. H. A., and Jolly, W. A. *The Nature of the Ovarian Influence on the Uterus.*
4. *Moynihan, B. G. A. *The Mimicry of Malignant Disease in the Large Intestine.*
5. Smith, P. C. *Degeneracy.*

1. Osler writes a most interesting description of this disease from an historical and clinical point of view.

4. Moynihan reports in detail six cases of disease of the large intestine which before and during operation resembled malignant disease. These cases consisted of, (1) a non-malignant over-growth of the mucous glands of the large intestine, with intestinal obstruction; (2) perforative sigmoiditis with localized abscess, probably a perforation of a false diverticulum; (3) transverse pericolitis with a localized hypertrophy of the wall of the intestine; (4) a non-malignant exuberant cauliflower-like growth of the rectum causing obstruction; (5) false diverticula of the sigmoid with sigmoiditis, and (6) a non-malignant tumor of the transverse colon and splenic flexure requiring ileo-sigmoidostomy. These tumors were for the most part of inflammatory origin, and are probably much more frequent than is supposed. [J. B. H.]

Deutsche Medizinische Wochenschrift.

No. 11, March 14, 1907.

1. *Beck, C. *Gangrene of the Lungs.*
2. *Rosenheim. *Infiltrating Colitis and Sigmoiditis.*
3. Hoffa. *The Treatment of Tubercular Coxitis.* (Concluded.)
4. Hirschberg. *A Rare Case of Cataract Extraction.*
5. Jellinek, S. *The Pathology, Treatment and Prophylaxis of Electrical Shock.* (Concluded.)
6. Zweig, A. *Hydrotherapy at the Climacterium.*

1. Beck discusses gangrene of the lungs from the surgical standpoint. Nearly all the cases are in children from aspiratory causes. The areas involved can and should be carefully located with the x-ray and then treated by a surgical operation.

2. Rosenheim has had considerable experience with a circumscribed inflammatory process, involving any part of the colon, but most frequently the region of the sigmoid flexure. He reports five cases, the anatomical pictures of which vary from an acute phlegmonous infiltration of the intestinal wall, with ulcers of the mucosa and pericolitis, to a hard infiltration with hypertrophy of the muscle layers and only slight stenosis of the lumen, the tumor being mainly produced by a spastic condition of the muscles. Usually the course is an exceedingly chronic one, with occasional exacerbations. The tumors are elongated, smooth, sausage-shaped masses, very painful and not hard to the touch. The symptoms, in acute as well as in chronic forms, can resemble any variety of intestinal disturbance, and the differential diagnosis from cancer can only be made by careful study and observation. When there is a tumor of the lower region of the colon, with passage of well-formed fecal masses, there can be no stenosis of the lumen of the canal, and this points to an inflammatory process other than cancer. With careful dietetic treatment, rest, rectal injections of oil and building up of the nervous tone, the symptoms gradually subside. [L. G. M.]

Münchener Medizinische Wochenschrift.

No. 10, March 5, 1907.

1. *v. Starck, W. *The Diagnosis of Infantile Scurvy.*
2. *v. Hippel and Pagenstecher, H. *The Influence of Cholin Injections and of the X-Ray on the Course of Pregnancy.*
3. *Schmid, J., and Géronne, A. *The Action of the X-Ray on Nephrectomized Animals.*
4. Geigel, R. *The Strength of the Percussion Stroke.*
5. *Schlesinger, E., and Holst, F. *The Value of the Benzidin Test for the Demonstration of Minute Hemorrhages.*
6. Kroemer, P. *A Case of Anus Opening into the Vulva Cured by Operation.*
7. Auerbach, S., and Grossmann, E. *A Case of Jacksonian Epilepsy Cured by Operation.*
8. Rahn, A. *Ovogal, a New Cholagogue.*
9. Struppler, T. *Lipoma of the Pericardium.*
10. *Pagenstecher, A. *Enophthalmos.*
11. Seefelder. *The Prophylaxis of Ophthalmia of the New-Born.*
12. Wende. *The Treatment of Hammer-Toe.*

1. Von Starck considers the following symptoms of infantile scurvy as most important: (1) increasing anemia, (2) hemorrhagic swelling of the gums, (3) pain on motion, (4) periosteal swellings, (5) hematuria and (6) exophthalmos and hemorrhagic swelling of the eyelids. It should be noted, however, that anemia is not necessarily present in the early stages. The swelling of the gums may be slight, but the characteristic purple discoloration is almost always present. X-ray examination may be important, showing a dark transverse shadow at the end of the diaphysis and at times also periosteal swellings due to hemorrhage. The prompt response to treatment with fruit juices and raw milk may be of diagnostic aid in obscure cases.

2. Von Hippel and Pagenstecher report interesting experiments on the effect of the x-ray and cholin injections on pregnant rabbits. They observed in many instances death of the fetus. Whether absorption or abortion took place, they were unable to determine, but considered the former more probable. The same effect was produced by the x-ray when the abdomen was protected during the exposure. The interruption of pregnancy must be due, therefore, to substances reaching the fetus through the blood current and not to direct action by the x-ray. Congenital cataracts were also observed in some cases in which the death of the fetus did not take place.

3. Prolonged exposure to the action of the x-ray produces leucopenia. This is probably due to destruction of the white cells and the production of a toxic substance, the so-called leucotoxin, which has a marked destructive action on leucocytes. Schmid and Géronne exposed nephrectomized rabbits to the action of the x-ray and found that leucopenia was induced in them much quicker than in normal control animals who were exposed for the same length of time. Nephrectomy alone did not cause a diminution of leucocytes. This they consider proof that the leucotoxin is normally excreted by the kidneys; in the nephrectomized animals it accumulated in the body and gave rise to a rapid decrease in white corpuscles.

5. Schlesinger and Holst from Strauss's laboratory in Berlin report further results with the benzidin test for blood in the feces and urine. As performed by them, the test is never positive in persons on a meat-free diet unless there is blood present. They have found it very reliable and more delicate than either the guaiac or aloin tests. A piece of feces the size of a pea is used for the test; the reagent consists of a mixture of $\frac{1}{2}$ cm. of a freshly prepared solution of benzidin in glacial acetic acid with 3 cc. of a 3% solution of hydrogen peroxide. The bit of feces is stirred up in one fifth of a test-tube of water, the reagent is added and the whole shaken. If blood is present a handsome blue color appears, or if the amount is small a clear green. When urine is to be tested it should be treated first with a small volume of glacial acetic acid and extracted with ether. The ether extract is cleared with a few drops of absolute alcohol, removed with a pipette and added to the benzidin reagent. The test is especially valuable in hemoglobinuria, where the microscopic examination for erythrocytes is negative.

10. Enophthalmos is the opposite of exophthalmos, and consists of a sinking back of the eye into the orbit. Pagenstecher reports two cases of the traumatic variety, which is always the result of injury in the neighborhood of the eye, with fracture of one of the walls of the orbit. In some cases the retraction of the eye-ball takes place soon after the accident, and it is here supposed to be due to the escape of the fat from the back of the orbit. In other instances where it appears late it is due to contraction of scar tissue which pulls the eyeball back. Limitation of movement of the eye with double vision is often present, due more to injuries to the muscles and secondary contractures than to nerve lesions. [W. T.]

BERLINER KLINISCHE WOCHENSCHRIFT, NO. 9.

MARCH 1, 1907.

1. EHRLICH, P. *Chemotherapeutic Studies on Trypanosomes.* (Continued acticle.)
2. GOTTSTEIN, G. *The Technic of Bronchoscopy.*
3. *SCHÜLLER, M. *The Cause of the Proliferation in Cancer and Sarcoma in Man.*
4. *DONATH, J. *The Supposed Significance of Lactic Acid in Eclampsia.*
5. NEUMANN, H. *Erroneous Interpretation of a Physical Thoracic Sign in Children.*
6. *SEELIGSOHN, W. *A Case of Amaurosis due to Quinine.*
7. TOBIAS and KINDLER. *The Physical Treatment of Tabes Dorsalis.* (Continued article.)

3. Schüller describes parasites found by him in the nuclei of tumor cells in cancer and sarcoma, which he regards as the cause of these diseases. They penetrate the nucleus and by their multiplication give rise to division of the nucleus and to the rapid proliferation characteristic of these tumors. The organisms are classified with the sporozoites; spores, microgametes and other forms are described.

4. Donath refutes the theory recently advanced by Zweifel and others that puerperal eclampsia is due to poisoning with lactic acid, and shows that the lactic acid found in the blood and urine is merely the result of the violent muscle contractions, just as in epilepsy. Animal experiments with sodium lactate showed that this substance is not poisonous.

5. Seeligsohn's case of blindness due to quinine showed the usual appearances of extreme narrowing of the retinal arteries with pallor of the disc, followed later by atrophy. There was also mydriasis with loss of pupillary reaction to light and accommodation. Restoration of sight within two months incomplete as regards colors. Quinine amaurosis is rare, and requires for its production a previous lowering of resistance, usually either from malaria or anemia. Its cause is to be sought in a combination of ischemia due to contraction of the vessels with direct toxic action on the ganglion cells of the retina. [W. T.]

DEUTSCHE ARCHIV FÜR KLINISCHE MEDIZIN.

BD. 88, HFT. 4-6, 1907.

1. *HOLST, NICOLAYSEN and USTREDT. *Investigations on the Duration of Life in the Phthisical in Norway.*
2. *KREHL. *Disturbance of Chemical Correlation in the Organism.*
3. BOHR. *Functional Changes in the Median Respiratory Level and Vital Capacity of the Lungs.*
4. *MEYER and HEINEKE. *Blood Formation in Severe Anemias and Leukemias.*
5. *MORAWITZ. *A Typical Severe Anemia.*
6. *BLUMENTHAL. *The Coli-Typhoid Group in Relation to Disease of the Biliary Passages.*
7. MÜLLER. *The Influence of Hydrochloric Acid on Pepsin Digestion.*
8. *ZAK and NECKER. *The Excretion of Euglobulin in the Urine in Amyloid Disease.*
9. *NAGEL. *The Polyuria of Contracted Kidney.*
10. JOACHIM. *A Further Contribution to Conduction Disturbances in Cardiac Muscle.*

1. This is a statistical study of tuberculous patients in Norway made by a committee appointed by the Medical Society of Christiania, and concerns patients not treated in sanatoria. The data were collected by means of circular letters sent to physicians throughout the country. Seventy-three physicians reported on 2,293 patients treated during 1891–1900. No patients had been observed for less than four years. Two thousand and five cases were sufficiently completely reported to be used in these statistics. Of these, 905 were males and 1,100 females. At varying periods of the disease it was determined how many were living, how many dead, *e. g.*, at the end of six months of disease among 905 men 6% were dead; at the end of twelve months 18.6% dead; at the end of three to three and a half years half were dead; at the end of ten years 16.2% were living and 83.8% dead. Of the total number of cases dead during the period of observation, the average duration of the disease was thirty-seven months for males, thirty-eight months for females. Of the living the number capable of working was determined as follows: at the end of four years, of 908 living 52.3% were capable of work, 8.7% partly capable, 3.6% incapable and 35.1% unknown; at the end of ten years, of 272 living 65.8% were capable of work, 12.8% partly capable, 4% incapable and 17.4% unknown.

2. Krehl in an address delivered before the Naturforscherversammlung in Stuttgart points out what complex and varying changes follow lesions or removal of various organs of the body. As he says, a perversion of one function of one organ may necessitate a readjustment of function in many parts of the body. He cites many examples of this, as the changes following castration, lesions of the adrenal, removal of the thyroids or parathyroids, nephritis and many more. Many of these changes are the results of chemical processes, and the correlation of any chemical change with the hundreds of other chemical processes of the body must be exceedingly complex. It is this complex correlation of chemical changes which we must consider in explaining the great multiplicity of symptoms which we observe in different patients suffering from the same disease. Scarcely any diseased patient is like his fellow, and a relatively small number of patients thus present daily new and oft unsolvable mysteries.

4. Meyer and Heineke have studied the blood pictures and the histological changes in the viscera in a group of severe anemias and leukemias. The group included 2 cases of chronic lymphatic leukemia and 1 of acute, 4 of myelogenous leukemia, 6 of pernicious anemia, 3 of leukanemia and 1 of streptococcus sepsis. They find a distinct difference in the viscera between myelogenous and lymphatic leukemia in that in the latter there is a general proliferation of the lymphoid tissues, while in the former the lymphatic tissue is only passively permeated by myeloid tissue. The myeloid transformation in the spleen always takes place in the pulp. In pernicious anemia there is almost always a myeloid transformation of the spleen, frequently of the liver, rarely of lymph nodes. In spleen and liver there is in anemia both an extra and intravascular blood formation, the former of white cells, the latter of red. These changes are to be regarded as compensatory. The high color index of pernicious anemia results from young red cells entering the circulation and is absent in cases of aplastic anemia. Leukanemia results when there is an active formation of both red and white cells in the viscera, but the condition seems primarily a severe anemia.

5. Morawitz reports two cases of acute severe atypical anemia as illustrative of the difficulties sometimes presented in an attempt to classify blood diseases. The first case was a boy of sixteen who was suddenly taken ill with a chill, fever, headache and vomiting. Four days later a blood count showed red cells 881,000, hg. 25–30%, white cells 9,800, of which 4½% were myelocytes. There was marked poikilocytosis, polychromatophilia, with normoblasts and megaloblasts. Twelve days later red cells had increased to 1,300,000 and white cells were 4,000, with 15% myelocytes. Five days later red cells were 1,952,000, white cells 5,400, with myelocytes 6.2% and no nucleated red cells. Five days later still there were 3,200,000 red cells, hg. 60%, white cells 9,800, no myelocytes and no abnormal red cells. The second case was a boy of fifteen, who was taken sick with vomiting and diarrhea. The following day he had 3,396,000 red cells, 35% hg., 15,000 leucocytes, with 16½% myelocytes and many normoblasts and megaloblasts. Four days later the red cells were 1,900,000 and white cells 12,400. Fourteen days later the reds were 1,612,000, whites 22,600, myelocytes 20%. Eleven days later the reds were 2,470,000, hb. 55%, whites 14,000, myelocytes 3.8% and nucleated reds much decreased. Five months after the onset his blood was microscopically normal, his red cells 3,500,000. Both these cases are of the group described as leukanemia, but Morawitz regards them as more closely related to anemia than to leukemia.

6. In a bacteriological study of the bile from fourteen patients operated on for cholelithiasis or cholecystitis Blumenthal isolated B. coli four times, B. paratyphi once, B. typhi four times and an atypical B. coli once. In one case in which B. typhi was found in pure culture at operation, B. coli appeared later. Blumenthal thinks that in many cases in which B. coli alone is isolated it may be a secondary invader, and this view very much strengthens the importance of the typhoid-paratyphoid group as etiological factors in cholecystitis, and as well in chronic gall bladder lesions. The tpyical B. coli of the intestine seems rarely to produce lesions in the gall bladder, and its frequent occurrence in earlier reports may well be the result of defective methods of identification. These ideas are of practical importance in the question of "bacillus-carriers" as infecting agents. If organisms of the typhoid group are so frequently associated with gall bladder lesions, these people in turn are an infecting menace to their fellows and should be operated on to clear them of these bacteria, that being the only way to free the gall bladder of bacteria.

8. See Progress in the Theory and Practice of Medicine, Boston Medical and Surgical Journal, 1907, p. 365.

9. See Progress in the Theory and Practice of Medicine, Boston Medical and Surgical Journal, 1907, p. 366.

[H. A. C.]

Correspondence.

"THE PROCREATION OF DEFECTIVES."

Boston, April 15, 1907.

Mr. Editor: Your editorial on the "Procreation of Defectives" in the issue of March 28, suggests to me a thought which I would like to put before your readers.

The bill before the legislature of Indiana mentions heredity as playing a most important part in the transmission of crime, idiocy and imbecility and suggests that upon the approval of a board of surgeons, a surgical operation shall be performed upon those considered to be confirmed criminals, idiots, rapists and imbeciles. In commenting on this, you state that in the present condition of knowledge such legislation would do little to help matters and might lead to serious abuses.

It is true that we cannot be sure that the child will inherit the tendencies of the parent, but the probability is that the child of the criminal, the imbecile, or the degenerate, will be born handicapped for life, both physically and mentally.

It is also true that the question of race improvement does not rest entirely on heredity. Nevertheless, we must remember that not only do the parents furnish this factor to their children, but the condition of the parents fixes the environment of the most important periods of life, the formative periods of infancy and youth. Certainly no criminal, no insane person, and no degenerate can furnish a proper environment for the child, whatever tendency he may transmit.

The method of checking procreation mentioned in the bill from which you quote is a surgical operation, but no such thing is necessary. We now know that x-ray treatment will produce sterility in the male. This treatment is painless, it is easy to give and as it does not produce impotence, there would seem to be no objectionable features connected with it. The substitution of this treatment for a surgical operation would, it seems to me, put the matter in a different light.

Truly yours,

A. A. Merrill.

THE LEGAL AID SOCIETY.

Boston, April 15, 1907.

Mr. Editor: The Legal Aid Society has opened an evening branch office at No. 6 East Brookline Street near Washington Street and has appointed me to take charge of the office. At present I may be found there Wednesday evenings from eight to nine p.m. and shall be glad to give legal advice or furnish legal services without charge to all persons who are in need of them and are unable to procure a lawyer for themselves. If any of you meet with or hear of any worthy case in your practice a card from you brought to my office at No. 6 East Brookline Street will command my services without charge. It is the purpose of the Legal Aid Society to co-operate closely not only with the charitable organizations in the city, but with the members of the medical profession, and I hope that any of you will feel at liberty to command my services at any time on behalf of patients of yours or others you hear of who need assistance.

Respectfully yours,

Henry R. Scott

RECORD OF MORTALITY

For the Week ending Saturday, April 6, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,540	482	Quincy	6	1
Chicago	686	219	Waltham	8	4
Philadelphia . . .	—	—	Gloucester	10	1
St. Louis	—	—	Pittsfield	10	2
Baltimore	207	52	Brookline	2	—
Cleveland	—	—	North Adams . .	8	2
Buffalo	—	—	Chicopee	7	2
Pittsburg	—	—	Northampton . .	9	3
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	6	1
Washington . . .	—	—	Hyde Park . . .	5	—
Providence . . .	81	21	Newburyport . .	—	—
Boston	248	55	Leominster . . .	4	1
Worcester	49	9	Melrose	4	1
Fall River	52	18	Woburn	—	—
Cambridge	20	6	Marlboro	2	0
Lowell	28	6	Westfield	4	—
Lynn	33	12	Peabody	—	—
New Bedford . .	39	14	Revere	3	—
Springfield	18	4	Clinton	10	2
Lawrence	31	9	Attleboro	3	0
Somerville	20	2	Adams	3	—
Holyoke	10	8	Gardner	—	—
Brockton	13	3	Milford	—	—
Malden	4	1	Weymouth . . .	6	0
Salem	15	6	Framingham . .	3	—
Chelsea	10	3	Watertown . . .	2	1
Haverhill	22	5	Plymouth	—	—
Newton	8	2	Southbridge . . .	4	2
Fitchburg	10	4	Wakefield	—	—
Taunton	—	—	Webster	—	—
Everett	12	4			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING APRIL 13, 1907.

C. D. Langhorne, surgeon. Detached from duty at Naval Medical School Hospital, Washington, D. C., and ordered to the Navy Yard, Washington, D. C.

R. E. Riggs, passed assistant surgeon. Detached from Naval Station, Port Royal, S. C., and ordered to the "Texas."

R. G. Heiner, assistant surgeon. Detached from Navy Yard, Washington, D. C., April 15, and ordered to attend course of instruction at the Naval Medical School, Washington, D. C.

J. H. McGuigan, pharmacist. Detached from marine barracks, New York, N. Y., and ordered to Washington, D. C., April 11, for examination for retirement, and thence home to wait orders.

SOCIETY NOTICES.

Congress of American Physicians and Surgeons. — The Congress of American Physicians and Surgeons will hold its seventh triennial meeting in Washington, May 7, 8 and 9.
W. H. Carmalt, M.D., *Secretary*.

Association of American Physicians. — The Association of American Physicians will hold its twenty-second annual meeting at the New Willard Hotel in Washington, May 7, 8 and 9. Henry Hun, M.D., *Secretary*.

American Gastro-Enterological Association. — The American Gastro-Enterological Association will hold its tenth annual meeting at Atlantic City, N. J., June 3 and 4.
Charles D. Aaron, M.D., *Secretary*.

American Pediatric Society. — The American Pediatric Society will hold its annual meeting in Washington, May 7, 8 and 9. Samuel S. Adams, M.D., *Secretary*.

The American Orthopedic Association. — The American Orthopedic Association will hold its annual meeting in Washington, May 7, 8 and 9.
Robert Osgood, M.D., *Secretary*.

American Climatological Association. — The American Climatological Association will hold its annual meeting in Washington, May 7, 8 and 9.
Guy Hinsdale, M.D., *Secretary*.

American Otological Society. — The American Otological Society will hold its annual meeting in Washington, May 7, 8 and 9. F. L. Jack, M.D., *Secretary*.

American Surgical Association. — The American Surgical Association will hold its annual meeting in Washington, May 7, 8 and 9. Robert G. LeConte, M.D., *Secretary*.

American Laryngological Association. — This association will hold its annual meeting in Washington, May 7, 8 and 9. James E. Newcomb, M.D., *Secretary*.

American Ophthalmological Society. — This society will hold its annual meeting in Washington, May 8.
S. B. St. John, M.D., *Secretary*.

American Therapeutic Society. — This society will hold its annual meeting in Washington, May 4, 6 and 7.
Noble P. Barnes, M.D., *Secretary*.

National Association for the Study and Prevention of Tuberculosis. — The National Association for the Study and Prevention of Tuberculosis will hold its third annual meeting at the New Willard Hotel, Washington, May 6, 7 and 8. Livingston Farrand, M.D., *Secretary*.

RECENT DEATH.

Dr. W. F. Morrison, of Providence, R. I., died suddenly at his home April 9, at the age of forty-nine. He graduated from the Harvard Medical School in 1882, and at the time of his death was a member of the American Medical Association, Rhode Island Medical Society and Providence Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

University of California Publications. Physiology. On the Production of a Fertilization Membrane in the Egg of the Sea-Urchin with the Blood of Certain Gephyrean Worms. By Jacques Loeb.

The Röntgen Rays in Medical Work. By David Walsh, M.D., Ed. Fourth edition. Illustrated. New York: William Wood & Co. 1907.

Essentials of Chemistry and Toxicology. For the Use of Students in Medicine. By R. A. Witthaus, A.M., M.D. Thirteenth edition. Revised by R. J. E. Scott, M.A., B.C.L., M.D. New York: William Wood & Co. 1907.

Memoir of Dr. William S. Forbes. By Frederick P. Henry, M.D. Reprint.

Thirty-first Annual Report of the Ladies' Union Charitable Society (Incorporated) Conducting the Lawrence, Mass., General Hospital and Children's Home, for the Year ending Sept. 30, 1906.

Annual Report of the Health of the Imperial Navy for the Year 1904. Tokyo.

Tuberculosis as a Disease of the Masses and How to Combat It. Fourth issue. Revised and Illustrated. Prize Essay. By S. A. Knopf, M.D. New York: Fred P. Fiori. 1907.

Some Aids in Teaching Climatology and Climatotherapy. By Guy Hinsdale, A. M., M.D. Reprint.

Die spezifische Therapie der Tuberkulose. Von Prof. E. Maragliano.

Thérapeutique Spécifique de la Tuberculose. Par Le Professeur Maragliano. Paris: A. Poinat. 1906.

Health-Education Series, No. 12. Emergencies. By Marshall H. Bailey, M.D. Boston: Health-Education League. 1907.

International Clinics. By Leading Members of the Medical Profession throughout the World. Edited by W. T. Longcope, M.D. Seventeenth series. Vol. 1. 1907. Philadelphia and London: J. B. Lippincott Co. 1907.

A Manual of Obstetrics. By A. F. A. King, A.M., M.D., LL.D. Tenth edition. Revised and enlarged. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Surgical diseases of the Chest. By Carl Beck, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Transactions of the American Climatological Association for the Year 1906. Vol. XXII. Philadelphia. 1906.

Traitement Chirurgical du Cancer du Colon. Par Le Dr. Joseph Okinczyc. Paris: G. Steinheil. 1907.

The Present Position of the Medical Schism. By Kenneth W. Millican. Reprint.

Physical Diagnosis. With Case Examples of the Inductive Method. By Howard S. Anders, A.M., M.D. Illustrated. New York and London: D. Appleton & Co. 1907.

University of California Publications. Physiology. Note on the Synthesis of a Protein through the Action of Pepsin. (Preliminary Communication.) By T. Brailsford Robertson.

Treasury Department. Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Bulletin No. 33. Studies in Experimental Alcoholism. By Reid Hunt. Washington. 1907.

Abnormality in Amniotic Secretion in its Relation to Fetal Malformation. By Joseph Brown Cooke, M.D. Reprint.

Address.

HISTORY AND ETHICS IN MEDICINE.*

BY JAMES G. MUMFORD, M.D., BOSTON.

> " Why, all the Saints and Sages who discuss'd
> Of the Two Worlds so wisely, — they are thrust
> Like foolish prophets forth; their words to scorn
> Are scattered, and their Mouths are stopt with Dust."

Rules to govern the practice of medicine began with the priests of Isis, centuries before our era, and the selfish guilds of that time were able to enjoin that healers of the sick must become part of their fold, or must cease to cumber the earth. Priestcraft was a function of government, and arrogated to itself the care of diseased bodies as well as of diseased minds.

In those days there was government supervision of practice in a sense which modern thought abhors. Such control was possible under an absolute monarchy only, in which the ruler was regarded as almost divine; but, when wars and tumults, and foreign invasion and revolution came, the old close medical corporation was broken up, and competition entered in. A class of physicians who were not priests grew up, — a class whom the law ceased to protect. They could no longer persecute and destroy their unlicensed rivals, so they betook themselves to ethics.

Egypt was not the only land which knew such changes. Throughout the ancient and medieval worlds fluctuations in custom occurred; at times there was a control of practice by statute, — civil or ecclesiastical; at times there was chaos, with such little decency as good ethics might enjoin and enforce.

I think that is an interesting reflection, and it is interesting also to recall that in those countries which have been the most enlightened, which have been most democratic in their customs and mode of thought, — in just such countries have superstition and vapid medical tradition and routine languished, while advanced liberal thought has flourished, science has progressed, quackery and falsehood have made the least progress, mild laws have sufficed and ethics have triumphed. Such were the conditions in the Greece of the fourth century B. C., when the great Hippocrates lived. Hippocrates and his associates were the first to see clearly and to formulate the relations which should exist between physicians, and between physicians and patients; and so to Hippocrates we owe that famous oath, — the bond to which all right thinking doctors have ever since subscribed:

" I swear . . . to follow that system of regimen which I consider for the benefit of my patients; . . . I will give no deadly medicine; . . . I will not produce an abortion; with purity I will pass my life and practice my art; . . . I will enter a house for the benefit of the sick only. . . . Whatever I hear and see in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret."

There is a feeble and fatuous word, etiquette, by which the unthinking are wont to cloak the noble qualities of ethics. Alas! that such a Turveydrop semblance should have been given a precedence by feeble minds; that the outward and visible sign should have shouldered aside the inward and spiritual grace.

Ethics signified originally *character*. It deals philosophically with conditions which affect the human family for good or ill. Etiquette codifies the superficial relations which govern men in the drawing-room or the club. Ethics directs that there shall be honor among gentlemen; etiquette that they shall tread softly and wear evening dress. Hippocrates marked the distinction. That great man struck at the root of the matter, and, like St. Paul himself, gave us rules that shall prove sound through all time.

So one sees, in looking back over the history of our guild, that after the banishing of privilege, and royal and priestly authority with their selfish pompous insistance and their tedious etiquette, there grew up gradually in the minds of thinking men a wiser appreciation of our purposes and a sound system of ethics.

Good ethics, then, is to be looked for among physicians who, following the teaching of Hippocrates and Aristotle, of Celsus and of Galen, maintain that he is the upright scientist who pursues his art by the light of sound reason; who draws his conclusions and guides his practice by deductions founded on accurate observation; who observes that clear inductive method which is older than history. Now, throughout its history one sees that medicine has never been regarded as an exact science. Hippocrates himself founded his pathology upon a hypothesis, which developed into that curious myth known to us as the humoral theory; and from his day to our own hypotheses have abounded. The master knot of human life and human fate held firm through the ages. The great mystery of life remained a mystery. Men strove, by theories and systems, to unravel it, and while they sought the unattainable through metaphysical means, they continued blind to the solution of the attainable. While they sought by specious arguments to explain the destiny of the soul, they overlooked the heart's part in the circulation, and the liver's function in producing bile. So schools arose out of little knowledge. The leaders of those schools were honest men, but having dim light and having builded upon the sand largely, their superstructures tottered betimes, and their wisdom became as vapor.

Through it all, though, and with the progress of time, one recognizes the gradual accumulation of facts. Solid surgical knowledge existed among the Egyptians, Jews and Greeks. Galen perceived something of the nature of the blood current and the function of nerves. The Arabians, Albucasis and Avicenna, and the schools of Medieval Italy gathered up the wisdom of the ages, until, with the revival of learning in the 15th and 16th centuries, there came a rush and an enthusiasm for science such as had been unknown for a millennium.

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* An address at the annual dinner of the New Bedford Medical Society, Feb. 25, 1907.

But among the best even of these young 15th century moderns, certain ancient prejudices survived. Though Vesalius placed anatomy again upon a sound basis, and made possible a sane physiology, he despised Paracelsus as a vain fool, and fell out with his own successor. The researches of Borelli and Malpighi and Harvey advanced our knowledge of digestion, and of the structure of organs, and of the course of the blood, but their very researches led these great souls to a contempt for chemistry and a vociferous decrying of those mysterious reactions, whose principles the early chemists themselves ascribed to unexplained and supernatural forces. So there were materialists on the one side and mystics on the other; while out of the two types of mind there grew up two great schools of medicine which divided scientists for generations, — the iatro-physicists and the iatro-chemists.

Such dissensions among the wise conduced little to the winning for physicians of popular confidence and respect; and the literature of generations abounds in sneers at the doctors and flings at their pretensions. Hudibras and Don Quixote set the pace, and those immortal works of Butler and Cervantes for centuries imposed a standard of scorn from which the writings of our own day are not exempt.

Such lack of comprehension and sympathy appears constantly throughout the medical history of the sixteenth, seventeenth and eighteenth centuries. Scientists had no common meeting ground or point of departure. They attacked from the circumference the great central problem of pathology; and while they worked laboriously and unwittingly towards a common center they bemired each other with bad language, and looked upon their rivals as knaves. Such were the scientists, — the few and lonely pioneers. But the great mass of practitioners were the satisfied and pompous conservatives who were content with tradition, with their own misapprehensions of Galen's teaching and with a monstrous therapeutics. While they upheld a dull and illiberal routine they hated bitterly the rare prophets of progress. So one sees two clearly-defined groups among our professional forbears — the routinists and the liberals; the routinists forming a great and strong conservative body, the liberals divided among themselves, despising conservatives and hating those of their enlightened fellows whose lines of thought diverged from their own. History abounds in tales of these ancient squabbles. Conservative Sylvius attacked Versalius because Versalius taught a new and correct anatomy. Gourmélen, dean of the Paris faculty, attacked Paré, because Paré taught a simplified treatment of wounds. The whole French Academy derided Harvey because Harvey demonstrated correctly the functions of the heart; and in the enlightened eighteenth century, even, Pott inveighed against Hunter's operation for aneurism, while Sir Joseph Banks, president of the Royal Society, after Hunter's death asserted that the great Hunterian collection was of little or no value to the subject of natural history. While such were the views of many conservative minds the conservatives, themselves, though agreeing in their general attitude of letting well enough alone, constantly were embroiled over matters of procedure and technical rights of practice. Barber surgeons encroached upon the field of surgeons, and surgeons encroached upon the preserves of physicians. Bone-setters proclaimed the ignorance of the faculty in general, and lithotomists attempted to show that they alone were competent to cut for stone.

Out of such a chaos of complacency and fever, smugness and contempt, ignorance and wisdom, perversity and enlightenment, backsliding and progress, men attempted in some fashion to apply the ethics of Hippocrates; but by their endeavors they succeeded in building up a thin system of etiquette only. With their limited knowledge and their lack of true comprehension they failed to perceive the common purpose which instigated all, — the purpose to mend and save human life and to advance their art. So ethics floundered and etiquette triumphed. One reads dreary accounts of dull formalities, of precedence, of bowing and wavings, of bed-side hemmings and hawings, of solemn groanings and fatuous consultings, of absurd stalkings; of prescribed costumes, of ruffles, wigs, shorts and canes; of offense easily given; of slander, of rival schools, and of pretension founded upon academic degrees and illustrated by preposterous doses and the activities of the undertaker.

Towards the end of the eighteenth century, the humoral theory declined; the iatro-physicists and the iatro-chemists kept up a feeble wrangle; on the continent of Europe a dozen diverse methods of practice sprang up and withered; in Scotland and England, Cullen preached an impossible new nosology; the Brunonian system imposed upon the credulous; and in our own America even, Rush was asserting the triumphs of his own system, that " consumption in its last stage is cured by bleedings; gout is torn from its ancient sanctuary; dropsy is cured; tetanus is prevented by inflaming the parts; madness has yielded to bleeding, low diet and mercury; and the last achievement of our science consists in the discovery and observation of the premonitory signs of mortal disease, and in subduing them by simple remedies in their forming state."[1]

We talk about ethics and etiquette and how they languish. In 1778, Hunter told his students that he'd be damned if he would meet a brother practitioner in consultation; he is said to have claimed a fee which should have gone to a consulting colleague, and he clamored for all the money paid into St. George's Hospital by student assistants, because he said the young men were attracted there by himself alone. Medical gentlemen of those times thought poorly of John Hunter's etiquette, though no one questioned his ethics; but ethics were not understood then as we understand them now.

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[1] Rush's Medical Inquiries and Observations, vol. 4, p. 393.

Behind it all, however, there was growing up in the eighteenth century a system founded upon the few and scattered sound teachings of earlier centuries; and an appreciation of science was coming to enlighten some of the better minds. John Locke understood science as we do. So perhaps did Sydenham and Boerhaave; so did Morgagni; so certainly did von Haller and John Hunter. These men disregarded schools. They were practical observers, physiologists, pathologists and surgeons; they looked for tangible proofs; they cared nothing for metaphysics and theories founded upon moonshine. Of them all Boerhaave and John Hunter affected especially American medicine in our early days, and Hunter's pupils, Physick, J. C. Warren and their like, taught their students on sound and liberal lines.

In the last year of our American Revolution, the Massachusetts Medical Society was founded, with its leading object the promotion of medical education, war against quackery, the stimulation of preventive medicine and the preservation of the public health. The annals of this famous society show that in the first fifty years of its existence it accomplished much on these lines of endeavor; that with the co-operation of Harvard College it did promote a higher grade of education; that its committees investigated and battled with serious and widespread epidemics, and that especially it had a keen scent for medical heresies of all sorts; that it strove vigorously to root them out and that its combat was unceasing. The development of homeopathy is one evidence of the chaos into which medical practice had drifted toward the end of the eighteenth century. As one examines it in the light of history, its early tenets seem but little more astounding than do those of the schools championed by Cullen, Brown or Rush. Doubtless the early successes of homeopathy were the more striking because its let-alone principles contrasted so violently with the heroic measures of its rivals.

With such a sketch before us of former conditions we can see why etiquette became the greatest good, and why true ethics failed of general comprehension. The warring schools of practice adopted their own rules and their own customs. Rival schools to them were anathema.

With the development of latter-day science, with the spread of a broad education, with the rise of special learning and with the demonstration of sound pathology and physiology as the central theme upon which rests our whole superstructure, it has resulted that ethics has come into its own, and that mere etiquette is but little regarded. Schools of practice no longer signify. Cullen, Brown and Rush are forgotten. In some distorted fashion Hahnemann is thought to survive as the prophet of a simplified therapeutics, though few of his modern followers accept his premises. The great and fundamental distinction between latter-day and former medicine is our present sound conception of pathology. Modern practice rests upon a pathology of which the principles are everywhere accepted. Ancient practice rested upon a cloud-bank of whimsies, regarding the nature of which no two men agreed. Such division as still persists among educated physicians concerns the details of a dwindling therapeutics. A better understanding of each other, a wider knowledge, a culture founded on travel and observation in many lands, surely are bringing together all groups of thoughtful men in our profession. Etiquette is no longer imposed; it is the accepted habit of good breeding among educated men of science. Good ethics remains and its meaning daily grows more apparent.

Let us hope that that Chauvinism, of which Osler complained, one day will pass from us. We are not yet perfect, however. Is it not worth while occasionally to return upon ourselves with the old question, Are we always and truly scientific in our modes of thought? Are we ready and willing, as were the early members of the Massachusetts Medical Society, to investigate with open mind new and strange things? Do we break through in season the shackles of convention? Or does tired cynicism sometimes prompt us to a denial of truths which seem evident to our more generous fellows?

Educated physicians are weary of old-time, meaningless terms applied to modern conditions. We hear still of *schools* of medicine, — the *old school, the new school, rival schools.* The educated man knows that the study and pursuit of science does not admit of schools. Doubtless, all methods of treatment and therapeutic activity allow many diseases to run their course with the recovery of the patient. Doubtless different therapeutic measures appeal especially to patients of different temperaments. Doubtless in a great many diseases, therapeutic eccentricity and voluble verbiage do no special harm. Such reflections are familiar to us all, and we recognize wearily the truths of psychic influence expressed by such conceptions. We know, however, that genuine organic disorders require for their cure something more than empty phrases and placebos, while the weariness engendered of serious responsibility renders us skeptical of the outcome of all disease. Men have groaned over homeopathy. Fifty years ago they despised Thompsonianism; they have sneered at spiritualism; they have distrusted mesmerism and mental healing; they have looked askance at hypnotism, and have questioned the value of psychotherapeutics as applied by responsible scientists of to-day — grouping indiscriminately the good and the bad. Our thoughts have been divided and our intelligence assaulted by such a multitude of semi-quackeries and propositions of pseudo-science that often we are unable to winnow the grain from the chaff. Such is the diversity of modern-day conditions. More than ever, therefore, is it incumbent upon us laboriously and faithfully to seek for truth; not to assume it without proof; not to throw it aside without investigation; to recognize always the significance of good ethics, and to divorce captious etiquette from the painstaking pursuit of a genuine and enlightened knowledge.

Original Articles.

THROMBOSIS OF THE CAVERNOUS SINUSES; WITH REPORT OF FOUR CASES.

Remarks on the Topography of the Sinus.

BY HENRY GLOVER LANGWORTHY, M.D., DUBUQUE, IOWA.

Case I. Chronic purulent otitis media with mastoiditis, facial paralysis, thrombosis of the lateral sinus, internal jugular vein and both cavernous sinuses; pyemia and death.

On Feb. 3, 1905, there was admitted to the Massachusetts Charitable Eye and Ear Infirmary, on the service of Dr. Frederick L. Jack, a boy fourteen years of age.

Family history not obtained.

Past history. — Scarlet fever eight years ago, intermittent discharge from the right ear ever since.

Present illness. — Has had severe pain in the right ear for ten days with considerable increase in the amount of discharge. Duration of facial paralysis nine days.

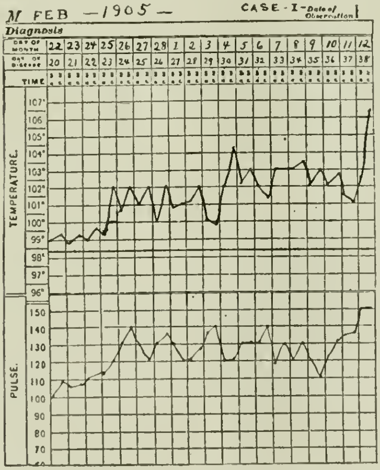


Fig. 1. Temperature chart (Case I). The first rise in temperature is very suggestive of beginning trouble in the nearest sinus.

Physical examination. — Fairly well developed and nourished. Prostration slight. Right ear, middle ear filled with many granulations. Probe passed through granulations into attic, encounters bare bone beyond. Swelling of the postero-superior canal wall. Mastoid tender. Right facial paralysis. Hearing tests, low spoken voice 5–35; Galton whistle normal; low limits 1024 S. V.

Feb. 4. — Radical mastoid operation by Dr. Walter A. Lecompte. Granulations and cholesteatomatous material scraped out. Small fistula found posterior to oval window leading into the facial canal. Panse flap and primary skin graft.

Feb. 25. — Radical cavity clean. Packed daily. Epidermatizing slowly. Temperature, previously normal, rose suddenly to 102° F. Patient complains of severe frontal and occipital headaches.

Feb. 26. — Frontal and occipital headaches still severe. Diarrhea and slight dizziness. External rectus muscle paralyzed. Pupils equal and react to light. Fundi examined by Dr. Edward K. Ellis and found negative. Packing removed from radical cavity and light wick substituted. Temperature 102° F. Knee jerks active and equal. No Kernig. Superficial reflexes normal.

Feb. 27. — Frontal headaches. Pupils dilated. Complete paralysis of sixth nerve, other ocular nerves not involved. No rigidity of neck. No ataxia of arms. Reflexes normal. Lumbar puncture by Dr. Lecompte and half an ounce of clear fluid withdrawn. Case seen by Drs. Walton and Waterman. Operation advised. Exploratory brain operation performed by Dr. Frederick L. Jack. Radical cavity reopened. Roof of middle ear and antrum removed. Dura discolored and bulging, incised. Probe passed through brain tissue in several directions but no pus found.

Feb. 28. — Frontal headaches persist. Two chills. Patient seen by Dr. Putnam who finds: "Abdominal reflexes lively. Knee jerks lost. Kernig both sides. Slight plantar reflex. No Babinski. Slight retraction of head and tenderness on pressure over cervical vertebræ."

March 1.— Cerebration active. Pain about both eyes. Exophthalmos of right eye. Tenderness and edema of cheek and neck on that side. White count, 39,000. Fundi normal.

March 2. — Exophthalmos of right eye increasing. Chemosis of lids. Swelling of cheek and neck more extensive. Cerebration slow.

March 6. —Ligation of right internal jugular vein by Dr. Mixter. Vein thrombosed. Lateral sinus opened and curetted by Dr. F. L. Jack.

March 8. — Periods of unconsciousness and delirium. Exophthalmos increasing. Choked disc. Retention of urine. Chills.

March 12. — Death took place from septic exhaustion.

Post mortem. — Original incision in neck elongated by Dr. George L. Tobey, Jr. Jugular vein excised as far as the bulb and found thrombosed. Petrous portion of the temporal bone removed. After removal of the bone, pus was seen to come from a point in the dura communicating with the cavernous sinus. Pressure on the eye ball evacuated some pus. Probe passed freely through the inferior petrosal sinus.

Case II. Acute suppurative otitis media with extra-dural abscess, thrombosis of the lateral sinus, internal jugular vein and both cavernous sinuses; pyemia, death.

A. G., male, age three years, was admitted to the Massachusetts Charitable Eye and Ear Infirmary, July 13, 1905, on the service of Dr. Clarence John Blake.

Present illness. — Transferred from Children's Hospital, Boston, where patient had been dangerously ill with pneumonia. Discharge from the right ear eight days; left ear, five days. Paracentesis both drums. Said to have had three chills yesterday. No vomiting. No convulsions.

Examination. —Ears, marked redness and bulging of both membrana tympani. Purulent discharge. Mastoid tenderness on right. Paracentesis.

Feb. 14. — Temperature 101° F. Both middle ears discharging. Marked prostration. Slight edema of tissues anterior to right auricle.

Feb. 16. — Increasing exophthalmos of both eyes with chemosis of lids. Chills. No vomiting. Edema over right mastoid process and glandular swelling in neck. Profuse purulent discharge from middle ear. Right mastoid operation and ligation of the internal jugular vein by Dr. George L. Tobey, Jr. Cortex found perforated. Antrum and cells filled with pus.

Pus extended forward into zygoma. Lateral sinus and internal jugular vein found thrombosed. Two perforations discovered, one high up over the squamous portion and the other through the anterior bony canal wall.

Feb. 17. — Exophthalmos and chemosis of lids of both eyes marked. Beginning optic neuritis. Cornea slightly hazy. Media clear. Restless. Periods of unconsciousness. General condition growing rapidly worse. Profuse discharge from middle ear. Swelling and discoloration of skin about right elbow joint.

Feb. 19. — Death from sepsis. Autopsy refused.

CASE III. Chronic suppurative otitis media with mastoiditis, bronchopneumonia, thrombosis of both cavernous sinuses; pyemia, death.

On April 27, 1906, there was admitted to the Massachusetts Charitable Eye and Ear Infirmary on the service of Dr. Philip Hammond, a boy, F. D., eight years of age.

Family history not obtained.

Past history. — Indefinite (state ward). Adenoids and tonsils removed by Dr. William Goodell on April 17. Rapid emaciation, cough with pain and discharge from left ear about one week. Swelling anterior to auricle four days.

Examination. — Left ear: membrana tympany reddened, thickened and bulging. Perforation lower anterior quadrant. Middle ear discharging. Perforation through anterior wall with foul smelling discharge. Swelling size of a walnut over zygoma and parotid gland. Tissues indurated below angle of jaw. Slight mastoid tenderness and edema. Rachitic. Lungs, no definite consolidation, sibilant râles over whole chest. Slight cyanosis. Temperature 104 8.° F. Respiration 32. Pulse 130. Abdomen negative.

April 29. — Anterior canal wall incised by Dr. Dana W. Drury, and two drams of pus evacuated. Throat negative. Sponge baths have reduced the temperature to 103° F.

April 30. — Temperature 105 8.° F. Pulse rapid and weak. Chills and vomiting. Delirious. Swelling has extended forward involving the whole left side of the face. Exophthalmos and chemosis of lids of left eye.

Mastoid operation by Dr. D. Harold Walker, of Boston. Antrum opened and found filled with pus and granulations. Tegmen antri carious but no distinct perforation. Second incision made in front of left auricle parallel to temporal artery. Considerable amount of pus under zygoma and masseter muscle, evacuated.

May 1. — Frontal pain and headache. Stupid. Exophthalmos and chemosis of lids marked. Kernig's sign positive. Temperature 105.4° F.

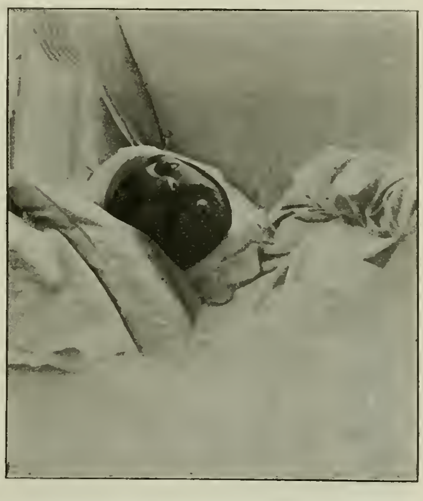
May 2. — Exophthalmos and great chemosis of lids of left eye. Swelling of corresponding side of face and neck. Delirious. Knee jerks increased. Involuntary movements and epileptiform attacks. Temperature 104° F.

May 3. — Exophthalmos and chemosis of lids of both eyes. Extremities cool. Stiffness of neck muscles. Unconscious. Temperature 105.5° F. Fundi negative.

May 4. — Pulse grew gradually weaker and death took place early this morning.

Autopsy. —(Dr. F. H. Verhoeff.) Head only. Marked rigor mortis and lividity of dependent parts. Eyelids of both eyes much swollen, more marked on right side, neither mastoid nor zygomatic wound enter cranial cavity. Pia-arachnoid congested and infiltrated with turbid fluid along the sulci. Cerebrospinal fluid not markedly turbid. Dura over petrous bone normal. Both cavernous sinuses thrombosed. Lateral and other sinuses free (petrosals not examined). Body and a part of the left wing of the sphenoid highly necrotic, green colored, soft and oozing pus. Sphenoidal sinuses filled with pus. Extending from the left cavernous sinus beneath the dura over the squamous to the petrous bone there is a mass of thick pus. Also over the site of the external incision in front of the auricle the dura is raised in the form of a small abscess. Evidently the purulent process had extended through the dura explaining the meningitis. The bone beneath the abscess is intact although showing two small emissary veins. On the temporal wall of the left orbit there is a thick layer of pus extending beneath the periosteum from the margin of the orbit, backward to the sphenoidal fissure. The bone along this tract of pus is necrotic. The orbital tissues contain no pus.

Bacteriology. — Smears from the subdural abscess show an abundance of Gram staining cocci, both in pairs and short chains. Many of them are degenerated and fail to take the stain. Cultures show a pure growth of pneumococci.



A. Cavernous sinus thrombosis of otitis origin early in the disease. Eye symptoms, chemosis of lids and exophthalmos, first appeared in the opposite eye. Photograph of a patient on the aural service of Dr. E. M. Plummer, Massachusetts Charitable Eye and Ear Infirmary, October, 1906.

Diagnosis. — Thrombosis of cavernous sinuses. Sub-dural abscess. Purulent meningitis. Empyema and necrosis of the sphenoid.

CASE IV. Acute suppurative otitis media with mastoiditis, meningitis, thrombosis of lateral sinus, internal jugular vein and both cavernous sinuses; death.[1]

Boy, aged seven, admitted to the Massachusetts Charitable Eye and Ear Infirmary, Feb. 2, 1906, on the aural service of Dr. Philip Hammond.

Past history. — Diphtheria two years ago. No previous ear trouble.

Present illness. — Five days ago said to have had an attack of severe pain in right ear followed by slight mastoid tenderness and swelling. Otorrhea one day.

Examination. — Well developed and nourished. Marked prostration. Unconscious. Pupils pin point and react sluggishly to light. Neck muscles stiff but no retraction of head. Temperature 105° F.

Right ear. — Membrana tympani reddened, thickened and bulging. Small perforation lower anterior quadrant. Edema postero-superior canal wall. Middle ear discharging. Edema over mastoid. Slight protrusion of auricle from side of head. Mastoid operation by Dr. Philip Hammond. Antrum found filled with pus and granulations. Small area of normal dura uncovered. Lateral sinus exposed. Drum incised. Culture showed streptococci.

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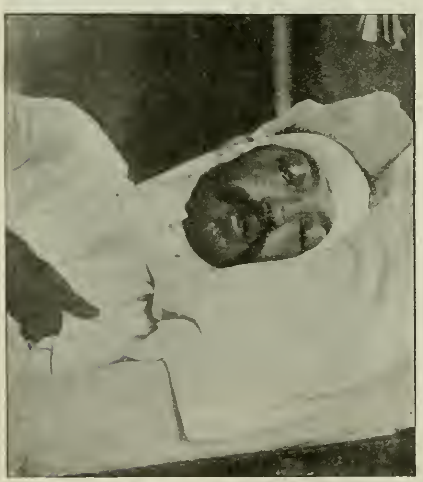
[1] This case referred to in the *Laryngoscope*, July, 1906. A Proposed Measure for Thrombosis of the Cavernous Sinus.

Feb. 4. — Pupils pin point and do not react to light. Knee jerks absent. Delirium. Mastoid wound clean. Profuse purulent discharge from middle ear.

Feb. 6. — Unconscious. Slight retraction of head. Vomited. Pupils pin point and do not react.

Feb. 7. — Acute inflammation of left middle ear. Paracentesis. Kernig's sign positive. Babinski on right. Knee jerks absent. Retraction of head. Marked variation of temperature in twenty-four hours ranging from 101° F. to 106° F. Edema of right side of face and extending along zygoma. Neck tender.

Feb. 8. — Temperature has risen as high as 107° F. Double optic neuritis. Involuntary movements. Delirious. Slight chemosis of lids of right eye and exophthalmos.



B. Same patient two days before death. Exophthalmos and chemosis of lids marked in both eyes.

Feb. 10. — Exophthalmos and chemosis of lids of both eyes, alternating. Pupils pin point and do not react to light. Difficulty in swallowing. Epileptiform attacks. Chills. Operation for cavernous sinus thrombosis considered but finally abandoned.[2]

Feb. 11. —Death from sepsis.

In Case I, the whole duration of the disease was thirty-eight days, the cavernous sinus thrombosis, twelve days. Pain about the eyes and severe headaches were noticed four days before the exophthalmos. The cause of the partly unilateral headaches and pains over the forehead may have been in some way due to pressure on the first branch of the trifacial. The prominent symptoms in order of their occurrence may be grouped as follows: known mastoid focus, pain about the eyes, headaches, slight paralyses of a nerve within the sinus, chemosis of lids, exophthalmos, edema of face and neck on the same side, double optic neuritis, pyemia and death. In this case death took place before the second eye became involved, unusual in cases of otitic origin. The nerve paralyzed was the sixth (abducent) supplying the external rectus muscle. This nerve enters near the floor of the sinus, posteriorly passing to the outer side of the internal carotid artery where it is finally directed into the orbit through the sphenoidal fissure. Pressure on the nerve was sufficient to cause the convergent squint. The classical symptoms with which we are at present familiar are really nature's last efforts. Not until we have the most careful analysis of the very early symptoms can we expect to improve in diagnosis. In this work we are hindered not only by the fact that many of the cases may be in children, but also that the train of symptoms due to septicemia and pyemia often mask the disease. Occasionally in adults, cerebral symptoms are absent until within a few hours before death. Accustomed as we are to encounter marked disturbances in the central sensorium, this fact is often confusing. Even such characteristic features of phlebitis as pyemic rigors may be wanting. Ptosis (oculomotor) cannot be relied upon. So many factors enter into the causation of symptoms that even the cases reported are most unsatisfactory. The prognosis is absolutely bad. Our only hope of recovery is in operation and as early as possible. The moment the diagnosis seems clear the sinus should be opened and drained. It is not so much the inaccessibility of the sinus which baffles us as the fact that even if the sinus be opened and drained successfully the cases are so septic that small hope can be held out for recovery. The responsibility of the surgeon is great. Even if the relatives of the patient are willing to have anything done which may offer the remotest chance one is still inclined to be wisely conservative.

In Case II, the duration of illness was fourteen days, the cavernous sinus thrombosis five days. Exophthalmos of the second eye was noticed within twenty-four hours from that of the first. The diagnosis with the known mastoid focus was unmistakable. The thrombosis extended into both cavernous sinuses very quickly, with metastatic abscesses in distant parts. It is remarkable how soon the lungs become the seat of purulent infarcts. An operation for draining the cavernous sinus was not considered because of intense sepsis and the poor condition of the patient on the operating table. It is almost impossible to form an opinion of the value of attempted operation in a case of this kind. From the first, the patient was extremely sick.

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[2] Cases II and IV. The route considered was as follows: *Operation*. After elongating the usual frontal incision downward along the nasal bone and retracting the eye out of the field, the inner wall of the orbit is removed over a considerable area together with the nasal bone on that side. The entire structures within the nasal fossa-ethmoid, labyrinth and turbinates are then curetted out. This at once brings one down on the anterior surface of the body of the sphenoid with the opening of the sphenoidal sinus in plain view. The anterior wall of the sphenoidal sinus is next to follow and also a portion of the roof and lateral wall upon which rests the cavernous sinus. From this point one can do considerable on the cadaver with a prick of the knife and a properly curved blunt dissector. If unsuccessful in opening the cavernous sinus, the external wound is easily closed, the eye remains uninjured and nothing is lost by the attempt.

If the patient lives, the after treatment with the nasal structures wanting would be no more difficult than dressing an open thrombosed lateral sinus in the depth of the temporal bone. The Laryngoscope, July, 1906.

In Case III the duration of illness was fifteen days, of sinus symptoms, five days. The fundi were negative and media clear.[3] Early diagnosis was impossible. Operative interference in this case, while worth considering, would hardly have warranted any serious attempt. Of course, one may be wrong in deciding that any particular case is inoperable, for time, as Cicero tells us, often overthrows the opinions of men. The clinical and surgical standpoint, however, surely deserves as much if not more weight than the purely experimental side. One is always inclined to be skeptical when imperfectly known data are classified under any broad or general theory.

In Case IV, the duration of illness was fourteen days, of cavernous sinus symptoms, four days. There was exophthalmos of both eyes becoming less just before death. One of the most hopeful signs in these cases, indicating that recovery might ensue if the sinus could be drained, is periods of temporary general improvement. The operation of opening the cavernous sinus through the inner wall of the orbit and roof or lateral wall of the sphenoidal cavity, as suggested by the writer who had charge of the case, was considered at length, but finally abandoned. The most difficult problem which confronts the surgeon lies in making a positive diagnosis as soon as one eye shows the characteristic symptoms. Should he wait until the second eye becomes involved, clinching the diagnosis, so to speak, where there can be little hope in operation or, accepting the small percentage of error, operate at once? The answer can only be found in the individual condition of the case, the number of days already elapsed pointing to thrombosis of the cavernous sinus, willingness on the part of the relatives to take the chance which lies in operation and, finally, a trust in the future resistance of the patient to overcome the intense toxemia.

"The incessant progress of surgery, sanctioned by almost unhoped-for success, has very greatly increased the indication for operation in imperative surgery. Certain cases, which only a few years ago would have seemed hopeless, are to-day operated upon, and the wonderful results obtained show that the interference was justified. It is not, unfortunately, always thus, and all human power has its limits. There are patients who, when seen by the surgeon, represent organisms which are ruined and where all science loses its rights. The question of interfering in these cases is a difficult problem to solve."[4]

Historical note. As pointed out by Dwight-Germain, it has apparently been taken for granted by most authors that the cavernous sinus was hardly available for surgical interference on account of the supposed inaccessibility of the region. With few exceptions all agreed that the only justifiable operation was either an incision into the orbit in the hopes of striking a communicating pus pocket, or a simple enucleation of the globe itself. Others concluded, as did Macewen,[5] who has given us by far the best monograph on the subject, that in any view the cases are beyond surgical treatment. Finlay[6] remarks, "One can scarcely seriously contemplate reaching the local lesion through the orbit or by means of a craniectomy." Gaillard[7] was one of several to believe that "the treatment is entirely preventive." In cases in which the cavernous sinus had become involved by extension along the petrosals from a thrombosed lateral sinus, attempts had been made to drain all the sinuses at the base of the brain by opening and curetting the lateral, securing free bleeding. Three cases of recovery are recorded following this operation. One case of extension from the middle ear is reported by Cohen-Tervert[8] in which the middle fossa was opened and "several punctures made especially in the direction of the cavernous sinus," but without success. The Krause[9] method for intracranial resection of the trigeminus as the most feasible route has been the subject of much dispute. Robineau is reported to describe a method of operation on the cavernous sinus by doing a temporary resection of the malar and trephining the sphenoid. He says, however, that "this has never been tried as yet upon a living person."

Bircher[10] in 1893 reports opening the middle fossa by trephining and resecting the entire petrous pyramid with the exception of the inferior wall of the carotid canal, sectionizing of course the facial nerve. At the extremity of the pyramid he discovered a grayish place leaking fetid pus, apparently from the sinus. The patient recovered, but with extreme paralysis of the face and eyeball. Luc questions whether this was not an extradural abscess rather than a thrombosed sinus. Voss (de Riga) succeeded in incising the sinus by opening the middle fossa at the level of the base of the great wing of the sphenoid. He first sawed through the zygomatico-malar arch before doing the osteoplastic operation. The result was unfortunate as the patient died shortly from traumatic meningitis. In 1900, Dr. Herman Knapp[11] reports a case of aseptic thrombosis of the cavernous sinus with successful sinus operation by Dr. Hartley following the Gasserian ganglion (Hartley-Krause) route. An osteoplastic flap was made over the temporal region and reflected over the zygoma. The dura mater was then loosened from the squamous and petrous portions of the temporal bone sufficiently to recognize the second and third divisions of the fifth nerve. The cavernous sinus located, it was incised longitudinally as far as the sphenoidal fissure and the other sinuses investigated with a small probe. No hemorrhage took place at this time since the lumen of the sinus was occupied by a clot which completely filled it. The division of the third, fourth and opththalmic branch of the fifth nerve was not thought to be of moment since they had already shown evidences of paralysis. The patient lingered for over two months. In 1902 Dwight-Germain [12] report a similar operation performed Jan. 1, 1899, by Dr. Dwight for an acute septic thrombosis of the sinus. The patient was lightly etherized, head shaved and a horseshoe flap with its apex two and one half inches back of the outer canthus turned down. The dura opened, the temporal lobe was lifted backward and upward until the cavernous sinus was felt with the tip of the index finger of the left hand; a narrow bistoury with protected edges was then carried in along the finger and the cavernous sinus opened with an incision about one-half inch in length. This incision was followed by a rush of dark semi-clotted blood. The hemorrhage, however, was easily controlled by a strip of gauze. The patient died six and one-half hours after the operation. Krönlein in devising his operation (temporary resection of a wedge-shaped piece of the external bony orbital wall) for removal of retrobulbar growths, hoped that this operation might also drain some cases of thrombosis of the cavernous sinus by reaching the ophthalmic vein at the bottom of the orbit. With the appearance of a number of rhinological articles on empyema of the sphenoidal sinus and its treatment, it was remarked that curettement of either the external wall or roof of the sphenoidal cavity should be performed as lightly as possible owing to the great danger of opening the cavernous sinus or internal carotid artery. A direct application of this anatomical knowledge as an exit for a thrombosed cavernous sinus, however, was still lacking. In 1903, Cushing of Baltimore,[13] while extracting the Gasserian ganglion in a patient, accidentally opened the cavernous sinus which was followed by a well of venous blood spurting up into the wound. It was controlled by packing. One month later there suddenly occurred, without the patient being aware of it herself, a great protrusion of the left eye with edema of the lids and retinal hemorrhages. Evidently the long awaited thrombosis of the cavernous sinus had taken place and the pack for the first time could be removed with safety. A few days later the eye was enucleated. The patient made an uneventful recovery. Cushing adds that so far as he is aware the sequel of a cavernous sinus thrombosis has heretofore never been recorded, although many have believed that they have injured the vessel during this operation. The mechanical results of the stasis was the counterpart of that seen in the infective thrombosis, but without the serious clinical manifestations accompanying the latter condition. It is a rather curious coincidence that in 1905–6, Dr. H. Luc,[14] of Paris, and the writer should have begun a series of somewhat similar experiments on the cadaver in an attempt to work out the most reasonable and best method for attacking the vessel. My own observations have to date included six cases of septic thrombosis of the cavernous sinus, some of them autopsied. In one case of cavernous sinus thrombosis the method to be described was performed an hour after death. The first purely experimental dissections were, of course, limited to a few fresh cases in the autopsy room and on twelve half heads. Not a very extensive array, to be sure, but enough, I think, to draw some conclusions. I will first roughly mention the experiments of Luc, of which the original French text is given below.[15] He first proceeded by making a large opening through the anterior wall of the maxillary sinus on the same side as the cavernous sinus which he wished to open, and another smaller one into the nose to locate the anterior wall of the sphenoid. Using a straight chisel, however, he was unable to penetrate the lateral wall of the sphenoidal cavity on that side and so came to the conclusion that the cavernous sinus should be approached through the maxillary antrum on the opposite side of the head. This gave him the desired angle (oblique) and he was able to open the side of the sella turcica and penetrate the sinus without injuring the important structures. Grünert also seems to have had a clear idea of sometime opening the cavernous sinus through its relationship with the accessory sinuses of the face. My own operation, published some time ago, and also a modification of the same will presently be described. Ellett [16] believed that inasmuch as the prognosis is absolutely bad the operation as performed by Hartley should be tried.

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[3] Optic neuritis in thrombosis of the cranial sinuses; occurrence 30% in 26 cases. *Laryngoscope*, Jan., 1907.

The 26 cases presented included four of cavernous sinus thrombosis. The 4 cases are presented in detail in the present paper. Death took place in one of the 4 cases before any changes were observed in the fundi. A number of cases have been reported during the last few years without demonstrable ocular changes.

[4] Cumston, C. G.: The Frontiers of Death in Surgery and the Question of Operation in Extremis. *New York Med. Jour.*, July, 1906.

[5] Macewen: Pyogenic Diseases of the Brain and Spinal Cord.

[6] Finlay, C. E.: Ann. of Otol., vol. xxxii, p. 419.

[7] Gaillard: Nagel's Jahrb., 1874, p. 518.

[8] Cohn, B.: Klin. der Embolisch. Gefässkran, Berlin, 1860.

[9] Krause-Hartley: Method of Removal of the Gasserian Ganglion. Internat. Textbook of Surgery, vol. i, p. 866.

[10] Bircher: Centralbl. für Chir., 1893.

[11] Knapp, H: A Case of Traumatic at First Doubtful Orbital Sarcoma, followed by Aseptic Thrombosis of the Cavernous Sinus.

MORBID ANATOMY.

Cavernous sinus thrombosis is usually secondary to lateral (sigmoid) thrombosis or affections of the ophthalmic veins. It is possible, however, from above from traumatic inflammations following the superior longitudinal sinus and cerebral veins and inferiorly by direct caries of the sphenoid bone. In ear disease it is commonly said to occur in one of three ways: (1) Sigmoid sinus thrombosis through intermediary of the petrosal sinuses. (2) Carotid plexus of veins surrounding the carotid artery by infection from the tympanic cavity. (3)

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[12] Dwight-Germain: Report of Four Cases. Bost. Med. and Surg. Jour., May, 1902.

[13] Cushing, H.: The Surgical Aspects of Major Neuralgia of the Trigeminal Nerve. A report of 20 cases. Jour. Am. Med. Asso., 1905.

[14] Luc, H.: La Voie d'Accès Vers le Sinus Caverneux. Communication Faite au Congrès de la Société Française d'Otologie, de Laryngologie et de Rhinologie. Tenu à Paris du lundi, 8 mai au jeudi 11 mai, 1905.

[15] J'adoptai donc la voie maxillaire supérieure que j'avais, d'ailleurs, été l'un des premiers à utiliser comme méthode de cure radicale des suppurations de cette cavité. J'eus alors l'idée de renouveler ma tentative en abordant chaque sinus sphénoïdal par le sinus maxillaire du côté opposé, et bien m'en prit, car dès lors je réussis, sur les deux mêmes cadavres et sur deux autres dont je disposai ultérieurement, à ouvrir le côté de la selle turcique et à pénétrer du même coup dans sinus caverneux. J'eus, en outre, la satisfaction de constatu que, conformément à mes prévisions, je n'avais lésé ni les troncs nerveux contenus dans la paroi externe de ce vaisseau, ni même le nerve de la sixième paire, ni surtout l'artère carotide qui traverse, comme, ou sait, l'intérieur du sinus veineux en question.

[16] Ellett, E. C.: Septic Thrombosis of the Cavernous Sinus. Report of three cases. Jour. Am. Med. Asso., May, 1904.

Involvement of the petrous cancellous cells, either from the cells on the inner wall of the tympanum or from the mastoid antrum.[17] Sometimes with perforations through the anterior bony canal wall or a line of suppurating cells far forward in the zygoma, the veins of the diploë passing inwards through the internal table and emptying into the superior petrosal may be the means of infection as observed in two of the cases presented.[18] The post-mortem picture varies slightly in accordance with the anatomical direction of the infection. Sometimes bone discoloration in the neighborhood of the sinus is absent. Almost always, however, the staining of bone is a prominent feature varying from livid green to black. The following two autopsies (Dwight-Germain) are most interesting. The first, spreading from a carbuncle on the back of the neck, showed a softened thrombus of left lateral sinus, petrosal and both cavernous sinuses.

All small sinuses around pituitary body were enlarged and filled with pus. Pressure on the eyeball caused pus to be forced out of the orbit, apparently along the track of the ophthalmic veins. Abscess of both lungs; septicemia; infection with staphylococcus aureus. In the second case, arising from infection of the right frontal sinus, the post-mortem picture was as follows: Infection of frontal sinus with extension of inflammation into orbit and ethmoidal cells on right side. Septic thrombosis of both cavernous sinuses and circular sinuses. Bronchopneumonia. No meningitis. Other sinuses not affected. Culture, streptococci and a bacillus. In Jack's [19] case of cavernous sinus thrombosis following the grippe the autopsy (Verhoeff) showed: Pia-arachnoid congested, edematous, numerous foci of suppuration in the sulci on the sides and at the base of the brain. Cerebrospinal fluid turbid. Both cavernous sinuses distended with pus and their walls lined with thrombi. Circular sinus filled with purulent thrombus. Left superior and inferior petrosal and left sigmoid sinuses similarly affected. Right inferior petrosal sinus filled with pus which continues into a thrombus blocking the right jugular vein. The other sinuses are free. Frontal and ethmoidal cells normal. Sphenoidal cells filled with pus and surface of sphenoid bone covered with purulent exudate. Orbital tissue on right side edematous, but shows no suppuration. Orbital tissue of left eye contains pus in direct continuity with that in the left cavernous sinus. Cultures show only the staphylococcus pyogenesalbus. The autopsy revealed " an apparent direct connection between the sphenoidal suppuration and the sinus, a direct infection such as occurs in the lateral sinus from middle ear disease." Section of lung tissue demonstrated purulent foci throughout.

Jackson [20] reports a case of thrombosis of the cavernous sinus in a patient suffering from pulmonary tuberculosis. The cerebral meninges showed miliary tubercules scattered over both hemispheres, but none at the base of the brain. In the right cavernous sinus was an organized clot, about one eighth of an inch in diameter, extending into it from the orbital vein. No retinal changes. Dr. Arnold Knapp reports a case of primary cavernous sinus thrombosis secondary to osteomyelitis of the petrous pyramid. Autopsy as follows: Disintegrated but recent blood clot in the right sigmoid sinus becoming purulent as it approaches the bulb. Superior petrosal sinus normal. Dura over right cavernous sinus bulging and yellow; on opening this, a cavity filled with thick creamy pus is exposed. The left cavernous sinus also contained pus. Sphenoidal sinuses healthy. After removing dura from surface of petrous pyramid, a round, carious defect I cm. in diameter, in the bone was found at apex just underneath the Gasserian ganglion, anterior and internal to the internal auditory meatus. The meatus and its contents appeared healthy. Another defect was found along the superior petrous margin somewhere externally but communicating with the cavity at the apex of the petrous pyramid. The tympanum was filled with swollen mucous membrane. No fistula on inner wall. Antrum small and filled with granulations. The mastoid process is entirely infiltrated, though no actual cavities or disintegrations can be observed. The infiltration extends inward from the antrum just above the external semicircular canal throughout the cancellous tissue and communicates with the carious areas near the petrous apex described above.

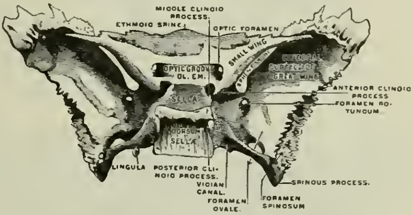

Fig. 2. The sphenoid bone, viewed from above. (Testut.)

One important fact can be deducted from most of the cases if the chest is opened, namely, that the lungs are involved early in the disease. This may not be demonstrable to objective examination, however, until quite late. Where the chemosis of lids and exophthalmos develop first in the opposite eye from the supposed infective source it may be due to extension of the process completely around the base of the skull.

If this cannot be proven at autopsy we assume that the infective material merely happened to lodge first in the cavernous sinus on the opposite side in the same manner that it might have found lodgment in any vein of the body.

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[17] Knapp, Arnold: Primary Cavernous Sinus Thrombosis Secondary to Osteomyelitis of the Petrous Pyramid. Arch. of Otol. Oct., 1906, p. 437.

[18] Langworthy, H. G.: Cavernous Sinus Thrombosis in Children Following Mastoid Inflammation. Laryngoscope, Oct., 1906.

[19] Jack, E. E.: A Case of Cavernous Sinus Thrombosis Following Grippe. Autopsy by F. H. Verhoeff. Arch. of Ophthal., 1902, p. 545.

[20] Jackson, E.: Arch. of Ophthal., p. 365, 1901.

REMARKS ON THE TOPOGRAPHY OF THE SINUS.

"The sinuses of the dura mater are venous channels formed by the separation of its endosteal and meningeal layer and are lined by a prolongation of the lining membrane of the veins. They are rigid tubes which always remain patent (Macewen); their function is to return the venous blood from the brain and its coverings, the diploë and also the greater part of the blood from the orbit and eyeball. They collect this blood and convey it to the jugular or posterior lacerated foramen where it is taken up by the internal jugular veins. The two cavernous sinuses are situated along the sides of the body of the sphenoid bone and extend from beneath the anterior clinoid processes to the apices of the petrous portion of the temporal bones. The outer wall of the sinus, the most distinct, contains the third and fourth nerves and the ophthalmic division of the fifth, while the inner wall contains the internal carotid artery, the sixth nerve and the cavernous plexus of the sympathetic." (Deaver.[21]) Anteriorly they receive the ophthalmic veins, internally, communicate freely with each other by two and sometimes three smaller circular sinuses enclosing the pituitary body, and, posteriorly, terminate by dividing into the superior and inferior petrosals. They also receive veins from the inferior surface of the frontal lobes of the brain and some of the middle cerebral veins. Below they communicate with various venous plexuses in different parts of the neck. There is probably no other sinus within the cranial cavity which admits of so free and extensive a collateral circulation. The venous circulation around the body of the sphenoid presents the appearance of a circle within a circle. The purpose of the endothelial lining of the sinus is to prevent the blood from coming into contact with the nerves and artery. An idea of its considerable size may be had when it is understood that the internal carotid artery and sixth nerve pass through the sinus while the above mentioned nerves are contained in its outer wall. The shape of the sinus is like that of a prism, with the base generally in and tilted towards the median line. Sometimes in an anatomical specimen, showing irregular sphenoidal cavities projecting well laterally, the sinus is placed almost directly above one of them. While divided by fibrous bands (trabeculæ) into lacunar cavities there is always one large and distinct channel.

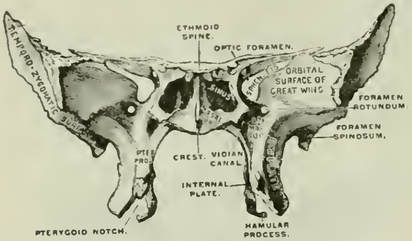

FIG. 3. The sphenoid bone, viewed from the front (Testut.)

The cavernous sinuses are separated from the air in the sphenoidal sinus and external world by the thinnest of bony partitions. On one specimen an actual bony dehiscence was noted opening through the wall of the sphenoidal sinuses into the carotid canal. Evidently, during life, a layer of fibrous tissue only separated the carotid artery within the sinus at that point from a large sphenoidal cavity. It is exceedingly difficult to separate the delicate inner wall of the sinus as it is applied so closely to the bone. An opening made from below upwards cracking the bone is pretty sure at the same time to penetrate the sinus. On a white and well cleaned skull with the calvarium removed one can hold the specimen between one's eye and a bright light and if the normal sphenoidal opening is at all large, see an uninterrupted beam of light pass through the nasal fossa, sphenoidal opening, lighting up a small circle overlapping the region of the cavernous sinus just beyond. The Gasserian ganglion is in intimate relation with the cavernous sinuses and internal carotid artery, being lodged in a depression near the apex of the petrous bone. It is in Meckel's space between two layers of the dura mater. Every now and then one cavernous sinus is found, either rudimentary or absent altogether, showing that a single sinus can, if need be, perform the work of both. A few weeks ago I had the pleasure of assisting Dr. H. H. Germain, of Boston, in tying the common carotid artery in one of those rare cases of sudden rupture of the internal carotid artery within the cavernous

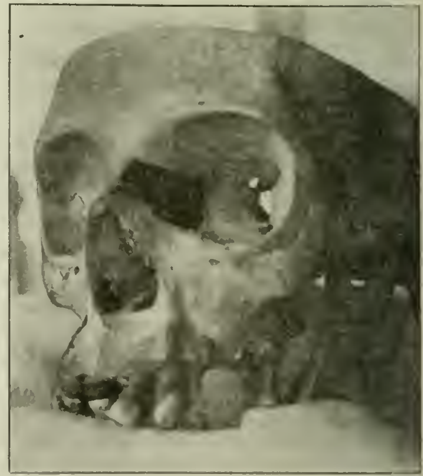

FIG. 4. Area of bone comprising a portion of the inner orbital wall and nasal bone removed to secure a good opening into the nose. From this point one can punch out the middle turbinate and ethmoids, uncovering the anterior wall of the sphenoid. The eye is retracted from the field and remains uninjured.

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[21] Deaver, J. B.: Surgical Anatomy, vol. i, 1901 ed.

sinus causing a pulsating exophthalmos. The patient, an adult over forty years of age, lingered nearly a month. At autopsy (Dr. F. H. Verhoeff) there was found normally a complete absence of the cavernous sinus on the side opposite the arterio-venus aneurysm.

In a footnote (page 536) a proposed orbitonasal route was described for reaching the cavernous sinus. (Fig. 4.) With an opening through either the roof or lateral wall of the sphenoidal cavity abundant drainage should be secured. This also leaves the outline of the sphenoidal sinus for control of hemorrhage by packing. With a moderately large opening through the inner orbital wall into the nose one is working at all times in a good light. This gives the advantage of being able to work through both the orbit and nasal fossa at the same time. Approaching the cavernous sinus from below leaves the brain and coverings untouched. The chief danger is the internal carotid artery. Using a blunt instrument, however, to break into the sinus, the artery will not be injured. If one dreads a sudden and uncontrollable hemorrhage the common carotid can be tied before beginning the operation. A better plan would be to lay bare the common carotid sheath in the neck,

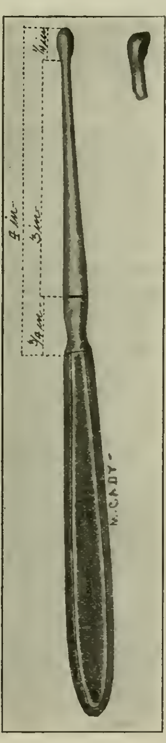

Fig. 5. Curette with heavy handle and long tapering shank. The overhanging edge of the spoon assures a blunt non-cutting end when introduced into the nose. A mark 3 inches from the neck of the spoon is the distance allowable for a ¼ inch penetration of the sinus. The instrument is weighted not unlike a dagger.

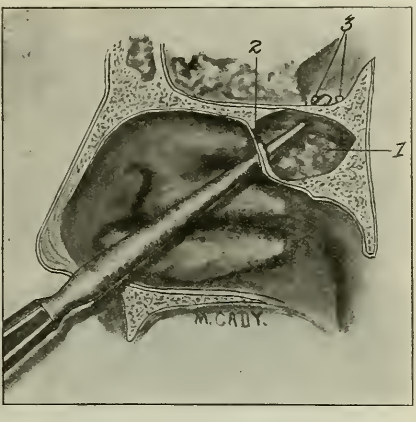

Fig. 6. Curette shown introduced into right nares and passed upward through the thin bony anterior wall and the roof of this sphenoid into the cavernous sinus region. The end of the curette is seen to protrude just beyond the roof.
1. Sphenoidal sinus.
2. Orifice of sphenoidal sinus.
3. Circular sinuses lying upon the roof of the sphenoidal sinus with the fossa for pituitary gland.

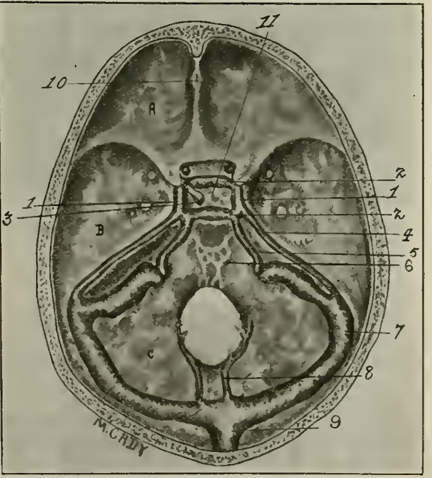

Fig. 7. Base of the skull (superior surface) showing the cranial sinuses.
1. Cavernous sinuses.
2. Circular sinuses.
3. Curette passed from the nose beyond the roof of the left sphenoidal cavity and perforating the cavernous sinus at its junction with the circular.
4. Superior petrosal sinus.
5. Inferior petrosal sinus.
6. Basilar plexus.
7. Lateral sinus.
8. Occipital sinus.
9. Torcular Herophili.
10. Crista galli.
11. Fossa for the pituitary body.
(*a*) Anterior fossa. (*b*) Middle fossa. (*c*) Posterior fossa.

pass a ligature around the vessel, but allowing it to remain untied. This provisional tourniquet could then be tightened at any time during the course of the operation if necessary.

The following experiment of opening the cavernous sinus is quite easy on the cadaver and can be done without injuring the structures within the sinus. Introducing the instrument (Fig. 5) into the nose as far posterior as the pharyngeal wall one finds the inferior surface of the sphenoid above the naso-pharynx. This can be done by the sense of touch alone. Withdrawing the instrument until the curette passes just above the junction of the anterior and inferior wall of the sphenoidal cavity, it is forced backward and of necessity upwards through the roof directly into the cavernous sinus at its junction with the anterior circular. (Fig. 6.) The curette enters the sinus as the thin endothelial lining of the sinus in contact with the bone is held down in place by the other structures within the sinus. The outer and superior wall of the cavernous sinus is the one which is thick and elastic, preventing the instrument from passing further on into the brain. The end of the curette can push this yielding wall of the sinus one-half inch without damage. With a finger at the mark on the shaft, the overhanging edge of the curette grasps the bone when the instrument is rotated. With this single instrument a hole of any size can be made. I was able to do this simple experiment on a patient dying of thrombosis of the cavernous sinus within an hour after death. Withdrawing my spoon, after opening the sinus, I found that it contained some pus. Removing the skull cap and brain and incising the cavernous from above the curette was found to have perforated the sinus exactly as outlined. With a portion of the floor wanting the pus within the thrombosed vessel was still slowly draining out of sight into the cavity below. (Fig. 7 and Fig. 8.) It actually seems possible to remove the middle turbinate and anterior wall of the sphenoidal cavity and, with a good head light, under cocaine, open the cavernous sinus under primary anesthesia. If it is thrombosed it would hardly be likely to bleed. Luc's method of approaching the cavernous through the maxillary antrum on the opposite side is an excellent one. The pus would drain either into the naso-pharynx or antrum. The latter could be kept open as long as desired. The advantages of an intranasal route over a craniectomy would be minimum of shock, comparative freedom from hemorrhage and accessibility of a possible after-treatment. I do not believe that merely opening the ophthalmic vein will be sufficient in all cases to drain the cavernous. To expect results one would be inclined to think that the sinus must be opened as freely as a lateral sinus and with a chance for permanent drainage.

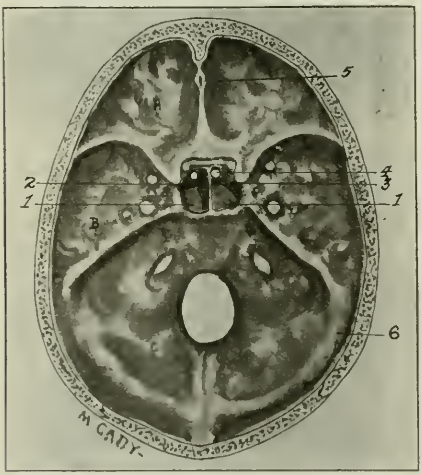

Fig. 8. Superior surface of base of skull. Roof of both sphenoidal sinuses removed.
1. Cavities of sphenoidal sinus seen from above.
2. Median bony partition.
3. Anterior wall of right sphenoidal sinus.
4. Opening of sphenoidal sinus into the nose.
5. Crista galli.
6. Groove for lateral sinus.
(*a*) Anterior fossa. (*b*) Middle fossa. (c) Posterior fossa.

It perhaps makes but little difference what method is selected as long as some attempt is made to drain the sinus directly. We can no longer, however, look for aid in speculation, but must patiently wait for the severer test of actual trial.

Luc: " La voie la plus directe et la meilleure pour la réalisation de ce but nous paraît être celle imaginée par Krönlein et que Voss, conseille d'adjoindre à son procédé opératoire dans les cas ou l'infection caverneuse, au lieu de partir de l'oreille, tire son origine de l'orbite.

" D'après cette méthode, un incision courbe, à concavité postérieure, passant entre le bord externe de l'orbite et la commissure palpibrale externe, permet de rugines les deux faces (temporale et orbitaire) de la paroi externe de l'orbite, à sa partié la plus antérieure, puis de libéres celle-ci inférieurement au moyen d'une scie à chaîne passée à la partie antérieure de la feute pterygo-maxillaire et ressortant, en arrière, audessus de l'arcade zygomatique, toudis que la libération est réalisée supérieurement avec la gouge. Après quoi, le fragment osseux libéré étant laissé adhérent à la face profonde du lambeau musculocutané, en vue de sa remise en place ultérieure, le reste, c'est-à-dire la portion postérieure de la paroi externe de l'orbite, est réséqué de proche en proche, à coups de pince coupante, jusqu'au sommet de l'orbite, ou l'on atteint, la veine ophtalmique et la terminaison de ses principales bronches afférentes. Rien de plus simple ensuite que d'assures le drainage de ce foyer au moyen d'un gros drain plongeant au fond de l'orbite et que l'on fait ressortir par l'extrémité inférieure, laissée béaute, de l'incision cutanée, tandis que le reste en est suturé."

THE CAUSE OF A POSITIVE AGGLUTINATION REACTION IN ICTERUS.

BY HENRY A. CHRISTIAN, M.D., BOSTON,

Instructor in the Theory and Practice of Physic in Harvard University.

Very soon after the introduction of the agglutination reaction as an aid in the diagnosis of typhoid fever, it was noticed in certain individuals, clinically not ill of typhoid fever, that their serum agglutinated typhoid bacilli. Cases with icterus, as first pointed out by Grünbaum, often give a positive agglutination with B. typhosus and S. choleræ Asiaticæ, though as a rule only in low dilutions. Their attention having been called to this fact numerous observers, as Köhler, Zupnik, Megele, Eckhardt, Joachim, Steinberg, and others, investigated the agglutination reaction of the serum of icteric patients to B. typhosus. They found that very frequently the reaction was positive, though in many cases it was negative, and that there was no definite relation between the reaction and the degree of icterus. Different observers used different methods for determining the agglutination reaction and for quantitating their results. After making allowance for these differences, it is apparent that most cases give a positive reaction only in low dilutions and usually after long periods of observation (two to eight hours). Judged by the usual standards of the present time many of these cases would not be regarded as positive, and such reactions as they gave would not be accepted as any evidence in favor of the diagnosis of typhoid fever in a suspected case. Cases of this kind may then be neglected, since they present no difference from non-icteric cases, the serum of some of which in these low dilutions will agglutinate B. typhosus.

However, there remains a small group of cases with icterus whose serum possesses quite high agglutinative properties for the B. typhosus, and it is these which interest us and for which an explanation is desired. Such a case has recently been observed by me, and is here reported.[1]

A man of forty-two was admitted to the Massachusetts General Hospital on Nov. 6, 1906, with a history of typhoid fever seven years previously. Five weeks ago during the night the patient was awakened from sleep by severe pain in the right hypochondrium. There were frequent repetitions of these attacks, and the patient grew jaundiced, with clay-colored stools and very dark urine. Physical examination showed a deeply jaundiced man with marked tenderness, and slight rigidity and spasm in the region of the gall bladder. On Nov. 8, I tested his blood serum and found that it agglutinated B. typhosus with complete loss of motility in a dilution 1:50 in twenty minutes, and 1:100 in one hour; in a 1:150 dilution there was a partial reaction in one hour.

On Nov. 10 Dr. Harrington removed a stone from the common duct. The patient recovered from the immediate effects of this operation, and for a time did well, but then gradually failed and died Dec. 9.

On the day of the operation I was given a blood-stained swab from the common duct, a sterile test tube containing a small amount of slightly turbid, almost colorless fluid from the gall bladder, and the stone from the common duct, the latter in a sterile towel. The stone was 2 cm. in diameter, slightly irregular, semi-translucent, yellowish, crystalline, and not very hard. Cultures were made from these as follows: the swab was smeared over the surface of a blood serum slant, and incubated for forty-eight hours. This gave about 40 discrete colonies, 1 to 2 mm. in diameter, round, white, slightly elevated. Some of the fluid from the gall bladder was poured over the surface of an agar slant, and yielded, after forty-eight hours, 3 colonies, each about 3 mm. in diameter, yellowish white, semi-translucent. The gallstone was placed with sterile forceps in a flask of sterilized water and thoroughly shaken. It was then removed to a sterile towel and split with a sterile knife, the knife being forced to a depth of less than ½ the diameter of the stone, and then twisted so as to split the stone without touching its center. With a second sterile knife particles were picked from the center of the stone and added to 3 tubes of bouillon. After twenty-four hours' incubation each tube showed a diffuse cloudiness caused by actively motile rod-shaped organisms of varying length. Microscopical examination of organisms from all of the above tubes showed rod-shaped Gram decolorizing bacteria of somewhat varying length, the average being fairly long.

Agar plates made from the bouillon tubes showed a pure culture of bacteria growing as already described for the solid media. Further tested, these bacteria grew readily on blood serum and agar without changing the media, did not liquefy gelatin, produced no gas in either 1% glucose or lactose, and caused no change in litmus milk, either, acidification or coagulation, even after fourteen days. The milk did not coagulate on boiling. On the Conradi-Drigalski medium, kindly furnished me by Mr. Long, of the fourth-year class, the organisms grew as small bluish colonies with no acidification of the medium. From these characteristics the organism was diagnosed as B. typhosus. Tested with the serum of two typhoid cases then in the wards it was agglutinated in the same dilutions as the laboratory stock culture of B. typhosus.

The serum of the patient tested on Nov. 28, still agglutinated both the organism isolated from his gallstone and the stock culture of B. typhosus, though in considerably lower dilution than before the operation. B. paratyphosus alpha and beta gave no clumps even in a dilution of 1:10 after one hour.

Autopsy of this case showed no typhoid lesions in the intestine. The gall bladder was contracted and its walls thickened. The bile ducts seemed normal, and there were no biliary calculi. The liver was rather small (1,245 gm.), dark brown in color and firm. In one kidney there was a blackish granular calculus about 2 cm. in diameter. Cultures made from the center of this calculus in the same way as from the biliary calculus yielded many colonies of B. pyocyaneus and a few of B. coli communis, but no B. typhosus. Cultures made at autopsy from the heart's blood and spleen were negative. Histologic examination of the liver showed no increase in interstitial tissue, and no cellular infiltration. About the central veins there was a slightly increased granular pigmentation of the liver cells, and here and there in the sinusoids were endothelial cells similarly pigmented. In a few biliary canaliculi were small casts of inspissated bile. Liver cells showed no abnormality of structure or arrangement.

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[1] This case was investigated in the service of Dr. F. B. Harrington, Visiting Surgeon to the Massachusetts General Hospital, whose courtesy I acknowledge with thanks.

SUMMARY OF CASE.

Typhoid seven years before operation; cholelithiasis with deep jaundice; positive agglutination reaction of blood serum for B. typhosus; choledochotomy with removal of biliary calculus; isolation of B. typhosus from gallstone, gall bladder and common duct; death; autopsy, no lesions of typhoid fever.

A priori the positive agglutination in icteric cases might be explained either by the action of biliary substances dissolved in the serum, or by bacterio-agglutinins in some wise generated independently of the icterus. There is much evidence against the first hypothesis. Many cases, more deeply jaundiced than those giving agglutination reactions, do not agglutinate B. typhosus even in the lowest dilutions. This has been my experience as well as that of many others. Bile, and various bile constituents, either tested alone or added to normal serum, do not cause an agglutination. As to the latter point there has been some difference in the results obtained by various observers. A few claim that bile agglutinates, but most obtain negative results. Moreover, interpreted by the standard of agglutination with complete loss of motility in one hour in a dilution of 1:50, many of the former observers would have negative results. Another source of error has been pointed out by Vanema, who found that certain partial reactions with human bile were due to agglutination, not of typhoid bacilli added to the bile, but of bacteria previously present in the bile. Taking these facts into consideration it appears that there is insufficient evidence that biliary constituents are in any way responsible for a positive agglutination reaction in icteric cases, and we must seek elsewhere an explanation.

An examination of the clinical history of reported cases of icterus with agglutination values as high as 1:50 in thirty minutes by the microscopic method shows that they may be divided into several classes: (*a*) Those that give a history of an attack of typhoid fever at some time prior to the development of jaundice; (*b*) those in which, with or without a previous history of typhoid fever, typhoid bacilli are found present in the biliary tract; (*c*) those in which there is an acute infectious jaundice, and (*d*) those not of the acute infectious type, which give no history of a previous attack of typhoid fever, and in which the presence of B. typhosus is not demonstrated.

It is known that the agglutination reaction of blood serum is retained for some time after typhoid fever, and under these conditions a positive agglutination during an attack of jaundice is easily understood. When the typhoid fever much antedates the jaundice, it is fair to assume a persistence of typhoid organisms. We know that this often happens, and the bacilli may persist for a very long time as in a case reported by Droba, where, seventeen years after typhoid, B. typhosus was isolated from both gall bladder and gallstone. In this way we may explain the reaction in such cases without overstepping the bounds of probability. Steinberg gives cases of this type; one of carcinoma of the gall bladder with typhoid two years previously, agglutinated B. typhosus 1:640 (the values used by Steinberg refer to the maximum dilution at which any agglutination occurs during two hours at 37° C.); another of cholelithiasis or tumor with a history of typhoid thirty years before agglutinated 1:160. Gilbert and Lereboullet give a case of biliary cirrhosis in which there was typhoid twelve years before, and a positive agglutination 1:100, while Gilbert and Lippmann, out of 30 cases of icterus, find 4 with positive agglutination for B. typhosus, in a dilution of 1:25, two of which had had typhoid fever and a third may have been a typhoid infection.

Of group (*b*) several cases have been reported. Blumenthal, in a cholelithiasis case with absolutely no history of typhoid, fever and no evident exposure to typhoid, found an agglutination value of 1:2500, and from pus in the gall bladder obtained a pure culture of B. typhosus. Libman, in a similar case, with no history of previous typhoid, obtained agglutination in a dilution 1:50, and B. typhosus was present in the gall bladder. In a second case with typhoid twelve years before, Libman found an agglutination of 1:100, and isolated B. typhosus from the gall bladder. My case here reported comes in this group.

Group (*c*) includes cases such as Weil's disease, and some others which might be regarded as atypical typhoid. Eckhardt studied a case of Weil's disease with an agglutination for B. typhosus of 1:100 in fifteen minutes, and a second convalescent case which agglutinated 1:100 in forty-five minutes. Cases of Weil's disease are believed by many to be due to infection with organisms of the proteus or colon group. With these, if previous typhoid or the presence of typhoid bacilli are excluded, it is possible that we may be dealing with group agglutinations such as we observe often in immunizing animals, where with a high agglutination for a given organism, lower yet considerable agglutinative values are obtained for related organisms. However, Abeles denies the possibility of a group agglutination of typhoid bacilli from proteus infections, and considers a positive reaction in these cases the result of the presence of typhoid bacilli at the time or at some earlier period.

Finally group (*d*) forms a residual class in which a few cases must be placed. They include those which, without history of typhoid like Blumenthal's case, may harbor typhoid bacilli, but of which fact there is no proof, or the agglutination may be the result of the effect of some allied organism (group agglutination). This group, for which we can offer only the above tentative explanation, however, is a small one.

As there is insufficient evidence then that the presence of bile in the blood serum is a cause of the agglutination of typhoid bacilli, and as the majority of icteric cases which give positive agglutinations have a history of previous typhoid, or are known to harbor typhoid organisms, the conclusion seems justified that in most cases of icterus which give a positive agglutination reaction with B. typhosus, the reaction is due to the presence of bacterio-agglutinins formed by the action of B. typhosus and is entirely independent of the presence of bile constituents in the circulating blood. In other cases in which the facts cannot be proven, typhoid bacilli may still be present and causative, or in their absence, the explanation may lie in the existence of group agglutination.

The reason for the frequent association of icterus and the presence of agglutination for typhoid organisms is to be sought in the etiological relation between cholelithiasis or cholecystitis and bacterial infection of the gall bladder. The presence of typhoid bacilli in the relatively large gallstone of our case is of interest in this connection. Pratt, Milian, Hanot and others have isolated typhoid bacilli from small gallstones during or shortly after typhoid fever. Funke in a bacteriologic study of 102 biliary calculi isolated B. typhosus once, and other organisms frequently. The presence of colon bacilli is not uncommon, and bacillus paratyphosus has been isolated occasionally. (Blumenthal.) These facts further support the view here expressed as to the cause of a positive agglutination reaction in icterus, a view concurred in by Blumenthal, Stern, and others.

Conclusions. — 1. There is insufficient evidence for the hypothesis that biliary constituents in the blood serum are the cause of the positive agglutination of B. typhosus in icteric cases.

2. The hypothesis that in most cases the reaction is due to the presence of bacterio-agglutinins generated independently of the icterus, is supported by a consideration of the available cases.

3. These bacterio-agglutinins may result from a previous attack of typhoid fever, from the presence of typhoid bacilli in some way related to the biliary disturbance, or possibly from closely related bacteria causing a group agglutination reaction.

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According to the *Medical Record*, Prof. William Keen, of Philadelphia, a delegate to the German Surgical Congress in Berlin, has been elected an honorary member of the German Surgical Society, and was one of five delegates received at a special audience by the German Empress.

A PLEA FOR CONSERVATISM IN GYNECOLOGY.*

BY GEO. W. KAAN, M.D., BOSTON,

Professor of Clinical Gynecology, Tufts Medical School; Assistant Surgeon, Free Hospital for Women, etc.

Most of the articles appearing in the medical journals respecting gynecology relate to surgical methods, to some operative means of relief; and this has been so prominently before the profession that the general practitioner has been led to consider gynecology as a branch of surgery only. Indeed, this has been publicly stated as a fact, by consulting physicians and surgeons connected with hospitals, and teaching in the medical schools. The result has been that an adequate teaching of this branch of medicine has been neglected, and the young graduate from some schools and hospitals is not prepared, as he should be, to take care of cases which will constitute more than half his practice. The time given to the practical teaching of gynecology is wholly insufficient, and I believe you will agree with me that you would be dissatisfied to have your women relatives treated for local conditions by the recent graduate or the average general practitioner.

In some otherwise good schools, the clinical instruction in diagnosis, upon which the treatment depends, and upon which rests the woman's health and happiness, is made a matter of a few hours in a section of four or even more students. It is painfully evident that later, when in practice, the diagnoses made upon the basis of such instruction are proven often to be erroneous and insufficient, and the treatment injudicious.

When conservatism in gynecology is mentioned, it is usually in connection with some surgical measure, as resection in place of extirpation of ovaries and tubes, or supravaginal amputation of the fundus in place of complete hysterectomy; but what I wish to call to your attention is the conservative diagnosis and prognosis, and treatment other than surgical; and what can be done to benefit the patient when she declines surgical intervention, as she has a right to do in so many cases. It is also the right of the patient to demand and expect the best kind and method of treatment to help her avoid the operation. Is it possible for her to get such treatment from those who consider gynecology as simply surgery, and who fail to appreciate that the whole organism of a woman is closely related to her function of procreation, and the organs connected therewith? It sometimes seems that we have hardly begun to understand the diseases of women. The functions of the ovaries as furnishing a secretion affecting the whole system has only recently come into prominence. It has been shown that with each menstruation there is a menstrual wave which reaches its climax just before the flow. Investigations made by Mandl and Bürger, of Vienna, with normal women, those with uterus and ovaries removed, those with ovaries only removed and with uterus remaining, show that just before the menstrual flow in normal women, and those with ovaries remaining, there is an increase in the pulse rate, the blood pressure, the muscular tonicity, and a rise in temperature,— all of which come to a climax just before the flow, and drop suddenly as the flow is established. In the cases where the ovaries have been removed and where the menopause has been established, these phenomena are lacking.

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* Read before the Clinical Club, Jan. 18, 1907.

On Aug. 17, 1902, I was called to Lowell to see a case confined five weeks before. For the three days before I saw her, the evening temperature had been 104°, and I was told to come prepared to operate. Examination showed no tenderness over the abdomen even upon deep pressure, the uterus was in good position and well involuted. No operation was attempted as there were no indications for one. The 17th and the 18th the temperature was again 104° P.M. On Aug. 19, the temperature in the morning was normal, menstruation was free and the patient practically well.

Here is the chart of a patient from whom I took a fibroid tumor as large as the fist from the interior of the uterus. You will notice that eleven days after the operation there was a sudden rise in temperature to almost 102° and the pulse beats increased from about 80 to 100; this continued for two days and dropped to normal when the menstruation began.

Furthermore, there are known to be reflexes from the sexual organs affecting the stomach and intestines. The vomiting of pregnancy is an example, and there are others.

The physiology of the sexual organism is not well known; with some women there is a noticeable swelling of the mammary glands just before menstruation; others develop a general nervous condition if their menses are delayed, and this wholly apart from any apprehension of pregnancy.

It can often be demonstrated physically that about a week before menstruation appears, one ovary will be found enlarged two or three times the usual size; and this is found normal in size again after the flow. Such an ovary, of course, should not be removed, and yet it probably has been.

I have a patient who feels sure she menstruates one month from one side and the next month from the other.

You are aware that the subjective symptoms in gynecology are of little more value than to direct attention to the pelvic organs. The diagnosis depends upon a local examination. Here is where conservatism begins,— a conservative interpretation of what is found on local examination, supplemented by a knowledge of what can probably be done by local treatment, and by operation. Let me illustrate.

A young married woman, the wife of a physician, had what the attending physician called a ruptured tubal pregnancy. For some reason there was a change of physicians, and the new one asked me to see the case. The uterus was held back in the second degree with thickening on both sides, especially on the right. The main question, of course, was one of operation; the patient had improved in the past three days, there was no indication for urgent measures, and it was decided to wait. I confess that I was very anxious until her next menstruation came around. About fifteen months later she had a normal confinement. At the time of my receiving the report from her husband she was on the way to a second confinement. Had an operation been done at the time I first saw her, I feel sure that the condition of the internal organs was such that one or both ovaries and tubes would have been sacrificed, and the chances of her having children diminished or perhaps destroyed. While the two cases are not similar, I always compare this one in my mind with another young woman I saw in consultation. She had an actively inflamed left tube and ovary. She recovered without an operation, but with treatment. A few years later I saw her again, but with another physician in charge. The local condition was worse than before; this time, it was a lighting up of a chronic inflammation of both sides, so that the organs were fixed high in the pelvis. She could not be taken care of at home and was, therefore, sent to one of our large hospitals where gynecology is not recognized. She was operated upon at once, and died in three days. You may say that she should have had some operation after her first attack had subsided; however that may be, I feel that when I last saw her, the proper immediate treatment did not include an operation.

I have under my care two physicians, the one had a retroverted uterus with prolapsed ovaries; the other a uterus drawn by adhesions to the left and posterior. Both had treatment and are wearing pessaries in preference to operations. Both feel perfectly well, and are able to walk five miles and more at a time without difficulty. They do not object to having the pessaries taken out and replaced every two months. Why should they undergo a dangerous operation, and perhaps not come out as well? Neither you nor I nor any operator can honestly tell them just how an operation will result.

About a year ago, I saw a nurse from the Adams Nervine Asylum, twenty-six years of age. She had been running down for five months and had some local symptoms. The uterus was in position, the sides tender. She had been having local treatment in the *dorsal* position by another physician, but without success, and an operation was suggested by him to which she objected. Treatment in the *Sims' position* with attention to her manner of living cured her in a month.

The teaching of gynecology has been so distinctly surgical and operative for years, it is not strange that some older conservative methods have been neglected. Then, too, it is not so easy, as it is in clinics of other branches, to get a chance to do the work and gain knowledge. It takes time, more than a few months, to get an understanding of how to give treatment, what may be expected from treatment, and in what cases so-called local treatment is useless. The statement that local treatment tends to produce eroticism in the patient is not true. It is the fault of the physician, or of his treatment, if this should happen. In the case of young girls, treatment is to be avoided so far as possible; but with women over twenty-four or five and with married women, it is different. The attendance of a nurse is not essential. Good treatment can be given without a nurse, provided as much pains is taken in gaining the technic as is required in other special work. If the physician dislikes this branch of medicine as many do, or, with limited experience, has no faith in what can be accomplished, then the patient is bound to feel it and become discouraged, finally giving up all treatment, or resorting to operation.

Whoever speaks in disparagement of local conservative treatment displays a lack of knowledge of the subject. His opinion is derived from those surgeons whose experience is from operations only and whose final results are not clearly and properly understood. That a patient survives an operation, does not necessarily mean that a cure has been established better than would have resulted from good local treatment.

Boldt, of New York, a professor of gynecology, and a gynecologist at different hospitals says, "I do not coincide with those of my *confrères* who look upon gynecology only from a surgical side." However, we do not need to be told this. You and I know that the surgical side has failed in too many cases; failed not only by not curing the patient, but dismally failed by actually making her worse. The foundation of the failure is the error in diagnosis; the failure to find and understand the underlying pathological condition. I have in mind a patient who for ten years had suffered with pelvic pain, so that her nervous system gave way, and she was in tears, more or less, every day. The trouble, which had been overlooked by others, was located in the cervix which did not look badly itself, but had a tear involving the lateral cul-de-sac of the vagina. The cicatrix here held the cervix to the lower part of the broad ligament. Whenever she was on her feet the weight of the uterus and pressure above it bore directly on this cicatrix and the constant pain gradually wore her out. The patient declined operation; but was made practically well by tampons, and then a pessary to take the pressure away from the cicatricial tissue. This is only one of a number of similar cases.

The method of treating patients in the dorsal position and through a bivalve speculum is deplorable. Within a few days I have seen a woman with varicose veins of the broad ligament. She had been treated at a dispensary (and by the way, this dispensary is not the only place where patients are treated on the back) through a bivalve speculum. She has some erosion of the cervix and this was always irritated by the edges of the speculum blades as they were opened; so that she had more pain (and less relief) from treatment there at the dispensary than from the examinations of myself and assistant and two students, and treatment on the side. Treatment, as a rule, should be with patient in the Sims, or knee chest position. As the posterior vaginal wall is retracted by the Sims speculum, the sensitive inflamed tissues gravitate toward the abdominal cavity and away from the instrument. Applications can be made and dressings applied through the open vaginal canal with the patient on the side and she is not hurt nor the inflammation made worse. This can be done without a nurse as I constantly demonstrate to my students. What more irrational than to push up a sensitive uterus and adnexa on the sharp blade of a speculum and then crowd a tampon under them?

The determination of the proper treatment for a woman depends not alone upon what is found by examination, but also a knowledge of her environment,— the kind of work she has to do, and the hours in which she does it; her method of living, as to fresh air and sunlight; her sleep; the action of her bowels and bladder; her relations with her husband and family. All these may need to be taken into account in deciding the best treatment for her local condition.

In this connection and in relation to retroversion of the uterus, I beg to refer to a report made by Andersch (Archiv. für Gynekologie, No. 65) upon the permanent results of the operative treatment of retroflexion and prolapse between April, 1896, and October, 1900, under Pfannenstiel, in Breslau. The results obtained by operation are not pertinent to this paper, but I will call your attention to the fact that in the Krankenhaus *public* clinic, 760 cases were treated by pessaries, and 304 by operation. In *private* practice 736 cases treated by pessaries and 24 by operation. Mark you, only 24 operations in 760 cases of private practice and yet Professor Pfannenstiel undoubtedly is as anxious to do the best for his patients as any surgeon here on this side. What makes the difference? Is it easier for some to perform an abdominal operation than to fit a pessary? The perfect operation for cases of retroversion has not yet been devised. Which treatment would you prefer for some one in whom you are interested?

My plea is for a better appreciation of the relation of the generative organs in the woman to other organs, and to her whole physical and nervous system, and to her health and happiness; and also for a better understanding of the deviations from the normal which are truly pathological conditions; so that the reason for, and object to be gained by surgical interference be clearly understood, and be a secondary resort when possible, and not always a primary resort; that "local treatment" be undertaken with more intelligence.

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Mary Putnam Jacobi Fellowship. The Woman's Medical Association of New York has raised $25,000 to be used for a fellowship to bear the name of Dr. Mary Putnam Jacobi. The income of the fund will be used to pay the expenses of a woman medical student who wishes to study abroad.—*Jour. Am. Med. Asso.*

Clinical Department.

SUCCESSFUL REDUCTION OF DISLOCATION OF THE NECK, TWO CASES.

BY FRANK M. SHERMAN, M.D., WEST NEWTON, MASS.

DISLOCATION of the neck is, of course, serious when so considerable as to damage the cord. Much less serious when the cord is not pinched.

If the dislocation is above the third cervical vertebra, there may be sudden death from cutting off the phrenic nerve. Below the third cervical vertebra the injury may be sufficient to cause more or less paralysis according to the amount of damage to the cord, or to the spinal nerves.

The dislocation may be bilateral or unilateral. It may be a subluxation and the articular processes still remain in contact at their edges, or it may be more complete, so that the articulating surface slips completely past its fellow and drops down in front of it.

Even this condition can occur without damage to the cord, and in this class should be placed the following case, which is reported because the writer believes that the diagnosis and the correct method of reduction, as shown by Walton, should be more widely known.[1]

CASE I. Mrs. P., seen Jan. 15, 1907, with Dr. C. A. Davenport, of Newton. Two days before patient lifted a kettle of water from the stove with the left hand, and while holding it, quickly turned the head toward the left. The sudden pain felt in the neck was so acute as to cause her to drop the kettle and she was then unable to turn the head.

The head was tilted to the right, the face turned toward the left. There had been some soreness in the back of the neck and considerable pain. The right sterno-cleido-mastoid was not contracted, but the muscles on the left side of the neck were all rather tense.

Under chloroform anesthesia the head was tilted backwards diagonally to the left, and then rotated to the right, there was a distinct click as the reduction took place.

On recovery from the anesthesia patient was able to move the head slowly and carefully in all directions. Considerable pain and tenderness persisted for some days, gradually lessening. No apparatus was applied, but she was kept in bed with caution as to movements.

CASE II. The second case was seen Feb. 19, 1907, with Dr. F. R. Stubbs, of Newton. The history was somewhat similar to that of Case I. Patient was carrying a heavy weight when the accident occurred.

Pain in the neck and left shoulder was severe, especially on attempting any motion. She could not sit up in bed without assistance. Head and body must be moved together. The face was turned and tilted somewhat to the right. This case was therefore an example of subluxation on the left, the articular processes being still in contact at their edges.

In Von Bergmann's "Handbuch der Practischen Chirurgie" cases of this kind are classified as those of distortion.

When relaxed under chloroform, the head was tilted diagonally backward to the right, and then rotated to the left. No click was heard, but now the head was freely movable in all directions.

The neck was painful and tender for a few weeks, then complete recovery.

The following quotations are from Walton:

"With regard to the position assumed by the head in these cases, let us suppose an articular process on the left has slipped over; the head will be rotated with the face to the right. If the articular process has slipped down into the notch the head will be tilted to the left, the face being still rotated to the right. If the articular process has become caught on the crest of the process below, the head will be tilted to the right as well as rotated to the right. The side on which dislocation has occurred can always be determined, therefore, by the direction of rotation; the question whether the articular process has slipped into the notch may be determined by the tilting of the head. In case bilateral dislocation has occurred, the head will be carried forward and tilted directly backward."

"*Diagnosis.* — The only conditions with which dislocation is likely to be confused are torticollis and vertebral disease (tubercular caries). In case of torticollis, assuming the head to be rotated to the right, and the head tilted to the left, these movements will have been produced by the sterno-mastoid muscle on the left which will therefore be contracted. If this position is assumed in unilateral dislocation, on the other hand, the left sterno-mastoid will be lax, but the right will be put more or less on the stretch. In cervical caries the history is the important diagnostic factor."

"If one attempts to carry any given rule into effect, I should suggest the following: Perform retrolateral flexion toward the side toward which the face is turned by the dislocation, then rotate back to place."

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[1] BOST. MED. AND SURG. JOUR., March 31, 1889, Dec. 7, 1893, Oct. 22, 1903.

Reports of Societies.

NEW YORK PSYCHIATRICAL SOCIETY.

STATED MEETING, MARCH 6, 1907.

ALLAN MCLANE HAMILTON, M.D., in the chair.

DR. AUGUST HOCH read the paper of the evening, the subject being,

THE PSYCHOGENETIC FACTORS IN SOME PARANOIAC CONDITIONS, WITH SUGGESTIONS FOR PROPHYLAXIS AND TREATMENT.

Dr. Hoch pointed out that among the paranoiac states there were cases, and that they probably represented a large proportion, in which the psychogenesis could be clearly traced, when the facts of the cases were really accessible. The theory of the development of paranoaic states Dr. Hoch summarized briefly as follows, stating that besides basing his ideas upon facts of his own studies he had been influenced by the work of Adolf Meyer, Freund, Bleuler and Jung.

Every person has certain points on which he is especially sensitive. He has ideas or complexes of ideas which are associated with very strong feelings. These complexes refer either to personal defects, shortcomings, limitations, or to feelings of guilt, remorse, shame; on the other hand to certain longings and desires. We may, therefore, generally speaking, say that they belong either to the realm of self-assertion or to the sexual sphere, in the broadest sense of the term. Now most people are able to get square with such things, partly because their nature is such that these feelings never reach anything like a great intensity, or partly also because they have a healthy way of dealing with these matters.

Other people do *not* get square with such difficulties. They do not acquire balancing, healthy habits, such as a healthy turning away from one's difficulties to outside interests, or a habit of unburdening or a certain aggressiveness and the like. While then such undercurrents, as we may call these complexes, when they are of any intensity, have themselves a tendency to set narrower and narrower limits to the interest and to create a certain fascination, they often become a menace to the sanity of mind, also because they are not balanced sufficiently by sound mental tendencies. In this way there develops a growing disharmony which gradually, or, sometimes under the influence of acute causes, physical or mental, may suddenly lead to an unbalancing of the mind when, finally, the undercurrents break through to the surface.

But the mind, even in the cases in which the undercurrents are not handled properly, makes certain miscarried attempts at readjustment. Thus, the feelings of defect and the longings do not come to the surface as such, but are transformed; the former give rise to a general suspiciousness and delusions of persecution, probably for the same reason that we are inclined to blame everyone else, except ourselves when anything which we do goes wrong; the latter give rise to ideas that the innermost longings are fulfilled. And there are still other forms of such miscarried adjustments.

We see then that we have two things, the undercurrents and the abnormal manner of dealing with these undercurrents, upon which we should lay stress as important in the causation of these paranoiac states. To a certain extent this division is, of course, artificial and the two principles often enough overlap greatly. Then again it is difficult often to find a correct or a definite formula for that which we have called abnormal mental habits, or difficult to pick out from among the complex fabric of mental reactions, those which are disastrous, or estimate the dangers of certain combinations, or to correctly gage the value of saving traits. Naturally it will often be a combination of traits rather than single traits which we have to consider, and while we speak of some reactions as dangerous mental habits they may exist in certain combinations in which they are sufficiently safe-guarded.

It is also very evident that other causes than an unhealthy manner of dealing with the undercurrents may enter into the casual constellation as well — such as influences which increase the strength of the undercurrents or influences, which, in other ways than those indicated, lessen the resistance, such as the action of alcohol, the menopause, and the like.

These principles were demonstrated by means of careful analysis of four cases and certain indications for treatment were discussed.

DISCUSSION.

Dr. H. R. Stedman, of Boston, was inclined to lay more stress on the influence of heredity in affecting the progress of a genuine paranoia than did Dr. Hoch. Numbers of cases of the disorder were seen in patients who had been sensibly brought up and who were treated affectionately by their families, nothing being left undone to make their surroundings congenial and their lives smooth and happy, yet in spite of it all they developed paranoia. Little could be hoped for, he believed, in the way of materially modifying the psychogenetic factors so as to make any real impression on these cases of typical paranoia, a disease arising on a defective constitutional basis and gradually and logically developing into an inflexible system of delusional thought and conduct.

He thought, however, that after the disease had developed, when family, friends and a normal environment had proved powerless to influence the disease and the patient was sent to the hospital, his condition was more susceptible of improvement than is generally thought to be possible. He had not infrequently found the paranoiac to be rendered decidedly more manageable and his life made far more comfortable by regular friendly and explanatory talks, answering his questions, making the endeavor to set him right, and satisfying such of his minor demands as were not wholly unreasonable. The fact that many of them are hopeless and cannot be reached at all by such means — in fact become worse in consequence — accounted, he thought, for the tendency that exists to pay them as a class little or no systematic attention such as Dr. Hoch adopts with his cases. Dr. Stedman questioned if the reader had not chiefly in mind the paranoid state rather than the paranoiac, that symptomatic, persecutory condition so often found in dementia precox. If so, he was wholly in accord with his view that much might be done in the way of prophylaxis. Dr. Hoch's masterly analysis of the psychogenetic conditions in his cases showed this plainly, and he believed it to be due to the fact that the morbid direction of their thought had become less impaired than in the true paranoiac. Dr. Stedman felt the same confidence that he had expressed at length several years ago, that not a few cases of this kind, when recognized early by the psychiatrist while yet the patient is comparatively comfortable, may be saved from an attack by well directed medical oversight and guidance and regulation of his habits and surroundings. He attached little importance to the menopause as a special causative factor in insanity, as individual experience and statistics seem to show quite conclusively that paranoia develops to the same extent in both sexes during the period of life in which the menopause occurs.

Dr. Charles L. Dana had been interested in Dr. Hoch's analysis, which was instructive as showing that in a certain group of cases of paranoia conditions might be improved by careful therapeutic effort. He had not been in a position to carry out this method of treatment, which could not be very successfully employed by those not connected with institutions. He agreed with Dr. Stedman as to the importance of hereditary taint in all these cases, and that a goodly proportion of paranoiacs develop in spite of careful bringing up. Few of these patients could be influenced unless they were taken in hand very early. He had been much interested in two or three cases of paranoia which illustrated that the under-current does not always break through in a way that particularly disturbs the mental make-up or general life of the patient. Such a case was a woman, about fifty years of age, now under his care, who was first seen by him when she was forty years old. She was married and the mother of two healthy children. About fifteen years before he first saw her she had developed delusions of a certain kind of persecution — that when she went out on the streets people made remarks about her, trying to annoy her and to injure her. She had these delusions throughout her married life and during her pregnancies. She was a good mother, however, and to most people who knew her she remained a good, kindly woman, about whose mental condition no one had suspicions except her husband, some members of her family and Dr. Dana. She was probably preserved from a general paranoiac state by the fact that she was able to stay in the house and keep away from sources of irritation. He had had under observation also a man, now forty years old, who had been engaged in business all his life. For fifteen or twenty years this patient had had similar delusions of persecution — that the police and detectives were after him and that attempts were being made to watch him. But this under-current delusion never broke through except in one little spot in his brain. One or two of his children developed dementia precox at the age of sixteen. Such very limited types of paranoia certainly lent themselves to treatment by instruction and by careful selection of environment, which was all essential. As to the general correctness of Dr. Hoch's analysis there could be no question.

Dr. Maurice C. Ashley, of Middletown, N. Y., agreed with Dr. Hoch in the main, but he questioned whether the therapeutic talk with pananoiacs would accomplish very much as a curative measure. In his experience there had been no such beneficial results. He recalled one paranoiac who, for ten years, had believed that he had been giving him poison. At first the patient was inclined to retaliate, he threatened, and made definite efforts to take the life of the doctor's children. The man had some somatic symptoms which he himself attributed to the poison which he thought had been given him. He still has the delusions but no longer attempts to execute his threats. Another patient, a woman, for eight years had believed that he had been turning an electric current upon her for the purpose of annoying her. Every argument had been used to convince her that this was impossible, but without effect. As the disease progresses the reason of such patients becomes enfeebled and less active, and while they continue to have their delusions they become accustomed to them and cease to react much to them.

Dr. William Hirsch thought that in forming a definite opinion concerning the cases analyzed by Dr. Hoch it must first be determined whether one had to deal with genuine paranoia, or with a paranoiacal state of another disease. Genuine paranoia is always a congenital and not an acquired disease, although the true paranoiacal symptoms often do not manifest themselves during the earlier part of life. But there is always a congenital condition, a constellation of mental factors, which not only predisposes to, but which necessarily develops, at some time of life, such a combination as to produce that mental condition known as paranoia. When such a point in any given case would be reached cannot be determined in advance, but we are, in most cases, able to predict the development of a true paranoia. Various conditions, such as environment, worry, etc., might have something to do with it, at least with a premature manifestation of the condition. He did not believe, however, that in any given case anything could be done to prevent the manifestation of the paranoiacal condition, even though it were recognized that the development of such a condition existed. This opinion was not based merely on theory. In his practice he had had children brought to him whose parents realized that they were a little peculiar, nothing more, but whom he recognized as abnormal individuals who in later life would become paranoiacs. In such of these cases as he had been able to follow for ten or fifteen years he had found that they developed genuine paranoia in spite of all the precautions which had been taken. He had warned the mother not to let the child have any impressions which would stimulate the imagination or fancy of the child, not to let it read any fiction, to guard it against any undue emotions; all this was carried out with the greatest care. But at some time in life, generally after an unusual emotion, such as falling in love, slight business troubles, something which otherwise would be of no importance, would develop a true paranoia. A normal individual, normal from the start, would never develop paranoia. A normal individual might develop melancholia, or some other acute disease, but never paranoia. When he said one must differentiate between types he meant cases in which there was genuine paranoia and those in which there was a paranoiacal state. The paranoiacal state might occur in a great many psychoses. He had seen such a case lately. A man of sixty years of age, a good business man, perfectly normal all his life, suddenly developed a paranoiacal condition; he had delusions and hallucinations, imagined there was a conspiracy against him, that his neighbors tried to kill him, etc. After remaining in this condition for nine months he gradually became demented. He is still living, and is suffering from a condition of general arteriosclerosis. The case could be defined as dementia senilis, but not as paranoia.

Dr. P. C. Knapp, of Boston, thought it a mistake always to regard delusions of persecution, with hallucinations of one form or another, as constituting paranoia, and that we should be guarded in speaking of such conditions as paranoiac states. He agreed entirely with Dr. Hirsch's opinion that true paranoia, while not a congenital condition, is dependent upon a congenital mal-arrangement, so to speak, of the brain. Tanzi had taken the same position, *viz.*, that, whereas other forms of mental disease might be spoken of as true diseases, paranoia was not a disease but a morbid congenital state which, later in life, under the influence of various factors, might develop into typical paranoia with hallucinations and delusions. He thought that the " under-current " did not always " break through." In this connection he cited the case of a woman who for years had a limited type of delusion. She had lived a secluded, narrow life in one of the smaller New England cities; for many years she had been active in the care of her household and family and in church work; she had been trained in the old New England habit of keen theological discussion and argument, and for many years she had had the very definite idea that she had been excommunicated from the church. In the main the idea had been suppressed, many of her church associates did not know of it, and those who did kept it secret. The idea existed for many years without going on to any real mental disturbance. Cases were not uncommon in which the delusions occupied a limited field in the consciousness and affected but little the conduct. With a true paranoiac, however, he questioned very much the real importance of any emotional stress, or of any psychical ideas as influencing materially the genesis of the disorder. They might influence the development in so far as changes in modern belief influence the character of delusions. As Dr. Hirsch had suggested, it was impossible to protect these patients from all influences that might give rise to the condition. Not infrequently delusions of persecution developed in normal individuals in connection with hallucinatory conditions having a distinctly physical basis. He had recently seen such a case, a man with well systematized delusions on an alcoholic basis, derived largely from tactile disturbances, which proved to arise from the paresthesiæ of a very mild alcoholic neuritis.

Dr. L. Pierce Clark was of the opinion that the cases cited by Dr. Hoch might be called paranoid states rather than typical or true paranoia. The therapeutic suggestions outlined would be of undoubted value in these paranoid states. During the past three years he had been treating several cases by analyses and talks and the method had been very advantageous. He thought the method was of little use in true paranoia as the mental state was too fixed; his experience in asylum service had proved this fact to his entire satisfaction.

Dr. Swepson J. Brooks, of Harrison, N. Y., was very glad to know of the success Dr. Hoch had had with therapeutic talks. He had tried this plan and found it productive of results in many cases, but the patients would relapse into the old condition after being released from institutions. He presumed that Dr. Hoch had reference in his paper to simple paranoid states. The question of paranoia was a hard one to go into, and sometimes one almost concluded that paranoia and paranoid states were the same, only differing in degree. The forcing of patients to do things, as suggested by Dr. Hoch, was often neglected. He had in mind two cases in which it certainly had a very salutary effect. One case was a woman, forty-five years of age, who had delusions of persecution. She was put in a very quiet hall. She complained that she was merely brought to the place to be put in jail, that there were no sick people there, and that she would like to see some sick people. She was allowed to see some sick patients; the next morning she was convinced, and she got well. That was four years ago and she had remained well since. The other case was of the manic-depressive type. The patient confessed after her recovery that her family physician had had to force her to take medicine, that he would stand her up against the wall and knock her head against it if she did not take the medicine, and that she believed his method did good.

Dr. Smith Ely Jelliffe said that Dr. Hoch's paper had offered glimpses into a large and but partly explored territory. To him, four different trends of thought were suggested, all of which were the subjects of much investigation. In the first place, the importance of the study of the mental development of the child was emphasized. The work of Weygandt, on "Abnormal Children"; of Koch, on "Pathological Inferiority"; of Hall, in his masterly work on "Adolescence"; and of Sommer, on "Character and Personality," were instances in point as to the activity of these lines of investigation. As to the psychogenic origin of certain types of delusions, Dr. Jelliffe was in accord with Dr. Hoch. He spoke of the help that might come from the literary side, as evidenced by the stories of Henry James, the "Turning of the Screw," and the "Two Magics"; Wier Mitchell's "Constance Trescott"; and Anstey's; "Statement of Stella Maberly." In all these this type of delusion formation is beautifully brought out, with great literary charm, if not with scientific pedantry. Therapeutically, he deemed Dr. Hoch's paper as stimulating, and he himself regarded certain phases of the subject with optimism. Paranoia, he said, was too large a term to use in a general blanket manner. While it is true that little can be accomplished by the most tactful of psychotherapeutic conversations in chronic lunatics who have been in the asylums for years, yet the important factor in the whole problem is to recognize the beginning stages, before the delusional ideas have become too firmly crystallized. Greater success had not been attained because the psychogenic origin of many delusional states had not been sufficiently understood. It required a rare tact to work on those patients, and the outlines given by Dubois, Dejerine and Oppenheim were but the beginnings of a scientific psychotherapy which for some time had been grasped at by pseudo-scientists. Dr. Jelliffe desired to rank himself with those who saw a hopeful outlook for the amelioration, if not cure, of certain cases of dementia precox, and of the paranoid states, by early and intelligent psychotherapy.

Dr. George H. Kirby had been interested of late in the management of paranoiac states along the lines suggested by Dr. Hoch, and thought that much could be accomplished in this way toward the correction of morbid trends. Dr. Hoch's work was particularly important in regard to the study of delusions in general. Such a method of analysis opened the way to an understanding of certain mechanisms which heretofore had been practically inaccessible.

Dr. Hoch, in closing the discussion, stated once more that what he wished to bring out was the fact that certain paranoiac states were produced by purely mental causes, *i.e.*, by conflicts and unhygienic ways of dealing with them, and that they were more or less amenable to treatment early in the course, but that naturally he did not mean to claim that old cases of paranoia could thus be influenced. It was necessary in order to help such cases that one could still get at the root of things and explain to the patient the genesis of his delusions and train him to healthy mental habits. The criticism that his cases were not cases of typical paranoia, he could not quite understand, because he was unable to see where the line could be drawn between cases such as his and cases of so-called typical paranoia. Again, to say that paranoia was caused by heredity was an exceedingly unsatisfactory way of stating the situation because it did not mean enough. He had claimed that some paranoiac states were due to an unhealthy dealing with conflicts. Such an unhealthy dealing may be due to tendencies which were more or less inherited, but that it was time to make an attempt at determining what these tendencies were, because the mere statement of heredity was absolutely barren, that the same may be said about the statement which has been made that paranoia was due to a congenital mal-arrangement. If Dr. Hirsch said that a normal individual would not develop paranoia, this was doubtless true, if by normal individual was meant one who had perfectly healthy mental habits.

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Book Reviews.

Heart Disease and Aneurysm of the Aorta, with Special Reference to Prognosis and Treatment. By Sir William H. Broadbent and John F. H. Broadbent. Fourth edition. New York: William Wood & Co. 1906.

"Aneurysm of the Aorta" has been added to the title of this book since the third edition was published in 1900, and the fourth edition has been increased seventy-two pages in size. The preparation of the fourth edition has been entrusted to John F. H. Broadbent, the son, who has re-arranged the subject matter and added chapters on the pulse, disease of the coronary arteries, bradycardia, and atheroma of the aorta. He has also made considerable change in the part dealing with affections of the myocardium. Sir William Broadbent has changed somewhat the chapters on angina pectoris and functional affections of the heart. The book remains, as in previous editions, an admirable and practical exposition of cardiac disease, in which much attention is given to the question of prognosis. An exhaustive discussion of each subject is not attempted, and but little attention is devoted to the consideration of the physiological theories of cardiac function except in so far as these are directly concerned with the clinical manifestations of cardiac disease. The book is written in a clear, concise style, which renders it one of the best books for the student to use when beginning the study of cardiac disease.

For the more mature practitioner it will be a valuable book to read consecutively rather than to use as a book of reference.

Broadbent recommends in percussion of the deep cardiac dullness that the finger be pressed firmly in the intercostal spaces and that the stroke must be delivered smartly and perpendicularly. Auscultatory percussion he considers of no value whatever. Though be believes that there are many possible errors in determining the cardiac outline, yet he teaches that after inspection, palpation and percussion for the most part a diagnosis can be arrived at before the stethoscope is applied. This indirectly emphasizes the importance of the methods other than auscultation in diagnosing cardiac disease.

Arterial tension is discussed at some length. The statement of Clifford Allbutt that " in aortic regurgitation the mean arterial tension is higher than in any other disease " is justly criticised. Arterial tension is defined by Broadbent as a measure of the constant mean blood pressure as expressed by the strain it exerts on the arterial wall. This closely approximates the idea generally held in America, while what Clifford Allbutt refers to is the large pulse of aortic regurgitation in which the pulse pressure — the difference between diastolic and systolic pressure — is large, while the maximum or systolic pressure is near normal, at least, as a rule, not greatly increased. Broadbent believes that the arterial tension can be quite accurately estimated by the finger, a view not in accord with that held by most observers.

For the usual terms " malignant " or " ulcerative " endocarditis, pernicious endocarditis is substituted in the same sense as the word is used in connection with anemia, pernicious anemia. Though the older terms are not satisfactory, it seems to the reviewer that " pernicious endocarditis " is not a very great improvement. That it is not possible to draw a hard-and-fast line between simple and pernicious endocarditis, all will agree. Pathologically they are rather different degrees of the same process, the extremes of which are readily to be distinguished clinically. As to the etiology of endocarditis, the inclination is toward a specific organism in rheumatic cases, though both sides of the controversy are fairly stated.

While favoring the Schott treatment by carbonated baths and graduated exercises in favorable cases, the authors criticise the percussion method of measuring the results as follows: " Too much importance is attached by advocates of the Schott treatment to the percussing out of the area of cardiac dullness and to the diminution it is said to undergo after each bath, more especially when the so-called auscultatory method is employed. This method lends itself very much to the imagination and is absolutely untrustworthy. . . . It is also probable that the diminution in percussion dullness is due not so much to fluctuations in the size of the heart as to encroachment by the lungs on the cardiac area, due to deeper respiration taken while the patient is in the bath. It does not follow that because the cardiac dullness diminishes after a bath the heart was previously dilated. . . . It is difficult to attach any real value to the remarkable diagrams of the cardiac dullness ' before ' and ' after ' the bath, published in quantity by the enthusiastic advocates of this treatment, and one is compelled to question their accuracy if not their honesty," etc.

Fatty degeneration of the myocardium is given great significance. In the words of Broadbent the younger, " more than any other it carries with it the danger of sudden death and the liability to angina pectoris." This is scarcely in accord with the more usual modern pathological teaching.

Broadbent takes active issue with Pratt in his summary of the views on the causes of cardiac insufficiency and is unwilling to exclude fatty degeneration as an important cause.

After reviewing the theories as to the cause of anginal attacks, the author adheres to the theory of spasmodic ischemia as best explaining the symptoms and harmonizing with the post-mortem findings. For Stokes-Adams disease the theory of an obstruction in the path of conduction between auricles and ventricles is not clearly accepted. In this connection, the fundamental work of His, Jr., and Kent, the latter an Englishman, is not mentioned.

This book is well printed on good paper and typographical errors are few. On page 16, by a mistake in spacing, reduplication of the second sound is made to appear " due to a synchronous closure of the aortic and pulmonic semilunar valves," which is the very condition under which the phenomenon does not occur. There is a bit of humor on page 75 in the sentence, "Austin has published an account of three cases in which he found Pfeiffer's influenza bacillus," which becomes apparent at a glance at the article referred to, for it is seen that Broadbent attributes to the name Mabel the male sex, *i. e.*, if he actually looked up the paper referred to. Again on page 346, where Johns Hopkins Bulletin is made to appear as (Dr.) " Bull. ' Johns Hopkins Hospital,' vol. xv, p. 162," something in an unintentional lighter vein appears.

Woman in Girlhood, Wifehood, Womanhood: Her Responsibilities and her Duties at all Periods of Life. By Myer Solis-Cohen, A.B., M.D., Instructor in Physical Diagnosis, University of Pennsylvania, etc. Illustrated. Pp. 469. Philadelphia, Chicago, Toronto. 1906.

This book is a strange combination of medical matters, advice regarding various social questions and directions as to the raising of children. We can neither condemn nor commend it. It certainly cannot appeal to medical men as a dignified presentation of important questions, but it may find a place of usefulness among certain classes of the community who are wholly ignorant of hygienic matters. The book is profusely illustrated in a haphazard way. Many of the pictures have no other than a sentimental significance, and some of them are in questionable taste.

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THE BACTERIOLOGY OF MILK.

In the course of a symposium on milk at the last meeting of the Medical Association of the Greater City of New York, Prof. H. W. Conn, Director of the Bacteriological Laboratory of the Connecticut State Board of Health, made an address on the relation of the bacteriology of milk to health, which was timely in view of the present active discussion on the milk supply of cities and the best means of securing its purity. After referring to the general misapprehension existing on the subject, he laid stress on the point that so far as bacteria were concerned, the healthfulness of milk depended, not on the number of the organisms it contained, but on their character. While some of the bacteria liable to be found in milk are injurious, others are harmless, and still others distinctly useful. Among the latter are the lactic acid bacteria which have the effect of preventing the development and growth of other and harmful organisms, and which are indispensable for cheese and butter making. There were some, he said, who advocated the destruction of all the bacteria, on the same principle as that advanced by the man who would kill all birds because once in a while a hawk kills a chicken. The kinds of bacteria to be feared in milk were the bacilli of tuberculosis, typhoid and diphtheria, and the organism of scarlet fever, as yet unrecognized; the first of these coming from the cow, and the other three being due to some form of human contamination. In addition to the four affections named, which might be communicated through milk, there was a type of disease characterized by the gastro-intestinal disturbances commonly known as cholera infantum, "summer complaint," etc., which in many instances were distinctly traceable to the use of milk, though the special causation of such disease was as yet unknown.

Among the methods at present advocated for purifying milk supplies is the setting up of a bacterial standard, and the standards of this character which have been thus far been adopted vary very widely in their requirements. Thus, one city places the maximum number of bacteria to be permitted at 500,000 per cubic centimeters, another at 100,000, and a third at 30,000. Professor Conn said that in his own little city of Middletown it would be quite an easy matter to obtain milk with a bacterial content as low as 10,000, while in New York City it was doubtful whether a standard of one million could be successfully maintained. This did not imply, however, that the milk in Middletown was one hundred times better than that in New York. It might be not one iota more wholesome, and even be distinctly less so if it happened to contain the organisms of one or more of the specific diseases referred to. As to the number of bacteria, buttermilk has a content of two, three and sometimes even five millions to the cubic centimeter, and yet physicians do not hesitate to recommend it as a particularly wholesome article of diet. As a matter of fact, these enormous numbers of bacteria in buttermilk and sour milk are practically all (perhaps 99%) of the harmless lactic acid type.

It was a difficult matter, he went on to say, for the bacteriologist to distinguish between the deleterious and the harmless types, and, while this could be done, he thought it was advisable not to place too much reliance upon bacteriological milk standards. They did not always work fairly, being often unjust to the producer; and those living in cities were too prone to lose sight of the other end of the milk route. No milk standard could guarantee that a sample of milk was entirely satisfactory. Its bacterial content might fall below 500,000, or any other figure which had been fixed upon as a standard, and yet might be filled with typhoid or tubercle bacilli. On the other hand, it might have millions of bacteria to the cubic centimeter, and still be entirely wholesome. At the present time the emphasis was placed upon the wrong point; it was upon the type of the bacteria, and not their numbers, upon which stress should be laid. Some day, perhaps, this would be done. Up to now it certainly had not been done, because it was impracticable to do it.

In the discussion which followed the formal addresses and papers Dr. William H. Park, of the

New York Health Department, expressed doubt as to whether the great majority of the bacteria found in milk were altogether harmless to infants. As to the lactic acid bacteria, while they were undoubtedly very numerous, he could hardly believe that there was so great a preponderance of them as represented by Professor Conn. He also pointed out that the morbific colon bacillus belonged to the lactic acid type of organism. Dr. Edward F. Brush, of Mount Vernon, N. Y., whose practical experience with matters pertaining to milk has probably been more extended than that of any other educated physician in the country, called attention to the fact that while Professor Conn had spoken of tuberculosis as the only one of the specific diseases communicated through milk, the germ of which might come from the cow, this was unquestionably true of one other affection also, namely, scarlet fever. He has found that cows suffer from a disease corresponding exactly to scarlatina in the human subject, and that the milk from animals affected with this disease is capable of communicating scarlatina. In the city of Mount Vernon, of which Dr. Brush has served most acceptably as mayor for several terms, the health ordinances require that every report of a contagious disease by a physician shall mention the milk dealer by whom the family of the patient is supplied. Some time since, sixty cases of scarlet fever were reported within eight days, and it was ascertained that the milk used by the families in which the cases occurred all came from one dairy. An investigation showed that the scarlatinal disease referred to was prevailing among the cows in this dairy and as soon as the dairy was closed by the health department there were no more cases of scarlet fever reported. Dr. Brush has found the same disease among dairy cows at Ossining and other places at times when outbreaks of scarlet fever were occurring in the localities.

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SPIROCHETES IN MOUSE CANCER.

In this Journal of Feb. 7, 1907, appeared an editorial entitled, "A Carcinoma Parasite." This editorial noted the finding, by Gaylord and Calkins, of spirochetes in mouse cancer as reported at the one hundred and first annual meeting of the New York State Medical Society. Details of these findings have been published recently by Gaylord and Calkins.[1] Gaylord's ideas as to the relation of these spirochetes to mouse cancer is expressed in the following conclusion: "Our observations do not as yet establish an etiological relation between this organism and cancer of the breast in mice, but the presence of the organism in primary mouse cancers with which it is regularly transplanted through many generations, greatly increasing in number as the tumors increase in virulence, instead of interfering with, and finally preventing, transplantation, as do bacteria, is suggestive."

This is a conservative statement and is based on the finding of spirochetes in sixteen transplanted mouse tumors from three different sources. It is to be remembered, however, that the spirochetes occur in the connective tissue about the tumors and in the contents of cysts within the tumor. To explain how they may be the cause of the epithelial growth, Gaylord cites the attraxine theory of Fischer[2] which Fischer uses to explain why the subcutaneous injections of certain stains (Scharlach R and Sudan III) in olive oil cause an epithelial downgrowth and proliferation. In last analysis, Gaylord's findings reduce to the presence of spirochetes in the inflammatory tissue about mouse tumors. Unfortunately, he has not controlled his observations by the study of chronic inflammatory tissue in mice unassociated with tumors. It would seem that exclusion of spirochetes in such tissue is almost a necessary step before the spirochetes can be accepted as a probable cause of cancer. If they are found commonly in inflammatory conditions in mice, their presence about tumors would be of little special significance. It is feared that control work will show that the cause of cancer yet remains unknown. At least, this has so often been the fate of the alleged parasite of cancer, that such skepticism seems warranted.

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MEDICAL NOTES.

One Hundredth Anniversary of Agassiz's Birth. — Prof. Burt G. Wilder, of Cornell University, will give a memorial address on May 28, to commemorate the one hundredth anniversary of the birth of Louis Agassiz.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, April 24, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 53, scarlatina 41, typhoid fever 7, measles 8, tuberculosis 59, smallpox 0.

The death-rate of the reported deaths for the week ending April 24, 1907, was 20.18.

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[1] Jour. of Infectious Diseases, April 10, 1907, pp. 155 and 171.

[2] Münch. Med. Woch., 1906, liii, 2041.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, April 20, 1907, was 216, against 246 the corresponding week of last year, showing a decrease of 30 deaths and making the death-rate for the week 18.70. Of this number 123 were males and 93 were females; 211 were white and 5 colored; 120 were born in the United States, 90 in foreign countries and 6 unknown; 39 were of American parentage, 149 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 98 cases and 2 deaths; scarlatina, 55 cases and 1 death; typhoid fever, 6 cases and 0 deaths; measles, 5 cases and 0 deaths; tuberculosis, 55 cases and 26 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 34, whooping cough 0, heart disease 24, bronchitis 3 and marasmus 1. There were 18 deaths from violent causes. The number of children who died under one year was 27; the number under five years 40. The number of persons who died over sixty years of age was 51. The deaths in public institutions were 81.

There were 8 cases and 5 deaths reported from cerebrospinal meningitis during the week.

Reception Hospital at Coney Island. — The enlarged reception hospital at Coney Island was formally opened by Charities Commissioner McEnerney and other city officials on April 15.

Winner of the Boston Marathon Race. — Thomas Longboat, an Indian runner from Toronto, won the Marathon race of the Boston Athletic Association last Friday, April 19. Longboat not only won the race, but beat the best previous record by 5 minutes 2 4-5 seconds.

The second contestant, Robert Fowler, of the Cambridgeport Gymnasium Association, also broke the record, but came in more than three minutes behind Longboat.

The course was twenty-five miles from Ashland to Boston. The winner ran easily and finished in good condition.

Springfield, Mass., Academy of Medicine.— Measures have been taken to found an academy of medicine at Springfield, Mass., with a capitalization of $50,000. The object is to establish a post-graduate course in medicine and a meeting place for various medical clubs and associations in several of the New England states. It is hoped finally to erect a suitable building. Permanent officers have been elected, among whom are the names of Dr. W. A. Smith, of Springfield, President, Drs. John A. Houston, of Northampton, and R. H. Seelye, of Springfield, First and Second Vice-Presidents; Dr. Joel I. Butler, Secretary and Dr. W. H. Van Allen, Treasurer.

A Diphtheria Epidemic Traced to Milk. — An epidemic of diphtheria, which has recently occurred in the towns of Hyde Park, Milton and Dorchester, has been satisfactorily traced to contaminated milk. All of the cases, although in different localities, were found to be due to the milk of a single producer on the routes of two milkmen. The cases all occurred within a week, and investigation showed that a child of the dairyman was the first victim. Through this child the contamination resulted, and although it is probable that but one day's supply became affected, a disastrous epidemic numbering approximately forty cases resulted with several deaths. No further spread of the disease is expected.

NEW YORK.

Erysipelas. — For some unexplained reason there has been of late a marked increase in erysipelas in the city. On a single day, April 4, no less than 15 cases of the disease were admitted to Bellevue Hospital, and on the two preceding days, together, seventeen cases.

Appointments; New York College Physicians and Surgeons. — At a meeting of the trustees of Columbia University, held on April 8, Dr. Simon Baruch was appointed Professor of Hydrotherapy, and Dr. Porter Flewellan Chambers, Clinical Professor of Gynecology in the College of Physicians and Surgeons, the medical department of the university.

Free Glasses for Public School Children. — On April 19, there was a hearing before the committee on elementary schools of the Board of Education on the proposition pending before the board to furnish free glasses to all children in the public schools requiring glasses whose parents cannot afford to procure them; and against the measure there appeared representatives of most of the larger charitable organizations of the city. These commended the board for undertaking the work of having the children's eyes examined and cases of defective vision corrected, but objected to the plan of having the city furnish glasses on the ground that there were plenty of societies which would perform this service in instances of real need, and that any such general action of the board, if not absolutely unlawful, would be false charity and tend to defeat the ends for which it was intended. Among those who spoke were Edward T. Devine, general secretary of the Charity Organization Society, who declared the project to be unnecessary, unwise and demoralizing. Dr. Charles S. Bull also said it would be an abuse of charity. During an experience of over thirty years at the New York Eye and Ear Infirmary he had met with very few cases in which parents were unable to provide glasses for their children, and in such cases it had always been found possible to have the glasses furnished through some charitable agency. Dr. C. B. Meding, of the Harlem Eye and Ear Infirmary, said that out of nearly 4,000 children for whom glasses were prescribed at that institution during the last five years, there were but 31 cases in which the glasses were not paid for by the parents. He made the suggestion that the city should reimburse charitable institutions for glasses furnished in cases in which the inability of the parents to pay was shown after careful investigation.

Bequests. — By the will of the late William C. Egleston, of New York, $275,000 is left to charitable and educational institutions. Of this amount, $100,000 goes to St. Luke's Hospital for the endowment of free beds, to be known as the William C. and Ella Egleston beds, and $20,000 to St. Mary's Free Hospital for Children, for the endowment of beds in memory of two deceased children. Among other charitable bequests left by the late Daniel Sheehan, of New York, are $5,000 each to St. Joseph's Hospital, the Séton Hospital for Consumptives, the House of the Good Shepherd, and the New York Foundling Hospital.

Obituary.

THOMAS HENRY WAKLEY, F.R.C.S.

Thomas Henry Wakley, or, as he was more generally known, Thomas Wakley, died early this month at his home in London in his eighty-seventh year, and the London *Lancet* thereby loses its senior editor. He was the eldest of the three sons of Thomas Wakley, coroner and member of Parliament, who founded the *Lancet*, and who remained associated with it up to the time of his death, transmitting his interest to his son, who has now just died full of years and reputation, not only as a journalist, but also as a broad-minded physician. In 1857 Thomas Wakley, the father, having resigned from Parliament, made an arrangement through which his eldest and youngest sons became part proprietors in the periodical which he had founded. In 1862, on the death of the elder Wakley, the youngest son became an editor. Thomas Wakley also took an active interest in the affairs of the journal, and, together with his son, the third Thomas Wakley, our contemporary has flourished and prospered. There is probably no other instance in which a great medical journal has remained in both the editorial and financial control of a single family, and it is a matter of congratulation that the management of the journal will continue in this family, which has done much for medical journalism in maintaining the high standard which the *Lancet* has invariably assumed.

Current Literature.

The Journal of the American Medical Association.
April 6, 1907.

1. *Koplik, H. *The Clinical History and Recognition of Tuberculous Meningitis.*
2. Kieffer, C. F. *Intermittent Tick Fever.*
3. *Hektoen, L. *Is Scarlet Fever a Streptococcus Disease?*
4. Brunson, R. *Some Syphilitic Diseases of the Eye.*
5. Aldrich, J. F., and Crummer, L. R. *Polycythemia.*
6. Allport, F. *The Radical Mastoid Operation.* (Concluded.)
7. *Calvert, W. J. *Pulsus Paradoxus in Pericarditis with Effusion.*
8. Cumston, C. G. *Drainage of the Hepatic Duct.*
9. Kebler, L. F. *Synthetic Chemicals and Their Relation to the Pure Food and Drugs Act.*
10. *Hatcher, R. A. *Tincture of Strophanthus.*

1. Koplik gives an analysis of 52 cases of tuberculous meningitis. All the cases utilized in his article were diagnosed clinically and the diagnosis confirmed by postmortem, lumbar puncture or animal experimentation. The oldest patient was ten years, the youngest six months, the average four years and four months. The onset, in cases in which reliable data could be obtained was generally insidious, and Koplik is inclined to question the majority of the reports of sudden onset in this disease. Rigidity was absent in fourteen (27%); hyperesthesia was lacking in the great majority (90%), the patient generally lying dull and giving little attention to surroundings and reacting slowly to irritation. The Kernig symptom was present in only twenty-two cases, and he considers it of comparatively slight diagnostic value. The Babinski reflex, on the other hand, is, he thinks, a more valuable evidence of the tuberculous nature of the disease, as it is exceptional in the cerebrospinal type. Skin eruptions, the *tache cerebrale*, the character of the pulse and of the respiration have not much value for the diagnosis; vomiting occurs when the ventricles are distended, but is not a leading feature or persistent. Temperature is important; the absence of fever or persistently low temperature with the cerebral symptoms is strong evidence of tuberculous meningitis. Very high temperature means either a complication or approaching death. Localized pareses only appear toward the close of the disease, and then their evanescent character is characteristic. While leucopenia is a presumptive evidence of a tuberculous process, the leucocyte count furnishes nothing pathognomonic in this form of meningitis. The eyes of all the patients were examined by experts and some change, varying from optic neuritis to choroidal tubercle, was found present from the beginning in 66%. This symptom sharply distinguishes this form from other types of meningitis, especially the cerebrospinal, in which fundal changes are rare. Skull percussion is of the greatest value in the early stages of the disorder when the symptoms are still rather equivocal. Macewen's method should be followed; the patient is in an upright position, the head slightly inclined and per-

cussed over the pterion. Koplik found this of value in 34 of his 52 cases. Lumbar puncture, while admittedly the most valuable precise diagnostic method, is advised only as a confirmatory method after the clinical examination has rendered the presence of tuberculous meningitis highly probable. In other words, Koplik advocates it only as a means of confirming or excluding the presence of a disease whose prognosis is hopeless. He believes that careful search will reveal tubercle bacilli by this method in a majority of cases. Although a lymphocytosis of the puncture fluid is not pathognomonic, a predominance of lymphocytes is of considerable significance and certainly excludes the diagnosis of certain acute purulent forms of meningitis. Summing up the diagnostic points the author says that the diagnosis of tuberculous meningitis in its earlier stages is possible to-day, whereas it was well-nigh impossible formerly. The slow onset interrupted by periods of irritability, etc., the irregularity of the pulse and respiration, the low or normal temperature, the absence of hyperesthesia, the lack of appetite, and the discovery of hydrocephalus by percussion of the skull will all tend to establish the diagnosis. If after this we can obtain a lumbar puncture, the examination of the fluid in the great majority of cases will put the diagnosis beyond a doubt. The examination of the fundus of the eye is also conclusive in many cases.

3. Hektoen calls attention to the prominent part which the *streptococcus pyogenes* must be admitted to play in scarlet fever, from its almost constant presence in the throat of scarlet fever patients, its well-known predominance in complications, its occurrence in the blood as shown by blood cultures. Some observers have found increased agglutinating power for streptococci in the serum of scarlet fever patients. The streptococco-opsonic index is low in the early stages and later increased. Yet certain facts argue against the streptococcus as the cause of the disease. The permanent immunity which one attack of scarlet fever produces is without parallel in known streptococcus infections. Streptococci are rarely found in the skin or scales of scarlet fever cases. Streptococci are no more prevalent in scarlet fever than in smallpox. Thus it is unlikely at present that the streptococcus is the cause of scarlet fever. The streptococcus, however, is of great importance as a secondary invader. Precautions should be taken to prevent transmission of streptococci from patient to patient in scarlet fever wards.

7. Calvert has studied the cadavers of two cases of pericarditis with effusion to investigate the cause of the pulsus paradoxus. In one case the superior vena cava was found collapsed within the pericardial cavity. This is taken as evidence that the cause of the diminished pulse volume during inspiration is compression of the vena cava at this time. Calvert assumes that the pressure in the vein is more influenced by respiratory changes than is the pressure in the pericardial cavity, and that therefore the compression of the vein by the pericardial fluid is greatest when the intrathoracic pressure is lowered in inspiration. The discussion is not conclusive.

10. Hatcher finds that preparations of tincture of strophanthus obtained in ordinary drug stores are quite as uniform in potency as are other tinctures not standardized, and vastly more uniform than preparations of digitalis. Strophanthus as compared to digitalis has been little used, largely because when it was first introduced the preparations were variable in the extreme. Now that this difficulty has been overcome, strophanthus deserves a more general reputation. It is more rapid in action than digitalis, produces less vasoconstriction, and tends less to cumulative effects. Strophanthin also possesses advantages over digitoxin, being less irritant and much more active. [F. W. P.]

The American Journal of the Medical Sciences. April, 1907.

1. Goldwater, S. G. *The Medical Staff and Its Functions: a Study in Hospital Organization.*
2. *Warren, J. C. *Abnormal Involution of the Mammary Gland with Its Treatment by Operation.*
3. *Deaver, J. B. *The Surgical Aspects of Gastric Carcinoma.*
4. *Koplik, H. *Hydrocephalus Complicating Epidemic Cerebrospinal Meningitis.*
5. *Cook, H. W. *Cardiovascular Regulation during and after Operation.*
6. *Rous, F. P. *Clinical Studies of the Cerebrospinal Fluid.*
7. Fales, L. H. *Tropical Neurasthenia.*
8. Miller, J. L. *Experimental Arterial Degeneration.*
9. McWilliams, C. A. *Some Congenital Anomalies of the Hands and Feet.*
10. Hamill, S. McC. *Standards and Work of the Philadelphia Pediatric Society's Milk Commission.*

2. Warren describes the process of involution of the mammary gland, which occurs at the time of the menopause, and classifies the abnormalities which are observed. These are important of recognition since they must be distinguished from beginning carcinoma. A mass in the breast distinctly a product of abnormal involution must not, however, be regarded as surely benign, since certain types are associated with epithelial proliferation which may become malignant. In 115 cases of abnormal involution the presence of cancer was demonstrated in 15, or 13%. To meet this danger, and yet to avoid unnecessary amputations, Warren advocates an exploratory operation which he describes. The incision is made from the lowermost point of the breast margin, upward and outward along the anterior axillary border, until the breast can be turned upward, and its deep surface inspected. The abnormal tissue is excised, and, if necessary, examined microscopically. If no evidence of malignancy is found, the operation can be completed with almost no disfigurement. In 50 cases of cysts of the breast in which this procedure was followed, the diagnosis was made at time of operation in all, and in none has subsequent tumor developed.

3. Deaver emphasizes the frequent occurrence of cancer of the stomach, not only in cases when it develops in the classical manner and sooner or later is discovered, but also in cases with a long-standing history of dyspepsia, finally fatal, in which first ulcer and later cancer exist unrecognized even to the end. In view of the brilliant results of surgery in chronic ulcer, he urges gastro-enterostomy as an operation which may be considered a preventive of cancer. When cancer is already present, operation is also advised, if only to prolong life and to reduce the ultimate suffering. The hope of permanent cure by pylorectomy, moreover, is not so slight that it can be disregarded. The choice of operation must be deferred until the abdomen is opened. In some cases pylorectomy offers a fair prospect of permanent cure. In most cases the disease is too far advanced to permit any operation but gastro-enterostomy. This, however, is justified by the relief of symptoms which it affords. In cases still more advanced jejunostomy is an operation which will do much to prolong life.

4. Koplik calls attention to the importance of hydrocephalus as a cause of symptoms in the course of cerebrospinal meningitis. Symptoms referable to hydrocephalus are headache, pain in the neck, vomiting, unconsciousness and convulsions, occurring often in paroxysms. Hydrocephalus may appear suddenly with the onset of the disease; it may develop gradually in infants below one year of age; it may occur in an acute form in the later stages of the disease. Its appearance at any stage is a serious event; prompt recognition and treatment are essential to save the patient's life. In diagnosis, Koplik lays great stress upon percussion of the skull, as described by Macewen. Where there is distention of the ventricles with fluid, percussion of the skull will give a tympanitic note, which is considered pathognomonic. In treatment, withdrawal of fluid by lumbar puncture is the sole reliance. The relief which this affords, as in cases described, is great, and is, according to Koplik, the only important use of lumbar puncture. Lumbar puncture for diagnosis should be unnecessary, and to remove purulent exudate it is ineffectual. Patients without hydrocephalus do well without lumbar puncture. Koplik, therefore, resorts to lumbar puncture only when he is satisfied of the presence of hydrocephalus.

5. Cook reports the results of his observations upon abnormal cardiovascular conditions, made especially upon surgical cases. The abnormalities were divisible into two main classes: those associated with increased tension and those associated with low tension. Cases of the former class stand operation poorly, tending to suffer cardiac dilatation and renal insufficiency. Cases of the second

class, with low tension pulse, stand operation well, provided that chloroform is not used, but show a lowered resistance to infections and pneumonia. To correct abnormalities sodium nitrite is used to reduce resistance in peripheral arteries and strychnia to improve conditions of low tension. During operations frequent determinations of blood pressure are the most delicate index of changes in the patient's condition, since hemorrhage and shock produce changes in it long before warning is given by the pulse. Rise of pulse due to infection can be distinguished from hemorrhage since it is not accompanied by a fall in blood pressure.

6. Rous describes his methods of examination of cerebrospinal fluids and his results. A complete clinical observation of a fluid obtained by lumbar puncture should include determinations of the pressure under which the fluid is held in the subarachnoid cavity, of the protein content of the fluid, and of the number of cells per cubic millimeter, as well as observation of the kinds of cells present. The pressure is measured by a vertical small caliber tube connected with the needle. The protein content is determined by Esbach's process in a small test tube. The number of cells per cubic millimeter is counted by a red blood counting pipette filled with 4 parts in 1,000 of methyl violet solution and 996 parts of cerebrospinal fluid. The kind of cells present is observed by staining a centrifugalized sediment. Lymphocytosis has been observed in tuberculous meningitis, tabes, general paresis and syphilis of the central nervous system. The pressure of the fluid has been reported by other observers to be, in normal cases, 120 to 180 mm. of distilled water. In cases considered normal Rous found the pressure to vary from 70 to 300 mm. In tuberculous meningitis it was 240 to 550 mm., in purulent meningitis 290 to 560 mm.; in other abnormal conditions such as brain tumor and uremia the pressures were high. The protein content averaged in normal fluids ½ gm. per liter, in tuberculous meningitis slightly less than 1 gm. per liter, in purulent meningitis 2.5 gm. per liter. In normal fluids the cells averaged 2.75 per cubic millimeter; in tuberculous meningitis there were 43 to 686; in purulent meningitis 1,300 to 30,000 per cubic millimeter. The cells found in normal cases were all mononuclear basophiles of variable size. The tuberculous cases showed great predominance of lymphocytes. In purulent meningitis in the acute stages polynuclear neutrophiles predominated, but in certain cases which became chronic the fluid became indistinguishable from the tuberculous fluids. In certain fluids formed elements were found which could not be classified as cells. These were proved by experiment to be products of cell degeneration. [F. W. P.]

The Lancet.

March 30, 1907.

1. Savage, G. H. *The Increase of Insanity.*
2. Semon, F. *The Relations of Laryngology and Rhinology to General Practice.*
3. Buzzard, E. F. *Certain Acute Infective or Toxic Conditions of the Nervous System.*
4. Bolton, C. *The Treatment of Acute Heart Failure.*
5. Raw, L. *Cerebrospinal Fever.*
6. *Gordon, A. K. *A Series of Cases of Puerperal Septicemia; with Comments.*
7. *Wynter, W. E. *Chloretone and Its Uses, especially in Chorea.*
8. *Shaw, H. B., and Cooper, R. H. *"Pulmonary Hypertrophic Osteo-arthropathy" Occurring in a Case of Congenital Heart Disease* (!).

6. Gordon gives the details of 49 cases of puerperal septicemia with special reference to the bacteriology and serum treatment. In cultures from the interior of the uterus streptococci were present in 29 cases, the colon bacillus in 6 cases, gonococci in 1 case, staphylococci in 1 case and an unknown bacillus in 1 case. But of 27 blood cultures, streptococci were found in 8 instances. In addition to strenuous surgical measures, antistreptococcus polyvalent serum was used in 20 patients, in 16 of whom streptococci were found. The serum represented mixed cultures of streptococci isolated from 5 cases to which later more were added. The doses were about 100 cc. The writer feels that smaller doses of 10–20 cc. are useless. In these large doses he has never seen any bad results and thinks it does good and believes in its use if merely on the chance that it may do good.

7. Wynter strongly recommends chloretone (trichlor-tertiary-butyl-alcohol) in irritative stomach lesions, in sea sickness, and especially in chorea in which disease he has had remarkably good results with it. The dose is 5 to 10 gr.

8. Shaw and Cooper report a case of congenital heart disease in a girl of twenty-one who for the last ten years suffered from pains in ankles and wrists and in the shafts of the long bones of the legs, more particularly after walking. The tuberculo-opsonic index was normal, red cells 8,320,000, whites 9,300, hemoglobin 150%. X-ray showed enlargement of the fibulæ and tibiæ of both legs, especially of the lower two thirds, more marked on the right; there were irregular bony deposits in the ligaments and an increase of bone in both femurs, the head and neck of which were normal. These changes in the bones and the joint pains constitute what is generally called "pulmonary osteo-arthropathy" of Pierre Marie because associated with certain lung diseases, as tuberculosis, bronchiectasis, empyema, neoplasm, etc. In this case there were no lung lesions and this supports the view of Béclère and Groedel that these changes are due to a toxin formed by some fault in metabolism, not necessarily in the lungs. The case is unique, appearing to be the only one in which congenital heart disease has been associated with these bony changes. [J. B. H.]

British Medical Journal.

March 30, 1907.

1. Bradford, J. P. *The Diagnosis of Certain Forms of Renal Disease.*
2. Jessop, W. H. *Albuminuric Retinitis.*
3. Pernet, G. *Remarks on the Treatment of Syphilis.*
4. *Ruffer, M. A., and others. *Researches on the Bacteriological Diagnosis of Cholera.*
5. Savage, G. H. *Insanity, Its Causes and Increase.*

4. Ruffer in making autopsies on some who had died while on a pilgrimage to Jeddah in 1897, the cause of death not being cholera, found typical cholera lesions in the intestine and a large number of micro-organisms not to be distinguished from cholera vibrios. The agglutination tests were positive. Clinically, there was no sign of cholera. No case of true cholera developed subsequently. In later investigations it was found that the stools of almost every pilgrim suffering from disease other than cholera, from pneumonia, rheumatism, etc., contained many vibrios, and that these gave a positive agglutination test while vibrios in the few cases of cholera that occurred did, not give this test. In 1905, after this region had been free from cholera for nearly two years, the stools of every patient that died were examined, and vibrios were found in 38 out of 107 cases. Ruffer believes that these pilgrims infected themselves at Mecca or Jeddah from drinking water. As no cases of real cholera resulted clinically, these vibrios cannot be called true cholera vibrios, and the agglutination, saturation and Pfeiffer'a tests are not in themselves of absolute diagnostic value. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 12.

1. Loeffler, F. *The Twenty-fifth Anniversary of the Discovery of the Tubercle Bacillus.*
2. *Starck, H. *The Intravenous Use of Strophanthin.*
3. *Jordan, M. *The Medical Treatment of Appendicitis and the Indications for Surgical Intervention.*
4. *Joseph, G. *A Case of Cancer of the Stomach of Metastatic Origin.*
5. Kamp. *A Case of Intermittent Hydrops of Both Knees.*
6. Schereschewsky, J. *The Demonstration of the Spirocheta Pallida in Smears.*

2. Starck recommends the intravenous use of strophanthin, claiming all the advantages of digitalis, with greater quickness of action and increased diuretic effect, without, in his experience, any unpleasant results. He uses very small doses, beginning with ½ mgm., then ¾ and at most 1.25 mgm.

3. Jordan summarizes the treatment of appendicitis thus: (1) The possibility of operation must be considered

in every case of acute appendicitis, however mild. (2) The attention of the physician should be directed towards determining the character of the inflammatory process rather than the treatment of the attack. (3) Since this can only be obtained by exact observation, the use of opium preparations is contra-indicated. (4) Mild cases, if under careful observation, may be treated medically. (5) Immediate operation on all cases, which from the onset or from the second or third day, are classified as severe or doubtful. (6) The treatment of severe cases by medical means is unjustifiable. (7) Interval operations are indicated after a severe first attack, after two or more light attacks, and with chronic symptoms persisting after the attack. (8) In chronic appendicitis extirpation is the most sure and rational means of cure.

4. Joseph reports the autopsy findings of a case of mammary carcinoma with numerous metastases in lungs and pleura including two in the submucosa of the stomach, also in the spleen. [L. G. M.]

Münchener Medizinische Wochenschrift, No. 11.
March 12, 1907.

1. Cremer, M. *The String Electrometer and Its Use in Electrophysiology.*
2. *Rubin, J. *The Course of Urobilinuria in Typhoid Fever.*
3. *Vérse, Max. *Cysticerci in the Fourth Ventricle as the Cause of Sudden Death.*
4. *Frese, O. *Microscopical Worms (Rhabditis) in the Stomach of a Patient with Ozena.*
5. Vorschütz, J. *The Treatment of Cerebrospinal Meningitis with Passive Congestion and Lumbar Puncture.* (Continued article.)
6. *Avellis, G. *The Treatment of Hay Fever.*
7. *Bass, O. *One Hundred and Seven Cases of Childbirth Treated with Scopolamin-morphin Seminarcosis.*
8. Toff, E. *Remarks on Protection of the Perineum.*
9. Schottelius, M. *Hemostix, an Instrument for the Procuring of Blood for Diagnostic Purposes.*
10. Lengfellner, K. *A Case of External and Internal Anthrax.*
11. *Strebel, H. *The Application of the X-Ray to the Interior of Cancer Growths.*
12. Hocheisen. *Further Remarks on the Use of Scopolamin and Morphin in Labor.*

2. Rubin describes the course of the urobilin excretion in typhoid fever on the basis of eight cases followed by him. Urobilin in the urine is scanty or absent from the beginning till well into the fastigium, the amount increases rapidly with the first remissions, and continues a while into convalescence. Cases with constipation showed larger amounts than those with diarrhea; the amount excreted seemed to vary with the severity of the disease, being probably proportional to the impairment of the function of the liver. A severe case with nephritis showed little urobilinuria, the excretion of the substance being interfered with.

3. Report of two cases of cysticercus in the fourth ventricle with sudden death. The autopsy showed in each marked hydrocephalus with blocking of the foramen of Magendie, the latter due to proliferation of the ependyma. The sudden death is not to be ascribed to the cysticercus itself, which was shrivelled and dead in both instances, but rather to sudden variations in the intracranial pressure acting on the centers in the medulla.

4. In Frese's case of ozena in which nasal secretion was regularly found in the stomach contents, the latter showed for a period of two months numerous small worms which belong to the genus rhabditis. Such creatures are found living free in the presence of putrifying material, and may be rarely parasitic in man. The condition for such occurrences is the existence of putrifying organic material, such as the nasal secretions in the author's case.

6. Avellis has found benefit in hay fever from the treatment of the nose with the galvanocautery for a short period preceding the expected outbreak of the disease, and repeated for several years. The serum treatment with pollantin or graminol helps many patients and should be given a trial. It is of benefit, however, only where the nose is not already in an irritated condition. The irritation of the nose can be stopped by the local use of rhinoculin salve, a preparation compounded of anesthesin, subcutin and paranephrin. This salve is often of itself enough to keep the patient comfortable, and makes it unnecessary to send him away to another climate. It is important to avoid exposure to pollen as much as possible, and this is rendered easier by the use of the Mohr nasal filter, an apparatus which is worn in the nose and prevents pollen from getting inside.

7. Bass has used the scopolamin-morphin combination in 107 cases of labor, and comes to the following conclusions: (1) The pain of labor is much diminished in the majority of cases; (2) the best dose is 3-10 mgm. scopolamin (hyoscin hydrobromate) with 1 cgm. morphin; (3) there is in many cases a lengthening of the first two stages of labor; (4) the uterine contractions and the length of the third stage are not influenced, but the abdominal contractions are often impaired; (5) the injections are not dangerous for the mother; (6) in a fair proportion of cases the child showed disturbances of respiration attributable to the drug, and in one case death resulted. [The advantages of this method are still a matter of dispute, and its dangers are such that it is not suitable at present for use in general practice.]

11. Strebel has devised an apparatus by means of which the x-ray may be directly applied to the interior of subcutaneous tumors. This is a great advantage, for the x-ray does not penetrate far beneath the skin. [W. T.]

Berliner Klinische Wochenschrift, No. 10.
March 11, 1907.

1. *Raecke. *Hysterical Insanity.*
2. Weleminsky, F. *The Path of Infections in the Lymph Passages.*
3. Litthauer, M. *Retropharyngeal Tumors.*
4. Bloch, A. *A New Apparatus to Sterilize Catheters.*
5. Fischer, B. *The Cancer Problem.*
6. Ehrlich, P. *Chemotherapeutic Studies on Trypanosomes.* (Continued.)
7. *Tobias, E., and Kindler, E. *The Physical Treatment of Tabes Dorsalis.* (Concluded.)

1. Raecke describes several forms of hysterical psychosis which are important because they are easily mistaken for incurable mental or nervous disease, such as dementia precox and apoplexy. Three types can be distinguished: (1) The excited, stuporous form in which outbreaks of mania alternate with periods of retardation; delirium and attacks of somnambulism may occur. (2) The depressive form with attacks of anxiety, stupor, confusion (Dämmerzustande) and melancholia. (3) The paranoid type with systematic delusions of persecution. The diagnosis is made partly on the previous history, partly on the general hysterical behavior of the patient, while the hysterical stigmata are often absent. The prognosis is always favorable as to the eventual outcome, but the course is often tedious. The treatment is that of hysteria in general.

7. The modern treatment of tabes, in the absence of a specific, is essentially physical and dietetic. Little is to be expected from antisyphilitic therapy. The general condition is always to be taken into account. The diet is important, for most tabetics are under-nourished. It should be non-irritating, with restriction of meat, and plenty of carbohydrates and fats; in the small class of obese tabetics a cautious reduction of weight is indicated. With regard to exercise great care in necessary, for rest cures may increase the ataxia, and excessive fatigue often brings on a marked change for the worse. Frenkel's method of systematic exercises is of the greatest benefit in combating ataxia, but must be used with judgment, not to the point of undue fatigue. Massage is beneficial when given in a mild form. Hydrotherapy can do much to better the general condition and to stimulate that portion of the nervous system which is not yet diseased. The employment of drastic measures is always contra-indicated. The severer cases should have only the warm full-bath, followed by rest in the reclining posture; the more stationary type is benefited by the half-bath, gradually cooled, the carbon dioxide bath, and the wet pack. Cold douches are better avoided altogether. [W. T.]

Miscellany.

PHILADELPHIA PATHOLOGICAL SOCIETY'S SEMI-CENTENNIAL.

The Pathological Society of Philadelphia, which is one of the oldest, if not the oldest, society of its kind on this continent, will celebrate its semi-centennial in May, 1907. Instituted at a time when pathology scarcely had a foothold in this country, it has kept pace with the tremendous development of that science, and has had a share, not only in increasing Philadelphia's eminence as a medical center, but also in fostering the scientific spirit in America.

The celebration will extend over two days, Friday, May 10, and Saturday, May 11. On the first day addresses will be delivered by Dr. Frederick G. Novy, of Ann Arbor, Mich., on "The Rôle of Protozoa in Pathology"; by Dr. Simon Flexner, of the Rockefeller Institute, New York, on "The Newer Pathology"; and by Dr. A. E. Taylor, of the University of California, on "The Dynamic Point of View in Pathology."

In the afternoon, at four o'clock, a commemorative meeting will be held in the Pennsylvania Hospital, where the first meetings of the society, in 1857, took place. At this meeting, Dr. William Osler, Regius Professor of Medicine, Oxford University, will deliver an address on "Pathology and Practice."

At a dinner in the evening, prominent men from all parts of the country will respond to toasts.

An exhibition meeting of interest to pathologists, clinicians, and surgeons will be held.

The date of the celebration will enable those to be present who have been in attendance upon the Congress in Washington, and those who are coming east a little in advance of the meeting of the American Medical Association.

MASSACHUSETTS GENERAL HOSPITAL RESOLUTION ON THE REGISNATION OF J. W. ELLIOT, M.D.

In the resignation of Dr. Elliot from the Massachusetts General Hospital, the Visiting Staff feel a great personal loss, the weight of which it is difficult to express in words. The members of the staff have always appreciated the great merit of his work, and they cannot but look with deep concern upon the withdrawal of his services; for they, better than any others, know the value of unselfish devotion and long experience when based upon intelligence, originality, and — best of all — common sense.

The visiting surgeons wish to express to Dr. Elliot the regret they feel at his withdrawal from the hospital; their appreciation of his personal and professional worth; and their best wishes for his success in the field of private work.

Correspondence.

LONDON LETTER.

[*From our Special Correspondent.*]

Clinical Society of London. Nerve Grafting by Lateral Implantation. Giant Growth of Feet. "Pulmonary" Hypertrophic Osteo-arthropathy. Conan Doyle. Lister. Wright. Alcohol. Death of Allen Macfadyen.

London, April 9, 1907.

Mr. Editor: At the last meeting of the Clinical Society of London, three cases were exhibited by Tubby, the the orthopedist, which excited a great deal of interest. The first was a successful case of treatment of facial palsy by grafting the distal ends of the cut seventh nerve into the trunk of the hypoglossal. The patient, a boy of nineteen, had had an abscess at the left angle of the jaw, which had been opened by an incision transverse to the course of the facial nerve. At the operation, it proved very difficult to identify the distal end, which was eventually found in two divisions; the proximal end it was impossible to find. The hypoglossal was therefore exposed and brought up as near the facial as possible; the two distal portions of the facial were then implanted into a longitudinal incision in the twelfth. The result was surprising in that motor power in the facial muscles showed definite signs of return at the end of the first week, and steadily progressed until, five months afterwards, the functional power was almost perfectly recovered. The tongue, which at first showed some atrophy on the left side, entirely recovered and exhibited no associated movement upon voluntary movements of the face. The result, indeed, was very nearly perfect.

It was, however, the other two cases which attracted most attention, illustrating, as they did, the application of this same principle to the treatment of infantile palsy. The patients were boys, each nine years of age and both suffering from talipes calcaneus; in both, the gastrocnemius and soleus were the only muscles exhibiting total inexcitability to electrical stimuli, or the reaction of degeneration. In one case the whole lower extremity, in the other the leg below the knee, was smaller and colder than its fellow of the opposite side, but all the muscles except those mentioned reacted to faradism. At the operation, the fibers of the internal plantar trunk destined for the sural muscles were isolated; it was shown that the muscles contracted upon direct stimulation of their nerves, and these nerves were then severally grafted into the external popliteal trunk, with as little disturbance as possible. In one case four and a half months elapsed before any return of power could be noted, but when exhibited, nine months after operation, there was undoubted action of the calf muscles and the gait was quite satisfactory.

In the other case, although the tendo Achillis could be rendered tense, there was not enough power in the muscular contraction to admit of raising the body on the left foot. In this case the muscles had recovered their reaction to faradism, and to galvanism K.C.C was greater than A.C.C.

Of course, this method can only be pursued in specially selected cases, but when used with discretion, it bids fair to surpass the results obtained by tendon-transplantation, whilst it is not open to the same mechanical objections. Moreover, the method should prove capable of more extended application.

I am impelled to mention one or or two other cases of interest, chiefly as pathological curiosities, exhibited at the same meeting. The most extraordinary was that of a young girl of nineteen, otherwise healthy and normal, who was the subject of congenital hypertrophy of the feet. To say that the feet were some twenty inches or more in length, and even broader in proportion, conveys nothing at all comparable to the visual impression. There was nothing of the nature of elephantiasis about them; the bones were large in proportion, but the phalanges and metatarsals exhibited the giantism more decidedly than the tarsus. The left lower extremity to some extent shared in the hypertrophy. Photographs and radiographs will doubtless appear eventually in the transactions of the society.

Another case, said to be the first on record, was one of "pulmonary" osteo-arthropathy associated with congenital heart disease, the lungs themselves showing no evidence of disease. The phalanges showed but little thickening, whilst both tibiæ and fibulæ and the femora were greatly enlarged.

The name of Conan Doyle has become so much a household word on this side, and I suppose on your side too, that one might be pardoned for forgetting he had any closer connection with medicine than the impersonation of "Sherlock Holmes" and "Dr. Watson." It has been brought to mind forcibly by his advocacy of the case of a man named Edalji, convicted some time since of a series of dastardly cattle-maiming crimes in the Midlands. The circumstances were exceedingly curious, not to say mysterious, and the evidence against him, though very strong, was rendered inconclusive by the occurrence of similar outrages in the same neighborhood after his arrest. At any rate the man was released after serving some two years of his sentence, and then a very strong train of evidence, established by the prosecution and fastening the guilt of at least one midnight crime upon Edalji, was transformed into strong presumptive if not positive evidence of his innocence — for Conan Doyle ascertained that he was the subject of an extreme degree of myopia, and the defect in his vision was such as to render him physically incapable of traversing the requisite distances over difficult country, catching the animals which were turned loose, and regaining his home within the time during which his whereabouts could not be certainly accounted for.

Starting from this firm foundation, the creator of "Sherlock Holmes" was able, quite in the manner of his hero, to elaborate a very strong case for exculpation, and a claim for compensation for wrongful imprisonment. The affair is still *sub judice*, but in any event there remains the interesting point as to the degree of incapacity that may certainly be occasioned by any given degree of visual defect.

The forces of "Temperance" — or rather of "Total Abstinence" — in this country have undoubtedly attained many desirable results, but backed up by the enthusiastic — one might almost say fanatical — eloquence of Sir Victor Horsley and Prof. Sims Woodhead, and the not-too carefully-considered remarks of Sir Frederic Treves, they threatened to hang the poor dog to whom they had given the bad name. But the faithful dog was not to die without an effort to save him, and so there appeared in the *Lancet* a manifesto for the exact wording of which several of the distinguished signatories hastened to disclaim responsibility.

Nevertheless, they did good service in arresting the idea, fostered by the Temperance party, that "Alcohol" was at all times and in all circumstances not only useless but actually harmful. Sir William Bennett, Sir J. Crichton Browne, Sir Dyce Duckworth, Sir William Gowers, Sir T. McCall Anderson, Professor Haliburton, Jonathan Hutchinson, Robert Hutchison, Edmond Owen, Pye-Smith, Frederick Roberts and others lent the weight of their names to a very moderate statement of the views of the profession as to the value of alcohol within well defined limits; a value not to be gainsaid by the evils of excessive consumption, however deplorable. It is evident that the signatories were unwilling to see the cause of temperance weakened by the assumption of an untenable position.

St. Mary's Hospital has for a long time been in the unfortunate position of possessing a magnificent new block of wards and theatres they have been unable to use for want of funds. They have now done Science and the Profession a service by putting the space at the disposal of Sir Almroth Wright who is organizing research — particularly in connection with "Opsonins" — on a considerable scale. Professor Wright is so enthusiastic and unselfish an investigator that he can always attract as many assistants as he can want and we may well look for rich results.

Pathological research in England has sustained a grave loss by the death of Dr. Allan Macfadyen who fell a victim to Science a few weeks ago through accidental infection in the laboratory by Malta fever. Until a year ago Dr. Macfadyen was head of the Bacteriological Department of the Lister Institute, and it was there he commenced the important work on "endotoxins" which was beginning to yield such good fruit when he untimely died. The discovery of liquid air and its practical application provided him with a method for extracting the juices of bacterial cells without destroying their properties. He demonstrated that at the temperature of liquid air or hydrogen, frozen bacteria can be triturated, and the extracts thus obtained from virulent strains prove to be intensely toxic. Latterly he had been able to show that the serums of animals immunized against these endotoxins possess curative properties. Cholera, plague, Malta fever, typhoid, pneumonia, all have given encouraging results. Much of his other and earlier work was of enduring worth; that on yeast zymase in particular being important in its bearings on many subsequent researches.

Writing as I do, upon the eightieth anniversary of Lord Lister's birthday, I cannot forbear mention of the proposal to celebrate the occasion by the publication of a collected edition of his papers. The names of the distinguished members of the profession and of others eminent in science in all parts of the world, who have signified their active approval of the project, make a testimonial no man could view but with pride.

The idea is not only gracious in conception, but pregnant with interest, as an historical and logical presentment of the origin and development of a scientific observation, through trial stages to perfected practical application; as a means of orientation to generations who, born into the new régime, will be able but dimly to grasp the magnitude of the advance; and lastly as a stimulus to all who daily employ the fruits of labors they honor without always fully appreciating. C.

NORFOLK SOUTH DISTRICT MEDICAL SOCIETY.

Resolutions Regarding Fees for Life Insurance Examinations

Wollaston, Mass., April 16, 1907.

Mr. Editor: At an adjourned stated meeting of the Norfolk South District Medical Society held in Boston, April 4, 1907, the following was unanimously voted:

Whereas, The New York Life Insurance Company, the Mutual Life Insurance Company of New York, and the Equitable Life Assurance Society of the United States have each and all announced that for an examination of an applicant for less than $5,000 insurance they will pay only the sum of three (3) dollars; and

Whereas, These organizations have declared that they shall expect for the reduced fee an examination as thorough and accurate as they received for the old fee of five (5) dollars, therefore

Resolved, That we, the Fellows of the Norfolk South District Medical Society (comprising the Fellows of the Massachusetts Medical Society residing in the city of Quincy and the towns of Braintree, Holbrook, Randolph, Weymouth, Hingham, Cohasset and Hull), declare that the dictation of fees to the medical profession by outside corporations and individuals is derogatory to the medical profession and is therefore disapproved.

Resolved, That we refuse to accept the new schedule of fees offered by the above-named organizations so far as applies to examination for less than five-thousand-dollar policies, and in the future shall make physical examination and chemical examination of urine for albumin and sugar for not less than the old fee of five (5) dollars.

Resolved, That the Fellows of this society who may have already acceded to the demands for reduced fees immediately notify these companies that, in accordance with the vote of this society, they will be obliged in the future to charge a fee of five dollars for each physical examination and chemical examination of urine for albumin and sugar.

Resolved, That these resolutions be entered upon the records of this society, that a copy of the same be sent by the secretary to the New York Life Insurance Company, the Mutual Life Insurance Company of New York, and the Equitable Life Assurance Society of the United States; that a copy also be forwarded to the Kentucky State Medical Association, to each District Medical Society in the State of Massachusetts, and also be furnished to the Boston Medical and Surgical Journal for publication.

Chas. S. Adams, M.D.,
Secretary.

RECORD OF MORTALITY

For the Week ending Saturday, April 13, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,517	449	Quincy	4	2
Chicago	717	214	Waltham	12	1
Philadelphia	—	—	Gloucester	4	2
St. Louis	—	—	Pittsfield	9	2
Baltimore	227	55	Brookline	9	—
Cleveland	—	—	North Adams	7	0
Buffalo	—	—	Chicopee	8	3
Pittsburg	—	—	Northampton	8	0
Cincinnati	—	—	Medford	8	1
Milwaukee	—	—	Beverly	10	1
Washington	—	—	Hyde Park	0	—
Providence	79	21	Newburyport	—	—
Boston	203	48	Leominster	4	—
Worcester	69	16	Melrose	3	0
Fall River	32	13	Woburn	—	—
Cambridge	31	10	Marlboro	1	1
Lowell	47	11	Westfield	3	1
Lynn	20	3	Peabody	—	—
New Bedford	29	6	Revere	3	1
Springfield	31	5	Clinton	5	1
Lawrence	23	5	Attleboro	3	0
Somerville	14	3	Adams	4	2
Holyoke	20	9	Gardner	—	—
Brockton	15	2	Milford	—	—
Malden	5	1	Weymouth	3	1
Salem	20	5	Framingham	—	—
Chelsea	9	2	Watertown	3	2
Haverhill	10	3	Plymouth	—	—
Newton	12	2	Southbridge	2	1
Fitchburg	13	3	Wakefield	—	—
Taunton	19	2	Webster	—	—
Everett	6	2			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED APRIL 10, 1907.

Banks, C. E., surgeon. Granted leave of absence for one month from about April 19, 1907. April 5, 1907.

Cobb, J. O., surgeon. Granted leave of absence for one month, or so much thereof as may be necessary, on account of sickness. April 6, 1907.

Wertenbaker, C. P., surgeon. Granted leave of absence for one day, April 11, 1907. April 6, 1907.

Stimson, A. M., assistant surgeon. Granted leave of absence for seven days from April 6, 1907, under Paragraph 191 of the Service Regulations.

Robertson, H. McG., assistant surgeon. Directed to proceed to Philadelphia, Pa., for special temporary duty, upon completion of which to rejoin his station. April 5, 1907.

Salmon, T. W., assistant surgeon. Granted leave of absence for one day, March 2, 1907, under Paragraph 191 of the Service Regulations.

Ward, W. K., assistant surgeon. Granted leave of absence for two days from March 20, 1907, under Paragraph 191 of the Service Regulations.

Ashford, F. A., assistant surgeon. Granted leave of absence for one day, March 2, 1907, under Paragraph 191 of the Service Regulations.

Frost, W. H., assistant surgeon. Granted leave of absence for two days from March 30, 1907, under Paragraph 191 of the Service Regulations.

Kastle, J. H., chief of division of chemistry, hygienic laboratory. Granted leave of absence for nine days from April 11, 1907. April 10, 1907.

Buonocore, E., acting assistant surgeon. Granted leave of absence for fifteen days from Jan. 23, 1907, on account of sickness. April 6, 1907.

Delgado, J. M., acting assistant surgeon. Granted leave of absence for six days in March, 1907, under Paragraph 210 of the Service Regulations.

Duke, R. F., acting assistant surgeon. Granted leave of absence for three days from April 10, 1907. April 4, 1907.

Griffitts, T. H. D., acting assistant surgeon. Granted leave of absence for twenty-one days from April 12, 1907. April 9, 1907.

Kennard, K. S., acting assistant surgeon. Granted leave of absence for one day, March 8, 1907, under Paragraph 210 of the Service Regulations.

Schwartz, Louis, acting assistant surgeon. Granted leave of absence for two days, March 3 and 10, 1907, under Paragraph 210 of the Service Regulations.

Watters, M. H., pharmacist. Granted leave of absence for thirty days from April 1, 1907. April 8, 1907.

Megaw, Herschel, pharmacist. Directed to proceed to Boston, Mass., reporting to the medical officer in command for duty and assignment to quarters. April 4, 1907.

APPOINTMENT.

Megaw, Herschel. Appointed a pharmacist of the third class April 3, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at New Orleans, La., April 9, 1907, for the examination of an alien immigrant. Detail for the board: Surgeon J. H. White, chairman; Passed Assistant Surgeon R. L. Wilson; Acting Assistant Surgeon J. T. Scott, recorder. April 8, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING APRIL 20, 1907.

J. D. Gatewood, surgeon. Ordered to additional duty in the Bureau of Medicine and Surgery, Navy Department.

D. N. Bertolette, medical director. Sick leave further extended three months.

O. H. Delancy, passed assistant surgeon. Ordered to Naval Medical School Hospital, Washington, D. C., for treatment and observation.

J. C. Downey, assistant surgeon. Granted leave for one year from April 15.

J. H. McGuigan, pharmacist. Granted sick leave for three months.

R. Spear, surgeon. When discharged from treatment at the Naval Hospital, Mare Island, Cal., ordered home and granted sick leave for two months.

APPOINTMENTS.

Hasket Derby, M.D., has been reappointed a trustee of the Children's Institutions for a term of five years.

Francis J. Keany, M.D., has been reappointed a trustee of the Boston City Hospital for a term of five years.

Mr. Herbert F. Price has been appointed a trustee of the Consumptives' Hospital for a term of five years.

SOCIETY NOTICES.

American Academy of Medicine. — The thirty-second annual meeting of the American Academy of Medicine (specializing in medical sociology) will be held at the Hotel Dennis, Atlantic City, on Saturday, June 1, and Monday, June 3, 1907.

Medical Meeting at Boston Medical Library. — Wednesday, May 1, at 8.15 p.m. Subjects: "Hydrophobia and its Prevention," Dr. Charles P. Sylvester; "Rabies: Diagnosis and Prevention," Dr. Langdon Frothingham; "Rabies: Its Prevalence and Prevention," Dr. Austin Peters.

The Psychical Treatment of Nervous Disorders. Lecture by Dr. Lewellys F. Barker. — Dr. Lewellys F. Barker, of Johns Hopkins University, will speak on "The Psychical Treatment of Nervous Disorders," before a general audience at Emmanuel Church, Newbury Street, Boston, on Wednesday evening, May 1, at 8 o'clock. Physicians are cordially invited to attend.

Suffolk District Medical Society. — Annual meeting, Saturday, April 27, 1907, 8.15 p.m., Boston Medical Library. "A Series of Typhoid Outbreaks Caused by a Chronic Bacillus-Carrier," by Geo. A. Soper, Ph.D., of New York. "A Recent Outbreak of Typhoid Fever Due to Infected Milk," by Geo. B. Magrath, M.D. Election of officers. Refreshments after the meeting. L. R. G. Crandon, M.D., *Secretary.*

RECENT DEATHS.

The death of Dr. Junius F. Smith, of Brookfield, Conn., is announced, death resulting from pneumonia. Dr. Smith was forty-two years old, a prominent physician in the section in which he lived, and representative from his town in the present General Assembly.

Dr. Justin L. Barnes, of New York, a well-known specialist and one of the surgeons to the Manhattan Eye and Ear Hospital, died on April 13. He was graduated from the medical department of the University of the City of New York in 1885.

Dr. Henry De Witt Joy, of New Brighton, Borough of Richmond, New York City, died suddenly on April 15. He was born in New York in 1841, and was graduated from the College of Physicians and Surgeons there in 1866. He practised for seventeen years at Sag Harbor, Suffolk County, N. Y., after which he removed to Staten Island. He retired from general practice about five years ago, but continued to do some consulting work.

Original Articles.

GALL BLADDER DISEASE WITH SPECIAL REFERENCE TO ITS GASTRIC SYMPTOMS.*

BY PHILIP KING BROWN, M.D., SAN FRANCISCO, CAL.

The frequency with which inflammatory and mechanical irregularities of the organs in the right hypochondrium cause symptoms which attract attention, particularly to the stomach, and the brilliant results of surgery in many of these conditions, lead me to report a few cases which have come to operation and which I have selected to illustrate types of the underlying trouble.

The relation of cancer of the gall bladder to gallstones is of so great importance that it seems reasonable to accede to the position taken by the surgeons that gallstone manifestations of any kind, however slight, are indications for surgical treatment. It is true that nature's method of getting rid of the stone is frequently a satisfactory one. In addition to stones being passed by the ducts into the intestinal tract it is not infrequently the case that a perforating ulcer may release the stones from the gall bladder, and if the process has been slow, it is sometimes the case that the adhesions to the stomach, duodenum or the hepatic flexure of the colon have allowed the stones to ulcerate through and be discharged by the bowel without giving trouble. The chance of such an escape is so small, however, the symptoms attending adhesions between the gall bladder and adjacent organs are so serious, and the complications of interrupted passage of stones through the ducts so dangerous and so difficult of surgical treatment, that the operation for the removal of stones known to be present in the gall bladder seems relatively simple and an absolutely reasonable procedure.

Of the usual symptoms associated with gallstones, the chill, fever, pain and jaundice are often so characteristic that no doubt as to diagnosis exists, but intermittent fever has been associated with adhesions of the gall bladder, as well as have chills, irregularly recurring colic, hepatic enlargement, tenderness in the gall bladder region, enlargement of the spleen and dilatation of the stomach. The association of all these symptoms at once with a simple case of adhesions not complicated by stone occurred in one of my patients operated upon with the idea that she must have gallstones. A contracted gall bladder was discovered containing a thick, viscid, dark-green bile. In another case further symptoms of absence of HCl and progressive emaciation with retention of food in the stomach led to the consideration of a cancer of the pylorus, in spite of the absence of palpable tumor. At operation, a dense mass of adhesions was found, due to the ulcerating through of stones from the gall bladder to the duodenum, and the establishment of three permanent fistulæ maintaining this connection. This case is abstracted because of the interest of these symptoms.

Case G. H. Male, age seventy.

May 8, 1903. History of long-lived family. Has not been ill since childhood, and does not remember ever having any stomach symptoms or abdominal disturbance of any kind till the present trouble began. Has lived a healthy, simple, out-door life. Best weight 190. Present weight 140. Loss has occurred within a year. Began to be somewhat constipated a year ago, and occasionally to vomit after he had been in bed some little time at night. Vomitus very sour. Thought nothing of it. Four months ago he grew suddenly very much worse with marked constipation and very frequent vomiting. Pain in right hypochondrium with no special relation to eating. No cause is attributed to this sudden change, but it is evident from careful questioning that he had been steadily losing ground even before this. Vomiting has been a daily occurrence since, and he has occasionally vomited a little blood. Vomitus always sour and yeasty, frequently containing food taken the day before. No jaundice. Occasional chills. Pain never severe or paroxysmal. Thinks he has had fever. Is growing weak very fast.

Examination of the abdomen shows no tumor, but a large and tender liver, and a very much distended stomach. The colon is also distended along its entire course. No HCl. Lactic 70. Pus and B. o. bacillus in vomited material. Hemoglobin 50%. Temperature 97°, pulse 80. Gall-bladder region not especially tender and no tumor could be made out. After lavage the empty stomach reached to the umbilicus.

The sudden onset of grave stomach symptoms in an elderly person with no earlier history of stomach trouble and with rapid loss of weight arouses always a suspicion of cancer. This was not the case, however. The dense adhesions seemed of long duration, but the beginning of the local trouble can be only a matter of speculation.

In connection with fistulæ from the gall bladder, Naunyn tabulates 43 cysto-duodenal fistulæ in 10,866 autopsies; 19 fistulæ between gall bladder and duodenum; 16 cystoduodenal fistulæ between gall bladder and colon; 5 fistulæ between common duct and duodenum; 1 fistula between gall bladder and stomach; 1 fistula between gall bladder and liver; 1 fistula between bile ducts themselves.

The presence of a tumor mass in connection with gall-bladder disease presents considerable difficulty in many cases in diagnosis of the nature of the lesion and the parts involved. A cancer of the stomach or duodenum may arise from the site of an old ulcer, which may have left the involved part adherent to the liver or gall bladder from adhesions below the floor of the ulcer. In the case of cancer of the stomach we would have symptoms of pyloric obstruction, with dilatation, absence of HCl, emaciation and probable pain and tenderness in the region of the tumor, but the tumor probably could not be felt, or if it could, its connection with the liver would make its origin obscure. Gastric ulcer generally, although moving downward with inspiration, can be held down by pressure with the fingers. When attached to the liver this is impossible. The age of the patient, the previous history and the duration of the acute symptoms give pointed information, as will also examination of the stools for occult blood according to the Boas-Weber methods. In cancer of the stomach, repeated examination of the stools after diet free from meat will give a positive evidence of occult blood in the vast majority of cases. Emaciation, cachexia and dilatation may follow simple adhesions from ulcer as well as cancer, and blood may be found in the stools. Yet cancer may be positively excluded by the age of the patient, as well as by the presence of HCl in the stomach, although even this may be absent without cancer. This condition is illustrated by the following case:

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* Read before the Marin County Medical Society, Jan. 19, 1907.

R. R. Male. Age twenty-three.

Dec. 5, 1905. Patient gives a history of catarrhal jaundice of two months' duration, eight months ago. He had no other symptoms at the time except fever and extreme depression. Has never felt quite well since then, and has lost flesh and color steadily. Has had pains in his gall-bladder region. Slight temperature at times. A great deal of gas, which he has belched up, and distress in the stomach, beginning two or three hours after eating. The pain is referred to the back and to the right shoulder. He has not been jaundiced since the first attack. Is aware that certain kinds of food affect him worse than others. Is unable to do much work and has no appetite. Is afraid to eat when he does feel hungry. Patient has never had typhoid, and there is no history of any unusual gastric disturbance earlier than the jaundice.

Examination. — Temperature normal. Pulse 84. Heart tones clear and quite forcible, due probably to his athletic tendencies. Stomach reaches nearly to umbilicus. There is no tenderness anywhere except over the gall-bladder region. Kidney not felt. Feels much nausea when pressure is put upon this region. No local tenderness in the stomach. No tumor made out. Stomach analysis showed total acidity of 4. No free HCl. No blood.

Patient operated on one month later after two weeks of extreme suffering, worse at night, during which period he often walked the floor for hours. Lost 15 pounds in this time.

Operation revealed an adhesion of the distal end of the gall bladder to the duodenum about 5 cm. from the pylorus. Beneath the adhesion was an ulcer of the duodenum. No gallstone found. Gall bladder seemed perfectly healthy, except at the site of the adhesions.

Tumor of the gall bladder, as pointed out by Courvoisier, is absent in obstruction to the common duct from gallstones, where we might ordinarily expect it to be present, and is present when obstructions are due to pressure from the outside. In 35 of his cases, 17 of which were due to stones, the gall bladder was found contracted in 13 and normal or dilated in 4, whereas in 18 cases of obstruction due to external pressure dilatation occurred in 16. This observation, made many years ago, has been confirmed by numerous observers in a large number of cases, so that it is generally understood that if the gall bladder is enlarged from an obstruction of the common duct, in fully 90% of cases the obstruction is outside the duct. The converse is not so striking, for the gall bladder has been found to be contracted in only 60% to 70% of the cases where the obstruction was due to stones in the common duct. Nevertheless, the possibilities are sufficiently marked to warrant careful consideration of this point in a differential diagnosis.

Tumor of the gall bladder from an empyema may occur without local pain or jaundice, and even without much fever. It may develop so gradually, with such vague symptoms, that only a careful examination of the patient reveals its presence.

A case showing chiefly gastric symptoms illustrates this.

G. Y. Female. Age thirty-six.

Jan. 4, 1905. Stomach trouble for two years. Began while visiting various mineral springs. Bad food and loosening waters. Noted a pain just below sternum in epigastrium, and extending through to back. Tender on pressure also. Slightly relieved by taking soda water. Came on at least four hours after eating. Lasted all night. Didn't double her up that time, but twice since she has had it so bad that it caused writhing with pain. Vomited in both of these attacks, but in no other. Isn't even nauseated with ordinary attacks. Was somewhat relieved by vomiting those two times. The attacks come on now rather more frequently at night. Has great deal of gas. After first attack was free from them for three weeks. Began again at night and lasted three nights, but with considerable relief in daytime while in erect position. Isn't able to say whether she noted relief of pain if she lay down in daytime. Could eat milk, toast, soft eggs, broth, oysters, white meat of chicken occasionally. Indigestion and pain at night, and at times in daytime if she ate sweets, fruits or seasoned food.

Several times, both by day and night, patient has noticed a sudden feeling of weakness which she has connected with her heart condition, and yet she has no objective symptoms referable to the heart. She has noticed no blood or black material in stools, but hasn't observed them carefully. The vomiting attacks have not been accompaned by blood.

Examination. — There is no tenderness whatever over the gall bladder, even on deep pressure. Stomach is quite large to within 1 cm. of umbilicus, and much distended with gas. No kidneys felt. No McBurney tenderness, and no tenderness now at the point where she feels the great pain during attacks. In the last attack she has had more pain through the right side, but always before, the pain and tenderness were just under the ribs to the right of the median line.

Jan. 21. On a diet of milk for a week, patient lost a good deal of flesh and had no pain in the stomach and only a very slight pain under the left scapula. She was fed by rectum the first four days, not even water being taken by mouth. For two months on careful diet, pain ceased.

March 27. Some chocolate creams eaten one afternoon were followed by pain in the stomach and through to the back. This grew much worse. She vomited a number of times. Pain was not relieved by soda solution or vomiting or Dover's powder, of which she took 20 grs. Two days later her temperature was up to 100, and then it ranged between 99½° to 101½° for two more days. She has had absolutely nothing by mouth except a few swallows of hot water. Pain has been paroxysmal in character, and has been confined to the *left side of the back* under the angle of the scapula and to the area at the lower border of the right ribs, from the gall bladder around to the midaxillary line. Tenderness here has been extreme, and the pain in this region is especially paroxysmal, so that it looks unlike an ulcer of the duodeum and more like gallstone. There was no swelling, and no increased dullness. Pulse has never been above 78, and is most of the time below 70, so that a local peritonitis from a perforated ulcer is excluded. The pain has required 7 grs. of opium by rectum for its relief.

Patient's temperature fell steadily to normal on the third day. It rose to 100° two nights later, at which time she had a return of nausea, which had grown steadily better for thirty-six hours. Patient had been allowed to take fluid by mouth since the morning before, and although the nausea had now ceased, she complained a good deal of indigestion.

April 1. Patient passed a comfortable day, retaining without trouble 8 oz. of peptonized milk every two hours. The orange juice and white of egg caused her to have a lump in her throat and was therefore discontinued. The temperature, however, rose slowly, until it was 101°. She had occasional sharp twinges of pain in the gall-bladder region, and at one time a pain lasting five minutes.

The leucocytosis next day was 11,000. Pulse did not rise above 70, but it was decided to operate, as the gall bladder could be constantly better and better outlined, as it increased slightly in size.

About 8 oz. of fluid pus, without odor, removed by aspiration. After the fluid had begun to flow into the barrel of the needle, it began suddenly to be quite blood-stained. Blood-staining was also diffuse, giving it an even tinge. Whether this was due to its being thoroughly mixed in being sucked up through the needle, it is impossible to say. After the needle was removed the opening was enlarged, and again pure pus came out, followed by the bloody pus. There was a good deal of edema about the gall bladder, and a large number of adhesions, so that no further operative interference was considered. No gallstones found. Examination of bile tract impossible on account of adhesions.

Questions at issue in considering the case were whether we might not have to deal with an ulcer at the pylorus, or even in the duodenum, which had perforated and caused a local peritonitis. Against this was the tenderness of the liver, the peculiar character of the spasmodic pain, and, later, the round tumor mass.

April 13. The patient's pulse and temperature remained normal after operation. There has been no nausea and no stomach disturbance whatever, even though the patient ate some toast and ice cream.

May 2. Patient returned to Lane hospital to-day for a removal of the gall bladder, which has been secreting a muco-purulent material since it was drained. She complained of a persistent pain immediately to the right of the drainage tubes, but otherwise no induration or swelling. There has been no temperature since the operation except the day she was moved home, and the pulse rarely rises above 60.

May 3. Patient operated on this morning by Dr. Stillman for obliteration of the gall bladder. Upon examination it was found that cicatricial tissue prevented a dissection of the mucous membrane, so that an attempt had to be made to remove the organ. This elicited the fact that there was an hour-glass contraction of the gall bladder, in the lower end of which was confined a stone, necessitating the opening of the peritoneal cavity and the complete removal of the gall bladder.

May 6. Patient vomited excessively for the first two days after the operation and required a large amount of morphine for the pain.

Jan. 6, 1905. Stomach analysis; t. a. 30; free HCl 18; decided trace lactic.

Jan. 29, 1906. Stomach analysis; t. a. 9; free HCl 3; lactic present; faint reaction propep. and peptones; erethro dextrine and maltose present.

Feb. 6, 1906. Patient has been having a good deal of stomach disturbance in the early hours of the morning. On account of low acidity, patient was given dilute HCl. for ten days past, which relieved her stomach symptoms very decidedly. There has never been any pain, nausea or evidence of ulcer since the second operation.

Relative stenosis of the pylorus from adhesions doubtless played a large part in the symptomatology, which are likely to give trouble if they reform, as is most probable.

An acute inflammation in the gall bladder may also be indicated merely by temperature and gastric symptoms, and doubtless occurs many times in the course of typhoid fever without being detected in any way. The following case, occurring during convalescence from typhoid, illustrates how insidious the onset of such trouble may be.

F. F. B. Male. Age forty.

Nov. 4, 1902. Patient passed through a typical, mild typhoid fever beginning eight weeks ago. Diagnosis by physical examination and Widal test. Nothing unusual about the case except the absence of any very high fever, and the extreme degree of constipation, it being necessary to move the bowels with enema every other day. An afebrile period of nearly a week followed the five weeks' typhoid, when the patient had numerous chilly sensations one day and slight irregular fever thereafter, which has continued ever since with intermissions of a day or two, generally following profuse movements of the bowels, the result of medication. Early in the attack a tenderness appeared across the epigastrium. It was a vague, irregular pain, described as extending clear across the epigastrium, not located at any particular point, slowly growing worse and becoming localized slightly more on the right of the median line, the patient himself having to hunt about considerably to find the most tender point. In his past history there have been almost no illnesses. Never has had any pain in the side or jaundice. Patient had occasional appearance of slight jaundice after this pain began, but experienced no increased pain upon eating; in fact, was getting to relish certain food very much, and to look forward to it.

Four days ago he began vomiting, and has vomited continuously since, especially at night, when he has appeared to vomit everything. Enough medicine has been retained to keep the bowels moving freely, although after several movements of usual size, a period of constipation generally came. Large quantities of bile are said to have passed with the stools. The character of the vomitus at present is a clear, dark bottle-green fluid, alkaline in reaction. The patient has had no headache whatever. Seems bright and clear-headed. Tongue coated. Lungs negative, although he has had a slight cough for three or four days. Heart sounds clear; rate and force regular, but action rapid; probably nervous, as the rate last evening without stimulation was 84. Spleen to the costal border and easily felt; slightly tender. Liver slightly enlarged 14 cm., dullness in nipple line and extending well below the costal border. No tumor felt in the gall-bladder region, but a distinct increased spasm on the right side; more as the epigastrium is approached. The right epigastric region seems more prominent than the left. No tympany. Stomach not enlarged. No tenderness elsewhere in the abdomen. Patient locates the chief tender point in slightly different places at different times, but generally to the right of the median line and just where the hepatic border begins.

Diagnosis of cholocystitis, the vomiting due to regurgitation of the bile and gastric irritability.

The patient was seen two and four days later and a distinct tumor in the gall-bladder region was made out.

Temperature by rectum 103°. It was necessary to feed him by rectum for five days, as the stomach could retain no food. Condition subsided without operation, the whole febrile process from the gall-bladder condition having lasted twenty-four days.

No subjective or objective symptoms referable to gall bladder when examined two years later.

In both of these cases, stomach symptoms were of paramount importance, and of a nature to direct the attention at once to trouble somewhere in that vicinity. In the first case, the history of pain after eating had led early in the course of the trouble to the consideration of possible ulcer of the stomach. The gall bladder was not palpable, and *the pain located in a single spot*, apparently to the left of the median line. It must be remembered that this is quite characteristic of gallstone pain in women, as is also its occurrence at night. A very careful diet relieved the pain, and any indiscretion in diet was apt to be followed, especially at night, by severe pain. The nocturnal pain was suggestive, but its constant association with errors in diet and its occurring a number of hours after eating, made considerable doubt as to whether we were dealing with an ulcer beyond the pylorus, or with gallstones. There had never been pain or tenderness in the gall-bladder region, jaundice, chills with acute onset of fever, or true gallstone colic. In the second case, the slight rise in temperature, distaste for food, nausea and constant gastric unrest, led me to examine carefully the gall-bladder region where a small tumor mass was finally made out. This increased in size for several days and there was local tenderness. The condition subsided without operation.

Cancers of the gall bladder are so frequently not palpable that they present, at times, great difficulty in diagnosis. Indeed, we have all seen cases coming to autopsy where there were secondary involvements of many organs without the correct diagnosis having been made. One case suffices to illustrate this.

O. W. Male. Age forty-four.

Gave a history of having been thrown from a street car and receiving a severe injury to his right side in the neighborhood of the liver. He was carried to a hospital, and was dead in two months. I examined him one week before death. While the symptoms were made obscure by the doubtful history given in this case, owing to the desire on the part of the patient to obtain redress from the street railroad, the difficulty in accurate diagnosis is none the less strikingly illustrated. He claimsto have been perfectly well at the time of the accident. He certainly failed very rapidly from the time of his admission to the hospital, but how much failure there had been before this it was not possible to say. There was a very slight jaundice, loss of weight and increasing cachexia. These latter symptoms were easily accounted for by the *persistent nausea and vomiting*. A varying temperature, at times slightly above normal, but most of the time below. The stomach was markedly dilated. The liver was enormously enlarged, and as emaciation advanced its surface could be palpated easily, but the enlargement was uniform and no surface irregularities could be made out through the abdominal wall. There was a history of syphilis, and no history could be obtained of gallstones. As the spleen was also enlarged and the glands palpable, the diagnosis of syphilis was entertained. Patient was unable to retain much of anything on the stomach after the first few days. The vomited material contained a trace of free HCl. The pain was so great in the right hypochondrium that he required morphine. The possibility of cancer was entertained but rejected. At autopsy the gall bladder was found contracted and without stones. There was a small tumor mass, the size of a quarter and about two and one-half times thicker, near the neck of the gall bladder. *Dense adhesions connected this organ with the pylorus.* The liver was a diffuse mass of secondary tumor, and there were metastases in the lung. The microscopic examination was interfered with as the autopsy was done the day before the fire and the material was lost.

In regard to the diagnosis in this case, the symptoms of syphilis of the liver are not always plain, although this organ is very markedly affected by syphilis. The accompanying cirrhosis may be either hypertrophic or atrophic, although the latter form is more common in adults. The deep depressions usual in syphilitic cirrhosis could not be made out in this case. Large projecting nodules due to irregular contraction in cirrhosis might have confused the diagnosis with secondary cancer, as might also true gummata which occur commonly in this organ. Jaundice is present in only about one third of the cases. The possibility of an abscess of the liver following the accident had been entertained, but as the liver enlargement extended downward, which is not usually the case in abscess, and as the enlargement was rather uniform, this diagnosis was ruled out. Then, too, the spleen was enlarged, which is never the case in abscess of the liver, except from pyemia or pylephlebitis. The constant pain suffered by the patient is characteristic of syphilitic affections.

The differentiation between the minor symptoms of gallstones and a relative stenosis of the pylorus due to adhesions between the gall bladder and that end of the stomach, is frequently impossible. Fink states that in 403 cases of gallstone colic, seen by him at Carlsbad, 94% showed gastric spasm without local hepatic pain or tenderness. As these were cases not necessarily coming to operation the possibility of adhesions causing most of the pain must be entertained, for it has been shown that adhesions occur with and without gallstones. It is doubtless true that there are a good many inflammatory conditions in the gall bladder which result in adhesions without stone formation having taken place. Typical attacks of colic and even chronic jaundice have been reported from simple adhesions. Meteorism and constipation may be important symptoms. Attacks of violent pain in the stomach simulating true angina, particularly occurring in people with heart lesions, may be due merely to adhesions of this character. The pain may even simulate gallstone colic, and has frequently led to operation where no gallstones were found but the symptoms entirely relieved by the breaking up of adhesions. To illustrate this condition the following cases are cited:

C. C. Male. Age forty-two.

Aug. 12, 1905. Complains of pain in the left mammary region, just below the rib border. May come on at any time during the day, and seems to shoot upward toward the heart. Pain is deep-seated. There is no tenderness on pressure with it. He has a marked depressed feeling, and has gas associated with it, which he feels moving freely.

Patient has a history of typhoid fever and malaria as a boy. Except for these things his general health has been good. Has exercised actively for many years. For last five months has had no exercise, prior to that of outdoor duties.

Has lost in weight from 270 to 188 in six months. During this period he has been growing in nervousness, and has not slept as well as formerly. Appetite good. Has distress from any food that he eats. The distress is due to the gas and feeling of pressure, and depression. Has a sick feeling in the stomach which takes away his appetite at times.

Examination. — Patient has large, pendulous abdomen. Stomach much distended with gas. Liver tender in the gall-bladder region. He seems to have shooting pains to the point where he experiences pain whenever the gall-bladder region is pressed upon, and there is no tenderness at all where he feels the pain when he is walking about. Stomach reaches to within three and one-half centimeters of the umbilicus, and is not tender anywhere, although much distended. There is slight discomfort when McBurney's point is pressed upon.

Further questioning elicits the fact that the patient is subject to bilious attacks with headaches and constipation.

Heart condition is one of extreme muscular weakness. First tone is scarcely heard at the apex. Heart is apparently pushed up by large liver and stomach. Spleen is not enlarged.

Stomach content shows t. a. 52; free HCl 36; comb. HCl 12; trace lactic; propeptones, peptones, dextrin and maltose present. Well digested; little mucus.

The tenderness in the gall-bladder region, the slight radiating pain, the distension of the stomach, the normal gastric content after a test meal, the absence of definite symptoms of gallstones, all seem to point to a relative obstruction to the outlet of the stomach, causing a good deal of gas collection, and pressure pain, and due probably to adhesions with the gall bladder. The absence of any history of gall-bladder trouble, and any marked tenderness in that region, while not excluding gallstones, made them seem less possible. Operation showed adhesions binding the distal termination of a grayish-colored gall bladder to the beginning of the pylorus. The cystic duct was also adherent to the pylorus.

Mrs. A. Age thirty-four.

Stomach trouble since early girlhood. Nausea and vomiting after lunch or dinner almost every day recently. Can take milk exclusively without this symptom. Bloats as soon as she eats. Gnawing feeling in the stomach when hungry. Stomach is sensitive to touch after eating for several hours. No blood in the vomitus or in the stools.

On examination the stomach was found well dilated and the transverse colon well down below the umbilicus. Tenderness above the gall bladder. Several tender spots along the lower border of the liver increased with inspiration, and causing sharp, shooting pain from point of pressure to center at upper part of epigastrium. The stomach analysis showed diminished HCl.

The patient has an over-active thyroid gland, an organic heart lesion; mucous colitis; and questionable condition of right apex of lung.

The diagnosis of adhesions of the gall bladder was made and dense adhesions were found at operation. These were relieved, but the connection with the pylorus was re-established, and a gastro-enterostomy was done later. The end result has never been entirely satisfactory, as bile frequently regurgitates into the stomach.

I am convinced, from my experience in several such cases which I have observed two or three years after the operation, that a mistake is made in not resecting the gall bladder because of the marked tendency of these adhesions to recur. In the second case the patient has been operated upon three times, and it is quite plain that the gastro-enterostomy is not sufficient to relieve the spasm in the stomach, and that the reformed adhesions tend to contract the new opening.

Hypertrophy of the pylorus may result from the presence of gallstones, and the constant spasmodic contraction of that end of the stomach. Such cases have been operated on for stricture of the pylorus supposed to be due to tumor. Boas reports two from the literature, and adds a third where the hypertrophy was so irregular that operation was performed for the relief of supposed cancer only to find on resection of the pylorus that no change of the mucous membrane was apparent. Such a case fell into my hands some time ago. It presented the further complicating symptom of an absence of free HCl. Its history is as follows:

H. M. Age sixty-four.

Complains for a year past of gas in his stomach, constant soreness in the epigastric region, occasional attacks of vertigo, and loss of six pounds in weight.

Examination. — Riedel lobe, no hepatic or gall-bladder tenderness, but more resistance is noted over the upper right rectus. Several test meals showed no HCl, even after lavage and administration of it for some days. The stomach was only moderately enlarged, and the soreness complained of seemed to be from its distention with gas. As the stomach digestion did not improve, and the evidence of retention was only very moderate, a slight stricture of the pylorus was suspected, and considered due to adhesions to the gall bladder. Operation showed hypertrophied pylorus with spasmodic contracture, no adhesions. A single small stone was found in the gall bladder. This was removed and the gall bladder drained. A gastro-enterostomy was done, and now, eighteen months later, the patient has no return of the old symptoms.

A case illustrating the gastric conditions which frequently complicate gallstones, and emphasizing further the long history of stomach symptoms, is the following:

Miss A. S. Age forty-nine.

History of stomach trouble since early youth. Neurasthenia six years ago; weight at that time 105, now 150. Attacks resembling mucous colitis for many years. Stomach specialists here and abroad have diagnosed her trouble during the past thirty years as, — nervous dyspepsia, ulcer, hyperacidity, gallstones, catarrh of bowel, dilated stomach and neurasthenia. Knows she has had excess of HCl for four years past. One week before I saw the patient she had a decided pain in the right side of the abdomen high up, so severe that she could not walk. She has never been jaundiced and the pain did not resemble gallstone colic. Considered congestion of the bowel. When examined by me she had no temperature, pulse normal, heart and lungs normal, no jaundice. The rise of .3° in the temperature was considered nervousness from the examination. Floating kidney found on the right side reaching well down toward the pelvis. Below the rib border and extending well down below the costal margin was a tumor mass extending almost to the median line, and within 3 cm. of the umbilicus. It was tender on pressure and moved with respiration, and was evidently an enlarged gall bladder. Urine normal. No jaundice. Patient's condition improved rapidly, and she was sent to her home in New York one week later with a diagnosis of gallstones and a recommendation of immediate operation.

Operation some weeks later showed beginning cancer of head of pancreas, and 333 gallstones were removed from gall bladder.

The age of this patient at the onset of her trouble excluded cancer, and doubtless her years of trouble with her stomach were due entirely to the gallstones.

The gastric crises of tabes have been mistaken for gallstone disease and for obstruction of the pylorus. In the tabetic crisis jaundice does not occur. There is no tenderness of the liver. The tabetic pains are not necessarily associated with the night hours. The absence of food which influences gall bladder trouble does not alter a gastric crisis. Other symptoms of tabes would practically always serve to differentiate.

In connection with operations on cases of gall-bladder disease it must not be forgotten that as liver complications may be present it is essential to know the coagulation time of the blood. This may be reduced to one fifth the normal, leading to death from uncontrollable hemorrhage. A long course of treatment with the chloride or lactate of calcium will be necessary before such cases can be operated upon safely. The lactate apparently is as effective in most cases as the chloride, and has not the disagreeable taste or irritating qualities of the latter.

SAHLI'S DESMOID REACTION.*

BY H. W. CAREY, A.B., M.D.,
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From the Out-Patient Clinic of Dr. J. H. Pratt, Massachusetts General Hospital, Boston, Mass.

In April, 1905, Sahli[1] published a method for determining the sufficiency of gastric digestion without the use of the stomach tube by means of what he called desmoid capsules. The principle of the method depends upon the fact proven by Schmidt,[2] that raw, uncooked, connective tissue is digested in the gastric juice but not in the pancreatic juice.

The capsules consist of pills of some substance which is readily absorbed and excreted in the urine or saliva such as methylene blue, salicylic acid or iodoform, inclosed in a rubber dam such as is used by dentists and tied with connective tissue in the form of raw, uncooked catgut. A uniform method in making these capsules is of much importance in obtaining constant results; the directions given by Sahli are as follows:

Methylene blue 0.05 gm. or iodoform 0.1 gm. is mixed with ext. glycerrhizae q. s. to make a pill 3-4 mm. in dimeter.

The rubber dam should be about 0.2 mm. thick and of light color. A piece of the rubber 4.0 cm. square is dusted with talcum powder to prevent the edges from adhering and wrapped about the pill then twisted, in this way completely closing it in a membrane of rubber. Care must be used not to cause too much tension of the rubber over the surface of the pill lest it become permeable; this can be avoided if only sufficient tension is made to make the rubber covering slightly shiny. The twisted pedicle of the capsule is closed by raw catgut size 00 which has been previously soaked in cold water until it becomes pliable. In winding the catgut about the pedicle three turns are made, each beyond the other, the first at such a distance from the pill as not to cause too much tension on the rubber. The catgut is tied in a square knot and the edges cut close. The rubber beyond the ligature is cut short, and in cutting it it is essential to prevent the edges from becoming adherent. The capsule is now complete and it should be placed in water to be sure that it sinks readily and is water-tight.

In carrying out the test the patient is instructed to swallow the capsule with or immediately after a full meal, preferably mid-day dinner, and cautioned not to bite or in any way injure it. The urine or saliva is collected at intervals and the time noted at which the indicator (methylene blue, salicylic acid or iodoform) appears.

If methylene blue is used, in the great majority of instances the urine is colored greenish blue, but occasionally it is excreted as a chromogen, so in cases where no color appears it is necessary to boil 10 cc. of urine with 1-2 cc. of glacial acetic acid which will bring out the green color in case the chromogen is present.

In testing for the presence of iodine a little chloroform is added to a few cubic centimeters of urine or saliva, then 1 cc. of diluted sulphuric acid (C. P.) and 0.5 cc. of 1% sodium nitrite solution are added and shaken. If iodine is present the chloroform takes on a rose color.

The presence of salicylic acid in the urine is demonstrated by precipitating the phosphates with a solution of the perchloride of iron, filtering and adding perchloride of iron to the filtrate which takes a violet color if salicylic acid is present.

When the capsule is taken at midday dinner, the reaction is considered positive if the indicator appears in the urine on the same day or in the first urine voided on the following morning, that is, approximately nineteen to twenty hours. A positive reaction means that the gastric juice contains sufficient free hydrochloric acid and pepsin to digest the catgut, liberate the methylene blue which is absorbed and excreted giving a greenish blue color to the urine.

In the table on pages 564 and 565 will be found the results obtained in 25 cases, in all of which there was evidence of functional or organic disease of the stomach. All but three of these cases were taken from the Out-Patient Department of the Massachusetts General Hospital in Boston in the medical service of Dr. J. H. Pratt to whom I am indebted for many valuable suggestions.

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* Read as the meeting of the medical society of the State of New York, January, 1907.

In each case the stomach contents were analyzed one hour after an Ewald test breakfast to determine the amount of free hydrochloric acid, total acidity and the presence or absence of enzymes and lactic acid in order that the desmoid reaction and chemical analysis might be compared. In most of the cases the tests were repeated.

It will be noted that methylene blue was the only indicator used, because the results of Alexander and Schlesinger showed that methylene blue was absorbed more quickly and gave more constant results than iodine or salicylic acid.

The time elapsing before the appearance of the indicator in the urine in normal cases varies with the capsule used, and in fixing what shall be considered a positive or normal reaction this must be taken into consideration. The materials used by the various men who have published their resuslt have not all been the same. This applies particularly to the catgut. In the cases reported by Kühn,[3] methylene blue appeared in the urine in from seven to twelve hours, in Kaliski's[4] series, from eight to nine hours, in the series of Alexander and Schlesinger,[5] from two to three hours and in the series here reported, five to eight hours. These variations in time indicate variations in the digestibility of the catgut. For this reason it seems advisable to determine in a series of normal cases what the normal reaction time is and then to regulate the time limits accordingly. Although Sahli has made twenty hours the time limit of a positive reaction it must be remembered that this applies only to those cases in which his capsules are used. In the series here reported the time limit is placed at sixteen hours, and when the reaction occurs later than this it is termed a delayed reaction.

Two other factors influence the reaction time, the rate of absorption and rate of elimination. Saito[6] has proven that methylene blue is absorbed from the intestine and not from the stomach. After ligating the pylorus in a dog a solution of methylene blue was introduced into the stomach and then the esophageal end was ligated. No reaction in the urine occurred. The capacity of the intestine for absorption therefore must be intact, for if it is impaired the reaction may be delayed.

The elimination of methylene blue through the kidneys is retarded in cases of advanced cardiac disease and nephritis. French writers have pointed out that after subcutaneous injection of methylene blue no reaction in the urine followed; in some instances, probably because it was not excreted through the kidneys. These factors are of little importance in the great majority of cases, but if they are suspected of being the cause of a negative reaction they may be excluded by using a plain methylene blue pill as suggested by Sahli.

The reaction is positive in some cases in which the stomach contents after an Ewald test breakfast contain no free hydrochloric acid. Taken after a full meal which stimulates the gastric mucosa to its utmost the capsule is under the most favorable conditions for digestion. It is exposed to the continued action of the gastric juice and by reason of its weight lies in contact with the gastric mucosa; consequently, it is in the position to measure more accurately than any other test the digestive efficiency of the stomach.

The Ewald test breakfast does not stimulate the gastric mucosa enough; the contents removed by the stomach tube measure only its minimum of efficiency, and their analysis determines only the presence or absence, increase or diminution, of certain ingredients at the particular moment of removal. Kaliski proved this clearly in one of his cases in which the test breakfast contained no free hydrochloric acid yet the desmoid reaction was positive. In the stomach contents removed three hours after a full meal free hydrochloric acid was present. Eichler reports similar cases.

In spite of the fact that Sahli called attention to this in his original communication most of those who have used the test have measured its accuracy by comparing it with the analysis of the test breakfast, whereas the comparison should be reversed.

Numerous experiments have been made in vitro to determine the possibility of some error in the basic principle of the test. Sahli suspected the possibility of catgut being digested by the pancreatic juice, but in the test tube no such digestion could be proven. The same result was obtained by Eichler,[7] Boggs[8] and Saito and in my own experiments.

The individual constituents of the gastric juice, hydrochloric acid, pepsin, lactic and butyric acids will not digest catgut.

Uhlich found that catgut would digest in a 1:400 solution of lactic acid plus pepsin in from eight to ten hours at 37.5° C. and I obtained the same result with a 1:100 solution of lactic acid and pepsin in five and one-half hours, the controls with pepsin and hydrochloric acid requiring two hours and forty-five minutes for digestion. Kühn, Kaliski and Alexander and Schlesinger, on the other hand were unable to digest catgut in lactic-acid-pepsin solutions, and Saito obtained negative results except in solutions containing too high a percentage of lactic acid to be considered physiological.

However divergent these results may be it must be borne in mind that with lactic acid and pepsin solutions the digestion is slow, and that when lactic acid is present in the stomach it is the result of fermentation and other acids; butyric and acetic are present also which inhibit digestion.

The action of the intestinal secretions upon the desmoid capsules has been studied by Saito, and his results were always negative with the individual constituents — bile, intestinal extract and pancreatic juice. But if the pancreatic juice is activated by an extract of the mucous membrane of the intestine, digestion of the capsules always takes place. I have obtained similar results in repeating these experiments. When bile is added to the mixture of intestinal extract and pancreatic juice digestion still occurs but it is considerably delayed, over sixteen hours in the thermostat. If the time during which the capsule remains in the stomach be added to this a negative desmoid reaction follows. It is probable, however, that these experiments in vitro do not imitate the actual conditions of digestion closely enough to allow us to draw positive conclusions; one fact in particular speaks against a digestion of the catgut in the intestine, that is, the frequent negative reactions.

Einhorn's[10] experiment in which he inclosed a desmoid capsule in mutton fat and subsequently found the capsule digested in the stool cannot be considered as conclusive proof that the digestion of the catgut occurred in the intestine. In determining the melting point of mutton fat which is between 45 and 46° C., I found that at 40° the fat was much softened, so much so that it might readily become separated from the capsule in the stomach by the movements of the contents. Then the action of gastric lipase, discovered by Volhard[11] and repeatedly confirmed, must not be overlooked as a means of digesting mutton fat in the stomach.

In the four cases of achylia gastrica cited by Einhorn the test breakfast on removal contained no free hydrochloric acid and no rennin, yet a positive desmoid reaction was obtained. This result seems only to prove the inadequacy of the test-breakfast in making a diagnosis of

TABLE.

	Fasting.			Ewald Test Breakfast.			Desmoid Reaction.	Diagnosis, Remarks.
1. J. H. (M. G. H.)	20 cc.		Bile.	80 cc.	42	Free HCl.		Hyperacidity.
			Free HCl.		75	Total acidity.	4½ hours.	
					0	Lactic.		
2. S. M. 68813 (M. G. H.)	a. 100 cc.		Free HCl.				4½ hours.	Hyperacidity. Hypersecretion.
	b.		Bile.					
	50 cc.		Free HCl.	30 cc.	+	Free HCl.	4½ hours.	
			Bile.		88	Total acidity.		
	c. 40 cc.		Free HCl.	90 cc.	40	Free HCl.	4½ hours.	
3. H. McC. (M. G. H.)	a. Few cc.		Free HCl.		19	Free HCl.	2 hours.	Hyperacidity. Under treatment some time.
					38	Total acidity.		
	b. 10 cc.		Free HCl.		15	Free HCl.	4 hours.	
4. L. W. 68676 (M. G. H.)	a. 680 cc.		Bile.		25	Free HCl.	5 hours.	Ulcer pylorus; stasis; pus, sarcinæ, yeast in contents; occult blood.
			Free HCl.		34	Total.		
	b. 200 cc.	35	Free HCl.				6 hours.	
5. R. (M. G. H.)	50 cc.		Free HCl.	300 cc.		Free HCl.	10 hours, probably much less.	Ulcer pylorus. Gastro-enterostomy. Capsule taken 7 P.M. Urine blue at 5 A.M.
6. M. D. 69204 (M. G. H.)	120 cc.		Free HCl.	190 cc.	53	Free HCl.	5½ hours.	Hyperacidity.
					70	Total acidity.	6 hours.	
NERVOUS DYSPEPSIA.								
7. R. M. (M. G. H.)	30 cc.		Free HCl.		20	Free HCl.	9 hours, probably less.	Nervous dyspepsia (capsule taken 7 P.M.).
8. H. E. (M. G. H.)				120 cc.	38	Free HCl.	6 hours.	Nervous dyspepsia.
					54	Total acidity.		
					0	Lactic.		
9. P. C. (M. G. H.)	Few cc.		Free HCl.	Only obtained by lavage.				Nervous dyspepsia.
					+	Free HCl.	5 hours.	
10. B (Student.) (M. G. H.)				200 cc.	12	Free HCl.	a. No reaction.	Hypermotility? Test for chromogen negative.
					32	Total acidity.		
					+	Rennin.	b. No reaction.	
SUBACIDITY — ANACIDITY.								
11. Mrs. M. K. 6761 (S. H.)	15 cc.			5 cc.	5	Free HCl.		Subacidity.
		10	Free HCl.		10	Total acidity.	8 hours.	
		15	Total acidity.					
12. W. S. 70149 (M. G. H.)	a.	0	Free HCl.		0	Free HCl.		Subacidity.
			Bile.		16	Total acidity.	7 hours.	
					0	Lactic.		
	b. 70 cc.	0	Free HCl.	200 cc.	0	Free HCl.		
			Bile.		14	Total acidity.	7 hours.	
					0	Lactic acid.		
13. J. S. M. (M. G. H.)				60 cc.	0	Free HCl.	a. No reaction.	Subacidity. Carcinoma.
					6	Total acidity.		
					0	Lactic.	b. No. reaction.	
14. J. Y. (M. G. H.)	20 cc.	0	Free HCl.	50 cc.	0	Free HCl.	No reaction.	Subacidity.
					9	Total acidity.		
15. K. T. 70121 (M. G. H.)					0	Free HCl.		Subacidity. Carcinoma.
					8	Total acidity.	a. No reaction.	
					0	Lactic acid.	b. No reaction.	

	Fasting.			Ewald Test Breakfast.			Desmoid Reaction.	Diagnosis, Remarks.
16. F. L. 6831 (S. H.)	30 cc.	0	Free HCl.	20 cc.	0 8 0	Free HCl. Total acidity. Lactic acid.	5½ hours.	Subacidity. Obstructive Jaundice. Syphilis of the liver.
17. J. McG. 25834 (M. G. H.)	10 cc.	0	Free HCl.		+ ? 0	Free HCl. Total acidity. Lactic acid.	18 hours. 18 hours.	Subacidity. Chronic gastritis. Previous tests showed no free HCl. Has been under treatment.
18. G. P. 42462 (M. G. H.)	Few cc.			20 cc.	0 20 0	Free HCl. Total acidity. Lactic acid.	*a.* No reaction. *b.* No reaction. *c.* No reaction. *d.* No reaction.	Subacidity. Chronic gastritis.
19. D. McQ. (S. H.)	50 cc.	0 14	Free HCl. Total acidity. Bile.	40 cc.	0 14 0 0	Free HCl. Total acidity. Pepsin. Rennin.	No reaction (after 4 mos.). Positive 8 hrs.	Pernicious anemia. Achylia gastrica. Marked improvement. Red cells increased from 900,000 to 2,900,000. Gastric symptoms have disappeared.
20. S. P. 70018 (M. G. H.)	20 cc.		Bile.	Few cc.	0 ? ?	Free HCl. Total acidity. Lactic acid.	No reaction.	Carcinoma ventriculi.
21. Mrs. Mary S. 6757 (S. H.)		0		30 cc.	0 15 +	Free HCl. Total acidity. Lactic.	No reaction. No reaction.	Carcinoma ventriculi.
22. M. D. (M. G. H.)	500 cc.	0	Free HCl.	410 cc.	0 28 0	Free HCl. Total acidity. Lactic.	No reaction. 15½ hours.	Carcinoma pylorus with stasis.
23. M. S. (M. G. H.)	200 cc.	0	Free HCl.	185 cc.	0 14 0	Free HCl. Total acidity. Lactic acid.	*a.* 16 hours. *b.* 10 hours. *c.* 4 hours.	Carcinoma of lesser curvature; verified at operation.
	20 cc.	0	Free HCl.	100 cc.	0 40 0	Free HCl. Total acidity. Lactic acid.		
24. T. G. (M. G. H.)	Few cc.			10 cc.	+ — 0	Free HCl. Total acidity. Lactic acid.	4½ hours.	Carcinoma pylorus. Gastro-enterostomy.
	10 cc.	+	Free HCl.	60 cc.	41 60 0	Free HCl. Total acidity. Lactic.	4½ hours.	
25. J. G. (M. G. H.)	66 cc.	0	Bile. Free HCl.		0 10 +	Free HCl. Total acidity. Lactic acid.	4½ hours.	Carcinoma pylorus. Gastro-enterostomy.
	20 cc.	0	Free HCl. Bile.	100 cc.	0 30	Free HCl. Total acidity.	4 hours.	

achylia and not that the desmoid reaction is unreliable. The test-breakfast, as already stated, does not stimulate the gastric mucosa to its utmost, and although it may not contain free hydrochloric acid or enzymes it does not follow that they are absent in the stomach after a full meal.

The results obtained in these 25 cases have been very satisfactory, and if the points brought out by Sahli, already referred to, be borne in mind the results are very instructive. In the table, the cases of hyperacidity as shown by the test breakfast, the reaction time is a little shorter than in the normal cases. Kaliski also observed this in his series and concluded from it that the rapidity with which the reaction appeared would serve to differentiate cases of hyperacidity. A similar shortening of the reaction time is noted in the series of Kühn and Alexander and Schlesinger. The difference in time, however, does not seem to be sharply enough defined to be of much significance as a diagnostic factor, but a very rapid reaction might be considered suggestive of hyperacidity, a very slow reaction, of subacidity.

Case 10 in the table is unique for, notwithstanding the presence of hydrochloric acid and rennin in the test breakfast, a negative desmoid reaction twice resulted, and the test for the chromogen of methylene blue was negative in each instance. A diagnosis of hypermotility as in a similar case of Eichler's cannot be made from the results of the test breakfast, for at the end of one hour 200 cc. were removed with the stomach tube, approximately the same amount as was taken in. The young man, a student in the clinic, was in good general health, and stated that only for a few days previous he had noticed some distress in the stomach after eating. Possibly this is a case in which the methylene blue was not excreted through the kidneys.

In the cases of subacidity, numbers 12, 22, 23 and 25 illustrate the point brought out by Sahli and already referred to, namely, positive desmoid reactions when no free hydrochloric acid is found in the test breakfast.

In cases 12 and 25 the stomach contents were always bile-stained, particularly the fasting contents, indicating some regurgitation from the intestine, possibly of sufficient grade to neutralize the small amount of free hydrochloric acid secreted after a test breakfast but not sufficient to neutralize a larger amount of free hydrochloric acid secreted after a full meal. In vitro it was found that bile added to a pepsin-hydrochloric acid solution in equal parts would prevent the digestion of the desmoid capsule.

Cases 22 and 23 both presented marked stasis on admission, as shown by the amount of the fasting contents. In both cases a marked improvement in the symptoms followed frequent lavage with improvement in the digestive function as shown by the desmoid reaction.

In case 19 the patient made a marked improvement between the two tests, a period of four months intervening. The blood count increased from 900,000 to 2,900,000 and the stomach symptoms entirely disappeared.

These results, with the exception of case 10, conform in every particular to the results mentioned by Sahli; there is no case in the series in which there is any discrepancy between the desmoid reaction and the analysis of the test breakfast that does not place the burden of proof with the latter. The digestion of catgut in the secretions normally present in the intestine is proven in vitro, and assuming that it occurs intra vitam the time necessary excludes it as a factor in causing positive reactions.

The chief value of the desmoid reaction, as Sahli says, is in determining the digestive sufficiency of the gastric juice, its ability to digest the meal with which the capsule is given. As von Aldor [12] states, it is a test for both free hydrochloric acid and pepsin, and a positive reaction means that these two constituents are present in sufficient amount to digest a full meal.

The test, on the other hand, is not suited to the differentiation of the various functional disorders and it gives us no clew as to stasis or loss of motility. It does not, therefore, take the place of the stomach tube and test breakfast but acts as a control in those cases where the analysis of the test breakfast shows an absence of free hydrochloric acid or enzymes and so separates the mild from the severe cases of gastric insufficiency, fulfilling the function Sahli originally claimed for the test.

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[4] Kaliski: Deut. med. Wochenschr., No. 5, 1906.
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[8] Boggs: The Johns Hopkins Hosp. Bull., Sept., 1906.
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[10] Einhorn: *Ibid.*, No. 20, 1906.
[11] Volhard: Münch. med. Wochenschr., pp., 141, 191, 1900.
[12] Von Aldor: Berl. klin. Wochenschr., No. 46, 1906.
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[14] Sahli: *Ibid.*, No. 30, 1906.

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PLAGUE IN INDIA. — According to dispatches from Simla there were 75,000 deaths from the plague in India during the week ended April 13. Seventy thousand of these occurred in Bengal, the United Provinces, and the Punjab. Since the disease began in the Punjab in October, 1897, nearly 1,500,000 deaths have occurred. — *Medical Record.*

NOTE ON THE RONTGEN DIAGNOSIS OF URINARY CALCULUS: THE PREPARATION OF THE PATIENT.

BY PERCY BROWN, M.D., BOSTON,

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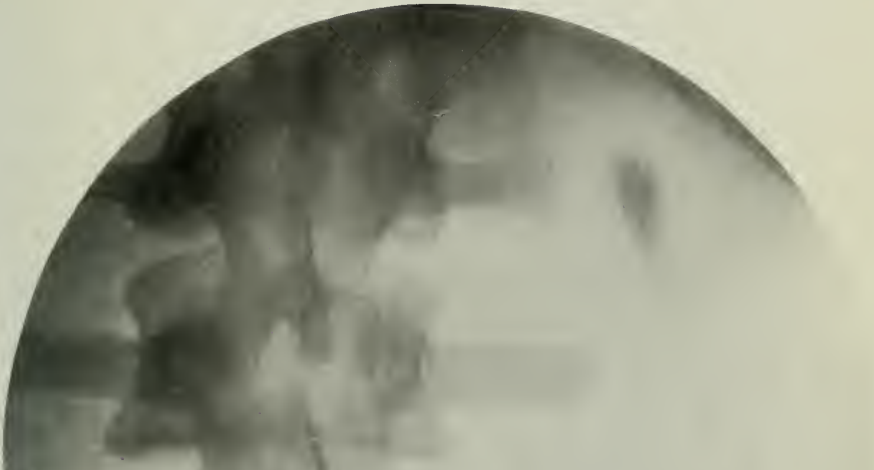
ADDITIONS of value to the literature of Röntgen diagnosis have been made during recent years with especial regard to renal, ureteral and vesical calculi, and he who has availed himself of the various suggestions contained in them has been gratified at the results of his improved technic. In the discussion of a paper by Baetjer, of Baltimore, at a recent meeting of the American Röntgen Society, the writer endeavored to emphasize the value, as well as the actual need, of what may be termed the "ante-operative" preparation of the patient in cases where the Röntgen examination for urinary calculus is to be undertaken. He wishes, in these columns, in as few words as possible, to elaborate upon the sentiments then expressed, for it seems to him, in the light of a growing need of Röntgen examinations in certain genito-urinary conditions, that one or two suggestions of like nature might not be quite out of place.

In times past, an excessive amount of adipose or muscular tissue, to be penetrated, has been a great handicap to proper results in examinations by x-rays of deeply-seated structures. Since the introduction, however, of certain valuable accessory appliances by Albers-Schönberg and others, these difficulties have become surmountable, and now the real hindrance to dependable results is the lack of proper preparation of the patient as regards his stomach and intestines. There are certain technical reasons why examinations of the urinary tract, in the hands of most operators, should be made under local compression of the area to be examined, in heavy individuals, at least. Aside from this, it is easy to see that if, under the influence of this compression, the intestinal contents of the patient can be temporarily forced away from the renal, ureteral or vesical regions, as the case may be, a much clearer skiagraphic image of these areas may be obtained. It is also easy to see that if, by virtue of an empty stomach or empty bowels, the process of compression can be rendered more simple for the operator, and at the same time, more agreeable to the patient, such "ante-operative" preparation of stomach and bowels is greatly to be desired in all cases.

It is useless, then, to attempt to make such x-ray examinations on the spur of the moment. Arrangements should be made at least twenty-four hours ahead, and during this period, the patient should be prepared almost as if for surgical anesthesia. Of first importance are the bowels, which should be most thoroughly evacuated. Hulst, of Grand Rapids, recommends high oil enemata. It is usual for the writer to suggest, unless the patient be habitually constipated, the use of castor oil in capsules, by the mouth, or, in the case of a young and active person, the carthar-



Röntgen diagnosis of urinary calculus. (Brown.) Röntgenograph of a right renal calculus, showing the photographic contrast which may be obtained by a proper preparation of the stomach and bowels of the patient. Patient, male of 183 pounds weight.

tic to which he is accustomed. In either case, the additional use of a suds-and-glycerine enema is desirable shortly before the sitting.

The examination should take place at a time as remote from a meal as is practicable, and the preceding meal should be partaken of sparingly with regard to liquids as well as solids. This preparation of the stomach is of especial importance when the left kidney is in question. By no means secondary in value to the especial preparation is the question of deliberation as to the diagnostic procedure. The patient should be prepared to devote from one to three hours to the sitting, so that as many exposures as are necessary may be made while the gastro-enteric tract is in the most favorable state. If there is, in the region to be examined, any co-existing or secondary pathological condition, resulting in pain or tenderness, anesthesia should unhesitatingly be produced. If ether be used, fire precautions should not be neglected. If respiratory undulations are to be avoided, chloroform is preferable. The bladder should be emptied just before the sitting, even if catheterization be required. Where a vesical calculus is in question, this is, of course, absolutely necessary, but it is none the less desirable in ureteral and lower renal cases, on account of the mechanical influences brought to bear on the abdominal wall, as a part of the modern technic.

Of the especial operative measures in these examinations, much has been written by painstaking Röntgenologists, and there is no need for repetition; suffice it to say that in procedures presenting such difficulties, the employment of especially constructed accessory apparatus, as above mentioned, makes for the best results in the hands of the majority of workers. Exposures should be short, on account of the possible slight discomfort to the patient caused by the application of this apparatus; such short exposures are rendered possible by the use of the modern modification of the Ruhmkorff coil and the vacuum tube.

In a consideration of the importance of proper physical preparation on the part of the patient, his equally important state of mind should not be forgotten. By assuring him of the painless and uninjurious character of the proceeding, the elements of apprehension and fear should be eliminated. In many instances, the cases which are the most difficult of management are those in which the patient, nervously over-excited by a procedure the nature of which he knows nothing, and the reason for which he knows but little more, is prone rigidly to contract his abdominal muscles on the least provocation. Rigidity through pain is, unfortunately, at times inevitable; rigidity through apprehension has no cause for being.

It must be appreciated that there are to be found certain cases of renal emergencies associated, possibly, with anuria, where such preparation cannot be undertaken. The Röntgenologist must be prepared to come in contact with such instances, and to compensate for the difficulties they present by especial painstaking care in ways available. In them he often finds, however, a favorable condition of the bowels, produced by an exhibition of purgatives in the efforts to eliminate toxins, or as preparation for an anesthetic.

Statements have been made as to the various shadow-producing qualities of urinary calculi according to chemical composition and atomic weight. Realizing, however, the likelihood of a mixed chemical composition, it is the writer's belief that every suspected stone should be repeatedly and diligently searched for, and that, with proper preparation, apparatus and manipulative care, there are few which may not be found, regardless of the findings in the urinary sediment.

In these few words, therefore, an attempt has been made to emphasize the fact that what may amount to a simple set of instructions for the practitioner to give, and fully as simple for the patient to carry out, invariably becomes, when a trustworthy Röntgen diagnosis is to be made, a matter of the utmost importance.

THE SUMMER CLIMATE OF ORACLE, PIMA COUNTY, ARIZONA.

BY ISAAC W. BREWER, M.D., FORT HUACHUCA, ARIZ.

To the patient who has wintered in southern Arizona, there comes a time when the all absorbing question is, Where shall I spend the summer? For persons who can afford an expensive railway trip, Flagstaff, Ariz., or the stations in northern New Mexico or Colorado seem to offer the most attractions, but for those whose means are limited it is necessary to find a summer station somewhat nearer.

It may be taken as a rule that any point in Arizona which has an elevation of 4,500 feet or more will be comfortable during the summer, provided it is not shut off from the mountain breeze. In such locations the afternoon temperatures will occasionally exceed 100 degrees, but owing to the dryness of the air such temperatures are not felt as much as similar temperatures in a moister region. The direct rays of the sun are very penetrating, but their intensity is overcome by a very slight shade. The nights are always cool and comfortable.

Oracle is such a station. It has an elevation of 4,510 feet and is situated among the foothills of the Santa Catalina Mountains. The surrounding country is arid and very much like that seen around Tucson, but being a little more moist there is more vegetation. Here there are large oak trees that afford a welcome shade during the hotter hours of the day. The soil is porous and dries very rapidly after a shower.

At Oracle are located the Arcadia and Neal ranches, both making an especial business of providing accommodations for persons with tuberculosis. At each ranch there are cottages and tents, and the weekly charges vary from $10 up. The management of these ranches endeavors to supply an abundance of good food, especially fresh eggs and milk. Most of the food supply comes from Tucson which is situated about forty miles south, and with which there is communication by stage. The stage makes the trip in six hours but the distance can be covered by automobile in three hours.

The following tables give the available climatological data:

Table I. Temperature.

	Mean.	Highest Mean.	Lowest Mean.	Maximum.	Minimum.	Mean Maximum.	Mean Minimum.
April,	60	63	53	90	39	71	47
May,	68	72	64	102	32	81	56
June,	78	82	74	105	40	90	67
July,	80	85	78	102	57	92	71
August,	78	80	75	103	55	88	68
September,	74	77	71	97	48	83	64

	Mean Relative Humidity, Per cent.	Average Precipitation.	No. Rainy Days.	No. Clear Days.	No. Partly Cloudy Days	No. Cloudy Days.
April,	19	0.4	3	22	5	4
May,	19	0.3	2	27	3	1
June,	24	0.4	1	26	3	1
July,	33	2.3	7	18	9	4
August,	50	3.1	8	15	12	4
September,	38	1.6	6	18	9	3

Table II. Showing the Percentage of Days for Each Month for the Period from 1901 to 1905 that the Extremes of Temperature were between Certain Critical Points.

	April.	May.	June.	July.	August.	September.
Maximum:						
Above 100	0	0	1	1	0	0
90–100	0	2	59	67	37	15
75–89	51	83	39	32	61	75
40–74	49	15	11	0	2	10
Minimum:						
Above 40	84	98	100	100	100	100
32–39	16	2	0	0	0	0

The mean temperature for the six months from April to September, which is the period covered in this paper, varies from 60° in April to 80° in July, falling to 74° in September. The greatest heat is in June and July when the mean maximum reaches to ninety and above, but there is a decided fall as soon as the rains become well established, and August is a comfortable month. The highest temperature recorded is 105°. During the five years from 1901 to 1905 the temperature was above 100° on but three dates. In July the maximum temperature is liable to be between 90° and 100° on 67% of the days. In August the number of days with temperatures above 90° falls to 37%.

The mean minimum temperature reaches 71° in July and is above 60° during the other months excepting April and May. Temperatures below freezing point have been recorded in April and May.

The relative humidity rarely reaches 50% and during the summer months is generally below 40%.

The precipitation for the period amounts to 8.1 inches which is about three inches more than at Tucson. Nearly one third of the precipitation falls during the summer months. These rains are mostly in the shape of short sharp thunder storms occurring during the afternoon and are great factors in cooling the air. During the period under consideration there are, on an average, twenty-seven rainy days.

During the same time 68% of the days are clear, 22% partly cloudy, and 10% cloudy.

The climate of Oracle is similar to that of Fort Huachuca, where, during the past four summers, I have not found the weather unpleasantly hot.

While not so cool as Flagstaff, Oracle seems to be a desirable summer station for persons who have wintered in the vicinity of Tucson and are unable to make the journey to some distant resort.

Tucson people who have spent the summer there speak very highly of it and say it is much cooler than Tucson. The statistics published by the Weather Bureau seem to indicate that the difference between the temperatures at the two towns varies from 8° to 12°.

Clinical Department.

THREE CASES OF EXTENSIVE NERVE INJURY FROM REMOVAL OF CERVICAL GLANDS.

BY J. W. COURTNEY, M.D., BOSTON.

From the Clinic for Diseases of the Nervous System, The Boston City Hospital.

The operative handling of diseased anterior cervical glands is, as a rule, not a subject of deep surgical interest, and I make as my excuse for reporting the three cases of this sort, which came under my observation between April, 1904, and November, 1906, the exceedingly serious and startling nervous phenomena that followed in the wake of operation.

In all three of my cases the surgeon's incision was made along either the inner or the outer border of the sterno-mastoid muscle, but inasmuch as this primary incision is not, in my judgment, responsible for the nervous lesions, I propose, at the risk of going over well-known ground, to speak very briefly of certain aspects of the anatomy of the region in question.

With regard to the sterno-mastoid, I wish to recall that it is in relation below with the lower part of the common carotid artery, internal jugular vein, the pneumogastric nerve, the descendens and communicans noni, the deep lymphatic glands, the spinal accessory nerve — which pierces its upper third — the cervical plexus, the occipital artery and part of the thyroid gland.

The cervical plexus is formed by the anterior divisions of the four upper cervical nerves, is situated opposite the four upper vertebræ, rests upon the levator anguli scapulæ and scalenus medius muscles and is, as implied above, covered in by the sterno-mastoid.

The brachial plexus is formed by the union of the anterior branches of the four lower cervical and the greater part of the first dorsal nerves, and extends from the lower part of the side of the neck to the axilla. In the neck it lies at first between the anterior and middle scaleni muscles, and then above and to the outer side of the subclavian artery. At this latter point it is acessible for operation.

Out of these complex relations of the various structures of the neck, two only are of importance for the purpose of this paper: that between the sterno-mastoid and the spinal accessory nerve, and that between it and the cervical and brachial plexuses. With these in mind it is only too comprehensible how the finger of the surgeon, the primary incision being made, may sweep down in behind the sterno-mastoid in search of glandular débris, and inadvertently tear away or otherwise injure the soft, yielding nerves lying within its easy reach.

How disastrous and irreparable such an inadvertence may prove to be is clearly set forth in the three clinical histories which follow:

Case I. J. M., male, aged fifty-two, married; occupation, bar-tender. Date of first visit, Nov. 30, 1906.

Family history. — Negative as to nervous and mental diseases.

Previous history. — Patient has been married twenty-one years and has begot five children, only one of whom is living. The others died in infancy. He admits gonorrhea at thirty, and says he had a " little crop of warts " on his penis twenty years ago. This crop was burned off by a doctor, and he claims that he was well in a few days. He denies all secondaries. He has been a periodic drinker, absorbing during such periods as much as a half pint of whiskey a day. Two years ago he had a gland removed from the right side of the neck without trouble, and was operated for strangulated hernia at the same time. He had no trouble after this for a year or more.

Present complaint. — This dates from the recurrence of the glands in the right side of the neck and the beginning of pain associated therewith, running down through the right shoulder.

The patient allowed this condition to go on until Sept. 1, 1906, when he went to a hospital and underwent an operation.

Prior to the operation he had no paralysis or even paresis of the neck, shoulder or arm, Directly he recovered from the immediate effects of the operation he noticed that the right shoulder drooped. He went to work three weeks after the operation, suffering from pain in the right shoulder and lower neck, often also in the upper portion of the back of the neck. With all this he found that his lifting power was affected and that he was unable to raise the right arm as formerly. At the present time, Nov. 30, 1906, he thinks the pain has moved further down the arm and finds that the weakness has so far increased that he can't dress himself at all.

Physical examination. — Dec. 3, 1906, patient is a slightly stooped individual, with rather mask-like features and a certain suggestion of *protrusio bulbi* in both eyes. The pupils are equal and regular, and respond normally to tests of light and accommodation. Field of vision normal. The facial and ocular muscles are normal, but fixation of the attention brings out a fine tremor of the head. There is some tremor of the tongue and lips, although the tongue is protruded straight. The whole right shoulder droops markedly and there is obvious atrophy of muscles above and below the clavicle. Along the inner border of the right sterno-mastoid is a linear operative scar, about three inches long and fairly recent looking. With the head held stiffly, patient cannot raise the point of the right shoulder. With the shoulders fixed, the head cannot be drawn directly backward. With the hands clasped behind the head — I assisting — patient can shrug the left shoulder but not the right. With the shoulders fixed the head cannot be inclined to the right and rotated backwards. With the arms crossed behind the back — again with assistance — the right shoulder blade cannot be approximated to the spine. With shoulders fixed, lateral flexion of the spine is much lessened on right; o. k. on left. The whole right sterno-mastoid seems to have vanished, and the approximation of chin to left shoulder, with occiput to right shoulder, is well-nigh impossible. The right arm cannot be raised from the body beyond an angle of 40°, but the deltoid does not seem particularly atrophied. The right arm can be rotated outward and inward with fair strength. The right pectoral is markedly wasted. Flexion, pronation and supination of the forearm are fairly good but extension is weak. The left grip is 100, the right only 75 (patient righthanded). The fingers of both hands are swollen and the skin is exfoliating. All the nails except those of the thumb are blackened and atrophied. The electrical changes in the affected muscles were found to be of a quantitative character only and varied in degree in direct proportion to the degree of atrophy.

From the widespread nature of the paralysis and atrophy as above described, it is obvious that not only the accessorius and the major portion of the cervical plexus were seriously injured at the time of the operation, but that a secondary neuritis of the brachial plexus has started up and added materially to the disability.

Case II. Female, single, aged nineteen; occupation, stenographer. Date of first visit, April 27, 1904.

Family history. — Said to be negative as to nervous and mental diseases.

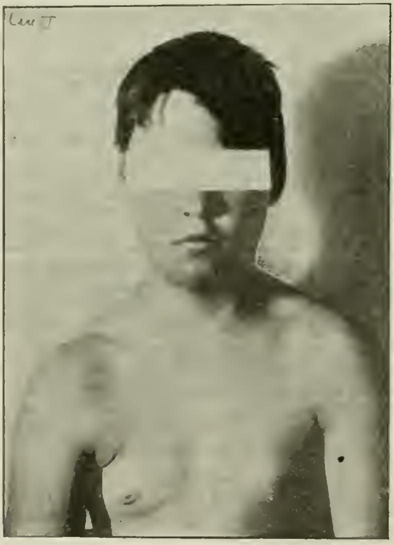
Previous history. — Patient has had the usual children's diseases and had suffered from tonsilitis on several occasions. Five years previously glands had been removed from the left side of the neck without any trouble, and a few months later a similar operation had been performed without untoward results. From this time she had remained perfectly well, except for a recurrence of the glands in the neck, up to eight months ago, when a third operation was performed. Prior to this operation she had absolutely no trouble with the muscles of the neck, shoulder or arm.

Present complaint. — Eight months ago patient underwent an operation at a hospital, for removal of diseased cervical glands on the left side. She was under ether a long time and found on coming out of it that the left shoulder was very weak and that she couldn't raise the left arm at all. Associated with this was considerable pain in the neck, which prevented her from turning her head. She tried to work two weeks after the operation, but found that the left hand was useless. She gave up her work for three weeks, then went back and worked a day. She grew very nervous and despondent, her appetite became capricious and she was obsessed and phobic to a marked degree. At the end of six months she again returned to work but had to give up after a few days' trial. At this she gave up completely and remained away from work for nine or ten months.

On her first visit to the Nervous Department, examination showed considerable atrophy in the left shoulder-girdle group, but only moderate weakness in raising the shoulder. There was weakness also in the inward and outward rotation of the arm. The scapula was everted and rotated forward.

Electrical examination showed a quantitative diminution to faradism in the left trapezius; the other muscles appeared to react normally.

No further examination was made at this time and the patient disappeared from the clinic. At my request she came to my office on Feb. 17 of this year, and examination made by me revealed the following:



The left side of the neck has lost its fullness, and there are marked supra- and infra-clavicular depressions. The neck itself shows three large and disfiguring scars from the old operations. The cervical border of the left trapezius is markedly thinned, but the shoulder-girdle group is not otherwise strikingly affected. The supra- and infra-spinatus muscles are slightly atrophied, the rhomboids much more so, approximation of the left scapula to the spine being seriously hampered.

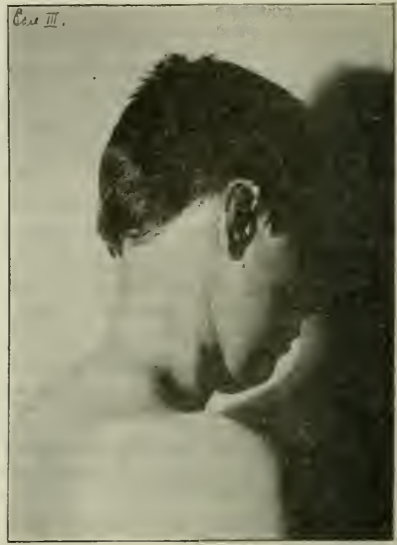
Electrically the affected muscles show only quantitative loss to faradism. The intense nervousness which the patient exhibited in 1904 has practically disappeared and she is able to perform her work as a stenographer fairly satisfactorily, although she says the left arm and shoulder tire easily.

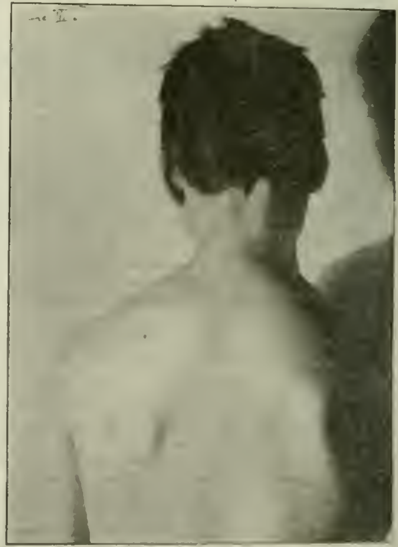
Case III. Schoolboy, aged thirteen.

Date of first visit, Oct. 24, 1906.

Family history. — Negative as to nervous and mental diseases.

Previous history. — The boy's father states that prior to five years ago there was no trouble with neck, shoulder or arm.





Present complaint. — Five years ago the boy was operated upon for diseased glands of the right side of the neck. At some time subsequent the mother thought the boy was growing round-shouldered and took him to the Children's Hospital, where the real nature of the trouble was pointed out. The patient says that the only trouble he himself noticed was that he couldn't throw a ball as well as formerly.

At the time of his first visit to the City Hospital clinic the conditions were about as at present, and as the accompanying photographs show fairly well. There was a marked shoulder-drop on the right, marked supra- and infra-clavicular depressions, thinning of the cervical border of the trapezius and considerable wasting of the pectorals. Posteriorly there was some atrophy of the supra and infra-spinatus, with eversion and forward rotation of the right scapula. The right arm could be raised fairly well to a right angle with the trunk, but beyond that only with difficulty. All other motions of the arm and hand were also weak. Motions of the head and neck were possible but distinctly limited on the right. The right scapula could not be approximated to the spine. The affected muscles showed varying degrees of quantitative loss to faradism.

The situation to-day, Feb. 23, 1907, shows but little change for the better, although the patient has had the benefit of four months' treatment by massage and electricity.

The photographs used in illustration of the conditions in this last case may be regarded as illustrating all such cases, the only variation being one of degree of severity.

In the matter of prognosis it need only be said that the nature of the original lesions implies permanent damage. In Case I, the most recent of the three, a certain amount of recovery will probably take place. Case II may be characterized as one of " healing with defect," while a lapse of five years in Case III practically places the damage upon a permanent basis.

The surgical lesson taught by these cases is too obvious to require comment.

Medical Progress.

RECENT PROGRESS IN LARYNGOLOGY.

BY A. COOLIDGE, JR., M.D.,
AND
H. A. BARNES, M.D.

NASAL POLYPI.

The etiology of nasal polypi has long been the subject of much discussion. That they are the result of underlying inflammation or disease is now undoubted. An interesting contribution to this subject appears in a recent monograph by Yonge.[1]

The author's position is strengthened by having produced polypi artificially in cats which he subjected to the conditions under which he believes that polypi are formed. Disease of the underlying bone, which by several authors has been looked upon as the primary cause, he considers secondary, if it exists, to changes in the mucous membrane. Briefly stated, the writer believes that on account of the structure of the mucous membrane from which polypi grow, a partial closing of the ducts of the glands accompanied by hypersecretion will tend to produce polypi. The sequence of events is as follows: Chronic inflammation of the mucous membrane, dilatation of the glands going on to cystic distention, caused either by marked inflammatory infiltration of their ducts produced by septic discharges, or by excessive filling of the gland combined with a partial obstruction to the exit of the gland contents. Then follows edematous infiltration of the surrounding tissues, resulting from the passage of serum through the capillary walls, due to increased pressure in certain of the capillaries, owing to obstruction, and to increased permeability in the capillary walls, the result of inflammation, and to the laxity of the surrounding tissues. This leads to the formation of folds or projections on the infiltrated mucous membrane, the increase of edema in certain of the folds combined later with a hyperplasia of the fibrous elements, the formation of flat edematous structures containing the essential constituents of the nasal mucous membrane, or of edematous structures containing the same constituents but a greater amount of fluid, and perhaps of hyperplastic tissue, and each possessing a base which gradually becomes relatively constricted and stretched until it constitutes a pedicle.

ETIOLOGY OF DEVIATION OF THE SEPTUM.

That the nasal septum of civilized man should deviate from the median plane in a large proportion of the race has been a matter of interest for years. With the introduction of constantly improving methods for correcting the deformity during the past fifteen years, many theories to account for its existence have been brought forward. Many of these were for obvious reasons unsatisfactory. Spurs and ridges were often looked upon as outgrowths of cartilage or bone, only accidentally connected with deviation of the septum as a whole. More recently deviations, when not obviously due to trauma, have been commonly considered to be the results of asymmetrical development, and spurs and ridges, dislocated or misplaced portions of the septal cartilage or bone. While this asymmetrical growth is probably influenced by many factors, as is asymmetrical growth in other parts, no one factor, with the possible exception of trauma, satisfactorily accounts for the more common types of deviation, especially of the tendency of the lower border of the cartilage to dislocation along the upper border of the vomer. On this account the relation of deviation and spurs to the eruption of the permanent incisor teeth, recently studied by Mosher,[2] is especially interesting. Embryologically, the septum and the premaxillary bones are formed by the fusion of the mesial nasal processes. At birth the lower part of the septum is a shallow trough composed of three overlapping segments,— the vomer behind, the nasal spines in front, and between and connecting the two the premaxillary wings or subvomer bones,— into which trough the quadrilateral cartilage and the perpendicular plate of the ethmoid dip from above. Bearing this in mind, it may easily be appreciated that the weakest points in the septum are the suture line between the perpendicular plate and the vomer, and the point at which the vomer trough is overlapped by the trough formed by the premaxillary wings. Any force that disturbs the normal coaptation of these constituent parts may produce deviation to one side or the other. The subvomer bones are prominent offenders in this particular, producing pressure by hypertrophy, which hypertrophy is caused by irregular or delayed eruption of the incisor teeth, the sockets of which are formed by the premaxillary bones. When the two wings are symmetrically but only slightly enlarged they tip evenly outward and produce basal spurs on either side of the septum anteriorly. When, however, the enlargement is symmetrical and at the same time excessive, the tip of the septum is first pushed upward and then to one side, with a resultant horizontal folding of the lower part of the cartilage upon itself. When the delay is unilateral, the hypertrophy is on the delayed side only, the quadrilateral cartilage is tipped out of its bed along the vomer-ethmoid articulation making a spur at this point and causing a deviation to the side opposite the hypertrophy.

Up to the eighth year, at which time the ossification of the septum is complete, trauma plays a minor part in producing deviations of the septum, as the force of blows is reduced by the elasticity of the cartilage. After this age trauma is an important cause of deviation. Trauma by breaking one or both premaxillary wings and one or both leaves of the vomer can produce spurs and deviations identical with those produced by delayed eruption of the incisor teeth. Where trauma causes the deviation, the anterior border of the perpendicular plate of the ethmoid plays an important rôle. This is the thickest part of the septum and the buffer against which blows from the front expend themselves. If this border is obliquely vertical, as it usually is, it is rightly placed to withstand trauma. If, on the other hand, it runs horizontally backward, it transmits the force of the blow along the vomer-ethmoid articulation. The direction, therefore, of the anterior edge of the perpendicular plate of the ethmoid determines how far back on the septum the force of the blow will be felt. The typical deviation caused by trauma from the front is a double one. First, a vertical deviation and then a horizontal one into which the first merges. No rules can be given for deviations and spurs caused by excessive trauma from the front or from the side. The writer sums up his views as follows: A great many spurs and deviations are caused by delayed eruption of the incisor teeth. After the teeth, trauma is the most common cause of deviations of the septum. In many cases the teeth start the deformity; trauma supplements and increases it.

SKIAGRAPHY AS AN AID TO THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE ACCESSORY SINUSES OF THE NOSE.

Coakley[3] first called the attention of the profession in this country to the value of x-ray plates as an aid to diagnosis and treatment of accessory sinusitis. He had seen plates taken for this purpose by Killian, of Freiburg, and in March, 1905, published the results of ten cases of radical operation in which skiagraphs had been taken. Since that time several communications have come from him on the subject. His results, together with those of Mosher[4] and Chisholm[5] demonstrate conclusively the great value of such plates, especially in frontal sinus disease.

An antero-post and right and left side views should be taken in all cases. The antero-posterior plate shows the presence or absence of the sinus, the size of the sinus, the position of the complete septum separating the right and left sinuses, and the partial partitions, and the presence or absence of an orbital prolongation. As in one third of all cases the frontal sinus does not come into the brow, but is simply an anterior ethmoid cell within the upper angle of the orbit, the plate obviates the necessity of always making the initial opening at the root of the nasal bones, the only safe procedure previous to the use of the plates. Cloudiness over one sinus or in the ethmoid region denotes either pus or diseased, polypoid or edematous mucous membrane.

The side views corroborate the testimony of the antero-posterior plate in regard to the height of the sinus and the size of the orbital prolongation. In cases of diseased sinuses, in which the antero-posterior x-ray plate fails to show the outline clearly, the side views are of inestimable value, as in them the outlines of the sinus come out clearly even when the sinus is filled with pus. They also show the depth of the frontal sinus and the extent of the basal relationship between the floor of the sinus and the anterior ethmoid cells. This is of importance from the standpoint of prognosis as we may state before operation the probabilities of making a sizable opening into the nose insuring adequate drainage.

PNEUMOCOCCUS INFECTIONS OF THE ACCESSORY SINUSES.

In a preliminary communication founded upon fifty-two autopsies at Ancon, Isthmus of Panama, Darling[6] concludes that the portal of entry of the pneumococcus is, in most instances, an accessory nasal sinus, the mucous membrane of which is probably fitted for the reception of the pneumococcus by an antecedent influenza or rhinitis. Of the autopsies 37 were pneumococcus infections, including 22 lobar pneumonia, 1 acute pericarditis, 9 acute meningitis and 5 pneumococcus septicemia. Of these 92% showed in a very marked degree pneumococcus inflammation of one or more of the sinuses. It is fibrino-purulent in character, fibrin and mononuclear cells being abundant. Pneumococci are always present and in numbers depending on the duration of the process. A point of great importance is the age of the sinus infection which has been appreciably greater than that of the lung or meningeal lesion.

HYPEREMIA IN THE TREATMENT OF DISEASES OF THE UPPER AIR PASSAGES.

The methods of Bier for the treatment of different diseases by inducing hyperemia has been studied by Polyak[7] in cases involving the upper respiratory passages. Following the technique of Keppler, passive congestion of the head is induced by an elastic bandage about the neck. The bandage should be so made that the degree of constriction can be easily altered; and especially if the effects of the hyperemia are desired in the larynx, it must be placed as far down on the neck as possible. It should never be placed over the larynx, but in the region of the thyroid gland, where it is generally tolerated by the patient without discomfort, even at his meals. Although Bier recommended that the bandage be kept on for twenty out of the twenty-four hours, the author has reduced the time to eight or twelve hours a day, broken by two or three intermissions of an hour or two each. In cases of disease of the larynx, especially tuberculosis, he begins with short periods, thirty minutes, noting the effects with the laryngoscope. The effects of this induced congestion were often striking. Headache disappeared in a few minutes, and pain in swallowing in cases of acute tonsillitis and pharyngitis were often quickly relieved. This relief of pain was also obtained in cases of laryngeal tuberculosis, so that the condition of the patient was much improved. When the bandage is removed, although the pain recurs, it is less rather than more acute as a result of the previous hyperemia.

A second method of inducing hyperemia consists in a special suction apparatus in which a cup is applied over some local point in the pharynx, and the air exhausted by means of a rubber bulb. This suction is continued for a few minutes, and may be repeated if desired. The author has obtained good results in cases of acute swelling of the tonsils, painful pharyngitis and crust formation.

The author considers that it is well worth while to try induction of hyperemia in certain diseases of the upper air passages. The experiment is simple and has never given rise to serious complications. Nevertheless, it should be carefully applied. At the beginning, at least, it should be under the observation of a physician. This is especially true in cases of laryngeal tuberculosis, where edema of the larynx is possible. It may be of use in acute catarrhal and purulent processes with crust formation, torpid ulceration, tuberculosis and lupus. Although it is not easy to describe the exact degree to which positive congestion should be carried, it may be said that it should never be distinctly uncomfortable for the patient, nor cause marked congestion nor headache. The proper degree is where a previous pain is at least relieved after a few minutes.

THE BACTERIA OF SCARLATINAL AND NORMAL THROATS.

Ruediger[8] has reported results of examinations of cultures from the tonsils of 154 cases, divided as follows: Normal 51; scarlatina 75; measles 14; tonsillitis 5; pneumonia 5; pharyngitis 4. Streptococcus pyogenes was constantly found in great numbers in all cases of scarlet fever and tonsillitis. As a rule this organism greatly predominated over other colonies when the inflammation of the throat was pronounced and rapidly decreased in numbers with the subsidence of the throat symptoms. When the throat symptoms were mild the proportion of the streptococcus colonies to other colonies was small. In normal throats the streptococcus was found in 58% of the series examined, but was always present in small numbers. The author considers that it cannot be considered a normal inhabitant of all healthy throats. The streptococci from normal throats had a slightly greater virulence for rabbits than those from scarlatinal throats, which agrees with the reported results of Hilbert[9] and Tunnicliff.[10] Pneumococci of low virulence were found in 135 of this series of 154 throats. The Commission for the Investigation of Acute Respiratory Diseases of the Health Department of the City of New York[11] found the pneumococcus in an equally large percentage of persons not afflicted with pneumonia. Klebs-Löeffler bacilli were found in 4 cases, which was to be expected, as innumerable observers have reported present in normal throats in varying percentages. Bacillus mucosus and bacillus influenzæ were each found once. Staphylococcus aureus and citreus and micrococcus tetragenus were found occasionally, but were thought to be contaminations from the tongue. Gram-negative diplococci which form small brownish colonies were found quite frequently. Some of these were identified as micrococcus catarrhalis. A large group of organisms which lies between the typical streptococcus pyogenes and pneumococcus was found in all normal throats and in nearly all diseased throats. These organisms have little virulence for rabbits and, as they are found in great abundance in practically all throats, they would appear to be normal inhabitants.

A DEFINITE CONDITION OF IRRITATION OF THE LARYNGEAL NERVES.

Among the neuroses of sensation of the larynx and its neighborhood Boenninghaus[12] believes that certain symptoms occur together frequently enough to constitute a definite pathological picture. The principal symptom is pain or discomfort, varying much in different cases, but accompanied by definite spots which are tender to pressure. This condition arises generally as a sequel to inflammatory disturbances of the pharynx, larynx and trachea. As these tender spots are found in the paths of the laryngeal nerves, it is probable that the symptoms are due to an irritation of these nerves. As this condition is a not infrequent one, and as it seems to be benefited by massage of the neck, the subject is one of practical importance. It is fully as common in men as in women, and very rare in children. It may last for days or months or even years. The pain varies very much in different cases, but one very common characteristic is that the pain is aroused by the motions of swallowing when nothing is swallowed. The essential element in the diagnosis is the presence of certain definite spots sensitive to pressure, an upper spot between the greater cornu of the hyoid bone and the upper edge of the thyroid cartilage, that is, in the lateral part of the thyro-hyoid membrane; and a lower spot on the lateral border of the trachea. The patient will sometimes point out one of these spots as the seat of his trouble. In other cases they are discovered by careful manipulation, especial attention being given to the relative sensations of each side. Treatment by massage is generally effective, and the galvanic current is also useful.

MALIGNANT DISEASES OF THE LARYNX.

As is usual, much has been written on this important subject during the past year; and although nothing essentially new has been advanced since the last review of the subject in the JOURNAL, Feb. 5, 1904, the increased numbers of reported results in operative cases has made prognosis more definite and hopeful. All the writers accentuate the necessity of early diagnosis and the removal of the growth in its incipiency. Baginsky[13] states that although extirpation of the larynx has become a less dangerous operation than formerly, and after-treatment has been much improved, still the mortality is great, and early diagnosis holds out the only hope of permanent cure. Mackenzie[14] advances the view that injury to the growth due to excision for microscopical examination opens the pathway for metastatic invasion, and he makes a plea for diagnosis by exclusion without the aid of the microscope if possible. If, however, a piece must be removed for examination, let operation be immediate, if the growth prove malignant.

Jackson[15] urges the frequent malignant nature of chronic hoarseness. The early curable stages of cancer of the larynx are characterized by nothing but hoarseness, which may disappear and recur. Cough, odor, pain and glandular involvements are present only when the curable stage is passed. He reports 15 cases of thyrotomy and 8 cases of total laryngectomy. No immediate deaths occurred, which he modestly ascribes to good fortune; and the subsequent history of his cases show surprisingly good results. Of the 15 thyrotomies 5 were alive and well two years after operation. His conclusions are: Early diagnosis is essential; if discovered early, the comparatively slight operation of thyrotomy will cure. If discovered late, total or partial laryngectomy will probably prolong life for a variable period but recurrence is fairly certain.

In a recent paper Semon[16] reviews the whole subject, his present views not differing materially from those of his earlier papers.

THE ETIOLOGY AND PATHOLOGY OF VOCAL NODULES.

Miller[17] has contributed an interesting and original article on this subject. Microscopically he has found nodules to consist of a superficial localized edema manifesting itself on the edge of of the cord, with little or no change in the epithelial layer either in the external hornified stratum or in its relation to the subepithelial connective tissue. He found no evidence of an inflammatory process. Nodules may be traumatic in origin, such as those produced during violent coughing, in which case the nodule may appear at any point on the cord. On the other hand, the nodules caused by vocal weakness display a puzzling affinity for particular portions of the cords. They are generally found protruding from the anterior and middle third on one or both sides of the glottic opening. The traumatic nodule and what may be styled the vocal node are oftentimes simultaneously present, the traumatic nodule existing by itself in some irregular portion of the cord or superimposed upon or blended with the vocal node each to be distinguished by its well defined location, though produced by totally different causes. His theory as to the causation of the typical nodes is as follows: A great majority of the subjects present a follicular tonsillitis, accompanying this there is more or less congestion of the mucous membrane of the larynx. This renders that portion over the vocal cords more liable to become edematous. It is further thought that there is a hyperactivity of certain fasciculi of the thyro-arytenoideus externus muscle, and that where these bundles cross the true cords there is produced localized edema or a singer's node. In support of this theory the author has succeeded in producing nodules experimentally in dogs. A tonsillitis was first produced by painting the fauces with cantharidal collodion and two days later rubbing on the surface a virulent culture of streptococci. Then through a slit-like opening in one side of the thyroid cartilage a small piece of the central portion of the thyro-arytenoideus muscle was removed, consisting of its whole thickness but not completely dividing the muscle, in the hope that the nodes would be produced at the joints where these fasciculi pressed on the true cord. Examination with the laryngoscope after convalescence showed a node about where the post-fasciculus crossed the cord. This was confirmed by a postmortem examination. A very interesting fact was that, on splitting the larynx open from behind through the cricoid cartilage, the node disappeared. From this it is suggested that nodes cannot be preserved after death.

GASTROSCOPY BY MEANS OF A MODIFICATION OF THE KILLIAN ESOPHAGOSCOPE.

Chevalier Jackson[18] has devised a modification of the esophagoscope which he has used with success for direct inspection of the stomach for purposes both of diagnosis and treatment. The instrument is simply a lengthened esophagoscope with the lamp at the distal extremity of the tube as in the bronchoscope and esophagoscope previously devised by the author. For use in the adult the tube is 9 mm. in diameter and 80 cm. in length. The light is carried on a removable light carrier which passes through a small auxiliary tube made in the wall of the main tube. When the carrier is in place the small lamp is at the extreme distal end of the gastroscope where it brilliantly illuminates the field without interfering with vision or instrumentation. Dry batteries are advised for lighting as the current from commercial lighting circuits may be "grounded" through the patient. The secretion aspirator, cotton carrier and tube forceps of increased length are used as in bronchoscopy or esophagoscopy. Deep anesthesia is absolutely necessary to prevent retching, and ether is the choice, as the author considers chloroform especially dangerous for gastroscopic work. The tube is inserted in the usual way with the patient supine and the head well over the end of the table in Rosen's position. It is first passed to the greater curvature and the anterior and posterior walls inspected. It is then partially withdrawn, inclined slightly laterally in the same plane and again pushed downward in a new series of folds. After the whole possible range has been covered in this way the tube is passed down until the extremity touches the wall of the greater curvature at the extreme left of the possible field. It is then moved slowly along the greater curvature, but not in too close contact, until the extreme right is reached. This movement is repeated as many times as is necessary to cover the field as high as the cardia, the tube being withdrawn a centimeter or two with each repetition. Abdominal palpation may then be used to bring unexplored portions of the gastric mucosa within the field. This sometimes is better accomplished by turning the patient from side to side; but during these latter manipulations the tube must be withdrawn from the esophagus, and reinserted when the stomach is in its new position. In a patient with a normal stomach and esophagus the greater curvature for an extent of about 14 cm. and a considerable area of both the anterior and posterior walls may readily be explored without the aid of external manipulation. The fundus and pyloric ends can be brought within range of the gastroscope by change of position or by palpation. In the vertical or gastroptotic stomachs, the lesser curvature, the pylorus and the pyloric third are easily seen with little or no external manipulation. The author reports diagnoses of gastritis, gastroptosis, malignant disease of the cardia and the pylorus, each in one instance; of peptic ulcer in three cases, one of which was cured by direct application.

ADRENALIN CHLORIDE, DANGERS OF ITS INDISCRIMINATE USE.

Adrenalin has been a great boon to the intranasal operator, enabling him, as it does, to operate in a comparatively dry field. That it is not always an innocent and harmless agent has been shown by the investigations of Josué,[19] Erb,[20] Rzentkowski,[21] Fisher,[22] Pierce,[23] and Stanton,[24] during the past three years Josué first called attention to the fact that intravenous injections of adrenalin in the rabbit were followed by extensive changes in the aorta and larger vessels, and this observation has been corroborated by the results of the other observers. The change consists of localized destruction of the smooth muscle fibers of the media accompanied by rapid calcification and other characteristic alterations in the elastic tissue elements. Erb states that there is no actual similarity between this condition and the arterial sclerosis in the human subject. There is no sclerosis in the sense of a thickening due to proliferation of the intima, nor an atheromatous process, but there is apparently an analogy between the condition described and the calcification of the media as found in the large arteries of the extremities in man. Josué,[25] in a more recent article, says that hypodermic injections may be given up to $\frac{1}{60}$ gr. in twenty-four hours, but if this dosage be exceeded there is danger of producing toxic effects. Applications to the unbroken nasal mucous membrane may be made without anticipation of untoward action. Adrenalin is often freely applied in mid-operation in intranasal work, and the question becomes pertinent as to whether in so vascular a tissue as the mucous membrane of the nose, enough of the solution may not be absorbed through the cut surface to give rise to the immediate toxic symptoms and later vascular changes. A case has recently been reported of profound general disturbance induced by the injection of half a dram of 1–1000 solution into the urethra for the purpose of checking bleeding after the passage of a sound.[26] The cut nasal mucous membrane would seem to offer as fair a chance of absorption as the urethra.

Less serious than the above described conditions, but still of importance, are the local symptoms which may follow the long-continued use of nasal sprays of adrenalin for the relief of hay fever. B. H. Potts,[27] has made a timely protest against the careless use of this drug, and reports several cases of persistent turgescence of the nasal mucous membrane, due to long continued home use of adrenalin sprays by the patient.

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Death of Railway Servants from Accidents.— Some interesting figures have recently been given out showing the number of railway servants in England killed for each year from 1896 to 1906, both inclusive, in the movements of railway vehicles. The total number for eleven years was 5,241, and the yearly average number of deaths was somewhat over 476. The worst year was 1900 with 583 deaths, and the best year was 1905 with 399.— *British Medical Journal.*

Reports of Societies.

THE PHILADELPHIA COUNTY MEDICAL SOCIETY.

STATED MEETING, WEDNESDAY, APRIL 10, 1907, AT 8.30 P.M.

SYMPOSIUM ON INSANITY AND CRIME.

THE PRESIDENT, DR. JAMES B. WALKER, in the chair.

PARANOIA, ITS VARIETIES AND MEDICO-LEGAL IMPORTANCE.

DR. CHARLES W. BURR gave his own conclusions relative to what kind of a man really acquires paranoia, described the symptoms and pointed out how such a man is unlike other men with other mental diseases. The great cause of paranoia he declared to be heredity. It may not be inherited directly, but the subjects of hysteria, epilepsy, alcoholism, the markedly eccentric person and the criminal are types of fathers and mothers most apt to breed the child who upon reaching manhood becomes the paranoiac.

The chief symptoms of the disease were given and those termed the smaller, and the difficulties in diagnosis pointed out. Secondary paranoia was described as a state in which the condition of paranoia is present as an incident in some other insanity. Really to know a paranoiac it is necessary to know his whole life history, and not only for an occasional day or two. The relation there might be between the secondary form and the disease itself Dr. Burr does not know. Regarding the hallucinatory type he saw no reason that this should be marked off as a special type, since hallucinations occur in pure paranoia. The mattoid condition was also described.

The legal side of the question presented many difficulties because the paranoiac shows a considerable amount of reasoning power and knows perfectly well the object of the examination. An added difficulty encountered arises from the confusion as to what paranoia means and as to who are the paranoiacs.

INSANITY, A DEFENCE IN HOMICIDE.

DR. ROBERT H. CHASE of the Friends Asylum, Frankford, outlined the cases in which insanity as a defence in homicide is not only legitimate but highly commendable. Two distinct forms of alienation frequently resorted to as a defence in homicide were mentioned as the so-called emotional insanity, and that much-abused form in psychiatry, paranoia. In discussing the term, "transitory insanity," he remarked that the claim that a man may be sane just before committing murder, insane when the shot is fired, and sane again as soon as the deed is done, seems to require more credulity than the majority of any community possesses. He had known only two cases in which the diagnosis of transitory insanity seemed justifiable. These were cited.

In the matter of expert testimony he concurred with Dr. Mills, that no system of official experts will ever succeed in this country, and that it is necessary "that the medical experts shall be of the highest order as regards intelligence, training and honest purpose." The question was raised why there could not be constituted, through the concurrence of the Medico-Legal Society and the Bar Association, a committee or board to pass upon the good standing and fitness of would-be lunacy experts before the courts. A number of regulative provisions might be necessary to such a system. To maintain the standard, withdrawal of the certificate from a licensed expert should be possible. Such certificate should be presented to the judge in place of the present crude method of qualifying. Difficulties in such a plan were admitted and the suggestion was made that perhaps after all, Wyleyism in expert testimony could best be "cured" by a good brisk application of gruelling, *à la Jerome.*

DR. CHARLES K. MILLS said that the community and even the profession to some extent did not recognize fully the fact that insanity and sanity are relative terms. Dr. Burr had shown that there were grades of paranoia from the man almost sane to the man easily recognized as insane. The responsibility of the man on trial was not to be fixed by the expert, his work being confined to what in his opinion was the state of mind of the man on trial and to giving his proofs.

Regarding expert testimony he did not believe that under the Anglo-Saxon system of laws there can be a satisfactory system of official experts. He believed that the present methods are the best that can be followed, but that the correct thing to do is to try to get good men for the work. Dr. Chase's suggestion he he thought not without some merit, but he doubted whether it would be constitutional. Reference was made to the underlying provision in the law that a man on trial for his life is entitled to every means of defence that can be given him by those who take up his cause in court. The judge, it was thought, might rule out a man on the committee. The only thing to do in matters of the kind under debate he believed to be to educate the community to the right standpoint.

DR. F. X. DERCUM believed that the future of psychiatry lies in the study of the morphology of arrested development. He divided insanity into two great groups of the infectious and the paranoiac type and gave the essential features of each. The word "paranoia," an ancient one, was used by Aristotle and Plato, and means "thinking beyond," or "beside of."

He did not think expert testimony in Pennsylvania in the bad condition attributed to it, but felt that the adverse opinion is due to the high ideals obtaining in this Commonwealth in the profession. He can recall but few instances in which a man called as an expert in court was grossly incompetent.

DR. JOHN B. CHAPIN stated that legal insanity implies a prolonged change from the normal mental state with delusions in which or because of which the criminal act is performed.

DR. ALFRED X. GORDON, in his discussion, gave his conclusions in the following propositions:

(1) The legal conception of responsibility is not in accordance with the principles of science and does not satisfy the practical exigencies of life.

(2) The dogmatic principles of law should be replaced by more real and vital, namely, by biological principles.

(3) A special psychiatric service should be established in prisons for a study of all criminals, or else an an alienist be attached to prisons, reformatory schools, houses of refuge.

(4) The function of the law should be not only to find criminality, but also to correct the criminal himself.

(5) Legal instruction should consist of study of crime as a social phenomenon and of the criminals as individuals.

(6) Administration of justice in such cases should be confided to a jurist and to an alienist.

(7) Administration of houses of correction should be placed in the hands of alienists and pedagogues because the majority of criminals bear stigmata of degeneracy which require special attention.

(8) Youthful criminals should be isolated and placed in special institutions in which proper medical and pedagogic measures will be most beneficial.

Finally, that conviction of criminals intellectually and morally defective is not only unjust but also useless, and that punishment should be replaced by prophylactic measures which form a part of social hygiene.

Book Reviews.

Psychology Applied to Medicine. Introductory Studies. By David W. Wells, M.D. 12mo. Pp. xiv, 141. With 16 illustrations. Philadelphia: F. A. Davis Co. 1907.

About one half of this little volume is devoted to the subject of hypnotism, and is simply a repetition of what has already been told many times before concerning it. The rest of the book contains a few chapters on certain elementary facts in psychology, chiefly upon some points concerning the psychology or rather the physiology of vision, but only a limited number of elementary topics are discussed, so that the book is quite inadequate as an introductory manual for the study of psychology. "Deformed" spelling mars the work.

Aids to the Diagnosis and Treatment of Diseases of Children. By John McCaw, M.D., R.U.I., L.R.C.P., Edinburgh. Physician to the Belfast Hospital for Sick Children. Third edition. New York: William Wood & Co. 1907.

This little book, on account of the thinness of the paper and the fineness of the print, contains much more than would appear at first glance, and is consequently more useful than most books of its class. It is, however, distinctly inferior to the larger textbooks. The arrangement of the book seems peculiar, at any rate from the American point of view. The subject matter is, on the whole, pretty good. The chapter on the blood diseases is especially good, that on artificial feeding extremely poor. Much more space is given to treatment than in most books. We trust, however, that most babies do not receive all that is recommended.

Practice of Medicine. A manual for students and practitioners. By Hughes Dayton, M.D. New York and Philadelphia: Lea Bros. & Co.

This is a small book, pocket size, a volume of the Medical Epitome Series. It is not a quiz compend in arrangement, but gives a concise short statement of the main facts regarding the subjects which might be expected to be discussed in the usual book on the practice of medicine. Much information will be found here in small compass and yet in readable form. The arrangement closely follows that in Osler's textbook of medicine.

The book is well printed on good paper. The use for such a book is rather limited. It is distinctly preferable to the usual quiz compend. It would be useful to a student for a rapid review of medicine in preparation for examination, and could be used with advantage in the clinic in connection with cases. Its small size is a valuable asset in this regard. The danger of all such books is that the student may substitute it for a more complete work and thereby lose in breadth of view. The apparent absence of gross omissions in discussing the various diseases in this book might encourage such a use. For this type, the book has been well made.

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THE CAUSE OF CARDIAC INSUFFICIENCY.

Frequently post-mortem examination of the heart in a case which clinically has been diagnosed myocarditis fails to show any very definite anatomical lesion beyond the evidence of moderate dilatation and some hypertrophy. Almost as often fatal cases of valvular lesion yield no gross anatomical evidence explanatory of the fatal cardiac insufficiency. The valvular lesion is there, it is true, but that appears to have remained unchanged in character for some time, and it is not very evident why, at this particular period, the heart should have gradually failed in its ability to do its allotted work.

Various attempts have been made to find a myocardial lesion which would explain these cases of cardiac insufficiency. In the earlier days great emphasis was put on fatty degeneration of the myocardium, and this explanation still finds favor with some of the English authorities on heart disease. But as Welch and others pointed out there is often no relation between the amount of fatty change and the degree of cardiac insufficiency, and in some cases with extreme degrees of fatty degeneration of the heart there is no clinical evidence of cardiac failure.

Under the influence of the Leipzig school, especially Krehl and Romberg, great importance was attached to the inflammatory changes in such hearts. They, in a thorough examination of hearts, showed the almost constant presence of small foci of interstitial myocarditis, and these they believed to be in large part the cause of the cardiac failure.

How such foci involving but a small part of the total area of myocardium could be so disturbing to cardiac function was puzzling to many. Albrecht, in a monograph on the heart,[1] attempted to answer this by means of a study of cardiac muscle architecture which determined certain points as of great functional importance. The frequent occurrence at these of inflammatory foci might explain the cardiac failure, and such a distribution he believed he could demonstrate.

Aschoff and Tawara, in another monograph,[2] have criticised the views of Albrecht on the grounds that the cardiac architecture claimed by him has been deduced largely from a study of animal hearts and is a very inconstant arrangement in man. Moreover, they disagree with Albrecht in regard to the existence of distinct muscle cells in the heart which is one of his chief claims for a similarity of cell lesion in the heart with those in parenchymatous organs. Further, a number of nuclear and cell variations which Albrecht considers evidence of pathological change, Aschoff and Tawara believe within the limits of normal variation in myocardial structure.

Aschoff and Tawara have studied carefully and extensively hearts from one hundred and twelve cases in which cardiac insufficiency was to be anticipated. In these they fail to find any evidence of a progressive degeneration of the myocardium and no constant demonstrable histological changes to account for the cardiac weakness. Focal lesions they commonly find which they regard as the result either of the healing of areas of infarction or of the formation of certain proliferative foci which occur in association with rheumatism. However, there is no evidence of any causal relation between these and the cardiac insufficiency. Fragmentation of the heart muscle receives especial attention, but they conclude that this is largely a terminal event and in no way the cause of the cardiac failure. They fail to associate focal lesions with fibers of the conduction system of His except in cases of Adams-Stokes disease.

The failure of Aschoff and Tawara to find in the majority of cases any anatomical lesions as a cause of the cardiac insufficiency is disappointing. It was to be hoped that some association of focal lesions with the cardiac conduction system might be a satisfactory explanation for this condition. These observers, notwithstanding their thorough knowledge of this phase of cardiac structure, failed to find evidence of any such association. They seem to have succeeded in destroying the claims made for other reported anatomical causes and we are forced back to the functional explanation that the gradually increasing strain finally goes beyond the reserve force of the heart, and cardiac failure is the result. This was the view held before any of these anatomical studies were undertaken.

THE HALF-INSANE.

Almost all controversy springs from and thrives upon lack of definition. This is especially so with regard to insanity, which state has been variously defined, in different eras and from many viewpoints — that of the physician, the lawyer, the psychologist, the philosopher, the practical man. And little wonder, considering the almost infinite complexity of human psychism. Moreover, to define insanity accurately, one must first answer the question: What is mind? and who has ever done that successfully?

All gradations of the perturbed have been made, from the lovably daft to the hopelessly idiotic. And the point of view has, in the course of civilization, been constantly changing. That of the present day is quite ultrascientific, having been developed from the "rationalism" of Voltaire in the eighteenth century. This position will surely be modified by future generations. For it considers many insane, or at least half-mad, who in other ages were rightly lauded as geniuses, saints, benefactors and world-compellers. It ignores the legendary which is so dear to human nature; it takes no account of the emotional, the poetic, the soul-stirring — things which after all do make living somewhat more worth while.

Prof. J. Grasset, of the University of Montpellier, in France, has in his book "Demi-fous and Demi-responsables;" designated as half-insane (Lombroso would deem them afflicted with "genius-insanity") such men as Pascal, Comte, Balzac, Hugo, Molière, Byron, Tolstoi, Newton, Darwin, Wagner, Schiller, Chopin, Descartes, Cromwell, Goethe, Mozart, Beethoven, Ampère, Napoleon, and many another. Dante and Columbus have been placed in this category, and even Shakespeare!

But who would not, if he could, find place for himself among such notable company? Did St. Paul or St. Francis see visions? Did Beethoven "rough-house" the homes of his princely friends who sought to relieve his needs? Was Cæsar an epileptic? Was Napoleon a degenerate and a hypochondriac? Did Newton abstractedly stick his fiancée's finger into his lighted pipe? (He died a bachelor.) Was Chopin a consumptive? Was Poe a chronic alcoholic? Was Schopenhauer a misanthrope? Were such as these neurotic or hysteric or did they suffer from vicious heredity? What of it? Where would humankind be to-day had they not lived?

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[1] Der Herzmuskel und seine Bedeutung für Physiologie, Pathologie und Klinik des Herzens. Ein Versuch zur Entwicklung einer allgemeinen Pathologie und Symptomatologie auf anatomischer grundlage. Berlin, 1903.

[2] Die heutige Lehre von den pathologisch-anatomischen Grundlagen der Herzschwäche. Kritische Bemerkungen auf Grund eigener Untersuchungen, Jena. 1906.

Grasset has well sought to ascertain the just status of the "Demi-fou" before the Law, believing that he should not be held as responsible for his acts as the wholly sane. He would not, as is generally done, divide humanity into two hard and fast groups — the sane and the insane; the group which is or should be placed under confinement and that which confines it. He wisely believes that there are degrees between normal psychism and dementia. And a part of his work is given to the discussion of Demi-responsibility, Limited Responsibility and Attenuated Responsibility, to the end that such distinctions may find place in French jurisprudence. And it seems, indeed, that they have already been accepted in many continental courts, though not at all in our own or in those of Great Britain.

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HARVARD MEDICAL ALUMNI FUND.

It will be remembered that about two years ago a committee of the Harvard Medical Alumni Association inaugurated a movement toward securing funds from the graduates of the Medical School for the purpose of increasing the efficiency of teaching. A report of progress shows that the result of this movement has been most encouraging. Responses to the appeal have been received from every part of the country so that already a substantial amount has been raised as a nucleus for what is hoped may be a fund of increasing size.

Considering the many calls which are being made upon the medical profession for contributions of various sorts, it should certainly be gratifying to the committee having this matter in charge, that an excellent beginning has been made and that already enough money has been secured to further the main object for which subscriptions are desired. It will, no doubt, take some years before graduating classes of the medical school will come to look upon their period of study as do students in academic departments in our various colleges. There is, however, ample evidence to show that in the past few years individual classes have been more united than ever before, and it is not to be doubted that so far as the Harvard School is concerned the new buildings with the rooms provided for students' use will go far toward fostering a spirit of class loyalty, which means loyalty to the school itself, that has not hitherto been in evidence. It is, therefore, confidently to be expected that the plan of an alumni fund, auspiciously started, will gain in strength as the years go by.

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MEDICAL NOTES.

Dr. Charles H. Peck Honored. — Dr. Charles H. Peck, the Senior Attending Surgeon to the French Hospital of New York, has recently received from the French Government through the minister of Public Instruction and Fine Arts the decoration of Officier de l'Instruction Publique.

Officers of the American Society of Sanitary and Moral Prophylaxis. — At the meeting of the American Society of Sanitary and Moral Prophylaxis, held April 11, 1907, the following officers were elected for the ensuing year: President, Dr. Prince A. Morrow; Vice-Presidents, Dr. Stephen Smith, Prof. Edwin R. A. Seligman and Mr. Francis Lynde Stetson; Secretary, Dr. Edward L. Keyes, Jr.; Treasurer, Dr. Smith Ely Jelliffe.

Death from Ex-Ray Burns. — It is announced that Prof. Wolfram C. Fuchs, of Chicago, has finally succumbed to carcinoma, set up by exposure to the x-rays. He had been affected for about three years and had had various operations performed to check the spread of the disease, but ultimately without avail, when the breast became affected. The list of deaths from the use of the x-rays in this country is somewhat appalling. Five have been reported, one of the most recent being Dr. Louis A. Weigel, of Rochester, N. Y., who underwent a very similar experience to that which finally ended Professor Fuchs' life.

Retirement of Professor Politzer. — The retirement of Prof. A. Politzer from the professorship of otology at the University of Vienna is announced, after a service as teacher of forty-six years. He is now obliged to vacate his chair because of the age limit. In recognition of his great services to otology and to medicine in general, a committee has been formed to execute a medal bearing his likeness. On his retirement it is proposed to present him with a copy of this medal in gold, with an address containing the names of the subscribers. The committee is of an international character, and it hopes that contributions may be received from various countries. The treasurer of the committee is Dr. D. Kaufmann, Vienna, VI, Mariahilferstrasse 37.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 1, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 49, scarlatina 31, typhoid fever 5, measles 18, tuberculosis 48, smallpox 0.

The death-rate of the reported deaths for the week ending May 1, 1907, was 21.48.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, April 27, 1907, was 257, against 225 the corresponding week of last year, showing an increase of 32 deaths and making the death-rate for the week 22.26. Of this number 133 were males and 124 were females; 255 were white and 2 colored; 163 were born in the United States, 89 in foreign countries and 5 unknown; 44 were of American parentage, 177 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 50 cases and 9 deaths; scarlatina, 36 cases and 0 deaths; typhoid fever, 6 cases and 1 death; measles, 27 cases and 0 deaths; tuberculosis, 46 cases and 27 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 33, whooping cough 0, heart disease 27, bronchitis 9 and marasmus 1. There were 12 deaths from violent causes. The number of children who died under one year was 42; the number under five years 63. The number of persons who died over sixty years of age was 57. The deaths in public institutions were 78.

There were 10 cases and 2 deaths reported from cerebrospinal meningitis during the week.

Clean Milk. — At the recent quarterly meeting of the Massachusetts Association of Board of Health the cleanliness of milk was under discussion. Pasteurization found few supporters among those who spoke. The general feeling was expressed that such an artificial means of treatment misses the main issue, which is that the conditions of the milk as produced and marketed should be maintained at a high standard, and that, if this were done, Pasteurization or other means of sterilization would be unnecessary.

A Gift to the Floating Hospital. — Mrs. Lamont G. Burnham has presented to the Floating Hospital the steam yacht, *Pilgrim*, formerly a cup defender. The vessel is now equipped with twin engines and twin boilers, which, it is suggested, may be used in the new boat of the Floating Hospital, for which no provision for self-propulsion has yet been made, owing to lack of funds. The advantage of being propelled by her own power will increase the usefulness of the new hospital boat and will also be a saving on account of doing away with the cost of towing.

The Boston Instructive District Nursing Association. — We have frequently taken occasion to comment on this admirable charity. The growth of this work has been steady and gratifying so that now there are twenty-two regularly employed nurses who devote their time to visiting in the homes of the poor. The following remarks by Dr. Elliott P. Joslin, given at the annual meeting, express in general the feeling of the community, both lay and professional, towards the work:

"Is it not a comfort that this is a society which does not need to be reformed? It is sufficient to watch your growth from year to year to be assured of your usefulness in this community. This last year you have increased your activities in many directions, both in Boston and in the suburbs. You have increased your district work, you have started a Nurses' Home Training School, and have doubled your work among the school children as well as that among tuberculous patients. Surely the public will be satisfied with your progress, and I predict you will find its response to your appeal for funds more hearty and liberal than ever before.

"There are so many reasons why you should receive aid. You carry the chief advantage of wealth to the homes of the sick poor, namely, the means to have their own cared for in illness. Lord Rosebery would certainly be one of your patrons if he lived in Boston. It is easy for you to ask gifts for such a charity, and natural for one to respond. I think you will find that those who have suffered most from illness in their own homes will be your strongest friends."

NEW YORK.

A Home for Incurables. — Mrs. Henrietta M. Parker, of New York, has filed a contract with the county clerk of Middlesex County, New Jersey, for the erection of a home for incurables, as a memorial of her late husband. The institution is to be named the "Parker Home for Incurables," and is to be located at New Brunswick, near which the Parker family has its country seat. The building, constructed of brick and marble, will be situated on a bluff overlooking the Raritan

River, and will have thirty-one rooms, in addition to two hospital wards, together with offices, sun parlors, baths, nurses' quarters, etc. There will be a resident medical staff, and a number of prominent New Brunswick physicians and surgeons have promised their services on the visiting corps. The home will be the only institution exclusively devoted to incurable cases in the state of New Jersey, and the generous gift of Mrs. Parker is widely appreciated.

Government Department of Health. — At the annual meeting of the American Association for the Advancement of Science, in June last, a committee of one hundred was appointed to take such steps as were in its power towards the creation of a Government Department of Health. On April 18, some twenty of the members of this committee met in the Bar Association building in New York, and, after an extended discussion of the subject, elected a special committee of seven, to carry on the active work of the movement, and the following vice-chairmen of the general committee of which Professor Fisher is chairman: President Eliot, of Harvard, Andrew Carnegie, Dr. Lyman Abbott and Prof. Felix Adler, of New York, John D. Long, ex-secretary of the Navy, Dr. William H. Welch, of Johns Hopkins University, Archbishop Ireland, President Angell, of the University of Michigan, and Judge Lindsay of the Juvenile Court of Denver.

Hospital Saturday and Sunday Association. — The distributing committee of the Hospital Saturday and Sunday Association met on April 26, and gave out from the undesignated fund of the collection of 1906 the sums awarded to the various institutions represented in the association. The amounts over $2,000 were distributed as follows: Montefiore Home and Hospital for Chronic Invalids, $8,400; Mount Sinai Hospital, $8,400; St. Luke's Hospital, $4,647; Roosevelt Hospital, $4,428; German Hospital and Dispensary, $4,119; Lebanon Hospital, $4,074; Hospital for Ruptured and Crippled, $3,673; New York Post-Graduate Hospital, $3,504; New York Infant Asylum, $3,499; Society of the Lying-in Hospital, $3,295; Orthopedic Dispensary and Hospital, $3,105; St. Mary's Free Hospital for Children, $2,942; Nursery and Child's Hospital, $2,926; New York Home for Incurables, $2,298; Beth Israel Hospital, $2,271.

These allotments were made, as usual, on the basis of the amount of free work done by each institution. The total collection this season, amounted to $103,110, the largest recorded in the history of the association; and of this sum, $1,555 was the gift of Mr. and Mrs. James Speyer, who announced previously to the collection that they would duplicate whatever amount in excess of $100,000 should be contributed. Of the total, $14,610 was designated to particular institutions by the donors, and, after the deduction incident to the expenses of the collection, there remained the handsome sum of $84,000 at the disposal of the distributing committee.

Appointments, Medical Department at Fordham University. — The following additions to the teaching corps of the medical department of Fordham University, situated at Fordham, in the Borough of the Bronx, have recently been made: Dr. Thomas Darlington, President of the Health Department, Professor of Sanitary Science; Dr. John J. Cronin, Adjunct Professor of Sanitary Science; Drs. Robert M. H. Dawbarn and John A. Bodine, Professors of Clinical Surgery; Dr. George Franklin Shiels, formerly of the University of California (who as an army surgeon in the Philippines received a Congressional medal of honor for conspicuous bravery), Lecturer on Gun-shot Wounds and Military Surgery; Dr. William Edwards Fitch, late of Savannah, Lecturer on Surgery. At this medical school, four lectures, which were free to the profession of the city, were given during the month of April by Dr. Darlington, Dr. John S. Billings, Jr., Chief of the Division of Communicable Diseases of the Department of Health, and Dr. John J. Cronin, also of the Health Department, on "Typhoid and Other Communicable Diseases," "City and Public School Health," and other topics of interest to practitioners.

Opening of Buildings, Harlem Hospital. — The new buildings of the Harlem Hospital which belongs to the group of city institutions known as "Bellevue and Allied Hospitals," governed by a special board of trustees, were informally opened on April 27. They are situated on Lenox Avenue, between 136th and 137th streets, and constitute a thoroughly equipped modern hospital, with accommodations for 250 patients and special provisions for a very large ambulance service. The main building, a handsome structure of red brick and light-colored stone, is one of the most notable architectural features of Harlem. The institution has entirely outgrown its old quarters, a number of frame buildings situated in a location very inconvenient for present-day needs and erected when Harlem was a straggling village along the shore of the East River.

A Milk Dealer Fined. — A milk dealer whose depots are at Davenport Centre, Delaware County, was recently fined $1,800 by Justice Ford in the Supreme Court, after a jury had found him guilty of skimming his milk before shipping it to New York. This is probably the largest fine ever imposed for a similar offense, and the testimony on which the defendant was convicted was furnished by two State inspectors of the Health Department, who while in hiding personally observed the skimming of the milk, and then followed the product to the points where it was disposed of.

Bequest to Presbyterian Hospital. — By the will of the late Peter J. Cumming, of New York, his residuary estate, which is said to be large, is bequeathed to the Presbyterian Hospital for the purpose of endowing a room or certain beds, in perpetuity, in the name of the testator. Mr. Cumming was greatly interested in the Broadway Savings Institution, of which he was president for fifty years, retiring in 1905, and it is stipulated in the will that the endowed room or beds shall be used, under the direction of the executors, for the benefit of such deserving employees or depositors of the savings bank, as may require hospital care for which they are unable to pay.

Obituary.

HON. ALAN PERCY HERBERT, M.D.

The newspapers of London and Paris have recently announced the death in the latter city of the Hon. Alan Percy Herbert, M. D., who for more than forty years had been in the active practice of his profession in the city of Paris.

He was the second son of the third Earl of Carnarvon by the eldest daughter of Lord Henry Howard, and niece of the twelfth Duke of Norfolk.

His name medically has long been a familiar one to both the English and American resident colony in Paris, and the intelligence of his death will also come to a large number of his former American patients, both at home and abroad, with that nearness of loss to which the personal contact of his profession gives especial meaning.

Educated at Harrow and Christ Church, Oxford, almost immediately on completing his education in England, Doctor Herbert began his medical studies in Paris, where after a most thorough preparation he was appointed, by competitive examination, an interne to the Paris hospitals.

Later on in 1871 when Sir Richard Wallace founded the Hertford British Hospital, Dr. Herbert was made consulting surgeon to that well-known, admirably conducted institution.

Remaining at his post throughout the entire siege of Paris in the Franco-German war, his loyalty to his chosen profession was heroically evinced by an utter ignoring of self in his efforts to relieve the suffering and want in which he also shared during those tragic days in the imprisoned French capital. His able assistance to the United States Legation in its effective service rendered to the military authorities has never been forgotten.

At this time a Chevalier in recognition of these valuable services, he was later made an Officier of the Legion d'Honneur.

Dr. Herbert's close and varied intercourse with the numerous French, English and American coteries of science, literature and art in Paris brought his acquaintance to many to whom it was as delightful as it was appreciated and enduring. Possessing a nature of marked gentleness and delicate thought for others, he had a happiness of temperament which in health seemed to continue the playful mirth and buoyancy of youth. Underneath it all was a basis of firmness and strength always ready for the demands of his profession and equally sustaining to those about him. His retiring simplicity of manners while having a quiet distinction were felt rather than observed from their unvarying courtesy.

By the constancy and fulfilment of his beneficent resolve in early youth to acquire the human skill to alleviate the distressing ills of others, to the sacrifice of that greater ease of circumstance which birth and station had placed before him, Dr. Herbert fully transcribed in his life the ancestral motto of his family, "*Ung je servirai*" and as truly added a new and lasting luster to the distinction of its honored past.

Of the just remembrance and future recompense to follow such useful and unselfish lives, Dr. Holmes has told us in his benign song of gratitude for the blessings they bestow:

> "No labored line, no sculptor's art
> Such hallowed memory needs;
> His tablet is the human heart,
> His record loving deeds.
>
> "Enough is there a world of love;
> No more we ask to know.
> The hand will guide thy ways above
> That shaped thy task below."

A. H. W.

Current Literature.

The Journal of the American Medical Association.
April 13, 1907.

1. Spiller, W. G., and Allen, A. R. *Internal Hydrocephalus.*
2. Howard, C. P. *Myxedema.* (Continued article.)
3. *Camp, C. D. *Pathology of Paralysis Agitans.*
4. *Leach, W. J. *Acute Otitis Media.*
5. *Brown, O. H. *Differences in the Physiologic Action of the Salts of an Alkaloid.*

6. Hynson, H. P. *Nostrums and Proprietaries.*
7. Carson, S. C. *The Modern Surgeon.*
8. *Elliott, A. R. *Clinical Observation on Blood Pressure in Arteriosclerosis and Bright's Disease, with Suggestions Concerning the Therapeutic Control of Persistent High Blood Pressure.*
9. Holloway, T. B. *Gonococcus Conjunctivitis.*
10. *Knorr, E. A. *Study of the Opsonins.*
11. *Clark, J. B. *Gonorrheal Prostatitis.*
12. Zenner, P. *Traumatic Neurosis.*

3. Camp has made a careful critical study of the postmortem findings reported by others, and noted by himself in his own 14 cases of paralysis agitans. In the central nervous system the most common abnormalities were the fibrosis of capillary blood-vessels of the spinal cord, upon which much stress has been laid, and diffuse overgrowth of the glia of the spinal cord. Neither of these changes, however, was constant, and neither can be said to differ from senile changes frequently found without paralysis agitans. In the muscles, in all of 9 cases examined, constant changes were found, agreeing with the observations of others. Whether these changes are the prime cause of the disease, or are merely incidental to the course of the disease, perhaps the result of circulating toxins, is still uncertain. Recently attention has been directed toward a possible connection of disorder of the parathyroid glands with paralysis agitans. In parathyroidectomized dogs, tremor, rigidity, convulsions, dyspnea and death are observed. It has been argued that a gradual diminution of the internal secretion of the para thyroid might well modify this course of events into the symptom complex of paralysis agitans. In two of his cases Camp was able to examine the parathyroid glands and in both were found pathologic conditions. These observations, in connection with Berkley's report of marked improvement of 9 out of 11 cases treated with parathyroid extract, suggest strongly that paralysis agitans is a toxemia due to alteration in the internal secretion of the parathyroid glands. [Other observers have found the parathyroids normal.]

4. Leach describes acute otitis media as due most often to nasal or pharyngeal disease, catarrh or adenoid. The symptoms are pulsating pain in the ear and face, sometimes fever, delirium and convulsions. Examination shows redness and bulging of the drum. The treatment in the early stages is simply to relieve the pain and to treat the nose and throat. To relieve pain, Leach uses a hot douche of boric acid solution followed by instilling within the external canal a 4% solution of cocain. If the bulging and pain continue after thirty-six hours he incises the drum, producing local anesthesia by a 10% solution of cocain in 1-1000 solution of adrenalin. Incision is necessary to prevent spontaneous rupture, which frequently does not close. After puncture the ear is cleaned out, boric acid powder is blown in and cotton inserted. When the discharge has ceased, Politzerization is practiced. Removal of adenoids, etc., should be performed early without waiting for the drum to heal. With proper treatment the prognosis is good; if, however, the condition is neglected it may lead to destruction of the middle ear, infection of the mastoid, and become chronic. If symptoms persist three days after incision, with tenderness over the antrum, fever, chills and sweats, suddenly ceasing or very profuse purulent discharge, the mastoid should be drained.

5. Brown finds that different salts of the same alkaloid have decided differences in action, a fact which is not recognized in the standard works upon pharmacology. In his work he has dealt mainly with strychnin, quinin and morphin, and their actions upon motile protozoa.

8. Elliott, in 30 cases of arteriosclerosis, evidenced by thickening of peripheral arteries, has noted a positive arterial hypertension in only 6. In 60 cases of chronic Bright's disease, on the other hand, the average blood pressure was 190 mm. Elliott feels that a blood pressure of 200 mm. is good evidence, even in the absence of other signs, of renal insufficiency. In treatment of hypertension the inadvisability of vasodilators is emphasized. High blood pressure must be regarded primarily as a vascular reaction against toxins in the circulating blood, continuing until finally cardiac failure supervenes. The increased tension is necessary to compensate functional deficiency of the kidneys, and while it exists the patient enjoys comparative comfort, whereas when the secondary low tension occurs symptoms increase. Broadbent says "it is not high tension, but low tension that is to be feared in Bright's disease." It is important to plan the diet with reference to disintoxication. The nitrites are to be avoided except in special conditions, such as angina pectoris and apoplexy prodromes. Symptoms of weakening of the heart are indications for cardiac stimulation.

10. Knorr reports the results of experiments performed to determine certain points with regard to the variations of the opsonic index due to variations in the technic of its estimation. The question considered deals only with details of laboratory procedure, not with principles of general interest.

11. Clark believes that prostatic inflammation is always present in gonorrhea of the posterior urethra. Acute prostatitis may be classified as catarrhal, follicular, or parenchymatous, severe grades of the last often leading to abscess. The catarrhal form is by far the most common, and its symptoms are indistinguishable from those of the accompanying posterior urethritis. The diagnosis is made only by the finding of prostatic casts in the urine. The follicular form is similar clinically, but its presence is detected by localized areas of tenderness found on digital examination. In the parenchymatous form the prostate is swollen, smooth, and more or less tender. Urination and also defecation are painful. The milder cases occur without fever, but the more severe cases may be accompanied by fever and chills, with great pain, tenderness and swelling, especially in cases which go on to suppuration. Prostatic abscess should be drained early. Untreated cases rupture most often into the urethra, next most commonly into the rectum. The mortality of such cases is high. The treatment of all forms of acute prostatitis is mainly palliative, with abstinence from massage and other forms of manipulation; the treatment of abscess is purely surgical. Chronic prostatitis is of greater importance, since it is more common as a source of the infection of women, cases with acute prostatitis seldom being capable of intercourse. Chronic prostatitis has few subjective symptoms except those of sexual neurasthenia with referred pains, erections, premature ejaculations and decreasing sexual ability. The diagnosis is made from the somewhat increased size and irregular outline of the prostate, and from the presence of pus in the prostatic fluid, obtained by digital compression. Gonococci have been found in this discharge up to three years from the date of infection. In treatment the main reliance in chronic prostatitis is prostatic massage performed systematically once, twice, or three times a week, the bladder, being first filled with mild antiseptic solution, which is voided at the end of the process. Massage, however, must not be performed if any trace of acute inflammation persists.

[F. W. P.]

The Bulletin of the Johns Hopkins Hospital.

April, 1907.

1. Osler, W. *On the Library of a Medical School.*
2. Raney, M. L. *Some Ana of the Marburg Collection.*
3. *Kelly, H. A. *Method of Preserving Outlines of Visceral Lesions.*
4. *Ford, W. W. *A Clinical Study of Mushroom Intoxication.*
5. *Egdahl, A. *Acute Pancreatitis.*
6. Ingalls, N. W. *Vena Cava Superior Receiving Two Upper Right Pulmonary Veins and Opening into Both Atria.*

3. Kelly describes his method of preserving for purposes of record the outlines of abdominal tumors and of other conditions capable of graphic representation. After outlining the tumor with a skin pencil, a sheet of transparent material is laid over the abdomen, the anterior superior spines, the symphysis and the umbilicus are marked upon the paper, and the outlines drawn upon the abdomen are then traced off. This record is marked with the patient's name and the date and is filed away. This method is especially valuable in demonstrating changes from month to month in tumors, such as fibroids.

4. Ford distinguishes between the clinical symptoms produced by various kinds of poisonous mushrooms. By far the majority of fatalities from mushroom poisoning are caused by the *Amanita phalloides*. Symptoms appear only after a prodromal stage of six to fifteen hours, beginning then with sudden extreme abdominal pain, with vomiting and diarrhea. The vomitus and stools contain blood. Paroxysms of pain and vomiting alternate with periods of remission. There is rapid loss of strength; the Hippocratic facies is pronounced. Within two or three days coma comes on, soon followed by death. The active principle of the *Amanita phalloides* is not muscarin, but a substance little understood which has been called *Amanita-toxin*. The treatment is that of poisoning in general, together with morphia and other palliative measures. No drug has any antidotal effect; the only hope of successful treatment in the future lies in antitoxins which are said to have been produced. The *Amanita muscaria* not uncommonly causes cases of poisoning. Symptoms appear within an hour or two after ingestion, with vomiting and diarrhea, severe headache, contracted pupils, delirium and finally violent convulsions and death. The active principle is muscarine; as an antidote atropine has been used with considerable success. Other less common poisonous fungi are described. To avoid poisoning it is urged that only common and easily recognized species be used as food. An extensive bibliography is appended.

5. Egdahl has analysed 105 published cases of acute pancreatitis, with the purpose of determining the relative frequency of the different factors which have been considered to have etiological significance. Most prominent among these is the action of gallstones in causing a retrojection of bile into the pancreas. Bacterial invasions of various kinds, from the intestine or from other sources, undoubtedly play an important part. Entrance of gastric juice through the ducts of the pancreas has been thought by some to occur. The action of ferments originating in the pancreas, particularly the action of steapsin in the production of fat necrosis, has attracted much attention. Egdahl from the results of his studies concludes that gallstones are probably the most common single cause of pancreatitis, occurring in 42% of the cases. Gastro-intestinal disorders are the next most common cause, being present in 30%. Seventeen out of the 32 cases of this group gave a history of alcoholism. It is probable that retrojection of bile may be caused by these intestinal disorders. The organism most commonly present is *B. Coli communis;* next come the streptococcus and the staphylococci. Acute pancreatitis may occur in a large variety of conditions of which typhoid fever, tuberculosis, mumps, trauma, syphilis, emboli, appendicitis, malaria and gastric ulcer deserve special mention.

[F. W. P.]

The Lancet.

April 6, 1907.

1. Handley, W. S. *The Pathology of Melanotic Growths in Relation to their Operative Treatment.*
2. Savage, G. H. *The Increase of Insanity.*
3. *Childe, C. P. *The Area of "Acute Abdominal Conflux" and the "Incision of Incidence."*
4. Crace-Calvert, G. A. *Amyl Nitrite in Hemoptysis.*
5. Alexander, W. *Aseptic and Septic Midwifery at the Liverpool Work-house Hospital.*
6. *Savill, A. F. *A Case of Multiple Circumscribed Lipomata Treated with Ethylate of Sodium.*
7. Sykes, J. F. J. *The Teaching of the Hygiene of the Expectant and Suckling Mother.*
8. Campbell, H. *The Role of the Blood Plasma in Disease.*

3. In cases of acute abdominal disorder where the exact source of trouble cannot be located, it has been the custom with many surgeons to make a median incision below the umbilicus. Childe does not agree with this method, and urges a right rectus incision in all these cases. Within an area bounded on the left by a vertical line from the seventh rib one inch from sternum on the left down to Poupart's ligament, and on the right by a line vertically upwards from the right anterior superior spine, lie the organs which in 90% of cases will be the ones affected in any acute abdominal condition. This area he calls the area of "acute abdominal conflux," and the incision in the center of this area the "incision of incidence." He classes acute abdominal conditions in three groups: (1) those which can only occur within this area, (2) those that may occur within or without this area, and (3) those that can only occur outside the area. Group I is overwhelmingly large and Group III insignificant, though slightly larger in the female owing to the possibility of various pelvic conditions. The incision should commence at the level of the umbilicus and be continued downward.

6. Savill reports a case of multiple lipomata in a man somewhat alcoholic, who for years had suffered from deficient arterial tone, *i.e.*, his hands and feet were blue and mottled even in warm weather and in cold weather or after a heavy meal became white and numb. Savill cites a theory which connects the growth of these lipomata with deficient local circulation. Operative procedures were impossible owing to the number of tumors. To increase the local circulation each lipoma was regularly painted with sodium ethylate, and in addition, massage, exercise and abstinence from alcohol were prescribed. The lipomata slowly disappeared, leaving only small fibrous remains, and the cure seems to have been permanent.

[J. B. H.]

British Medical Journal.

April 6, 1907.

1. Cameron, H. C. *Lord Lister and the Evolution of Wound Treatment during the Last Forty Years.*
2. Horsley, V. *Dr. Hughlings Jackson's Views of the Functions of the Cerebellum as Illustrated by Recent Research.*
3. Riddell, J. S. *On Iodine-Spirit Catgut.*

The Practitioner.

April, 1907.

1. Herman, G. E. *The Treatment of Post-partum Hemorrhage.*
2. *Cowan, J. *The Myogenic Theory.*
3. Childe, C. P. *Six Cases of Ruptured Ectopic Gestation. Five Ex-sections; Four Recoveries.*
4. Thomson, H. C. *Clinical Lecture on Diseases of the Nervous System.*
5. *Langmead, F. *On the Relationship between Simple Posterior Basic Meningitis and Cerebrospinal Fever.*
6. Hutchinson, W. *What is Fever?*
7. *Fennell, C. H. *Juvenile General Paralysis.*
8. Hertz, A. F. *Notes from Germany on the Value of Rontgen Rays in Medical Diagnosis.*
9. Fletcher, H. N. *The Use of Antipyrin as a Sedative in Some of the Common Disorders of Infancy and Childhood.*
10. Moore, F. C. *Diseases of the Stomach. A Review of Some Recent Works.*

2. Cowan gives a careful and detailed consideration of the physiology of the heart, its contractions and to extrasystole with especial reference to heart block. He discusses the recent investigations along these lines by Mackenzie, His and others and reviews the entire subject in a very satisfactory way.

5. Since attention was first called to posterior basic meningitis by Barlow and Gee in 1878, the question has often arisen as to whether it was a disease *sui generis* or only a variation of epidemic cerebrospinal meningitis. Posterior basic meningitis is a disease of infancy. Retraction of the head is marked; in two cases the author has seen it necessary to put a pad between occiput and sacrum to prevent ulceration. About 33% of these children are blind. Dr. Still grew a small diplococcus of "readier growth and greater vitality" than the meningococcus. The differences between this disease and typical spotted fever seem to be one of degree only. and the writer is convinced that they are one and the same.

7. Fennell discusses 20 cases of juvenile general paralysis. This condition is by no means rare among the degenerative mental conditions of early life, and on account of its absolutely bad prognosis it is important to be able

to differentiate it from other less serious mental conditions. The average age of onset was seventeen years. The cardinal signs are iridoplegia, affection of speech, alteration of deep reflexes and muscular tremors. The pupils are unequal and irregular. As the disease progresses diagnosis becomes more difficult. Post-mortem are found signs of a typical chronic diffuse meningo-encephalitis, identical with the changes found in the adult form. There is nearly always a history of parental syphilis.

[J. B. H.]

Deutsche Medizinische Wochenschrift, No. 13.

March 28, 1907.

1. Loeffler, F. *The Twenty-fifth Anniversary of the Discovery of the Tubercle Bacillus.* (Concluded.)
2. *Dietrich, A. *Results in the Experimental Investigations of Cancer.*
3. *Litten, M. *Pneumonia Following Contusion of the Chest Wall.*
4. Tschistowitsch, N. J. *Pseudoleukemia with Intermittent Fever.*
5. *Elischer, J. V. and Engel, K. *Mediastinal Tumor Treated by the X-rays.*
6. Silbermann. *Treatment of Graves's Disease.*
7. Gerber. *Kosmetic Operations on the Nose.*
8. Levy, M. *The Mortality of Ear Disease and Its Significance in Life Insurance.*

2. Dietrich reviews briefly the results of the various experimental investigations into the etiology of cancer. He remarks that all the most careful investigators are agreed that there is no ground for the parasitic theory of cancer growth. Recent animal experiments have led us back to the view, which pathological anatomy has always maintained, that the cause of tumor growth lies in the tumor cell itself, and a complete understanding can only be obtained through a careful study of its biological conditions.

3. Litten reports a case of pneumonia following a blow on the chest (Kontusionspneumonie), chiefly interesting from a medico-legal aspect. He distinguishes these from traumatic pneumonias in that there is no visible sign of injury to the chest wall. Rupture of the expanded lung has been proved to occur from trauma without any external signs of injury, and it is probable that congestions thus produced may become the seat of pneumonic processes. Such processes are not necessarily immediately under the part which receives the injury, but may be on the opposite side. The etiology is of the usual sort, pneumococcus, Friedländer's bacillus, or streptococcus, and the symptoms are precisely like those of ordinary pneumonia. The course is usually shorter and the fatal cases more common, with a tendency to sudden death, due apparently to the condition of shock, induced by the injury. The author has seen 14 cases of such pneumonias directly following and, in his opinion, attributable to an injury. [L. G. M.]

Münchener Medizinische Wochenschrift. No. 12.

March 19, 1907.

1. *Manchot, C. *A New Method of Administering Phosphorus to Children.*
2. Hans, H. *The Causes of Difficulty in Removing the Canula after Tracheotomy in Diphtheria.*
3. Haentsens, A. H. *The Absence of Phagocytosis in Absorption of the Complement.*
4. *Teschemacher. *The Continuance of Polyuria After the Disappearance of Sugar in Diabetes Mellitus.*
5. Bäumler, E. *A Report of 350 Extirpations of the Lachrymal Sac, with Remarks.*
6. Deutschmann, R. *The Treatment of Separation of the Retina.*
7. Leick, B. *The Treatment of Typhoid Fever with Pyramidon.*
8. Eisenberg, H. *Iodofan, a New Organic Preparation of Iodin, A Substitute for Iodoform.*
9. Bull, P. *A Case of Teratoma Combined with Meningocele.*
10. Wagner, T. *A Case of Polyserositis.*
11. Näcke, P. *Dermatological Reports.*
12. Hornung. *Aspirin as an Analgesic in Renal Colic.*
13. *Vorschütz, J. *The Treatment of Cerebro-spinal Meningitis with Bier's Passive Congestion and Lumbar Puncture.* (Concluded.)

1. The two chief disadvantages in the internal use of phosphorus are its poisonous effects noted in a few rare instances, and the fact that it is instable and loses its efficacy after standing a few weeks. Manchot experimented with subcutaneous injections of phosphorus, and found that they were followed in atrophic children by a rapid increase of weight. He was forced, however, to abandon this form of administration, owing to the occurrence of abscesses at the site of injection. He then looked for an organic compound of phosphorus, and hit upon hemp seed. The seed of the Russian hemp contains larger amounts of phosphorus than any other plant which is used as food. He administered it in the form of a soup made from hemp-seed meal. Cases of infantile atrophy and rachitis thus treated showed prompt gain in weight, and improvement in the general condition.

4. Teschemacher has noticed that polyuria may continue for some time in diabetes after the urine has become free from sugar. This does not include those cases complicated with hypertrophy of the prostate, in which the polyuria is due to the obstruction to the outflow of urine. In a third group belong the rare instances in which diabetes mellitus has changed into diabetes insipidus. Teschemacher reports three such cases; in the third, glycosuria occured at the age of three years, probably as the result of an inflammation of the brain. After a year the sugar disappeared from the urine, and diabetes insipidus followed, lasting thirteen years, at the end of which time glycosuria appeared again to last eight months.

13. Vorschütz gives a good review of the present state of our knowledge concerning epidemic cerebrospinal meningitis, and recommends for treatment a combination of the use of passive congestion with frequent lumbar punctures; of five cases thus treated, one died. He performs lumbar punctures whenever the fever is high, and when there are signs of increased intracranial pressure. Passive congestion is applied for twenty hours each day by means of a rubber bandage about the neck. This should be put on just tight enough to cause moderate cyanosis of the face. The bandage should be removed during lumbar puncture. The advantages of passive congestion consist theoretically in the increased amount of bacteriocidal substances brought to bear on the inflammatory process, and the increased exudation of lymph which brings fresh leucocytes to the spot, and in combination with the lumbar puncture causes a flushing of the cerebrospinal canal. From a practical point of view, it seemed to diminish the headache and was grateful to the patient. [The number of cases treated is too small to draw conclusions from, but the method is certainly rational. W. T.]

Berliner Klinische Wochenschrift. No. 11.

March 18, 1907.

1. *Baisch, K. *Hyperemesis in Pregnancy.*
2. *Lindenheim, H. *Fever Following the First Use of Mercury in the Early Stage of Syphilis.*
3. *Hoke and Mende. *Katzenstein's Method for Testing the Function of the Heart.*
4. *Müller, R. *Protargol Salve as a Means for Promoting the Healing of Wounds.*
5. Ehrlich, P. *Chemotherapeutic Studies on Trypanosomes.* (Continued.)

1. Excessive vomiting in pregnancy may be due to one of three causes, viz., (1) irritability of the vomiting center in the medulla, (2) irritability of the stomach, (3) uterine abnormalities, including displacements, the absorption of abnormal chemical substances, etc. The great majority belong to the first class, and are cases of neurasthenia and hysteria. In others, previous over-sensitiveness of the stomach points to that organ as the cause. Uterine displacements probably cause vomiting by reflex action. In a small number, a toxic action must be assumed, the formation of some abnormal chemical substance, or of some normal substance in undue amounts. The treatment recommended by Baisch is as follows: rest in bed, absolute starvation for twenty-four hours, with an ice-bag or

hot water bottle on the abdomen. Then small amounts of cold milk, followed by a very gradual return to a normal diet. If this treatment is not effective within a few days, the patient should be transferred to a hospital, where the mental effect of isolation and change of surroundings is often promptly curative. In cases of the third group, sedatives are indicated, especially bromides, morphin, and scopolamin (hyoscine hydrobromate). The weight curve must be carefully followed, and if in spite of treatment vomiting persists, and the weight reaches a dangerously low point, abortion should be induced. This in most cases stops the vomiting immediately, but if too long postponed, the patient dies in spite of the operation.

2. Lindenheim made careful records of the temperature of syphilitic patients receiving mercury, and found transitory fever in 10% after the first administration of the drug. The temperature rose within twenty-four hours, reaching a maximum of 103°. The patients were all in the secondary stage. The febrile reaction is probably due to the absorption of endotoxins set free by the death of spirochetes.

3. Hoke and Mende investigated the Katzenstein method of testing the function of the heart. This consists in compressing both femoral arteries and noting the pulse rate and blood pressure before and after. It is claimed that with good cardiac function the pulse rate remains the same or falls, and the blood pressure rises, while with insufficient hearts the pulse rate rises and the pressure falls. The authors found these statements to be true in the main, but in some instances these were such discrepancies that they consider the method to be of little value. In one case of uncompensated heart disease, serious symptoms resulted from the compression.

4. Müller recommends warmly protargol salve to stimulate the healing of wounds of the skin, especially after burns. It should be used in the strength of 5 to 10%. [W. T.]

Zeitschrif für Klinische Medizin. Bd. 61, Hft. 1 and 2.

1. *Seiler, F. *The Nature of Diabetes Insipidus.*
2. *Von Ritook, S. *Hypoplasia of the Arterial System.*
3. *Stern, A. *Cysticercus of the Fourth Ventricle.*
4. *Janowski, W. *Dicrotism in Aortic Insufficiency.*
5. *Nürnberg, A. *Dicrotism in Aortic Insufficiency.*
6. Bergell, P., and Labaud, L. *Experimental Test of Isotonic Mineral Water.*
7. *Klemperer, G., and Umber, H. *Diabetic Lipemia.*
8. Aronsohn, E. *Clinical Observations on Increased Metabolism.*

1. Seiler has studied two cases of diabetes insipidus with much care. These he reports along with two other cases less completely studied. In order to determine whether in diabetes insipidus there was any disturbance of renal activity, he compared the urinary output with the intake of fluid and the effect on the urinary secretion of a large amount of fluid taken at one time. These he compared with the urinary excretion of normal individuals under like conditions. That there was no disturbance of the absorption of water he determined by comparing the effects of fluid drinks on the hemoglobin of the blood in normal people and in diabetes insipidus. Then he studied the total output in twenty-four hours of various solid constituents under a constant diet, the effect of large ingestions of proteid, carbohydrate or salts on the total solids; also the secretion of methylene blue in comparison with a normal individual. Finally, he tested the action of caffein, agurin and theocin on the urinary excretion in diabetes insipidus. As a result of these experiments he concludes that in diabetes insipidus there is an abnormality in renal function, which consists in an inability to excrete a urine of a normal concentration. Only a urine of reduced concentration can be excreted. A sufficient excretion of solids then takes place only when there is an increased output of fluid. This demands an increased ingestion of fluid, and when the fluid intake is insufficient there is a retention of urinary products, evident objectively in an increased osmotic tension of the blood, (estimated by determinations of the freezing point,) and subjectively in symptoms similar to those of beginning uremia. This explains the increased thirst and the polyuria of the disease. Seiler suggests that possibly the polyuria of chronic interstitial nephritis may be of similar nature. This disturbance in function in diabetes insipidus the author does not believe due to a decreased reabsorption of water in the convoluted tubules, as suggested by some, but it is of a more complex nature and in part due to a disturbed nervous mechanism. Caffein, agurin and theocin he found practically without influence therapeutically. It seems best to determine the optimum fluid intake and to give daily that amount of fluid. A departure in either direction from this generally leads to unpleasant symptoms.

2. Arterial hypoplasia occurs most commonly in the young and is usually accompanied by anemia and frequently by defective development of other organs, as a small heart or hypoplastic genitalia. These individuals tire abnormally easily without any demonstrable cardiac lesion. Subnormal temperature and cold extremities are common. Palpitation and left-sided hypertrophy of the heart is often found. Cardiac insufficiency after slight cause and decreased resistance to disease are features. It is rare to have all these symptoms but enough are usually present to justify a presumptive diagnosis. The condition is either congenital or the result of a defective arterial growth after birth. An aorta less than 55 mm. in circumference in an adult is to be considered as hypoplastic. V. Ritook has been able to collect 56 cases of arterial hypoplasia from the literature and reports 17 cases of his own. From these he deduces the above conclusions.

3. Stern reports 4 cases of cysticercus of the fourth ventricle and tabulates 68 from the literature. As a result of this analysis, he states that symptoms may be divided into (*a*) symptoms of general cerebral pressure, (*b*) symptoms of disease in the posterior fossa, (*c*) rare but certain localizing symptoms of disease of the medulla (diabetes, respiratory disturbance and paralysis of regional nerves especially the abducens.) Local symptoms are usually obscured by the general ones. Characteristic is the striking alternation between severe general symptoms and periods of no symptoms, so that a functional disturbance is simulated. The Bruns symptom (dizziness on suddenly turning the head) is especially characteristic of cysticercus of the fourth ventricle. Sudden death from respiratory failure is common. These last three in connection with any localizing symptoms form the basis of a possible diagnosis. A very extensive bibliography is given at the end.

4 and 5. In an earlier number of this same journal (Bd. 59, hft. 5, 6, S. 532), Goldschieder, as the result of the study of three cases, concluded that the appearance of a distinctly dicrotic pulse in aortic insufficiency was evidence of the development also of mitral insufficiency. In Goldscheider's cases with the appearance of evidence of mitral insufficiency, fever had developed. Janowski questions whether the fever or the mitral insufficiency is the cause of the dicrotism. Mitral insufficiency alone he shows is not a cause. Pulse tracings from two cases of aortic and mitral insufficiency give no evidence of dicrotism. On the other hand, cases of aortic insufficiency show a dicrotic pulse during periods of fever which disappears when the temperature returns to normal. So Janowski concludes that in aortic insufficiency the same causes produce dicrotism as do without such valvular lesion. These are conditions which lower vascular tension, as fever, Basedow's disease, amyl nitrite. A dicrotic pulse is no evidence of a coincident mitral insufficiency. On the other hand, Nürnberg, by means of sphygmograms from cases which do not show a palpable dicrotism, supports the views of Goldscheider. [Of the two papers that of Janowski is the more convincing.]

7. Lipemia is not characteristic of severe diabetes and diabetic coma, as it was not present in some of the author's severe cases. The increased lipoid in the blood is only in part true fat, in part it is lecithin and cholesterin. The latter are in the blood in larger amounts than in the fat depots of the body, so the lipemia is not due merely to increased fat transport. It rather suggests an increased cell destruction and the freeing of lipoid substances from union with proteid. [This paper gives some evidence for the intracellular origin of part of the fat of fatty degeneration. H. A. C.]

Miscellany.

THE POPULATION OF FRANCE.

In France, unlike England, the population has been counted regularly every five years since the beginning of last century, the date of the last census being just over a year ago. No full report relating to it has yet appeared, but the Minister of the Interior has published a summary of its contents so far as gross population is concerned. From the figures given it would appear that the population of France on March 4, 1906, numbered 39,252,267, which represents an increase of 290,322 in five years. Such increase is considerably less than in the previous five years, when it was little less than half a million; on the other hand, if the ten years ending March, 1906, be compared with the ten years ending March, 1901, the rate of increase is in favor of the later decennial period. A further point from which can be drawn some consolation for those who view the comparative depopulation of France with alarm is that the increase, such as it is, is distributed over a larger number of departments than in earlier periods, or, in other words, the population seems to be stationary or decreasing in fewer parts of France than heretofore. A further item in the summary relates to the number of foreigners resident in France. They were counted for the first time in 1886, and then numbered 1,115,214; they now only just exceed a million. It is believed that this diminution is the outcome of a law passed some seventeen years ago with reference to foreign residents, which has the effect under certain circumstances of converting resident foreigners into French subjects automatically and irrespective of their wishes. A certain amount of information is also supplied as to changes in the distribution of the population. Some large towns have added to their population although that of the departments in which they are situated has decreased, but the figures as a whole are considered to indicate at least some slackening in the flow from the country districts to large centres. In considering these figures it is worth while to remember that the British census of 1901 revealed a population of 41,976,827; this was equal to an increase in ten years of not far short of 4,000,000 against, roughly speaking, a quarter of a million in five years in France.— *British Medical Journal.*

Correspondence.

LETTER FROM SAN FRANCISCO.

The Present Hygienic and Professional Situation.

San Francisco, Cal., April 13, 1907.

Mr. Editor: In accordance with your suggestion and as the close of the year following our great disaster approaches, it may be interesting to the medical profession to know the present status of hygienic and professional matters in San Francisco.

Following the fire, there was great apprehension lest an epidemic should befall us, not only here but in the neighboring towns. This might reasonably be expected as a result of the crowded conditions brought about by the necessity of housing three hundred thousand homeless people; and further because the major part of the water supply of San Francisco was cut off for many weeks, owing to serious breaks in the water-mains. This impelled many people to use old wells, and in spite of every effort made to have water boiled, the carelessness in this particular caused serious trouble. In the summer and fall there occurred more than a thousand cases of typhoid. When one considers that one hundred cases a year is about the average for San Francisco, and that a vast majority of these are brought in from neighboring counties, such an epidemic as ours seemed to us a serious matter. The situation was carefully studied by a committee from the County Medical Society, and by the local board of health. Considerable importance was attached at first to the possibility of the disease being fly-borne. Serious breaks in the sewers might easily have occurred without being noticed, and it was some weeks after the disaster before the latrines in the camps were properly screened. The possibility of flies carrying the disease is apparent. It is a point worthy of attention that there is no proof that the main water supply of the city was in any way contaminated. The epidemic reached its height in October and November, and within two months of that time had completely died out. The prompt isolation of cases of smallpox, scarlet fever, measles and whooping-cough in an improvised hospital for contagious diseases, ably managed in its early days by Dr. MacKenzie of Portland, Ore., prevented any trouble whatever on this score, and the city has been remarkably free from contagious disease during the year. The dry season has about begun, and with it will come the summer winds, which are bound to make the burnt district a very dusty place. Fortunately, these winds are west winds, and as the burnt district occupies the eastern part of the city, a greater part of it will not be affected.

The transportation problem has not by any means been settled, and it is a singular fact that there is an immense increase in the complaint of foot troubles, which suggests that many people are walking who were not accustomed to this form of exercise.

In spite of the fact that nine hospitals were burned, and several of those remaining badly damaged, there has been no lack of hospital accommodations, due partly to the extremely healthy condition of the city, and partly to the rapidity with which several of the large private residences were converted into hospitals. The generous support given by the San Francisco Relief Committee to the families of working-people in which there was sickness, has done an immense deal to prevent additional burdens being put upon a large number of people who suffered in the fire The Relief Committee has paid the hospital expenses of an average of two hundred and twenty-five people a day up to April 1, from the time of the fire.

About $40,000 was received by the Physicians' Relief Committee, and a very large supply of new clothing and shoes, besides a number of medical books and surgical instruments. From the money and clothing three hundred families of doctors were helped, at an expense of $30,000. The balance of the fund, after providing for a few who on account of age and infirmity must be cared for the rest of their lives, will probably be turned over as a permanent relief fund to the County Medical Society. The sets of books, particularly files of magazines, were given to the library of the County Medical Society. The rest of the books and the instruments were distributed among doctors who needed them. Although physicians as a class suffered very heavily, more than a thousand out of the four thousand in town losing their homes, offices or both, they have re-established themselves remarkably well. The prosperity of the working classes is partly responsible for this. I think it is a fair statement to make, however, that no single class of people suffered more, or found it harder to re-establish themselves than physicians. It is certainly harder to do one's work, and people in trouble through sickness seem to expect the doctor to charge less than before, while expenses of living are certainly greatly increased.

Very truly yours,

Philip King Brown, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 20, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,557	463	Quincy	4	2
Chicago	617	192	Waltham	9	1
Philadelphia	—	—	Pittsfield	11	—
St. Louis	—	—	Gloucester	6	2
Baltimore	203	44	Brookline	4	—
Cleveland	—	—	North Adams	9	2
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	7	3
Cincinnati	—	—	Medford	6	—
Milwaukee	—	—	Beverly	3	—
Washington	—	—	Leominster	1	—
Providence	74	33	Hyde Park	8	3
Boston	216	40	Melrose	5	2
Worcester	53	13	Newburyport	—	—
Fall River	29	13	Woburn	7	—
Cambridge	33	5	Marlboro	3	2
Lowell	28	9	Westfield	3	—
Lynn	25	4	Peabody	—	—
New Bedford	25	4	Revere	5	1
Springfield	20	3	Attleboro	6	1
Lawrence	22	4	Clinton	3	2
Somerville	15	1	Adams	3	2
Holyoke	22	9	Gardner	—	—
Brockton	7	—	Milford	—	—
Malden	17	5	Watertown	0	—
Chelsea	12	3	Plymouth	—	—
Salem	14	6	Weymouth	5	0
Newton	14	2	Framingham	2	1
Haverhill	13	3	Southbridge	4	1
Fitchburg	8	1	Wakefield	—	—
Everett	12	2	Webster	—	—
Taunton	11	4			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED APRIL 24, 1907.

CARRINGTON, P. M., surgeon. Detailed to represent the Service at the meetings of the National Association for the Study and Prevention of Tuberculosis, and the twenty-fourth annual meeting of the American Climatological Association, to be held in Washington, D. C., May 6–9, 1907. April 23, 1907.

LAVINDER, C. H., passed assistant surgeon. Granted leave of absence for one month from April 24, 1907. April 23, 1907.

HORDY, W. C., passed assistant surgeon. Directed to proceed to San Francisco, Cal., for special temporary duty, upon completion of which to rejoin station. April 18, 1907.

BOGGESS, J. S., passed assistant surgeon. Directed to proceed from St. John, N. B., to Quebec, Can., for duty in connection with the examination of alien immigrants. April 23, 1907.

BAILEY, C. W., acting assistant surgeon. Granted leave of absence for one day, April 23, 1907. April 23, 1907.

BULLARD, J. T., acting assistant surgeon. Granted leave of absence for nine days from March 23, 1907, on account of sickness. April 17, 1907.

FOSTER, S. B., acting assistant surgeon. Granted six days' leave of absence from April 19, 1907. April 18, 1907.

KEATLEY, H. W., acting assistant surgeon. Granted leave of absence for three days from April 16, 1907, under paragraph 210 of the Regulations.

ONUF, B., acting assistant surgeon. Granted leave of absence for two days from April 10, 1907, on account of sickness. April 20, 1907.

SCHWARTZ, LOUIS, acting assistant surgeon. Granted leave of absence for four days from April 7, 1907, on account of sickness. April 17, 1907.

SCHUG, F. J., acting assistant surgeon. Granted leave of absence for fifteen days from May 3, 1907. April 22, 1907.

FISH, ERWIN L., pharmacist. Directed to proceed to Evansville, Ind., reporting to the medical officer in command for duty and assignment to quarters. April 22, 1907.

APPOINTMENT.

MR. ERWIN L. FISH appointed pharmacist of the third class. April 20, 1907.

BOARD CONVENED.

Board of medical officers convened to meet at Galveston, Tex., April 22, 1907, for the physical examination of an officer of the revenue-cutter service. Detail for the board: Passed Assistant Surgeon G. M. Corput, chairman; Acting Assistant Surgeon William H. Gammon, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING APRIL 27, 1907.

F. A. ASSERSON, passed assistant surgeon. Detached from the "Columbia" when placed out of commission, and ordered to the "Kansas."

J. T. KENNEDY, passed assistant surgeon. Detached from the "Hancock" and ordered to attend course of instruction at the Naval Medical School, Washington, D. C.

R. C. RANSDELL, assistant surgeon. Detached from the "Maine" and ordered to the "Connecticut."

H. A. MAY, assistant surgeon. Ordered to the Navy Yard, Norfolk, Va.

M. C. BAKER, acting assistant surgeon. Detached from the Navy Yard, Norfolk, Va., and ordered to duty at the Naval Hospital at that place.

J. G. FIELD, surgeon. Detached from duty with marine recruiting party at Dallas, Tex., and ordered to duty with marine recruiting party at Houston, Tex., May 12.

E. L. JONES, assistant surgeon. Orders of March 29 modified; ordered to the "Milwaukee."

SOCIETY NOTICES.

AMERICAN MEDICAL EDITORS' ASSOCIATION. — The thirty-eighth annual meeting of this association will be held at Atlantic City on Saturday, June 1, and Monday, June 3, with headquarters at the Marlborough-Blenheim Hotel. The president's address will be on "The Future of Medical Journalism," by Jas. Evelyn Pilcher, M.D., Ph.D., LL.D. The annual editors' banquet will be held at the Marlborough-Blenheim Hotel on Monday evening, June 3.

J. MACDONALD, JR., M.D., *Secretary and Treasurer.*

AMERICAN NEUROLOGICAL ASSOCIATION. — The annual meeting of the American Neurological Association will be held in Washington, D. C., May 7, 8 and 9.

GRAEME M. HAMMOND, M.D., *Secretary.*

RECENT DEATHS.

DR. CHARLES D. MATISON was found dead in bed on April 22, in his home at Minetto, Oswego County, N. Y., death having resulted from an overdose of hydrated chloral, taken to induce sleep. He was a graduate of Johns Hopkins University, and thirty-five years of age.

DR. ANDREW M. MILLS, of Newark, N. J., county physician of Essex County, committed suicide on April 21. He had been ill for two months and of late had shown symptoms of insanity. He was thirty-six years old, and a son of the late Dr. Andrew M. Mills, of Newark. He was graduated from the medical department of New York University in 1892, and at the time of his death was visiting physician to St. Michael's Hospital, Newark.

DR. JONATHAN F. LEAMING, of Cape May Court-house, N. J., died on April 25 from burns received in a fire which damaged his residence three days previously. His daughter, Miss Helen F. Leaming, in endeavoring to save her father from the flames, was also fatally burned. Dr. Leaming, who was eighty-five years of age, was well known throughout the State of New Jersey. He served in the State Senate from 1862 to 1865, and again from 1877 to 1880, and in the intervening period served a term in the Assembly. He leaves one son, Edmund B. Leaming, who is at present vice chancellor of New Jersey.

DR. IRENE DU PONT YOUNG, of Bordentown, N. J., one of the oldest and best known physicians in the state, died on April 26. His mother belonged to the Du Pont family of Delaware, and he was born at Rockland, on the Brandywine, near which the Du Pont powder works are situated. He was graduated from the medical department of the University of Pennsylvania in 1848. He had been an officer of the New Jersey Medical Society and the Burlington County Medical Society, and at the time of his death was still consulting surgeon to the Mercer Hospital at Trenton.

BOOKS AND PAMPHLETS RECEIVED.

Physical Therapeutics at the Massachusetts General Hospital. Opening of the Hydro-Therapeutic Department. By Max Bohm, M.D.

Metabolism and Practical Medicine. By Carl von Noorden. Anglo-American Issue under the editorship of I. Walker Hall. Chicago: W. T. Keener & Co. 1907.

Original Articles.

GASTRO-ENTERIC OBSTRUCTION IN EARLY INFANCY.*

GENERAL DIAGNOSIS AND TREATMENT, WITH A REPORT OF TWO CASES OF PYLORIC STENOSIS AND ONE OF VOLVULUS, SUCCESSFULLY TREATED BY LAPAROTOMY.

BY THOMAS MORGAN ROTCH, M.D.,
Professor of Pediatrics in Harvard University,
AND
FRED TOWSLEY MURPHY, M.D.,
Assistant Surgeon to the Infants' Hospital.

In 1905 a paper[1] by Scudder and Quinby on stenosis of the pylorus in infancy, with an analysis of 115 cases, was read before this society. This paper was in its way classical and served a good purpose. It not only represented the very latest views of the subject up to that time; it not only covered the entire ground of pathology, symptomatology, prognosis and surgical treatment, but it did what was very necessary at that time, namely, it established the pyloric stenosis of infancy as an entity and as a definite and at times organic disease. This article, by its admirable system, its breadth, its statistical merit, its exact detail and its varied and accurate bibliography forced upon the not infrequently doubting minds of the profession at large that it is their manifest duty to accept this condition as a disease, to learn to recognize it during life and to acknowledge the propriety and necessity of surgical interference in cases where infantile laparotomy was by many considered unadvisable.

Something more, however, happened from the publication of this paper, for it acted as a double-edged sword. Apathy in regard to the subject was replaced by overenthusiasm, and vomiting babies were not only oversuspected, but in certain cases convicted, to their great detriment, of stenosis where no stenosis existed.

Bearing these facts in mind, we have thought that the time had come when we should enter upon a study of the various phases of the subject, both medical and surgical, which might aid the general practitioner to look upon the whole subject of the gastro-enteric disturbances of infancy from a more rational point of view, and thus to deal with his cases of persistent infantile vomiting more intelligently.

So far as we can ascertain by careful search no case of volvulus in the first year of life, provisionally diagnosticated during life and operated on with complete recovery, has appeared in the literature of the subject, so that we have one more class of cases the study of which will probably, as it certainly has in pyloric stenosis and infantile intussusception, reduce the mortality of intestinal obstruction.

What can we safely say we know in regard to gastro-enteric obstruction in infancy as a whole which is of sufficient value to aid us in a differential diagnosis of one of the special forms of infantile obstruction?

First, we should know that outside of various rare malformations, either of the gastro-enteric tract itself or of neighboring organs, notably the liver, the symptoms of obstruction arise almost invariably from four classes of cases:

(1) Stenosis of cardiac (very rare) or pyloric (comparatively common) orifice of the stomach or intestine (rare).

(2) Intussusception.

(3) Volvulus.

(4) Appendicitis.

Second, we should recognize that in infancy vomiting is exceedingly common, we might almost say a universal symptom of all diseases whether etiologically general infections, cerebrospinal conditions, the above-mentioned general malformations, functional or organic disturbances of the gastro-enteric tract, or as a symptom of the four cardiac diseased conditions just mentioned. Vomiting in early life, as comparatively distinguished from a later period, is, therefore, not primarily diagnostic of any especial disease, and, in this sense, not of obstruction. On the other hand it is present at some time in all forms of obstruction. Again, by far the most frequent cause of continued vomiting in the early weeks of life is indigestion, and in comparison with indigestion all obstructive cases are extremely rare. The character of the vomiting has a good deal of diagnostic value. For instance, a few attacks, as early prodromal symptoms in the acute exanthemata, especially scarlet fever, or slight initial vomiting without nausea, as in cerebral disease, or vomiting accompanied by nausea and following the ingestion of food, as in indigestion, or, again, the vomiting of obstruction without nausea, expulsive, and not dependent upon the quality of the food, but upon the quantity. It is to be noted that the latter two classes quite often simulate each other closely. Vomiting, therefore, is only partially diagnostic of obstructive cases. The form of vomiting which most closely simulates obstructive, is the so-called recurrent, or cyclic. In this class of cases the etiology is unknown, the disease seemingly being a neurosis. In these cases the vomiting is expulsive as it is in cerebral disease (notably tubercular meningitis) and in obstruction (notably pyloric stenosis). It differs, however, from both in being accompanied by extreme nausea, in this respect corresponding to the vomiting of indigestion, and differing from it by not depending upon either quality or the quantity of the food.

Again, it is extremely rare to meet with recurrent vomiting in the early weeks of life, which is the time for the obstructive vomiting of infancy.

Facts which are of great value in the differential diagnosis of stenosis, volvulus, intussusception and appendicitis (which includes peritonitis) are the stages of development and the ages. Pyloric stenosis occurs in the early days or weeks of life, while volvulus is very variable as to its time. On the contrary, appendicitis is practically unknown at an earlier age than two years, and the youngest case of which we have record was six weeks; therefore appendicitis need not be considered as a probability in very early life. In like manner intussusception under the age of three months is extremely rare. The fact is, therefore, that whether the attack of gastro-enteric disturbance occurs in the early days, or in the first three or four weeks of life, it presents strong evidence that we are not dealing with appendicitis, peritonitis or intussusception, and our diagnosis should be especially directed, first, to indigestion, and if that can be eliminated, next to gastro-enteric stenosis and volvulus. The classical symptoms which are usually stated to be required for the diagnosis of obstruction are, vomiting, disappearance or diminution of feces by the rectum, rectal hemorrhage, dilated stomach, rapidly progressing emaciation, gastric peristalsis and a palpable tumor. As indigestion is the cause of vomiting in the vast majority of cases, it should be known that all the above symptoms, with the exception of hemorrhage and a palpable tumor, may occur, and not infrequently, from indigestion. Vomiting in young infants in quite a number of cases where there is extreme gastric irritability may be expulsive to such a degree that we are often in doubt as to whether to call it expulsive or not. Owing to this fact we are at times deprived of an otherwise most valuable factor in our diagnosis of organic disease. Extreme constipation in merely functional diseases is very common. A dilated stomach and rapid emaciation often occur in these cases, and where emaciation is extreme and the stomach dilated gastric peristalsis is likely to be quite evident. Again, we have seen a palpable mesenteric gland in the region of the pyloric end of the stomach simulate the pyloric tumor of stenosis, and we have known a congenital stenosis of the duodenum to simulate stenosis of the pylorus closely in its symptoms. Again, in our case of volvulus, the hemorrhage from the rectum was accompanied by petechiæ and ecchymosis of the skin, signifying hemorrhagic disease of the new born, and thus masking the intestinal obstruction which, in all probability was at least partially present from the very first. Again, in quite a large number of cases of pyloric stenosis the pyloric tumor cannot be detected under ether.

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*Read before the Obstetrical Society of Boston, Feb. 26, 1907.

[1] Jour. Am. Med. Asso., May 27, 1905.

Having made a provisional eliminative diagnosis of pyloric stenosis, we must keep certain general facts in mind:

(1) We know that there may be an organic stenosis.

(2) That this stenosis is probably greater during life than at the post-mortem.

(3) The actual stenosis is, and probably almost always is, increased by spasm from various causes, notably from excessive acidity of the gastric contents.

(4) The stenosis may be complete or partial, and in the latter case, of varying degree.

(5) There may be no organic stenosis at all and yet a complete or partial stenosis from simple spasm.

(6) A partial organic stenosis may allow the infant to live for years with remission of symptoms, but usually with symptoms of chronic and gastro-enteric indigestion, producing wasting and general ill health.

In reviewing these six conditions we at once see that it is the fifth class, or that of spasm without organic change, which presents the greatest difficulty as to diagnosis and treatment, for in this case the infant may recover entirely. It is in this class of cases (to which we shall refer later when speaking of treatment) that all skill and knowledge that we possess, all modern medical treatment, together with long and trained experience in feeding, and usually good judgment, are imperative.

It is no wonder under these circumstances that the general practitioner is very uncertain as to his diagnosis and hesitates to advise operation.

Regarding the etiology of hypertrophic pyloric stenosis there has been much speculation. Several theories have been formulated, but facts clinical or experimental do not substantiate any one of them. If the stomach of a dog is pinched, violent contractions in most cases are produced, and the transient spasm at the pylorus looks and feels to a remarkable degree like the typical tumor of pyloric stenosis in infants. Gastric irritation might cause such spasms as Pfaundler[2] believes, but there is no evidence clinically either that the food in all these cases is irritating, or that the stomach is irritated. The majority of the careful analyses of the stomach contents have shown an excess of HCl, but this is not a constant finding. From experimental evidence, as shown by Cannon, an excess of HCl, at least up to a moderate hyperacidity, should cause the pylorus to relax. Moreover, the spasms of the pylorus and this hypertrophy are pathologically two distinct conditions. The former shows no evidence of obstruction post-mortem. The latter shows without exception at autopsy and in the operated cases an hypertrophy of the structures at the pylorus, causing a narrowing of the lumen. This hypertrophy is as a rule confined to the fibers of the circular muscle coat. It is the main factor in the obstruction. The folds of mucous membrane which are often mentioned are secondary, as is the hypertrophy of the stomach walls. The minute size of the intestine is proportionate to the amount of atrophy or of non-development from disuse.

The family history in these cases is not of importance. Ordinarily the mother has been found to be healthy. The condition is found in the first child as well as in children where several other infants have developed normally on the mother's milk. Neither sex is immune. Breast-fed as well as bottle-fed infants are subject to this obstruction.

The symptoms may begin at birth or at any time during the first few weeks of life. The majority of cases show the first symptoms in the third week. Frank first attacks after the second month are very rare.

Wide variations in the symptoms may be found.

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[2] Virch. Arch., clxxxi, No. 1.

These variations are explained by considering the modifying influences which have become engrafted upon the primary lesion. Vomiting is, on the whole, the leading symptom. It is without exception the one which first attracts attention, for the vomiting is secondary to the obstruction at the pylorus, and it begins at birth, or weeks later, whenever that obstruction becomes sufficiently complete to interfere with the onward passage of the food.

Consider first the typical case, with complete or practically complete occlusion of the lumen of the pylorus. Food is poured into a cavity of limited capacity. From this reservoir there is no outlet, so periodically the content is expelled via the inlet. The mechanical process is carried out in every detail just as would be expected. If the feedings are of large amount the reservoir is rapidly overfilled and the vomiting is frequent; if small in amount, the reverse is true. The amount of vomitus is variable, depending upon the size and tolerance of the stomach. It is practically a return of the ingested material, for with a complete obstruction the intestinal content is dammed off. This vomiting in the typical cases is not the simple running over of a well-filled tolerant stomach. It is expulsive in character, for the reservoir is contracted forcibly in its effort to drive the food along its normal channel. The vomitus may be thrown across the crib to a distance of several feet, not spit up or allowed to run down the side of the face. If from gastric irritation there is caused a prolonged spasmodic contraction of the pylorus, and the pyloric sphincter is stronger than the cardia, there is no reason why the resulting expulsion of food should not simulate perfectly the expulsion with the true hypertrophic stenosis. But for this vomiting some dietary cause may be found. It is amenable to treatment to some degree. Also this vomiting in the uncomplicated cases of obstruction is not associated with nausea, and after the stomach has emptied itself the infant is comfortable and soon is eager to receive more food. Neither is it associated with symptoms of gastric or enteric irritation, that is, the point to be emphasized is that the vomiting is mechanical in its manifestation. Change the mechanical condition and the character of the vomiting changes. If there is an hypertrophy with an associated spasm of the pylorus, the amount and frequency of the vomiting may vary in proportion to the extent of this spasm. There may be periods of prolonged relief. The vomitus may contain bile. Engraft an acute process upon the stenosis and there will follow changes in accord with the nature and severity of this process. There will be with associated gastric irritation the symptoms of this condition.

The obstruction of the pylorus causes abnormally vigorous contractions of the stomach, just as an obstruction of the intestinal canal causes vigorous peristalsis of the intestine above the obstructed point; but as in the intestine these contractions, the spasms of the muscular coats, are subject to wide variations depending upon the nature of the obstruction, be it acute or chronic, and upon the time of observation. An hypertrophied intestine secondary to the slowly advancing stenosis of the new growth may not contract so as to produce visible peristalsis, neither does an exhausted intestine after an acute obstruction. So with the stomach the presence or absence of visible peristalsis is dependent upon the combination of conditions. Also peristalsis which might be evident with the thin abdominal wall might be equally vigorous and yet not be seen with the thick abdominal wall. Therefore this sign must be considered as only of secondary importance, as something which substantiated the diagnosis if associated with other symptoms. Visible peristalsis has been observed most frequently in the cases which were most carefully watched during the early stages of the disease. Gastric peristalsis was most plainly evident in our case of volvulus, but it was doubtful and, so far as we could determine, practically absent in the cases of pyloric stenosis.

The pyloric tumor, another of the mechanical signs, if present, is diagnostic. If it is not palpated the negative evidence is not conclusive, because the tumor may be obscured by a large liver, by a thick or rigid abdominal wall or from the fact that only in contraction is it palpable. It may be overlooked or confused with something else from the unfamiliarity of the observer with the exact feeling of the tumor when present. This has undoubtedly occurred in the past. In the future the more careful and intelligent examination of these cases will show, in our opinion, a larger percentage in which the pyloric tumor may be felt. The size of the tumor, as is illustrated by our second case, may not be indicative of the degree of obstruction. Here the tumor was easily and constantly palpable, and as shown by operation, it was of more than average size, yet the lumen was not completely obstructed.

The size of the stomach depends upon the amount of pressure exerted by the food, the tolerance to this irritation and the strength of the stomach walls. Dilation is the rule, the lower border not infrequently coming below the umbilicus, as was the case in these two infants, but it may be of normal size, or smaller than normal. The distinct, sharply outlined fullness in the epigastrium, which may be seen in these cases after the ingestion of a small amount of food, would seem to us to be of greater importance as a diagnostic sign than the actual size of the organ.

Another diagnostic sign which has not yet received its proper emphasis is the character of the dejections. Constipation is the rule, diarrhea the exception. The fecal discharges grow small in amount, proportionate to the degree of obstruction, and the character changes markedly. They become meconium-like, dark and pasty. In a case reported by Dr. Morse[3] and one of the writers this was the first and only typical evidence until the very last stages, when a pyloric tumor became palpable.

The loss of weight is fairly well represented by our two cases. It is of course dependent upon the amount of food which passes the pylorus plus the effect of any error in metabolism, and the slight modifying influence of the resistance of the individual.

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[3] Bost. Med. and Surg. Jour., Nov. 2, 1905.

The condition of a typical tetany with respiratory spasms seen in the second case is most unusual. That it was secondary to the obstruction of the pylorus seems probable, because it came on gradually as the obstruction had increased, and disappeared within forty-eight hours after that obstruction was relieved by a side-tracking of the stomach contents. Rolleston and Crofton-Atkins[4] report convulsions in a case of pyloric stenosis which died in the eighth week of life, the symptoms beginning in the second week; but the descriptions do not warrant a diagnosis of true tetany.

The rare cases of congenital atresia of the pylorus, such as that reported by Little and Helmholz[5] can never be differentiated by clinical symptoms. An examination of the meconium will, however, exclude practically all the cases of congenital atresia of the gastro-intestinal tract, for they occur before the fifth month. Hence there is, as shown by Walz,[6] absence of the lanugo hairs, and this would not be so in cases of hypertrophic stenosis even though the symptoms began at birth.

In differentiating between the obstruction of an hypertrophic stenosis of the pylorus and an obstruction in the intestine, it should be remembered that in pyloric stenosis it is rare to find bile in the vomitus, except in small amount and depending upon whether the stenosis is more or less complete, while we expect in accordance with our at present limited knowledge of volvulus or other obstruction of the intestine to find bile in considerable quantity. In this latter condition in both cases the character of the vomiting is expulsive.

If the case has been under personal supervision from the first, and has been fed either by the breast or with a properly modified milk from the first day, the problem of differential diagnosis will be much simplified and a diagnosis reached more rapidly. If, however, the stomach from birth has been maltreated with various unsuitable mixtures or bad breast milk, the difficulty of the problem is very much increased.

Washing out the stomach and the chemical examination of the gastric contents, especially the latter, has, in comparison with later periods of life, proved at present to be of very little aid for diagnosis and treatment in the early weeks of life.

It is possible that in the future the Röntgen ray will aid us in determining the absence or presence of a pyloric stenosis. Powdered bismuth can be introduced into the stomach and the shadow from the bismuth, which is impervious to the ray, will indicate the condition, as Cannon[7] has so beautifully demonstrated in his experiments on animals.

Taking all these facts into consideration, it is evidently of vital importance to eliminate gastroenteric indigestion. Once having done this, however obscure the symptoms, however impossible to differentiate the different causes of the obstruction, we have arrived at a stage in the diagnosis where we can say: This is a case of obstruction and the indication is for laparotomy, no matter what the cause of the obstruction. Again, we can go further and say, first, if the case is three or four weeks of age, that we do not expect to find appendicitis, peritonitis or intussusception. Second, that there may be a malformation or a stenosis of the intestine, but that the chances are that there will be a volvulus of a pyloric stenosis, and, again, the chances are that the condition will turn out to be a pyloric stenosis. There may be a mistaken diagnosis as to the special cause of the obstruction, but there is no mistake as to the advisability of operating, provided that we are correct in eliminating indigestion. Here, of course, we can but say that if an infant is evidently dying from the exhaustion following extreme vomiting we have at least given it a chance by subjecting it to an exploratory laparotomy which, if properly performed, does not by any means imply that the child will die. On the contrary, it will, by clearing the diagnosis, encourage us to push still farther our medical treatment for functional disturbance.

The treatment of the suspected case of pyloric stenosis must be exact and intelligent. The stomach should at once be washed out and then allowed to rest, the nourishment being supplied by nutritive enemata of one half to one ounce of peptonized milk with brandy — 10 minims every four hours. In the meantime, if the food has been breast milk, an analysis of the milk should be made to ascertain whether it is of suitable strength. We should not, however, feel too much encouraged if the vomiting ceases after the lavage, as in either a spasmodic or organic stenosis it may be merely the removal of the food which is the cause of the gastric irritation and the resulting vomiting which has produced the seemingly favorable result. This cessation of vomiting, indeed, aids us in making the differential diagnosis, for if after twenty-four hours' rest a good breast milk or a carefully modified milk of 1 fat, 5 sugar, .25 whey proteids, .25 caseinogen and 10% alkalinity is given and then as soon as the stomach is full expulsively vomited, we strongly suspect some mechanical obstruction of the gastroenteric tract. We should not, however, at once admit the diagnosis, but should in two hours try small quantities of whey. If this is also vomited, we should as a rule not delay so far as simple indigestion is concerned, for now we should recognize the condition of obstruction whether from functional or organic causes, or possibly arising from spasm. The indication is now for alkalies and doses of bicarbonate of soda or lime water sufficient to make the milk strongly alkaline to be administered, in the case of breast milk, by means of a dropper at the time of nursing. If any of these procedures are followed by improvement of the general condition with lessening of the vomiting we should persevere in the same treatment, as the case may be simply one of functional spasm. If, however, no improvement in the general condition follows and the infant is rapidly losing in weight — perhaps half a pound a day — we should postpone operative treatment no longer, as forty-eight hours have now elapsed, and every hour of delay becomes of the greatest importance. Of course this is but a rough outline of the preliminary medical treatment for differential diagnosis. There are any number of phases of the disease and changes of the actual details of the treatment arising in the individual case, and calling for expert knowledge, experience and judgment, but the general treatment is as we have outlined. We would, however, give warning that the administration of drugs other than as just specified is not only unsafe, but from the danger of their masking the diagnosis, decidedly contraindicated.

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[4] Brit. Med. Jour., Dec. 22, 1900.
[5] Bull. Johns Hopkins Hosp. July, 1905.
[6] Münch. Med. Wochenschr., liii, S. 1011–1013.
[7] Jour. Am. Med. Asso., Jan. 7, 1905.

If we have determined that an uncontrollable functional spasm or a more or less complete hypertrophy of the pylorus are present, or that a possible malformation or volvulus may be present, we should recognize that benefit — excepting temporary, and in that sense illusive and dangerous — is not for a moment to be expected from medical treatment, and that laparotomy, to reveal the diagnosis and possibly to save the life of the infant, is absolutely imperative.

After the operation there is again great need for the most exact and skillful medical supervision of the feeding of the case; at least so it has seemed to surgeons who have worked hand in hand with medical experts in infantile feeding. We would especially emphasize the fact that both before and after the operation where good breast milk cannot be obtained, for if it can be obtained it can be employed without mechanical risk, the milk should if possible be modified with the precision which can only be only supplied at a good milk laboratory. In none of the diseased conditions of early infancy is the necessity for exact percentage feeding more absolutely indicated than in the intestinal obstructions of early life. To leave the required delicate manipulation of the food to a nurse, whether she be trained or not, is, in our opinion, an opinion now shared by many of our colleagues, very unwise.

The great temptation and the great danger is to feed these infants too soon after the operation. They are hungry and they cry for food. Knowing that the obstruction has been mechanically relieved, the tendency is to assume that the stomach and intestine will immediately take up their functions. It has been proven experimentally by Cannon and Murphy[8] that after very slight trauma the stomach and intestine do not take up the normal movements of peristalsis for at least several hours. Therefore, even though the anastomosis is patent, the food accumulates in the already distended stomach, and vomiting begins. When this vomiting has once started it apparently may continue though there is no mechanical obstruction or peritoneal infection. Lavage of the stomach may control vomiting of this character, and should always be tried. It is much safer, therefore, not to attempt any feeding by the mouth for at least twenty-four hours after the operation. During this time enemata of peptonized milk, three to four drams in amount, should be given every three hours, with brandy 10 minims. If necessary, infusion of normal saline solution should also be given subpectorally. If the general condition requires it, strychnia should also be used. If at the end of twenty-four hours there has been no vomiting, sterile water may be given, beginning with a few drops and continuing in dram doses every half hour, and the enemata continued. If this sterile water is well borne, beginning on the third day whey should be started in dram doses, and gradually increased in amount. It is well to give the sterile water in place of the whey every third or fourth feeding in order that any residue may be washed out of the stomach. When it has been possible to increase the whey up to an ounce every hour, the enemata may be omitted and a weak milk modification, such as a 1 fat, 5 sugar, .25 whey proteids, .25 caseinogen, alternated with, or substituted for, the whey. Gradually the strength of the modified milk should be increased, the fat and sugar being run up rapidly and the proteids very slowly. The amount of the feeding had best be less than that given to a normal child of the same age, since these infants have been starved, have dilated stomachs and therefore are eager for food. Special judgment is here needed to determine how long the infant should be allowed to cry, seemingly from hunger, and thus become exhausted, or to run the risk of prolonging the dilatation by continual overfilling of the stomach.

The diagram on the following page illustrates the meaning of what has just been said.

The stomach is shown dilated. The dotted line shows the normal size to which the stomach should recover when the dilation has disappeared, as under treatment it undoubtedly does. The proper amount of food to be given in this case is that which would fill the normal stomach, that is from B to C; but this amount in the dilated stomach will fill it at the most dependent part and only from B to C. This leaves the space A to B empty. The infant cries under these circumstances not from hunger but from emptiness, and if we give more food and fill up the space from A to B the empty feeling disappears and the infant stops crying. But when this takes place we continue to prolong the condition of dilation, and so long as this continues the infant cannot have its digestive function sufficiently perfect to insure its nutrition, and the long line of consecutive symptoms, ending in chronic gastro-enteric indigestion, rhachitis and infantile atrophy, may ensue.

The after-treatment of these cases should, therefore, be to not only adapt the food to the infant's disturbed digestion, but also to treat the gastric dilation by regulating the amount of the food.

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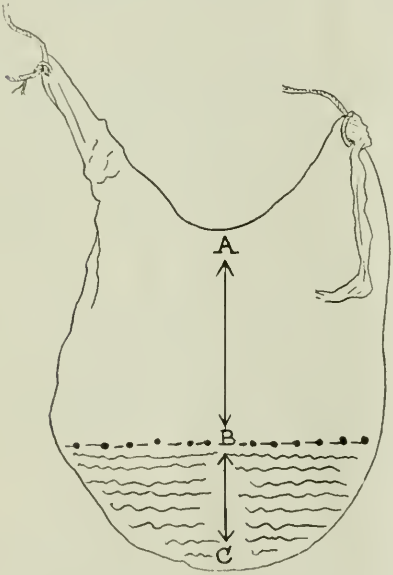
[8] Ann. of Surg., April, 1906.

As a last word regarding pyloric stenosis, we wish to emphasize the fact that to look for it is to discover it, by reminding you that in this community about Boston there have been eleven cases operated upon by various men in the past four years. Prior to the operation of Dr. John C. Munro, in 1904, no surgical relief had been offered in these cases. Surely the years preceding 1904 cannot have been entirely without cases of pyloric stenosis in infants in this region.

Volvulus is not a common condition in infants. Surgical and autopsy statistics agree that it is a disease most usually found at or beyond forty years of age. Fifty per cent of all the cases are in the sigmoid flexure.



In the cases occurring in adults chronic constipation and adhesions secondary to some previous inflammatory process are important factors in the etiology, though a congenitally long mesentery and a short attachment is usually the primary predisposing cause. In the cases occurring in infants, save for the possible influence of some congenital remnant as the vitelline duct, the etiology is reduced to its simplest terms — an abnormally long mesentery which makes the rotation easy, plus some force which starts this rotation and carries it to 270° or more.

Sometime in the second half of the intra-uterine life the cecum should descend from its position under the liver into the right iliac fossa, but not infrequently this descent is not complete, the cecum may retain its early embryological position, or the ascending colon may preserve its mesentery. If the embryological position of the cecum is retained, the mesentery of the small intestine must preserve its embryological attachment in the median line. Therefore the ideal conditions for a formation of a volvulus of the small intestine and cecum are present. If we consider that the small intestine at birth is approximately nine feet in length, and the large intestine eighteen inches, about one half of which is sigmoid flexure, it is remarkable that volvulus is not of more common occurrrence in infants. This evidence would seem to give added importance to the influence of factors other than the simple length of the mesentery in adult cases.

Pescatore[9] reports the autopsy findings in a nineteen-day old infant with a volvulus of the whole small intestine and the ascending colon, and reviews the findings of the similar case reports since those of Bendar in 1850. Every case showed some anomaly of the mesentery or the attachment of the intestines. He could not determine what had been the cause in these cases of the beginning of the rotation. The rotation of the bowel was usually from the right to the left.

Our case showed the typical congenital anomaly predisposing to this condition,— the median attachment of a long mesentery of the small intestine and the cecum high up under the liver. No influence, either external violence or unusually vigorous peristalsis during the intra-uterine life or after birth, could be found as the immediate cause of the starting of the torsion.

Volvulus in infants, as in adults, must show a varied symptomatology because the lesion is subject to so many variations both in the degree of the torsion and in the location of the obstruction. If the degree of torsion varies so that at one time there is obstruction and at another time a patent lumen, the resulting symptoms will likewise vary.

Practically the diagnosis is one of obstruction. Differentiation as to the nature of the obstruction is interesting, but it is not essential.

Pain, the most constant and early symptom of volvulus in adults, loses in a great measure its value in these infant cases on account of the difficulty in interpreting it correctly.

The obstruction may be high or low in the intestinal canal. If it is high the vomiting begins early, and any attempt to fill the stomach will be followed soon by the expulsion of the food. The vomiting may be not unlike that of pyloric stenosis except that the vomitus contains intestinal content and bile. If the volvulus is of the sigmoid flexure the vomiting may be a late symptom. Ordinarily the vomitus becomes feculant, but fecal vomiting is not so constant a symptom as with the other forms of acute obstruction.

The intermittent character of the symptoms seems to be more frequent in infants than in adults. Kredel[10] reports a case of volvulus in an infant in the tenth week of life. The child had for three weeks been subject to attacks of vomiting with symptoms of obstruction. Later the vomitus contained bile, but two days before death the stools were normal. Autopsy showed a volvulus of the whole small intestine. This case is referred to because the symptoms are so similar to those in our case. No intestinal peristalsis was observed and no distention of the loops of intestine was evident.

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[9] Deut. Zeitschr. für. Chir., Bd. 68, s. 185.
[10] *Ibid.*, Bd. 69, s. 90.

Local meteorism if present with the symptoms of acute obstruction is diagnostic, but it may be found, either because gas has not accumulated within the intestine forming the volvulus, or if it has been formed in sufficient volume to distend the intestine it has escaped beyond the twist or through a perforation of the bowel. The distention of the intestine with gas is secondary to the disturbance of the circulation rather than to any actual increased formation from the decomposition of the contents. The foul bloody content is also secondary to the circulatory disturbance, the obstruction of the venous return being principal factor.

(*To be continued.*)

THE TUBERCULOSIS PROBLEM OF THE MIDDLESEX NORTH DISTRICT, MASSACHUSETTS.*

BY THOMAS F. HARRINGTON, M.D., LOWELL, MASS.,
Chairman,
AND
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The Middlesex North District of the Massachusetts Medical Society was established Oct. 2, 1844, and at present comprises the city of Lowell and the following towns: Acton, Bedford, Billerica, Boxborough, Carlisle, Chelmsford, Dracut, Dunstable, Groton, Littleton, Pepperell, Tewksbury, Tyngsborough and Westford. The combined population is about one hundred and twenty-five thousand, four fifths of which population is confined to Lowell. The soil varies from a sandy porous soil in the south and easterly sections of the district to a hard, rocky soil in the northern and westerly parts. There is an abundance of trees of all ages and kinds throughout this territory and the whole is a typical New England agricultural district. The total area of the district is about twenty-five thousand acres, a trifle more than that of the city of Worcester, Mass. The altitude varies from 140 to 150 feet above the sea level to 400 or 450 feet, the lowest part being at Dracut and at Tewksbury; the highest elevation at Westford. The nearest point to the sea is at Billerica (twenty miles inland); the farthest point is at Pepperell (about forty miles from the sea).

LOCAL CONDITIONS.

Lowell has an area of about eight thousand acres, with a population of over ninety-six thousand. It is a manufacturing city, one of the largest in this country, and, as such, offers an opportunity for studying many phases of the tuberculosis problem.

When in 1822 the center of industrial activity in this country was transferred from Waltham to Lowell the wise provisions which Francis C. Lowell had inaugurated at the former settlement found a much wider field of application and "the Lowell system" became an essential part of all future manufacturing projects. This "system" consisted in the erection of substantial brick tenement and boarding houses, wherein operatives were required to dwell, the rentals and price of board being placed at a low rate. These boarding houses were placed in charge of matrons selected for that purpose, and every effort was made to continue the simplicity and purity of the rural homes which the operatives had left to enter the mills. The kind and the standard of the food was selected, rules of conduct were enforced, hours of work and sleep prescribed, schools, churches and amusements provided, a hospital and reading room maintained and all done without the exercise of paternalism or restraint. Board was $2.90 per week for a man, and $2.25 for a woman; this included food and lodging. Tenements consisted of eight or nine rooms each and cost the operative $7.00 or $8.00 per month. The living and sleeping rooms were arranged so that every room had one or more window openings to the outer air. Sunshine had free access to every sleeping room at some time during the day. All this detail is important in the consideration of the question of tuberculosis, as will be seen later. Before going further, however, it will be necessary to trace briefly the evolution in nationality as noted among the Lowell mill operatives. When the mills were established the operatives were drawn from the towns and villages of New England, — strong, robust and healthy. As the industries developed and the demand for men skilled in the art of calico-printing became pressing, a large influx of workmen of a superior class came here from England, Scotland and other countries. From this combination resulted an intelligent social organization maintained until this day to a greater or less degree. The mills soon attracted immigrants, especially those seeking homes in America. These were principally Irish, who lost no time in sending for parents and friends whose coming necessitated the erection of tenement blocks outside the mill districts. The places vacated in the corporation boarding houses were soon occupied by French Canadians who were now flocking in large numbers to the growing mill town. Year by year a greater number of these Canadians remained here and following the example of the Irish built homes, churches and schools. In 1885 the census showed that 25,000 were natives of Massachusetts, 10,000 of other New England states, 12,000 natives of Ireland, and 8,000 natives of Canada. The Swedes who were the next to swell the population partook of little or none of the boarding-house stage, but entered at once upon a housekeeping basis. The same is partly true of the Portuguese and Poles, comparatively few of whom lived at the corporation boarding houses. This resulted in a gradual converting of the boarding-house blocks into corporation storehouses, now greatly demanded by increased bulk of business. When the next race appeared they naturally colonized in localities where living might be obtained most cheaply, and we find the Greeks occupying the tenement property erected for the early Irish and French families now subdivided and multiplied and living in residential portions of the city more harmonious to their social state. To-day the population is divided into 42.3% born in Massachusetts, 14.6% born in other states, and 43.1% foreign born. Over 77.9% of the total population are of foreign parentage. There are 25,466 of Irish parentage, 24,928 Canadians, 8,000 Greeks, 2,500 Portuguese, and 1,500 Poles. The number employed in manufacturing establishments is 47,748 (30,467 males and 17,281 females); of this number 14,928 (7,832 males and 7,096 females) are between the ages sixteen to twenty-four years, and 21,988 (14,757 males, 7,231 females), between twenty-five and forty-four years. The result of these various changes is that the most perceptible classes of the community, so far as tubercular infection is concerned, are living under unhygienic and unsanitary conditions far worse than any previous class of employees. Most of these people have come from a warmer and more tropical climate where they lived as shepherds or agriculturists; here they are confined in overheated, dusty, indoor occupations, and at night return to illy ventilated rooms where overcrowding is the rule and bodily maintenance reduced to a minimum. Their living and sleeping rooms had often been occupied by consumptives among previous inhabitants. The following table shows the association of density of population and death-rate:

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*Published by request of Middlesex North District Medical Society.

	Total Population Census 1900.	Total Number Dwellings.	Total Number Tenements.	Deaths Year 1905.
Whole city,	94,969	13,671	19,279	1,895
Ward I,	8,248	1,077	1,446	*134
Ward II,	10,821	1,107	1,715	146
Ward III,	10,052	1,591	2,293	159
Ward IV,	9,315	1,257	1,916	173
Ward V,	8,973	1,118	1,786	199
Ward VI,	10,706	1,839	2,339	181
Ward VII,	18,490	1,987	3,213	*347
Ward VIII,	9,655	2,096	2,288	133
Ward IX,	8,709	1,594	1,895	*131

A recent census (Dec. 1, 1906) was able to locate 486 cases of tuberculosis living in Lowell.

HOSPITALS.

The Lowell Corporation Hospital was established in 1839 when various corporations agreed "to establish and maintain a hospital for the convenience and comfort of the persons employed by them when sick or needing medical or surgical treatment," and "to contribute funds necessary for that purpose." The management is in the hands of a board of trustees, the members of which are the local agents of the several corporations. The number of beds is ninety. There is a daily out-patient clinic, and a separate building for contagious and infectious cases, exclusive of tuberculosis. The operatives are treated free, and if confined to the hospital are maintained at the same rate as paid at corporation boarding houses. Patients known to be afflicted with tuberculosis are not received, although yearly a certain number find their way in to the wards. The following list covers the cases of tuberculosis treated at this hospital since 1895:

	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
Males,	3	4	3	3	2	7	5	4	4	3	7
Females,	3	6	5	3	4	2	6	3	3	3	2
Improved,	1	9	4	4	2	1	9	2	7	4	7
Unimproved,	2	2	0	0	1	1	3	0	1	2	1
Died,	1	0	4	0	3	6	0	1	1	0	0

It is interesting to note here that bone tuberculosis is a common form of the disease among the Greek operatives coming to this clinic. No such predisposition is known in their own country and its origin here is yet unexplained.

St. John's Hospital was established in May, 1866, under the jurisdiction of the Sisters of Charity. There are eighty-seven beds, besides a daily clinic. Neither tuberculosis nor other infectious or contagious diseases are accepted. An average of 25 cases of consumption yearly are treated in the wards.

The Lowell General Hospital was incorporated in 1891. By a gift of Frederick Fanning Ayer, of New York City, a tract of land of some forty-one acres was added in 1906 to the hospital site, and on July 19 a tuberculosis camp of twenty-eight beds was opened. Patients were received whether able to pay or not. Of the 65 applicants, 39 were accepted,—8 incipient cases, 20 less favorable, and 10 advanced. The camp was closed Oct. 15. Three persons remained the full three months. Their average gain in weight was nineteen pounds. Eleven stayed two months, with an average gain in weight of 9.7 pounds. The greatest gain was twenty-six pounds. The average stay at the camp was 6.5 weeks. Thirty-three cases were classed as improved, having gained in weight or in the condition of the local disease, and 6 are reported as "on the high road to becoming 'apparently cured' by continuing their treatment at home." Tubercle bacilli were present in the sputum of 24 at entrance, and of 19 when discharged. Nineteen of the patients were mill operatives, 4 were school children, 4 housewives, 2 machinists, 2 shoemakers, 2 night watchmen. On account of no provisions being made for heating the shacks it was deemed advisable to close the camp until early in the spring.

The Lowell City Hospital is an institution under the management of the City Board of Charities. It has eighty-seven beds in its hospital department for the care of the indigent. Tuberculosis in all stages is admitted and the yearly average is 40 patients. The tubercular and the non-tubercular inmates of this institution are separated.

In addition to the above the Board of Charity appoints annually six physicians who care for the sick poor applying for aid. Each physician has an assigned district and also serves during the

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* Exclusive of deaths in hospitals.

year at a daily clinic connected with the charity department. A large part of the tuberculous poor of the city come to the notice of this corps of physicians.

DISTRICT NURSING.

During the past year the Associated Charities of the Ministry-at-Large have provided means for maintaining a district nurse whose services for tuberculous patients are available.

BOARD OF HEALTH.

This department is organized according to statute, and consists of three members, besides an agent, plumbing inspectors, etc. It employs an efficient bacteriologist and makes examinations of sputum, throat cultures, blood, etc., free of charge. The result of sputa examinations is as follows:

	Positive.	Negative.	Total.	Deaths.
1896	16	30	46	207
1897	26	35	61	189
1898	27	38	65	208
1899	28	54	82	197
1900	43	63	106	186
1901	49	121	170	170
1902	27	114	141	164
1903	70	154	224	132
1904	92	165	257	143
1905	139	287	426	170
1906	103	312	415	161

In September, 1902, the Board of Health placed tuberculosis on the list of contagious diseases to be reported to that department by physicians attending the same. Little attention was given to the action of the board, and on April 20, 1906, the following letter was sent to every practicing physician in Lowell.

> Health Department,
> Lowell, Mass., April 20, 1906.
>
> At a meeting of the Board of Health held to-day it was voted:
>
> That a circular letter be sent to the physicians of this city reminding them of the existence of certain regulations of the board regarding the reporting of all cases of tuberculosis, and that further neglect of this requirement will be followed by a penalty.
>
> Your attention is hereby called to Rule No. 1 of the Rules and Regulations of the Board of Health of Lowell, viz.: "When a physician knows that a person whom he is called to visit is infected with smallpox, varioloid, diphtheria, membranous croup, scarlet fever, measles, typhoid fever, cerebrospinal meningitis, 'pulmonary tuberculosis,' or any other disease dangerous to the public health, he shall immediately give notice to the office of the Board of Health."
>
> We desire to call special attention to the fact that tuberculosis is included in the list of diseases which must be reported to this office, and to inform you that we intend to take cognizance of all infringements of this rule.
>
> It often happens that a family, having among its members a case of tuberculosis, moves out of a tenement, and another family, in ignorance of the danger, moves in without there having been any preliminary cleaning or disinfecting of the premises. To add to the safety of these innocent or ignorant families, the Board of Health desires to be notified of all cases of tuberculosis that come to the attention of the medical profession.

In cases reported as well as in cases proven positive by the bacteriological department no further action is taken by the health department. No literature has ever been issued by this department relative to the prevention of tuberculosis.

The health department disinfects premises where tuberculous patients die; also where a tuberculous patient has lived, if requested by a family moving in, or by a regular physician.

There is no penalty for leasing infected quarters, nor is there any system carried out by which the department has any knowledge when infected premises are vacated or new quarters occupied.

There is no systematic inspection of tenements. Neither are schools, shops or factories inspected by any local authorities.

The employers have limited their assistance to maintaining the Corporation Hospital and in contributing individually to the support of the district nurse.

The cattle inspection is done by a competent veterinarian.

The Lowell Anti-tuberculosis Association was formed in January, 1906. Its objects are to promote a careful study of conditions regarding tuberculosis in Lowell; to educate the public opinion as to the cause and prevention of tuberculosis; and to arouse general interest in securing adequate provisions for the proper care of tuberculous patients in their homes and by means of hospitals and sanatoria. The first work of the association was a public exhibition in March at which an attendance of more than ten thousand was recorded. Lectures were given in the French, Greek, Polish and Portuguese languages; literature was freely distributed, and an awakening of public interest manifested in an unmistakable manner. A committee of the association investigated sites for a day sanatorium, and an appeal was made to F. F. Ayer, Esq., of New York City, for funds to carry out the project. Mr. Ayer added some forty-one acres to the site of the Lowell General Hospital and gave the sum of six thousand dollars to equip a tuberculosis camp in connection with that hospital. This is given in detail under hospitals in this report. The Anti-tuberculosis Association has appointed a committee to secure a census of tuberculosis in Lowell; it has requested the school authorities to have all the school buildings fumigated at least twice a year, and that each room be regularly and thoroughly cleansed; it has called attention to the dangers of infection in the use of public telephones and has suggested means for preventing the same; it has suggested that the streets be watered daily with some disinfectant to reduce the annoyance arising from dust; it has requested that placards prohibiting spitting in public places be placed in schools, factories and public places. The society is ready to co-operate with the committee on tuberculosis of the medical society in furthering any plans suggested for fighting tuberculosis.

No church organization has taken active steps in anti-tuberculosis work.

The physicians have shown a marked increase of interest since the exhibition here in March and this interest cannot fail to be of great benefit to this committee.

REPORTS OF TOWNS.

Acton. — Has a population of about two thousand; no registration required. Has disinfection of premises; does not prosecute for leasing infected premises; does not inspect schools, tenements nor factories; there are no provisions for the sick, and no organization interested in the work; cattle inspection is thorough.

Bedford. — Population about twelve hundred; registration is not required; no fumigation carried out; no inspection of any kind, except cattle which is poorly done; no interest by lay organization.

Billerica. — Population about three thousand; it has two mills for the manufacture of flannel cloth, and a Dyewood and Chemical Company; the Board of Health does not require registration of tuberculosis; does not disinfect premises nor penalize for leasing infected quarters; there are no systematic inspections of tenements, workshops or factories; there is no hospital accommodation, nor visiting nursing organization, neither have employers of labor taken any steps to help the employees; there are no classes for instruction, and the church organizations have shown no active interest in this work; the physicians are interested ; there is an inspection of schools; the inspection of cattle is thorough.

Boxborough. — No local physician; population three hundred and twenty-five. Negative report to all questions covering foregoing data.

Carlisle. — No local physician; population four hundred and eighty. Negative answers to all the questions.

Chelmsford. — Population about four thousand. At North Chelmsford are large mills for woolen yarn manufacture employing nearly two thousand hands; there is also a large foundry, as well as a granite works. The south and center are agricultural districts, and a member of the tuberculosis committee writes: " I only know of two cases in this town, and they are well cared for and instructed. We have no congested tenement districts. I believe this is one of the cleanest and healthiest towns in the state, and in no need of active crusade against tuberculosis, but am in favor of sending literature on the subject to every family." A negative answer follows every question submitted, except number 13 which says the doctors are interested.

Dracut. — Population about thirty-five hundred; has large woolen mills, many of the operatives living in Lowell. A negative report to all questions submitted, except " cattle inspection," said to be thorough.

Dunstable. — No local physician; population four hundred and twenty-seven. A farming town with no manufacturing and no tenement houses. Cattle inspection thorough.

Groton. — Population about two thousand. The Board of Health is elected by the people; notification of tuberculous patients is required and premises are disinfected upon application of family or physician; there is no penalty for leasing infected quarters, neither is there any inspection of tenements or schools; there are no hospital provisions for the sick, and there is no nursing, visiting association, nor any other provision for instructing the laity concerning tuberculosis; the physicians seem interested in the subject; the inspection of cattle not thorough.

Littleton. — Population about twelve hundred; the Board of Health is elected by the people; notification is required, and disinfection is carried out when requested; in all other respects the conditions are identical with those existing at Groton.

Pepperell. — Population about thirty-seven hundred; the principal industry is that of papermaking; like Groton and Pepperell the Board of Health is elected by the people; the board does not require notification in tuberculous cases; there is no penalty for leasing infected quarters; there is no inspection of schools, tenements or factory; the employers have taken no active steps to better the condition of the employees; there is no system of inspection, nor any nursing or visiting organizations; the inspection of cattle lacks thoroughness; doctors are interested.

Tewksbury. — Population about four thousand. The Massachusetts State Hospital is located in this town. The following is a brief account of the work done at this institution in so far as it relates to tuberculosis:

" In the State Hospital there is a total capacity of 1,800 beds divided as follows: general hospital, 500 beds; dormitories for convalescents and infirm, 600 beds; department for the insane, 700 beds.

" There is a special hospital for tuberculosis for men containing 100 beds; this hospital is situated quite a distance from the rest of the institution. There are two camps connected with this hospital with an additional capacity of 36 beds.

" We are at present constructing a detached hospital for tuberculosis for women with a capacity of 40 beds. At present our tuberculous women are kept in a separate ward in one of our regular hospital buildings.

" The tuberculous patients among the insane are at present treated in a camp near our insane department; there are 16 patients thus treated in our department for insane women. As we have but a small number of insane men, it is only occasionally that there is a case of tuberculosis among them, in which case, or in the case of any insane women that we cannot safely care for in our camp, they are treated in single rooms with as much isolation as possible from the other patients.

" There has been appropriated for this class of patients $60,000 for building and furnishing of the men's hospital in the year 1898, and $25,000 for a hospital for women in the year 1904.

" During the last fourteen years there have been treated something over 5,000 cases of tuberculosis in its various forms and during that time there have been 1,628 deaths from tuberculosis in its various forms. During the last six years we have treated 129 cases sent to us from Lowell. It is rarely that cases of tuberculosis are sent to the State Hospital in the very earliest stages, but we receive a great number of the far advanced cases.

"The State Hospital is an institution for the poor to which are admitted all needy persons sick or infirm within the state without a settlement in Massachusetts. It was established in 1852. During the last year there were admitted to the general hospital wards 4,277 cases."

The town of Tewksbury requires registration of tuberculosis, and disinfects premises when requested by the attending physician; there is no penalty for leasing infected quarters, and tenements and schools are not inspected; there are no classes of instruction, visiting, nursing, nor church organizations in this town interested in tuberculosis work; the inspection of cattle is as thorough as required by state officials; tuberculin is used on quarantined or suspected animals only.

Tyngsborough. — Population about eight hundred; registration is not required; disinfection of premises is carried out only in case of death of the patient and upon request of the attending physician; there is no penalty for leasing infected houses, nor any inspection of tenements; schools are inspected, but not in reference to tuberculosis; there are no church or district nursing organizations, nor any classes of instruction concerning tuberculosis; the inspection of cattle is done by a farmer and not by a veterinary surgeon.

Westford. — Population about twenty-seven hundred; worsted and yarn mills, besides granite quarries, are located here; the Board of Health consists of the selectmen and is organized according to statute; registration is not required, and a negative answer follows each question submitted except that relating to the doctors' co-operation.

TREATMENT OF PROSTATIC HYPERTROPHY. THE CONSIDERATION OF THE VARIOUS METHODS OF TREATMENT BASED UPON THE MORTALITY AND THE REPORT OF TWENTY-FOUR CASES OF MEDIAN PERINEAL PROSTATECTOMY.

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The consideration, which has been given to the operative aspect of prostatic hypertrophy, especially by the genital-urinary surgeons of America, France and England, has, during the past few years, established certain definite operative procedures, which, by general improvement in details and increased operative experience, has reduced the mortality, so that to-day the prognosis regarding death from such operations, and also the operative results are very different from ten years ago.

The advance in the subject has been made through the institution and observance of details in the already established surgical measures, rather than by any new operative method, and the large number of cases, from which conclusions may be drawn, has emphasized the special values of the various forms of operative treatment.

Certain operations, castration and vasectomy, have been wisely relegated to the past as the perineal and suprapubic methods have come to the fore. Castration and vasectomy have an established mortality of 17% and 9% respectively, and the results are, on the whole, poor. Even the Bottini operation has recently declined in favor because of the brilliancy of the radical operative results, and perhaps justly so as an operation for all cases, but it is the writer's belief that the operation is of the greatest service when performed by the hands of certain men, especially in affording relief to those cases which will not stand the shock of general anesthesia or more radical procedures, and therefore, cannot be dispensed with.

While to draw the best conclusions regarding the relative merits of the different operations one should learn the limitations of the various methods by personal experience with each, no operator has yet had sufficient experience to justly warrant comparative conclusions, and we must, by necessity, have recourse to compiled statistics.

The choice of the operative methods change from time to time, rather from the influence of good writing and the personal characteristics of brilliant operators, than from the actual merit of the method advocated.

It must be realized at the outset that patients suffering from hypertrophy of the prostate are, as the very name of the malady implies, persons past the prime of life. They must always be considered poor surgical risks. They are old men with but a comparatively short time to live, and the operative tax imposed upon them must always be the smallest possible.

The salient point in the choice of one or another method in the treatment of a given condition, must be the respective mortalities of the different methods. Following is a list of the existing methods for the treatment of senile hypertrophy of the prostate, with their respective mortalities:

	Cases.	Per cent Mortality.
Catheterization,	207	7.7
Palliative operations,	168	36.9
Partial prostatectomies,	167	19.1
Bottini operation,	1,289	5.3
Total suprapubic prostatectomy,	406	9.6
Total perineal prostatectomy:		
1. Dissecting,	563	5.5
2. Enucleation,	192	4.7

Deaths following all forms of prostatic operations are due to four general factors. 1. Uremia. 2. Sepsis. 3. Shock. 4. Pulmonary complications. These conditions are common to all forms of prostatic operations, but certain of them are more especially associated with one or the other methods.

1. *Uremia.* — Is less often associated with the

Bottini operation (about 25%) and occurs in about the same proportion of cases of suprapubic and perineal operations (about 35%).

2. *Sepsis.* — Is by far the largest factor contributing to the mortality of the Bottini operation (about 50%). The perineal operation is next (about 17%) and the suprapubic method has the lowest percentage from this cause (about 8%). The relative percentage of deaths from sepsis is dependent upon the relative degrees of drainage obtained by the different methods.

3. *Shock.* — As would be expected, the death from shock with the Bottini operation, an operation done under local anesthesia, is the smallest (about 5%). The perineal operation is next (about 20%), and the suprapubic operation the highest (about 30%). The difference in the percentage of deaths from shock, between the suprapubic and perineal operations, illustrates the greater severity of the suprapubic method.

4. *Pulmonary complications.* — The mortality from pulmonary complications in the Bottini operation is comparatively low (about 8%). The reason is obviously because the patient is up and about immediately following the operation, and because of the general anesthesia. The perineal operation shows a lower mortality than the suprapubic operation, dependent upon the same fact. The respective mortalities are, perineal operation (about 17%), suprapubic (about 22%).

We have at our command to-day, the following recognized procedures for the surgical treatment of prostatic hypertrophy: 1. *Catheterization.* 2. *Palliative operations for simple drainage.* 3. *Partial prostatectomy.* 4. *Bottini operation.* 5. *Total suprapubic prostatectomy.* 6. *Total perineal prostatectomy.*

1. CATHETERIZATION.

The question as to when a patient shall be given a catheter for daily use is a most disputed one. Less consequence, perhaps, is attributed to this point by the operator than by the physician, who is to recommend operation to a patient who is in fairly good health except for frequent urination, and who is to face the result of his judgment.

The cry has been, "If we could get the cases early, we would have a smaller mortality and better results." This is unquestionably true.

Most men who have had the care of patients suffering from prostatic hypertrophy can recall patients who have used catheter satisfactorily for years and who have died from some intercurrent disease. On the other hand, they can also recall cases in which they have advised the use of the catheter and the patient has declined rapidly and died. The first class of cases are the more vigorous individuals with less pronounced secondary changes in the upper urinary passages, while the second class are the less resistant individuals.

There is always the risk of having the patient attacked by the complications accompanying catheterization, namely, inflammation of the gland, prostatic abscess, epididymitis and orchitis.

Unfortunately, we have but few observations on the mortality due to regular catheterization in prostatic cases. The observations, however, which have been recorded on this point, are as follows:

	Cases.	Deaths.
Rovsing,	126	10
Casper,	51	3
Watson,	30	3
Mortality,		7.7%

The facts here given surprise one in showing that regular catheterization actually has a mortality higher than the Bottini operation, or even total perineal prostatectomy. Through our neglect to make observations upon this elementary important point, the truth of the above figures is rather startling, and it becomes a question, if one is really conservative, in advising that patients, who are able to introduce and take care of a catheter, should employ this form of treatment until the catheter can no longer be introduced because of the increased obstruction, with the hope that the individual's life will terminate before this condition takes place.

We have no evidence pointing to the fact that regular catheterization arrests the hyperplastic changes in the gland, and there is, on the other hand, much evidence that patients who have been employing a catheter arrive at a time when they can no longer introduce it into the bladder because of the increase in the obstruction, and that they have attacks of congestion of the gland, producing acute retention requiring tapping and often immediate operation.

In recommending the use of a catheter, these extremely important facts must be held in mind, for in postponing the evil day, the patient is subjected to operation when the bladder and kidneys have become damaged, and the patient's vitality is lessened in consequence and because of his greater age.

Under these conditions, the patient may be in a broken down condition, in which surgical intervention must be either hopeless, or subject the patient to the gravest dangers.

2. PALLIATIVE OPERATIONS.

The establishment of drainage by opening into the bladder either suprapubically or through the perineum, without attempting to remove the obstructing gland, in 152 cases shows 54 deaths, a mortality of 35 + %.

The high mortality attending this procedure is due largely to the fact that the patients have been in very poor condition. They are the cases palliated by catheterization, or who have sought aid at a time when less radical measures would be too unsafe to warrant their undertaking.

Simple drainage should be purely a palliative measure performed through necessity to relieve suffering from retention, and should not play any real part in the consideration of the operative treatment of prostatic hypertrophy.

The operation of simple drainage is the least severe method in relieving the retention, when no instrument can be introduced into the bladder through the urethra even after the tension in the bladder has been relieved by suprapubic tapping.

The procedure may, at times, be necessary to control hemorrhage following prolonged attempts at catheterization.

With the establishment of such drainage, suffering is relieved, cystitis is improved, and the renal tension is lessened. Depending upon these well established facts, some operators prefer to perform simple drainage as a preliminary step to removal of the obstructing gland, using the suprapubic opening to aid the enucleation of the gland through a perineal wound, the so-called combined operation.

It is the writer's personal feeling that the only reason for employing the combined operation, which has a higher mortality than either the perineal or suprapubic operations (12+%), should be the necessity of establishing suprapubic drainage to relieve complete retention and subsequent improvement in the patient's condition, warranting total removal of the obstructing gland.

Patients requiring palliative drainage are in very poor condition, which is the point, rather than the idea of lessening the intra-vesical tension prior to prostatectomy. So far as the relief of tension in the urinary tract is concerned, it hardly seems necessary to subject the patient to a preliminary operation to gain this, for if the gland is removed entirely through the perineum or over the pubes, such drainage is already established and only a few additional minutes are required, which does not add materially to the shock of the operation, and the necessity of subjecting the patient to a second operation is obviated.

Palliative drainage should be employed only as a last resort in the feeblest patients, because it is the smallest tax that can be imposed upon the individual and accomplish the necessary object, and should be done under local anesthesia when possible.

3. PARTIAL PROSTATECTOMY.

It has been proven that the removal of the parts of the prostate causing the obstruction is not attended with such satisfactory results as complete removal of the gland, and the mortality is comparatively high. A series of 160 cases shows 22 deaths, a mortality of 12.5%. The procedure has nothing to recommend it, and is now seldom employed.

4. BOTTINI OPERATION.

The principle of this operation is to make galvanocautery incisions in the obstructing portions of the gland by means of a specially devised instrument. The newly formed channel through the obstructing portions of the gland extend along the sides of the prostatic urethra and widen this portion of the canal, allowing the free passage of the urine.

It is an operation of technical details, and consequently should not be generally employed, but should be practiced by only those who have given the matter special study.

The success of the operation depends primarily upon a careful study of the prostate by the cystoscope, determining the exact character of the obstruction and the relative sizes of the respective lobes. Without a satisfactory cystoscopic examination and determination of these points, the Bottini operation is not only dangerous, but unjustifiable. If the instrument is not properly placed, the heated knife may be drawn through the prostatic capsule, causing extravasation of urine into the rectum, with resulting urethrarectal fistula, or burning anywhere except through the prostate, will result in suppuration.

It is an operation performed under cocaine anesthesia of the urethra and bladder, and having the great advantage of not necessitating general anesthesia, it becomes the operation best suited for those patients who are too feeble to stand one of the more severe operations of complete prostatectomy.

Provided everything goes well, the patient need not be confined to bed at all, and the benefit of the operation becomes apparent almost immediately.

In the great majority of cases the result obtained by this comparatively simple, yet extremely technical operation, is quite as satisfactory in relieving the patient's symptoms as complete prostatectomy.

It cannot be emphasized too strongly, however, that the Bottini operation is an operation to be performed by comparatively few men, who have taken the pains to master the technical difficulties of cystoscopy and the finer manipulations of bladder instrumentation.

The mortality attending the operation is comparatively low, which fact becomes significant when it is realized that most of the cases subjected to this operation are those considered too feeble to be subjected to more radical measures.

In a series of 1,289 Bottini operations in literature, there is a mortality of 5.4%. Rorig has performed 203 such operations with only one mishap and one death, which emphasizes the point that one proficient with a certain operation may expect the best results.

The writer has reserved this method for those cases which are physically unfit for the median perineal operation. Cases which have been considered too feeble to undergo the perineal operation, or in whom cardiac lesions or renal insufficiency has been demonstrated, the severity of which would lead one to entertain a fear of etherization, have been subjected to the Bottini operation. He has operated upon 13 cases, with 2 deaths, which deaths, however, could not be attributed to the operation, one occurring from angina pectoris fourteen days after operation in one who had suffered severely from this disease for years; the other from intestinal strangulation, due to an existing umbilical hernia.

5. TOTAL SUPRAPUBIC PROSTATECTOMY.

It is generally admitted by everybody acquainted with the subject that the mortality of the suprapubic operation is higher than by any other form of radical operation. The following collection of cases is illustrative:

	Cases.	Per cent. Mortality.
Proust,	244	12
Watson,	263	13.3
Escart,	164	18.0
Tenney and Chase,	396	9.8
Freyer,	205	7.3

There has been a recent interest in performing the suprapubic operation, instituted largely by Freyer, of England, in 1903. Mr. Freyer's series in this publication consists of 45 cases, with a mortality of 11.1%. Since then Mr. Freyer has published a series of 205 cases, with a mortality of 7.3%, by far the best mortality of any operator doing the suprapubic operation. What is most important, however, is that even this low suprapubic mortality, attained by one most proficient with this operative method, is higher than the mortality of the recorded perineal operations performed by everybody.

Although the method may appeal more generally to surgeons, it can hardly be justifiable to subject the patient to the well established greater risk of life (about 3% over the perineal route), with no expectancy of a better functional result.

6. TOTAL PERINEAL PROSTATECTOMY.

We have two distinct methods for the removal of the prostate through the perineal route, with modifications of each: 1. Perineal dissecting operations as done by Albarran, Proust, Rydygier, Young and others, by which methods the gland is approached through some form of perineal incision, the median raphe of the perineum divided, the gland drawn into the wound by some form of special tractor introduced into the bladder, and the gland removed through the posterior surface of the capsule. 2. Median perineal prostatectomy, performed through a median perineal incision, as suggested by Gouley as far back as 1873.

1. *Perineal dissecting operations.* — During the past few years operations have been devised by which the hypertrophied gland is approached by dissection of the perineum through a number of different incisions. The various methods are all essentially the same. The median raphe of the perineum is exposed and divided and with some form of tractor, introduced through an opening in the membranous urethra; the gland is drawn downward, and being freed from the rectum by blunt dissection, is made to present in the wound. The posterior surface of the capsule of the gland is opened by a variety of different incisions, each of which is supposed to possess special virtue. The chief points claimed are to save the ejaculatory ducts, which pass downward close to the posterior median line of the gland and but a short distance inside the capsule, and also to remove the hypertrophied glandular tissue without destroying the prostatic urethra.

It is yet to be proved that the preservation of the prostatic urethra by these dissecting operations has any advantage over the results obtained by the suprapubic or perineal enucleation methods in which instances the prostatic urethra is removed with the gland. It is acknowledged by some who have done the greatest number of these dissecting operations, that they often destroy the prostatic urethra, although attempting to save it, and state further that it makes no difference in the result.

As to the value of saving the ejaculatory ducts, it must be borne in mind that the great majority of patients who suffer from prostatic hypertrophy have passed the age when sexual intercourse, other than of a perverted sort, has lost its charm and fruitfulness. Statement of facts are still wanting that the sexual power is preserved to any greater degree by the dissecting operations than by the median perineal operation.

Following is a list of the most recently reported cases of the perineal dissecting operations with their accompanying mortalities:

	Cases.	Mortality.
Young,	150	4.6%
Ferguson,	103	3.6%
Alberran,	73	4.0%
Hartmann,	56	9.0%
Pauchep,	53	7.0%
Legueu,	45	8.8%
Murphy,	51	3.9%
Rafin,	32	6.2%
Total number of cases,	563	
Average mortality,		5.5%

2. *Median perineal prostatectomy.* — This method, the one employed in performing the series of cases here reported, has the lowest mortality of any of the radical operations as seen from the following table:

	Cases.	Mortality.
Symes,	34	5.6%
Watson,	54	8.0%
Goodfellow,	78	2.5%
Cunningham,	24	0.0%
Cases,	190	
Average mortality,		4.7%

Technique. — Previous to operation the bowels are thoroughly emptied by cathartics and enema and the perineum is shaved and made surgically clean.

The instruments and at least two gallons of 4% boric acid solution are ready before the patient is placed upon the table. No rubber glove should be worn on the right hand as it hinders in the enucleation of the gland.

After the patient has been placed on the table, a curved groove staff is passed into the bladder while the patient is in dorsal position, it often being difficult to pass urethral instruments when the patient is in the lithotomy position. After the staff has been introduced, it is intrusted to an assistant to maintain in place.

Ether is now started, and as soon as the patient has lost consciousness he is placed in the lithotomy position with the buttocks drawn over the end of the table. The curve of the staff is made prominent in the perineum, and the operator, drawing the testicles forward with the left hand, plunges a curved bistoury into the perineum at a point just below the bulb of the urethra, until the point of the knife enters the groove of the staff. The blade is made to traverse the groove for a distance of about three quarters of an inch, when it is drawn directly outward, thus leaving a perineal wound about one inch in length. (See Fig. 1.)

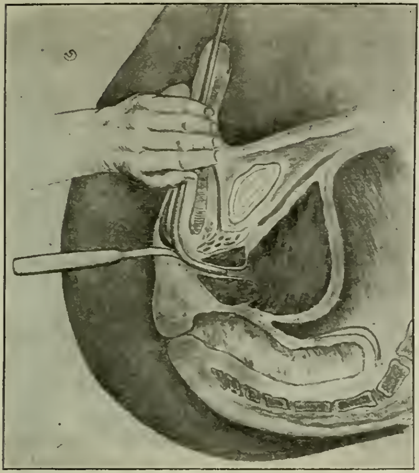

Fig. 1. The grooved staff in position. The knife entering the groove of the staff through the perineum at a point behind the bulb of the urethra. The testicles held forward by the left hand.

The operator now grasps the staff by its handle with the left hand and withdraws it slowly, while the index finger of the right hand, introduced into the perineal wound, awaits the presentation of the tip of the instrument. As soon as the tip is detected, the finger is slipped by it into the prostatic urethra. (See Fig. 2.) The staff has served its purpose and is now withdrawn. The finger is forced onward through the prostatic urethra into the bladder, and the character of the obstruction quickly defined.

Dependent upon the character of the obstruction certain clefts are detected, which clefts are the natural lines of cleavage through the urethra and between the obstructing lobes. The finger breaks through the prostatic urethra at such a point as becomes most evident. Often the simple introduction of the finger into the prostatic urethra ruptures it in the weakest point, and enucleation will naturally be started from this point of cleavage. If the obstruction is due to two hypertrophied lateral lobes, and the prostatic urethra is in consequence dilated antero-posteriorly, the line of cleavage will be either at the roof or floor of the urethra, usually the latter. If there is associated middle lobe hypertrophy, the line of cleavage will be at either side of the verum montanum. No rule can be laid down as to where the enucleation should begin, but the finger should follow any line of cleavage which results from the over-distention by it of the prostatic urethra.

Having broken through the prostatic urethra, the finger is passed through the glandular tissue, or rather between the lobes, until it strikes the fibrous sheath or capsule of the prostate, from which the lobes are separated by sweeping the finger between it and the gland. Suprapubic pressure with the left hand forces the prostate downward, and the enucleation becomes a bimanual procedure. (See Fig. 3.)

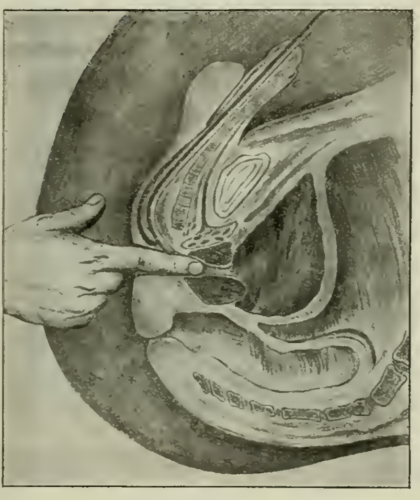

Fig. 2. The staff being withdrawn. The index finger of the right hand passed beyond the tip of the staff into the prostatic urethra.

Often the lobe can be entirely separated from the capsule and withdrawn by the enucleating finger, but sometimes it is necessary to grasp it by Vulsellum forceps, and drawing downward and to one side, the gland is separated from the posterior segment of the vesical sphincter, to which point it is most firmly attached, and which sphincter must not be injured. (See Fig. 4.)

After one lobe has been removed, the remaining lobes are enucleated in a similar manner, care always being exercised to perform the separation of the attachment between the gland and the sphincter in a most delicate manner, because upon the preservation of the sphincter depends largely the control of subsequent voluntary urination.

It is possible in many cases to separate the whole gland from the prostatic capsule and remove it *in toto* with the prostatic urethra. This, however, is not advisable, because of the possibility of over-distention and rupture of the compressor urethra muscle, which may be avoided by removal of the gland by *morcellement.*

The enucleation is usually easy if the finger is kept in close contact with the gland surface. It is when the finger is carried into one of the lines of cleavage of the capsule itself that the enucleation becomes so difficult and hemorrhage results, because within these layers of the capsule is situated the prostatic plexus of vessels.

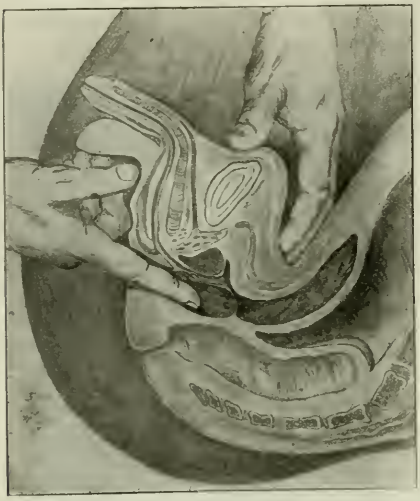

Fig. 3. The right index finger enucleating the gland from its sheath or capsule, while the left hand fixes the gland by suprapubic pressure.

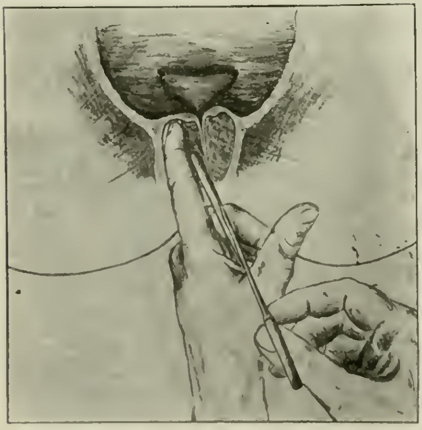

Fig. 4. The right lateral lobe grasped by vulsellum forceps drawing it downward and to the left, while the index finger of the left hand separates the attachment of the gland from the vesical sphincter.

After the gland has been enucleated, the capsule should be found intact, the floor of the bladder uninjured and the vesical orifice left as a well defined muscular ring, admitting the passage of the index finger. (See Fig. 5.)

The bladder should now be examined by the forefinger of the right hand introduced through the vesical sphincter, while the left hand exerts suprapubic pressure; thereby the bladder surface may be palpated and stones or diverticula may be detected if present.

If stones are found, they should be removed by stone forceps provided they are not too large to be drawn easily through the bladder orifice. If they are large, they should be crushed and then removed in pieces.

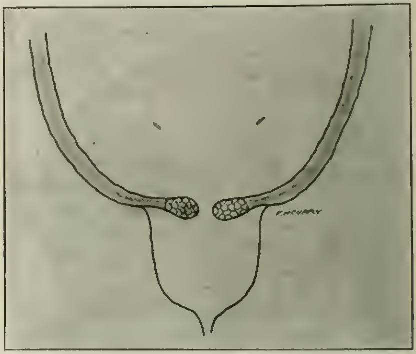

Fig. 5. A diagrammatic outline of the part after removal of the gland. The capsule and floor of the bladder should be unruptured and the vesicle orifice left as a distinct ring.

An irrigating tube should be introduced into the bladder and the viscus thoroughly irrigated with hot boric acid solution, and all fragments of stone, if present, washed away. The capsule, perineal wound and anterior urethra should also be thoroughly irrigated. If the capsule has not been injured, little bleeding results, and the hot solution is usually sufficient to arrest it.

Drainage. — If there is but little cystitis present at the time of operation, no catheter is retained in the bladder for drainage, but a small cigarette drain is placed just within the vesical orifice and brought out through the perineal wound, the urine thus draining by capillary attraction as fast as it is formed. On either side of the cigarette drain is placed a small iodoform wick.

When cystitis is present in marked degree a de Pezzer self-retaining catheter, No. 30, is placed just within the vesical orifice and brought out through the perineal wound. The small gauze wick is inserted into the capsule behind the catheter and one on either side. The catheter is attached to a siphon drainage apparatus.

When cystitis of a mild character is present, a soft rubber catheter of large caliber is placed through the full extent of the urethra and the wicks inserted into the capsule, as in the drainage through the perineum. The catheter is attached to a siphon drainage apparatus.

By the first method of drainage, when cystitis is not present, the wicks are removed in about twenty-four hours. It is felt that by this means urinary control is gained quicker and the perineal wound heals more rapidly.

In the second instance, where cystitis is pronounced, constant drainage of the bladder is best obtained through the catheter inserted by the perineal route, and frequent irrigation of the bladder with antiseptic fluids is made possible.

In the third form of drainage, where there is a mild cystitis present, the introduction of the catheter from the meatus to the bladder enables constant drainage and irrigation of the bladder, and at the time when the cystitis has improved sufficiently to warrant the secession of drainage, the perineal wound has been gradually closing.

After-care and medication. — The amount of urine secreted should be carefully measured, the immediate danger being that the kidneys will cease secreting reflexly from the operation. When this unfortunate complication occurs, mustard plasters should be applied to the kidney region, potassium acetate administered by mouth, tr. digitalis in 15-minim doses intramuscularly, and subpectoral infusions of salt solutions should be administered.

As soon as the patient recovers from his ether, fluids should be forced; cream of tartar lemonade, ale, milk and the sparkling waters being preferable. Tea and coffee are excellent as diuretics and stimulants, provided the patient desires them. Ordinary stimulation is indicated according to the patient's condition.

The bladder should be irrigated several times a day with some antiseptic solution when a catheter has been employed for drainage and, when the perineal wound has simply been wicked, the perineal dressings should be changed as often as they become saturated with urine. Unless hemorrhage is present, all wicks should be removed between twenty-four and forty-eight hours following operation.

The most important feature during the convalescence is that the patient should take a fair amount of nourishment. The next most important point is to get him out of bed early, as these patients are especially subject to hypostatic pulmonary congestion. They should sit up in bed usually soon after their ether recovery, and should be placed in a chair the day following the operation unless their condition will not allow it.

It is better that the bowels should not move for two or three days at least, as the wound will be soiled and there is danger of forcing a thrombus from the prostatic venus plexus into the general circulation, with fatal result. To control the bowels, Pil. opii, gr. 1, is administered night and morning. Rectal enemata should never be given for at least a month following prostatectomy for fear of embolus. When it is necessary to move the bowels, it should be done by internal medication.

If the perineal wound is sluggish in healing, it should be occasionally touched with silver nitrate stick.

Sounds should be passed from the meatus to the bladder, beginning about one week after all forms of drainage have been removed, and should continue at intervals of three or four days, until the perineal wound is entirely healed and no evidence toward constriction can be detected.

Throughout the convalescence it is advisable to have the patient live as near his natural habits as possible. If he is a smoker it is unwise to advise against it; but, on the other hand, it should be encouraged.

MISCELLANEOUS POINTS REGARDING THE CASES AND THEIR REPORTS.

The following series of twenty-four cases of median perineal prostatectomy have been performed by the writer during the past three years. There have been no deaths from the operations, and, excepting one, every case of the series is living at the date of this writing. All of these cases have been operated a period over four months.

All the cases except one (Case XX) have control over the act of urination, and each has been benefited by the operation.

There have been two cases requiring a second operation: one for recurrent stone formation and obstruction from an unremoved portion of the gland (Case IX), and another for stricture in the prostatic region, due to neglect to pass sounds. (Case XX.)

The case operated for recurrent stone has been greatly benefited by the second operation and may justly be considered cured. The case operated upon for stricture in the prostatic region has incontinence, presumably from the inability of the urinary sphincters to act because of the connective tissue changes about them.

All the cases have been operated by the median perineal route. This route and method of operating here illustrated has been suitable in all cases. The sizes of the glands have varied from 18 gr. to a fraction over ½ lb. in weight. There have been all forms of hypertrophy, but in no instance did the operator feel that he might have done better to employ some other operative method. The writer is personally familiar with the suprapubic and perineal dissecting operations, and has had experience with a considerable number of the former and a fewer number of the latter.

It is generally stated that the majority of all hypertrophied prostates can be removed through the perineal route, and that the remaining third, because of the large size, are better attacked over the pubes. It is the writer's belief that in paying attention to detail in the operation here illustrated that all glands, no matter how large, may be and are best removed through a median perineal incision. Proof of this remark is found in Case X, in which the gland weighed a little more than ½ lb., an unusually large prostate with a middle lobe, and one which most operators would consider not suitable for perineal operation.

The writer has chosen to do the median perineal operation because of the lower mortality and the obvious reasons upon which this lower mortality depends, and because, further, the results are equal to those of any other method and are obtained as quick if not quicker.

The rapidity with which the operation can be done requires little more than primary anesthesia and short exposure of the patient, whereby the shock is minimized. The longest time required to perform the operation was twelve minutes; the shortest time, one and one half minutes. Twenty-one out of the twenty-four cases were done in six minutes or under. The case requiring twelve minutes was the gland weighing a fraction over ½ lb., and the other case, which required eight minutes, was difficult because the operator did not keep close enough to the gland, but got between the layers of the prostatic capsule (which always makes the enucleation difficult) and did not immediately recognize the mistake.

The longest administration of ether was twenty-two minutes, the shortest six minutes, the average being less than fifteen minutes.

One cannot but believe that a short etherization and operation does much to lessen the liability of uremia and shock, and that getting the patient out of bed a day or two after the operation lessens the liability of pulmonary complications.

There were six cases with associated vesical calculus; two cases with chronic parenchymatous nephritis and five with chronic interstitial changes.

Only two cases presented a history of gonorrhea, and one who had suffered from syphilis.

Four of the glands had areas suggestive of carcinoma, but microscopical examinations were negative in each instance.

The glands which were in a state of congestion enucleated with greater ease than those not congested. From this fact it might be presumed that the line of cleavage between the gland and its capsule is accentuated at this time. In view of this, it seems best to operate immediately upon these cases in which the congestion has produced acute retention rather than to establish drainage until the congestion has been reduced, as is usually the custom.

It is of interest to note the frequency of associated hemorrhoids and herniæ which is evidence of prolonged straining.

There were fourteen cases which possessed sexual power before the operation and ten in whom the power had been lost. Of the first class six retained the power unchanged, one considered it improved, two have not been heard from, two have not tried and in three the power was lost. Of the second class of ten who had no sexual power before operation, one states that it has returned.

The cases have not been free from complications. Hemorrhage occurred in three cases, requiring packing of the prostatic capsule with gauze saturated with adrenalin. The hemorrhage occurred in one case soon after operation, in another, three days after operation, following a movement of the bowels, and in the third case the bleeding began on the tenth day, without known cause. The hemorrhage in this case (No. XXI) was the most severe, and produced alarming constitutional symptoms, requiring subcutaneous salt infusions every six hours for three days.

Subcutaneous ecchymosis of the scrotum and perineum occurred in several cases, but disappeared with the application of cold within a few days. The infiltration of the lax scrotal tissues with blood occurs easily and emphasizes the importance of keeping the scrotum elevated.

Epididymitis occurred in six cases, usually appearing soon after the perineal wound had closed. In one case it was bilateral and in no case did it go on to suppuration. The application of poultices for a few days, strapping of the scrotum, or even the use of a suspensory bandage was sufficient to remedy the condition.

In one instance (Case No. X), a recto-urethral fistula was formed, probably from the passage of hard feces several days after operation, and possibly aided by prolonged drainage with a hard perineal tube.

Three of the patients developed temporary mental disturbances, following soon after the operation. This condition was not a uremic symptom, but was considered by Dr. E. E. Southard to be a post-operative psychosis. They all regained their former mental state.

The cases in which cystitis was present were irrigated daily when possible, and in several instances this was necessary for weeks following operation.

The cystoscope has been employed in those cases which could be subjected to study before operation. Its use can in no way be considered essential, but knowledge of the actual form of the hypertrophy, the condition of the bladder, and whether or not stones or incrustations are present, enables a more trustworthy prognosis and aids materially in the steps of the operation. In Case No. IX, in which no cystoscopic examination was made, a small hypertrophied anterior commissure was left behind, and had it been possible to have cystoscoped this patient before operation, this extremely rare form of associated hypertrophied tissue would have been discovered and sought for at the operation, and the patient would, in all probability, not have required a second operation for recurrent stone formation.

The absence of mortality in this series of cases seems to the writer to depend largely upon the following points: 1. Study of the character of the obstruction and changes in the bladder, by means of the cystoscope and the functional capability of the kidneys by the phloridzin test, and subjecting those not up to a certain standard to the Bottini operation. 2. Very short etherization and rapid operation. 3. Encouraging the patient to live as near his normal life as possible during his convalescence.

CASES.

I am indebted to the following gentlemen for cases included in this paper: Dr. George Farrell, Dr. Fritz Gay, Dr. John L. Ames, Dr. Willis G. Bond, Dr. Gardner Hall, Dr. John M. C. Murphy, Dr. F. H. Lahey, Dr. J. C. Suckeris, Dr. Lincoln Sise, Dr. Charles Wormelle, Dr. J. A. Shatswell, Dr. P. P. Johnson, Dr. H. H. Smith, and Dr. H. J. Shannon.

(To be continued.)

HOSPITALS FOR CHILDREN.*

BY ROBERT W. HASTINGS, A.M., M.D.,
Resident Physician to the Boston Floating Hospital.

My topic is not the abstract one suggested in the circular of notice, hospitals for children, its advantages, disadvantages, etc., valuable as such a discussion might be. But I am to try to tell you what hospitals for children are available for men in the Norfolk district and as much about them as the limits of a ten minutes paper will allow. I know that there are men present who will know more about individual institutions than I do. If I am incorrect in any of my statements, or if I omit essential facts, will not those men kindly add their criticism when the time for the open discussion of the evening comes?

We all of us have occasion sometimes to send children to a hospital. At certain seasons or for some diseases difficulties arise because of the limited beds available. I shall have fulfilled my duty to-night, if I shall have broadened your field of vision along this line. For I certainly have added a great deal to my own information in preparing this paper.

From local boards of health and physicians I find that of the towns in our district, Brookline, Milton, Sharon and Franklin alone have hospitals to which children may be admitted.

The Brookline Contagious Hospital for diphtheria, scarlet fever, and measles has 100 beds. Its location, not far from the Country Club, is an advantage from the point of view of isolation, a disadvantage from the point of view of accessibility. Patients are expected to pay $15.00 per week, but if unable to do so, the burden will be borne by the town for its own residents.

Milton sends its contagious cases to Brookline and pays that town for their care. There is, however, in Milton a hospital of 10 beds free to residents of Milton who cannot afford to pay, to which children as well as adults may be admitted.

Franklin has a contagious hospital of 6 beds, not free.

Children have been occasionally admitted to the Sharon Sanatorium for tuberculosis, but aside from that no provision is made by that town for the hospital care of sick children.

Wellesley sends its needy patients, especially the contagious cases, to Newton Hospital and pays the bill there.

The Wellesley Convalescent Home for children is connected with the Boston Children's Hospital, and patients are admitted almost exclusively from that institution.

Dedham cares for its sick poor in their homes, as doubtless the other towns in the district do, but adds a nurse when necessary, through the aid of its Emergency Nurses Association of Dedham.

When we turn to those portions of the Norfolk District which lie within the bounds of Boston, we find a great number of institutions and organizations whose duty in whole or in part is to care for needy children. I received reports from about 50 and letters from most of them and from several others who had no printed report to send.

First is our great City Hospital, second to none. Most of the children there are in the South Department, where are 264 beds for diphtheria, scarlet fever and measles. None too many, for from the time the department was opened up to Nov. 13, 1906, 818 patients with measles were rejected for lack of room. Pertussis, varicella and mumps are not received here when they have not also scarlet fever or diphtheria. Our contagious hospital is a splendid one and has a great expert at its head, but he needs more room. There are, besides, in the City Hospital, Ward O for surgical cases of children with 14 beds for boys and 8 for girls and in Ward L a room for medical cases containing 8 cribs and two bassinets, besides three cribs in other rooms if necessary,—*i.e.*, 35 of the 615 beds in the main hospital may be used for children; surely not an unduly large proportion! But they are there and if you remember that, you *may* secure one of them for a very sick neglected child left on your hands.

The Massachusetts General Hospital has one ward of 18 beds for children. Emergencies are admitted at once; other cases must await a regular appointment of from one to three weeks. No contagious or incurable cases are admitted except some of the latter may come for temporary relief. Specify in your letter of recommendation if a free bed is needed. The regular charge is $10.50 per week. Apply when possible between 9 A.M. and 1 P.M., or 2 and 3 P.M.

The Children's Hospital, on Huntington Avenue, has 51 surgical and 30 medical beds. Admission is secured generally through the out-patient department, but emergency cases apply by telephone or with note from a physician to the superintendent. A charge of $7.00 per week is made for children not residents within the limits of Boston — these latter are cared for without charge.

The Infants' Hospital, at 37 Blossom Street, has 23 beds. Emergency cases are admitted at any time when there is a bed, but all others are referred to the admitting physician who is there daily, except Sunday, from 9 to 11 A.M. Charges made according to ability to pay, from as high as $10.00 to $12.00 per week to as low as 50 cents per week, or no charge at all.

The Carney Hospital, in South Boston, has no regular ward for children, but does occasionally admit them. Usually they come in through the out-patient department, but they may be brought with a note from a physician to the superintendent, on Tuesday and Friday afternoons from 2 to 4 P.M. A charge of $7.00 per week is made but is modified to meet the financial condition of the family.

The New England Hospital for Women and Children has 12 beds for children. Application is made to the superintendent from 11 A.M. to 1 P.M. daily with a note from the attending physician. $3.00 per week is charged when patients can pay. A private room for a child can be secured there for $10.00 per week. The hospital is on Dimock

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* Read before the Norfolk District Medical Society, Dec. 18, 1906.

Street, Roxbury. Its staff are, as you know, all women.

The New England Baptist Hospital, on Parker Hill, Roxbury, while it has no beds set apart for children, occasionally takes one, especially if the mother comes with the child. If as much as $12.00 is paid to the hospital each week, the patient may be under the care of his own family physician. The airy, quiet location is excellent.

The new hospital of the House of the Good Samaritan, located on Francis Street, near the new Harvard Medical School, has two wards of 12 beds for orthopedic surgical cases. Application is made to the superintendent for admission. No charge is made.

The Faulkner Hospital, in Jamaica Plain, has about 30 beds,of which some, no definite number, may be used for children. Application is made to the superintendent by the physician. Children are welcome. If possible they pay from $10.50 to $14.00 per week for their care and treatment. For the latter sum any one of you may have a patient there in the open ward. Private rooms of course cost more. There are 6 free beds.

Three institutions are open in the summer only: the Boston Floating Hospital has now one hundred beds, besides the chance for a hundred more to come by day and spend the nights at home. All diseases except the children's contagious cases are welcome. Specially do we desire to have, in our open ward of 16 beds, tuberculous cases. So if you have any such next July, send them down early in the month before we are pushed by the infectious cases. We will keep them as long as the season lasts and hope to do much good thereby. No case is refused so long as there is a bed, but it helps us in the proper care to have a note from the doctor who has had the case. Come down yourselves and see the new boat, at the North End Park Pier, before 9 A.M. or after 4.30 P.M.; or, if you can, make a trip with us. You will have a cordial welcome and will, I think, find much to interest you.

The Burrage Hospital, on Bumkin Island, near Nantasket Point, maintained each summer by Mr. A. C. Burrage, is a most beautiful hospital. More than 100 children can have the benefits of fresh air, sunlight and good food, with medical supervision, and treatment when necessary. Most of them are cripples. A few more acute cases are taken. Applications are made at the wharf by parents to a hospital officer. This last season certain of the Nantasket boats stopped there. This inaccessibility of the hospital is the objection of parents to it but is more imaginary than real for there is always telephone connection with the city. It ought to be crowded full every summer as it never has been. Members of our own district are on its visiting staff, so you may be sure patients you send there will be well cared for.

The Children's Island Sanitarium, in Salem Harbor, reached by boat from Marblehead, has 75 beds. It is open from May to October. Applications are made with physicians' certificates to 37 Blossom Street, between 3 and 4 P.M., Mondays and Thursdays in June, July and August, *i.e.*, when the Infants' Hospital is closed. Children must be over two years old and if boys, under ten. All sorts of cases are admitted except contagious. Many have tubercular joint and bone diseases, as at the Burrage Hospital, but the superintendent would welcome more of the acute cases. We send the children of wealthy parents away to the seashore in the hot summer months. Here are chances to do the same for the sick children of the poor. No charge is made at any of these three summer hospitals.

The Eye and Ear Infirmary on Charles Street has 150 beds. Patients are admitted on the recommendation of any reputable physician. They pay $6.00 per week, if able to do so, or a less amount if that sum is too large. Specially valuable is the building where the contagious cases like gonorrheal ophthalmia can be cared for and isolated. Here one-half hour treatment can be and is maintained for days at a time, the salvation of many an eye! Eye and ear cases are also admitted to the City Hospital and to the Carney Hospital.

The Perkins Institute for the Blind, in South Boston,the Kindergarten for the Blind, in Jamaica Plain, the Boston Nursery for Blind Babies, on Fort Avenue, Roxbury, the Sarah Fuller Home for little deaf children, the Industrial Home for crippled children, all furnish aid for certain classes of cases.

Two of the so-called asylums are really hospitals, *i.e.*, the Massachusetts Infant Asylum, Jamaica Plain, and St. Mary's Infant Asylum, in Dorchester.

The Massachusetts Infant Asylum has about 12 beds. Applications for admission are made on special blanks to be signed by the examining physician who in our district is Dr. E. C. Stowell. Special emphasis is laid upon the feeding of these infants by breast milk, as has been reported to this society by one of the visiting physicians, Dr. Francis P. Denny. Preference is given to the younger children, under eighteen months.

St. Mary's Infant Asylum, on Everett Avenue, Dorchester, has 100 beds. All ages up to four are admitted. Application is made to the superintendent in person. Cases are classified according to age and condition, in 12 wards. For the efficiency of the medical work in this institution, my associate, Dr. Robert M. Merrick, of this district, is largely responsible. The new building is an excellent one and the clinic well worth a visit from any of you who live near by, and are equal to the steep climb to the top of that hill. I know what its reputation was in days gone by, but those days are now long past. It is a hospital which Dorchester men can be proud of and can do much to aid. A charge of $2.00 or less per week is made for those who can afford to pay, but nearly all are free patients.

The Waltham Baby Hospital and the Newton Hospital are neither of them within the limits of this district, or of Boston, but both receive children. The Waltham Baby Hospital has 16 beds, admits only babies under two years old and charges $1.00 per day when parents can pay it.

This does not meet the whole expense, by any means, which averages about $10.00 per week per baby.

The Newton Hospital, to which, as I have stated, Wellesley sends her contagious cases, has about 75 beds. About half the patients pay their way. The free beds are for Newton patients. Its chief value to our members therefore is for cases of contagious diseases who can pay. Doubtless similar arrangements can be made with the Brookline authorities, as Milton does.

I received also numerous reports from homes to which we may recommend patients. But as nearly all insist upon the good health of their applicants they cannot properly be considered as hospitals. There are two exceptions: Massachusetts Infant Asylum and St. Mary's Infant Asylum, as noted before.

There ought to be a diet kitchen in this part of the city. Formerly there was one on Ruggles Street, but this has been discontinued. The only place of which I can learn where one may secure needed supplies for a sick child is the North End Diet Kitchen on Common Street, Boston. Perhaps some of you can add to this. In the summer time the milk fund and Whiting's Distributing Centers help a great deal.

Finally, mention should be made of a large number of philanthropic societies which are ready to take up any case we may refer to them and to locate it in the institution most suitable or most available. Among these are the Society of St. Vincent de Paul, Massachusetts Society for Prevention of Cruelty to Children, Children's Aid Society, Barnard Memorial Society for helping Destitute Mothers and Infants, and lastly, in Boston and in each town, are the Overseers of the Poor.

I must apologize for the bareness of this outline. Time forbids more details or the consideration of other institutions.

In conclusion let me say that the replies I received to my inquiries always evinced the greatest willingness, even anxiety, to render help to the child for whose sake they supposed I was inquiring. They will help you in this same way. But remember, sometimes the beds *are* all full. Then help that admitting physician, *if you can*, by trying one of the other institutions which does similar work.

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Clinical Department.

DIAGNOSIS OF DILATATION OF THE DUODENUM; A CLINICAL NOTE.

BY HENRY A. CHRISTIAN, M.D., BOSTON,

Instructor in the Theory and Practice of Physic, Harvard University, formerly Assistant Visiting Physician at the Long Island Hospital, Boston.

(From the Service of Dr. J. J. Minot, Long Island Hospital).

During the past year or two considerable interest has been aroused in the subject of dilatation of the duodenum by the observations of surgeons in their operations on the stomach, duodenum and gall bladder. Ochsner[1] has called attention to the presence of a duodenal sphincter and its possible action. Zade,[2] Finney[3] and others have pointed out that dilatation may result from obstruction due to the traction of the root of the mesentery over the lower end of the duodenum in conditions of enteroptosis. The possibility of duodenal atony associated with gastric atony and pyloric relaxation may be assumed as another factor in etiology. However, the case which I here report is of interest rather from the point of view of diagnosis, since the case was observed before much attention had been directed to this subject, and consequently no very special observations as to a possible cause for the condition were made, either at operation or autopsy.

P. H. was first admitted to the Long Island Hospital, Dec. 31, 1903, complaining of pain in the stomach after eating, occasional vomiting, and constipation. At that time he was seventy years of age, in a good condition of nutrition. His peripheral arteries were moderately thickened and tortuous. His abdomen was flaccid, not tender. No tumor masses could be made out. Pressure on the epigastrium and left hypochondrium caused eructations of gas. Gastric lavage was instituted, and with cathartics the patient's condition improved. In one month he gained ten pounds in weight. Before discharge, Feb. 1, 1904, inflation of the stomach showed the lower border to be 3 cm. below the umbilicus.

Patient remained well until about June 1, 1904, when the symptoms recurred. He was readmitted to the hospital July 18, 1904, in a somewhat feeble condition. He remained until the last of August. During this stay he developed an abscess of the buttock, which was incised under ether anesthesia. Sept. 17, 1904, he was again admitted, suffering from a contusion of the shoulder, received from a fall in the street. At this time he again complained of pain and distress in the epigastrium, relieved by vomiting. This gradually improved, and toward the end of October he was discharged from the hospital to the pauper institution, where he remained until March 23, 1905, when he was readmitted to the hospital.

At this time he was complaining again of constipation, distress in the stomach, gaseous eructations, and vomiting of food and mucus. I saw him on the day of admission and found a well nourished old man, with peripheral arteriosclerosis but otherwise in fair condition. An attempt to inflate his stomach by means of a divided Seidlitz powder was unsuccessful. The following day a stomach tube was passed and 115 ounces of water was put in. Of this only 48 ounces could be recovered. On April 11, 1905, I again saw the patient, and made the following note: No masses can be felt in the abdomen. With the patient sitting up, the percussion outline of the lower border of stomach tympany lies 13 cm. below the costal margin in the left mamillary line, 2 cm. below the umbilicus and reaches the right costal margin at a point 6 cm. to right of median line. Further to the right there is a tympany whose lower border cannot be sharply demarcated. By means of the stomach tube 98 ounces of water were introduced, and the lower border of the tympany was raised 2 cm. on the left and the area of tympany disappeared on the right. Sixty-seven ounces were removed, all that could be obtained.

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[1] Ann. of Surg., 1906, xliii, 80, and Am. Jour. of Med. Sc., 1906, cxxxii, 1.

[2] Beiträge z. klin. Chir., 1905, xlvi, 388.

[3] Ann. of Surg., 1906, xliii, 870.

The lower border of tympany was now 17 cm. below costal margin on left, 6 c.m. below the xiphoid and had disappeared beneath costal margin on right as previously described. The tympany on the right did not reappear. Inflation with air lowered the line of tympany 4½ cm. The patient was placed on his back, but no more fluid could be expressed. Inflation in this position showed lower border of stomach visible at umbilicus and extending up to costal margin on both sides well outside of mamillary lines.

From these clinical facts a probable diagnosis of hourglass stomach or dilated duodenum and stomach with pyloric relaxation was made. Dr. Cunningham saw the patient, and determined to make a gastro-enterostomy. On April 21, 1905, this operation was done. At that time the stomach was seen to be enormously dilated, with no obstruction at the pylorus. The patient stood the operation poorly, and without completely regaining consciousness, died the next evening.

An autopsy was made several days later by Dr. Magrath, from whose protocol the following description of the gastro-intestinal tract is taken:

Gastro-intestinal tract: the mesentery of the transverse colon upon its posterior aspect shows an opening 5 cm. in diameter, through which there is union by sutures between the jejunum at a point 5 cm. from its origin, and the posterior wall of the stomach 2 cm. above the greater curvature and 8 cm. from the pylorus; the peritoneum adjoining is a little injected and roughened, otherwise natural. Stomach: length 31, cm. depth at cardia 16 cm.; upon section, it contains a small amount of brown to black fluid material; the mucous membrane is smooth, and shows extensive post-mortem changes; at a point as above noted, the posterior wall near the greater curvature shows an opening 1.5 x 3 cm. communicating with a segment of the jejunum; the pylorus is 9.5 cm. in circumference, and represented by a well-marked fold. The duodenum at its origin is 11.5 cm., at a point midway between the pylorus and the papilla 12 cm., at the beginning of the third portion 11 cm. in circumference; the mucous membrane shows post-mortem changes, but is otherwise negative; at a point 6 cm. from its origin the jejunum is united with the stomach as above noted, and upon section, at this point presents an oval opening communicating with the stomach; this portion of the intestine contains a small amount of dark-brown semi-fluid material; the ileum and colon, a moderate amount of pale brown, homogeneous material.

The anatomical diagnoses were:

Operation wound of the abdomen; chronic adhesive pericarditis; hypertrophy and dilatation of the heart; edema and congestion of the lungs; anthracosis of the lungs; gastro-jejunal anastomosis; dilatation of the stomach and duodenum; fatty infiltration of the liver; chronic nephritis; cyst of the kidney; enlargement of the prostate; hypertrophy and dilatation of the bladder; general arteriosclerosis.

The point which I wish to emphasize in this case is the possibility of determining by physical examination of the abdomen and the use of the stomach tube an anatomical condition in which there exist two pouches, so connected by a patulous opening that both can be filled with water, but the water can be siphoned back but from one. This condition would be present in both an hourglass stomach and duodenal dilatation with pyloric relaxation. In the latter condition the second pouch would be well to the right side, as in the case here reported. This is only a single observation, but may serve in the hands of others as an aid in diagnosing such conditions.

ABDOMINAL TUMOR WEIGHING EIGHTY-THREE POUNDS.

BY F. W. JOHNSON, M.D. BOSTON,
Visiting Gynecologist, Carney and St. Elizabeth's Hospitals.

THERE was in this case a fibroid weighing 14½ pounds. The sac of the ovarian cystoma weighed 28½ pounds, and the fluid in the sac weighed 40 pounds.

The day on which the patient left the hospital she weighed 92½ pounds. During the month following the operation she certainly gained more than ten pounds.

A. L., single, 59 years of age, entered the hospital, Sept. 29, 1904. Menstruation began at 14 years of age and was regular up to eight years ago. During these eight years menstruation had been irregular, occurring both before and over the four weeks. Once went one year, but even up to the time of entering the hospital there has been at times a bloody discharge.

Twenty years ago she noticed enlargement of the abdomen. Dyspnea for the past year, easily tired, marked increase in size of abdomen. Has had a dry cough for the last six months.

Heart. — Regular, rapid. Area not made out.

Lungs. — Fine moist râles at bases behind. Diminished respiratory murmur over lower part of each lung.

Liver. — Upper border at nipple-line; sixth rib at axillary line; lower border not made out.

Abdomen. — Greatly distended; small umbilical hernia. Dull everywhere on percussion. Lower part of thorax bulging; intercostal spaces markedly retracted. Ensiform cartilage was pushed out almost at right angles to the body. There was marked edema of buttocks, thighs and legs.

For six months she had been practically bed-ridden. It was necessary to support the tumor to prevent its rolling off the table and dragging the patient with it. She nearly died before enough ether could be given so we could open the abdomen, tap the cyst and thus give her room to breathe.

Remembering Dr. J. C. Warren's advice, great care was taken not to empty the cyst too rapidly. Just as soon as the lungs had room to expand, the fluid was drawn off very slowly. A complete hysterectomy was done. She made a good recovery, and was discharged one month after operation.

Feb. 24, 1907. She weighs 160 pounds, and for a long time has done her own house work. She walks to and from the post-office which is one half mile from her home.

Medical Progress.

HYGIENE.

BY CHARLES HARRINGTON, M.D., BOSTON.

TYPHOID BACILLI IN WATER, FOOD, ETC.

How long typhoid bacilli will live in water has been the subject of much study, the results of which have been far from being in agreement. The character of the water, the nature and amount of the organic matter present, the number of bacteria of other kinds present and their nature, the temperature, the conditions as to light, the association of higher forms of vegetable life and various other factors all seem to be of more or less consequence. Important work reported by Wheeler[1] proves that under certain conditions not only can these organisms live in water but they may even multiply to a considerable extent. This occurred in well water, containing considerable organic matter, kept at room temperature and in the dark. It is commonly believed that the saprophytic bacteria are hostile to the typhoid bacillus, but Wheeler showed that with one species, at least, it grows without difficulty.

The detection of the typhoid bacillus in the water of a suspected source has been reported by Matthes and Neumann[2] and in that of two suspected wells by von Drigalski,[3] who, in the case of one, obtained confirmatory proof by agglutination and Pfeiffer's test, though in the other he was unable to do so, failing to get the organism in pure culture.

Dr. W. Rullmann,[4] six months after planting typhoid bacilli in sterile soil, river sand, sifted humus and organic filth, found them in abundance; a year later but few were demonstrable in the humus, none in the sterile soil and sand, but many in the more filthy medium.

The effect of tea on typhoid bacilli is recorded by Dr. J. G. McNaught,[5] who found that four hours' contact with the infusion greatly diminishes their number and that after twenty hours' contact in the cold tea, they cannot be detected. He points out the desirability of substituting cold tea for water in soldiers' canteens while in the field, especially where typhoid fever is known to exist.

While milk has often been proved to be the vehicle for the exciting cause of typhoid fever, instances are few in which the bacilli themselves have been detected therein. D. Konradi[6] has reported an outbreak (120 cases) of the disease, in the course of which suspicion pointed to a bakery where many of the victims obtained their milk. The specific organism was found in 2 of 33 specimens of milk examined, and investigation showed that the son of the producer had ambulatory typhoid and that he milked the cows and handled the milk. The genuineness of the cultures obtained was confirmed by agglutination and by Pfeiffer's test.

CONTACT INFECTION AND TYPHOID CARRIERS.

It is asserted by Kutscher[1] that in southwestern Germany, direct contact is a more important factor in the spread of typhoid fever than polluted water, and that about 4% of typhoid patients become chronic carriers of the specific bacilli, which they excrete in both urine and feces, sometimes for long periods. Doerr,[8] for example, cites cases reported by Drober and Hunner, in which the bacilli were isolated from the gall bladder seventeen and twenty years after recovery, and Lentz[9] asserts that if after ten weeks from convalescence the excretion of the bacilli has not ceased, it will most likely continue permanently and uninteruptedly, in spite of medication. He cites a number of cases in which after ten, thirty and even forty-two years after recovery, the excretion continued. Levy and Kayser[10] report that in the autumn of 1905 a number of cases of typhoid fever occurred in an insane asylum, in which two years previously an inmate had had the disease and had recovered. On the appearance of these later cases, this person was examined and was found to be excreting the bacilli in her feces. Further examinations were made at intervals of several weeks, and the bacilli were found ten times. In October, 1906, she died of a typhoid bacillary septicemia, due to auto-infection from the gall bladder; and on autopsy the bacilli were isolated from the spleen, liver, bile, wall of the gall bladder and from the interior of a large gallstone.

A somewhat similar case is reported by Nieter and Liefmann,[11] also from an insane asylum in which the disease had been endemic for many months. A patient dead of chronic dysentery was examined, and typhoid bacilli were found in the intestines and in pure culture in the gall bladder, in which were gallstones. Among 250 inmates were found 7 typhoid carriers.

Klinger[12] found among 1,700 persons, 23 typhoid carriers, ranging in age from eighteen months to sixty years, 11 of whom had no typhoid history. Of 842 convalescents from the disease, 63, or 13.1%, were found to be excreting the bacilli, and 8 were still doing so six weeks after recovery.

Kayser,[13] tracing outbreaks to their sources, found a boy of twelve years, a member of a milkman's family, to be a chronic carrier and the probable source of infection in a number of cases. Another outbreak in which 17 persons were seized (2 deaths) was traced to a woman who had no typhoid history but was excreting the specific bacilli. She was employed in the dairy from which the persons seized had obtained their milk. Of 260 cases of typhoid fever investigated, 60 were traced to infected milk. Among the 60 victims were 30 maids and kitchen girls, 12 bakers, and 44 persons engaged more or less in kitchen work. In all, 28 cases were traced directly to apparently healthy typhoid carriers.

Minelli[14] examined 250 prisoners who had not been in contact with typhoid cases, and found but one who had the specific organism constantly in the feces. The agglutinative test was positive.

Etienne and Thiry[15] report the case of a man, sixty-four years of age, who, after four years in a hospital, under treatment for tabes and hemiplegia, had two attacks of jaundice, and on examination was found to be excreting typhoid bacilli in the feces.

A series of 26 cases of the disease in fifteen families of a village in Lorraine is described by Seige,[16] who states that diligent investigation by the district physician, the village authorities and the Bacteriological Institute of Saarlouis placed the responsibility upon a woman who was a chronic typhoid carrier.

An interesting case of infection from direct contact is reported by Dr. H. Mackenzie and Mr. W. H. Battle.[17] More than two years after a severe attack of typhoid fever, a man had an attack of femoral osteomyelitis, caused by *B. typhosus*. After operation the patient was discharged, but some time afterward a sinus formed, the purulent discharge from which contained typhoid bacilli. The patient's wife had not been in contact with any other case, but frequently removed and burned the dressings. After a time she fell sick with typhoid fever, and died.

In a letter to the writer, under date of April 3, 1907, in response to a request for information concerning a woman described in the press as a "typhoid factory" and held under detention by the Department of Health of the City of New York, Dr. Walter Bensel says: "The woman of whom you write has given a history of a probable mild attack of typhoid fever about six years ago. Since that time there have been undoubtedly twenty-eight cases of typhoid fever in the families in which she worked. The number of cases occurring in a family within a few weeks of her advent varied from one or two up to six out of seven members. The evidence seemed so strong that she was a carrier of typhoid fever that she was removed to Reception Hospital by force. Examination of her feces and urine were made, and the typhoid bacilli found in her feces confirmed positively our suspicions with regard to the possibility of her conveying typhoid fever."

TYPHOID FEVER AND SHELLFISH.

At a recent meeting of the Académie de Médecine, Prof. A. Netter[18] stated that he had collected 125 cases of sickness, occurring in less than four months in twelve towns in different parts of France, all having in common that the patients had eaten oysters from Cette. The cases occurred in 37 families. The majority of patients had gastro-intestinal symptoms, characterized especially by colic and diarrhea, with or without vomiting. "The incubation period was generally at least twenty-four hours, but in 22 cases it was forty-eight hours or more. In some, the stools became very frequent; there was somnolence and a marked adynamic condition, and especially among children, profuse perspirations with a tendency to syncope occurred. In several cases there was epistaxis."

There were 33 cases of typhoid fever, mostly of very severe type, and 7, or 21.1%, resulted fatally. There was no relation between the number eaten and the severity of the symptoms; in 5 fatal cases the numbers eaten were respectively 3, 4, 9, 10 and 21. With rare exceptions, all who partook of the oysters became ill, while those members of the invaded families who did not eat of them escaped.

The Cette oysters are stored in canals which receive the sewage of the town. The yearly output is about 61,000 kilos.

An outbreak of typhoid fever due to polluted clams from flats near an outfall sewer is reported by J. F. Beale.[19] Seven persons ate clams which were said to have been thoroughly cleaned and boiled; four escaped with diarrhea and vomiting, but three had typical typhoid. Clams obtained from the same source were found to be grossly polluted with sewage bacteria which could be recovered alive from the tissues of the clams even after fifteen minutes' boiling. This result is in agreement with the findings of Mr. H. W. Clark,[20] whose tests with clams showed that one cannot be sure of sterility in all cases after five minutes' boiling, fifteen minutes' steaming, or by ordinary frying. The same was found to be true also of oysters, which, if cooked for more than five minutes are rendered unsuitable for eating, except that by the method followed in the preparation of "escalloped" oysters sterility may be secured after fifteen minutes' baking, without serious damage to texture and palatability.

According to a note in *Medical Record* (Nov. 10, 1906), Wesleyan University, Middletown, Conn., has had a second outbreak of typhoid fever, traced to polluted oysters consumed at fraternity banquets on Oct. 12, 1906.

DISCHARGE FROM THE EAR AS A PROBABLE FACTOR IN THE SPREAD OF DIPHTHERIA.

Dr. J. Biernacki and C. Montague Heanley[21] call attention to the importance of the discharges from the ears as a factor in the spread of diphtheria, it being well known that school children often have ear discharge after diphtheria and that this may contain the specific bacilli. These were found by them in 16 of 19 cases of ear discharge, and in a majority of the positive cases hundreds of bacilli were observed in a single field. The stage in which this condition obtains was found to last sometimes several weeks, so that the output of the bacteria must have been enormous. The bacilli were found as late as ninety-one days from the onset and on the sixtieth day of the discharge, and in scrapings from the meatus a week after the discharge had ceased and syringing had been stopped as unnecessary. In one case the interval from the onset to the appearance of the discharge exceeded forty days; in three cases, thirty days; in six cases, twenty days; in seven cases, ten days; in two cases, less than ten days.

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[17] Lancet, July 7, 1906, p. 26.
[18] Bull. de l'Acad. de Méd., 1907, lxxi, No. 6, and British Med. Jour., Feb. 23, 1907.
[19] Lancet, Jan. 5, 1907, p. 20.
[20] Pollution of Shellfish. Thirty-seventh annual report of the State Board of Health of Massachusetts, Boston, 1906.
[21] Jour. of Preventive Medicine, July, 1906, p. 423.

(To be continued.)

Book Reviews.

Aids to Medical Diagnosis. By ARTHUR WHITING, M.D., M.R.C.P., Physician to the Tottenham Hospital and Assistant Physician to the Mount Vernon Hospital for Consumption and Diseases of the Chest, etc. Pp. 152. New York: William Wood & Co. 1907.

This small volume of 152 pages, including an index, is one of the so-called Students' Aid Series. The book has the definite merit of not attempting too much, thereby avoiding the faults so often met with in volumes of this size, of unnecessary confusion of detail and the statement of mere facts. Dr. Whiting proceeds from the clinical standpoint and, from an eminently practical point of view, discusses disease as met with, for example, in an out-patient department. We do not hesitate to commend the book for what it purports to be, an aid to diagnosis.

Manual of Clinical Chemistry. By A. E. Austin, A. B., M.D., Professor of Medical Chemistry and Toxicology in the Medical Department of Tufts College, Boston. Pp. viii, 278. Boston: D. C. Heath & Co. 1907.

This is a 12mo volume of 278 pages arranged for the guidance of students in their study of medical chemistry. There are fifteen chapters, each one consisting of a brief and intelligent description of the subjects treated, and interspersed through the text are outlined numerous experiments which will serve to impress on the student the significance of the statements which precede.

This book is, however, not alone valuable to the student but to the practitioner of medicine as well, for each subject, which is so thoroughly treated, sums up with a brief statement of the clinical significance of the experimental facts; the work is, therefore, of an extremely practical character and well worth the careful study of the practicing physician as well as of the student.

The book deserves a wide circulation and general adoption by our medical schools as a textbook in this important branch of medicine.

No little credit is due the publishers whose reputation for book-making is well known. The type is excellent, the illustrations clear and well reproduced, and the binding good.

The Diseases of the Nose, Throat and Ear. By Charles Prevost Grayson, A.M., M.D., Clinical Professor of Laryngology in the Medical Department of the University of Pennsylvania, etc. Second edition, revised and enlarged. Philadelphia and New York: Lea Brothers & Co. 1906.

The first edition of this book was reviewed in the Journal of Dec. 18, 1902. This edition differs but little from the previous one. The chapter on the accessory sinuses has been rewritten; the first edition practically ignored the subject, in this one it is the best chapter in the book. A short, insufficient description of submucous resection has been added, also one on paraffin. There have also been added several good cuts from the recent work of Laurens, and a few less satisfactory colored plates. The opportunity of a new edition should have been taken to revise a larger number of subjects, such, for instance, as nasal polypus and "Mycosis Tonsillaris," which are not in line with the common views of to-day. The book is well made, and, as a whole, well written and attractive.

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REPORT OF THE MASSACHUSETTS GENERAL AND BOSTON CITY HOSPITALS.

The annual reports of the Massachusetts General and Boston City hospitals appear this year at practically the same time, and are interesting as illustrating the best types of a private institution with large public interests and a municipal institution essentially supported by the taxpayers.

The City Hospital report is the forty-second issued by the trustees of that institution, and serves to give one an increasing sense of the importance and the significance of this great hospital for the people of Boston. An excellent map of the buildings in elevation and also one of the hospital grounds and principal floor are this year published with the report. The cost of conducting the hospital is now in the neighborhood of half a million dollars, but it is gratifying to note that nearly seventy-five thousand dollars has been collected from patients of all classes able to pay something for their care. Other sums from the state of Massachusetts and various cities and towns and from other sources have raised the entire amount received from the patients, or for the care of patients, to the sum of something over ninety-nine thousand dollars, this being upwards of forty-one thousand dollars more than was received the previous year. The reason for this change is given in the facts that the laws regarding the settlement of non-residents have been more rigidly enforced, that there has been less resistance on the part of cities and towns in paying for patients treated at the South (contagious) Department, and finally that ward patients have shown a greater willingness to pay a moderate price rather than be classed as charity cases. Such a showing as this is certainly gratifying and leads to the conclusion that at this institution a definite step has been taken toward the solution of the difficult question of medical charity. The growth of the Out-Patient Department at this hospital has been very striking. Ten years ago the number of patients treated was 17,740; this year the number was 38,650, an increase of more than 117%. Various reasons are given for this extraordinary increase, the chief of which, no doubt, are improved buildings and rooms for consultation and examination and a growing willingness on the part of patients to accept gratuitous medical advice. To this may be added an increasing confidence in the character of the treatment received at public institutions. The former skepticism has in a great measure subsided. The South Department shows its usual excellent record, with 1,900 patients treated during the year and but 131 deaths. Many original papers from the pathological laboratories demonstrate the continued activity of this department. Nearly ten thousand cultures were made also for diagnostic purposes. A complete Zeiss photomicrographic outfit of the latest design has been added to the laboratory equipment.

The Massachusetts General Hospital report, its ninety-third, also records a year of excellent progress. About forty-eight acres of land have been secured in Waverley, adjoining land now occupied by the McLean Hospital, a valuable accession to the property already owned by the institution in that town. A chapel at the McLean Hospital is now fully completed and in use, as is also the Codman House referred to as in process of construction in a previous report. At the General Hospital in Boston a significant addition to the buildings is a new ward to be devoted to the purpose of orthopedic surgery. The whole number of patients treated at the hospital was slightly less in 1906 than in 1905, and of this number considerably fewer free patients were treated, the number of paying patients in whole or in part being 2,225 out of a total of 5,075. Nearly 2,000 fewer out-patients were treated than in 1905, the whole number being 20,010, which may again indicate an awakening of the public conscience on the question of medical charity. A somewhat larger number of patients was treated in the accident room than in the preceding year. The average stay of patients in the hospital was twenty-one days, as against slightly over nineteen in 1905. This hospital is always the recipient of bequests from public-spirited citizens, the total amount for the year included in this report being over $165,000; of this amount $39,000 was given for the establishment of the orthópedic ward. Regarding the general support of the hospital, it will not be amiss to quote the following statement: "To correct a misapprehension which seems to exist to some degree, the trustees would say that the Massachusetts General Hospital is not supported by any national, state or city aid. Its funds for its support come entirely from those generous benefactors who recognize the high standard of charitable work in which it is engaged, and who have confidence in the ability and integrity of the men who are responsible for the administration and best usage of the trust which such generous benefactors put in them."

An event of importance during the year was the resignation of Dr. John W. Elliot, a visiting surgeon, which was accepted on Nov. 16. In December Dr. William A. Brooks was appointed to fill the vacancy caused by Dr. Elliot's resignation. Excellent work has been accomplished in the pathological laboratory under the general direction of Dr. J. H. Wright, and a valuable series of publications, based in whole or in part on observations made at the laboratory, have appeared during the year. Perhaps the most significant of these publications are those relating to the origin of the blood plates by Dr. Wright. The report of the superintendent of the McLean Hospital, Dr. George T. Tuttle, should be read with profit by those interested in the care and treatment of the insane and of the modern methods looking toward the care of this group of hospital patients.

The two reports taken together are admirably illustrative of the best development of hospital management on somewhat different lines.

THE NEW HAMPSHIRE STATE MEDICAL SOCIETY.

Next week the annual meeting of the New Hampshire State Medical Society will be held in Concord, and it is, therefore, fitting that we should take this opportunity to review the history of this pioneer organization. The New Hampshire Medical Society is one of the oldest associations of physicians in the country, being now in its one hundredth and sixteenth year. In 1791, when the new Constitution of the states had been firmly established, it was not unnatural that physicians should unite for purposes of mutual benefit. It was also at about this time, 1782, that the Massachusetts Medical Society came into formal existence. In those early days the necessity of combination for the best interests of the profession was even more urgent in some respects than now. America had practically no means of publishing medical books, and relatively few medical traditions. It was, therefore, altogether natural that physicans, cut off as they were from the advantages of established medical organizations, should form a society of their own. This was done, and the society then inaugurated has continued with increasing usefulness to the profession and to the community from that time to this. The society consisted of nineteen charter members, men of ability and wide experience, the descendants of whom have carried on the traditions of their fathers, both in New Hampshire and in other states. There were at that time but three medical schools in the country,— Harvard in Boston, the University of Pennsylvania in Philadelphia and King's College in New York,—all very distant for the means of travel which prevailed in those days. It, therefore, was incumbent upon conscientious physicians to establish as far as possible some sort of standard for those entering upon the medical profession, and this, no doubt, was a further incentive toward the founding of the state medical society.

The first meeting was held May 4, 1791, at Exeter, with ten of the nineteen original members present. At this meeting thirteen new members were admitted. A month later another meeting was held at Concord with an attendance of eighteen, and from this time on the attempt was made to hold meetings with regularity, at least once a year, but often no quorum was secured. The society, however, grew; the meetings were in time more adequately attended, and there was no dissension among the members. It was, however, not until 1810 that there is record of formal literary exercises at the meetings. In 1811, for the first time, an orator was chosen, a position held in that year by Nathan Smith, one of the most distinguished physicians and surgeons which this country has ever produced. In 1838 a further step in progress was taken, when it was voted that the several state medical societies of the eastern states be requested to send a delegation to the New Hampshire society. It was furthermore voted by the New Hampshire society that an annual national convention be held, with representation from the various medical schools and medical societies of the United States. In 1843 a resolution was passed which savors somewhat of present day agitation. It reads as follows: "That the Society condemn most pointedly the use of secret remedies in the practice of medicine, and no fellow of this Association shall hold consultation with persons who notoriously make use of such remedies."

It is not possible in the space at our command to enter into detail regarding the many achievements of the members of this society during its long period of activity. These were fittingly rehearsed by many distinguished men at the centennial anniversary of the society, held in Concord in 1891. On that memorable occasion, much which is of special interest to the members of the society and which also has a distinct bearing upon the development of medicine at large in this country was discussed, both in the form of after-dinner speeches and in more set and formal papers. These were together published as "The Transactions of the New Hampshire Medical Society at the Centennial Anniversary held at Concord June 15, 16 and 17, 1891."

It is altogether natural that societies which enjoy the prestige of an historical past, such as that of the Massachusetts Medical Society, the New Hampshire Medical Society, the Rhode Island Medical Society and others, should feel a just pride in maintaining their autonomy and in guarding their individual rights and privileges as against any undue usurpation and control by a central authority. Few such organizations have had among their list of members the superiors of Nathan Smith,— the founder of three medical schools,— Amos Twitchell, Dixi Crosby and Reuben D. Mussey. As we have previously had occasion to point out, one of the most important problems in the future organization of the medical profession in the United States is the relation between the profession as a whole and of its component parts as represented by the various state societies. It is, in fact, the problem applied to medicine which has long been before our legislators in the purely political field. Upon its proper solution depends the ultimate welfare of the medical profession in this country.

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THE EDUCATION OF DEFECTIVES.

Not many years ago education compelled by the state was looked upon as meddlesome and pernicious paternalism. To-day no one denies that compulsory education is a proper function of government. But from our public schools defective children — the crippled, the blind, the deaf and dumb, those of perverted mentality — have until recently been excluded. We have now, however, advanced to the point that we recognize the state's duty to do all that it can for the abnormal child. We are recognizing that, at least in great cities, where so many immigrants with their families make their homes, our public schools have a function greater than merely elementary teaching; they are now well compared to great manufactories where the raw material — the children of these immigrants — are converted into intelligent, self-supporting and patriotic citizens. It is certainly best for our institutions if we can make the abnormal child intelligent and healthy; for he becomes a voter as well as the sanest individual in his community. And he oftentimes votes with greater regularity than the latter. We now wish that defective children may no longer become burdens upon themselves, their families and perhaps also the state. And this apart from humanitarian reasons which, of course, exist among us in fullest measure to-day.

In this city, in Chicago, Philadelphia and in New York "ungraded classes" have been established for defective children. In the latter city there are now some forty such classes, under the direction of a special inspector; and the work is being gradually extended. Teachers competent to undertake the peculiar task were given three months' leave of absence in order that they might thoroughly inform themselves by visiting state institutions, where mentally or physically defective children are cared for. Among the Jewish people in Manhattan there is a school for the blind and the deaf and dumb.

In these special schools there is, of course, no graded curriculum; there can be no set rules for the training of children who are exceptions to the normal type. In the old days no one made a scientific examination of a backward child; he simply spent most of his time on the dunce stool. Now, if he is slow in reading he is referred to a medical inspector for an examination in refraction. If he looks up stupidly when asked a question it is ascertained if his sense of hearing is defective. The causes of a weak body or of a sluggish mind are discovered and, if possible, removed. No tasks are given beyond the child's capacity; and those backward in certain subjects are put in a class by themselves, and specially coached. It is, by the way, a sad and rather a discouraging fact that the parents of many of these children look upon their offspring as so much capital; "and when one is born into the world blind, or crippled or mentally unable to fight the battles of life, the little creature is neglected, and sneered at, and deemed a hopeless burden."[1] It is not to be wondered at that such a child becomes timid, dull, sullen and, alas, often vicious.

MEDICAL NOTES.

Cæsar Borgia an Astigmatic? — Apropos a tragedy which Mr. Swinburne is reported to be preparing and which centers around the dark figure of Cæsar Borgia, it is suggested that Borgia's criminal tendencies may have been due to astigmatism.

Adulteration of Oleomargarine. — According to *Public Health*, January, 1907, page 257, a provision dealer in Hackney, England, was convicted of selling oleomargarine containing an excessive amount of water and 15% of mashed potatoes. The defendant explained that the product was intended for the German market and had been sent from Holland by mistake. A similar case, in which the amount of mashed potatoes present was 10%, is reported in *British Food Journal*, November, 1906.

Coffee without Caffeine. — An editorial in *The Lancet* of Dec. 8, 1906, draws attention to articles published by M. Gabriel Bertrand, who has analyzed the coffee beans of four species of *coffea* growing wild in Madagascar and the Great Comoro Island. Ordinary coffee beans (coffea Arabica) contain from 10 to 15 gm. of caffeine per kilo, but these contain none. Bertrand found 0.7 gm. per kilo in another species (coffea Mauretiana) grown in French Guinea. Mention is made also of a coffee which grows wild in Réunion, in the Indian Ocean, which Trillich found to be free from caffeine.

Free Diphtheria Antitoxin in Illinois. — The state of Illinois has appropriated $30,000 to be expended during the next two years by the State Board of Health for the purchase of diphtheria antitoxin for free distribution where needed outside of Chicago. Chicago already furnishes free antitoxin to its citizens. The State Board of Health of Massachusetts has for a number of years produced its own antitoxin for free distribution. The state of New York follows the course now adopted by the state of Illinois.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 8, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases:

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[1] N. Y. Evening Post, Feb. 9, 1907.

Diphtheria 50, scarlatina 29, typhoid fever 6, measles 36, tuberculosis 39, smallpox 0.

The death-rate of the reported deaths for the week ending May 8, 1907, was 22.60.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, May 8, 1907, was 221, against 226 the corresponding week of last year, showing an decrease of 5 deaths and making the death-rate for the week 19.14. Of this number 114 were males and 107 were females; 213 were white and 8 colored; 127 were born in the United States, 85 in foreign countries and 9 unknown; 45 were of American parentage, 147 of foreign parentage and 29 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 43 cases and 2 deaths; scarlatina, 35 cases and 0 deaths; typhoid fever, 6 cases and 2 deaths; measles, 17 cases and 0 deaths; tuberculosis, 43 cases and 27 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 25, whooping cough 1, heart disease 27, bronchitis 2 and marasmus 3. There were 17 deaths from violent causes. The number of children who died under one year was 35; the number under five years 44. The number of persons who died over sixty years of age was 47. The deaths in public institutions were 82.

There were 10 cases and 4 deaths reported from cerebrospinal meningitis during the week.

New Hampshire State Tuberculosis Hospital. — A state sanatorium for consumptives is about to be established in New Hampshire. When the bill was introduced into the legislature two years ago, it carried a clause to the effect that if no sanatorium for consumptives were in the meantime established in the state, suitable to meet the public demand, a state sanatorium should be established May 1, 1907. Inasmuch as no private hospital has been established, the act of 1905 will now be carried out. The sum of fifty thousand dollars was originally appropriated; a board of five trustees, two of whom are to be physicians, will be appointed, a site selected, and a suitable building or buildings constructed.

NEW YORK.

Medical Unification Bill. — Contrary to the expectation, but much to the satisfaction of the regular profession throughout the state, both houses of the legislature have now passed the so-called Medical Unification bill, which provides for the establishment of a single examining board (instead of three, as at present) for the examination of applicants for medical license; and Governor Hughes will probably give it his signature. The satisfaction is not an unalloyed one, however, as since the original bill was introduced there has been tacked to it an amendment which recognizes osteopathy to a certain extent. According to the terms of this, it appears that persons now practicing osteopathy (the number of whom is stated to be about 350) are eligible to apply for licenses; but after 1910 each applicant must present the same evidence required of all others who desire to practice medicine in the state: that he has studied four years, including four full courses of not less than seven months each, in a college maintaining at the time a standard satisfactory to the regents of the University of the State of New York. Still, notwithstanding this amendment, the bill, viewed as a whole, is a distinct advance for the profession, containing as it does some important reforms, in addition to the creation of the single examining board. One of these is a long-needed definition of " medical practice " as that of a person " who holds himself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity or physical condition." This, it is to be hoped, will be of distinct service in the suppression of quackery.

The Sale of Cocaine. — By a vote of 42 to 2 on April 30, the state senate rejected an amendment offered by the Senate Codes Committee to the Smith anti-cocaine bill, as it was passed by the assembly. This proposed amendment reduced the penalty for selling cocaine or any medicinal preparation containing it, making the offence a misdemeanor instead of a felony, as in the original bill.

Opening of the New Fordham Hospital.— The new Fordham Hospital, in the borough of the Bronx, one of the municipal series known as " Bellevue and Allied Hospitals," was opened for patients on April 30. This institution, like the Harlem Hospital, had outgrown its old quarters; and the commodious new buildings, while less extensive, are similar in architecture to those of the new Harlem Hospital.

Funds for Italian Hospital. — The Italian Benevolent Institute has mortgaged its property on East Houston Street, known as the Italian Hospital, in order to raise funds for the reconstruction of the present hospital building. The real estate and personal property of the Institute is estimated to be worth about $140,000, and the

Italian government has offered to contribute $60,000 for the endowment of the proposed new hospital.

Current Literature.

The Journal of the American Medical Association.
April 20, 1907.

1. *Stiles, C. W. *Protozoa as Factors in Disease.*
2. *Chase, R. F. *Chronic Gastritis.*
3. *Fisher, I. *A Graphic Method in Practical Dietetics.*
4. Howard, C. P. *Myxedema.* (Continued.)
5. *Vander Hoof, D. *Diagnosis and Treatment of Malarial Fever.*
6. Brennemann, J. *Nutritional Disturbances in Infancy Due to Overfeeding.*
7. Davis, E. P. *Choice of Methods for Dilating the Gravid Uterus.*

1. Stiles's article deals mainly with the characteristics common to known protozoan diseases, and the lines of argument which, in other diseases whose causes are still obscure, establish a presumption that the cause is not bacterial but protozoan. The study of protozoa is still in its early stages, so that certain objects observed, such as the supposed small-pox parasites, cannot yet be differentiated from degeneration products. We must still depend upon argument by analogy, and other such aids, in our efforts to determine the nature of the infective agents of disease. Stiles lays much stress upon the fact that whereas diseases spread not necessarily by insects are, with few exceptions, bacterial, not; diseases which depend entirely upon insects for their dissemination are, without known exception, protozoan. This law is an argument in favor of the protozoan nature of yellow fever. That yellow fever is caused by protozoa is further probable from the fact that mosquitoes which have bitten yellow fever patients are capable of transmitting the disease only after an interval of about twelve days. This suggests a necessary cycle in the mosquito such as occurs with many protozoa, *e. g.*, the malaria parasite, but which has no analogy among bacteria.

2. Chase describes the disorder properly known as chronic gastritis. The term chronic gastritis is one which is often improperly used to include a variety of gastric disorders. In its true sense, however, it means a chronic inflammation of the gastric mucosa, involving organic changes. It is not a common disease, being met once in from 300 to 400 patients in a general medical clinic. It occurs mostly in men; the use of alcohol may be a factor in the etiology. The symptoms are not characteristic. There may be great loss of weight. The appetite may be diminished or increased. There may be pain relieved by food, as in hyperchlorhydria, but pain is the exception. In many cases there is distress after eating, eructation and regurgitation, or nausea and vomiting; constipation is the rule. The diagnosis rests upon objective findings in examination of gastric contents, especially the presence of mucus in excessive amounts, with somewhat diminished secretion. Chase observed in a majority of his patients hypermotility. The condition is a serious one since it may lead to atrophy. In most cases, however, with proper treatment symptoms should be relieved. The treatment, in addition to the correction of habits of life and hygiene, may be summarized as follows: (1) low proteid diet in three meals a day with one or two additional lunches; (2) douching the fasting stomach at least twice a week with sodium chloride and sodium bicarbonate solution (30 gr. of each to the pint of water at 100° F.) forcibly injected; (3) 10 or 15 gr. each of sodium chloride and sodium bicarbonate in a glass of warm water fifteen minutes before meals.

3. Fisher urges greater exactness in the prescription of diets, and proposes a system which he has devised to facilitate the calculation of the caloric value of a patient's diet, and of the relative proportions in it of the three food elements, proteids, carbohydrates and fats. To carry out the plan all foods are served in portions representing 100 calories each, calculated from a table which is given. The total caloric value is then simply the number of portions eaten multiplied by 100. The relative proportions of food elements in any portion given can be expressed by a point on a triangular chart which is described, the amount of each element being represented by the distance of this point from a side of the triangle. To do away with troublesome calculations Fisher places equal weights, at the appropriate place on a cardboard chart, for every portion eaten, and by a simple instrument determines the center of gravity of the chart with weights attached. The point at which the center of gravity lies represents the relative proportions of proteid carbohydrate and fat in the whole of the day's diet.

5. Vander Hoof lays emphasis upon the importance of accurate diagnosis in malarial fever. For this the blood examination is the one absolute proof of the presence of the parasite. A normal or decreased leukocyte count and a relative increase of large mononuclear cells are both to be expected, and if they are not found suspicion should be awakened that the disease is not malaria. The therapeutic test is next in importance; tertian and quartan malaria are invariably cured by quinine, and the estivo-autumnal form is usually overcome by it. Malaria is seldom mistaken for other conditions, only the estivo-autumnal form and pernicious malaria being occasionally thought to be typhoid fever, meningitis or yellow fever. The common error is to call cases malaria which are not malaria. The conditions most often wrongly thought to be malaria are: typhoid, early pulmonary tuberculosis, pyelitis, septicemia, pyemia, acute endocarditis, liver abscess and gallstones. For prophylaxis every malaria patient should be covered at night with a mosquito net. In treatment quinine must be given in a form easily absorbed, preferably in solution, and must be continued until every parasite is destroyed. It is well to open the bowels with calomel at the beginning so as to promote absorption of the quinine. Quinine is then given in 5-gr. doses every four hours for five days, then in 3-gr. doses three times a day for two and a half to three weeks. In pernicious malaria intramuscular or even intravenous injections are indicated. Rest in bed should be enforced until the temperature is steadily normal. For the post-malarial anemia Fowler's solution is indicated.

[F. W. P.]

Surgery, Gynecology and Obstetrics.
April, 1907.

1. *Murphy, J. B. *Neurological Surgery.*
2. Martin, F. N. *Pyosalpinx and Other Chronic Pelvic Infections Treated by Laparotomy.*
3. Watkins, T. J. *Non-Operative Treatment of Pelvic Infections.*
4. Byford, H. T. *Vaginal Drainage for Pelvic Pus.*
5. Besley, F. A. *Rupture of the Urinary Bladder.*
6. Crile, G. *The Cobbler Stitch in Visceral Anastomosis.*
7. Connell, F. G. *Intestinal Suture, Perforating and Knotted in the Lumen.*
8. Hollister, J. C. *Small Portable Microscope for Bedside Blood Counting.*
9. Morris, R. T. *Management of the Adipose Layer in Suturing.*

1. Murphy considers the neurilemma the key to the surgery of nerves. Nerves with a neurilemma are all capable of regeneration under proper surgical conditions, those without a neurilemma are incapable of regeneration. There is no regeneration of the white columns or gray matter of the cord after destruction or division. Hemorrhage, concussion and contusion of the cord without laceration may give the same picture as that of cord division. Surgical intervention in injuries to the cord should be resorted to only in cases where the cord is not completely divided except in the caudal zone. Immediate intervention will be of benefit when the cord is compressed above the cauda or compressed and divided in the cauda. If operation is at all indicated there is no reason for delay. In fractures of the spine without considerable displacement operation is contra-indicated. After division or crushing of the nerves of the caudal zone there is positive indication for end-to-end suture of the various fibers, the same as in peripheral nerves. In all non-malignant tumors of the cord laminectomy should be performed at the onset of paresis. After pressure necrosis of the cord

has taken place operation is worthless. All nerve reunion should be made by end-to-end contact or fixation, not by lateral. The results of nerve suture without infection and without the intervention of connective tissue can be made as uniformly successful as bone unions under similar conditions. Whenever there is tension on the line of union the nerve should be sutured to neighboring structures. When the distance is too great for end-to-end contact the gap should be filled with a fresh nerve trunk from animals, incased in an artery hardened in formalin. During repair the muscles should have massage, passive motion and mild galvanic stimulation.

[W. C. Q.]

Annals of Surgery.

April, 1907.

1. *Hartley, F., and Kenyon, J. H. *Experiences in Cerebral Surgery.*
2. Gray, F. D. *Possibilities and Limitations of Brain Surgery for Traumatism.*
3. *Bruce, H. A. *Value of Trephining as a Palliative Measure in Tumors of the Brain.*
4. *Rogers, J. *Operations for Neoplasms of the Tongue.*
5. Bartlett, W. *A Method of Using the Tongue in Supplying a Defect of the Cheek.*
6. Winslow, R. *Diseases of the Hyoid Bone.*
7. Leonard, C. L. *Signs and Symptoms in Urinary Lithiasis.*
8. *Walker, G. *Tuberculosis of the Bladder.*
9. Allis, O. H. *Circumcision.*

1. Shock and sepsis are two of the important factors to which the mortality in cranial surgery is due. Hartley and Kenyon describe in detail the various methods and instruments which they use to shorten the time of operation, to limit the amount of hemorrhage and to avoid drainage if possible. After much experience with various implements they now use a motor driven either by electricity or compressed air to which is attached either a burr drill, or a circular saw with a Doyen guard. Before operation, and after shaving, the scalp is measured according to the method of cerebral topography of Chipault, the lines being drawn with a fuchsin pencil or with tincture of iodine. The best form of bone flap is one which obtains its blood supply from the temporal or occipital arteries. The thinner portions of the calvarium serve as bases for the bone flap, the thicker parts being sawn. A tourniquet surrounding the head just above the ears is usually employed. Nineteen cases illustrating operative interference in various regions of the brain are given in detail. The article is profusely and admirably illustrated.

3. Bruce reports five cases of brain tumor in which operation was done. In three the relief of pressure thus obtained gave marked improvement of the visual disturbances. He maintains that it is inexcusable to allow a case of optic neuritis to go on to blindness. Trephining should always be done.

4. After discussing the procedures of various surgeons in attacking malignant disease of the tongue, Rogers concludes that the method which seems to have given the best results is that of Whitehead. This method excises the portion of the tongue involved and then makes a thorough dissection of the submaxillary and cervical regions. It is never wise to separate all the muscular attachments from the genial tubercles as pneumonia is an almost certain sequel from disturbance of swallowing. Preliminary tracheotomy should be avoided. Before operation patients should be habituated to the use of the stomach tube and should be subjected to a thorough course of tooth and mouth cleansing.

8. In an analysis of 447 cases of tuberculosis of the bladder Walker finds that but very few cases heal. A minority run a chronic course extending over a number of years, but in the majority the progress is more or less rapid, and the downward course is marked by few interruptions. The disease is practically never primary in the bladder itself, infection coming most often from the kidney or the epididymis. Four stages of the disease exist: (1) invasion and formation of tubercles, (2) superficial ulceration, (3) deeper infiltration and (4) widespread destruction. Frequency and pain on micturition, and hematuria are the most prominent symptoms. The diagnosis is never certain till the bacteria have been found and cultivated by guinea-pig inoculation. The average duration of symptoms was about three years. Cystoscopy should be employed, but always with the greatest care and cleanliness. The treatment can be summed up thus: "Remove when possible the focus of bladder infection and send the patient to a suitable climate where he can live out of doors and where he will receive the proper quantities of well selected food. Surgical and medical treatment other than this has played a pitiful rôle." Of the whole series of cases only 29 have been reported cured and some of these are doubtful.

[W. C. Q.]

The Lancet.

April 13, 1907.

1. Savage, G. H. *The Increase of Insanity.*
2. Handley, W. S. *The Pathology of Melanotic Growths in Relation to their Operative Treatment.*
3. Higgens, C. *Notes on One Hundred and Thirty Consecutive Extractions of Cataract without a Failure.*
4. Wernich, S. F. *The Successful Treatment of Tuberculosis and Leprosy by Means of an Albuminoid Metabolic Product, Chemically Altered, of a Bacillus Discovered at Boshof in 1898.* (Continued article.)
5. Colt, G. H. *Five Cases of Inguinal Bubo.*
6. Bolton, J. S. *The Treatment of Prostatic Congestion by Electrical Methods.*

British Medical Journal.

April 13, 1907.

1. *Hartmann, H. *The Surgical Forms of Ileo-cecal Tuberculosis.*
2. *Steward, F. J. *Clinical Remarks on the Treatment of Surgical Tuberculosis.*
3. *Riviere, C. *The Vaccine Treatment of Tuberculosis in Children.*
4. *Bosanquet, W. C., and French, R. E. *The Influence of Antituberculous Serum on the Opsonic Index.*
5. Turton, E. *The Relative Opsonic Power of the Mother's Blood Serum and Milk.*

1. Hartmann believes tuberculosis of the intestine, and especially of the cecum, amenable to operative interference is more frequent than is generally thought. Many conditions formerly considered inoperable cancer are now known to be operable tuberculosis. The cecum is the seat of this condition in probably 85% of the cases. There are two forms: (1) the entero-peritoneal type characterized by caseation, perforation, ulcers, extensive involvement of other parts, abscess formation; (2) the hyperplastic form, simulating neoplasms and generally limited to the cecum. The cecum seems greatly increased in size, with walls often 2 to 3 cm. in thickness. The cul-de-sac normally formed by the cecum is obliterated. Microscopically the most extensive lesion seen is a diffuse round cell infiltration. There is often little or no involvement of the lungs, this differing from other forms of abdominal tuberculosis. Symptoms are in two groups, those of appendicitis and those of intestinal obstruction. A tumor can often be felt. The hyperplastic form has a very insidious onset and is not characterized by signs of obstruction until late in the disease. There are often recurrent attacks of pain without entire relief of symptoms in the interval. The average duration of the disease is two and one half to three years. In differential diagnosis ordinary appendicitis can usually be ruled out; actinomycosis can sometimes cause similar conditions. The hyperplastic form is most frequently mistaken for malignant disease. Cancer, however, grows more rapidly, and the tumor is more nodular and does not preserve the form of the cecum. Tuberculin in diagnosis is of no value because of the probable existence of pulmonary tuberculosis. Operation, however, is indicated in either case. The treatment is *always* surgical. The author has collected 229 cases from the literature, of whom 46 died after operation.

2. Steward speaks on some points in the treatment of surgical tuberculosis in children. The preparation of the patient by complete rest in bed out of doors if possible and forced feeding is very necessary. He gives the details of operating on a tuberculous abscess due to a process in a bone. He closes the wound carefully, not believing in any

form of drainage. After operation absolute rest by fixation is important. He has used tuberculin as a therapeutic measure and believes it has been beneficial in every case.

3. Riviere gives the results of tuberculin treatment of various forms of tuberculosis in children. He concludes that in proper doses it is a most valuable remedy, and that in many apparently hopeless cases remarkably good results can be obtained. It cannot take the place of surgical measures, but should be used in conjunction with these. That tuberculin treatment should only be given by those who have made a special study of it. He describes his methods and the dosage, but unfortunately does not give the kind of tuberculin he uses, so one cannot judge as to the size of these doses. He states that tuberculin cannot be safely given in children without opsonic determination, which statement is open to discussion. He has had especially good results with cases of tuberculous glands, but has been disappointed with results obtained in joints.

4. Bosanquet and French give result of experiments on the effect of tuberculin treatment with Marmorek's serum given by rectum. Subcutaneous injections did not have much effect. As a result of these investigations on several advanced cases of tuberculosis (pulmonary), they conclude that Marmorek's serum will produce a rise in the tuberculo-opsonic index beginning after the third or fourth dose and lasting while the serum is continued. Although the number of cases is small, they feel convinced that this method of treatment is of value and should be further investigated. [J. B. H.]

Münchener Medizinische Wochenschrift, No. 13. March 26, 1907.

1. Ballner, F., and Reibmayr, H. *The Value of the Complement-Absorption Method for the Differentiation of Capsule Bacilli.*
2. *Thalmann, S. *The Early Treatment of Syphilis.*
3. Spaeth, F. *The Alexander-Adams Operation.*
4. *Ach, A. *Eye Palsies after Lumbar Anesthesia.*
5. *Schwartz, G. *A Case of Mitral Stenosis with Profuse Hemoptysis and Sclerosis of the Pulmonary Artery.*
6. *Noeggerath, C. T. *A Case of Meningitis due to the Bacillus Coli Immobilis Capsulatus.*
7. Widmer, C. *A Case of Cancer Cured by the Use of Sunlight, with Remarks.*

2. Thalmann reports the result of 24 cases of syphilis treated early, that is to say during the primary stage. The diagnosis was made in every case by the demonstration of spirochetes, and treatment was begun at once. One half received one or two injections of corrosive sublimate beneath the chancre; all received inunctions. In 8 patients there were no secondary symptoms, and the patients are regarded as probably cured. In those patients who showed a rash, this came on quite soon after the first series of inunctions, and the lesions were always larger and less numerous than is usual at this period. In a number of cases the secondary symptoms appeared in one place only, most often the tonsil, and soon disappeared after the renewal of the inunctions. The reasons that have been given for delaying treatment to the secondary stage are chiefly two: (1) that the diagnosis is not certain in the primary stage, and (2) because the use of mercury at this time sometimes seems to make the patient worse. The first argument no longer holds good now that we have in the demonstration of spirochetes a sure means of diagnosis. The reaction after the first applications of mercury, which occurs also in secondary stage, is manifested by fever and increase in the eruption, sometimes by iritis. These symptoms are due, according to Thalmann, to the fact that mercury kills the spirochetes; their endotoxins are set free and absorbed. By treating cases in the primary stage, the long period in which the body is a prey to the spirochetes and their toxins is avoided, and it is hoped to prevent those changes in the cells which lead to tabes and general paresis. The iodides act, according to Thalmann, by removing the inflammatory products of the spirochetes, but do not affect the organism itself. Mercury is therefore to be used in all stages of the disease, iodides in the later stages in conjunction with mercury or for a short period before the use of the latter. "The early treatment of syphilis is the only rational one."

4. Ach reports four cases of paralysis of the external rectus muscle following lumbar anesthesia, and discusses their pathogenesis. He believes that fluid injected into the spinal canal in the lumbar region is very slow to reach the base of the brain, and that in most cases of lumbar anesthesia the drug does not go so high, but is taken up by the nerves as they lie in the subdural space. If it reaches the base of the brain, it must remain for some time in the lymph reservoir in front of the pons, where the sixth nerve is directly exposed to its action. This explains why the abducens is usually the nerve to suffer. The paralysis came on within the first two weeks after operation and lasted from one to six weeks. Other symptoms were headache, pains in the back and insomnia. The prevention of such sequels lies in avoiding the use of stovain, in employing small doses in weak solution, and in rest in bed after the operation.

5. In Schwartz's case of mitral stenosis the interesting features were the profuse and fatal hemorrhages from the lungs and the intense arteriosclerosis of the pulmonary artery. No infarcts were present and there was no rupture of the artery, so that it is assumed that the hemorrhage was due to capillary oozing. Such cases of abundant hemoptysis due to passive congestion of the lung are rare and may readily be mistaken for phthisis.

6. Noeggerath adds one more to the large list of organisms that may cause meningitis. An infant eleven days old was taken with convulsions and other signs of meningitis, of which she died ten weeks later. The fluid obtained by puncture was always very scanty, cloudy, rich in fibrin, but very poor in cells. Large numbers of bacilli were present, which according to their cultural characteristics occupy a position midway between the bacillus lactis aërogenes and the colon bacillus. They were negative to Gram, non-motile and bore a broad capsule. They produced indol, and gas on sugar-agar but not on potato. The organism is identical with the bacillus coli immobilis capsulatus of Wilde. [W. T.]

Berliner Klinische Wochenschrift, No. 12. March 25, 1907.

1. Hofmeier, M. *The Removal of the Placenta.*
2. *Venema and Grünberg. *A Case of Abscess of the Liver containing Typhoid Bacilli.*
3. *Blaschko, A. *The Significance of the Spirocheta Pallida in Syphilis.*
4. *Jacobson. *An Epidemic of Meat Poisoning in the East Part of Berlin.*
5. *Ehrlich, P. *Chemotherapeutic Studies on Trypanosomes.* (Concluded.)

2. Venema and Grünberg report a case of abscess of the liver following typhoid fever in which typhoid bacilli were obtained from the pus in pure culture; the patient recovered after operation. This makes the sixth case of typhoid abscess of the liver in which the organisms have been demonstrated. The abscess comes on usually during the convalescence from typhoid fever and is uniformly fatal unless operation is performed; with operation the mortality has been 33%.

3. Blaschko, in examining chancres for spirochetes, has found that the organisms may be absent in some sections or present only in a single lymph vessel, while they are very numerous in other sections. This is because the spirochetes are massed together in the center of the lesion and move away from it chiefly in the lymphatics.

4. Jacobson describes an epidemic of meat poisoning in Berlin in which 90 people were made sick and 2 died. Only those who ate the meat raw or slightly cooked were affected. The cause was found to be the bacillus paratyphi beta, which was recovered not only from the meat, but from the stools of the victims. The blood serum of the latter agglutinated the bacillus. The symptoms were those of acute gastro-enteritis and bore no resemblance to typhoid. The paratyphoid group seems to be the most frequent cause of meat poisoning, producing an acute inflammation of the gastro-intestinal tract without incubation period; it also may cause a disease closely resembling typhoid fever, with period of incubation. Possibly the mode of infection may account for these differences.

5. Ehrlich reports the results of long-continued researches on the action of dye-stuffs on animal parasites, especially trypanosomes. He states that a chemical

substance, if it is to destroy parasites in the blood, must have a greater affinity for the parasites than for the tissues of the host; otherwise the latter will be the one to suffer. A direct chemical union must take place, *e. g.*, studies have shown that the action differs with different species of animals and with different kinds of trypanosomes, so that the best drug must be ascertained for each species by thorough experimentation. Thus atoxyl, which has an effect comparable to that of quinine in malaria, when used against the trypanosome of dourine or that of man (T. gambiense) has little action on the trypanosome of nagana in infected mice. An acetyl derivative of atoxyl, however, acts promptly on the last-named trypanosomes in the case of mice, but is too poisonous to use on horses and guinea-pigs.

Three groups of substances have been found which have a trypanocidal action, viz.: (1) the benzidin group, including trypan-red and trypan-blue; (2) the basic triphenylmethan dye-stuffs, of which fuchsin and parafuchsin are the most important; and (3) the atoxyl group. Ehrlich's experiments have brought to light the interesting fact that by continued feeding of fuchsin or atoxyl to infected animals it is possible to produce a strain of trypanosomes that is resistant against the corresponding drug. These "drug-fast" strains retained this characteristic through many generations. The phenomenon is manifested towards other drugs belonging to the same group, but not to members of a different group, *i. e.*, the strain which has become resistant towards trypan-red is not affected by trypan-blue, while it is promptly destroyed by atoxyl or fuchsin. This has great practical importance, for it explains the failure of atoxyl in some cases of human sleeping-sickness; the protozoön has become "atoxyl-fast." In order to obtain the best results it will be necessary therefore to use a combination of substances belonging to different groups, and to destroy the trypanosomes in a short time, before such resistance can be established.

Immunity was found to be present after a single infection with trypanosomes, but of a very temporary character, lasting only about twenty days. This is in accord with the experience with malaria and some other protozoön diseases in which immunity is short-lived at first, and becomes permanent only after repeated infections.

[These researches are of great practical and theoretical importance and should be read in the original by those interested in the subject. — W. T.]

A Spirochete in Carcinoma of the Breast in Mice. GAYLORD (*Jour. of Infec. Dis.*, April 10, 1907), in sixteen specimens from three different strains of transplanted mouse tumors examined by the Levaditi method, observed the presence of spirochetes most numerous at the infiltrating edge of the tumors. Since then he has found the same organisms in nine out of ten primary mouse tumors examined, and in the one exception the failure can be accounted for by faulty technique. Examination of all organs and subcutaneous tissues of five normal mice has failed to show any such organisms. The spirochetes were most numerous in the more virulent tumors and in the more actively growing portions. Attempts to stain them by various methods other than that of Levaditi all failed, but they could be found, although with some difficulty, in fresh specimens, in which they seemed to be actively motile. A brief review of the observations of other authors with regard to the occurrence of spirochetes in cancer is given, and the organism under discussion is described with illustrations. Calkins, in an article immediately following, further describes the organism. It is not regarded as proved that this organism bears any causal relation to mouse tumors, but its constant occurrence is considered suggestive. [F. W. P.]

Miscellany.

FLIES AND DISEASE.

THE fly, and especially musca domestica (the common house-fly), will be much persecuted during the present year if the indications reported by our correspondents at Liverpool and Glasgow are to be considered as prophetic of action. In the former city a report is being prepared by Prof. Ronald Ross and Mr. R. Newstead as to the history of house-flies during the winter months with a view apparently of destroying them in the egg or in the larval stage, while at Glasgow (Govan) the council's bacteriologist has been making experiments by allowing flies to infect Petri dishes of agar-agar. The organisms which the flies brought were found to be those which are associated with sewage and decomposing organic material. There can be little doubt that infection of food stuffs by flies is one cause of summer diarrhea, although, as Dr. E. W. Hope, of Liverpool, pointed out, it is not the only cause. Many other of the diptera besides the musca domestica are noxious, such as the stomoxys, which can inflict a painful "bite." Instances are on record where this fly, or one of its congeners, has been the carrier of the infection of malignant pustule with fatal results, especially when the sufferer has been bitten on the lip, and some of our readers may remember the use made of this fact by Murger in his romance, "La Sabot Rouge." One of the most active enemies of the fly is the common wasp, and the wholesale destruction of these insects which is carried out in some places is likely to result in a plague of flies. Still, even in towns, where wasps are scarce, much may be done, to keep down the number of flies by careful attention to the removal of organic matter in ashpits and other places, a course recommended by the health committee of Liverpool. As a matter of fact, in the ordinary household there should never be any organic matter in the ashpit, and as a rule all household organic waste can be burned in the kitchen fire. — *Lancet.*

MASSACHUSETTS GENERAL HOSPITAL.

RESOLUTIONS BY THE VISITING STAFF ON THE RETIREMENT OF DR. H. H. A. BEACH.

AT the annual meeting of the visiting staff, held April 25, 1907, the following resolutions were adopted unanimously:

In the retirement of Dr. Beach the Massachusetts General Hospital loses an able and faithful surgeon, whose efficient official record runs for nearly two generations.

Appointed to the hospital thirty-five years ago, and serving for many years as the junior of such distinguished men as Bigelow, Hodges and the elder Cabot, Dr. Beach can look back with pride on a long, honorable and useful career. A trained anatomist, a painstaking investigator, a dexterous and sound operator, he has always been recognized by his colleagues on the staff as the conservative and resourceful surgeon, whose ready sympathy, invariable courtesy and wise counsel were constantly and abundantly at their command. They extend to him their cordial wishes for a long continuance of his services to the community.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, APRIL 27, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,671	457	Quincy	3	—
Chicago	678	226	Waltham	7	—
Philadelphia	—	—	Pittsfield	9	3
St. Louis	—	—	Gloucester	11	—
Baltimore	219	37	Brookline	9	2
Cleveland	—	—	North Adams	5	0
Buffalo	—	—	Chicopee	5	1
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	6	1
Milwaukee	—	—	Beverly	3	1
Washington	—	—	Leominster	4	—
Providence	68	20	Hyde Park	3	2
Boston	257	63	Melrose	4	0
Worcester	65	17	Newburyport	—	—
Fall River	57	21	Woburn	3	—
Cambridge	25	6	Marlboro	4	0
Lowell	48	15	Westfield	7	—
Lynn	23	1	Peabody	—	—
New Bedford	28	7	Revere	1	2
Springfield	29	7	Attleboro	3	1
Lawrence	23	6	Clinton	2	1
Somerville	21	1	Adams	3	1
Holyoke	24	7	Gardner	—	—
Brockton	18	4	Milford	—	—
Malden	15	4	Watertown	7	3
Chelsea	10	4	Plymouth	—	—
Salem	16	3	Weymouth	4	2
Newton	3	1	Framingham	4	—
Haverhill	20	2	Southbridge	6	—
Fitchburg	14	—	Wakefield	—	—
Everett	3	1	Webster	—	—
Taunton	14	7			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MAY 4, 1907.

A. H. ALLEN, assistant surgeon. Ordered to duty at Lajas, Cuba.

C. H. DELANCY, passed assistant surgeon. When discharged from treatment at the Naval Medical School Hospital, Washington, D. C., ordered to Navy Yard, Washington, D. C.

T. N. PHILLIPS, pharmacist. Detached from the Naval Hospital, New Fort Lyon, Colo., and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

RESIGNATION.

DR. WILLIAM LAMBERT RICHARDSON, Dean of the Medical School and of the Faculty of Medicine of Harvard University, has resigned from this position. Dr. Richardson has been connected with the department of obstetrics of the Medical School since 1871, and has been dean since 1893. The resignation takes effect Sept. 1, 1907.

SOCIETY NOTICES.

MAINE MEDICAL ASSOCIATION. — Annual meeting. Change of dates. By vote of the censors the annual meeting of 1907 will be held in Lewiston, Wednesday, Thursday, Friday, June 12, 13, 14.

WALTER E. TOBIE, *Secretary*,
PORTLAND, ME.

THE NEW ENGLAND HOSPITAL MEDICAL SOCIETY. — This society will meet Thursday, May 16, 1907, 7.30 P.M., at Hotel Nottingham, Huntington Ave., Boston. Section of Orthopedics. Dr. Jane K. Sabine, chairman. Paper: The Care of Flat-foot During and after Pregnancy, Dr. Sabine. Discussion by Alice M. Gray. Section of Rhinology and Laryngology. Dr. Margaret L. Noyes, chairman. Paper: Mouth Breathing. Etiology and treatment, Dr. Noyes.

BLANCHE A. DENIG, M.D., *Secretary*.

RECENT DEATH.

DR. HENRY J. WOOD, of Utica, N. Y., died suddenly from cardiac disease in Chicago on April 29, while returning from his winter residence at Pasadena, Cal.

BOOKS AND PAMPHLETS RECEIVED.

Metabolism, Physiology and Pathology, with Its Applications to Practical Medicine. By Carl von Noorden. Anglo-American Issue under the editorship of I. Walker Hall. Chicago: W. T. Keener & Co. 1907.

The Common Bacterial Infections of the Digestive Tract and the Intoxications arising from Them. By C. A. Herter, M.D. New York: The Macmillan Company. 1907.

The Treatment of Skin Cancers. By W. S. Gottheil, M.D. Third edition. Revised and enlarged. New York: International Journal of Surgery Co. 1907.

Transactions of the Thirty-seventh Annual Session of the Medical Society of Virginia held in Charlottesville, Va., Oct. 9–11, 1906.

The Treatment of Disease. A Manual of Practical Medicine. By Reynold Webb Wilcox, M.A., M.D., LL.D. Philadelphia: P. Blakiston's Son & Co. 1907.

Goiter, with Preliminary Report of Three Hundred Operations on the Thyroid. By C. H. Mayo, A.M., M.D. Reprint.

Talks to First Year Nurses. By Alfred T. Hawes, M.D. Illustrated. Boston: Whitcomb & Barrows. 1907.

Twenty-ninth Annual Report of the State Board of Health of the State of Connecticut for the Year 1906. New Haven, Conn. 1907.

The Procreation of Deviates. By William Lee Howard, M.D. Reprint.

Report of the Surgeon-General of Massachusetts. 1906.

Practical Physiological Chemistry. A Book Designed for Use in Courses in Practical Physiological Chemistry in Schools of Medicine and of Science. By Philip B. Hawk, M.S., Ph.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Anæsthetics, Their Uses and Administration. By Dudley Wilmot Buxton, M.D., B.S. Fourth edition. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

The Miracle Worker. By Gerald Maxwell. Boston: John W. Luce & Co. 1907.

Die Behandlung der Angeborenen Hüftgelenksverrenkung. Von Dr. F. Calot, übersetzt von Dr. P. Ewald. Mit einem vorwort von Prof. Dr. Oscar Vulpius. Stuttgart: Ferdinand Enke. 1906.

Die Behandlung der Tuberkulösen Wirbelsäulenentzundung. Von Dr. F. Calot, übersetzt von Dr. P. Ewald. Mit einem vorwort von Prof. Dr. Oscar Vulpius. Stuttgart: Ferdinand Enke. 1907.

Transactions of the Massachusetts Medico-Legal Society. Vol. III. No. 7. 1906.

The German Pseudo Doctors. By Dr. G. L. Hagen Burger. Translated from Dr. Theodor Moomsen.

Civilization and Tuberculosis. By John B. Huber, A.M., M.D. Reprint.

Ingestion Tuberculosis. By John B. Huber, A.B., M.D. Reprint.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., and Tracy C. Becker, A.B., LL.B., and others. Second edition. Vol. II. Illustrated. New York: William Wood & Co. 1907.

Lessons on Massage. By Margaret D. Palmer. Third edition. Illustrated. New York: William Wood & Co. 1907.

A Practitioner's Handbook of Materia Medica and Therapeutics. Based upon Established Physiological Actions and the Indications in Small Doses. To which is added Some Pharmaceutical Data and the Most Important Therapeutic Developments of Sectarian Medicine as Explained along Rational Lines. By Thos. S. Blair, M.D. Philadelphia: The Medical Council. 1907.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D., Lond. Third edition. New York: William Wood & Co. 1907.

Surgery of the Rectum. By Fred C. Wallis, B.A., M.D., B.C. Cantab., F.R.C.S. Illustrated. New York: William Wood & Co. 1907.

Tics and Their Treatment. By Henry Meige and E. Feindel. With a Preface by Professor Brissaud. Translated and edited, with a Critical Appendix, by S. A. K. Wilson, M.A., M.B., B.Sc. New York: William Wood & Co. 1907.

Gall-Stones and Diseases of the Bile-Ducts. By J. Bland-Sutton, F.R.C.S. Eng. Illustrated. New York: William Wood & Co. 1907.

Experiments on Animals. By Stephen Paget. With an Introduction by Lord Lister. Third and revised edition. New York: William Wood & Co. 1907.

Wellcome's Photographic Exposure Record and Diary. 1907. London (Eng.), New York, Montreal, Sydney, Cape Town: Burroughs Wellcome & Co.

Original Articles.

ON THE TREATMENT OF CHRONIC DISEASES OF THE HEART.*

BY PROF. THEODOR SCHOTT, M.D., NAUHEIM.

Allow me first of all to thank you heartily for your kind invitation, which affords me the opportunity to lay before you a few particulars of the treatment of heart diseases and some of my experiences in this connection.

Hardly twenty-five years have elapsed —and many of you remember that time — since there were, apart from hygienic directions, only two means of dealing with chronic cardiac diseases, viz.: rest and digitalis.

The general opinion, and the one generally held in our universities at that time, was that when these two means failed heart diseases were a *noli me tangere* for medical therapy. Even the view of Stokes, that in certain cases of fatty heart stronger exercise and climbing might prove very useful, was soon forgotten. This was partly due to the fact that, especially in the matter of chronic heart complaints, particular attention was devoted to pathological anatomy and to physical diagnosis, whereas therapy itself was more or less neglected.

No longer than twenty-five years ago, three methods of treating cardiac diseases appeared nearly simultaneously and, as I shall point out, quite independently of each other; they are known to-day as physical therapeutics. They were: the so-called Swedish method, the leading feature of which was Zander's treatment by the use of machinery; Oertel's mountain-climbing cure; and the balneological gymnastic treatment described by my late brother, August Schott, and myself.

You are well acquainted with these different methods. I may therefore enter at once into the consideration of the single points which are perhaps of special interest to you.

For the sake of completeness I must not fail to mention that the number of remedial agents used in the treatment of chronic cardiac diseases has largely increased. But I find it impossible, to my regret, at present to dwell on this subject at greater length and intend to treat it more extensively in the manuscript.

Digitalis, either with or without digitalin and digitoxin, is and always will remain our most important remedy. But sometimes its cumulative and toxic effect compels us to look for other means, the most important of which is tincture of strophanthus, which acts more slowly and safely.

A special reference may be made to strychnia, which is used *by mouth* and also subcutaneously. Strychnia may, of course, be used when the heart muscle is weak and relaxed. Its use is often desirable, but in recent years there has been perhaps too strong a tendency to resort to it as a heart tonic. It produces stronger contractions of the walls of the heart, but unless carefully watched, or when used for too long a period, it sometimes sets up a condition of abnormal irritation, occasionally followed by a recurrent weakness of the cardiac muscle.

Many other heart tonics, called vasodepressors, have likewise been adopted, especially the nitrites. Their chief representatives are erythrol-tetranitrite and nitroglycerin, the latter being more successfully employed in liquid form, generally a 1% alcoholic solution. The action of this is highly effective in some cases of pain and oppression.

In angina pectoris the haloid salts, especially those of iodine, often produce effects similar to those of nitrites. But they are not counted among the vasodepressors, and it is still an open question whether a changed viscosity or other circumstances exercise an influence in this respect.

Salts of mercury and, above all, calomel are not remedies for the heart in the strict sense; combined with digitalis, they are, separately or collectively, excellent diuretics.

The slowing of the pulse caused by morphia is the result of weakening of the ventricular contractions; thus it fails to tone up the heart. This view is amply supported by clinical observations. For all that, this remedy is not to be discarded entirely in cases of intense pain, oppression or conditions of great cardiac anxiety. A strong dose may then be administered, though not too frequently or for too long a time.

The inherent defects of remedies and the oft-recurring want of success obliged us to look for other means, and led at last to the methods, which, as I have said, are known as the physical treatment of chronic heart diseases.

Let us begin with the method which, though the most recent, aroused general interest for a short time, viz.: that of Oertel.

OERTEL'S METHOD.

The Dublin physician, Stokes, had already observed that an enervating régime is injurious to persons suffering from the heart, and more especially in cases of fatty heart. He expressed himself in favor of bodily exercise, chiefly mountain-climbing, and described how patients that were breathless as soon as they had begun to climb returned with an improved action of the heart. His teaching was soon forgotten until, some twenty-five years ago, it was taken up by Oertel, who modified his method, combined it with a limitation of the supply of liquids and applied it to the sphere of all disturbances of circulation.

Oertel had three objects in view, viz.: to facilitate the circulation by reducing the amount of liquid in the blood, to strengthen the heart by walking and climbing, and to remove the superfluous deposits of fat by a strict diet.

Numerous experiments and observations have proved the unsoundness of Oertel's original assumption that every quantity of liquid absorbed increased the amount of water in the blood. On the contrary, we have discovered that the composition of the blood is much more constant and, above all, that a reduction in the quantity of the blood does not tend to strengthen the circulation in the lungs. Oertel's diet may be employed successfully in dealing with fatty hearts, and especially with persons whose blood is of normal quality. His dietetic scheme possesses the great advantage over those of Harvey-Banting, Schroth, Ebstein, etc., of coming nearer to the components which Voit and those of his school have laid down as best adapted to the nourishment of the human body. However, the point must be insisted upon that most sufferers from cardiac complaints do not want to lose fat but to increase muscle, and that a too great and too rapid loss of weight should be avoided. Losing from 40 to 50 pounds in from four to six weeks, as mentioned by Oertel, may be allowed now and again without injury, but experience shows that small losses of weight produced by inadequate nourishment combined with a diminution of liquids may cause serious harm within a short time.

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* Read before the Suffolk Medical Society in Boston, Mass.; Ontario Medical Library Association in Toronto; College of Physicians in Philadelphia, Pa.; Post-Graduate Medical College in New York, etc.

The mechanical part of the Oertel treatment consists in the exercise of walking and climbing. For the latter the author selected mountainous localities of middling altitude named "Terrain kurorte," in which different degrees of climbing were prescribed. In this manner he hoped to obtain a development of strength of the heart by means of an increased action of the muscles. In later years Oertel combined the climb-cure with pneumotherapy, application of dry heat, electricity and massage. His manner of treatment was originally devised for fatty heart. In order to generalize it for the treatment of all chronic cardiac diseases, he propounded a number of theories, which were for the most part erroneous. It was, above all, the want of success attending these therapeutic measures and the dangers to which they so obviously gave rise that led many to abandon them. Instead of a low diet we often require a very strong and general one. Furthermore, climbing entails so much exertion on the organism that such a course should follow and not precede other cures; moreover, climbing should only be resorted to when by other means the heart muscle has become sufficiently strengthened to allow it to perform such an increase of labor without danger.

In accordance with this, Oertel's treatment may be adopted only in a very limited number of cases. Undoubtedly his greatest and undisputed merit is, that he has given a remarkable impulse to the mechanical treatment of chronic heart diseases.

THE SWEDISH METHOD.

Gymnastics and massage were first carried on practically on a large scale in Sweden. Having no scientific basis and not being improved upon, the Swedish method never went beyond Sweden until Wide and others took it in hand.

The system began to find general acceptance only through its most clever exponent, Zander, who, besides manual therapy, invented very ingenious apparatus, expecting to render the patient independent of the position of the body and of the assistant. Opinions, however, are much divided on these points. Nevertheless, it is beyond doubt that Zander's method constituted a most important improvement. It is an excellent means for strengthening the muscles of the heart and accelerating the circulation of the blood. Many points applicable to gymnastics in general hold good in regard to Zander's system.

But a continual supervision is needful here, in order to regulate the resistance of the apparatus and the maintenance of the patients during and after the exercises, otherwise failure is the result. These failures occur very easily, because exact individualizing in the determination of the resistance of Zander's mechanical contrivances is very difficult to obtain.

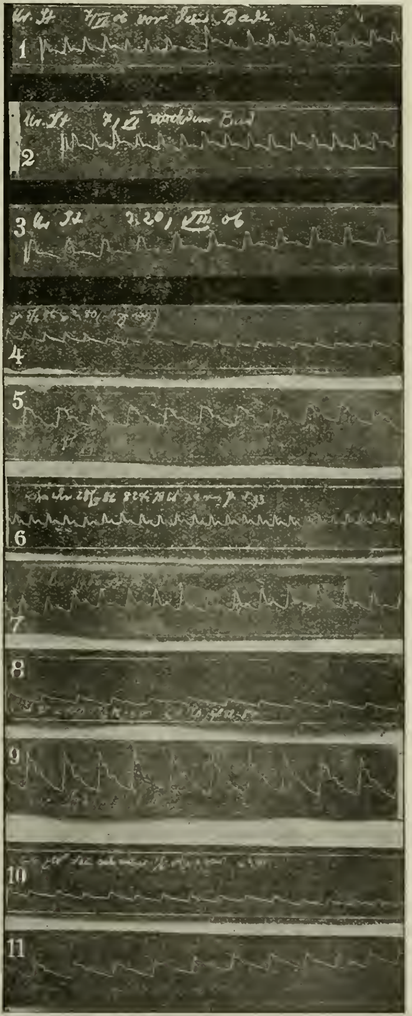
The great expense of the apparatus and of their use, also the restricted conditions under which the patients can have recourse to them, must be an obstacle to their general adoption. In recent times Herz has improved the Zander machines by the introduction of an eccentric wheel and a weight moving on a smooth inclined plane. There can be no doubt that the apparatus in question may be preferred to others, whose action is more limited, such as Gaertner's ergostat, the so-called hygienist, rowing apparatus, tricycle and many other modern apparatus.

THE BALNEOLOGICAL-GYMNASTIC TREATMENT.

As far back as 1872 Beneke, in opposition to former views, showed that patients subject to acute rheumatic fever could successfully use mineral baths when the polyarthritis rheumatica acuta was complicated with cardiac complaints. Even when a freshly developed valvular lesion exists it may be cured within a short time by absorption of the exudations on the valves, obtained by the baths. My late brother and I found that a carefully executed balneological cure combined with gymnastics which culminate in mountain-climbing frequently and even regularly produce an improvement which is soon noticeable, and even, according to the nature and the condition of the complaint, an absolute cure. I wish to point out to you how we explained the mode of action of our treatment. We conclusively proved that the same principles obtain as regards baths as well as gymnastics, viz.: to promote the action of the heart with the view to stimulate its activity, *i.e.*, toning up a weak heart. In the majority of cases we have to deal with a comparative or absolute inadequacy of the heart muscles to impel the circulation of the normal quantity of blood. This inadequacy involves an insufficient expulsion of blood from the cardiac cavities and hence leads to dilatation. But not every dilatation, as first proved by A. Schott, leads to the danger of want of compensation. We must differentiate between a dilatation produced by congestion and a compensatory one. The latter serves to overcome the obstacles caused by valvular lesions. Only the first form of dilatation requires treatment. The action of the heart muscles must be stimulated in such a manner that, by stronger systolic contractions, it may rid itself of the superfluous amount of blood. The dilatation — be it owing to insufficient ability to contract, or to a valvular lesion — means congestion of blood within the heart itself. The heart goes through many but insufficient contractions, and after each systole a certain quantity of blood remains within the heart cavities. The pressure within the aorta cannot be overcome merely by the force of the heart itself. My brother and myself were at last enabled to describe how, by means of our balneological as well as our gymnastic treatment, the heart becomes stimulated to a more forcible and vigorous systole.

The pressure within the aorta and within the entire arterial system, as established by experiments on animals, often increases to a considerable extent, but on account of the hyperkinesis and hyperplasia of the heart, it is in better condition to overcome this increase of pressure within the arterial system. The heart is now able to empty its cavities completely during the systole and, concomitant with this, the suction-effect of the diastole is more effective. In this way the heart is relieved from the constant over-pressure which previously, during the permanent overfilling, acted upon the inner surface of the cardiac cavities, inciting the muscles to incessant and feeble beats. The increasing intra-arterial pressure endows the heart with new inhibitory impulses, and on this account it is enabled to beat more slowly and also more vigorously. This last fact is easily noticeable and has not only been frequently demonstrated by us, but also been confirmed by many others.

Various authors have attempted to explain the effect of the baths on the heart by a derivation of the blood from the internal organs to the skin and muscles. In this manner a saving and an alleviation of the heart's action may be produced. But to my view this theory does not sufficiently explain the vigorous and immediate effect of the baths and gymnastics. The action of the bath is generally weaker but more enduring, whilst that of gymnastics is more energetic but less lasting, especially at the beginning of the treatment. We observe a diminution of congestion within the pulmonary circulation as well as in the general venous system; in consequence of this a quieter respiration as well as a decrease of hepatic congestion and reduction of the cyanosis. Immediate observation usually shows a decrease in the frequency of the pulse. In consequence of the increased quantity of blood thrown into the arterial system the sphygmographic tracings show higher primary elevations. The slower pulsation causes the systolic and especially the diastolic tracings to be prolonged. The latter circumstance is the expression of a longer period of restoration of the weakened heart muscle. In suitable cases we notice that an already existing arrhythmia disappears. Herewith (Fig. 1) I show you the diagram of the pulse of a man fifty-two years old, who suffered from mitral insufficiency with long existing myocarditis complicated with emphysema. Within the first week of his stay at Nauheim, and even immediately



1. Before treatment.
2. After the first thermal bath, June 7, 1906.
3. After the first effervescent mineral bath, Aug. 20, 1906.
4. Mitral insufficiency after acute articular rheumatism, June 5, before treatment.
5. The same case after forty-two baths, Sept. 15.
6. Mitral insufficiency and stenosis, before treatment, June 28.
7. The same case after forty baths, Sept. 8.
8. Aortic stenosis, before treatment, June 17.
9. The same case after thirty-six baths and resistance exercises, Sept. 8.
10. Mitral stenosis, before treatment, June 1.
11. The same case after seventeen baths and exercises of resistance ,June 23.

after his arrival, he experienced two violent attacks of embolism of the lungs. Besides that, he suffered from congestion of the liver, edema of the legs, etc.

The second diagram of the pulse (Fig. 2), taken after a bath, and which I demonstrate here, shows not only a decrease in the frequency of the pulse from 104 to 96, but also the disappearance of the arrhythmia. The blood pressure, measured by Gaertner's tonometer, rose from 82 to 90 mm. Hg.

A third diagram of the pulse (Fig. 3), shows the character of the pulsations at nearly the end of the treatment after an effervescent (sprudel) bath of spring No. 14. The frequency diminished to 78, the tonometric pressure rose to 105 mm. Hg. (Figs. 4 to 11.)

The effects of the balneological and gymnastic treatment may both be ascertained in the same way by percussion. The narrowing of the limits of the heart obtained by the bath is often not very considerable, though more lasting, whereas the gymnastic exercises reduce the size of the heart more quickly and considerably at the beginning of the cure; this effect is, however, less lasting, as I have mentioned before.

I take pleasure in demonstrating to you these changes in the heart-limits with a few drawings, which have been made partly by professors and other medical men who visited me in Nauheim, and partly by myself.

The radiograms including orthodiagrams are of valuable assistance in examining the size of the heart. But the difficulties for the patient to invariably assume the same position at different times, and the fact that the skiagrams do not give well-defined outlines of the heart, are both liable to give rise to errors and do not render the other methods of examination superfluous. By means of auscultation we often realize the change of the cardiac sounds during the treatment. The weak sounds of the heart often become more audible; some which were not audible become so. A murmur produced by a relative insufficiency changes into a divided sound and ultimately into a normal one. But in other cases, for instance in valvular diseases, a murmur which was not audible becomes so by a stronger contraction of the cardiac walls. Palpation and inspection also demonstrate that the apex beat moves upward and inwards; this with the simultaneous rise in position of the diaphragm constitutes a further proof that the size of the heart has been reduced. The ability to walk and the general condition are improved. The diuresis becomes more copious, chiefly by balneological treatment. As you may observe, a tonifying result is obtained similar to that following the administration of digitalis, but with the difference that injuries may easily be avoided. In addition to this the whole organism, and especially the cardiac muscles, gain strength. This strengthening of the heart is produced by the disappearance of congestion in the venous system and an increased volume of blood within the arteries. Owing to these facts the blood which flows into the coronary arteries is more highly oxygenated, the heart is better nourished, and more and better muscular substance develops itself.

In a large number of cases I have instituted exact investigations concerning the changes which the blood undergoes during a course of balneological-gymnastic treatment. In a dissertation, in which I communicated the results of these investigations, I proved that in such cases where the amount of hemoglobin had been diminished, it again became considerably increased by the treatment in question.

And now I should like to give you a short description of our balneological and gymnastic system. You will find something about it in many medical publications. Some of these have also been issued in America, such as those of William Osler, Babcock, Tyson, Anders, Solis Cohen, John K. Mitchell, Kinnicutt, Camak, Manson, etc.

THE BALNEOLOGICAL METHOD.

Let me begin by stating that it is just as impossible to give more than general rules in the matter of balneological treatment, as in that of internal medicine at large. I need scarcely say that strong individualizing in treatment is absolutely necessary. Balneological treatment is an agent of great power as regards its influence on the heart; and unless it be applied with due caution and under uninterrupted medical supervision, combined with frequent observation of that organ, the clinical picture often changes; without this careful supervision and observation, results the reverse of favorable may ensue. *Pari passu* with the treatment cooler temperatures are better borne and also applied with good results. Opinions supporting this view may be found in the publications of several Nauheim medical men. It is very often advisable to observe the patient before, during and after the bath. In severe cases it is best to begin with a simple brine bath. Our Nauheim baths containing from 2% to 3% NaCl and the same proportion per mille of CaCl, they have sometimes to be diluted. The duration of the bath should not exceed ten minutes with a temperature of 93° F. which should not be lowered much during the first week. When we have to deal with anemic patients or such as easily become chilled, prudence has to be exercised with the use of low temperatures. The temperature of 95° F. must not be exceeded, even when a combination of rheumatism and heart disease presents itself, otherwise the tonifying effect on the heart might fail to appear. In such cases cooler but shorter baths should be preferred. If the patient remains quiet he may during the first minute experience a sensation of chilliness. After that time a feeling of comfort must come over him, partly because of the heating effects of the bath, partly by becoming used to it. But should this feeling of comfort not be attained within one minute, and the chilliness not disappear, the bath must slowly and carefully be raised to a sufficient temperature. As a rule the patient must have the sensation of warmth as long as he remains in the bath. There are cases when patients, in spite of keeping quiet in the bath, feel chilly again in a little while. This second chilliness should be avoided, for it shows us that such a bath was too prolonged for its relatively low temperature. Either the temperature must be raised at once or the patient leave the bath immediately. On the following day the baths should be taken warmer.

If the patient bears the treatment well, more concentrated baths may be given. First of all the concentration of salts should be increased, especially the quantity of CaCl. Later on the baths containing CO_2 may be employed. We concentrate the brine bath by the addition of mother lye condensed from our springs. The next step upwards is furnished us by the so-called thermal baths with their weak percentage of natural CO_2. For this purpose large open basins are provided into which the water is conducted. Part of the CO_2 evaporates in the air so that the water of three of our different springs reaches the bath with an amount of about 4-500 cc. of free CO_2 per liter. Besides these reservoirs large underground basins have been constructed, which make it possible to keep up the natural heat of the water and to reduce to a minimum the evaporation of the CO_2 in the open air. These reservoirs provide us with the water which we term "thermal sprudel." This water enters the bath with an amount of 1,000 cc. of free CO_2 per liter, and constitutes a transition from the thermal to the effervescent baths. The water for our effervescent or so-called sprudel baths is led directly from the main pipe into the bath tub; besides its strong mineral ingredients it contains between 1,200 and 1,500 cc. of free CO_2 per liter. Finally the strongest of the Nauheim baths is the effervescent running bath, known as sprudelstrombad. The water flows in and out, with an excess of pressure of from one-half to one and one-half atmospheres, whilst the patient is in the bath. The mechanical effect thus produced is still further enhanced by the largest proportional amount of CO_2 with natural temperatures of 86–93° F. with which we are acquainted, that is, 2,000 and more cc. of free CO_2 per liter; this renders these baths the most efficient we know of.

The majority of patients require an intermission, in some cases after the first, but generally after the second, day. At a later stage three or four baths in succession may be given and at the same time the duration of the baths may be prolonged, but it rarely should exceed twenty minutes. After each bath the patient should be rubbed vigorously so as to put him into a glow. After that he should remain in bed, at least one hour, in order to rest and maintain an equally warm temperature. The physician's endeavor should be to lead to a constant and careful increase of the efficiency of the bath. The baths should be given progressively cooler, longer and more frequently. A strict supervision of the condition of the heart should be kept up uninterruptedly; the success of to-day's bath should give the measure for to-morrow's. The efficacy of the Nauheim baths may be explained by the following data:

1. The possibility of the fullest graduation of the baths, which allows of beginning with a weak brine bath and then concentrating the mineral ingredients by means of mother lye, which acts strongly on the peripheral nerves, as it contains 40% CaCl.
2. The employment of waters of appropriate natural temperatures, viz.: 86–93° F., such as are used in ordinary life.
3. The possibility of beginning with a small amount of CO_2 which may be gradually increased to the greatest quantity we know of for these bathing temperatures. The water of the effervescent bath being in contact with the integument loses part of its CO_2 on account of the bodily heat. But in the sprudelstrom bath the water containing fresh quantities of carbonic acid gas in the nascent state is constantly being brought into touch with the bodily surface. We know by experiments that the mineral ingredients of the water act by imbibition, whereas the CO_2 with its movable molecules penetrates rapidly through the skin, and hence produces a quickly tonifying effect.
4. The mechanical effect of the sprudelstrom bath is added to this.

The radio-activity of the Nauheim springs was established two years ago by Professors Elster and Geitel, and the results were published in the *Physikalische Zeitschrift.*

The summer months are most suitable for the bathing treatment. In milder cases from four to six weeks are sufficient, after which an after-cure is advisable. This should be taken at a moderate mountain altitude, that is, not over 1,000 meters. On the other hand, in severe cases, the cure requires several months. In such cases it is advisable to divide the cure into two parts, between which the abode in the mountains should take place. In winter the patients should resort to a warm southern climate, in order to remain a long time in the open air.

The Nauheim baths may, to a certain extent, be made artificially. My brother and I have published exact directions on the subject. For this purpose either the Nauheim-bath salts may be used or else their most important ingredients must be employed: *i.e.*, NaCl and CaCl in due proportions. The development of carbonic acid gas is produced by bicarbonate of sodium and commercial hydrochloric acid. The chemical equivalents of both give the proportion in which they should be added to the bath. Should a solution of hydrochloric acid contain 42½% the proportion of bicarbonate of sodium should be the same. But when, as is generally the case, the hydrochloric acid is more diluted, the quantity of the solution must be increased in proportion to its concentration. The quantity of bicarbonate of sodium should at first be 100 gm. per bath, gradually being increased 1,000 to 1,500 gm., the bicarbonate of sodium being dissolved simultaneously with the other salts. The hydrochloric acid should be poured on the water close to its surface and evenly diffused, or else the bottle containing it should be placed in the bath, some time before the patient enters it, in order to allow a slow diffusion of the hydrochloric acid. In this way the CO_2 may be developed for one half hour or longer.

Through our directions the artificial Nauheim baths have come into very extended use. I wish to lay particular stress on the fact, that many mistakes and misconceptions arise regarding the application of these baths. We often read in accounts of their effects that it is only the CO_2 which acts upon the heart. This, however, is quite erroneous. A good result — as already mentioned — may only be obtained with a gradual increase of all the component parts. Employing ingredients in fixed doses as manufactured and sold leads to the mischief that the quantity of CO_2 cannot be regularly graduated, the difference in the amount of CO_2 being too great and too sudden with each increase.

Thus, I have observed that unsatisfactory results were obtained with many patients, owing to the insufficient graduation, which rendered it impossible to regulate the bath either according to the nature of the complaint or to the temporary condition of the patient. It is evident that constant medical supervision based on long experience is absolutely necessary in the administration of artificial baths. In most instances a good result is obtained only when the patient is relieved from family and business worries, and, if possible, given better air and a change of surroundings. A suitable diet is likewise of great importance. In some cases and when proper means be adopted, excellent results may be derived from the artificial Nauheim baths. The number of successful cases must necessarily be limited, because the strongest forms of the natural baths — effervescent and effervescent running baths — cannot be made artificially.

METHOD OF GYMNASTIC TREATMENT.

As already pointed out similar results may be obtained with graduated gymnastic exercises as with bathing. The baths act through the sensory nerves, gymnastics through the motor nerves. We make use of, —

1. Exercises with resistance, in which the assistant resists the muscular action of the patient.

2. Gynmastics with self-resistance, in which the patient himself brings antagonistic muscles into action. The following principles may be recommended for the application of gymnastics: Each exercise must be performed so slowly and the resistance must be regulated in such a way that the patient is always in condition to breathe freely. This aim is best attained and fatigue of single muscles avoided when new groups of muscles are alternately brought into action and a pause made after each movement. When all the muscles of the trunk, arms and lower extremities have been exercised in this manner and the condition of the patient admits of it, the exercises may be repeated in several series. The different kinds of motion, consisting of flexion, extension, abduction, adduction and rotation are, of course, determined by the nature of the articulation of the joints. They have been so often described that no further description of them is required. I wish to add, however, that a great variety of exercises are performed. It is not very difficult to teach any one how to become a gymnastic operator, provided that he is conscientious and possessed of a certain degree of intelligence and power of observation. A certain amount of anatomical and physiological knowledge is presupposed; should it not be present it may of course gradually be acquired. In many cases it is advantageous to train a member of the family so that the patient may always avail himself of his services. Further rules for the operator are, that he must not grasp or in any way constrict a portion of the patient's body, so as not to impede the movements but resist them. When an exercise is carried on too quickly or with too great resistance he ought not to begin a new one before the patient breathes quietly and the pulse again becomes slower.

By adopting these exercises a bed-ridden patient may be relieved and strengthened to such an extent that he may be able to get about. I have received, on this point, most favorable reports also from medical men in the United States.

Even many years ago I had the opportunity to observe that in some cases in which digitalis had been extensively administered it ultimately proved inefficacious, whereas when used in combination with a bath and gymnastic exercises it again produced its effect.

It is advisable to resort first to the resistance exercises; later on the patient learns the exercises with self-resistance, which possess the great advantage of allowing him to make use of them at his own convenience and independently of any one else. After the resistance exercises the treatment, as already mentioned, should be concluded with mountain climbing, but only then, when the heart muscles have already become strong enough to bear the increased strain without any risk.

The powerful effect produced upon the heart by the baths and the gymnastic exercises indicates under what circumstances this treatment is inapplicable, in fact, when it is contra-indicated.

These are: 1. Aneurism of the heart and of the large vessels. 2. Cases of advanced arteriosclerosis and such extensive degeneration of the cardiac muscle that every increase of muscular action becomes dangerous, either by producing rupture of the aneurismal sac or by causing apoplexy or embolism.

It has recently been attempted to include in the treatment by mineral baths cases of advanced arterio-sclerosis and well-developed myocarditis, for the reason that at a suitable temperature these baths cause the blood to divert from the internal organs to the periphery. In such special cases this factor should not be considered decisive, because the ingredients of the baths, with or without the CO_2, have a far stronger effect upon the heart and may therefore lead to the above-mentioned dangers. Contrary to what has recently been maintained by some French and also by some German physicians it is inadmissible that the absolute height of the blood-pressure is any indication for the decision as to whether a bathing or gymnastic cure should be resorted to.

Thus we see that in cases of renal congestion or excessive dyspnea the unusually high blood-pressure decreases under our treatment while on the other hand a blood-pressure which has become too much lowered owing to debility of the heart increases under this same treatment. My brother and I resorted to massage, especially under the form of *tapotement*, particularly in cases of cardiac excitation, and by this means it often becomes possible to restore tranquillity within a short time. But this result is not lasting, which may also be said of vibratory massage.

The application of cold, especially in the form of ice-compresses or ice-bags, is also a good means for quieting the heart's action. In cases where the heart requires quick stimulation, the use of high temperatures may be resorted to with great advantage. For this purpose an india-rubber-bag containing water of from 140° to 160° F. may be applied by shifting it gradually over the entire region of the heart and chest.

Until recently electricity was mainly used in order to quiet the heart's action. During the last years electricity has been applied in the form of sinusoidal currents; it has been claimed that, in this way, the heart could be quickly and permanently reduced in size; this view has not been generally accepted.

A separate paper would be required to give an adequate description of the diet required by patients with heart disease. I only wish to point out the following general rule: a mixed diet is to be preferred, the nourishment must be easily digested and not spicy. Exciting or effervescent beverages, or such as tend to produce gastric distention, should be excluded. The consumption of any large quantity of liquids or solids at any single time should also be avoided for a distended stomach compresses the lungs and displaces the heart by pushing it upwards and outwards. In addition to this, the heart has to struggle against an increased intra-abdominal pressure, which should be avoided. When this pressure already exists, and is caused by constipation or flatulency, it may be made to disappear by combining a drinking cure of saline waters with the bathing cure.

The use of tobacco may easily prove injurious, and should either be restricted or entirely discarded, if possible.

Owing to want of time, and much as I should like to, I must refrain from dwelling upon certain accessory points such as dress, occupation, the advisability of contracting marriage, etc.

The skepticism which a few decades ago prevailed in the medical world has vanished in a great measure and a very material change has become apparent, especially as far as therapy is concerned. I should be greatly pleased if I have succeeded in showing you that satisfactory progress has really been made in the matter of therapy of chronic complaints of the heart.

Gentlemen, I thank you for the kind attention you have shown me during this lecture, and I hope that the subject I have laid before you may not have been entirely devoid of interest.

* * *

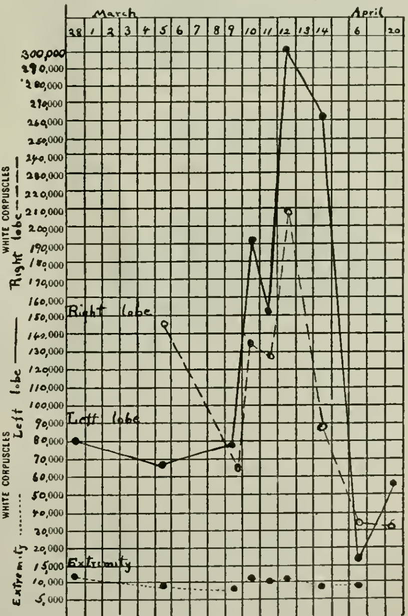
LOCALIZED LEUCOCYTOSIS ASSOCIATED WITH ATYPICAL PHAGOCYTIC CELLS.

BY W. B. BARTLETT, M.D.,
Interne Massachusetts General Hospital.

S. P., twenty-seven, single, a factory hand, entered Dr. Gannett's wards at the Massachusetts General Hospital on Feb. 26, 1907. He was born in Russia and had been one year in this country. He could speak very little English and was exceedingly stupid.

Family history negative; habits good. He claims never to have been sick until twelve weeks ago when he began to have symptoms of failing cardiac compensation. He took to bed two weeks before entrance to the hospital.

Physical examination showed a well developed man, slightly cyanotic, especially about the ears. Examination of the heart showed evidence of an aortic and mitral insufficiency with slightly broken compensation.



The liver was enlarged and tender; the spleen not palpable. There were no masses in the abdomen and no enlarged glands. The fingers were markedly clubbed. The first four days of his stay in the hospital he ran a slightly irregular fever which never went above 100.8°. Later the temperature became normal. Under digitalis he improved considerably and was discharged relieved on March 16. He subsequently appeared several times in the Out-Patient Department and later entered the Boston City Hospital where he remained a few days.

The blood condition peculiar to this case was the existence of an extraordinary leucocytosis localized to the lobes of the ears and accompanied by certain atypical phagocytic cells. The leucocyte count from the lobes of the ears ranged from 30,000 to 300,000. It varied greatly from day to day and even from hour to hour. Counts from two punctures in the same lobe often varied markedly. Counts from the fingers, toes and top of the ear (where it joins the head) were always within normal limits, the lowest count obtained (top of ear, March 14) being 7,600 and the highest (toe, March 10) 12,200. On March 14 when the white counts from the right and left lobes were 84,000 and 262,000 respectively, red counts made from the two ears simultaneously gave:

Right lobe, 4,864,000. Left lobe, 4,944,000.

On April 20 the red count in the two lobes averaged 4,750,000. The finger count was 3,632,000. Specific gravity of the blood taken on March 11 was, for finger, 1,059; left lobe, 1,059; right lobe, 1,057. Differential counts of the leucocytes showed nothing beyond a slight increase in the basophiles in those smears which contained numerous atypical cells. Eosinophiles and mast cells were seen frequently. Stippled and polychromatophilic cells were seen occasionally; normoblasts were very rare. There was no achromia or poikilocytosis. Blood plates were increased.

In smears made from the lobes of the ears many large atypical mononuclear basophilic cells were found. These cells varied greatly in size and staining reaction. Every gradation was found from atypical large mononuclear leucocyte to large mononuclear leucocytes to very large cells with degenerated protoplasm often containing many inclusions such as are shown in Figs. III and VII. With Wright's stain the nuclei of these cells stain purple or dark blue; they are usually oval but may be indented or even horseshoe shape. The protoplasm is reticular and stains a bright blue to a dull gray. It usually contains several reddish-brown granules. The protoplasm is often vacuolated (Fig. III) and many of the cells contain inclusions. These cells are evidently very phagocytic. Many contain neutrophiles or their remains; others contain very dark staining bodies which resemble erythroblast nuclei. Lymphocytes and red corpuscles are only rarely seen included. Many of the inclusions are surrounded by a clear zone which would seem to indicate a digestive action on the part of the phagocyte (Fig. I). Often the protoplasm of these cells may be seen extending out in long streamers (Fig. V); these protoplasmic streamers often become broken off and may be found free in the smear. The cells appear to have a tendency to approach each other and to fuse (Figs. VI and VII). The number of these atypical cells varies greatly in different smears. In some they are very numerous; thus on April 20 they constituted 39% of the total cells counted in a smear from the left lobe, 34% from the right, lymphocytes being 4% in both.

It is an extraordinary fact that search has failed to reveal any of these atypical cells in smears made from the extremities or top of the ear. Similar cells are found normally in the bone marrow and spleen. They are identical with those described by Van Nüys in a recent issue of this Journal.[1]

The fact that many of these cells contain inclusions which resemble erythroblast nuclei makes it appear probable that they originate either in the bone marrow or spleen. If such be their origin, how are we to account for their absence in blood from the extremities?

The patient denies ever having frozen or injured his ears. The appearance of the lobes is normal, except for marked cyanosis.

I am indebted to Dr. Van Nüys for verifying many of the counts and to Mr. L. S. Brown for his interest and care in taking the photographs.

GASTRO-ENTERIC OBSTRUCTION IN EARLY INFANCY.

GENERAL DIAGNOSIS AND TREATMENT, WITH A REPORT OF TWO CASES OF PYLORIC STENOSIS AND ONE OF VOLVULUS, SUCCESSFULLY TREATED BY LAPAROTOMY.

BY THOMAS MORGAN ROTCH, M.D.,
Professor of Pediatrics in Harvard University,
AND
FRED TOWSLEY MURPHY, M.D.,
Assistant Surgeon to the Infants' Hospital.

(Concluded from No. 19, p. 595.)

As a rule blood is found in the stools more often in volvulus of the sigmoid flexure than in volvulus of the small intestine. The presence of blood is not to be looked upon as so important a sign as in intussusception, but this possibility should be borne in mind. In our case the cause of the large amounts of blood which were passed by rectum is explained perfectly by the volvulus. The torsion increased, there was a more marked obstruction in the venous return, and the lumen of the bowel contained in the volvulus was filled with blood. Later the torsion became less, the lumen was patent and this large bloody mass was passed along the intestinal canal.

The continuation for several days of normal fecal movements may be misleading. If the volvulus involves the sigmoid flexure, and the obstruction is complete, the remainder of the large intestine is soon emptied; but if the volvulus is high in the small intestine, dejections from the material left in the large intestine may continue for a considerable time. Sooner or later, if the volvulus is not relieved, there appears a picture of profound collapse. The temperature, which has been elevated, may become subnormal,

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[1] Bost. Med. and Surg. Jour., vol. clvi, p. 390.

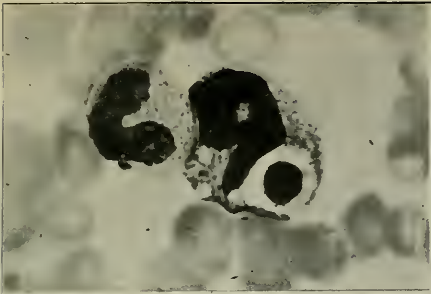

Fig. I X1500

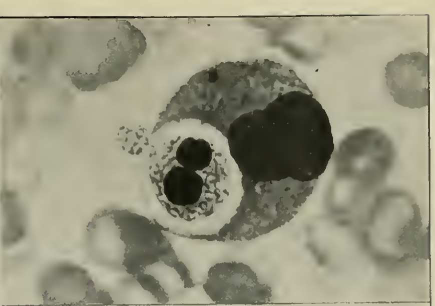

Fig. II. X1500

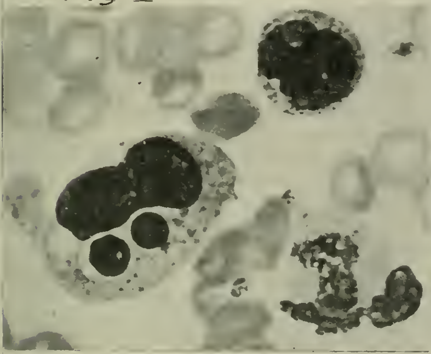

Fig. III X1500

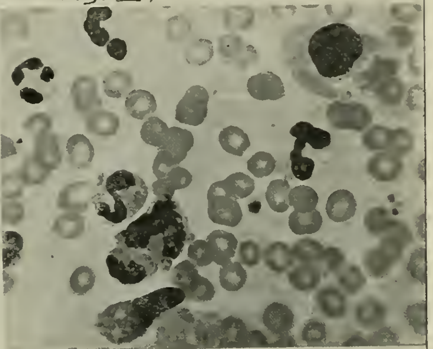

Fig. IV x750

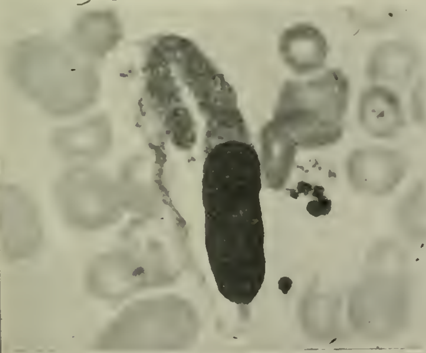

Fig V X1500

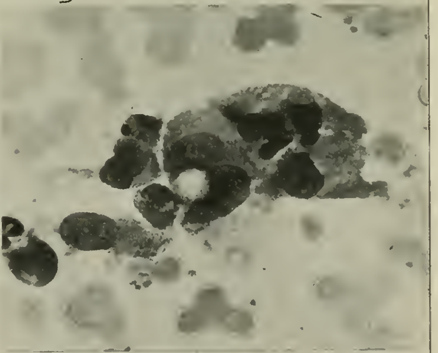

Fig. VI X750

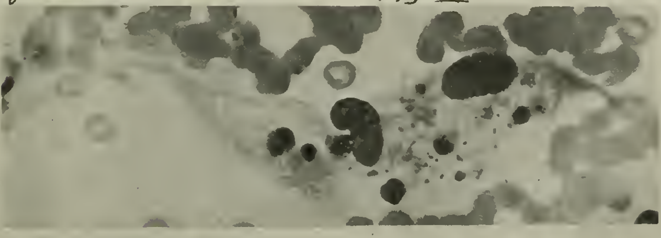

Fig. VII X750

Photographs by L. S. Brown, Clinico-Pathological Laboratory, Massachusetts General Hospital.

the pulse becomes more rapid and weaker and death soon follows. This collapse may appear early in the course of the disease within a few hours after the onset of the first symptoms, and when it does, it is probably due to the shock incident upon the circulatory disturbance. Or it may appear late after there have been symptoms of a general peritoneal infection, in which case it is secondary to the general peritonitis, the infection having come from the intestinal contents of the volvulus.

Digestive disturbances are so common in infants, and their manifestations so varied, that an early diagnosis of an abdominal lesion is most difficult. As was stated above, the diagnosis of volvulus is for practical purposes the diagnosis of intestinal obstruction. Rarely typical physical signs, such as obstruction with local meteorism, will warrant a diagnosis of volvulus. Ordinarily a diagnosis of intestinal obstruction will be made from the signs and symptoms after it has been proven that the infant's food is not the possible cause of the disturbance. This, of course, does not apply to the case which is *in extremis*, with a history of persistent vomiting, possibly fecal in character, without fecal movements, and with a distended rigid abdomen.

Persistent vomiting coming on suddenly in an infant that has previously been well, combined with evidence of abdominal distress, and with marked changes in the fecal movements, either obstinate constipation or the admixture of blood, should always excite the suspicion of intestinal obstruction in some form. If the vomiting persists after the stomach has been washed out and all food has been stopped by mouth, an exploratory laparotomy is indicated. If these attacks of vomiting with the signs and symptoms of obstruction are intermittent, as in the case reported, a volvulus of some portion of the intestine is the most probable diagnosis. The treatment of these cases of volvulus is essentially surgical. Attempts to move the bowels by cathartics only increase the distress and further increase the torsion. The acute cases with symptoms of complete obstruction demand immediate surgical relief. The cases of partial or intermittent obstruction demand surgical relief as soon as it is determined that the symptoms are dependent upon some mechanical cause.

The special surgery of these conditions may be outlined as follows:

If rectal feeding has not been systematically and properly used, the condition of these emaciated pyloric stenosis patients may be much improved by giving three to four drams of peptonized milk by rectum for twenty-four hours before the operation. Moderate stimulation by brandy or strychnia is also given to advantage, either subcutaneously or with the enemata. In case the rectum is not tolerant, infusion of normal saline solution should be tried for twenty-four hours in the cases which are so much reduced as to be very poor surgical risks. Infusions under the pectoral muscles give the best results. An infusion should be given every three hours on alternate sides, and as much fluid injected as the subpectoral space will hold without too great tension.

The anesthetic of choice is ether. Only as much as will prevent the child from actually straining or vomiting should be given. Under-etherization is never a serious matter with these diminutive patients, for they are easily and quickly controlled; and over-etherization is a very serious calamity.

Before the operation the stomach should be thoroughly washed out. In this day of perfected technic, asepsis is assumed in considering any major operation, but in operations on infants the avoidance of shock becomes a paramount factor, the importance of which is not infrequently overlooked. Maintenance of the body temperature is absolutely essential; therefore the chest and extremities should be enclosed with warm bandages before the infant is taken to the operating room. The temperature of the operating room should be at 90° or above. The top of the operating table should be artificially heated. If such a table is not available a heated top may be improvized by placing a blanket over a row of hot water bottles.

Manipulation of the parts and hemorrhage must be reduced to a minimum, for in these tiny patients rough handling of the abdominal contents or a profuse bleeding is fatal to success. The necessary rapidity of operation has been perhaps over-emphasized. A degree of speed that leads to the slurring of any technical details in these operations for pyloric stenosis is most dangerous, because not only must the line of sutures be absolutely tight, but the parts must be correctly placed for the operation and retained in their proper relations after the operation. Under proper conditions, and with gentle manipulation, these patients stand an operation of thirty minutes well. The second half hour is not so well borne, and of course an extension into the third half hour is not to be considered. Unless unusual complications are met, thirty minutes is ample time for the necessary operation.

Various operative procedures have been used in the treatment of this lesion. Experience has reduced the number of justifiable operations to three — post-gastro-enterostomy, pyloroplasty and divulsion of the pyloric stricture. The divulsion or stretching of the contraction ring does not seem to be an accurate or a scientific procedure. It is also fraught with dangers which are not incident to the other two operations. In our opinion it is not to be recommended. A choice between post-gastro-enterostomy and pyloroplasty will depend somewhat upon the nature of the case, and primarily upon the personal preference of the operator. The pyloroplasty reproduces more nearly the normal anatomical relations. If it can be done with as low a mortality as the post-gastro-enterostomy it should prove to be the operation of choice. The thickness of the pyloric walls offers, however, certain technical difficulties, and it would seem that this operation had the same limitations as its counterpart, the Finney, in adults. A posterior gastro-enterostomy has no anatomical limitations. It may be employed in every case. It is technically easy of application. While the normal relations are disturbed, and while, from an experimental viewpoint, this procedure of gastro-enterostomy is faulty, the clinical results have been most satisfactory. As yet there is no evidence that practically this operation does not meet every requirement. Certain technical details of the operation as applied to infants warrant special emphasis. The amount of jejunum taken by the stitches should be as small as is consistent with a solid suture in order that the lumen of the atrophied gut may not be obstructed. The use of the " in and out and over " stitch of Mayo in the anterior suture line of the anastomosis is of great assistance in this connection. Not only should the transverse mesocolon be caught up at either end of the anastomosis, but the jejunum itself should be sutured to the stomach beyond the anastomosis, in order to reduce the possibility of an obstruction caused by the sharp flexion of the gut at the end of the line of incision.

The now generally accepted technical steps as employed on the adult should be followed, namely, the use of clamps, the " no loop " operation with the anastomosis in the pyloric region of the stomach, and with the jejunum running downward to the greater curvature from the left to the right. An anastomosis of an inch to an inch and one half is ample.

In operating for volvulus the primary object is to relieve the obstruction of the intestine. This is of course accomplished by untwisting the volvulus. If it is possible by suturing the abnormally long mesentery, or fixing the intestine to the abdominal wall, to prevent the recurrence of the volvulus, this should be done. With these infants, however, with their reduced resistance, prolonged manipulation is never justifiable. What is to be done must be done simply and rapidly. If only the volvulus is reduced, it is possible, of course, that it should recur, but this will not necessarily follow, for, as has been mentioned above, the conditions which are necessary for the formation of volvulus are not infrequent in infants, yet volvulus rarely occurs. Therefore, it is probably fair to assume that the exciting cause of the first rotation will not be duplicated.

Should the intestine contained within the volvulus be considered non-viable, the whole gangrenous area, with as much of the mesentery as is involved, must be removed to prevent sepsis; but in these extreme cases whatever procedure is followed will probably be of no avail. After such an incision suture of the intestine should not be considered. The ends should be drawn out and the contents allowed to drain externally. In the case of a volvulus of the large intestine it may be wise to establish an artificial anus in order that the obstruction which might result from the paralysis of the bowel be at once relieved, but this procedure is not well borne by young infants. In these cases, therefore, the operation is reduced practically to the simple untwisting of the volvulus.

A comparison of the results of medical and surgical treatment based on the case reports in literature is manifestly unjust, because in the cases which have been said to recover under medical treatment the diagnosis of an actual hypertrophy can only be assumed, not proven, and without doubt surgical successes are more often reported than failures. It is yet to be proven, however, that medical treatment can give relief in the cases with an actual hypertrophy and with the lumen of the pylorus obstructed in a marked degree. Autopsy findings and case reports prove beyond a doubt that this hypertrophy may persist and cause fatal digestive disturbances in after years, even though the infant survives the first attack.

The surgical statistics show that in 60 cases operated upon 53.5% were saved. These operations represent the results of twenty-eight different operators and many different operative procedures. They are the results of the developmental period, and, considering everything, they are most brilliant and hopeful for the future.

The cases which have been operated upon successfully are too young to determine positively what the ultimate results will be. Lobker's[11] case, a posterior gastro-enterostomy, was followed for two years, and at the end of that time was perfectly well. Dent[12] has successful results from pyloroplasty four, three and two years after operation. These results are certainly satisfactory.

As in all other surgery procedures, forlorn hopes give a high mortality. In the future the operations for pyloric stenosis will show a much lower percentage of mortality than in the past, provided an early diagnosis is made, because gastro-enteric surgery is being done with more and more success.

The outlook for these cases of volvulus is bad. A spontaneous reduction of the volvulus which has not completed a full rotation may be possible, but it is hardly probable. What relief early surgical interference in these cases in infants will offer is a problem for the future. Certainly with operation some may be saved. Without operation they are practically hopeless.

CASE REPORTS.

The case A. M. was seen with Dr. Stickney of Arlington.

The child was five weeks old. He was healthy at birth. The parents were normal individuals. During her pregnancy the mother had been in the best of health. At birth the child weighed 6¾ pounds, was at once put to the breast and nursed normally. The dejections were well digested, yellow, and normal in every way. At the end of the fourth week of life, without evident cause, the child began to vomit persistently. A weak home modification was substituted for the breast milk without influencing the vomiting. One grain of bicarbonate of soda was then added to each dram of this mixture, but without effect. The child was then

[11] Verhandl. d. deut. Gesell. für chir., vol. xxix.

[12] Brit. Med. Jour., Oct. 13, 1906.

put back on the breast and the bicarbonate was continued. The vomiting then ceased for several days.

On Nov. 11, it began to vomit again. Large amounts were vomited at a single time, and the vomiting was expulsive in character. It did not occur after each feeding. Sometimes one and even two feedings were retained. The vomitus was free from bile — practically the ingested milk. The weight fell rapidly from 8 pounds to 6¾ pounds. The character of the movements changed. They were small in amount and resembled meconium.

Nov. 12, a Walker-Gordon modification of 1.5. .25, .25 pasteurized at 155° with 10% lime water was tried but was expelled as the breast milk and home modification had been. Whey was then given, but was also expelled.

On Nov. 12 Dr. Stickney and Dr. Rotch had felt a rather deep-seated, indefinite lump to the right and a little above the level of the umbilicus. Frank visible peristalsis had not been observed.

Examination Nov. 14, 1906, showed a fairly developed, but rather thin child. The sensorium was normal and the extremities were moved vigorously. The face was pinched and the cheeks sunken, but the impression was that of starvation rather than of any acute illness. No definite tumor in the region of the pylorus could be palpated at this time. By stroking the epigastric region, doubtful peristaltic waves could be demonstrated. A feeding of an ounce of whey was taken, and immediately expelled with great force.

A diagnosis of pyloric stenosis was made and operation was advised. The child was brought from Arlington to Boston and stood the journey well. Before the operation the stomach was washed out until the fluid returned clear. An incision about one and one-half inches long was made in the median line extending to just below the umbilicus. On opening the abdomen the stomach was found much dilated and with the walls markedly thickened. This thickening was so marked that it suggested almost an edematous condition. At the pylorus there was a smooth, non-adherent, hard tumor, about the size of the distal phalanx of an adult finger. To palpation this pyloric tumor was solid throughout; that is, there was no sensation of a cavity, such as one feels in a rubber ball with a hollow center. At the stomach side of this tumor was a sharply marked contraction ring. The jejunum and small intestine were not remarkable except that they were collapsed. They were not contracted as in those cases where practically no food has ever passed the pylorus. The mesentery was normal. A posterior gastro-enterostomy was done with the aid of clamps. Pagenstecher thread was used for all sutures. The mucous membrane did not seem to be excessive and was therefore not excised. The anastomosis between the stomach and the jejunum was made in the pyloric region of the stomach, and as close to the duodenum as could be done without causing tension of the sutures — practically a "no-loop" operation. The jejunum ran from right to left where it was anastomosed to the stomach, the opening being about an inch and a quarter in length, with the slant downward, and with the lower or left end at the greater curvature of the stomach. The mesocolon was caught up on either side of the anastomosis with stay sutures, and the jejunum was also stitched to the stomach beyond either end of the incision in order to prevent a sharp kinking of the gut. The abdominal wall was then closed with a catgut suture in the fascia and peritoneum and silkworm-gut stay sutures.

The child stood the operation, which lasted thirty minutes, well. Three hours later he was in a very good general condition, and was given a dram of sterile water, which was retained, and the child seemed eager for more. For the next four hours the child seemed very hungry, and during that time he was given and retained two ounces and four drams of a 1.5, .25, .25 mixture. Shortly after that he regurgitated a considerable amount. During the rest of the night this weak modification was taken in small amounts, but was not well retained, and in the morning of the day following the operation an amount was vomited which was much larger than the last feeding. The stomach was then washed out, very few curds returning in the wash water, and all food by mouth was stopped, and an ounce of normal salt solution and 15 m. of brandy were given by the rectum. At this time the general condition was not good. The color was bad, the face pinched. For the remainder of the day 4 drams of peptonized milk with 15 m. of brandy were given every three hours, and were well retained. The child was comfortable, and the general condition in the evening was decidedly improved over that of the morning.

During the next twenty-four hours the enemata of peptonized milk and brandy were continued, the sterile water in dram doses was given every half hour and retained.

The enemata were now omitted, and during the next two days the food consisted of whey and sterile water, the water being given every fourth feeding in amounts up to an ounce and a half, every one and a half hours.

On the fifth day after the operation a 1.5, .25, .25 modification was substituted for the whey. From this time on the strength of the food was gradually increased, the fats and sugar being run up first, and then gradually the proteid. The bowels moved normally and there was no vomiting after the stomach had been washed out on the morning following the operation.

Eight days after the operation the child weighed seven and three-quarter pounds, showing a pound gain over the weight which was taken two days before the operation, and which, therefore, probably does not represent fairly the weight of the child at the time of the operation. The wound united per primam, and the stitches were removed on the eighth day. The temperature rose to 102° the day after the operation, but after that day ran along within a degree of normal.

Fourteen days after the operation the child weighed eight and one-quarter pounds, and as far as could be judged, the condition was that of a normal infant. No pyloric tumor was palpable and there was no fullness in the epigastric region.

This case emphasizes certain points, namely, a normal breast-fed infant without evident cause began to vomit. This vomiting was expulsive in character, of large amount, and was not controlled by careful feeding with the addition of alkalies. The loss of weight was progressive and rapid. There was no evidence of any acute enteric disturbance. The character of the movements changed from the normal to that of meconium. The stomach was dilated and a tumor in the region of the pylorus was at times palpable.

The case E. N., age six weeks, was also seen with Dr. Stickney, of Arlington.

The parents were normal individuals. The mother's first child has been normal in every way, and has been nursed until time for stronger food.

This child was normal at birth, and is said to have weighed eleven pounds. For a week the child nursed. The movements of the bowels were normal, and there was no vomiting. At this time the mother had a little retained placenta removed, but there was no general upset, and the character of the milk apparently was not disturbed. The child began to vomit. Lime water in one-half to one dram doses was given with each breast feeding, but without effect. The vomiting was in large amount and projectile in character. At times one feeding would be retained, and then on taking the next, the whole would be forcibly expelled. The movements of the bowels grew gradually less, but were of fairly normal character. At the fifth week the breast feeding was stopped, and a weak home modification was substituted. This was given in one-half to one ounce amount every two hours, but was expelled as the breast milk had been. Next a 1. 5, .25, .25 Walker-Gordon modification with 10% lime water was tried. This also was expelled. Except for the vomiting the child had not been sick. The loss of weight had been rapid and progressive. The mother states that she has noticed some retraction of the head, and the extremities had seemed to be stiff; but there had been no convulsions.

At the time of the examination, Dec. 11, the child seemed cold, and the color was not good. This was attributed to the fact that it had been brought that afternoon in a car from Arlington. The head was held somewhat retracted, but could be moved freely. The fontanelles were normal. The chest was negative. The hands were kept tight shut but not in a position of tetany. The legs were moved normally and the reflexes were normal. The abdomen was not remarkable except that to the right of the median line, high up close to the liver, the edge of which came to the costal border, there was palpable a definite small, hard mass about the size of an olive. With the stomach full, the lower border was percussed out a finger's breadth below the umbilicus.

During the examination the child was given an ounce of modified milk, and this was promptly expelled with great force. It was not possible to demonstrate peristalsis in the epigastric region. The child weighed 5 lb. 14 oz. A diagnosis of pyloric obstruction was made, and operation advised.

For twenty-four hours the child was kept on rectal feeding, 4 drams of peptonized milk every three hours. During this time it was noticed that the child periodically would throw its head back, and the extremities would be stiffened out. When the head was thrown back the respiration changed in character. There would be shallow inspirations, then a deep long breath, and finally the regular rhythm would be taken up again. Before the operation the stomach was thoroughly washed out.

The abdomen was opened through a median incision about two inches long. The stomach was found dilated, the walls thickened, with the greater curvature lying at the level of the umbilicus. At the pylorus there was a typical non-adherent tumor of pyloric stenosis. This tumor was about three quarters of an inch in length, and as large around as an averaged sized finger. Judged from palpation, this pyloric tumor was not completely solid. It felt and rolled under the fingers as if there were a small hollow center inside of the rigid walls. The small intestine was small and collapsed. The mesentery was normal. The fat had almost entirely disappeared from the omentum. Gastro-enterostomy was done with the aid of clamps. The jejunum, as close to the duodenum as possible, was anastomosed with the pyloric end of the stomach running from right to left. The anastomosis was about an inch and a quarter long with the lower left end at the greater curvature of the stomach. Pagenstecher thread was used for the sutures. The abdominal wall was closed with double continuous No. 1 catgut suture in the peritoneum and fascia, and silkworm gut in the skin.

During the operation which took between thirty and thirty-five minutes, the child's pulse had remained of good character, but the respiration had been very peculiar. Although well etherized, the diaphragm would periodically contract and the abdominal muscles become rigid. At such times the respiration would become very slow and shallow, as in the attacks noted before the operation. At the end of the operation the color was good, and the respiration was not abnormal for about fifteen minutes. Then the periods of retraction of the head with slow shallow respiration began. There would be a half dozen normal respirations, and then a deep sigh with retraction of the head. The chest walls at these times would be rigid, — non-compressible without great force. After about ten minutes of these spasms respiration practically ceased. Ten minims of brandy and strychnia one three hundredth had been given subcutaneously. Artificial respiration with an oxygen tube inserted in the mouth was then kept up for twenty-five minutes. The pulse throughout this time could be felt at the wrist. Then the child began to breathe, but the spasms continued frequently for the rest of the day. During these spasms, the appearance of the veins of the head was very peculiar. They would flatten out so as to become almost invisible, and then, as the respiration became normal, would suddenly distend and become very prominent.

As soon as possible the child was given an ounce of salt solution with 10 m. of brandy by rectum. Two hours after the operation, the respirations had become normal except for now and then a deep inspiration. Pressure on nerves or blood vessels did not affect the condition. Now if the tongue were drawn forward at the time of these deep inspirations, the spasm seemed to be stopped, and the respiration would start up at the normal rate. It is certain that during the time artificial respiration was employed the position of the tongue so long as it was not allowed to drop back into the pharynx did not influence the spasms. For thirty-six hours after the operation the mouth was kept moist with hot water, and the child was nourished by enemata of one-half ounce of peptonized milk given every three hours. During the next twenty-four hours water was taken and retained in dram doses every half hour, being given with a dropper. During this time were three small black dejections.

On the second day, on removing the abdominal dressing, it was found that the abdominal incision had been pulled open and a small piece of the omentum had come out into the dressing. This was cleansed and returned to the abdominal cavity. The protrusion of the intestines was controlled with gauze packing, and the abdomen strapped with adhesive strips. On this day whey was started in dram doses and gradually increased in amount, and the enemata were omitted.

Four days after the operation it was necessary to give ether and to resuture the abdominal wound. At this time there was no return of respiratory spasms.

On the fifth day a 1.5, .25,. 25 modification of milk with 10% lime water pasteurized at 155° was substituted for the whey, and a nipple was used. Previously all food had been given by a medicine dropper, it being feared that the nipple might in some way irritate the pharynx, and start up the respiratory spasms. From now on, the strength of the food was gradually increased. The dejections continued to be normal, and there was no vomiting. The respiratory spasms disappeared absolutely, as did also the retraction of the head, and the rigidity of the extremities.

Eleven days after the operation the child weighed

7 lbs. 4 oz., a gain of 1 lb. 2 oz. During the next four days there was a gain of four ounces.

Excepting for a small area at the upper end of the incision where a wick was placed at the time of the secondary suture, the repair of the abdominal wall seemed to be as satisfactory as if the original sutures had held.

This case also emphasizes certain salient points, namely: the normal breast-fed child began to vomit. There was, of course, a question whether or not the illness of the mother had changed the character of the milk; but vomiting continued on any and all sorts of modifications, with and without alkalies. There was a definite tumor to be palpated in the pyloric region. The stomach was dilated. The vomiting was expulsive in character, of large amount, and free from bile. In addition to these classical signs and symptoms, there was a condition of a typical tetany, which, in the light of recent observations, might be associated with the obstruction at the pylorus.

The case B. D. was seen in consultation with Dr. Hooker, of Arlington.

The parents were normal individuals. The previous children, three in number, were normal at birth, and had continued in normal development. There had been nothing remarkable in regard to the intra-uterine life of this child, who was born on Oct. 9, after a normal labor, and weighed seven and three-quarter pounds. During the first day of life the infant vomited on three occasions a considerable amount of mucus, and the color was noted as being green. On the tenth the child passed normal meconium and urinated, and was apparently all right. He was put to the breast, and nursed normally. On the following day there were several large dejections of clotted blood, and small petechiæ appeared on the forehead and cheek. Gelatine was given by mouth for the hemorrhage. Late in the day a considerable amount of greenish material was again vomited. On the next day, the third after birth, there were five or six attacks of expulsive vomiting, the vomiting occurring about an hour after feeding. During the following forty-eight hours the attacks of expulsive vomiting were fewer in number, but the vomitus at times was bright yellow, and of greater quantity than the food taken. The urine became very scanty. The temperature which had been ranging from 101° to 102°, now came down to about 99°, and on the 15th, six days after birth, was normal. Sodium bicarbonate grains one, was now given with each feeding. Only one bad attack of vomiting on this day. The dejections, three in number, were of fair consistency and color and without blood.

Oct. 16, an ecchymosis about the size of a cent appeared on the right chest. The character of the dejections improved, and the urine was passed more freely.

On the 17th, the child weighed six and three-quarter pounds, a loss of one pound from the birth weight. There was practically no vomiting, one yellow dejection. The general condition seemed much improved. For the next twenty-four hours the child seemed to be doing very well. There was no vomiting, temperature 99°.

On the next day the attacks of vomiting returned. The vomitus was large in amount, greenish in color. On the 20th the vomiting became more frequent. The breast milk was drawn with a pump, and given with a dram of lime water with each feeding. Enemata of one-half ounce peptonized milk were also given.

On the 21st the general condition seemed to be better. There was one large yellowish dejection, and two small dark dejections. On the 23d, that is fourteen days after birth, there were six attacks of expulsive vomiting large in amount and dark green. The weight had fallen to 5 lb. 13 oz. Calomel was then given in fractional doses up to one grain. During the next three days the child was tried on breast milk diluted with lime water, whey and a modified mixture of 1.5, .25, .25 with 10% lime water; but the attacks of vomiting continued without remission. The general condition grew markedly worse. The temperature on the morning of the 28th was 96°.

Examination. — On the 28th, the child lay rather stupidly, with the face drawn, and the cheeks sunken. The fontanelles and eyes were normal. The expression was not peritonitic. The chest was not remarkable. The skin showed no petechiæ. The abdomen was not distended. There was no free fluid, and no abdominal mass was palpable. There was no evidence of a distended loop of intestine. On stroking the epigastric region visible peristalsis of the stomach was seen. A diagnosis was made of some obstruction of the small intestine below the entrance of the common bile duct. It did not seem probable that this obstruction was of congenital origin on account of the periods of normal dejections and relief of the vomiting. While the movements had contained blood, there had not been the characteristic bloody mucous stool of intussusception. Pressure or torsion was suggested as the most probable factor in the obstruction. The stomach was washed out before operation. The anesthetic was ether.

The abdomen was opened by an incision in the median line about two and one-half inches long, which extended from the epigastrium down below the umbilicus. On opening the abdomen, contracted dark small intestine presented. When manipulated this intestine contracted vigorously, the peristalsis running in both ways. The condition was one which may be seen in experimental lesions on animals, where there has been a partial obstruction of the venous return. There was no free fluid. The stomach and pylorus were apparently normal. The duodenum in the first and second parts was distinctly dilated. The large intestine was normal in appearance, and was not explored. The cecum preserved its embryological position under the liver. The upper part of the jejunum was then searched for some congenital narrowing, but nothing was found. No tight constricting band could be seen or felt. The small intestine was then lifted *en masse* out of the abdomen and it was found that the abnormally long mesentery, which preserved its embryological attachment, was rotated on itself from left to right to the extent of about 270°. After relieving this torsion, the circulation in the upper jejunum and lower ileum immediately improved. Apparently the torsion was sufficient only to obstruct partially the venous return, and to cause a partial or complete obstruction in the lumen of the gut, subject to the increase or decrease of the torsion. During the manipulation the intestine had been kept moist with warm normal salt solution. The abdomen was closed with through sutures of silkworm gut. Salt solution, one ounce, was given by rectum at the close of the operation.

Though the exploration had been extensive, it had taken but about ten minutes, and the child suffered practically no shock. Brandy in 4 m. doses and strychnia in one three-hundredth doses, were ordered every six hours subcutaneously.

During the night following the operation one and one-half ounces of modified milk 2.5 .25,.25 was taken, and only two drams of greenish fluid vomited. The day following the operation the modified milk was taken in six-dram feedings every one to two hours. The child vomited a small amount four times, and once a considerable amount. There were two dejections which were of dark color.

In the afternoon there was a considerable hemorrhage from the skin incision, and two superficial stitches were placed without ether by Dr. Hooker. For the next four days there was a severe enteritis, nine to ten dejections in twenty-four hours; but except for now and then a spitting up of a small amount of food, there was no vomiting. The temperature ranged from 100° to 101°. From now on the case became one of a severe enteritis, in the treatment of which modified milk of various strengths was used. On the ninth day after the operation there was a marked desquamation which was evidently secondary to the nutritive disturbance. The wound healed per primam and the stitches were removed on the twelfth day.

On Nov. 13, sixteen days after the operation, the child weighed 4 lb. 14 oz. At this period the temperature for several days was subnormal. On the 15th the first gain in weight was noted — 5 lb. 2 oz. With slight fluctuations this gain slowly continued, and Nov. 30, the weight was six pounds. The child has continued to show a slow but steady gain and at the last report weighed almost 11 pounds. There have been no more attacks of the explosive vomiting with bile in the vomitus.

The cardinal symptoms of this case were a more or less intermittent vomiting of bile associated with signs of intestinal obstruction in some form as shown by the character of the vomiting and the changes in the feces, the fecal discharge being intermittent and at times containing large amounts of blood. Save for the visible peristalsis in the region of the stomach, the examination of the abdomen was negative. Obscuring this vital condition of obstruction was a hemorrhagic disease of the newborn.

TREATMENT OF PROSTATIC HYPERTROPHY. THE CONSIDERATION OF THE VARIOUS METHODS OF TREATMENT BASED UPON THE MORTALITY AND THE REPORT OF TWENTY-FOUR CASES OF MEDIAN PERINEAL PROSTATECTOMY.

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Surgeon, Long Island Hospital.

(Concluded from No. 19, p. 606.)

Case I. W. N., age fifty-six. October, 1903. Denies venereal. *Frequency:* Gradually increasing for past four years; now urinates every one to two hours during the day, and six to eight times during night; has had two attacks of urine retention requiring catheterization; has used catheter every morning for past eight months; lately has had difficulty in introducing it. *Pain:* Not marked. *Stream:* Much difficulty in starting; comes slowly; drops directly from meatus; some dribbling. *Blood:* Slight amount during past few weeks after catheterization.

Examination. General condition: Moderate sclerosis; faint arcus senilis; heart action good. *Local condition:* External genitals normal; small inguinal hernia, both sides; small hemorrhoids.

Rectal examination: Both lateral lobes considerably and equally enlarged; median raphe pronounced; surface smooth; a little harder than normal and slightly sensitive; anterior urethra not constricted. Bladder entered by Coudé No. 12 Fr., not deviating from a median line. Residual urine, 14 oz.

Urine examination: Turbid; 1,012; alkaline; ammoniacal odor; urea 1.8; albumin, ¼ of 1%; sediment, chiefly pus.

Cystoscopic examination: The obstruction is of bilateral lobe enlargement, an anterior and posterior cleft being well defined; moderate degree of chronic cystitis; no stones.

Operation: Median perineal prostatectomy, two fair-sized lateral lobes. Penile drainage. Duration of operation, four and one-half minutes. Duration of etherization, ten minutes.

Patient out of bed day following. Drainage removed in five days. Perineal wound healed twelve days.

Present condition: Patient holds urine four hours during day and passes it but once during night; residual urine less than 1 oz.

Case II. J. A. L., age sixty-five. December, 1903. Denies venereal. *Frequency:* Increasing during past four years; now urinates every hour during day, six to eight times during night; often wets bed by dribbling. *Pain:* Dull pain over pubes during past two years and at corona glandis after urination. *Blood:* During past year has noticed it often after urination. *Stream:* Starts with difficulty; comes slowly; drops directly; dribbling for two or three minutes.

Examination. General condition fair; moderate sclerosis; slight myocardial changes.

Local examination: External genitals normal; right inguinal hernia; hemorrhoids.

Rectal examination: Prostate bilaterally enlarged; median raphe obliterated in upper two thirds; surface smooth, slightly harder and less sensitive than normal. Bladder catheterized by a Bigelow evacuating catheter, which rotated to the right about 30° during its passage through the upper portion of the prostatic urethra; stone felt by tip of instrument posteriorly. Residual urine, 19 oz.

Urine examination: Foul; ammoniacal; 1,010; ½ of 1% albumin; alkaline; urea, 1.01; sediment, much pus and squamous epithelium, normal and abnormal blood, few brown glandular casts, some with fat adherent, many crystals.

Subcutaneous injection of 0.01 gm. phloridzin showed sugar to appear in between fifteen and twenty minutes.

Cystoscopic examination: The obstruction was determined to be of bilateral and middle lobe encroachment; marked degree of chronic cystitis; fair-sized stone lying in the bar fond.

Operation: Median perineal prostatectomy; after enucleation of the lateral and middle lobes, the stone was broken by stone forceps and removed through the vesical orifice without rupturing it. Perineal drainage with de Pezzer catheter. Duration of operation, six minutes. Duration of etherization, fifteen minutes. Drainage removed on eighth day. Perineal wound healed on the twenty-first day.

Present condition: Patient holds urine three hours during day and passes it twice at night; residual urine almost 2 oz.; cystitis present in slight degree; casts with fat adherent occasionally found in urine.

Case III. A. J. G., age sixty-nine. March, 1904. Denies venereal. *Frequency:* Increasing for past year and a half; now urinates about every hour during day and seven or eight times during the night; complete retention yesterday; relieved by catheterization. *Pain:* None except during retention. *Blood:* None, except at time of catheterization. *Stream:* Starts with some difficulty; has come well and with slight projection; a little dribbling.

Examination. General condition fair; moderate sclerosis; moderate myocardial changes.

Local examination: External genitals normal except slight atrophy of testes.

Rectal examination: Prostate bilaterally enlarged; median raphe pronounced in the lower two thirds, less so in upper third; surface smooth, boggy and sensitive. Bladder catheterized with soft rubber catheter, No. 10 Fr.. Residual urine, 12 oz.

Urine examination: High; neutral; 1,018: albumin; ⅛ of 1%; urea, 2; sediment mostly normal and abnormal blood, considerable pus, some small, round cells and squamous epithelium, many crystals. Subcutaneous injection of 0.01 gm. phloridzin shows sugar to appear in twenty minutes.

Operation: Median perineal prostatectomy; two lateral lobes and a small median lobe enucleated. Perineal drainage with de Pezzer catheter. Duration of operation, three minutes; duration of etherization, nine minutes. Drainage removed on third day. Perineal wound healed on fourteenth day

Present condition: Patient holds urine between four and five hours during day and passes once at night; residual urine, ½ oz.

Case IV. M. McC., age fifty-seven. November, 1904. Admits gonorrhea at twenty. *Frequency:* Increasing for past three years; never catheterized; now urinates every one and one-half hours during day, four or five times during night. *Pain:* At corona glandis after urination. *Blood:* None. *Stream:* Starts with difficulty; comes slowly; slight projection; dribbles considerably.

Examination: General condition good; very slight sclerosis; heart normal.

Local examination: External genitals normal, except for small lump in right epididymis.

Rectal examination: Right lobe of prostate larger than left, which is also slightly enlarged; median raphe convex toward left, not pronounced; surface smooth, normal in consistency and sensitiveness. Bladder catheterized with a No. 14 Coudé, which rotates to the patient's left about 15° during its passage through prostatic urethra; there is also considerable resistance. Residual urine, 8½ oz.

Urine examination: Cloudy; slightly acid; 1,018; albumin, slight trace; urea, 2.8; sediment, chiefly pus, small, round squamous and few caudate cells.

Cystoscopic examination: The obstruction was determined to be due to bilateral lobe enlargement, chiefly on the right side; no stones; moderate degree of chronic cystitis.

Operation: Median perineal prostatectomy, large right and medium sized lateral lobes. Perineal gauze drainage. Duration of operation, three minutes. duration of etherization, ten minutes; Perineal wound healed on the eleventh day.

Present condition: Could not be determined.

Case V. M. C., age sixty. December, 1904. Denies venereal. *Frequency:* Increasing for past six years; now urinates every half hour during day, many times at night; wets the bedclothes; has had six attacks of retention requiring catheterization and confinement in bed; has used catheter twice a day for three years; now finds difficulty in introducing it. *Pain:* Over pubes and in perineum most of the time. *Blood:* Follows each catheterization. *Stream:* Very difficult to start; comes very slowly; no projection; dribbles almost constantly when he fails to catheterize himself night and morning.

Examination: General condition fair; considerable sclerosis; rather pronounced myocardial changes.

Local examination: External genitals normal; large inguinal hernia on left, small one on right; hemorrhoids.

Rectal examination: Prostate shows extensive bilateral enlargement; median raphe pronounced; surface smooth, harder and less sensitive than normal. Bladder catheterized by Bigelow evacuating catheter, which remains in the drain also during its passage through prostatic urethra. Residual urine, 23 oz.

Urine examination: Purulent; putrid odor; 1,012; albumin, ¼ of 1%; urea, 1.8; sediment, much pus, some abnormal blood, few granular casts, some with blood corpuscles adherent. Subcutaneous injection of 0.01 gm. phloridzin shows sugar to appear in between twenty and twenty-five minutes.

Operation: Median perineal prostatectomy, two lateral lobes. Perineal drainage with de Pezzer catheter. Duration of operation, four and one half minutes. Duration of etherization, eight minutes. Drainage removed on the eighth day. Perineal wound healed on twenty-fourth day.

Present condition: Patient holds urine about three hours during the daytime, passes it two or three times at night; residual urine, 1 oz.; cystitis still present in slight degree; no casts found in urine.

Case VI. C. H., age sixty-seven. February, 1903. Denies venereal disease. *Frequency:* Increasing for past two years; now urinates every hour and a half during day and seven or eight times during the night. *Pain:* Slight in the perineum before urination. *Blood:* On one occasion, three months ago, when he had increasing difficulty in urination; never catheterized. *Stream:* Starts with difficulty, necessitates a leaning posture, comes slowly and dribbles for four or five minutes before the act.

Examination: General condition fair; considerable sclerosis; heart sounds distant and slight systolic murmur transmitted to the aortic region.

Local examination: External genitals normal; small hemorrhoids.

Rectal examination: Prostate bilaterally enlarged to marked degree; median raphe pronounced throughout full length; surface smooth, slightly boggy, not abnormally sensitive. Bladder catheterized with soft rubber catheter, No. 14 Fr. Residual urine, 16 oz.

Urine examination: Turbid; alkaline; 1,012; albumin, large trace; sediment, chiefly pus, some normal and abnormal blood, some large round cells and triple phosphate crystals.

Cystoscopic examination: Obstruction was determined to be from bilateral lobe enlargement; moderate degree of chronic cystosis; one diverticulum seen at a point just above trigone and to inner side of right ureteral orifice; no stones.

Operation: Median perineal prostatectomy, two fair-sized lateral lobes. Perineal drainage with de Pezzer catheter. Duration of operation, three minutes. Duration of etherization, eleven minutes. Drainage removed on fifth day. Perineal wound healed on sixteenth day.

Present condition: Not determined.

Case VII. D. McG., age sixty-three. February, 1904. Denies venereal. *Frequency:* Increasing during past year; now urinates about every two hours during day, four or five times during night. *Pain:* A tingling sensation at the corona glandis just after urination; catheterized once and told that he had an enlarged prostate. *Blood:* None. *Stream:* Starts with slight difficulty, comes easily after it is started, fair projection, but slight dribbling.

Examination: General condition good; vigorous health for a man of his years; no sclerosis; heart normal.

Local examination: External genitals normal.

Rectal examination: Prostate but slightly enlarged bilaterally; median raphe not increased; surface smooth, normal consistency and sensitiveness. Bladder could not be catheterized with soft rubber catheter, but a Coudé No. 11 Fr. rotated to the left during its passage through the upper portion of the prostatic urethra. Residual urine, 6½ oz.

Urine examination: Slightly cloudy; normally acid; 1,020; albumin absent; urea, 3.2; sediment chiefly pus.

Cystoscopic examination: Determined that there was a slight bilateral lobe enlargement, but that the obstruction was due chiefly to a small median lobe.

Operation: Median perineal prostatectomy, two small lateral and middle lobes. Duration of operation, three minutes. Duration of etherization, twelve minutes. Perineal gauze drainage. Drainage removed on second day. Perineal wound healed on thirteenth day.

Present condition: Patient holds urine between four and five hours during day and occasionally does not urinate at all during night; urine practically normal.

Case VIII. T. C., age fifty-nine. March, 1904. Gonorrhea at twenty-six. *Frequency:* Increasing for past three years; now urinates every one or two hours during day and four or five times during night. *Pain:* Dull pain in perineum after urination. *Blood:* None. *Stream:* Starts with difficulty, comes slowly, slight projection, small degree of dribbling.

Examination: General condition good; slight sclerosis; heart normal.

Local examination: External genitals normal except for a slight degree of varicocele on both sides.

Rectal examination: Prostate bilaterally enlarged moderate degree; median raphe not distinct; surface smooth, slightly harder than normal. Bladder catheterized by Bigelow evacuator, which rotated to the patient's left about 20° during its passage through the upper portion of the prostatic urethra. Residial urine, 9 oz.

Urine examination: Turbid; neutral; 1,020; albumin, a trace; urea, 2.8; sediment, chiefly pus, few large round and several small round cells (prostatic?), few abnormal blood corpuscles. Subcutaneous injection of 0.01 gm. phloridzin shows sugar to appear in fifteen minutes.

Operation: Median perineal prostatectomy, two lateral lobes and a fair-sized median lobe enucleated. Perineal gauze drainage. Duration of operation, two and one half minutes. Duration of etherization, ten minutes. Drainage removed on fourth day. Perineal wound healed on seventeenth day.

Present condition: Not determined.

Case IX. J. A. M., age sixty-four. April, 1904. *Frequency:* Gradually increasing for five years; now passes urine every hour during day and seven times during night if he does not use catheter. For the past four years he has used catheter to draw his water two or three times during the day and as many times during the night. For the past four months there has been difficulty in introducing the catheter. *Pain:* At the corona glandis before and during micturition for the past four months there has been considerable pain during the introduction of the catheter. *Blood:* None. *Stream:* Started with such difficulty that he usually employed the catheter.

Examination: General condition poor; moderate sclerosis; slight myocardial changes.

Local examination: External genitals normal; large hemorrhoids.

Rectal examination: Both lateral lobes smaller than normal; smooth and harder than normal; median raphe not distinct; pronounced sulcus between the two lateral lobes at the top of the gland. Bladder catheterized with No. 14 Fr. soft rubber catheter. Residual urine, 5 oz. During the irrigation of the bladder the return flow stopped suddenly on several occasions and a stone searcher detected several small stones.

Urine examination: Purulent; foul odor; 1,012; large trace of albumin; urea, 2; sediment, chiefly pus, some normal and abnormal blood corpuscles and numerous small and large round cells.

Operation: Median perineal prostatectomy; two small lateral lobes enucleated; stones crushed and removed through the vesical orifice without injuring it. Penile drainage. Duration of operation, one and one-half minutes. Duration of etherization, six minutes. Drainage removed on twelfth day. The patient was very thin and the perineal wound closed and opened several times during the following four months. The patient returned nearly three years following the operation with symptoms of recurrent stone formation.

On Sept. 5, 1906, a perineal section was performed upon a grooved staff, and the finger, introduced through the vesical orifice, detected several bits of calcareous deposits; some adhered to the bladder wall on the posterior surface and a few free in the bar fond, which have diminished considerably in size since the prostatectomy.

In the anterior median line just in front of the anterior segment of the vesical orifice was a small bit of tissue, 1 cm. across its base and 4½ cm. in height. This was grasped by forceps and removed. Microscopic examination of this tissue showed it to be of prostatic origin and showed round cell infiltration on its surface. This bit of tissue, probably left at the time of operation, probably dropped over the vesical orifice and thus preventing bladder from emptying itself may have caused the residual urine and recurrent stone deposit.

In the region previously occupied by the prostate there were several small cicatricial bands running across the canal. This observation should lead one to believe that it is necessary to pass sounds upon patients for some time after the enucleation of the gland by this method. It is generally stated by surgeons that stricture in the region of the prostate after prostatectomy never occurs. This case, however, is an exception.

The patient was placed on penile drainage and the perineal wound healed in fourteen days.

Present condition: Perineal wound has remained healed. The patient holds his water from three to four hours during the day and passes it but once or twice at night. Residual urine but ½ oz. The cystitis is very much improved, but he still has bladder irrigation once a week.

Case X. T. F., age seventy-two. April, 1904. Denies venereal. *Frequency:* Eight years ago had acute retention and was catheterized; since then has noticed gradually increasing frequency; has had complete retention several times during this period and has had to be catheterized. For the past six years has catheterized himself, because if he did not he would be attempting to urinate every few minutes during the day. Seven weeks ago was unable to pass catheter; was aspirated and then placed on siphon drainage, which was continued for six weeks. *Pain:* Occasionally after passage of catheter and always at the time of his retentions. *Stream:* Started with great difficulty, comes slowly, no projection, dribbling for several minutes.

Examination: General condition fair; moderate sclerosis; moderate myocardial changes.

Local examination: External genitals normal.

Rectal examination: Both lateral lobes enormously enlarged; the top of gland could not be reached; median raphe distinct in the lower half, obliterated in upper half; gland boggy and abnormally sensitive.

Soft rubber catheter No. 7 Fr. introduced into the bladder. Residual urine, 10 oz.

Urine examination: Color normal; 1,014; alkaline; slightest possible trace of albumin; urea, 1.51; sediment, considerable pus, many bacteria, few normal blood corpuscles and numerous epithelium cells, many crystals and amorphous urates.

Cystoscopic examination: During passage to cystoscope through the prostatic urethra it rotated to an angle of 90° to the right and there was considerable resistance in this portion of the canal; two large lateral lobes and a large median lobe detected; slight degree of cystitis.

Operation: Median perineal prostatectomy; enucleation of large median and lateral lobes. Perineal drainage with a Watson tube. Duration of operation, twelve minutes. Duration of etherization, twenty-two minutes. Drainage removed on the fifth day. A very small communication between the rectum and prostatic region was demonstrated when the bowels moved on the following day. The movement was hard and may have caused the rupture at that time. A penile catheter was introduced into the bladder and the rectum packed with iodoform gauze. The recto-urethral fistula closed five days later. The perineal wound was closed twenty-one days following operation.

Present condition: Passes urine three or four times during day and twice at night. He writes, "I am feeling as well as when I was twenty years old."

Case XI. W. H. P., age fifty-two. October, 1905. Denies venereal. *Increasing frequency* and difficulty in urination for past four weeks; complete retention ten days ago. Catheterized twice daily until to-day, when physician could not make catheter enter. Considerable bleeding after attempts at catheterization with silver catheter. Delirium at night for past three days.

Examination: General condition excellent; no sclerosis; heart normal.

Local examination: Left testicle acutely swollen to size of lemon; blood issuing from meatus.

Rectal examination: Both lateral lobes equally enlarged; median raphe obliterated; surface smooth, gland boggy and very sensitive. Bladder entered with Bigelow evacuating catheter. A false passage was demonstrated at the tip of the prostate, running in front of it into the space of Ritzius. No urine obtained by catheter. Bladder contained large clots.

Operation: Staff introduced with difficulty; median perineal prostatectomy; medium sized lateral and small median lobe. Penile drainage. Duration of operation, six minutes. Duration of etherization, sixteen minutes. Perineal wound healed in eleven days.

Present condition: Holds urine four to five hours during day; does not urinate after retiring at night.

Case XII. J. H., age fifty-eight. November, 1905. Denies venereal. *Frequency:* Increasing for past year and a half; acute retention four months ago and also three days ago. Catheterized with difficulty. *Pain:* During catheterization. *Blood:* After catheterization. *Stream:* Has started with increasing difficulty during past year; dribbles considerably.

Examination: General condition fair; no sclerosis; heart action not strong, a feeble systolic murmur.

Local examination: Both testicles slightly swollen and tender; hemorrhoids.

Rectal examination: Both lateral lobes equally and considerably enlarged; median raphe obliterated; surface boggy and very sensitive. Bladder catheterized with a soft rubber catheter, No. 16 Fr. Residual urine, 8 oz.

Urine examination: Slightly bloody; neutral; 1,020; albumin, large trace; urea 2%; sediment considerable, composed chiefly of pus, normal and abnormal blood, some squamous epithelial cells with pus adherent. Phloridzin test shows sugar to appear in fifteen minutes.

Cystoscopic examination: The obstruction was shown to be bilateral, with a small, broad, middle lobe. Two stones were detected.

Operation: Median perineal prostatectomy, lateral lobes only. Perineal catheter drainage. Duration of operation, five minutes; Duration of etherization, fourteen minutes. Penile drainage removed on the eighth day. Perineal wound healed on twenty-second day.

Present condition: Holds urine three hours during day and passes it two or three times at night. Urine still contains some pus.

Case XIII. P. R., age seventy. December, 1905. Denies venereal. *Frequency:* Increasing for past twelve years. Has catheterized himself for past eight years; has been obliged to catheterize himself several times a day and many times at night during the past year. Now has difficulty in introducing catheter. *Pain:* Considerable before passing catheter, which relieves it. *Blood:* Occasionally after the catheterization. *Stream:* Used to dribble much; now can pass but a few drops without catheter.

Examination: General condition not good; considerable arterial sclerosis; marked *arcus senilis;* heart action fairly strong.

Local examination: Moderate sized inguinal hernia on either side; hemorrhoids; testicles atrophied.

Rectal examination: Both lateral lobes much enlarged; median raphe pronounced in lower half, absent in upper half; top of gland cannot be reached; surface smooth, hard and slightly sensitive. Bladder catheterized with a Coudé No. 10 Fr., which rotates about 40° to the right during its passage through the upper half of the prostatic urethra; here there is considerable resistance. Residual urine, 7 oz.

Urine examination: Cloudy; alkaline; 1,016; albumin, $\frac{1}{8}$%; urea, 1.8%; sediment consists mostly of pus, squamous epithelium and large round cells, few hyaline and fine granular casts, with occasional fat adherent. Phloridzin, 0.01 gm., subcutaneously, shows sugar to appear in twenty minutes.

Cystoscopic examination: The obstruction was demonstrated as bilateral and median lobe; a vesical calculus was demonstrated; chronic cystitis.

Operation: Median perineal prostatectomy; large, lateral and median lobes. Perineal catheter drainage. Duration of operation, five minutes. Duration of etherization, ten minutes. Perineal wound healed in twenty days.

Present condition: Holds urine about two hours during the day and passes it from two to four times at night; irrigates the bladder daily because of existing cystitis.

Case XIV. W. B. P., age fifty-nine. January, 1906. Admits syphilis at twenty-two. *Frequency:* Gradually increasing for past three years; now passes urine every hour during day and five or six times at night; had retention three months ago; in bed with continuous drainage for one week; bladder irrigation for two weeks following. Left testicle swelled at time of constant irrigation. *Pain:* Occasionally. *Blood:* None except at time of retention. *Stream:* Starts slowly, comes slowly, with but slight projection and dribbles for a minute or two.

Examination: General condition good; no sclerosis; heart normal.

Local examination: Left epididymis slightly enlarged, otherwise normal.

Rectal examination: Both lateral lobes moderately and equally enlarged; median raphe distinct in lower two thirds, absent in upper third; surface smooth, slightly hard and less sensitive than normal. Bladder catheterized with Coudé No. 10 Fr. A distinct jump felt as catheter approaches vesical outlet. Residual urine, 8 oz.

Urine examination: Cloudy; alkaline; 1,018; large trace of albumin; urea, 2.8%; sediment chiefly pus. Phloridzin, 0.01 gm., subcutaneously, shows sugar to appear in fifteen minutes.

Cystoscopic examination: The obstruction shown to be bilateral and median bar; no stones; moderate cystitis.

Operation: Median perineal prostatectomy; fair-sized lateral and small median lobe. Perineal catheter drainage. Duration of operation, four minutes. Duration of etherization, twelve minutes. Perineal wound healed in eighteen days.

Present condition: Holds urine three to four hours during day and passes it twice at night; cystitis absent; urine almost clear.

Case XV. L. L., age sixty-four. February, 1906. Denies venereal. *Frequency:* During past four years; now every half hour during day and about the same at night; five weeks ago had complete retention; relieved by catheter. *Pain:* During and after micturition at corona glandis; constant dull pain in back, both sides. *Blood:* None. *Stream:* Difficulty in starting; comes slowly and drops directly; considerable dribbling.

Examination: General condition only fair; edema about ankles and under eyes; marked *arcus senilis;* heart action not strong, but regular.

Local examination: External genitals normal; small hemorrhoids.

Rectal examination: Both lateral lobes much enlarged; no median raphe; surface smooth, boggy; increased sensitiveness. Bladder entered with soft rubber catheter, No. 12 Fr. Residual urine, 2½ oz. Bladder capacity, 4 oz. Slight bleeding after catheterization.

Urine examination: Cloudy; acid; 1,023; albumin, ¼%, urea, 2%. Phloridzin, 0.01 gm., sugar appeared in twenty minutes. Sediment: pus, normal and abnormal blood, few hyalin and fine brown granular casts, with fat adherent, small amount of free fat, few renal cells, some with fat adherent, squamous epithelium.

Operation: Median perineal prostatectomy; fair-sized lateral and median lobes. Duration of operation, three minutes. Duration of etherization, eight minutes. Perineal catheter drainage. Perineal wound healed in eighteen days.

Present condition: Passes urine four to six times during day and two or three times at night. Urine still shows the same chronic renal changes.

Case XVI. E. P. S., age sixty-three. March, 1906. Denies venereal. *Frequency:* Increasing for four years until a year and a half ago, when he had retention; since has been catheterizing himself, now several times a day and twice at night. Has recently had difficulty in introducing catheter. One week ago could not make catheter enter. Physician did suprapubic puncture and placed him on siphon drainage. Catheter still tied in. *Blood:* After attempts at catheterization, for past two months; much blood at time of retention.

Examination: Condition fair; slight *arcus senilis;* heart sounds distant, but regular.

Local examination: The epididymis on both sides slightly enlarged and tender; small inguinal hernia on right; left ring enlarged; hemorrhoids. Soft rubber catheter, No. 8, Fr., tied in.

Rectal examination: Both lateral lobes considerably enlarged, right the larger; median raphe absent; top of gland cannot be reached; surface smooth, a little boggy and tender.

Urine examination: Cloudy; slightly acid; 1,018; slight traces of albumin; urea, 3%; sediment consists mostly of pus and squamous epithelium. Phloridzin, 0.01 gm., sugar appears in fifteen minutes.

Operation: Median perineal prostatectomy, large right lateral and median left lateral and middle lobes. Stone felt by staff. Duration of operation, five minutes. Duration of etherization, thirteen minutes. Perineal catheter drainage. Perineal wound healed in twenty-four days.

Present condition: Not determined. Three months after operation was passing urine every three hours during day, and three times at night. Residual urine, 1 oz. Irrigating bladder once daily. Urine still contains some pus.

Case XVII. J. S., age sixty-nine. March, 1906. Denies venereal. *Frequency:* Increasing for past seven years; now draws all urine with catheter, several times during day and five or six times at night. During past six months he had difficulty in introducing catheter. *Pain:* Across back constantly; over pubes and in perineum, most marked when time to pass catheter. *Blood:* Periods with blood in urine several times during the last four years, lasting several days; now has blood in the water occasionally after difficulty in passing catheter.

Examination: General condition fair; moderate sclerosis; heart sounds distant but regular.

Local examination: Testicles show atrophy; fair-sized right inguinal hernia; hemorrhoids.

Rectal examination: Both lateral lobes equally and considerably enlarged; median raphe absent; top of gland forms a sulcus; surface smooth, rather harder and less sensitive than normal. Bladder catheterized with a Bigelow evacuating catheter, which met a resistance in the upper part of the prostatic urethra, and the distal end of the instrument was depressed, suggesting a large median bar. The instrument detected a calculus. Residual urine, 3 oz. Bladder capacity, 5 oz.

Urine examination: Cloudy; alkaline; 1,016; albumin 1-10%; urea, 2.4%; sediment, much, consisting of pus, normal and abnormal blood, much squamous and large caudate cells, few hyaline and fine granular casts, many small, round cells (prostatic?), triple phosphatic crystals. Phloridzin, 0.01, subcutaneously, shows sugar to appear in twenty minutes.

Operation; Median perineal prostatectomy, large lateral and fair-sized median lobes; calculus size of walnut removed. Perineal catheter drainage. Duration of operation, six minutes. Duration of etherization, fourteen minutes. Perineal wound healed on twentieth day.

Present condition: Could not be determined.

Case XVIII. R. M., age fifty-four. September, 1906. Denies venereal. *Frequency:* Increasing for past two years; now urinates every hour during the day and six or seven times during the night. *Pain:* Occasionally in perineum. *Blood:* None. *Stream:* Starts with increasing difficulty, comes slowly and is without projection; dribbles for about one minute.

Examination: General condition good; no evidence of sclerosis; heart normal.

Local examination: External genitals normal.

Rectal examination: Both lateral lobes enlarged, the left the larger; median raphe poorly defined; surface smooth, firm and not tender. Bladder catheterized with soft rubber catheter No. 14 Fr. Residual urine, 3 oz. Bladder capacity, 7 oz.

Urine examination: Slightly cloudy; acid; 1,018; albumin absent; urea, 3.5%; sediment small, consisting of small amount of pus, many small round cells (prostatic?), a few squamous and large round cells. Phloridzin, 0.01 gm., showed sugar to appear in fifteen minutes.

Cystoscopic examination: Showed obstruction to be bilateral lobe encroachment; no stones; considerable reddening of trigone, otherwise bladder wall normal.

Operation: Median perineal prostatectomy, lateral lobes. Perineal gauze drainage. Duration of operation, two minutes. Duration of etherization, eight minutes. Perineal wound healed in sixteen days.

Present condition: Patient holds urine five hours during day and urinates but once at night; urine contains a few pus corpuscles.

Case XIX. W. P. J., age sixty-one. October, 1906. Denies venereal. *Frequency:* Past eight months; most marked at night. *Pain:* In perineum just after urination; occasionally at corona glandis. *Blood:* None. *Stream:* Has started slowly; comes in fair volume and fair projection; dribbles a little.

Examination: General condition fair; moderate arcus senilis. Heart shows an organic systolic murmur; action regular.

Local examination: Both lateral lobes but slightly larger than normal; median raphe not distinct; surface of right lobe smooth; left shows a small nodule, size of a bean, deeply situated; gland abnormally hard and not sensitive. Bladder catheterized with a Coudé No. 10 Fr., which meets resistance in the upper half of the prostatic urethra. Residual urine, 3 oz. Bladder capacity, 9 oz.

Urine examination: Slightly cloudy; acid; 1,022; no albumin; urea, 3.2%; small amount of sediment, consisting of small amount of pus, some normal blood corpuscles, few small round cells (prostatic?), few squamous epithelial cells. Phloridzin test shows sugar to appear in fifteen minutes.

Cystoscopic examination: Cystoscope entered prostatic urethra easily; meets resistance in upper half and considerable pressure necessary to enter bladder; obstruction found to be more from the left lobe and probably some sclerosis of the vesical orifice.

Operation: Median perineal prostatectomy; after removing the two lateral lobes, the vesical orifice was found to be small and less pliable than usual; this was stretched and partially ruptured. Penile catheter drainage with No. 30 Fr. soft rubber catheter. Duration of operation, six minutes. Duration of etherization, sixteen minutes. Perineal wound healed in thirteen days.

Present condition: Passes urine every three to five hours during day and none during night, until recently, when he has been passing it once or twice during the night; urine practically normal.

Case XX. A. C., age sixty-two. October, 1906. Denies venereal. *Frequency:* Increasing for past three years; now urinates every hour during the day and seven or eight times during the night. *Pain:* In perineum and at corona after urination. *Blood:* None. *Stream:* Starts slowly, flows in small caliber without projection and dribbles considerably.

Examination: General condition fair; moderate sclerosis; organ systolic cardiac murmur.

Local examination: External genitals normal.

Rectal examination: Both lateral lobes moderately enlarged; median raphe distinct in lower two thirds; surface smooth, firm, not tender. Bladder catheterized with a soft rubber catheter No. 14, Fr. Residual urine, 4 oz.

Urine examination: High; neutral; 1,018; slight trace of albumin; sediment, chiefly pus, some blood and triple phosphate crystals.

Operation: Median perineal prostatectomy, two median lateral and a small median lobe. Perineal gauze drainage. Duration of operation, four minutes. Duration of etherization, twelve minutes. Perineal wound healed in twenty days.

The patient gained control over the act of urination in a few days, and at the end of three weeks was holding urine four hours. No sounds were passed, and six weeks after operation the patient had complete retention of urine. No instrument could be made to enter the bladder, all meeting obstruction in the prostatic region. A perineal section was done and the prostatic region was found to be obliterated by adhesions. The finger was bored through these until the bladder was reached. The vesical sphincter felt normal. A No. 28 soft rubber catheter was passed to the bladder from the meatus and siphon drainage established for twelve days. Since sounds have been passed at regular intervals, so that the passage has remained patent and of large caliber. The patient, however, dribbles constantly and cannot hold more than 1 or 2 oz. of urine in the bladder.

Case XXI. W. C., age sixty-four. October, 1906. Denies venereal. *Frequcney:* Gradually increasing for past two or three years. Complete retention eighteen months ago, lasting ten days; catheterized. Another attack of retention one year ago; similar attack twelve days ago. Frequency between attacks of retention, every one or two hours during the day, four to six times during night. *Pain:* None. *Blood:* Only after catheterization on a few occasions during retention. *Stream:* Starts slowly, comes with fair force and projection; slight dribbling.

Examination: General condition critical; apathetic with septic appearance. Temperature 102.8°; pulse 120. Had been in bed two weeks. Bladder had become infected.

Local examination: Both testicles slightly swollen and tender.

Rectal examination: Both lateral lobes enlarged; no median raphe; surface smooth, boggy and tender. Bladder catheterized with a soft rubber catheter, No. 18 Fr. Residual urine, 8 oz.

Urine examination: Cloudy and full of foul detritus; 1,008; neutral; albumin, 1%; urea, 1.8%; cryoscopic freezing point, 1.6°; sediment, much, consisting of pus, normal and abnormal blood, much epithelium, especially squamous.

Operation: Median perineal prostatectomy, median lateral and small middle lobes. Perineal gauze drainage. Duration of operation, three minutes. Duration of etherization, ten minutes.

Present condition: Died three months after operation from septicemia and pyemia, following a phlebitis of the leg. The patient expressed his desire to die before operation, and certainly would have had bladder drainage not been established. Many times after operation he expressed a desire to die, made no attempt to help himself and refused nourishment and medication. The urinary system improved satisfactorily after operation, and death must be ascribed to the inroad of a mild infection in a person with greatly lowered vitality from lack of nourishment, rather than to operative interference.

Case XXII. H. L., age fifty-two. November, 1906. Denies venereal. *Frequency:* Increasing for past two years. Three weeks ago retention lasting eight days; relieved by regular catheterization; now passes urine every hour or two during day; six to eight times during night. *Pain:* During and especially after the act in perineum, over pubes and at corona glandis. *Blood:* Several times during periods of retention, after catheterization. *Stream:* Starts slowly, comes in fair volume and projection at first, but then slowly and dribbles for about a minute.

Examination: General condition good; no evidence of sclerosis; heart normal.

Local examination: Old nodule in left epididymis, otherwise normal; hemorrhoids; left inguinal ring enlarged.

Rectal examination: Both lateral lobes enlarged, left more than right; median raphe distinct in lower half of gland, obliterated in upper half; surface smooth, a little softer and more sensitive than normal. Bladder catheterized with Coudé No. 10 Fr., which rotates about 10° to right during its passage through upper part of prostatic urethra, where there is also considerable resistance. Residual urine, 7.5 oz. Bladder capacity, 16 oz.

Urine examination: Slightly cloudy; neutral; 1,019; slight trace of albumin; sediment small, mostly pus, some normal and abnormal blood corpuscles, few caudate and small round cells (prostatic?), one hyaline cast; triple phosphate crystals. Phloridzin, 0.01 gm., shows sugar in fifteen minutes.

Cystoscopic examination: Obstruction shown to be bilateral and small middle lobe; a small calculus found.

Operation: Median perineal prostatectomy, fair-sized lateral and small middle lobe; stone removed without crushing. Duration of operation, five minutes. Duration of etherization, eleven minutes. Penile catheter drainage, Perineal wound healed in twelve days; reopened two days later and healed firmly eighteen days after operation.

Present condition: Passes urine every three to four hours during day and once during night. Some pus still in urine.

Case XXIII. M. H. D., age sixty. November, 1906. Denies venereal. *Frequency:* Increasing for past two years; now every three or four hours during day and once at night; last night, after a dinner party, acute retention. Catheterized. *Pain:* Constantly in perineum and at corona glandis since retention. *Blood:* Much after attempts to enter bladder.

Examination: General condition not good. Heart enlarged; loud systolic murmur and myocardial changes.

Local examination: External genitals normal; bleeding from meatus; hemorrhoids.

Rectal examination: Prostate enlarged laterally; no median raphe in upper half; surface boggy but smooth; not abnormally painful. Bladder catheterized with soft rubber catheter, No. 16 Fr. Residual urine, 16 oz.

Urine examination: Bloody; 1,016; albumin, ¼%; sediment considerable, mostly normal and abnormal blood and pus, some squamous, large and small round cells. Phloridzin showed sugar to appear in twenty minutes.

Operation: Median perineal prostatectomy. Perineal gauze drainage. Duration of operation, eight minutes. Duration of etherization, sixteen minutes.

Present condition: Passes urine three times during day and once at night.

Case XXIV. G. H. E., age fifty-five. January, 1907. Denies venereal. *Frequency:* Gradually increasing for past five years; now urinates from eight to twelve times during day and two to four times during night. *Pain:* In perineum for past week and also at corona glandis during and after micturition. *Blood:* None. *Stream:* Starts with considerable difficulty; small caliber; drops directly; dribbles much.

Examination: General condition fair; very nervous temperament; heart normal.

Local examination: Left testicle slightly atrophied, otherwise normal.

Rectal examination: Both lateral lobes enlarged, left the larger; no median raphe; surface smooth, harder and less sensitive than normal. Bladder catheterized with soft rubber catheter No. 10 Fr. Residual urine, 2 oz. Bladder capacity, 4 oz.

Urine examination: Color normal; 1,016; acid; no albumin; urea, 3%; sediment, small amount, consisting of few pus, normal and abnormal blood corpuscles, few squamous and small round epithelial cells.

Operation: Median perineal prostatectomy, fair-sized lateral and small middle lobe. Penile catheter drainage. Duration of operation, three minutes. Duration of etherization, nine minutes. Perineal wound healed on the tenth day.

Present condition: Passes urine once during night; does not hold it well during day. Had control eight days following operation and passed urine every four hours for four weeks; now dribbles during day. No residual urine.

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Clinical Department.

GANGRENOUS GALL BLADDER IN AN UMBILICAL HERNIA.

BY F. W. JOHNSON, M.D., BOSTON.
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Mrs. J. G., age fifty, entered the hospital Nov. 6, 1904. Twenty-three years ago, during labor, the umbilical hernia first appeared. It has been gradually getting worse, but she has been able to work up to two weeks ago, when severe, sudden abdominal pain between the region of the umbilicus and the liver obliged her to go to bed.

Patient has had a chronic bronchitis of long standing.

Operation Nov. 8, 1904. On the right of, and just above, the umbilicus was found an umbilical hernia the size of two fists, containing omentum, intestine and the gangrenous gall bladder which contained twenty-seven stones and about 300 cc. of inspissated foul fluid resembling old bile. The gall bladder was removed. Patient's condition being very poor and fearing the peritoneal cavity had been infected from the sloughing gall bladder, the incision was not completely closed and three gauze handkerchiefs were packed into the wound in as many directions.

The dressing was changed daily. Three days after the operation one wick was removed; five days after the operation the remaining wicks were removed. Wound looked clean. Thirteen days after the operation wound healed. Dec. 18, patient was discharged wearing an abdominal supporter.

Feb. 11, 1907. Patient has just recovered from an attack of pneumonia, previous to which attack she had attended to her household duties and suffered very little inconvenience from the hernia since the operation in 1904.

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Medical Progress.

HYGIENE.

BY CHARLES HARRINGTON, M.D., BOSTON.

(Concluded from No. 19, p. 612.)

INDUSTRIAL HYGIENE.

Hygiene of cigar making. — An editorial in the *Medical Record* (Aug. 18, 1906) calls attention to the fact that tuberculosis is a common disease of cigar makers, to the habit of the workers of moistening the end of the cigar when rolling the tip, and to another source of contamination that is not so generally recognized, namely, that the cuttings and discarded fragments of leaf which fall to the floor, where they are spat upon and walked upon, are swept and sold. It quotes from an article in a recent number of the *Medico-Legal Journal*, by A. D. Stevens, in which is described a tour of inspection through a very large number of cigar factories. In one of the Southern States and adjacent islands he estimated that nearly one half of the cigar makers were tuberculous or syphilitic. The objectionable practice of finishing cigars with the aid of saliva was commented upon in the report on industrial conditions made by the State Board of Health of Massachusetts to the legislature of 1905, and again in its report of its investigations made during 1905 and 1906 to the legislature of 1907,[22] in which it is stated that in more than one third of the 134 cigar factories visited this practice obtains.

The hygiene of barber shops. — For the disinfection of brushes, combs, etc., Hilgermann [23] proposes the use of hydrogen peroxide solution (10 volumes) diluted one half with water. Brushes infected with staphylococci, streptococci, trycophyton, and favus were completely sterilized in thirty minutes. The action of the disinfectant is not interfered with by fatty matters and the same preparation may be used three times without losing its efficiency.

Industrial poisoning. — In Great Britain and Ireland, during the year 1906, there were reported in accordance with the provisions of the Factory and Workshops Act of 1901, 707 cases of industrial poisoning, against 663 for the preceding year. Of the number, 632 were due to lead, 4 to mercury, 5 to arsenic, and 66 to infection with anthrax. The figures for 1905 were respectively 592, 8, 1, and 59.

Poisoning due to dyed silk. — A correspondent of the *British Medical Journal*, of Nov. 10, 1906, calls attention to the danger of lead poisoning from handling black silk which has been impregnated with lead salts to improve its lustre and increase its weight (being sold by the pound). Not only do the hands come in contact with the lead compound, but a considerable proportion of the substance is given off as dust into the air in which the workers are employed from eight to ten hours. Thus chronic lead poisoning is easily produced.

Hygiene of the textile industry. — In Blackburn, England, there are 128 cotton mills. In 1901 these employed 38,551 persons, or 38% of the population above nine years of age. Of this number (14,518 males, 24,033 females) 70% were engaged in weaving, 18% in winding and warping, 6% in spinning and 5% in carding. According to Dr. Alfred Greenwood [24] the mortality statistics for the fifteen years, 1891–1906, show that the death-rates for each age-period among the four main groups of these operatives have diminished; that the rates among the weavers from fifteen to fifty-five years of age have diminished excepting among women of forty-five to fifty-five years, and have been lower than those for the whole population of the borough since 1891, and that the death-rates from consumption have shown a steady decline except among weavers of forty-five to fifty-five years; and that the death-rates from other respiratory diseases also have shown a marked progressive improvement during each of the last three quinquennial periods. These results are attributed to improved sanitary conditions both at the mills and in the operatives' homes.

According to Mr. F. S. Conn,[25] these mortality returns clearly demonstrate the very great value of the Cotton Cloth Factories Acts of 1889 and 1897, now incorporated in the Factory and Workshops Act of 1901. The Factory Inspector shows that the requirement for better ventilation alone affects upwards of 16,000 operatives in Blackburn, and that whereas prior to 1898 it was the practice to exclude fresh air from the weave sheds as much as possible during a considerable portion of the year, on account of its detrimental influence on the process of weaving, improvements have been made which without injury to the process permit of supplying 4,000 cubic feet of air per capita per hour.

Some of the larger employers have gone much farther than the law requires and their managers say that the improvements have not only reduced sickness, but have improved the output. The Inspector of Cotton Factories says that improved health conditions almost invariably lead to better work and pay well commercially.

Anthrax and horsehair. — Between 1889 and 1905 there were reported [26] from the horsehair and bristle factories of Bradford alone, 77 cases of anthrax, 56 in males and 21 in females, with a mortality of 18 (23%). Most of the cases were traced to horsehair and bristles from abroad; 25, and perhaps 16 others, were traced to mane hair from China. Siberian and Russian hair is often infected. Hair can be disinfected by steam at 220° F. without injury, but at 246° F. it is made brittle and inelastic. In Germany, anthrax has decreased since 1899, when it was provided that all horsehair and bristles should be boiled in water for two hours, or in 2% potassium permanganate solution for fifteen minutes, with subsequent bleaching with 3% to 4% sulphur dioxide.

From a letter from the Vienna correspondent of the *Journal of the American Medical Association*, printed in the issue of March 30, 1907, the following is taken: "An outbreak of anthrax occurred quite recently in one of the hair factories here, and of the 6 cases affected, 4 proved rapidly fatal. Investigation showed that all 6 patients had been working in the same room, and the material used by them could be traced to a Russian bale of goods. Immediately work was suspended in the factory, and very exhaustive measures were adopted to have the premises and the goods disinfected thoroughly. At the same time the inspectors of the slaughtering houses were advised to keep up very strict supervision of their respective districts, with the result that a case of anthrax was found in a group of twenty-seven cattle. The necessary measures were thereon instituted and the carcass of the animal burned.

As regards the treatment of the affected factory hands (4 male, 2 female), the first four patients were beyond any hope of recovery when brought to the hospital. The disease had not been recognized by the medical man in attendance; the other two patients were treated in time by excision simply and they recovered. The necessity of international notification of similar outbreaks has now been proved *ad oculos*. In quiet times this would hardly have occurred, but the civil disturbances in Russia have brought it about that infectious material is exported."

Smoke and lung disease. — L. Ascher [27] asserts that smoke is responsible for much of the increase in the amount of acute diseases of the lungs observed in various countries. In East Prussia, in the rural districts, the infantile death-rates from non-tubercular respiratory diseases is one third of that of the industrial centres of the Rhineland and Silesia, where the miners' death-rate from the same diseases is 135% higher than in the whole of Prussia. He experimented on rabbits with soot, and states that this substance paves the way for the tubercle bacillus as well. The rabbits exposed to much smoke died at twice the rate of those exposed to small amounts.

Wood alcohol poisoning from varnish. — An unusual case of poisoning by wood alcohol is reported by Dr. H. Gifford.[28] After working about four hours in a room of 1,800 cubic feet capacity, tightly closed so as to keep out dust, applying to the woodwork first a stain and then a varnish, both made with wood alcohol, a man became absolutely blind, but had no other symptoms of poisoning. After a week, vision began to return, but after a few weeks it began to fail again, and in six months he was quite unable to see. Very slow improvement began again, and in about a year he was able to find his way about the streets.

DISINFECTION.

New method for formaldehyde disinfection. — In place of the usual methods of formaldehyde disinfection, which are expensive on account of the amount of alcohol required, dangerous on account of the possibility of fire and slow in disengaging the gas, Eichengrün [29] advises the use of a compound of paraform and metallic peroxides (barium and strontium), which he calls "autan." It comes both in the form of powder and in tablets. On being wet with water, a mixture of paraform and peroxides gives off formaldehyde more or less quickly, according to the proportions of the ingredients. If they are present in equal amounts the powder on being mixed with twice its weight of water explodes with violence; but as prepared, it gives off the gas quickly, but with no explosion. Selter [30] states that the action is so rapid, and the room is filled so quickly, that it is hardly necessary to do more than close the larger ventilating openings. In his experiments, using as test objects staphylococci, anthrax spores and fresh tuberculous sputum, the results were good, although a few staphylococci and many anthrax spores survived.

Wesenburg [31] conducted a series of experiments, in which he used as tests, old library books, staphylococcus aureus, anthrax spores, colon and typhoid bacilli, and pus (*St. aureus* and *B. pyocyaneus*), with good results. He used an ordinary kettle, in which he placed 1,000 gm. of autan, upon which he then poured 900 cc. of water. Not only was the gas given off rapidly, but the air of the room was quickly saturated with aqueous vapor. From his results he concludes that complete disinfection may be expected from the use of 1.4 kilo of autan per 50 cubic meters of air space, with exposure for six to seven hours.

He recommends the process as particularly adapted to the disinfection of closets, wardrobes and other small spaces, with their contents. It is perfectly safe and very simple, there being no danger of fire and no need of any apparatus beyond a pail or tub and a stick with which to stir the mixture with water. The material is put up in tin cans for rooms of different cubic capacities, and each can is accompanied with an "ammonia generator" containing ammonium chloride. The strongly alkaline residue in the can is treated with water, the ammonium salt is poured into it and the resulting ammonia neutralizes the formaldehyde gas after the desired period of exposure.

With the suggestion of Eichengrün, Selter and Wesenburg, that it is unnecessary to make a room as air-tight as possible, Dr. A. Nieter [32] does not agree. He finds the advantages of the process to be its simplicity, the freedom from danger of fire, and the possibility of a number of disinfections going on simultaneously under control of a single official. On the other hand, a distinct disadvantage is the high price of the material.

Disinfection of feces. — To determine the penetrating power of certain disinfectants in contact with solid feces, Dr. M. Kaiser [33] experimented with 5% and 10% solutions of caustic soda, 20% suspension of slaked lime (milk of lime), and 5% and 10% solutions of liquor cresoli saponatus (German pharmacopeia). The caustic soda solutions gave the best results, since they softened and broke down the masses much more rapidly than the others. With feces broken up with a spatula and then covered with the disinfectant, the caustic soda solutions were again very much more efficient, for growths were obtained after twenty-seven hours' contact with the 10% cresol preparations, and six hours' contact with milk of lime, while negative results were obtained after four hours' contact with 10% caustic soda. Even the most solid feces, if not larger than 1 cm. in diameter, were sterilized by three hours' contact with 15% caustic soda. He suggests a preliminary treatment for two hours with cresol soap or caustic soda, and then, after the feces are broken up with a spatula, an additional exposure for several hours.

Disinfectant properties of silver compounds. — The various silver preparations in common use have been studied by C. R. Marshall and E. F. Neave [34] who report that argyrol and collargol have practically no bactericidal power, nargol has some power, and actol, itrol, argentol, argonin, argentamine, ichthargan, novargan, largin, protargol and the nitrate and fluoride possess it to a marked extent. The percentage of silver present in combination is no criterion of the germicidal power of any given preparation. Indeed, the least powerful contains the highest proportion (86.6%), and certain of the best contain the least.

Naphthol preparations in disinfection. — Both alpha- and beta-naphthol possess very marked bactericidal power, but their very slight solubility in water has made them unavailable for general use. Attempts to introduce beta-naphthol in the form of its soluble sodium compound have come to naught, because by the influence of light and air the compound is converted into an insoluble inert substance. Schneider[35] found that equal parts of beta-naphthol and dried sodium carbonate, thoroughly mixed, can be employed to advantage, the carbonate promoting the solution of the naphthol in water without forming with it a new compound. A 1% solution of this mixture killed in ninety-six hours dried anthrax spores which resisted the action of 5% lysol for ten days; and a slightly stronger solution (1.50%) destroyed them in seventy-two hours. Against typhoid organisms and staphylococci the mixture proved to be about twice as powerful as lysol, which is a solution of cresol in soap, produced from tar oil and linseed oil or other fat, saponified with caustic potash and alcohol. It contains usually about 50% of cresol.

Poisoning by lysol. — At the meeting of the Prussian Society of Medical Officers, held in Berlin, in April, 1906, Dr. Arthur Schultz reported that, in 1904, lysol was the chief agent used by suicides, and that, in Berlin, scarcely a day passes without at least one newspaper report of a death caused by its use. Dr. F. Blumenthal[36] states that about 100 cases come to treatment in Berlin every year. No antidote is known, but if the victim does not die within twenty-four hours, recovery without serious after-effects is probable. As a rule the pathological appearances are too slight to account for death, and hence one must regard the substance as a cardiac and nerve poison. As treatment he recommends washing out the stomach until the washings no longer smell of the substance; and as the contained cresol has an affinity for fat, the washing process can best be done with milk. For the heart, stimulants are recommended. Dr. F. Hirschberg[37] describes the clinical history and anatomical findings of 24 cases which have come under his observation, and proposes prohibition of the custom of sending out free samples of disinfectants until their harmlessness has been proved.

A new disinfectant. — Metakaline, a compound of hard soap and potassium metacresolate, is found by Dr. G. Wesenberg[38] to possess great germicidal powers. In .5% solution it is effective against the common pathogenic bacteria within a few minutes, and is absolutely non-irritating.

ACTION OF SUNLIGHT ON PATHOGENIC BACTERIA.

The generally recognized freedom from infection by the common pathogenic bacteria enjoyed by the natives of the torrid zone is explained by Martin[39] as not due to natural immunity but to the lack of the infecting agents, which are shown by him to succumb very quickly to the action of the sun's rays, and perhaps to the extreme diurnal variations in temperature — nearly 70° difference between noon and nightfall. Examinations of the soil and of the air revealed the presence of non-pathogenic bacteria in comparative abundance. In this connection, certain experiments on the action of the sun's rays on *Bacillus tuberculosis* by J. Weinziel[40] are of interest. He made direct exposures of cultures of *B. tuberculosis* and other organisms on glass or paper and found that with no protection the former were destroyed in about ten minutes and *B. coli* and other non-spore-bearing species in from two to ten minutes.

COPPER SULPHATE AND MOSQUITOES.

A series of experiments on the action of copper and of copper salts on mosquito-breeding led Dr. J. H. Ford, U. S. A.,[41] to the following conclusions: Copper sulphate in 1: 100,000 solution is prejudicial to the development of culex larvæ into pupæ, but has little influence in preventing the emergence of the imagines from mature pupæ. In 1 : 500,000 strength it appears to have a temporary influence upon the development of mature larvæ, but is toxic to those which do not respond to this stimulus in the first three days. In 1 : 1,000,000 strength it has no toxic effect on pupæ and but slight, if any, effect on larvæ. Metallic copper appears to have little or no influence.

FORMALDEHYDE IN THE ATMOSPHERE.

The first to mention formaldehyde as a normal constituent of the air was Henriet, who asserted that it is present to the extent of 2 to 6 gm. per hundred cubic meters. According to A. Trillat,[42] however, not only are these amounts impossible, but the gas is present merely as an impurity, being a constituent of smoke. In the air of one district of Paris, Trillat found from .024 to .031 gm. per hundred cubic meters, and he has found as high as .055 elsewhere (Courbevoie). In a kilogram of soot he found[43] 3.5 gm., and by burning a kilogram of refined sugar in the air and in a stove, he obtained from the resulting smoke, 5.2 and 30.0 gm. respectively. From the air at different heights from the street level he found[44] widely different amounts of the impurity. He shows[45] also that it is formed in varying amounts in the incomplete combustion of all kinds of material, and that exposure to the smoking process is in effect carrying out disinfection.

HYGIENE OF GAS STOVES.

Among the conclusions reached from a series of tests of gas stoves, conducted under the auspices of the Coal Smoke Abatement Society[46] are the following:

A properly constructed gas stove with a sufficiently large flue is quite as satisfactory from a hygienic point of view as a coal fire and does not vitiate the air nor produce any abnormal drying effect as is popularly supposed. It is quicker in results, more easily regulated, and the temperature of the room is controlled in a way which is not possible with coal fires. The flueless stove on the other hand, while very economical of gas, discharges large volumes of carbon dioxide gas into the room, and if anything goes wrong with the flame and the combustion becomes imperfect, it pours out in addition the poisonous products, which, in the case of the flue stove, are discharged into the chimney. On account of the beneficial effect which they were capable of producing on the rate of ventilation, it is recommended that gas stoves should have their flues provided with independent inlet openings for air.

According to Dr. John S. Owens,[47] in tests of 25 different kinds of gas stoves, including 5 without flues, each test lasting eight hours, and the rooms having about 8,000 cubic feet capacity, with unplastered brick walls, the carbon dioxide content never rose to more than 9 parts per 10,000 except in the case of flueless stoves, of which two caused more than 30 per 10,000. Carbon monoxide was detected in but 3 cases; one was a flueless stove, and another a flue stove found to be faulty. A good many of the stoves produced a smell in the room, from "very slight" to "strong and unpleasant." Only 12 were noted as producing no smell.

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Book Review.

Talks to First Year Nurses. By Alfred T. Hawes, M.D. Illustrated. Boston: Whitcomb & Barrows. 1907.

This small book of 191 pages, including an index, is designed to give nurses information sufficient to understand the general condition of their patients and to carry out their work intelligently. The book is extremely elementary, and herein lies its chief merit. A common failing in textbooks for nurses is to go so far into medical matters that the book becomes rather a description of the elements of medicine than a statement of facts which a nurse should know. The author has certainly not fallen into this error.

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THE VALUE OF THE OPSONIC INDEX.

During the past year a number of laboratories in this country, under the stimulus received from Sir Almroth Wright at the time of his visit, have been investigating the opsonic index in various conditions. These workers have engaged in this study with an enthusiasm born of the magnetic personality of Wright and the numerous reports of the brilliant results obtained from vaccine therapy when guided by estimations of the opsonic index. This enthusiasm has been tempered by the calm judgment and critical spirit inculcated in these workers by their previous extensive experience in laboratory investigation. It was, therefore, with particular interest that the symposium on the opsonic index was listened to, at the meeting in Washington of the Association of American Physicians, since it presented the results obtained during the past year by these different laboratories.

The combined judgment of the American investigators represented at this meeting seems to have considerably discredited the importance of the opsonic index. Speaker after speaker expressed the view that there were many possibilities of error inherent in the method, and that the variations that resulted might be great. Under these circumstances, the results of estimates of the opsonic index should be interpreted with great caution. Some even went so far as to state that they believed that a determination of the opsonic index was of very little value. A few favored opsonic estimates, but the mass of opinion was far more against than in favor of the index. Possibly the pendulum has swung too far, but these opinions coming from such sources cannot be neglected. The future may give us a better method of estimating body resistance than that of determining the opsonic index as now practised. This will probably be the case for, notwithstanding unfavorable criticisms of the opsonic index, the value of bacterial vaccines as a therapeutic measure in many conditions was fully recognized, though not especially discussed. Some measure of this action is needed and if discovered will aid much in treatment. Work along the lines of the opsonic index should then be continued, but it seems to us that this should be more in the nature of laboratory investigation than as a clinical procedure. On the other hand, vaccine therapy along the lines already established should continue to be practised and from it good results are to be expected in many patients.

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THE DIAGNOSIS AND PROGNOSIS OF PRIMARY ACTINOMYCOSIS OF THE CENTRAL NERVOUS SYSTEM.

IT has generally been conceded that the diagnosis of primary actinomycosis of the central nervous system is an impossibility, and even in cases of secondary invasion one rarely arrives at the correct conclusion, for the simple reason that the primary focus may have disappeared a long time previously, while in other cases it has been passed by unnoticed and is only recognized at autopsy. Usually a cerebral neoplasm or hemorrhage, tuberculous or cerebrospinal meningitis is diagnosticated, or at least, suspected, and it would seem impossible to come to an exact conclusion as to the nature of the affection. Such difficulties become insurmountable when the disease is primarily located in the brain. A primary visceral focus, such, for example, as in the lung, has some chance of being diagnosticated by the examination of the sputum, which may reveal the presence of the specific organism, but in the case of the brain no such definite means are known enabling one to determine the nature of the causal agent.

At the present time, however, it cannot be absolutely said that the diagnosis of a primary localization of the actinomyces in the brain cannot be made, because, as illustrated in a patient presenting the symptoms of a cerebral neoplasm, Monod, having removed a certain amount of cerebrospinal fluid by lumbar puncture, found the typical organisms of actinomycosis and the lesion was confirmed by direct examination later on. It is rather astonishing that this diagnostic measure has not generally been resorted to; in those cases of cerebral actinomycosis which have been published, it is not mentioned excepting in a recent case reported by Pearce, where, however, the examination was negative. A positive result in all cases naturally must not be anticipated, for the simple reason that certain conditions must be present in order that the presence of the actinomyces in the cerebrospinal fluid may be recognized. The cerebral abscess or neoplasm must be in direct relationship to the ventricular cavities, and, on the other hand, if the case is one of secondary infection, the parasite is generally not long in disappearing. It, therefore, may be said that the examination of the cerebrospinal fluid is the only key to the diagnosis which we now have. This means is not infallible, but lumbar puncture may give rise to very important knowledge from the diagnostic point of view and should be resorted to, even several times if necessary, since at the same time it may also serve as a therapeutic measure.

Writing in 1902, Duvau asserted that there never had been a recovery from cerebral actinomycosis, and as far as we are aware no case has occurred since this date which would change this statement. No matter what may have been the localization of the parasite, no matter how minute may have been the lesion, death has always resulted more or less rapidly. The neoplastic type has given the longest lease of life, Bollinger's case having lived a year from the time of the first appearance of the symptoms. The suppurating type has a much more rapid evolution. If the suppuration is distinctly circumscribed, the patient may have some chance of living if surgical treatment is undertaken in time, because, by evacuating the pus, an improvement of the symptoms may occur. This was the case in Keller's patient, who lived nearly a year after surgical interference, but in cases of diffuse suppuration, death occurs within a few days. The prognosis of the medullary type is quite as bad.

The exhibition of potassium iodide, which is certainly the specific remedy of the disease, has been useless in the cerebral forms, so that a symptomatic treatment should be undertaken in order to reduce the sufferings of the patient, and lumbar puncture, by diminishing the intracranial pressure, has given good results in this direction.

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THE WEIGHT OF THE SOUL.

IT is no doubt well to keep our minds open to new hypotheses and to weigh evidence, however bizarre it may be, with what knowledge we have. We confess, however, that it is a considerable shock to our sensibilities to read, in a recent number of *American Medicine* (April), an article which seriously discusses the question of the weight of what we are accustomed to call the soul, or, more technically speaking, that part of the conscious personality which may survive death. Under the title, "Hypothesis Concerning Soul Substance, Together with Experimental Evidence of the Existence of Such Substance," Dr. Duncan MacDougall, of Haverhill, Mass., attacks this question as a problem capable of being solved by mechanical means. It does not concern us, at present, to discuss the metaphysical conceptions and arguments which Dr. MacDougall advances as a basis for his research. He conceives that modern science forces us to the assumption that soul substance is presumably a form of gravitative matter and, therefore, capable of being detected at death by weighing a human being in the act of dying. To accomplish this end, the bed upon which the patient lay was arranged on a frame work resting upon very delicately balanced scales. Six persons were observed immediately before death and immediately after death by means of this apparatus. The essential result of the experiments showed, according to the deductions of the author, that a loss of substance occurs at death not accounted for by known channels of loss. If this latter fact could be proved, and here naturally lies the crucial difficulty, the query arises, Is this loss of weight, amounting to an ounce, more or less, due to the soul substance which at that moment leaves the body? Dr. MacDougall is not dogmatic, but he is inclined to think that an affirmative answer should be given to this query. We take the liberty of reserving our opinion, at least until the experimentation has covered many more cases than are at present available. The solution of this great riddle has been attempted by various means since men began to think, but we question whether so ingenious and yet so simple a method has before been devised to attempt the demonstration of the persistence of the individual after death. Dr. MacDougall deserves credit for his ingenuity and scientific spirit, but surely in such a matter a conclusion should not be hastily drawn. We await further experiments with interest and skepticism.

GREAT FRENCHMEN.

A *plébiscite* has, perhaps, oftener than not, been characterized by lack of wisdom, especially in France. Recently, however, there was a vote of and by the people on the question of the relative pre-eminence of great Frenchmen of the last century, and the physician and the scientist must view the result with much approbation. The balloting was held under the auspices of the *Petit Parisien*, one of the most widely circulated of French newspapers, and one representing very well the average opinion in that country. By this vote —fifteen million answers were received — one may judge whom the French people consider to be their great men and what their idea is of civic duty as well as of intellectual and moral distinction. Only those observers, declares the Paris correspondent of the London *Times*, who have intimately studied the evolution of the French mind and feeling over an unbroken series of years can comprehend the profound transformation which the Republican school system and stable Republican government in general have effected in the view points of the present generation of Frenchmen.

Pasteur, who declared that it is in human power to banish from the earth all infectious diseases and who opened the path to such a result, led the list with 1,338,425 votes. Next came Victor Hugo, whose greatest novel strongly enlisted sympathy in behalf of the nether world. The great Napoleon came fourth. Seventh in the list was Curie, the discoverer of radium; and the ninth was Roux, Pasteur's co-worker. Following him came Parmentier, the introducer of the potato in France, and then Ampère, the father of dynamic electricity. After Brazza, Zola and Lamartine, Arago, the astronomer and physicist, occupied the fifteenth place. Sixteenth came Sarah Bernhardt; and immediately after her Waldeck-Rousseau, and then MacMahon. Next came President Carnot; and twentieth, Chevreul, the centenarian chemist, and so on through five hundred and two names. This showing must be most pleasing to those who wish well for humankind, demonstrating as it does a tendency to honor above others those who have lived their lives, not as destroyers of men and of institutions, but in behalf of human health and happiness.

REAPPOINTMENT OF DR. HENRY P. WALCOTT.

Few men in this community have been so closely identified for many years with important state affairs as Dr. Henry P. Walcott, of Cambridge. It is gratifying that the governor has recently reappointed him to the important post of chairman of the State Board of Health, a position which he has for many years held with conspicuous ability and public spirit. The high position which the Massachusetts State Board of

Health has taken is due in no small measure to the disinterested leadership of Dr. Walcott, whose intelligent interest in matters of public sanitation has been widely recognized for forty years.

MEDICAL NOTES.

A Centenarian. — Mrs. Josephine W. Kroll has recently died in New Orleans at the reputed age of one hundred and five years. She is said to have attended receptions at the White House and assisted in its restoration after its burning by the British in 1814.

Large Damages for the Loss of a Leg. — It is stated that a New York jury has recently rendered a verdict of $35,000 for the loss of a leg. The plaintiff was a young woman fond of dancing and athletic sports. The defendant was the New York Central Railroad. The plaintiff's appearance in court, crippled, combined with her natural beauty, is reported to have had an appreciable effect on the jury.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 15, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 45, scarlatina 26, typhoid fever 4, measles 51, tuberculosis 48, smallpox 0.

The death-rate of the reported deaths for the week ending May 15, 1907, was 19.66.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, May 11, 1907, was 242, against 226 the corresponding week of last year, showing an decrease of 16 deaths and making the death-rate for the week 20.96. Of this number 127 were males and 115 were females; 233 were white and 9 colored; 153 were born in the United States, 86 in foreign countries and 3 unknown; 52 were of American parentage, 167 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 57 cases and 3 deaths; scarlatina, 26 cases and 1 death; typhoid fever, 6 cases and 1 death; measles, 40 cases and 1 death; tuberculosis, 37 cases and 11 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 29, whooping cough 1, heart disease 33, bronchitis 10 and marasmus 3. There were 15 deaths from violent causes. The number of children who died under one year was 37; the number under five years 51. The number of persons who died over sixty years of age was 54. The deaths in public institutions were 75.

There were 15 cases and 10 deaths reported from cerebrospinal meningitis during the week.

Address by Dr. Frederick C. Shattuck. — It is announced that the address at the commencement exercises of the Yale Medical School will this year be delivered by Dr. Frederick C. Shattuck on the subject, "The Art and Science of Medicine."

Bequests. — Among the many bequests of the late John C. Haynes, the following are of medical interest: $1,000 to the New England Hospital for Women and Children; $1,000 to the Perkins Institution for the Blind; $2,000 to the Home for Aged Couples; $5,000 to the Massachusetts Homeopathic Hospital, — all Boston institutions.

A Protest against Insurance Fees. — It is announced that the members of the Worcester, Mass., District Medical Society at a recent meeting unanimously adopted resolutions denouncing the recent reduction in examination fees from insurance companies from $5 to $3. The members of the society agree to decline making examinations for the reduced fee or to accept the position of examiner from which any member of the society had been removed.

Popular Science. — The following conversation is reported:

After listening for an hour to the remarks of Professor Chittenden at a Lowell lecture in Boston, illustrating the value of proteids for the system, two women were leaving Huntington Hall when one, turning to the other, said, "Grace, are oranges proteids?"

"I don't know what proteids are," said the other, "but I shall always eat them in the future."

Centenarians. — Stephen E. Boynton, of South Deerfield, Mass., died May 9 at the reputed age of one hundred and four years. For a year he has been feeble, but remained active up to his one hundredth year. Until recently Mr. Boynton had been able to recall the events of the war of 1812.

Benjamin Warner, said to have been one hundred and one years old, died in Woodstock, Conn., last week.

Reappointment of Dr. Austin J. Peters. — It is a matter of congratulation that Governor Guild has renominated Dr. Austin J. Peters to the position of chief of the Massachusetts Cattle

Bureau. This reappointment has an added significance from the fact that it is a ratification of Dr. Peters' recent vigorous enforcement of the law regarding the treatment of dogs in this state. It will be remembered that opposition to his policy in relation to the suppression of hydrophobia has recently been manifested by certain interested persons and associations.

The Eight-Hour Law at State Hospitals. — The amended eight-hour law passed by the last Massachusetts Legislature placed the state institutions in a somewhat difficult position regarding their expense account. Through a recent rendering of the law by the Attorney-General, it appears that domestic service at the various hospitals will be hampered by the application of the new law, inasmuch as cooks, maids and other servants are included in the meaning of the law and cannot be required to work more than eight hours a day, and that the employment of domestics on an hourly basis is not permissible. It, therefore, appears that the law is far reaching in its effect, and it is evident in certain sorts of work will mean a decided increase of the expense of maintenance.

NEW YORK.

Gift to Princeton University. — It is announced that Princeton University has received from donors whose names are at present withheld a gift of $1,200,000, for the erection, equipment and maintenance of scientific laboratories, one of which is to be devoted to biological work.

Decrease of Trachoma. — It is gratifying to learn that trachoma among the public school children is rapidly decreasing. As the result of a report made on May 1 to the Health Department by Dr. Herbert W. Wootton, one of the ophthalmologists of the board, President Darlington announces that the number of cases has become reduced from 15,000 to 8,700. He also advocates additional accommodation for the operative treatment of the disease among the children.

An LL.D. for Dr. Joseph D. Bryant. — The corporation of the New York University has conferred the degree of Doctor of Laws upon Dr. Joseph D. Bryant, president-elect of the American Medical Association. Dr. Bryant, who was graduated from Bellevue Hospital Medical College thirty-nine years ago, has held a professorship first of anatomy and then of surgery, for twenty-nine years in that school and in the reorganized New York University and Bellevue Hospital Medical College. Only two of the present professors in the faculty of the college, Drs. Edward G. Janeway and A. Alexander Smith, outrank Dr. Bryant in their term of service.

Current Literature.

The Journal of the American Medical Association.
April 27, 1907.

1. *Walls, F. X. *Digestion of the Proteids of Cows' Milk.*
2. *Cooper, C. M. *Correlation of Clinical and Radio-Diagnostic Findings.*
3. *Thomas, H. M., and Greenbaum, H. S. *Multiple Neuritis (non-diphtheritic) in Children.*
4. *Gellhorn, G. *A New Mode of Treatment for Inoperable Cancer of the Uterus by Acetone.*
5. *Howard, C. P. *Myxedema. (Concluded.)*
6. Coleman, F. *Electricity in Ophthalmic Practice.*
7. Jordan, W. M. *Toxemia of Pregnancy.*
8. Ballantyne, J. W. *Influence of the Mother's Health in Pregnancy on Her Unborn Child.*
9. *Wootton, W. T. *Surgical Anesthesia with Special Reference to Post-anesthetic Nausea and Vomiting.*
10. Gordon, A. *The Function of the Prefrontal Lobes.*
11. *Schott, T. *Acute Overstraining of the Heart.*

1. Walls' statements if confirmed will shake to their foundations the present accepted principles of the percentage feeding of infants. The indigestibility of the proteids of cows' milk, which hitherto has been considered the great difficulty to be overcome in preparing substitutes for human milk, according to Walls, does not exist. The formation of large curds, which occurs in test-tube experiments, he believes to be prevented in actual digestion by the movements of the infant's stomach. The so-called curds which appear in infant stools he has shown by examination to be composed of fats or fatty soaps, bearing absolutely no relation to proteid materials. These lumps, he says, can be made to disappear from the stools by diminishing the fat of the milk, and in over 200 cases in which undiluted fat-free milk was given and the stools carefully examined no curds were found. Walls maintains that no digestive disturbances can be traced to the albuminous materials in cows' milk, whereas excess of fats is the commonest cause of such disturbances. He concludes, therefore, that in sterile fat-free milk we possess an unequaled therapeutic agent in the treatment of the nutritive disorders of infancy. This is not, however, advised in the feeding of normal infants. In these whole milk is to be given, diluted at first with two parts of water, in feedings not oftener after the first week than once in four hours during the day and twice in the night. As the age increases the dilution can be lessened, until by the sixth month undiluted cows' milk can be given.

2. Cooper reports many interesting observations by means of the x-ray which point out important lessons in clinical diagnosis. Observations of the diaphragm have shown that exact study of the outlines of the lungs by percussion is too often omitted. Centrally located consolidation, tubercular or pneumonic, may often be found by x-ray when it cannot be detected by physical signs. In examining cases when the x-ray revealed such conditions, Cooper has found that perceptible changes are more commonly present in *percussion resistance* than in percussion note. Peribronchial glandular enlargements and interlobar empyema may also be found only by x-ray; aneurism, however, should almost invariably be recognized by physical signs. A case of pneumothorax was observed which had prominence and diminished respiratory movement on the left, with hyper-resonance and diminished respiratory murmur, but with absence of amphoric note, of amphoric breathing, of coin sound and of displacement of the heart. A local functional spasm of the diaphragm was seen, a functional dilatation of the aorta, simulating aneurism, confirmed post-mortem, was proved to exist. Broadbent's retraction of the left lower posterior chest wall was shown by post-mortem evidence to occur *without* adhesions. A case of pouch of the esophagus was demonstrated in which a change in pulse rhythm was observed according as the pouch was full or

empty. Some success was attained in studying abdominal organs, especially kidneys, liver and stomach. The article is somewhat fragmentary since many records were destroyed in the San Francisco fire.

3. Thomas and Greenbaum believe that multiple neuritis in children, independent of diphtheria, is more common than is generally supposed, probably since many cases are mistaken for anterior poliomyelitis. They have found in the literature only 138 cases in children, but of 21 cases of multiple neuritis, not diphtheritic, seen at the Johns Hopkins Hospital, 8 occurred in children under twelve. The symptoms in children do not differ from those in adults. Multiple neuritis is to be distinguished from anterior poliomyelitis by a more insidious onset, more often without fever, by the presence of a cause, such as lead, arsenic or infectious disease, to which it can be traced, by a more frequent occurrence of pains and sensory disturbance, by a more widespread and often a symmetrical distribution which is rare in anterior poliomyelitis and by its ultimate complete or nearly complete recovery. The differentiation is important on account of the far better prognosis in multiple neuritis. The treatment consists of removal of the cause if possible, hygienic and tonic treatment, together with massage, electricity and hydrotherapy to the affected parts. Many cases have occurred in local epidemics, sometimes associated with epidemics of anterior poliomyelitis.

4. Gellhorn recommends the use of acetone in inoperable cancer of the uterus, not as in any way a curative measure, but as a means of overcoming the stench which is often the most distressing circumstance connected with the case. Acetone is extensively used in pathological laboratories to harden tissues; its use was therefore suggested to produce an effect upon the cancerous surface similar to that of cauterization. Gellhorn applies it first after a preliminary curettage under anesthesia. Subsequent applications of the acetone are given twice to three times a week without anesthesia, the acetone being held in the cavity for fifteen to thirty minutes each time. The result is a great diminution of or complete relief from discharge and odor, and a cessation of hemorrhages. The pain of the growth requires anodynes as before, but with cessation of hemorrhages the general condition of the patients so far treated has visibly improved and the odor has been entirely overcome.

5. Howard's paper is a report of Osler's 20 cases of myxedema, with an analysis of 100 cases of myxedema reported in American literature. Cretinism and postoperative myxedema are not considered. Myxedema proper is rare in negroes, and occurs most frequently in cold climates. It has been reported in several members of a family. Women are more often attacked than men, especially after rapid child-bearing. A previous history of Graves's disease is sometimes obtained. In its pathology the thyroid gland is found small and pale, and the skin on section is jelly-like and contains an excess of mucin. The symptoms begin, as a rule, insidiously, with languor, chilliness and slowness of motion. The most characteristic symptom is the presence of an edema which does not pit on pressure, causing an increase of weight and bulk and giving a mask-like immobility of facial expression. Supraclavicular pads and enlarged extremities are observed. The skin is dry and harsh, the hair is coarse and tends to fall out, the nails are brittle; the lips are often enlarged and salivation may occur. Next to the cutaneous system the nervous system is most strikingly affected. A functional derangement occurs, characterized chiefly by a slowness in all its activities. Somnolence is common, memory is often impaired; changes of disposition, various phobias, delusions and hallucinations or actual insanity may be present. Abnormal sensations, especially chilliness and sense of fatigue, also neuralgic pains, headache and various paresthesias are frequent. Slowness of motion is rarely absent; the gait is clumsy and lumbering; paresis of various muscles may occur. The speech is very constantly slow and monotonous. Special senses are often impaired. The temperature is nearly always subnormal. Hemorrhage from mucous surfaces is common. Albuminuria is often present, but the amount of albumin rarely exceeds a trace. The diagnosis, as a rule, is easily made from symptoms and appearance, and by exclusion of other diseases, such as Bright's disease; the therapeutic test serves as final confirmation. The treatment consists in careful administration of thyroid extract, beginning with one 5-grain tablet a day or less and gradually increasing the dose. Acceleration of the pulse is usually the first sign of overdosage; extreme prostration, headaches, sweating and irritability are other toxic effects. The first sign of improvement is the rising of the body temperature; following this are seen diminutions in edema and in body weight and improvement of all symptoms. With thyroid treatment not too long deferred, life should not be appreciably shortened. Of the cases of this series since the use of thyroid extract was discovered, 4.1% of the cases collected died of the disease and 79% were completely cured.

9. Wootton has followed the practice of giving oxygen inhalations as routine after anesthesia, beginning immediately on suspension of the anesthetic (ether) and continuing until consciousness is regained. In two years' experience at the Ozark Sanatorium, he asserts that he has not had one patient that has been disturbed by nausea or vomiting when this has been done. The list of operations includes almost all procedures known to major surgery.

11. Schott describes experiments and clinical observations bearing upon the condition known as acute overstraining of the heart. Clinically the condition appears after excessive exertion with severe symptoms of cardiac insufficiency. Examination reveals cardiac dilatation and hyperkinesis. In acute cases recovery is rapid and the condition does not necessarily recur. Observations upon healthy persons after severe exertion in wrestling and in bicycle riding, the heart being examined both before and after, show that such exertions produce marked dilatation which may well produce muscle straining. In treatment of such acute overstraining of the heart, rest is the first essential, aided by digitalis, heat or cold to the precordia and morphia if necessary for pain. Generous nourishment is important, and later bath treatment, carefully-graded exercise and long avoidance of overexertion. [F. W. P.]

THE LANCET.

April 20, 1907.

1. *Jamieson, J. K., and Dobson, J. F. *The Lymphatic System of the Stomach.*
2. Shaw, T. C. *Suicide and Sanity.*
3. *Hay, J. *The Early Diagnosis of Consumption.*
4. *Bardswell, N. D. *The Immediate and Ultimate Results of the Sanatorium Treatment of Pulmonory Tuberculosis.*
5. Johnson, A. E. *On Ligatures and Buried Sutures with Special Reference to Catgut.*
6. Choksy, N. H. *Some Indications for the Treatment of Cholera.*
7. Hall, F. de H. *A Case of Pressure on the Trachea.*
8. *Wernich, S. F. *The Successful Treatment of Tuberculosis and Leprosy, etc.* (Concluded.)

1. This is a careful and thorough anatomical research on the lymphatics of the stomach based on injections of about thirty of these organs. It makes clear what glands must be removed in a radical operation for cancer in this region. The sub-pyloric group must be removed at any cost, as it is involved in 60% of cases. Its removal, however, is extremely difficult.

3. Hay discusses the early diagnosis of consumption in obscure cases met with in an out-patient department. He describes the pathology with its results, local and constitutional. The local lesion may be fibrosis, protective and conservative, or caseation, distinctive and progressive. He emphasizes the fact that phthisis easily develops without symptoms, but also that these symptoms are often neglected or assigned to some trifling cause. Chlorosis is often an early sign, but when due to tuberculous disease the blood pressure is subnormal, while in simple chlorosis it is seldom below 130 mm. Cough is an almost invariable accompaniment, usually without sputum. Hemoptysis is of paramount importance.

Pain may be present in the chest or may be referred to an arm or a shoulder. Dyspnea without physical signs in the chest may be present up to 30-40 respirations a minute. Tachycardia is a distinctly unfavorable sign, aspecially if *not* associated with fever. In many cases the onset is apparently an attack of influenza. Family history, past history, surroundings and occupation must be carefully inquired into. As regards physical signs, their location is of greater importance than their quality; it is safe to attach much weight to the presence of certain signs, little weight to their absence; it is unwise to base a diagnosis on any one sign, and in perfectly sound chests one frequently meets with wide variations from the normal, but these variations from the normal are greatest from the tenth to the twenty-fifth year, much less after that age. Vocal fremitus is of little aid; percussion may be of the greatest help. Auscultation is of the greatest importance, but the patient must first be taught how to breathe properly to get good results. Weakening of the breath sounds at one apex, especially the right, is one of the earliest and most important signs. He recommends the keeping of temperature and weight records as an aid in diagnosis, and the estimation of the opsonic index.

4. Bardswell gives the first results of treatment of 277 consumptives under his care from 1899 to 1905, with the exception of 40, all of the leisure class, and except 17 all unselected cases. The *immediate* results of these cases were as follows: Of 91 early cases, 66 were completely arrested; of 97 fairly recent and extensive cases, 10 were completely arrested and 84 were improved but incompletely arrested, while 3 died. Of 66 chronic progressive cases, 16 were discharged with complete restoration of general health, but with signs still present in the lungs, and 42 less improved. None were completely arrested; 7 died. Out of these 277 cases only 10.4% failed to receive any benefit at all, while 28% were completely arrested; of the 91 early cases 72.5% were completely arrested. As to *ultimate results*, out of 260 patients discharged 32% are in perfect health, one to eight years after discharge, 39.6% have died and 10 have been lost sight of. The others are in fair or poor health.

8. Wernich continues in this paper a detailed description of cases treated by his new albuminoid serum. The first four were of leprosy in various forms with some brilliant results and some failures. With lupus he had successful results in practically every case. In treating pulmonary tuberculosis, his results with colored patients were far less favorable than those with white. In no case were dietetic or hygienic outdoor treatment used in addition to his method. He divides his cases (those here reported are all among whites) into quiescent and active. His results in all of these cases among whites are remarkable, — alleviation of symptoms in twenty-four hours and disappearance of signs and symptoms in two to three weeks. This somewhat remarkable paper must have further confirmation before it can be taken very seriously. [J. B. H.]

British Medical Journal.
April 20, 1907.

1. *Barr, J. *The Effects of Respiration on the Circulation.*
2. *Lewis, T. *The Pulsus Bisferiens.*
3. Bell, W. B. *On the Part Played by the Calcium Salts in the Blood and Tissues.*
4. *Turck, F. B. *The Etiology and Pathology of Peptic Ulcer.*
5. Willis, W. M. *Case of Repeated Abdominal Section for Perforation of Gastric Ulcers.*
6. Makins, G. H. *A Case of Cellulitis following Infection by an Organism Set Free by the Wounding of an Old Blind Diverticulum of the Large Intestine.*
7. Week, H. *Dislocated Spleen with Torsion of Pedicle Complicating Pregnancy; Removal of the Spleen.*
8. Lucas, T. C. *A Note on Haffkine's Antiplague Vaccine.*
9. Butler, T. H. *A Case of Chloroma.*
10. Brahmachari, U. N. *Albumosuria and the Duration of Albuminuria in Cholera.*

1. Barr writes, in opposition to Wenckebach's recent article in this journal on adherent pericardium, to defend his own views of the origin of the paradoxical pulse. This is due to one of two causes, namely, a defective filling or rapid emptying of the arteries, due to abnormal pressure conditions within the chest.

2. The term "pulsus bisferiens" refers to a form of palpably double pulse with two beats, the second of which is really a reinforcement of a prolonged systole. There are two types, one associated, the other unassociated, with arterio-sclerosis. It is quite distinct from the dicrotic pulse. The causes are obscure, but it seems to be definitely connected with a greatly dilated and hypertrophied left ventricle.

4. Turck fed a number of dogs for several months on bouillon cultures of colon bacilli and in every animal experimented on spontaneous genuine peptic ulcers were found from which the animals died either by hemorrhage or perforation. Certain cellular changes and alterations in the blood serum showed a diminution of the normal protective powers resulting in autocytolysis, apparently produced by the absorption of products from the gastro-intestinal tract. There was no evidence of any healing process. In a second series the feeding of the colon bacilli was stopped as soon as there were any indications of an ulcer. Then allowing sufficient time for healing to go on, the animal was killed. On post-mortem there was found round-cell infiltration and cicatrization of the incomplete ulcers in various stages of healing. In post-mortem examination of 271 control dogs no ulcers were found in any case. Intravenous inoculation failed to produce any ulcers. He describes the other previous attempts to produce ulcers of the stomach by various investigators with different theories as to the origin of these ulcers and gives in detail the technique of his own experiments and the pathological findings. He believes that altered conditions of stomach fauna and flora have a large part to play in the production of ulcers and also enter into the question of etiology in many other diseases. [J. B. H.]

The Edinburgh Medical Journal.
April, 1907.

1. Haultain, F. W. N. *A Clinical and Anatomical Study of Thirty Cervical Fibroids Removed by Abdominal Hysterectomy.*
2. Williamson, R. T. *Amyotrophic Lateral Schlerosis and Progressive Muscular Atrophy.*
3. Weber, F. P. *Acute Dilatation of the Stomach and Intestines in a Case of Multiple Peripheral Neuritis.*
4. *Turner, D. *The Electrical Conductivity of the Blood and Urine in Health and in Disease and as a Test of the Functional Efficiency of the Kidney.*
5. Urquhart, A. R. *On Insanity with Special Reference to Heredity and Prognosis.* (Concluded.)
6. Brown, A. C. *Two Forgotten Medical Worthies.*

4. Turner believes that careful estimation of the electrical conductivity of blood and urine is a distinct aid in surgical affections of the kidney in estimating the renal capacity before operating. It is far more accurate and simple than cryoscopy. The electrical resistance of blood depends upon the salt concentration and the relative volume of the corpuscles to the serum. Resistance of the urine depends on the ionic concentration, *i. e.*, upon the salts, acids and bases, of which NaCl is by far the most important. It is unaffected by the presence of albumin, sugar or blood. A high resistance of blood and a low resistance of urine is indicative of health. In disease the changes are in the direction of a diminished resistance of the blood, as in kidney disease, chlorosis, anemia, etc. From the estimation of the resistance of these two fluids a hemorenal index is estimated. The writer gives the details of his work and several cases. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 14.
April 4, 1907.

1. *Sonnenburg, E. *Enteritis and Appendicitis.*
2. *Hoffa, A. *Chronic Joint Rheumatism and Arthritis Deformans.*
3. Wollenberg, G. A. *The Pathological Anatomy of Chronic Joint Disease and Arthritis Deformans.*
4. *Tilmann. *Treatment of Tetanus.*
5. Papaioannou. *A Modification of Bassini's Operation for the Radical Cure of Hernia.*
6. *Ehrhardt, O. *Etiology of Relapses and Pseudo-Relapses after Gallstone Operations.*
7. Biberfeld, J. *Dosage of Intravertebral Injections of Adrenalin.*
8. *Arndt, G. *Hemolysis in Staphylococcus Affections.*
9. Fromme, F. *The Cause of Fever in Cancer.*
10. Hoffmann, E., and Bruning, W. *Some Successful Inoculations of Dogs with Syphilis.*

1. Sonnenburg notes the frequent difficulty in differentiating appendicitis from gastro-enteric disorders and thinks the latter cases are not infrequently operated upon and normal appendices removed. Acute appendicitis often arises secondarily from extension of inflammation from an inflamed cecum. In cases without marked peritoneal signs and a low white count, the author recommends the use of castor oil to completely empty the bowel. Most of such cases will get well when thus treated without operation. If operation later becomes imperative, the peristalsis thus started is not enough to materially increase the risk.

2. Hoffa attempts to classify chronic joint affections from an etiological standpoint as follows:

A. Non-infectious chronic joint diseases.
  1. Chronic traumatic arthritis.
  2. Chronic irritative arthritis. (Hydrarthos chronicus.)
  3 Chronic constitutional arthritis:
    (*a*) Gout. (*b*) Hemophilia.
  4. Arthritis deformans:
    (*a*) Spontaneous. (*b*) Reflex (reactive). (*c*) Neuropathic.
  5. Chronic functional arthritis.
    (Joint neuralgias, intermittent hydrops.)
B. Infectious joint affections.
  1. Primary chronic joint disease.
    (Polyarthritis chronica progressiva primitiva or destruens.)
  2. Secondary joint disease:
    (*a*) Chronic disease secondary to acute rheumatism. (*b*) Chronic joints after other infectious diseases, — gonorrhea, scarlet fever, etc. (*c*) Tubercular joints. (*d*) Syphilitic joints.

4. Tilmann has seen no case in which tetanus antitoxin has been given which has convinced him of its specific action. Cases in which the tetanus symptoms come on within the first six days usually die; if they are delayed ten days they usually recover; the intermediate cases die or get well according to the virulence of the infection. He is not yet convinced of the harmlessness of the use of the serum in prophylaxis, and in his own wards at the Charity Hospital in Berlin does not use it unless bacteriological examination of the wound shows the presence of the tetanus bacillus.

6. Ehrhardt finds from the surgical literature that recurrence of trouble after gall bladder operations comes mainly from three sources: (1) the overlooking and leaving of stones in the bladder; (2) adhesions; (3) pseudo-relapses or hysterical manifestations. The first two causes are being rapidly eliminated by better technic. Stones are very rarely new-formed in the gall bladder, but if the gall bladder be not removed or its neck left, then the author thinks that the glands and ducts described by Luschka, having been infected by the original process, may keep up the inflammation or even form hard or soft concretions in the mucous membrane, which may ulcerate through and obstruct the duct.

8. Arndt summarizes his investigations thus: (1) Hemolytic tests enable us to establish the specificity of any given staphylococcus infection, but they give no sure indications for prognosis. (2) Human beings have a certain natural resistance against the staphylococcus. (3) Antistaphylolysin is found in the blood stream and also in the exudate and surrounding edema; it can be detected in the blood long after the exciting cause has subsided. (4) The antitoxin can apparently be produced at the site of the inflammation, independent of the blood-forming organs, especially if the favoring influences of congestion be present. [L. G. M.]

Münchener Medizinische Wochenschrift, No. 14.
April 2, 1907.

1. *Riedel. *The Safest Appendix Incision; Its Value in Ligature of the External Iliac Artery in Removal of Femoral Herniæ and in Major Intra-abdominal Operations.*
2. Lange, F. *What Can the General Practitioner Do to Relieve the Condition of Cripples?*
3. Janssen, P. *The Avoidance and Treatment of Fecal Fistulæ Following Operations for Appendicitis.*
4. *Hænisch, F. *X-Ray Treatment of Hypertrophy of the Prostate; Its Technic.*
5. *Goldschmidt, H. *A New Method of Urethral Endoscopy.*
6. *Roepke, W. *Active Hyperemia in the Treatment of Arteriosclerotic Gangrene.*
7. *Landwehr, H. *Results Following Fracture of the Patella.*
8. Bogen, H. *Congenital Dislocation of the Patella.*
9. Vörner, H. *Onychia Pigmentosa.*
10. Erdmann. *Tuberculosis of the Eye Successfully Treated with Tuberculin.*
11. Reichard. *A Case of Penetrating Gunshot Wound of the Abdomen.*
12. Prym. *The Removal of Blood from the Rabbit's Ear.*
13. Auerbach. *A New Sensitometer.*
14. Schmidt. *Exposure of the Deeper and Inner Portions of Tumors to the X-Ray.*
15. Zum Busch. *The Eightieth Birthday of Lord Lister.*
16. Weckerling. *Semmelweis or Lister?*

1. Riedel advocates the so-called "zig-zag" incision not only for interval appendectomy, but also for abscesses of moderate size. He further employs this incision in cases of abdominal exploration, not hesitating to make a subsequent median incision if necessary. The incision is the usual muscle-splitting one more generally known in America under the name of McBurney's.

4. Enlarged prostates can be made to decrease in size under the influence of the Roentgen rays. Application is made through a rectal speculum with the patient in the knee-chest position. Simultaneous treatment of the bladder with catheter and irrigation should always be employed.

5. Goldschmidt describes a new instrument for endoscopy of the urethra and outlines some of the conditions found by its use.

6. Active hyperemia by immersion of the foot in hot baths of lysol enabled Roepke to determine the best point at which amputation should be done in a case of arteriosclerotic gangrene.

7. The examination of the late results of sixteen cases of patella fracture from the clinic of Bardenheuer at Cologne leads Landwehr to conclude that the bloodless method of treatment gives exactly as good results as does the operative method. [W. C. Q.]

Miscellany.

MASSACHUSETTS GENERAL HOSPITAL. RESOLUTIONS BY THE VISITING STAFF ON THE RESIGNATION OF DR. ARTHUR T. CABOT.

The announcement of Dr. Cabot's resignation from the hospital was received with profound regret by the visiting staff, especially by the visiting surgeons. His voluntary retirement is assured beyond recall, and his colleagues unite in affirming that Dr. Cabot's services to the hospital in the past have been of the greatest value, not only in the routine daily duties of the ward, the amphitheatre and the clinic, but in the inception and carrying out of those liberal and progressive ideas which have made the Massachusetts General Hospital what it is to-day.

While the staff regret that it is no longer possible for the hospital to receive the benefit of Dr. Cabot's active service, they trust that from time to time they may enjoy the advantage of his experience and wisdom when questions of deep concern to the general policy of the hospital arise.

They sever the ties of intimate professional companionship with a sincere sorrow which they feel it difficult to express.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, MAY 4, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,509	466	Quincy	1	—
Chicago	764	230	Waltham	1	—
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	5	2
Baltimore	186	56	Brookline	4	1
Cleveland	—	—	North Adams	6	1
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton	4	1
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	1	—
Washington	—	—	Leominster	4	1
Providence	74	24	Hyde Park	5	1
Boston	221	44	Melrose	3	0
Worcester	38	9	Newburyport	—	—
Fall River	41	15	Woburn	8	1
Cambridge	25	8	Marlboro	5	0
Lowell	32	6	Westfield	2	1
Lynn	19	4	Peabody	—	—
New Bedford	34	18	Revere	1	1
Springfield	23	5	Attleboro	5	0
Lawrence	25	9	Clinton	4	1
Somerville	17	1	Adams	3	—
Holyoke	30	10	Gardner	—	—
Brockton	12	2	Milford	—	—
Malden	11	3	Watertown	4	1
Chelsea	8	2	Plymouth	—	—
Salem	13	4	Weymouth	3	1
Newton	8	2	Framingham	—	—
Haverhill	13	1	Southbridge	2	2
Fitchburg	7	3	Wakefield	—	—
Everett	9	2	Webster	—	—
Taunton	17	1			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED MAY 1, 1907.

CARRINGTON, P. M., surgeon. Granted leave of absence for three days from April 29, 1907, under paragraph 189 of the Service Regulations.

MATHEWSON, H. S., passed assistant surgeon. Granted leave of absence for fifteen days from April 27, 1907. April 26, 1907.

GRUBBS, S. B., passed assistant surgeon. Granted one day's leave of absence, May 6, 1907. May 1, 1907.

HOLT, JOHN M., passed assistant surgeon. Granted leave of absence for two months from June 20, 1907. April 29, 1907.

WARD, W. K., assistant surgeon. Leave of absence granted Assistant Surgeon Ward for one month, on account of sickness, from April 1, 1907, amended to read for twenty-two days only. May 1, 1907.

STILES, CHAS. W., chief of the division of zoölogy. Granted leave of absence for five days in April, 1907.

KASTLE, J. H., chief of the division of chemistry. Granted leave of absence for nine days in April, 1907.

SCHWARTZ, LOUIS, acting assistant surgeon. Granted leave of absence for seven days from May 2, 1907. April 29, 1907.

STRAW, E. E., acting assistant surgeon. Granted leave of absence for twenty days from April 15, 1907. April 26, 1907.

RYDER, L. W., pharmacist. Granted leave of absence for seven days from April 27, 1907. April 26, 1907.

WATTERS, M. H., pharmacist. Leave of absence granted Pharmacist Watters from April 1, 1907, for thirty days, amended to read nineteen days from April 4, 1907. April 29, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Philadelphia, Pa., April 30, 1907, for the physical examination of an officer of the revenue-cutter service. Detail for the Board: Surgeon J. M. Gassaway, chairman; Passed Assistant Surgeon T. Clark, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MAY 11, 1907.

V. C. B. **MEANS**, surgeon. Upon discharge from treatment at the Army and Navy General Hospital, Hot Springs, Ark., ordered home and granted sick leave for three months.

M. S. **ELLIOTT**, surgeon. Detached from the "St. Louis" and ordered to duty at the Navy Yard, Norfolk, Va., in connection with fitting out the "Olympia," and to duty on board that vessel when placed in commission.

H. C. **CURL**, surgeon. Ordered to additional duty at the Naval Medical School Hospital, Washington, D. C.

E. S. **BOGERT, JR.**, surgeon. Upon expiration of leave, ordered to the "Milwaukee."

I. W. **KITE**, surgeon. Detached from the "Kearsarge" and ordered to the "Franklin."

G. H. **BARBER**, surgeon. Detached from the "Baltimore" when placed out of commission, granted leave for one week and thence ordered to the "Kearsarge."

R. A. **BACHMANN**, passed assistant surgeon. Detached from the "Franklin" and ordered to the "St. Louis."

J. R. **WAGGENER**, medical director. Having been examined by a retiring board and found incapacitated for active service on account of disability incident to the service, is retired from active service May 6, 1907, under provisions of Sect. 1453 R. S.

E. N. **BROWN**, passed assistant surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and Ordered to duty at the Naval Hospital, New Fort Lyon, Colo.

W. H. **SHORT**, R. I. **LONGABAUGH**, F. X. **KOLTES**, M. A. **STUART**, assistant surgeons. Appointed assistant surgeons, with rank of lieutenant junior grade, from May 4, 1907.

J. E. **PAGE**, surgeon. Detached from the "Milwaukee," and ordered to continue treatment at the Naval Hospital, Mare Island, Cal.

RECENT DEATHS.

WINTHROP BUTLER, M.D., M.M.S.S., died in Vineyard Haven, April 20, 1907, aged sixty-eight years.

DR. MARVIN STEPHEN BUTTLES, a retired physician of New York, died on May 9, after a long illness. He was born in Otis, Berkshire County, Mass., in 1833, and was graduated from the medical department of the University of the City of New York in 1861. From 1864 to 1873 he was a teacher of obstetrics in that medical school, and from 1865 to 1872 was surgeon of the Seventy-first Regiment, National Guard, State of New York. In 1867 and 1868 he was respectively vice-president and president of the East River Medical Association. He was the founder and physician-in-chief of the Olivet Female Infirmary, and was also for a time medical officer of the New York Fire Department. At the time of his death he was president of the Hotel Savoy Company and of the Hamilton Fire Insurance Company.

DR. JOHN W. BRENNAN, an old and respected practitioner of New York, died on May 10. He was graduated from the College of Physicians and Surgeons, New York, in 1862.

BOOKS AND PAMPHLETS RECEIVED.

The Essentials of Histology. Descriptive and Practical, For the Use of Students. By E. A. Schafer, LL.D., Sc.D., F.R.S. Seventh edition. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

A Treatise on the Principles and Practice of Medicine. By Arthur R. Edwards, A.M., M.D. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Ulceration of the Cornea. By Angus MacNab, B.A., B.Sc., M.B., Ch.B., F.R.C.S. Illustrated. New York: William Wood & Co. 1907.

The Treatment of Coryza. By E. S. McKee, M.D. Reprint.

Obstetrics. By E. S. McKee, M.D. Reprint.

Transactions of the Obstetrical Society of London. Vol. XLIX. For the year 1907. London. 1907.

Ingestion Tuberculosis. By John B. Huber, M.D. Reprint.

Rapport A M. Le Préfet sur les Recherches effectuées au Bureau du Casier sanitaire pendant l'année 1906 relatives à la répartition de la tuberculose dans les maisons de Paris. Paris. 1907.

Rapport A M. Le Préfet sur les Enquêtes effectuées en 1906 dans les maisons signalées comme foyers de tuberculose. Paris. 1907.

Address.

THE BORDER LAND OF MEDICINE AND SURGERY.*

BY REGINALD H. FITZ, M.D. LLD., BOSTON,

Hersey Professor of the Theory and Practice of Physic in Harvard University.

On the front of the building erected for the Harvard Medical School in 1883, are inscribed the names, Hippocrates, Celsus, Galen, Vesalius, Paré, Haller, Harvey, Sydenham, Hunter, Bichat. Of all names in medical history these were deemed the most worthy of such distinction. Each of these men represented an epoch, and the influence of each in his turn has been of undying influence in the progress of medicine from the age of Pericles to the present day.

During this period medicine has become divided and subdivided into its various specialties; advance has been made now in the one direction, then in the other, but the unity of medicine has ever remained paramount, and whatever has benefited a part has always proved of advantage to the whole. At times this progress has been checked by the frequent quarrels of physicians and surgeons who have shown for each other contempt and hatred, envy and malice, until what should have been a generous rivalry in a common cause became a persistent warfare and an inglorious defeat. But dissensions have lessened, distinctions have become recognized, and a border line has been traced, shadowy to be sure, but ever changeable and surrounding a territory open to each and productive for all. It is the purpose of this address to call attention to some of the landmarks in this borderland of medicine, to pay tribute to those who have been instrumental in establishing them, and to indicate some of the means by which this region is to continue productive.

The writings of the Hippocratic period, four or five centuries before Christ, recognized but one healing art, — medicine, — and the physician, for there was no surgeon, was conversant with disease only which was to be treated in various ways according to its nature. Especial skill was recognized in those who cut for stone, and the physician who took the Hippocratic oath swore to relinquish this operation to those who made it a business. Fractures and dislocations, wounds and ulcers, hemorrhoids and fistulæ demanded appropriate treatment, but diet, baths and exercise were depended upon to maintain health, and dietetics played an important part in the treatment of disease.

Celsus, shortly before the birth of Christ, has recorded the state of medical knowledge and practice at and before his time. The practice of medicine was regarded as beneath the dignity of a Roman citizen, and was largely in the hands of Greek slaves and freedmen. These practitioners were degraded, immoral and quarrelsome, often mere sycophants. He divided disease into three groups, — the first cured by diet, the second by medicine and the third by manual operations. He assigned to surgery those cases in which the physician makes a wound where he does not find one, and those wounds and ulcers in the treatment of which manual operations are more useful than medicines, and, lastly, whatever ailments relate to bones.

Galen, who lived a century or more after Celsus, makes it evident that the distinction between medicine and surgery was well established. His system of medicine, founded on a scientific and historical basis, served to raise the standard of the physician and to maintain the dignity and prominence of medicine for more than a thousand years. According to Haeser, his philosophical interest led him to harmonize facts and theories, and to establish a system "which gave an answer to every question and a solution of every problem. His apparent omniscience enchained intelligence and barred all progress for centuries."

For a while the physician became honored and favored, and those especially eminent acquired great riches. With the decadence of the Roman Empire, centuries elapsed before any noteworthy progress in medicine was made. The majority of writers were compilers and commentators and added but little to the knowledge of their forefathers. The doctrines of Hippocrates, Galen, Paul of Ægina, and other Greek and Roman authors became incorporated in the writings of Rhazes, Avicenna and Albucasis, and these Arab manuscripts, carried into Europe by way of Spain, became the authority in medicine and surgery till within comparatively recent times.

The monasteries, also, were important in preserving the influence of Greek and Roman medicine. The Benedictines, in particular, were advised to study Hippocrates and Galen, and their library at Monte Casino contained many medical manuscripts. The practice of the monks was limited to their own sex and increased to such an extent that it was prohibited by the Second Lateran Council, and at the Council of Tours the disobedient monks were threatened with excommunication. Eventually, however, they were allowed to practice medicine but were forbidden to make use of surgery. This check to the progress of surgery was promoted also by the Arabs who often substituted the cautery for the knife and were more interested in materia medica than in surgical operations. The practitioners of surgery, therefore, were obliged to acquire their knowledge largely through limited opportunities for observation and without especial training. The demand for the surgeon, and for the physician also, was increasing in consequence of the numerous wars, especially the Crusades, and the pestilences which at times ravaged Europe and the East.

The further development of medicine and surgery was fostered at first in the schools of Salernum and Montpellier, and later by the universities, especially in Italy and France. At Salernum a definite distinction was first drawn between the education of the physician and that of the surgeon. At this school in 1240 the medical student was required to pursue a preparatory course of three years in logic, after which five years were to be spent in the study of medicine and surgery. Then, after having passed a prescribed examination, he was permitted to practise, but for a year was obliged to consult habitually with an older physician. The student of surgery, on the contrary, was allowed to practise after he had spent "at least one year in the study of that part of medical science which gives skill in the practice of surgery." He must also have "diligently and especially studied the anatomy of the human body." At this period anatomy was taught on the pig, and the human body was dissected in the presence of physicians and surgeons but once in five years. In Montpellier at about the same time every practitioner of medicine must be examined, while the surgeon was not required to pass an examination.

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* Abstract of the address of the President of the Congress of American Physicians and Surgeons at the Seventh Session in Washington, D. C., May 7, 1907.

The schools then gave way to the universities, and Naples, Bologna, Padua and Paris became renowned in their turn as centres of medical education. The Medical Faculty in a given city consisted of all the graduated doctors in medicine of the university, each of whom had the right to teach, although but few were appointed for this purpose. Thus the doctors in medicine were but few in number. In Paris, in the seventeenth century, there were 540,000 inhabitants and only 110 doctors in the Faculty of Medicine. During these years there were many practitioners of medicine and surgery; for instance, 2,000 in Milan in 1288, with a population of 200,000. Some were licensed to practise, but without the title of doctor; others practised surgery with and without the license and there were many empirics of all kinds.

The distinction between the physician and surgeon thus became established as one of the nature and extent of the education. The physician, who might also practise surgery, received a university education extending over a long period of time and might obtain the dignified title of doctor which made him a member of the Medical Faculty, with a right to teach and to take part in its proceedings. He was an educated gentleman and a man of authority.

The surgeon, on the contrary, who had not received the education of the doctor, might acquire a sufficient theoretical knowledge of surgery in a year, at the end of which he could obtain the degree of master of surgery. Even then all practical knowledge for both classes of graduates must be obtained outside the university from those actually dealing with the sick. Many of these surgeons were without means to pay for university training, had little or none of the knowledge of Latin or Greek necessary for the doctor and often began their career as barbers. The latter became associated with medicine at an early day, according to Gairdner, because it was necessary that monks should be shaved and bled periodically (five times a year at the monastery of St. Victoire in Paris) and it was convenient to employ the same person for the two occupations. Furthermore, monks were not allowed to draw blood, although venesection was a highly commended remedy for various ills and the monastery barber became a convenient proxy. The act of bleeding was not without a certain risk to the operator, for the Visigoths in the sixth century decreed that if a freeman should be injured by venesection a fine should be paid. If he should die the relatives might do what they pleased with the venesector. Since the barbers practised venesection it was considered a disgrace for the doctors to bleed, but the barbers extended their practice from venesection to the application of leeches, the use of the cautery and, eventually, to minor surgery.

Included among the practitioners of surgery were attendants at bathing establishments, some of whom had acquired the habit of blood-letting, also natural bone-setters and experts for operations for hernia and stone, perhaps deriving their skill through inheritance of family secrets from generation to generation. To these were added the public executioners who were called upon to reduce dislocated joints and to treat the sprains, bruises and bleedings resulting from the various means employed in the torture of the accused and the condemned.

The educated surgeons, of whom some were also doctors of medicine, desired to be protected from identification with the larger class of irregular practitioners and wished for an honored position like that of the physician. In Paris in the thirteenth century they formed an association for this purpose and after a few years established a college, subordinate to the Faculty of Medicine, with statutes corresponding to those of the university giving them the privilege of holding stated meetings, and of educating and examining students. The influence of the college became increased through the decree of Philip the Fair, that no male or female should practise surgery in Paris who had not been examined for that purpose. Thus the barbers were made to submit to an examination in surgery.

The members of the Medical Faculty of this city were jealous of the rising importance of the surgeons. They regarded the art of the latter as a handicraft exercised also by many illiterate persons, and they wished to maintain the control of medical affairs. They, therefore, undertook to divorce the practice of surgery from medicine, and in 1350 their statutes demanded that baccal laureates in medicine shod swear not to performu-surgical operations or to treat wounds, ulcers, fractures, dislocations and tumors. The barbers in their turn rebelled against the aggressiveness of the surgeons and obtained an edict permitting them to apply plasters, ointments and other medicaments for bruises, abscesses and all open sores. The Faculty took the barbers under its protection on condition that they would not use internal remedies without consulting with one of its members. To spite the surgeons it gave the barbers a course in surgery, and, later, one in anatomy in French. The surgeons rebelled and the court decided that a member of the Faculty should give the lecture, the surgeon dissect and the barber assist. This warfare between the Faculty, the surgeons and the barbers continued until 1660 when it was decreed that the barbers and surgeons should submit to the Faculty.

Meryon informs us that in England a similar state of affairs existed and that the practice of medicine was largely in the hands of monks until the time of Henry VIII. The best educated had received their medical instruction in Italy and in France, but were few in number. The country was flooded with ignorant pretenders of all kinds who became much more numerous after the dissolution of the monasteries. Surgery was practised by barbers and by surgeons, most of whom had acquired their knowledge, as in France, by observation without especial training.

In Scotland the surgeons and barbers were incorporated as the guild of barber-surgeons and were granted a monopoly of their trade, the right to dissect annually an executed criminal and to make and sell all *aqua vitæ* within the burgh. These barber-surgeons later became surgeon-apothecaries by taking up the sale of drugs, and united with the apothecaries in opposing the request of the physicians for a charter which infringed upon some of the rights claimed by the surgeons.

During the greater part of this period of quarrel and strife, especially in France, between physisians and surgeons, but little advance was made in the progress of medicine. The field of surgery, however, became greatly widened through the genius of Ambroise Paré who found his opportunity in military surgery then transformed through the introduction of gunpowder into warfare. New problems arose to be solved only by an independent, forceful thinker.

Beginning as a barber's pupil he became the counsellor of kings. By his originality and breadth of view he gave distinction to surgery second only to that confered two centuries later by John Hunter. His writings were in French, therefore accessible to all classes of surgeons, including the barbers, whom he did not forget in the height of his success. In consequence of his achievements he was admitted to full membership of the college of St. Côme although he was unable to comply with an existing requirement, a knowledge of Latin.

The domain of medicine and surgery now became alike widened by the renewal of interest in the study of anatomy. From the days of the Alexandrian school to the beginning of the fourteenth century, a period of more than fifteen hundred years, all anatomical investigations had been made on the lower animals, and little or no attention had been paid to human anatomy. Yearly dissections now were made in Venice and in Montpellier. They were often spectacular, and dignitaries of the city and distinguished citizens were invited to be present. The bodies were chiefly those of executed criminals though occasionally derived from other sources.

The dissections represented almost wholly a demonstration of the two great cavities of the body, and were completed in three lectures. But little anatomy was learned from such exercises, and practically no addition was made to the existing knowledge of the subject until the sixteenth century. Then Vesalius, physician and surgeon, but above all, anatomist, by his investigations demonstrated the falsity of the doctrines of Galen based on the dissection of the lower animals. He was given abundant material for his researches, and by the elimination of error and the discovery of truth placed the study of medicine upon a scientific basis.

The numerous and important discoveries in human anatomy which first showed the inaccuracy of Galen's teachings were soon followed by a still more important and fruitful discovery, that of the circulation of the blood by Harvey. Theoretical statements of vital processes thus were subject to control by the actual knowledge of existing conditions. Research into the structure and functions of the body now became a subject for independent study, and medicine began to depart from theory and to assume more of the shape of an experimental science. The physician who had been pompous, dogmatic, full of false and absurd ideas, content to discuss and argue, and to refer the treatment of the patient to the barber and apothecary, became, in consequence of this scientific movement, a patient investigator of facts, and a serious, often impatient, critic of theories.

The example was set by Sydenham, the English Hippocrates, and a founder of exact observation of the patient. He despised tradition and observed the phenomena of disease as processes in nature, not differing essentially from the manifestations of health. He overthrew the authority of Galen in practical medicine as Vesalius had in anatomy, and Harvey in physiology. Sydenham, however, as a pioneer in the scientific consideration of disease, devoted his attention exclusively to the observation and analysis of symptoms, and lacked the essential control furnished by the study of the associated and resulting lesions. Original, independent and an accurate observer, he makes no mention of Harvey, apparently was unaware that Malpighi had already discovered the capillaries which he maintained could not exist, and had an outspoken contempt for pathological anatomy.

The time now had arrived for the development of this branch of the medical sciences, progress in which was to be intimately connected with all further advance in the theory and practice of medicine and surgery. The association of symptoms and lesions was the work of Morgagni, who first duly emphasized the importance of pathological anatomy in the control of clinical observation. His labors, by supplementing those of Sydenham, were the beginning of modern methods of observation and thought in medicine, as contrasted with those of Galen and his followers.

In the meantime, the utilization of the recent discoveries in anatomy, physiology and in the clinical characteristics of disease was being accomplished at Leyden. There is no mention of any clinical teaching worthy the name for more than fifteen hundred years, until an attempt was made at Padua, in 1578. This was soon followed by the introduction of bedside teaching at Leyden, and Boerhaave systematized this form of instruction and made that city the center of medical education and the resort of students from all parts of the world. The clinic consisted of but twelve beds, but he had the privilege of drawing patients from elsewhere. His students were taught the value of anatomy and physiology in medical practice, and he pursued the method of Sydenham in his observation and analysis of symptoms. One of his pupils, Haller, a skilled anatomist and eminent as a physiologist, became professor of medicine and surgery, although he is said never to have performed a surgical operation. He is called the "father of experimental physiology," and by his method of investigating vital functions established a scientific basis for the study of disease.

During this period of activity in medicine, learned men of scientific mind and training were studying the phenomena of health and disease as physicians, not as surgeons. The latter remained practitioners devoted to an art which seemed far removed from scientific interest, and which presented but little attraction for educated men. A change was about to take place, however, and was initiated by the definite separation of the barbers from the surgeons.

Surgery became a science, however, through the labors of one man, John Hunter, anatomist, physiologist, pathologist and surgeon. He showed that the methods employed in the accurate study of disease were the common property of surgeons and physicians. It was his aim to demonstrate that the relation between processes and results in health to be determined by physiological experimentation must exist in disease, and be determined by like methods. He was the founder of experimental pathology, alike applicable to medicine and surgery. In the words of Paget, "until his light shone the border line between medicine and surgery was sharply defined. On the one side were physicians, not only learned in their own calling, but men of high culture, educated gentlemen, and the associates of gentlemen. On the other side were those whose profession was a handicraft, whose education was mainly practical, and whose associates were unknown. After his time the relation between surgery and the sciences was established, and the scientific surgeon gained entrance into the most cultivated class."

The effect of Hunter's work was enhanced by that of Bichat, equally distinguished for breadth of mind, intensity of application and with a genius for generalization. Physician at the Hôtel Dieu, anatomist, physiologist and pathologist, his life was spent in searching for the seat of disease by observation and experiment. Dying at the age of thirty-one, his services to experimental physiology and pathology in determining the actual seat of vital processes in health and disease have placed his name among the immortals. What Hunter did for surgery, Bichat accomplished for all medicine, and the study of disease from his time became the study of processes taking place within the tissues.

During the first half of the nineteenth century, the scientific study of disease, whether more medical or more surgical in its therapeutic relations, progressed to the advantage of each. This was largely by the adoption of uniform measures, but especially in virtue of the increasing knowledge of pathological anatomy and pathological histology. The work of Morgagni and Bichat was carried on by Cruveilhier and Rokitansky, essentially descriptive pathological anatomists. The centre of scientific thought in medicine was now transferred to Germany and became lustrous chiefly through the teachings of Virchow, pupil of Johannes Müller and of Schönlein. These teachings applied to all medicine, and the keenness of his insight, the accuracy of his observation, the breadth of his view, the soundness of his judgment and his knowledge of the past afforded a combination of qualities without peer in medical history. Every specialist in medicine felt the influence of his teaching. His assistants and pupils were important discoverers and their work often was inspired by his suggestions and fortified by his criticisms. His achievements in anthropology, in philosophy, in citizenship and in affairs of state gave evidence of his genius. John Hunter and Bichat alone of all medical worthies stand nearest him, and Virchow had the advantage of Hunter's example and accomplishment and the results of Bichat's genius to aid in his development. During the same period surgery was represented by skilled anatomists, ingenious and brilliant operators, judicious counsellors and admirable teachers, especially in France and England. The leaders believed in a surgical pathology, and Paget set the example of its study, which was subsequently followed with even greater success by Billroth.

The latter half of the nineteenth century is filled with records of medical progress, all of which lie within reach of living memories. The discoveries in medicine of this period have added more to the welfare of mankind, as manifested by relief from suffering and disease, than the sum of all known efforts in this direction since the origin of man. Common to medicine and surgery, they have been alike beneficial to each and have resulted in a redistribution of the border land of medicine and surgery, giving and taking, adding more and more to the domain of surgery, relinquishing less, but opening fresh fields to the labors of the physician. Anesthesia and asepsis lead all the rest, and the names of Morton, Pasteur and Lister stand high among the world's benefactors. The discovery of surgical anesthesia was an inspiration, that of antisepsis the result of gradual, prolonged, often discouraging, labors by many men. The work of all led to the success of the few, and the genius of Pasteur revealed for surgery what the talent of Lister made available.

The early effect of these discoveries was to make a radical change in the treatment of certain diseases. Operations hitherto avoided in consequence of their length and the sufferings of the patient were gradually assumed. The former distinction between medical and surgical therapeutics, based upon the use of medicinal or of manual methods, upon diseases of the surface or of those of the cavities of the body, rapidly gave way. The duration of life with an operable disease not treated surgically was contrasted with the possibility of rapid and permanent relief by measures which offered more or less immediate risk to life. Anesthesia thus encouraged the operator, no longer disturbed by the immediate sufferings of the patient, and increased the number of surgeons as well as that of the operations.

In his presidential address before the American Surgical Association, J. Collins Warren gives the total number of operations at the Massachusetts General Hospital during the five years before anesthesia as 184, while in the five years after anesthesia it was 487. This increase in the frequency of operations was attended, as a rule, with an increase in their mortality. The latter was due, in part, to a wider selection of cases, which included patients previously regarded as unsuitable, and in part to the prolongation of the operation, with its attendant risks, especially of infection, since speed in operating was no longer of especial importance.

The border-land diseases which first felt the effect of the new discovery were those of the abdomen. This cavity had been invaded by the surgeon from time to time in the early history of medicine, but, as a rule, only on account of the gravest conditions immediately threatening life.

The one operation above all others which led to the transfer of many affections of the abdominal organs from the care of the physician to that of the surgeon is to be credited to American surgery. Dr. M'Dowell, of Danville, Ky., in 1809, first performed ovariotomy, with the intent of relieving his patient from cystic disease of the ovary. The customary treatment for ovarian disease hitherto had been either medicinal by drugs, or mechanical by pressure, puncture, the injection of irritating substances into the tumor, or incision with or without drainage. The disease was absolutely incurable despite the favorable reports occasionally to be met with, which, from our present point of view, must be attributed mainly to errors in diagnosis. According to Graily Hewitt, " the probable duration of a case of ovarian disease of progressive character is, in 85% to 90% of the cases, two or, at the most, three years; of the apparently stationary or chronic cases, the prognosis is more favorable, but in such cases the disease is liable at any moment to start into fresh activity." The successful removal of ovarian tumors through an abdominal incision was soon followed by attempts to remove the diseased uterus in a similar way.

Thus in 1846 the border land of medicine and surgery had become definitely invaded. For the most part it was a region filled with disability, suffering and despair. The inaccuracy of diagnosis, the uncertainty of prognosis, the dependence upon the healing powers of nature, the occasional relief of symptoms by the physician acted as a bar against the terror and danger which attended the invasion of the surgeon. The introduction of surgical anesthesia at once took away much of the immediate mental and physical suffering; terror became fear only, and danger was reduced to risk.

The effect of anesthesia in changing the border land of medicine and surgery was chiefly confined to the treatment of affections of the uterus and ovaries. Gynecologists and surgeons vied with each other; success lay with the former at first, but the surgeon soon took equal rank with the gynecologist and energetically availed himself of the experience and skill acquired by the latter.

The period of antisepsis then arrived, begun by Lister more than forty years ago, slowly progressing through his untiring efforts, welcomed by Germany before it had made much headway in Great Britain, France or the United States, but finally adopted throughout the world. Its application to ovariotomy by Keith, of Edinburgh, in 1877, reduced his mortality of 10% to 14% to 3% in 1880. Cæsarean section, an operation hitherto so fatal as rarely to be undertaken, acquired a mortality of about 25%.

Thus the application to laparotomy of Lister's method of treating wounds justified the surgeons in undertaking the gravest operations with but little hesitation. A new specialist in surgery arose, the abdominal surgeon. It lay within his province to undertake the treatment of affections of the stomach, intestine, liver and biliary tract, pancreas, spleen and kidney which, hitherto, had been considered to belong to the domain of the physician as being too hazardous for the surgeon to attempt to relieve. The antiseptic method had its dangers, however, and the necessary limitations to the use of carbolic acid, corrosive sublimate and iodoform were learned. The bacteriological investigations, especially of the Germans, led to the replacement of the antiseptic by the aseptic method of surgical treatment in all suitable cases. In consequence, the last fifteen years have witnessed the unhesitating advance of the surgeon into regions not only of the curable but also of the incurable diseases. The nearly absolute control of technics and the ingenuity and skill of the operator have so lowered the mortality of the operation that, in the doubtful affections, the uncertainty or inefficacy of medical treatment, the acquiescence, even the demand, of the patient, have encouraged experimental surgery apparently almost beyond limit. The surgical invasion of the border land is, at times, impatient of opposition and usually is resistless.

The number of operations at the Massachusetts General Hospital has increased from 385 in the decade before anesthesia to 24,270 in the decade following 1894. The mortality of ovariotomy has been reduced to a few per cent. Kelly has had 100 consecutive, abdominal hysterectomies, which included all kinds of complications, and lost but two patients, and his mortality in 1,000 cases was

3%. Cæsarean section has a fatality of less than 12%. At the last session of this Congress Dr. W. J. Mayo stated that in the service of his brother and himself the mortality of 510 operations for gallstones was 3%, and of 208 cases of stones in the gall bladder, without complications, the operative mortality was 1%.

With due appreciation of the great benefits that have arisen from the surgical invasion of the border land, there still exists sufficient reason to progress slowly and cautiously. Operative success is not necessarily a justification for the operation, as has repeatedly been recognized by those who are brought in contact with its failures. The removal of a diseased part, and especially of a diseased organ, may dispose of a result but not of a disease. Splenectomy in leukemia, despite its almost invariable fatality, has repeatedly been performed. A solitary kidney or a multilocular cystic kidney has more than once been removed, without thought that the patient was being deprived of his only means of living. Operative myxedema was worse than goiter, although without it we might not so readily have learned the value of thyroid therapy. The extirpation of normal organs has failed to give anticipated relief, and has resulted in disturbances more disastrous than the symptoms for which it was undertaken. The surgeon has learned to know that his knife may prove a two-edged sword, giving relief with the one cut, but with the other laying the foundation for subsequent disease. Operative success has increased the number of operators as well as the number of operations. But skill in operating is not attained in a day and requires a long period of preparation impossible for every one who would become an operator. The multiplication of small hospitals gives surgical opportunity, but this does not make the surgeon.

In the earlier days, the separation of surgery from medicine was caused by such an immediate and large demand for surgical treatment that the practitioner was encouraged in obtaining his education as quickly as possible. With little or no preliminary preparation, and with very limited practical instruction, he was sent to the wars, or was left to take the place of those who had gone. Such surgeons, with rare exception, accomplished nothing to advance the cause of surgery. In these days, on the contrary, the demand for the surgeon is due to the improvement in his art. It is for the leaders to be mindful that in broadening the field the breadth of the surgeon should not be contracted. Fortunately in this country education in medicine is demanded of all, whatever the ultimate practice may be, but the tendency to specialize is apt to begin too early. All may not agree with Senn who advises the expectant surgeon to "master the elementary branches in college, do general practice for several years, return to laboratory work and surgical anatomy, attend the clinics of different operators, and never cease to be a physician. If this advice is followed there will be less unnecessary operating done in the future than has been the case in the past."

The skilled surgeon has but little more to strive for in operative success in many operations, but his usefulness will be greater who knows when not to operate, and whose researches discover means by which operations may be made unnecessary. Billroth said, "Before deciding on the necessity for an operation, I always propose to myself this question: 'Would you permit such an operation as you intend performing on your patient to be done on yourself?' Years and experience bring in their train a certain degree of hesitancy."

The responsibilities of the surgeon never have been greater than at the present day. The final decision usually rests with him, and the physician is only too ready to be relieved of his burden. The ease of making the diagnosis after the operation not infrequently leads the surgeon to undertake it with too little forethought of what is to be encountered. He is inclined to be satisfied that for therapeutic purposes an operation must be performed. His skill in diagnosis, however, should transcend that of the physician, since his opportunities of control are furnished by every operation designed to relieve the patient, while those of the physician are limited largely to the post-mortem examination of the patient beyond relief. The operation is permitted, the autopsy often is denied. The therapeutic test of diagnosis offered by the physician represents essentially a sequence of events; that carried out by the surgeon is one of cause and effect. The biopsy of the surgeon has added valuable knowledge to the necropsy of the anatomist, but it is not infallible. The operation of the pathologist is exhaustive, that of the surgeon is limited, and the decision ultimately must rest with him who has the larger opportunities. This constancy of control should make the surgeon especially cautious and thorough in his investigation, particularly in the border-land cases, for upon the accuracy of his diagnosis, the future of the patient is to depend.

The surgeon has even greater obligations than those which arise from taking every possible means of making a correct diagnosis. His operative mortality may not be as low as that of the most successful, or as high as that of the beginner. It should be his best, determined by every conscientious and intelligent effort to perfect it. As surgeon, and not merely as operator, he is to satisfy the physician that the ultimate welfare of the patient is to be enhanced rather by surgical than by medical treatment. The lower his personal operative mortality, the more permissible is the trial of surgical measures. But the outcome of any operation, however simple, always has the element of uncertainty; and the existence of a medically irremediable, morbid condition is not a sufficient reason for an operation. As Treves says: "If the mortality attending ovariotomy were to be increased threefold beyond the present percentage, the operation would still be justifiable, inasmuch as the death-rate in untreated cases is so high as to leave but little prospect of life. On the other hand, were the death-rate of hysterectomy lower by threefold than it is, it would not sanction the performance of that operation on account of a small fibroid tumor which had ceased to grow, which produced no symptoms, but which the patient, as a whim, was determined to be freed from." A knowledge of the natural history of disease, therefore, is essential, and it is not to be forgotten that the latter has been the object of study for several generations before the aseptic period, and should be familiar to every surgeon. It is known that all cysts of the ovary are not proliferating cysts, nor do they necessarily attain a size productive of disturbance. Innocuous myomata of the uterus are so common after middle life that frequently they are to be regarded rather as abnormal than as pathological attributes. Because malignant disease of the uterus is associated with some of these it does not follow that all fibromyomata should be removed through fear that they may become malignant. Gallstones are present in a large number of cases of cancer of the gall bladder, but they are oftener found when there is no cancer of this organ, and it is a questionable argument for their removal that they sometimes are present in this disease. Gallstones in this relation are quite as likely to be the result as the cause of the cancer. The physician will have greater confidence in the judgment of the surgeon, when he knows that the latter is qualified by the thoroughness of his knowledge of pathological anatomy in general, to give due weight to the natural history of disease, and is not unduly impressed with contingencies which may happen, but of which there is no apparent prospect. But if the possible extent of the relief is limited, or new dangers are likely to arise, it becomes a serious question whether the temporary advantage of the few is compensated for by the permanent detriment of the many. In such cases it is the future of the patient which is to offer the means of discriminating between a useful and a useless operation. When operations were fewer this was to be observed by the physician. With the great increase in the number of the surgeon's operations, it is for him to keep informed of the subsequent history of the patient, and to be able to justify his action by a recognition of its effects, not for weeks or months only, but for a lifetime, whether this is to consist of weeks, months, or years.

The wise surgeon thus selects from the border land those cases which the physician has in vain attempted to relieve. He has taught the latter repeatedly that greater accuracy in diagnosis is attainable, that medicinal efforts for the absorption of an exudation, or the removal of a growth are usually a waste of time. He has demonstrated that the continued use of opium for the relief of pain may mask a purely mechanical disturbance to be definitely relieved only by mechanical measures; that the control of fever by antipyretics may prove a snare and a delusion; that prolonged jaundice is not to be cured by medicines; that obstinate vomiting does not necessarily demand a sedative, or persistent constipation a laxative. The diminishing reliance of the physician on treatment with drugs is significantly shown by the records of the Out-Patient Department of the Massachusetts General Hospital. According to Böhm, the number of prescriptions for drugs diminished from 68,143 in 1900 to 43 063 in 1906, more than one third, while the daily average of patients increased from 298 to 325. This change has been brought about by the introduction of the various appliances for physical therapeutics. In 1903, a daily average of 42 patients was treated entirely or chiefly by these measures. Thus the physician is led to recall the teachings of Hippocrates, that suitable diet, appropriate exercise, proper clothing and quiet of mind are important not only in the maintenance of health but in the recovery from disease.

The successful invasion of the border land by the surgeon is due mainly to the fact that surgery has become a science. The scientific surgeon, like the scientific physician, will have cause to glory in his name, which has sometimes been used in reproach, provided he has always before him the thought of applying his science for the relief and cure of disease. Scientific methods are to be acquired in the laboratory only, and the leaders in medicine of the present day realize that the laboratory has become quite as important in education as the clinic. They recognize that it is not the number of patients the physician or surgeon sees which makes his opinion valuable, but the sort of consideration he is able to give the individual patient. The ideal surgeon, therefore, seeks his early training in anatomy and pathological anatomy, in histology, physiology and pathology, in chemistry, physics and bacteriology, and thus prepared becomes the more successful in his encounter with disease. A like training is demanded of the physician, and the conjoint efforts of both are needed in the search for means of making future operations less necessary. It is always to be remembered that the origin of antiseptic surgery and its transformation into aseptic surgery are largely the outcome of laboratory methods in bacteriology and that the development of this science has been especially productive in the progress of medicine. Numerous discoveries in the etiology of disease, its methods of transmission, its prevention, the origin of symptoms, accuracy in diagnosis and precision in treatment are the outcome of bacteriological research. The ultimate extension of the border land of medicine, the corresponding limitation in the field of surgery, and the discovery of means of making many operations unnecessary seem most intimately connected with further progress in this science.

Biological chemistry, allied on the one hand to physiology, on the other to bacteriology, gives promise of a more accurate understanding of the nature of vital processes in relation to health and disease. It also permits the early recognition of remediable disorders and the control, if not cure, of those which have passed beyond the initial stages. The dependence upon the laboratory never ceases. The laboratory of pathological histology is an adjunct of the operating room, the bacteriological laboratory has become a necessity of the clinic, and the laboratory of the workers with the Röntgen ray is essential in diagnosis and treatment for physician and surgeon.

The training of the student in medicine in the scientific laboratories leads to his fullest preparation in the laboratory of clinical pathology, the clinical laboratory of the school in contradistinction to the greater clinical laboratory, the hospital. In the former he is to utilize all the methods of scientific observation, analysis and experimentation obtained in his earlier education that he may apply them in the latter to the diagnosis and treatment of disease. It is through the use of these methods that he is to recognize his opportunities and his limitations, to improve the former and to lessen the latter. Through them he is to fit himself the more thoroughly to give to his patient the benefit of medical or surgical methods in the treatment of the particular ailment.

The amount of knowledge to be obtained along these lines is without limit, the immediate value indefinite, but the promise is incalculable. The unselfish devotion of the workers and the general appreciation of their labors are meeting a reward not only in the good which has been accomplished but in the substantial aid which is being received from public and private sources. In this country, in particular, private munificence has set an example which makes the older world envious and there can be no more profitable investment than that which makes all mankind its debtor.

Thorough training in the laboratories is the best preparation for contact with disease. Many of the problems the latter offers remain unsolved, are steadily renewed, and can only be simplified by the return to laboratory methods of investigation. The solution often requires experimentation and the more clearly defined the conditions, the more definitely attainable the answers. Many such problems are to be found within and without the border land, and the more thorough the preparation of the physician and surgeon, the more skillful and beneficent their art, the more exact and the more productive their science.

Original Articles.

PHYSICAL TRAINING IN BOSTON PUBLIC SCHOOLS.*

BY JAMES B. FITZGERALD, M.D., BOSTON.

Physical training in the Boston public schools was established by vote of the school committee, June 24, 1890, when it was

"*Ordered*, That the Swedish system of educational gymnastics be introduced in all the public schools in the city."

This order did not have practical effect, however, until Jan. 1, 1891, when the first director of physical training elected by the board began the work of organizing the department. This order was passed as the result of a report of a special committee of the school board which had investigated and considered the question in all its bearings. The order never had full effect, however, because physical training was never established in all the public schools.

It is interesting to know that the recommendation of this committee which was adopted at this time came before the school committee in exactly the same form nearly fifty years ago, in 1860, to be exact, upon the recommendation of Mr. Philbrick, superintendent of schools at that time, but it did not have the approval of the board.

The special committee recommended that a director and four assistants be appointed, but the department had to begin with a director and one assistant only.

Enebuske's "Book of Gymnastics" was adopted as a textbook, the general idea being that in the primary and grammar grades the exercises should be done in the class rooms, or, perhaps, in the halls or corridors, occasionally, under the direction of the regular teachers. These teachers met at central places and were instructed by an expert who afterwards visited the class rooms to see that the work was properly done. When I took charge of the department in 1899 that was the way it was being done and that is the way it is being done at present, only it is no longer necessary to have the teachers' conferences.

The system works as well as can be expected. It is work that the regular teachers should not be asked to do if there was any way out of it, but it is certain that if this plan had not been adopted we would have had no physical training at all. In the primary and grammar grades it is as impossible for every teacher to teach gymnastics well as it is for every teacher to teach music well or drawing well, but as a whole they do astonishingly well, and in extreme cases we are sometimes able to have what is called departmental work; that is, the physical exercises are taught by some one who can teach them and the room teacher teaches something else.

Enebuske's book has been given up and a series of twenty printed cards, which make a graded course, has been adopted. They are the work of Mr. Nissen, a former assistant in the department.

Now the Swedish system differs from other systems in two important particulars. I am speaking now of educational gymnastics. In the first place, all exercises must be done in response to the word of command; they must not become rhythmic or automatic; they must have no assistance from music, for instance, and they must not be done so often that they become to any great degree automatic. In the second place, the exercises must always follow a certain definite order which is called the "Day's Order." The Day's Order begins with an introductory movement, then come arch flexions, heaving, balance, back, abdominal, jump and breathing.

Twelve minutes a day are set apart for these exercises in primary grades. The cards are, of course, very simple in these grades and all that is attempted is to give the children some idea of good sitting and standing positions and some training in fixing the attention. Emphasis, in the primary grades, is placed upon play and not upon educational gymnastics.

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* Read at the Boston Medical Library meeting, Feb. 13, 1907.

In the grammar grades sixteen minutes a day are given to the exercises, and emphasis is placed on good position, concentrated attention, quick response to the word of command, precision and decision. We come just as near the military standard, the West Point standard, as we can.

You will agree with me, I suppose, that this is good as far as it goes, and I hope you will agree with me that it does not go far enough, — that young boys and girls need to be considered from a hygienic as well as from an educational standpoint, and that the element of play should enter in.

With this in view we began five or six years ago the experiment of placing simple gymnastic apparatus in a few grammar schools where the conditions were favorable and where the masters and submasters were in sympathy with us. The apparatus was placed usually in the hall or basement and in one case in the corridor. Some of it could be used out of doors as well. For a time this experiment was a great success and we increased the number of schools with apparatus as fast as possible. There are now, I think, ten schools of this kind and the masters are unanimous in believing in the great benefit of this work, both in regard to the health of the pupils and as a means of improving the discipline of the school.

But a difficulty has arisen; the exercises have to be conducted by some one connected with the school, usually a submaster with occasional help from the department of physical training. It has happened in three or four cases that, owing to death, transfers or some such reason, new teachers have come into these schools who were not able to teach these advanced gymnastics. So far, we have been able to find other schools which were glad to get the apparatus, but it is a question how much farther, as a business proposition, it is wise to go under the present conditions. Of course, we look forward to the time when each grammar district will have its special teacher of physical training and hygiene who will relieve the grade teachers of a part of their burden and who will give his whole time to the physical work and to what is perhaps as important, the physical play of the pupils.

In one of my reports I venture to say that where from fifteen to twenty teachers are employed to train the minds of the pupils it does not seem unreasonable to ask that there shall be one to train their bodies.

In the high schools a different plan is followed. Speaking only of the girls — special teachers of physical training are employed who give their whole time to the work. The work is compulsory for all of the pupils, except a few who are excused for physical reasons, and it is carried on with one or two exceptions in the school gymnasiums. Two periods of about forty-five minutes are given each week, and if the work is well done the pupils receive two points towards the number necessary for graduation.

Nearly all of the high schools have or soon will have baths, and the students are of course encouraged to use them. This part of physical training, the work of the girls in high schools, is perhaps the most satisfactory part of the system. The only improvement I could suggest would be a medical examination and an increase in the number of lessons per week. The only reform that has been necessary has been the preventing the girls from taking part in competitive athletics.

When we come to the young men, however, the situation is not so satisfactory. As a matter of fact, when I took charge of the department there was no physical training for young men in any high school in the city. There were two reasons for this remarkable state of affairs. One was a lack of teachers and the other was the military drill. We have increased the number of teachers somewhat and we have introduced physical training for some of the boys in some of the high schools but the military drill still stands in the way of our doing all we ought to do for the physical welfare of the boys.

I suppose it is treason, but as a physician and as a citizen, I wish we were well rid of it. Disregarding the moral side and the injurious side which has been pointed out by Dr. Sargent and others, there is no doubt in my mind that simply as a preparation for war, simply as a means of making good soldiers, a thorough course in physical training would be infinitely better than what they are getting now in the military drill. So, while we can say that in the case of girls things are fairly satisfactory, in the case of the boys things are unsatisfactory and are likely to remain so.

I found that while the young men were doing nothing in gymnastics they were doing a great deal in all the various forms of competitive athletics, but, without the slightest regulation on the medical side; I was able to get the co-operation of the head masters and for the last seven years every candidate for a team has had to pass the director's medical examination. Until within two years the school committee took no official notice of the athletic question which is really one of the most important problems with which school officials have to deal. It is a moral, a physical and an intellectual problem.

Two years ago the head masters requested the school committee to appoint a sufficient number of assistants to the director of physical training competent to teach athletics. The committee appointed two instructors of athletics as an experiment. This experiment must have been considered successful by the head masters as far as it went, for a month or more ago they requested the committee to appoint some more teachers of athletics. In various other ways the school committee has shown its interest in athletics and its willingness to co-operate with the head masters. It seems reasonable to believe that before long athletics in the schools will be entirely in the hands of the representatives of the school committee.

You may be interested to know in a general way some of the results of the medical examination of school athletes.

We hear a great deal of the evils of athletics and I have no desire to minimize them, but I am bound to say that I have found very little evidence on the physical side in an experience of seven years. For instance, I have found just one case which I think could be fairly called an athletic heart, that is, a heart abnormally developed as a result of exercise. I have never found any evidence of pulmonary tuberculosis. This, perhaps, is not to be wondered at in the case of athletic youngsters, but it is worth recording.

I find an ocasional case of valvular disease or an irritable heart which makes me think that competition would do more harm than good, but they are surprisingly rare. I examine the same young men year after year in the various sports, and my testimony must be given that if a boy has a sound heart and lungs when he begins competition he is equally sound at least when he leaves the high school.

Blaikie said, twenty-five or thirty years ago, that Americans had no chests and no legs. I think there has been an improvement as to legs, but I cannot say as much for the chests. It is certainly the rare exception to see a finely developed chest.

In conclusion, you will see that something is being done, but that much remains to be done. We need more time for physical training, we need more teachers and we need more gymnasiums and more playgrounds. The department of physical training in 1891 consisted of a director, one assistant and three or four special teachers. At present it consists of a director, four assistants and fifteen special teachers.

MEDICAL SUPERVISION VERSUS MEDICAL INSPECTION OF PUBLIC SCHOOLS.*

BY THOMAS F. HARRINGTON, M.D., BOSTON.

MEDICAL inspection of school children has pointed out the necessity for the co-operation of physician and pedagogue if the physical and the mental health of the child is to be maintained in the adjustment of a fixed curriculum to a varying child. It has shown also that if the ends of a rational system of education are to be realized the path must be kept clear of unnecessary obstructions. The problems involved call for the closest union of physician and educator. This union is what I mean by medical supervision.

Massachusetts is the first state to enjoin the medical inspection of all children in the public schools. By the provisions of this legislative act[1] the medical profession becomes an active participant in the duties and the responsibilities thus assumed by the state. The greatest good to the child and to the state can be secured only so far as the members of the medical profession realize the importance of these new functions. Massachusetts will be sustained and indorsed, here and abroad, in this advanced step wholly by the confidence which the work of the physician wins, — work which calls for the highest type of public spirit and disinterestedness.

The physician in the public schools is not of recent introduction. As early as the beginning of the nineteenth century Peter Frank of Austria considered the instruction in schools and the duties of the physicians thereto in his "System of Complete Medical Police." In 1832 the number of lessons was diminished in Sweden for reasons of health. Many of the scientific congresses of Europe in the third quarter of the last century discussed the need of medical inspection and supervision of schools. To-day several countries have their boards of medical supervisors as a part of the central educational system; few, if any, are without medical inspection of school children, school surroundings, etc.; others like Austria-Hungary have made the work a state affair, and have granted the school physician a voice in the deliberations of local school boards. Japan has commenced the construction of a national system of education having for its foundation the physical state of the school children. In all these efforts abroad to lessen the physical and the mental defects among school children, as well as to construct a rational system of education the task is intrusted to the physician and the school authorities. In the United States, however, the work in this line thus far attempted has been done under local boards of health. Boston was the first city in this country to inaugurate the medical inspection of schools (1894). The plan established then has been followed more or less closely in other localities and states, and involves the appointment of visiting physicians by the board of health who direct their work. Originating as an effort to protect the public from the spread of contagious diseases through the aggregation of children in schools the system has great value in preventive medicine, and has proven its efficiency as such often. The well established fact that schools contribute largely to the spread of contagious diseases justifies the appointment of school inspectors, and likewise necessitates that these officers of the health department have free access to the schools. When viewed from the standpoint of the school, however, we meet an anomalous situation. In the first place the detection of unsuspected cases of contagious disease among the children is done by the teacher and not by the medical inspector; if the latter confirms the teacher's suspicion he exercises then the power of his department, *i.e.*, the public health department, and excludes the child from school; if the medical inspector does not agree in the conclusions of the teacher the child returns to its classes. Many teachers do not feel that they have technical knowledge sufficient to make a provisional diagnosis even, and rather than submit to the possible chagrin of a mistake hesitate, or do not call the inspector. There is also the possibility that ailing children not suffering from contagious disease may mingle with cases of true contagion while awaiting the arrival of the medical inspector. If the child is excluded and the case proves to be other than one of contagion the child becomes an involuntary truant often, and the school department is put to the expense and annoyance of returning that child to school. A more direct and practical means of accomplishing the end sought, and at the same time eliminating the above objections, would be for the teacher to exclude the child and at the same time notify the health department and the nurse representing that school. The school and the home, through the medium of the nurse, would thus continue their joint responsibility of the child without the intervention of the health department, while the public would have greater protection by the medical inspector's visit to the home, often the hidden or undiscovered source of contagion. Nurses of a part of the school government can be of inestimable service to the health department in pointing out where inquiry should be made. Schools should be notified daily of all contagion in their respective districts. Children excluded by the teacher or nurse and found free from contagion would be traced readily and returned to school, inasmuch as the failure of the school to receive a notice from the health inspector would be *prima facie* evidence that such a child was non-contagious. New York City illustrates this arrangement. In 1902 the medical inspectors of the board of health on their own responsibility excluded 10,567 children, many of whom did not report to their parents and did not return to school. In 1903 the health and the educational departments united; nurses were added to the system with the result that only 1,001 children were excluded. Every child excluded from the school should be given a blank stating the reason for his exclusion and requesting the parent or guardian to sign the blank stating whether the family would provide medical attendance for the child or whether aid was desired. These blanks must be returned for filing with the corresponding stub in the possession of the nurse or teacher.

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* Read at the Boston Medical Library meeting, Feb. 13, 1907.

[1] Acts and Resolves, 1906, chapter 502.

Within very recent years medical inspection in America has widened its scope beyond the detection and isolation of contagious diseases among school children, and the inspector is asked to pass upon sight, hearing, spinal curvature, adenoids, mental and physical defects, or any other demonstrable or supposed cause interfering with the school advancement of the child. This work has been added in many localities to the duties of the school inspectors of the health department. Why these agents of the board of health should be expected to carry out this work it is hard to understand. The abnormalities and defects cannot be classified as dangerous to public health. The salary of the medical inspector is merely nominal. The offense to the family physician engendered by conscientious honest work is a direct personal loss to the inspector. The inspector is not a part of the school system in which he is called upon to exercise power, and in which he bears the whole responsibility; his presence in the school is one of sufferance, if not less. The school authorities in whom compulsory attendance at school is vested have no jurisdiction in the matter. The antagonism of many families towards the agents of the health department, whom they regard as a sort of medical police, does not create active co-operation of the homes. Finally, the pressing necessity for the solution of many problems in pedagogy depending upon a careful study under competent medical authority, of many physiological and psychological data calls for something more than the pointing out of imperfections and the unsupported accusation that race deterioration due to school curricula is imminent. In the absence of a standing army with compulsory military service whereby the physical status of the whole population may be learned it becomes very essential that the advancing army of school children be studied closely so as to gain that information necessary for healthy development. It is not scientific nor accurate to take much for granted in this investigation. We assume often that one child is brilliant because his parents are brilliant, that another is defective because his parents do not exhibit marked mental activity. The real fact is that these qualities are acquired traits and not dependent upon physical structure which is the only part inherited by the child. Then too we assume that all children at a certain age physically must be at a certain stage of development mentally, hence the grading system in the public schools which has raised the age of college entrance to almost nineteen and a half years, a prohibitory age to many for acquiring higher education and professional life. We assume that all children are developing their faculties according to some fixed order, whereas, we have abundant illustrations in the physical part that children vary greatly in periods of growth and in the time and length of the nascent periods. The many misfits of school children and the curriculum find their explanation in this error. The best time to develop mental or physical capacity is when that power is growing. To neglect it means its degeneracy, to force it at its unnatural period means abnormality and a lack of harmony of the whole. An experiment made in Paris a few years ago illustrated those points graphically. Four principals each gave to twenty-five boys in his school the same studies prescribed in the regular courses, but in different order depending upon the natural development of the boy's mind, and not upon an arbitrary order of a fixed curriculum. The result was that these boys completed the required studies in all the courses in three and one half years instead of the prescribed seven years. They were found to be equally proficient mentally and physically as compared with those who had spent seven years in going over the same course.

Biology, physiology and psychology have each established data upon which each child can advance. Sensation, memory, imagination, judgment, comparison, curiosity and reason—each has its fixed period of activity and repose, each has its outward manifestations in the growing child.

Fatigue has its signs in the physical actions of the child long before it produces mental fatigue and exhaustion. If we hope to develop a generation physically and mentally able to combat the problems of the future it is absolutely necessary that all these questions be solved rationally. The solving of these questions has received nothing from the system of medical inspection in vogue in America. It requires the co-operation of physician and pedagogue under a different relationship than that prevailing in the present method. The position of the physician in the school should be one of supervision and control of all those questions having to do with the physical welfare of the school child. He should be counsel and advisor to teachers and school authorities in adjusting the many questions of mental and physical correlation in school curricula. He must be a part of the school system to which the state and the home intrust the mental development of the child without fear of physical injury resulting therefrom.

Any plan proposed for the medical supervision of school children must have at least three essentials, — it must be simple, practical, economic. To be simple its aim and purpose must be readily comprehensible to the lowest intelligence in the community; it must create an interest among children and parents and in the homes, so that there shall be greater confidence and a unity of action between the school and the home; it should stimulate parents and guardians to a fuller realization of their obligations, the benefits of better ways of living, the effects of such measures on length of life, its happiness and its cost. The plan should demonstrate that the general effects of school life are healthy if not counteracted by outside agencies; in a word any scheme proposed should aim to make the school the continuation of the home, the home the strength of the school, one the supplement of the other. The plan must be practical in so far as it meets the varying conditions of each child, his environment, temperament and mental development. Practical in the sense that it not only teaches that the highest quantity and quality of mental progress is dependent upon the physical state of the child, but it must show the simple methods by which this physical state may be maintained. It should strive to encourage and assist each individual to attain *his* highest development, mentally and physically, rather than point out variations from some ideal type which is contrary often to all laws of biology. Its end must be to remove the *causes* tending to lessen the average mental fullness and physical up-building of the whole population, rather than to center solely upon developing individuals with better made ears, throats, noses, or bodily contour. The method must have the possibilities of extension to the larger communities and the whole state, as well as meeting the requirements of the smallest country district, in order that uniform methods of pedagogy may be classified and judged. It must be economic not alone in the size of the budget required, but rather in demonstrating that *cost* and *value* are not interchangeable terms; that anything which betters the educational methods of a community means better return for the money expended than much larger sums spent for correctional, reformatory and dependency institutions. No system of medical inspection or supervision in schools, however simple, practical or economic, can attain its full measure of usefulness unless it has the confidence and support of each community in the state. This can be secured best by instruction and persuasion, not by compulsion and coercion. Parents and public officials will co-operate readily when they see that the measures proposed have for their sole aim and purpose the bettering of the child, group of children, and ultimately the whole population. Just as the detection and elimination of physical defects in the early school years mean less mental backwardness among future pupils in the higher grades, so too will the lessening of high tension, nerve exhaustion and unhygienic modes of life among pupils in the advanced classes guarantee a race superior physically and mentally. Obviously the physician is the one person most competent by training and preparation to weigh the significance of these various elements. City and town school authorities about to introduce medical inspection should secure such a medical official as the first essential. His position should be that of school *supervisor* as pointed out above, leaving the care of infectious or contagious diseases to the health department inspectors, ward physician, or the city physician.

Section 5 of the Acts and Resolves, 1906, chapter 502, provides that the school committee shall see that each child in the public schools is carefully tested and examined at least once a year, not only for defective sight and hearing, but also to ascertain whether he is suffering "from any other disability or defect tending to prevent his receiving the full benefits of his school work, or requiring a modification of the school work in order to prevent injury to the child or to secure the best educational results." The testing of the sight and hearing is vested in the teacher. Few will deny that the teacher above all others is the one best qualified to judge whether the child is receiving the full benefit of his school work, or whether he requires a modification of the work in order to prevent injury. The teacher sees the child at all hours of the day, under every degree of fatigue; she knows his mental status daily, weekly and monthly, and with the knowledge of the child's extra-school life which the school nurse can readily supply she is best able to furnish to the supervisor data for the construction of a physical and mental record of any individual child. Another advantage of having a responsible medical supervisor is that the teacher will refer to him those pupils who are obviously abnormal or who show lack of progress, and she will not assume that any physical imperfection present is necessarily a defect and must be removed. These problems seldom, if ever, require the daily visits of a physician. Many cases can be corrected readily by the teacher through the knowledge gained from the course of instruction given by the medical supervisor. Parents and the family physician would have greater confidence when the child's abnormality is pointed out, and co-operation with the school would be accepted more readily. The opinion of the medical supervisor would be based upon a knowledge of the child's growth and development from year to year, from grade to grade, and not upon the manifestations of a temporary excitement. Local school authorities would have an official in their department competent to decide the many questions of the order of studies and its relation to fatigue and exhaustion, the duration of work and the duration of recuperation, between the rate and the quality of work, between weariness and fatigue, the doing of pleasurable work and the forced task, — all factors which to-day are as needlessly enervating to the teacher as they are injurious to the child. By the association of the several medical supervisors the state would have a body of experts hardly possible under any other arrangement. Massachusetts has taken an advanced position by requiring compulsory medical examination of all children in her public schools. The responsibilities of this act call for more than yearly statistics of defective eyes, ears, noses, or spines among school children; it imposes the duty of detecting the *cause* and minimizing its effect in every factor of the home life and the school life of the child tending toward retrogression, in order that future generations may regain a mental and physical high standard. To that end the physician in the public school will give his best efforts.

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THE PHYSICAL WELFARE OF THE PUBLIC SCHOOL CHILDREN.*

BY GEORGE S. C. BADGER, M.D., BOSTON.

A commission of five physicians, appointed by the Boston School Committee last June, to report their "opinion as to desirable length of session, periods of recess, curriculum, and on all other matters, relating to the health of children attending the first three grades," made the following recommendations:

I. Regarding school buildings:

(1) That efficient artificial lighting be installed in all school rooms and toilets.

(2) That until such efficient artificial lighting be installed, the masters be empowered to dismiss on dark afternoons those rooms where the light is so dim as to strain the eyes of the pupils.

(3) That the windows be cleaned more frequently, especially during the winter months.

(4) That smooth pavements be laid on the streets adjoining the school buildings to lessen the noise.

II. Regarding the sessions and recesses:

(1) That the present rule of two sessions be continued.

(2) That the afternoon recess be lengthened and devoted to play.

III. Regarding the curriculum:

(1) That games and manual training, so far as possible chosen by the pupils, be introduced in place of the present schedule during the last hour of the afternoon.

IV. That the classes of the first grade be limited to twenty-five; of the second grade to thirty-five; and of the third grade to forty-five members.

V. That special provision be made for the care and study of the backward children, especially in these grades.

VI. That competent trained nurses be appointed to supplement the work of the medical inspectors.

The full report of the commission is being printed as a school document, and contains a discussion of the subjects leading up to our recommendations.

I wish to speak to-night of the introduction of manual training and of directed play into the first three grades, and of the medical inspection of schools.

The commission recommended that manual training and directed play, so far as possible chosen by the pupils, be introduced in the last hour of the afternoon session, in place of the present curriculum. It is during this last hour that the children become fatigued. This is manifested by great restlessness, inability to fix the attention, and sitting with heads on the desks. Their distress is evident and no good work is accomplished. The teachers are almost unanimous in their desire for a change in the work of this hour. Manual work or directed play seems to offer the most desirable change. An important thing is that the children shall have some choice of play and of the work to be done. In this way only can their interest be aroused.

In the fall and spring months the schools with good yard accommodations could conduct these exercises out of doors. The introduction of gardens, already in use in some schools of higher grades, would offer most attractive work for the older ones of these primary grades. Some simple gymnastic apparatus, as swings, balancing boards, together with the introduction of games requiring the co-operation of several children would be valuable. Those more familiar with manual training could suggest work suitable for children of this age. In the winter months this work could be carried on in the school buildings. If properly devised and directed it seems to offer valuable training with the minimum of fatigue.

Many of the schools have good play yards, and at present they are used only during the morning recess of twenty minutes. The plan just suggested would make better use of these valuable school assets,and better health of the pupils would follow. But why limit the use of the yards to the school hours? If the children are enjoying the work or the play at the close of the school hour why not let them play on and stop when they want to? It seems far wiser to allow the children to play together in a protected place under competent supervision than on the streets. Let the yards be open all day and on holidays. The educative value of work and directed play is great, and when conducted out of doors is of decided benefit to the physical welfare of the children.

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* Read at the Boston Medical Library meeting, Feb. 13, 1907.

For schools with no yard accommodations use could be made of the public playgrounds. The work or play must be more or less directed by competent teachers, whether in the school yards or in public playgrounds, and to accomplish this the playgrounds would have to be under the charge of the school committee.

THE MEDICAL INSPECTION OF SCHOOLS.

The physical welfare of the children is looked after by a corps of physicians, whose duty it is to visit the schools daily and examine any pupils considered by the teachers to need the physician's services. No special room is provided for this examination. The inspector visits the rooms only on special request. The children selected for examination are sent to him when he calls. The examination is made and the advice given to the teacher or master, who notifies the parents, if requested to do so, of the diagnosis, and what had best be done. The inspector does not treat the patients.

This is not an inspection by physicians, but by teachers. Yet the medical profession is held responsible. There is a great difference in the attitude of the teachers towards it. In some schools the inspection is good, the teachers being watchful of their children, and anxious to carry out their part of the work. In other schools there is apparent indifference. In one school of three hundred children, there had been no call for the physician's services in three months, and it seems incredible that there were none needing help.

It is impractible to require a complete physical examination of all the school children. Its value does not seem commensurate with the amount of time and work it would take. The trained observer can find much of value on which to base an opinion of bodily health by close observation of the child. It seems safe and fair to believe that children who look well nourished, have good color and good facial expression, who are alert in body and mind, sitting at their desks, or standing or at play, erect and with every appearance of normal development, must be in satisfactory physical health. Why, then, is a complete physical examination of all the children necessary? I do not believe it is necessary. And the condition of the children as noted by the commission does not seem to call for such an examination.

One of the principal duties of the medical inspection is the detection of the contagious diseases of childhood, especially diphtheria, scarlet fever and measles. Many people believed when the work was begun in 1894, and still believe, that the schools are the great sources of infection for these diseases. A study of the reports of the "Medical Inspection of Schools," published by the Boston Board of Health, is interesting and instructive. Eleven reports are available, the first being issued in 1895, the last one in 1906 for the year 1905. In all the public schools of Boston are approximately 100,000 pupils.

The cases of diphtheria, scarlet fever and measles reported as found in the Public Schools are as follows:

Year.	Diphtheria.	Scarlet Fever.	Measles.
1895	77	28	116
1896	26	8	59
1897	30	31	100
1898	8	16	26
1899	13	5	85
1900	23	23	121
1901	9	9	25
1902	7	2	69
1903	32	29	121
1904	11	10	264
1905	1	9	16

There undoubtedly were other cases not detected, but they were probably few in number, as there has been no epidemic of these diseases during these years. The cases escaping detection might have been found by a more thorough system of inspection. Surely the Boston public schools, at least judging from the reports of the school inspectors during the past eleven years, have not been such marked centers for the spread of these three most serious contagious diseases of childhood as has been supposed. The health reports show that the same conditions prevail with regard to the less severe diseases, as mumps, chicken pox and whooping cough.

The introduction of trained nurses into our schools will greatly increase the efficiency of the inspection, and will obviate the disturbance of an examination of all the pupils. The carrying out of proper treatment will be made possible and the absences from school will be greatly shortened.

A nurse might have three or four schools under her supervision. Her frequent visits to the rooms, conferences with the teachers and inspection of the children would tend to find those showing symptoms of sickness, and these could be referred to the inspector for examination. She could take cultures of all complaining of sore throats and from suspicious nasal discharges. That is, the nurse with her special training and experience in sickness, and the teacher with her intimate acquaintance with the pupils would together find the children showing symptoms of sickness.

The vision and hearing of the children are now being systematically tested by the teachers, under the provisions of a law passed by the legislature in 1906. That a large percentage of children with defective vision will be found, I feel certain. In three schools with an attendance of 1,275 pupils, where a nurse has been in attendance during the past year, over 10% of the children have already been fitted to glasses. These children complained of their eyes, and when the vision of all is tested a much larger percentage will be found with defective vision.

The commission found the children a fairly well nourished lot. Inquiry among the teachers satisfied us that but very few cases of real neglect existed. Some of the children whom the teachers thought underfed or coming to school without breakfast, on investigation were found to have been provided with food which they did not eat.

The adoption by the school committee of the recommendations made by the commission will add to the already great efficiency of our schools, and will better protect and add to the physical welfare of the children.

SCHOOL HYGIENE.*

BY S. H. DURGIN, M.D.,
Chairman of the Boston Board of Health.

School hygiene as it is and as it ought to be is the part of this evening's discussion assigned to me. Briefly stated, school hygiene in Boston has been promoted in the last few years by several important changes made in the interest of the health and comfort of the school children. This has been accomplished in part by better construction and care of the school buildings and their appurtenances, and in part by the closer observation and care for the physical condition of the school children by the teacher and physician. First in the alterations came the abolishment of the old privy vault, which, by several successive gradations, gave way to the modern open work, individual closet and washbowl. Cesspools have been replaced by direct sewer connections. Light and well ventilated basements, useful as recess playrooms in stormy weather, have taken the place of dark and unventilated basements. The fresh air supply for the schoolrooms, instead of being wholly dependent upon the caprices of weather conditions and unaided shafts in the walls (frequently terminating in the attic), is now secured with well constructed air shafts provided with the necessary artificial power to make them effective. The proper seating of children has been agitated and advanced largely by the medical profession and members of the school committee. Excessive overcrowding has been largely relieved. But while the schoolhouse conditions have been greatly improved, the present situation nevertheless calls for the abandonment of some, extensive alterations in others, the construction of many additional houses, and a more liberal allotment of ground for many already in use. Encouragement may be felt in the fact that we have at the present time a Board of Schoolhouse Commissioners with ample scientific qualifications, valuable experience and needful activity. I believe that under these conditions the best work is likely to be advanced as fast as the means may be provided.

The particular attention now given to the physical condition of the school children was begun in 1894. This has consisted in daily visits made by the medical agents of the Board of Health who examined such children as are selected by the teachers as needing the observation and advice of a physician. Diagnoses are made, cases of infectious disease sent home and the teacher advised as to what should be done with the other children who are ill. Examinations for evidence of vaccination, and other special inspections for pediculosis, etc., are made from time to time. The medical agents receive from the health office daily bulletins of all infectious diseases reported and have to do with the isolation of the cases in their several districts and the return of all children to school after an absence or a known exposure to infection.

This primary work is not all that was contemplated and provided for in the start, but has served to stimulate and warrant other cities in this country to adopt it and to extend its usefulness far beyond that reached in our own city. Its highest compliment was given a year ago by our state, whose legislature then made the work compulsory throughout the Commonwealth. This work is now to be considerably extended and will embrace much which has not hitherto been included in our requirements.

The medical service to be most effective should be given daily, and if the teachers and the coming school nurse do their best, many times the present number of ill and defective children who are referred to the physician will be found and so referred to him in the future.

The sight and hearing of every child in school is to be tested once in each school year by the teachers, and also examined by the school physician for any other defect which may interfere with his school work.

The inspector will see all cases referred to him by the teacher or nurse, all children who have been absent from school for more than two days, all children returning after a known exposure to infection, all children previously ordered under treatment and showing no evidence of treatment. Cultures will be taken in all cases of sore throats. All cases of acute infectious disease are to be immediately excluded and reported to the Board of Health. All children in whose families an infectious disease exists will be excluded until certified by the medical inspector.

The best results from the medical inspector's work in the schools will be obtained only when nurses are employed to aid the teacher in finding sick and defective children and in securing their treatment in the home or in the dispensary. The services of nurses are fairly assured. The nurses (if secured) will be appointed by the school board, and work in conjunction with the school physician.

Medical Progress.

RECENT PROGRESS IN NEUROLOGY.

BY PHILIP COOMBS KNAPP, A.M., M.D., BOSTON.

APHASIA.

In a recent editorial in this Journal[1] the revolutionary views upon the subject of aphasia recently advanced by Marie were discussed. Since that time, as might naturally be expected, his theories have received considerable adverse criticism, and he has defended his position with much force. In the discussion upon the subject it has been forgotten that the old theories of Lichtheim, which sought to establish upon a purely theoretical basis various forms of conduction aphasia, both sub-cortical and trans-cortical, were subjected to a very thorough and destructive criticism over fifteen years ago by Freud,[2] who showed that the actual cases could not be brought under the elaborate schemes proposed by Lichtheim, and that there were no reported cases which corresponded exactly to the theoretical forms of aphasia he described. As a result of that analysis, Freud proposed another classification of aphasia; first, a verbal aphasia, in which merely the associations between the different elements of the verbal idea were disturbed, and, second, an asymbolic aphasia, in which the association between the idea of the word and the idea of the object was affected. Freud also recognized that there were disturbances in the recognition of objects, to which he gave the name of agnosis, and considered that it was possible that agnostic disturbances, which could only arise through extensive lesions of the cortex in both hemispheres, might produce a disturbance of speech when the incentive to spontaneous speech arose from the association of the object.

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* Read at the Boston Medical Library meeting, Feb. 13, 1907.

[1] Bost. Med. and Surg. Jour., clv, 387, Oct. 4, 1906.

The elaborate schemes of Lichtheim and other German and English writers have of late years been abandoned for the more simple theories advocated by Dejerine and his pupils, Bernheim and Mirallié, and it is therefore not remarkable that the views of Marie should be sharply criticised by him. As our readers will remember, Marie [3] in his first paper maintained that Broca's convolution played no special part in the function of language, as there were many cases in which there was a lesion of that convolution without aphasia, and other cases of true motor aphasia without any lesion of Broca's convolution. Broca's aphasia is no more than the so-called sensory aphasia of Wernicke with anarthria, but Wernicke's aphasia is always associated with a considerable intellectual defect, and the disturbance of speech is due to that rather than to the involvement of any special speech centres. Dejerine [4] maintains, however, that in the cases of pure motor aphasia and pure word blindness and word deafness there is no failure of the intelligence; and in other cases the suppression of the images of language is the cause of the intellectual deficit. The mental failure varies greatly in the cases of aphasia, being more marked in the sensory forms, but varying with the extent of the lesion, and when the aphasia is cured the intelligence returns. Dejerine argues that the mental disturbance cannot explain such highly specialized troubles of speech, and the failure of intelligence cannot explain such particular troubles of speech as paraphasia and jargon aphasia, which are very readily explained by the suppression of sensory images of language, especially of the auditory image. In sensory aphasia internal speech is affected, and as the function of Broca's convolution is no longer regulated by the sensory images, the words no longer correspond to the ideas which the subject wishes to express. If Marie's views were correct, there should be similar disturbances in lesions of the right hemisphere, but the mental failure which Marie claims is seen only in lesions of the left hemisphere when the speech centres are involved. Furthermore, in various forms of mental disease attended with considerable mental failure, such as dementia and general paralysis, aphasia should be exceedingly common, but it is seen only when there is in addition some focal lesion.

In a second article [5] Dejerine argues that the cases of lesion of Broca's convolution without motor aphasia are not clearly proven. We cannot prove Broca's convolution to be the sole centre of speech, yet there is a centre in that vicinity lesion of which causes motor aphasia apart from any lesion of the temporal lobe. There is no connection between the motor aphasic who cannot speak because he has lost the memory of the movements necessary for the articulation of words and the anarthric patient who pronounces with difficulty by reason of paralysis of the muscles. Dejerine believes that in motor aphasia there may be an apparent sensory loss from defective evocation of auditory verbal images, but this sensory loss is very much less than in true sensory aphasia, and is very easy to be distinguished. He maintains, furthermore, that there are certainly cases of Broca's aphasia where there has been a complete preservation of intelligence, and cites two cases as proven,— one in his own service, reported by Bernheim, and another from the literature, reported by Ladame, — where there was no sensory aphasia and no paralysis. The lenticular nucleus and Wernicke's convolution were intact. Broca's convolution was affected. The patient was aphasic, but the intelligence was perfectly normal. He maintains, then, that there is a motor aphasia due to lesion of Broca's convolution, just as there is a sensory aphasia due to lesion of Wernicke's convolution. In either form, the troubles of the intelligence when they exist, which they do not always do, have absolutely nothing to do with the symptoms presented by the patient, and in Broca's aphasia the troubles of speech have no relation to anarthria.

To this Marie [6] replies that Dejerine's distinction between cortical and sub-cortical aphasias is absolutely theoretical and schematic; that no case of pure word deafness, as described by Dejerine, is known to him either in his personal experience or in the literature. The so-called "word deafness" is merely a failure of comprehension of language; since Wernicke's centre is an intellectual centre, and not a purely sensory centre. He knows of no case of word deafness without mental defect which also involves the comprehension of written language. He denies that there is any word deafness where there is also an absolute preservation of intelligence, of the power of reading and writing, and where the auditory acuteness is intact. When the patient does not understand, this is due not to a defect in the auditory verbal centre, but to a defect of comprehension. Intellectual deficit is a part of aphasia. This deficit is somewhat specialized in that it affects the stock of things which have been learned by didactic processes. Such deficit can be revealed only by methodical examination, and at first sight is not evident. Intelligence is not one simple function. The failure of the intellect in general paralysis is quite different, and the special failure from the lesion in the temporal lobe is not to be compared with the brute deficit of general paralysis. The deficit of the feeble minded has still another quality. There is, however, such a symptom as alexia, which is due to a lesion of the visual tract combined with an alteration in the temporal lobe. It is, however, absurd to suppose that in the few generations in which the average man has been able to read, a true visual verbal centre could be developed. Pure motor aphasia is not an aphasia but an anarthria, and anarthria is not an actual paralysis, but a loss of the power of special co-ordination similar to abasia. In anarthria the lesion is situated in the lenticular region, and the third frontal plays no special part.

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[2] Zur Auffassung der Aphasien. Leipzig, 1891.
[3] La Semaine Méd., May 23, 1906.
[4] La Presse Méd., July 11, 1906.
[5] La Presse Méd., July 18, 1906.
[6] La Semaine Méd., Oct. 17, 1906.

Finally, Marie subjects the two cases quoted by Dejerine to a critical analysis as the only two cases of so-called pure motor aphasia which Dejerine could find, and shows that they by no means substantiate Dejerine's claims. In Bernheim's case, which Dejerine quotes as being a case of pure motor aphasia with normal intelligence, no sensory disturbance, and with Wernicke's convolution intact, there was really mental impairment, sensory disturbance and Wernicke's convolution was affected. In the other case of Ladame's, the case had not been fully reported, and showed lesions beyond those which Dejerine claims.

Marie maintains, then, that Wernicke's convolution is the intellectual centre of language, not a purely sensory centre, and the deficit varies with the extent of the lesion. There is no room for the distinction between cortical and sub-cortical aphasia, for all cortical lesions affect the subcortical region as well. There is an intrinsic aphasia in which Wernicke's convolution is involved, and an extrinsic aphasia in which this convolution is not directly involved, but there is an anarthria from a lesion in the lenticular region, or alexia from a lesion involving the visual centres. The true centre of speech is in the temporal lobe, and is not sensory, but intellectual. The lesion disturbs the comprehension of speech, the ability to read and write, and all notions of a didactic order. In anarthria there is a loss of speech with preservation of comprehension of speech and the ability to read and write.

In a subsequent paper Marie[7] goes back to the two cases upon which Broca based his theory of motor aphasia, and examines the brains, which are still preserved in the Musée Dupuytren. In the autopsy of Broca's first case there was a large lesion in the Sylvian region involving the third frontal convolution, and also Wernicke's zone. Broca believed that the gradual progress of the symptoms was shown by the greater or less lesion in the brain, and in this case the disturbance of speech was the first symptom, and the third frontal convolution was the part most destroyed. The second case was a senile atrophy of the brain, which made Broca — partly from the phrenological theories of Gall — believe in the existence of a lesion in the foot of the third frontal. This patient seems never to have had aphasia.

These articles have been followed by considerable acrimonious correspondence on the part of Dejerine,[8] Ladame[9] and Marie[10] with reference to the two cases which Dejerine quoted in support of his views, but concerning which Marie seems to have demonstrated pretty clearly that neither of them can be regarded as strictly cases of pure motor aphasia, with a lesion limited to Broca's convolution.

Monakow[11] reviews the whole subject in a very judicial manner, partly upon the basis of fifteen personal cases with autopsy observed in the last year, and concludes that the number of negative cases is considerably larger than is ordinarily supposed, and the number is still greater of cases in which, although the lesion is either stationary or increasing, the aphasic disturbances disappear. Paradoxical cases, where the aphasia is chiefly sensory with destruction of the third frontal convolution, or motor with the lesion in the temporal lobe, are by no means exceptional. He concludes that the anatomical conditions for the occurrence of special forms of aphasia are uncertain. The break in conduction is by no means sufficient to explain the different symptoms of aphasia, and he is disposed to lay more weight than formerly on the nature of the morbid process and the manner of its onset. The restriction of the function of speech in these cases, on the hypothesis of the vicarious action of other parts of the brain, is hardly tenable, for it implies that certain portions of the brain can show increased function at a time — for example, after apoplexy — when the healthy cortex has enough to do to maintain its original functions. He contends that we must determine much more accurately than formerly what is the smallest amount of clinical symptoms which are, under all circumstances and in all individuals, produced by a purely mechanical destruction of a definite part of the brain, and also by what lesions or processes the more variable and temporary aphasic symptoms are excited.

Beside the local pathological processes he calls attention to a new physiological form of remote action to which he gives the name of "diaschisis," by which he means a temporary diversion of nervous activity from the local interruption of or deficit in a tract of fibres which direct or materially support any function. We can conceive that such a division may occur when the break in conduction in one chain of fibers or the destruction of projection or association fibers may indirectly inhibit or impair the action in another chain of fibers which stand in relation to them but have not been injured. Thus, for example, in cerebral apoplexy the healthy spinal cord may be temporarily so far affected that the spinal reflexes are at first lost. The initial aphasic symptoms are made up of a union of permanent symptoms upon the one hand, and of temporary symptoms upon the other. The permanent symptoms in a lesion of Broca's convolution are slowness of speech, difficulty in the formation of speech, hesitating speech, and, where the lesion is large, dumbness without agraphia, but there is no anarthria. In a lesion of Wernicke's convolution there is difficulty and slowness of speech, paraphasia, logorrhea and difficulty in utterance, perseveration and for a short time symptoms of partial deafness, with slowness in reading and writing. In lesion of both temporal convolutions there is probably cortical deafness. The temporary aphasic symptoms are represented by those symptoms which are at present termed transcortical or cortical. Among them are the disturbances of the complicated processes of the evocation of sounds, then those of the understanding of words and the ability to put words together, the implication of the so-called internal speech. To these may be added other disturbances of the relations between the word and object, and such disturbances as psychical paralysis, soul blindness and soul deafness, and many disturbances of the intellect. He gives a diagram explaining the action of diaschisis, in which he shows how a lesion of a definite portion of the brain may affect neurones going to other parts of the cortex, both in the same and in the opposite hemispheres, and temporarily impair the action of a large number of other neurones in the healthy cortex, which are brought into more or less direct connection with the neurones going to and coming from the diseased cortex. Under favorable conditions these healthy portions of the cortex soon resume their functions, but in other cases, many chains of neurones being injured, they may for a long time be considerably affected, and it is possible that through such varying processes, either by their involvement of the component mechanisms of speech or by other influences, we may ascribe many special forms of aphasia.

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[7] La Semaine Méd., Nov. 28, 1906.

[8] La Presse Méd., Nov. 17, 1906.

[9] *Ibid.*, Dec. 22, 1906.

[10] *Ibid.*, Jan. 12, 1907.

[11] Neurolog. Centralbl., xxv, 1026, Nov. 16, 1906.

By this theory we see that, under normal conditions, in producing the different mechanisms of speech, many cortical territories are involved, a number much greater than has formerly been assumed. If the cerebral lesion is purely local, and all the rest of the cortex has a healthy character, then a large part of the loss of speech may in a very short time disappear. While disagreeing with Marie's general conclusions, Monakow gives him credit for having called attention to the uncertainty of our present theories as to aphasia, but he believes that the present theory must be replaced by a better one which is based more upon physiological symptoms, and that the principle of diaschisis will be of help in this direction.

While it may be too soon to accept the views laid down by Marie, or the principle of diaschisis advanced by Monakow, the two seem to have proved conclusively that the older theories in regard to aphasia rest on a very uncertain foundation. In the recent discussion in Philadelphia, at the joint meeting of the New York and Philadelphia neurological societies, several speakers pointed out what has been the experience probably of every observer, that while it was possible to draw elaborate schemes showing the function of language, and to establish theoretically different forms of aphasia corresponding to these schemes, yet an actual study of clinical cases shows that the individual case never fits the scheme. The elaborate theoretical schemes of Lichtheim have practically been abandoned, and the distinctions advanced by Dejerine seem, in the light of the facts brought forward by Monakow and Marie, to be no longer tenable.

Reports of Societies.

BOSTON MEDICAL LIBRARY MEETING.

In Conjunction with the Suffolk District Branch of the Massachusetts Medical Society.

Medical Section.

R. C. Cabot, M.D., chairman; E. A. Locke, M. D., secretary.

The following papers were read:[1]

PHYSICAL TRAINING IN THE BOSTON PUBLIC SCHOOLS,

by Dr. James B. Fitzgerald, Director of Physical Training in the Boston Public Schools.

SCHOOL HYGIENE — AS IT IS AND AS IT OUGHT TO BE,

by Dr. S. H. Durgin, Chairman of the Boston Board of Health.

PHYSICAL WELFARE OF PUBLIC SCHOOL CHILDREN INVESTIGATED BY A COMMITTEE OF PHYSICIANS,

by Dr. George S. C. Badger, Boston.

MEDICAL SUPERVISION VERSUS MEDICAL INSPECTION OF THE PUBLIC SCHOOLS,[1]

by Dr. Thos. B. Harrington, Lowell.

DISCUSSION.

Mr. George H. Martin, Commissioner of Education, State of Massachusetts: The essential clause of the new medical law has just been read in your hearing. The pith of the whole law so far as it is likely to be most effective is that the children are to be examined annually for any defect that may interfere with their school work.

Now that law is on the statute books, and school physicians must be appointed to carry it out. It seemed to Governor Guild, I do not know but what it was suggested to him by some physicians, that in order to make this law effective throughout the state, it was very desirable that there should be some authoritative interpretation of that law, and so the governor appointed a committee of nine people, three members of the School Board of Health, three members of the State Board of Education and three physicians of the state to formulate a circular regarding the operation of this law for the guidance of the school physicians who might be appointed under this law. That was the purpose at first. That committee of nine appointed a sub-committee of three for the purpose of preparing such a circular. In the effort to do that this committee of three held conferences with the specialists in all the departments of children's diseases.

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[1] See pages 662, 664, 667 and 669.

We met every day, usually for an hour or two, with groups of men, heads of departments in the medical schools and hospitals of Boston. We met the heart men, dermatologists, laryngologists, neurologists, specialists in children's diseases and in contagious diseases, etc., until I, being the only layman, told them that I proposed to apply for a degree in medicine when the thing was over.

These questions were put to these gentlemen: "In your department of work what are the defects or diseases from which school children are likely to be suffering so as to interfere with their school work? Will you state in the plainest possible way the indications of these troubles?" As soon as we began to do this we found that in practice the observation of the children must be done by the teachers. In most cases the physicians would not visit the schools every day. They would visit them mainly when called upon by the teacher.

So we decided that this circular must be of such a character that it could be used by the teachers throughout the state. Accordingly these groups of specialists formulated what they thought ought to go into this circular and that material was taken by the committee and arranged and is now in the hands of the printer. It is our purpose to have it distributed universally throughout the state so that every teacher and physician in the state will have a copy. It is said by physicians to be a most admirable system. It deals with the ordinary diseases of the children in a general way; it deals with contagious and throat diseases and a brief statement from the orthopedic men; quite an extended statement in regard to mental defects of various kinds prepared by neurologists and something of general school hygiene.

You will see that this is likely to be a most efficient aid in the carrying out of this law, and my own judgment is that it will be a useful document to put into the families of the state as well as into the school itself. I think it will commend itself to the physicians of the state since it goes out with this weight of authority. That is as far as the matter has gone up to the present time.

Now another matter that I should like to speak of for a moment. We had thought that the difficulties which this law was meant to remedy were confined chiefly to the cities and we had felt that in the better schools of the city there would be few difficulties of the sort which need medical inspection, but as this work proceeds we are finding that troubles of this sort are not confined to congested parts of the city. They are everywhere, although certain forms of disabilities have become more common throughout the state in consequence of the recent immigration. The families that are coming into the country towns from Europe bring with them home habits which are interfering very seriously with the school work of the state.

May I also say that in naming the classes of doctors who assisted us in framing our circular I omitted to speak of the "teeth doctors," but we have a very clear and positive statement from them in regard to the necessity for the care of the teeth which will be incorporated in this little pamphlet of which I have spoken. May I also say that there is to be held in London this summer, from the 5th to the 9th of August, an International Conference of great value on the subject of School Hygiene. The committee represents every organization in England and Great Britain and there are co-operating committees representing every country in Europe. It is a five-days' meeting. I hope that the physicians of Boston, many of them, may be represented there and that we may have brought back to us the results of that great conference.

Dr. Arthur C. Jelly: Graded classes are well suited to the average child in the public schools, but other and separate classes are needed for children who cannot attain the average standard. In Boston these have been called "ungraded classes"; and they have been established from time to time until now I believe there are about seventy ungraded classes. First of all there are a great many foreign-born children who do not know our language and so are unable to do the school work of the ordinary grade. They require special instruction in English and they, therefore, are put into this ungraded class. Children who have illnesses frequently fall behind and cannot keep their grades; other children develop more slowly than the average and thus fall behind. Others again develop irregularly, *i. e.*, they develop in some directions quite rapidly and in others very slowly. Still other children have handicaps in the way of defective eyesight or defective hearing and therefore are unable to do their best work in school.

Classes are formed for all these groups of children. I do not know when these classes were started in Boston but in 1898 three *other* special classes were formed for training children who were mentally deficient. In 1902 the superintendent at the time asked me to take charge of the supervision of the existing classes, and after a while more classes were formed until there are now seven in all. They take care of 105 children. I regret to say that no classes have been formed since that time, but we have worked out certain problems in ways which have been very useful and have prepared us, I think, to some extent for the work which is bound to come.

The first classes were formed without medical advice and were selected by the teachers who were to take charge of the children. They went about through the public schools and selected cases that were clearly defective. When I took charge of the work in 1902 my first effort was to create two movements in the classes. Up to that time the children had remained in one class; none of them had been pushed ahead and none had been sent to institutions; hence the work was very discouraging, and I felt that it was important to take the low grade cases, study them and see if they could be improved or not and bring about as much improvement as possible. Undoubtedly many of those children are better off in the institution at Waverley.

You can surmise that with the low grade cases the home conditions were bound to be a detriment to the child, and led to habits of the worst sort, and, therefore, if they could be placed in the institutions it would be better for them. On the other hand, the teachers should have material of a more promising sort in order that they may be encouraged in their work. Hence I have endeavored to create *two currents* in the classes, one current (from the lower end among those least improbable) towards Waverley, and the other current from the upper or more intelligent end back to the graded classes. We have thus been enabled to bring about so much improvement that some of the children have been able to do grade work. On the other hand we have become so well acquainted with the parents in these intimate relations that many of them have been induced to send their children to the institutional school, and a great deal has been accomplished in that way.

The work has developed the fact that there were a great many symptoms of medical significance which were not noted by the teachers at all, and I have endeavored so far as possible to examine each child in the presence of the grade teachers who had had the child previously and to point out to her or to him the diagnostic points. I am pleased to say that a great many teachers now recognize and recommend to the ungraded classes a child much less defective than the children whom they thought suitable for this sort of work three or four years ago. The classes have not been multiplied as much as we could have wished, but it seems to me that the work is one of great concern to us all and one for which we have hope for the future.

Dr. Joel E. Goldthwait: Mr. Chairman, ladies and gentlemen, I should like to give you an impression of the problems with which the school board is confronted with the idea of trying to develop a fairer attitude to the school board than perhaps we, as a profession, have shown.

In the first place, I think we, as a profession, are apt to judge the effects of the school system by a few individual cases. We see one child, and a little later on another child, with evident signs of breakdown or defect of one sort or another, and we are apt to judge, it seems to me, that, therefore, the school system is at fault. Impressions thus formed are often unjust impressions. It seems to me that in justice to the school board a broader outlook is important. I speak from my own experience.

On class inspection the problems which were presented to our committee were such that it was not a matter of surprise that an occasional child might be injured by the system. The surprise was that not more children showed signs of distress in any system that could be developed when the number grouped for training is so large. For instance in the three lowest grades there are about 40,000 children, all nations being represented, some speaking English, some not, some coming from rich, some from poor, families. The school committee must work out a system that can satisfactorily meet the requirements of all those children. The surprise to us has been that so much good study and such satisfactory work had been developed.

There are conditions which can be improved. Some of them have been indicated in the criticisms which have been presented to-night. With the suggestions which we as a temperate body can make to the school board and to the teachers a much better system can be developed. My plea to-night is that we should be more temperate in the way in which we criticise our school board. The school board and the teachers as a body have impressed us as being a remarkable group of people, with the one desire of doing the best they knew how for the children. In so large a group there will be incompetent ones, of course, and with such a body of teachers it is not to be wondered at that there are certain ones that are distinctly inferior, but as a group of people it seems to us that they were remarkably efficient. It was interesting to see that practically all the suggestions which our committee made to the committee of masters which was also appointed by the school committee, had already been thought of by the masters and were already being worked out by them. In other words, it seems to me we have already a remarkably good school system but one which by calm, just criticism and advice upon our part can be made distinctly better.

Dr. Wm. H. Potter: In a recent work published in Strassburg, Germany, where great attention has been given to the examination of public school children as regards their teeth dental defects are spoken of as *the* illness of the people, *the* common illness. Now it is a fact, I suppose, that caries of the teeth is one of the most prevalent illnesses that our school children are suffering with. Why should not special attention be given to it? We have heard here to-night of the many disabling diseases with which school children are afflicted. To those who have means of knowing the prevalence of diseases of the teeth, it is perfectly evident that here we have conditions which most often disable the children. Perhaps the disability is not so evident as a case of diphtheria or scarlet fever; it works more insidiously. It affects first the powers of mastication and then the powers of digestion and then the powers of nutrition. It has been found by examination that children with poor teeth weighed less than children with good teeth.

Investigations of this sort have induced some towns and cities to go into the examination of the teeth of children as a whole and to give advice.

About a year ago I had the pleasure of superintending an examination in the Pierce School in the town of Brookline. Here is the result. We classified the teeth into good teeth, fair teeth and poor teeth. In the Pierce School containing about 700 pupils, 50% were classified as having poor teeth, 25% as having fair teeth and only 25% had good teeth. Now with that record here in Brookline, what must be the record in the much less favorable parts of Boston?

Dr. C. P. Putnam: There is one part of the school children in the city of Boston who have, I might almost say, the good fortune to have committed some minor offense so that they have been sent to the Parental School. There are certain disadvantages in this but there is one advantage for those children, who number in the vicinity of 250. There is a dentist at the Parental School who does an enormous amount of work on the children's teeth. They are systematically and thoroughly cleaned once a year and possibly twice. The eyes are examined and many operations are done on their ears. They have also operations of other sorts done. A great many of the bad teeth are extracted which leaves the children in a much better condition. I mention this only as further evidence as to how much ought to be done to the whole number of school children outside of the Parental School which is under the care of the Board of Trustees for the city of Boston.

Mr. Joseph Lee: The Massachusetts Civic League has introduced House Bill No. 536, providing that the school committee of Boston shall carry on play and physical education in its own buildings and yards and upon the playgrounds in charge of the Park Department, and providing it with money for that purpose.

The immediate practical effect of the bill, if it passes, will be that the school committee will carry on play in its own school yards during the summer, and will carry it on upon the playgrounds now under the charge of the Park Department (about 20 of which are available) all the year round, employing for this purpose volunteers from among its own teachers, with due supervision of a more specialized sort. The bill provides a special appropriation of $50,000, chiefly to pay the teachers for this extra work.

This bill, placing the playgrounds of Boston where they belong, as part of the public school system, is a logical development of the policy pursued by the league since the beginning of its playground work in 1899, the policy, namely, of developing the playground as an educational institution and connecting it as closely as possible with the public schools. If this bill is passed, it will make Boston once again a pioneer in taking a great step forward in the development of our national system of education.

That our public playgrounds should have supervision of some sort is coming to be generally recognized, owing in great measure to the demonstration of the benefits of supervision that the league has made, first at North End Beach, and afterwards on Columbus Avenue Playground and on the Public Garden. The testimony of neighbors, of settlement workers, of school teachers, and of police captains is unanimous to the effect that a properly supervised playground is of immense benefit to the children. Playgrounds without supervision, on the other hand, are apt to be monopolized by men and bigger boys, who take away the bats and balls from the smaller ones and otherwise molest them. Mothers do not dare to allow their children to go to such playgrounds; and so far as they are used, it is in the crowded districts largely for shooting craps rather than for strenuous play.

Our playgrounds must be supervised by somebody. The only question is by whom. A bill (Senate No. 152) has been introduced by Senator Linehan, providing that the baths, gymnasiums and playgrounds shall be under the charge of a single paid commissioner appointed by the mayor with the advice and consent of the aldermen. The passage of this bill would be a step in the wrong direction. Its effect would be to bring the playgrounds more into politics than they are, or are likely to become, under the Park Department, in whose charge they now are.

The proper body to carry on the playgrounds is the school committee.

It is already to a great extent the business of the school committee to supervise the children's play and physical development. It provides exercise, including games, during school hours. It has its school yards in which it supervises play in recess, which it uses in connection with its vacation schools, and which should be used and will be used, if this bill becomes a law, for play in summer. It will undoubtedly soon have play and games in the yards, at least of the primary schools in the afternoon, in accordance with the recommendations of its medical commission which recently reported.

The general physical oversight over the children already exercised by the school committee will become much more important when school nurses have been provided, and when our medical inspection law of last year is in other respects more fully carried out. It is very important that the play and physical exercise of the child shall be related to the physical examination and its discoveries.

The teachers are the right people to have charge of the playgrounds. Such is the lesson of experience. The Massachusetts Emergency and Hygiene Association, which has for twenty-one years carried on the sand gardens in the school yards in Boston, has found that school teachers are the best people to have charge of the work, and the experience in New York and elsewhere has been the same. There is no doubt whatever of the ability of the teachers to do the work. The supervision of play out of doors in the afternoon, on Saturdays, and during vacations, will, with proper interchange between different sets of teachers, be much less exhausting than teaching evening school, which is carried on indoors and requires much more preparation.

And the teachers are the kind of people to whom we should naturally look for work of this kind.

What is wanted on the playground is not the teaching of baseball (it is difficult to prevent a boy from acquiring that accomplishment under any conditions) but the influence of a man *or* woman of high character. Children are very imitative, it is the incidental teaching by example that counts, especially on the moral side, and nowhere does example count more than on the playground. The school-teachers are men and women of higher character than could be found for this work among any other class, far higher on the average than a single paid commissioner could ever hope to enlist. Such a commissioner could not properly afford to pay such high salaries as the teachers would receive when to their present salary is added extra payment for doing this special work. The teachers are members of a great and respected profession, with a professional standard and a remarkable professional enthusiasm behind them. They are men and women who have elected education as their vocation and have to pass difficult examinations and in most instances to do some teaching before they are employed in the Boston schools. They are the kind of people to whom our citizens are glad to intrust their children, whether during school hours or at other times. The same could not in most instances be said of instructors who, there is reason to fear, would be selected partly for political considerations.

Teachers are not only men and women of high character, they are trained educators. And the direction of play is largely an educational proposition. It is not only important on a playground to keep order and to see that the force of tyranny and anarchy are held in check sufficiently to allow life to go on. It is important, also, to know when to interfere and when to let alone; when to make suggestions and when to leave the boys and girls to work out their own solutions for themselves. These are educational problems. The whole question of the supervision of play is a problem in the growth and training of character and personality, and that is the fundamental problem of all education, the problem with which it is the teacher's special business to deal.

The teachers, moreover, are the only people in the world who can do the most important single thing that there is to be done in this whole matter, namely, the getting out on to the playground of those children who need play the most and who now get the least of it, the ones who are not specialists in football or baseball, but who are shy and backward and undeveloped upon the physical side and in the mental and moral qualities which play is especially calculated to develop.

Finally, having charge of the playgrounds will be of the greatest possible benefit to the schools themselves. A teacher can often learn more about a boy in fifteen minutes playing football with him than he could do in many weeks of school teaching. It is the difference between seeing the creature in his natural habitat and studying him in a menagerie. The relations between the teachers and the children will become closer and more fruitful when they meet on the playground as well as in the school. As a successful boarding school teacher has put it, " When you begin to play with the boys on the ball field, the problem of discipline disappears." Indeed, you cannot educate children unless you take account of the whole child. The tendency of education at the present time, what we now mean by it, is the development of strong, honest, effective men and women, not the imparting of a certain amount of knowledge. The school will never perform its true function, will never get at the whole child, so long as it leaves the most vital part of him, that which is developed and expressed in his play, outside of its influence and observation.

The expense involved in this bill ($50,000 a year, or about 50 cents for each child in the public schools) is an expense to which we must go if we are to get the benefit of the great expenditures already made for the playgrounds. The cost of the 21 playgrounds in the charge of the Park Department, together with Wood Island Park, Charlesbank and Franklin Field (which last three are also partly parks) has been $3,315,000. The expense of maintenance is $53,000 a year. We ought either to spend the additional amount necessary to make these playgrounds useful, or we ought to sell them and save interest, the present expense of maintenance, and the loss of taxable property.

Book Review.

The Treatment of Diseases of the Digestive System. By ROBERT SAUNDBY, M.D., M.Sc., LL.D., F.R.C.P., Professor of Medicine in the University of Birmingham, etc. London: Charles Griffin and Co., Limited. Philadelphia: J. B. Lippincott Co. 1906.

This little volume of 126 pages contains many practical points upon the treatment of diseases of the digestive tract. On the whole it is fairly well up to date, though the recent German work on the treatment of ulcer of the stomach and the investigation of intestinal diseases by the Schmidt and Strasburger diet has not been adequately considered.

Clinical Bacteriology and Hematology for Practitioners. Being the second edition of *A Handbook of Bacteriological Diagnosis for Practitioners.* By W. D'ESTE EMERY, M.D., B.Sc. Lond., Clinical Pathologist to King's College Hospital. Philadelphia: P. Blakiston's Son & Co. 1906.

It is a pleasure to commend this admirable work to practitioners. On every page are indications that the author has a first-hand knowledge of clinical pathology. The plates are excellent and will be found a real help to the beginner in identifying his microscopical findings. The section devoted to the blood is brief but the essentials of the subfect are well presented. The estimation of the opsonic power of the blood is described. For determining the percentage of hemoglobin the author recommends Haldane's hemoglobinometer. He agrees with most students of hematology that Tallqvist's method is too inaccurate even for rough clinical work. A better description of normoblasts and megaloblasts will be found in this small volume than in the authoritative work of Grawitz. Twelve pages are devoted to cyto-diagnosis. There is no section devoted to the bacteriology of the feces.

The Medical Epitome Series. Pathology General and Special: A Manual for Students and Practitioners. By JOHN STENHOUSE, M.A., B.Sc. Edin., M.B. Tor., formerly Demonstrator of Pathology, University of Toronto, Toronto, Canada, and JOHN FERGUSON, M.A., M.D. Tor., Senior Physician, Western Hospital. Series edited by VICTOR COX PEDERSEN, A.M., M.D., Lecturer in Surgery at the New York Polyclinic Medical School and Hospital. Philadelphia and New York: Lea Brothers & Co. 1906.

The authors have undertaken the task of presenting in 265 small pages an authoritative statement of the essentials of pathology. The attempt has been made to cover both general and special pathology and there are sections on the performance of autopsies and histological technique. We cannot agree with the editor of this series that the book before us combines brevity of statement with clearness and comprehensiveness. Accuracy is certainly lacking.

Phlebitis and Thrombosis. The Hunterian Lectures delivered before the Royal College of Surgeons of England in March, 1906. By WARRINGTON HAWARD, F.R.C.S. Eng., Hunterian Professor of Surgery and Pathology in the Royal College of Surgeons of England; Consulting Surgeon to St. George's Hospital; president of the Royal Medical and Chirurgical Society. New York: William Wood & Co. 1906.

The admirable lectures on phlebitis and thrombosis delivered last year before the Royal College of Surgeons have been issued in book form. They contain much of interest and value, alike for physicians, surgeons and pathologists. In addition to an analysis of the cases of thrombosis and pulmonary embolism that have been observed at autopsy during the last ten years at St. George's Hospital, the monograph includes the results of a careful study of the English and American literature. Many interesting cases have been collected and some of the author's own cases, hitherto unpublished, enhance the value of this excellent volume. We wish there were more clinical monographs of this high order published in English.

Applied Bacteriology. Revised and edited by CRESACRE G. MOOR, M.A. Cantab., F.I.C., formerly Public Analyst for Exeter, and Senior Demonstrator in Public Health, King's College, London, with the co-operation of RICHARD TANNER HEWLETT, M.D., F.R.C.P., D.P.H., Professor of Bacteriology, King's College, London; formerly Bacteriologist to the Lister Institute. Third edition. New York: William Wood & Co. 1906.

This is a well written and well printed book. It contains some excellent sections. Considerable information not found in other manuals is presented. Nevertheless, the work, as a whole, is disappointing. Although the volume was prepared to meet the needs of students of public health, workers in laboratories of hygiene will turn to it in vain for some wellknown methods of practical value and find others described so briefly and incompletely as to be well nigh valueless. For example, the v. Drigalski-Conradi method of isolating typhoid bacilli from water, feces and urine is most imperfectly described. This is rendered less excusable by the lack of a reference to the original article. Considerable space is devoted to old methods now no longer used.

The section on disinfectants is one of the best in the book.

THE BOSTON

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"THE CROWBAR CASE."

The recent death of Dr. John M. Harlow, of Woburn, Mass., referred to in detail in another column, recalls the extraordinary case with which he had the good fortune to be associated during the earlier years of his medical practice, and an account of which was first published in this Journal, in November, 1848 (Vol. 39, page 389). Dr. Henry J. Bigelow, then professor of surgery at Harvard University, took a keen interest in the progress of the case, and two years later a subsequent report was published with Dr. Bigelow in the *American Journal of the American Sciences.* At the meeting of the Massachusetts Medical Society, held June 3, 1868, twenty years after the accident, Dr. Harlow published a final report of the case, tracing the history of the patient, Gage, from the time of the receipt of the injury to his death.

It is hardly necessary to state that the accident which caused such wide and varied comment, not only in this country, but abroad, was occasioned by the passage of a tamping iron through the head of the man, Gage, destroying in its passage one eye and a large part of one frontal lobe, the iron bar being recovered some distance away. After many vicissitudes, and a somewhat protracted convalescence, during which, from our present point of view, as in fact, Dr. Harlow also thought, it must be conceded that nature was the chief restorer, Gage recovered, somewhat the worse for his experience, both physically and mentally. He died in California, May 21, 1861, thirteen years after the receipt of his injury. Fortunately for science and for the alleviation of a widely prevailing skepticism, his skull was returned to Dr. Harlow, who, with admirable public spirit, later deposited it, with the iron bar, in the Warren Museum of the Harvard Medical School where it may now be seen by any who may be interested.

It is not a matter of surprise that this case was at first received with much doubt, and that for many years, particularly in Europe, the whole story was received as a vagary of the American imagination. When the patient recovered sufficiently from the immediate effects of the accident, he came to Boston and was under the observation of Dr. Bigelow for about two months. It was no doubt largely due to Dr. Bigelow's conviction and influence that the case was accepted even with halting belief. During the nearly sixty years which have intervened other cases, similar but none so striking as this, have done their share toward proving the possibility of such an accident with preservation of life; and now it is accepted as a fact by all those who have taken the trouble to investigate it.

From our present point of view undoubtedly one of the most extraordinary aspects of the case is the fact that the patient survived in spite of various septic complications on the part of the brain, which, under ordinary circumstances, even at the present time, would probably have proved fatal. We quote, for example, from Dr. Harlow's final report this statement:

" This fungus first made its appearance on the 19th, six days after the injury; also large fungi pushing up rapidly from the wounded brain, and coming out at the opening in the top of the head. On the 27th, the swelling upon the forehead fluctuated. The exhalations from the mouth and head horribly fetid. Pulse 84. Comatose, but will answer in monosyllables when aroused. Will not take nourishment unless strongly urged. Calls for nothing. Surface and extremities incline to be cool. Discharge from the wound scanty, its exit being interfered with by the fungi. The friends and attendants are in hourly expectancy of his death, and have his coffin and clothes in readiness to remove his remains immediately to his native place in New Hampshire. One of the attendants implored me not to do anything more for him, as it would only prolong his sufferings — that if I would only keep away and let him alone, he would die. She said he appeared like ' water on the brain.' I said it is not water, but matter that is killing the man — so with a pair of curved scissors I cut off the fungi which were sprouting out from the top of the brain and filling the opening, and made free application of caustic to them. With a scalpel I laid open the integuments, between the opening and the roots of the nose, and immediately there were discharged eight ounces of ill-conditioned pus, with blood, and excessively fetid. Tumefaction of left side of face increased. Globe of left eye very prominent."

In spite of this situation, the man recovered. We cannot forbear a quotation of the paragraph with which Dr. Harlow closes his report:

"I indulge the hope, that surely but *little* if anything was done to retard the progress of the case, or to interfere with the natural recuperative powers. Nature is certainly greater than art. Some one has wisely said that vain is learning without wit. So may we say, vain is art without nature. For what surgeon, the most skillful, with all the blandishments of his art, has the world ever known, who could presume to take one of his fellows who has had so formidable a missile hurled through his brain, with a crash, and bring him, without the aid of this *vis conservatrix,* so that, on the fifty-sixth day thereafter, he would have been walking in the streets again? I can only say, in conclusion, with good old Ambroise Paré, I dressed him, God healed him."

The modesty of this statement is commendable, and comports well with the attributes of its author, with whose passing at the age of eighty-seven the last person has died who was intimately associated with this now famous case.

THE BORDER LAND OF MEDICINE AND SURGERY.

In his address as president of the Congress of American Physicians and Surgeons, recently held in Washington, Dr. R. H. Fitz discussed the border land of medicine and surgery. The address is published in full in another part of this issue, but the importance of the considerations which he takes up are so great that we beg to call further attention to the subject in this column.

It will be remembered that some years ago Dr. Fitz delivered the anniversary discourse before the New York Academy of Medicine on the subject, "Some Surgical Tendencies from a Medical Point of View." It will also be remembered that this paper excited a rather wide discussion, not unaccompanied with acrimony in certain quarters. The position which Dr. Fitz took at that time was one of conservatism in relation to surgical operations, particularly of a so-called palliative sort. He went, however, further than this, and on the basis of a large series of statistics from the Massachusetts General Hospital arrived at the conclusion that many operations were unnecessary, that some were positively harmful, and that the wise surgeon would do well to restrain his eagerness in the operative field. Opinions varied as to the complete justice of Dr. Fitz's conclusions, a not unexpected result of a somewhat radical statement of the existing situation.

It is, therefore, of more than passing interest that in his recent address at Washington, Dr. Fitz returns to the combat and reiterates, possibly in somewhat modified form, the statements made six years before. Like most border lands, that between medicine and surgery is and must always remain a somewhat disputed field. Physicians, so-called, will very naturally be inclined to assert their prerogatives in the treatment of cases which permit of both medical and surgical care. The surgeons, on the other hand, recognizing the dangers of delay, and anxious to demonstrate the efficiency of radical measures, are equally eager to take over into their domain many of the borderland cases. It is fitting, therefore, that a judicial statement should from time to time be made of the relationship existing between the physician and the surgeon in connection with various forms of disease. This Dr. Fitz has admirably done in this latest address. He discusses the history of medicine at considerable length, and notes the divergence of the medical and surgical points of view with the development of medicine on its scientific side. He then takes up in considerable detail the various organs and cavities of the body which have been gradually invaded by the surgeon in his effort to extirpate disease. We are not surprised to find that Dr. Fitz has not materially altered his attitude. He still begs the surgeon to progress slowly and cautiously, and draws attention to various situations in which operative success is not to be regarded as adequate therapy. Finally, he urges the necessity of greater accuracy in diagnosis, and insists that the surgeon has even greater obligations than those which arise from taking every possible means of making a correct diagnosis, and that the laboratory should not be neglected as an adjunct to the operating-room.

We imagine that no thoughtful physician will take serious issue with the general trend of Dr. Fitz's remarks as expressed in this address. The temptation toward over-radical operative interference is recognized by physicians and properly trained surgeons alike as a constant danger. The conservatism which comes from wide experience, tempered by much pathological knowledge, is a quality which the conscientious physician will do well to develop. Dr. Fitz unquestionably speaks with a certain medical bias, but it is altogether salutary that such an expression of opinion should again be heard. Surely surgery will be benefited in the long run by such appeals coming from authoritative sources. We commend Dr. Fitz's address to the thoughtful attention of our readers.

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SPIROCHETES AND CANCER.

In the Journal of April 25, 1907, under the title "Spirochetes in Mouse Cancer" there appeared an editorial in which the view was expressed that spirochetes might be found in inflammatory conditions in mice unassociated with tumor, and consequently under these circumstances their association with inoculated cancer in mice, as described by Gaylord and Calkins, would not be of great importance from the point of view of etiology. At the recent meeting in Washington, of the Association of Pathologists and Bacteriologists, Gaylord showed photographs of the spirochetes which he had found in mouse cancers, and in discussing his paper, Tyzzer demonstrated by means of lantern slides similar spirochetes which he had found both in mice unsuccessfully inoculated with tumors and also in some mice which had never received an inoculation. Ewing reported unsuccessful searches for spirochetes in human tumors.

As a result of this discussion it seems evident that the mere finding of spirochetes associated with tumors cannot be taken as evidence of any etiological association. The facts as known to-day are against the view that there is any close association between these parasites and cancer. It is possible that they may play a rôle in decreasing tissue resistance and in that way become a factor in tumor formation. However, this is highly speculative and it seems saner for the present to seek further for a cause of cancer, more specific in nature.

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MEDICAL NOTES.

Dr. Weir Mitchell Defeats an Antivivisection Bill. — It is reported that the bill to prohibit vivisection in Pennsylvania has been dropped from the calendar in the legislature and that this action followed an address in opposition to the measure made to fifty members of the house by Dr. S. Weir Mitchell, of Philadelphia.

Genius and Hydrocephalus. — According to the *Medical Record* Professor von Hanseman, of the Berlin University, who has recently examined the brain of Theodor Mommsen, the historian, states that he, like Hermann von Helmholtz, the physiologist, and Adolph Menzel, the painter, was the subject of hydrocephalus. He suggests that on this basis an explanation may be offered of Mommsen's eccentricity, Menzel's extreme irritability and occasional fainting fits, and the spasmodic seizures from which Helmholz suffered.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 22, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 43, scarlatina 33, typhoid fever 8, measles 50, tuberculosis 35, smallpox 0.

The death-rate of the reported deaths for the week ending May 22, 1907, was 18.45.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, May 18, 1907, was 229, against 214 the corresponding week of last year, showing an increase of 15 deaths and making the death-rate for the week 19.83. Of this number 125 were males and 104 were females; 222 were white and 7 colored; 130 were born in the United States, 95 in foreign countries and 4 unknown; 38 were of American parentage, 165 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 36 cases and 3 deaths; scarlatina, 26 cases and 0 deaths; typhoid fever, 3 cases and 2 deaths; measles, 36 cases and 1 death; tuberculosis, 44 cases and 26 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 23, whooping cough 1, heart disease 39, bronchitis 2 and marasmus 4. There were 15 deaths from violent causes. The number of children who died under one year was 37; the number under five years 51. The number of persons who died over sixty years of age was 56. The deaths in public institutions were 78.

There were 9 cases and 6 deaths reported from cerebrospinal meningitis during the week.

NEW YORK.

Passage of Medical Unification Bill. — The act known as the medical unification bill, recently passed by the legislature, which provides for a single examining board for all applicants for license to practise medicine, has now become a law, Governor Hughes having given the bill his signature on May 13.

Bequests. — By the will of the late James Henry Smith, of New York, $100,000 each is left to the New York Orthopedic and Dispensary and Hospital and to St. Luke's Hospital, in the latter of which institutions Mr. Smith was a member of the board of trustees.

PHYSICAL WELFARE OF SCHOOL CHILDREN. — Under the auspices of the Board of Education's committee on the physical welfare of school children a conference was held at the New York Academy of Medicine on May 13, at which there were present representatives of the Board of Education, the Health Department, the hospitals and dispensaries, and various other charitable institutions and societies. Data submitted showed that of 683,000 children in the public schools, only 163,300 had thus far been examined for physical defects, and that of these, about two thirds were in need of medical or surgical treatment or of better nourishment. Of the pupils examined, all but 5,600, who were in Brooklyn schools, were from Manhattan, while no examination had yet been made of children in the boroughs of Queens, Richmond and the Bronx. The corps at present engaged in the work consists of 130 medical inspectors and 55 nurses who assist them, and the appropriation for their salaries, together with those of the special summer corps of the Health Department last season, was $250,250. After a full discussion of the matter, it was determined, as the sense of the conference, that the Board of Estimate should be asked to appropriate at once a sum sufficient to complete the examination of all the public school children in all the five boroughs before the end of the present fiscal year, and also to appropriate, in the budget for 1908, the sum of $500,000, which would provide one physician and one nurse to every three thousand pupils throughout the city.

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Obituary.

JOHN M. HARLOW, M.D.

DR. JOHN M. HARLOW died in Woburn, Mass., May 15, at the age of eighty-seven. Dr. Harlow was born in Whitehall, N. Y., Nov. 25, 1819, was fitted for college at schools in Vermont and Massachusetts, and began the study of medicine in 1840 at the Philadelphia School of Anatomy, and later at the Jefferson Medical College. From this latter institution he was graduated in 1844. The following year he began practice in Cavendish, Vt., remaining there for fifteen years. It was during his active professional life at this place that he came into intimate personal relation with the case of head injury which has since been known as the "Crowbar Case." This accident occurred on the 13th of September, 1848, through the premature discharge of a blast whereby an iron bar was driven through the head of the victim. Dr. Harlow had charge of the patient.

Leaving Cavendish, Dr. Harlow returned for a period to Philadelphia, somewhat broken in health, and thereafter, before again resuming practice in Woburn, Mass., in 1861, spent several years in travel and study. Dr. Harlow held many positions of trust, although not self-seeking in this regard. In 1885 and 1886 he was a member of the Massachusetts Senate, and in 1895 and 1896 served in the Governor's Council. He was also at one time a trustee of the Massachusetts General Hospital, appointed by Governor Wolcott. During his long life he was active both in professional and other pursuits, and through much ability and good judgment in financial affairs, amassed a handsome fortune. Although twice married, he died childless.

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Current Literature.

DIE THERAPIE DER GEGENWART.

APRIL, 1907.

1. *v. BEHRING, E. *The Crusade against Tuberculosis.*
2. *MAGNUS-LEVY, A. *The Effect of Salt in the Diet.*
3. *SCHNÜTGEN. *Sarason's Oxygen Baths.*
4. JANOWSKI, W. *Intercostal Neuralgia.* (Concluded.)

1. v. Behring's paper is chiefly a description of his efforts to immunize calves against tuberculosis and to cure incipient tuberculosis in cattle. As is well known, he regards the majority of cases of phthisis in adults as due to an infection through the intestine taking place in infancy and remaining latent until later life. The supply of milk free from tubercle bacilli is therefore of the greatest importance, and can only be accomplished by preventing tuberculosis in cattle. The prophylactic method or bovo-vaccination consists in the intravenous injection of dry tubercle bacilli on two occasions three months apart, the first being made when the calf is two to four weeks old. This method has already yielded gratifying results and is to have a thorough trial by the Argentine Republic. In tulaselactin v. Behring has found a preparation that has very active curative properties. It is obtained by treating the tuberculous virus with chloral. The paper does not describe the details of the methods employed nor does it give any figures as to the results obtained.

2. Magnus-Levy reviews the subject of the action of salt in the diet in producing edema in diseases of the kidney. He describes the classical experiments of Widal and Javal, who caused edema to appear and disappear at will simply by increasing or removing the salt from the diet. It is possible, however, to have a retention of salt in the body without edema, the salt being taken up by the cells instead of remaining in the lymph spaces. The edema of cardiac disease is not due primarily to salt retention, but to mechanical causes, and therefore the reduction of salt cannot have such a marked effect as in nephritis. Indirectly, however, it may be advantageous by reducing the thirst and consequently the ingestion of water and the work of the heart. The effect of the exclusive milk diet in the reduction of edema is due probably to its small salt content, 3 liters of milk containing 5 gm. sodium chloride. A mixed diet prepared without the use of salt contains even less, approximately 2 gm. After the edema has gone it is best to continue a moderate restriction of salt, allowing about 8 gm. per day. With regard to the use of salt by the healthy, a moderate amount is probably beneficial, although many vegetarians remain healthy on a salt-free diet. Excessive amounts of salt have never been known to act injuriously on a healthy person.

3. Schnütgen praises the action of Sarason's oxygen baths. The oxygen is generated by a mixture of sodium perborate and borate of manganese. The effects are somewhat similar to those of carbon dioxide baths, but not identical. The patients in all cases felt refreshed and invigorated after the bath, and very sleepy. The pulse rate was usually considerably reduced; the blood pressure was sometimes raised, more often lowered. Schnütgen recommends these baths especially for neurasthenia and allied conditions, and also for heart disease. [W. T.]

Zeitschrift für Klinische Medizin.

Bd. 61, Heft 3 and 4.

1. *Thost, A. *The Management of Cases of Severe Laryngeal Tuberculosis.*
2. *Schiff, A. *The Mechanical Stimulation of Gastric Secretion.*
3. Fein, J. *Casuistics of Scleroma with Observations on Its Importance in the Army.*
4. Laudesberg, R. *Paralysis of the Recurrent Nerve on a Functional Basis.*
5. *Sorgo, J. *Mixed Infection in Pulmonary Tuberculosis and the Etiological Relation of It and of Intestinal Tuberculosis to Amyloid Degeneration.*
6. *Catti, G. *Venous Sounds in Interstitial Hepatitis.*
7. Herschfeld, H. *The Application of "Complement-Ablenkung" to the Diagnosis of Typhoid.*
8. *Talta, W., and Gigon, A. *Sugar Secretion in Diabetes Mellitus.*
9. *v. Leyden, E., and Bergell, P. *The Therapeutic Use of Trypsin in Carcinoma.*
10. Schütze, A., and Bergell, P. *A Contribution to the Knowledge of Antiferments.*
11. *Ohm, J. *Clinical Observations on Patent Foramen Ovale and Its Diagnostic Importance. A Contribution to the Casuistics of So-Called Paradoxical Embolism.*

1. This is a rather discursive paper on the treatment of severe laryngeal tuberculosis. Thost doubts the occurrence of a primary tuberculosis of the larynx. He believes there is considerable variation in form of the disease in different parts of the country, the worst cases being found where there is a dry, dusty climate. Diagnosis is usually easy. Ulcerative conditions without glandular enlargement of the neck are almost always tuberculous. Many cases can be cured with a fair degree of ease. Thost, however, concerns himself here more with severe uncurable cases where palliation is the chief end. A dust-free climate is very important. Insufflation of powdered morphine or morphine applied in some other form to the larynx is very useful in combating the pain. Applications of lactic acid he finds one of the best means of treating the pain of deglutition and he gives special directions for the method of its application. Tuberculin is to be used and forced feeding by nasal tube if necessary. Tracheotomy he does not believe in, but excision of the larynx he thinks in the future will be recommended for many cases. The paper contains a number of other hints useful in handling these severe cases.

2. Pawlow in his studies of gastric secretion has shown the importance of psychic stimuli and the action of chemical stimuli. He does not believe that the presence of food in the stomach mechanically acts as a stimulus to gastric secretion. By using dogs with Pawlow gastric fistulæ Schiff has studied the action of bismuth subnitrate given to the animals with milk. He finds that the animals who get the bismuth with their milk secrete almost twice as much gastric juice as those receiving milk alone. Sand has the same action. Schiff's experiments seem to have been carefully controlled and go to show that mechanical stimuli play a part in gastric secretion.

5. Sorgo, after carefully washing particles of tuberculous sputum, studied its bacterial content by cultural methods. In 26 of 30 cases examined he obtained a pure culture of bacillus tuberculosis; in the other 4 there were also cocci. Of 19 cases which later died and were autopsied he found tubercle bacilli in pure culture in the sputum during life in 13 cases; in the other 6 there was a mixed infection. Of 16 fatal cases of chronic phthisis, eleven yielded pure culture of B. tuberculosis from various foci of disease in the lungs. As a result of this work, Sorgo concludes that all the clinical symptoms including intermittent fever and the pathologico-anatomical processes (especially pneumonic changes and cavity formation) can result from the action of tubercle bacilli unassociated with other organisms. Sorgo in his cases found also a parallelism between the occurrence of tubercular intestinal lesions and amyloid changes in the viscera. In the case in which amyloid was present without intestinal lesions there was a mixed infection of the lungs. So Sorgo believes that amyloid is due to toxins absorbed through intestinal ulcers or formed by pyogenic organisms present as a mixed infection.

6. In cases of cirrhosis of the liver, according to Catti, venous murmurs audible in the region of the spleen are relatively common (one sixth to one fifth of the cases), but venous murmurs elsewhere, as in the epigastrium or about the umbilicus, are very uncommon. Catti gives a case in which there was a marked thrill and murmur most intense to the left of the umbilicus and which disappeared on compression of the left inferior epigastric vein below the point of greatest intensity. In another case there was a murmur but no thrill just below the ensiform cartilage. Catti explains these murmurs as the result of the opening of a smaller vein into a larger when the pressure is lower in the latter. In other words, they are murmurs of stenosis. They are only produced when there is a portal venous obstruction.

8. This is a long paper of sixty-two pages containing numerous tables of analyses of the carbohydrate and nitrogenous metabolism in 8 cases of diabetes. The authors have tested the effect on the metabolism in these cases of giving certain proteids and carbohydrates in addition to an established diet under which the metabolism had been studied for some time. They then could note the change produced by a definite amount of the added substance. They find that in the milder cases different proteids influence the glycosuria in different ways, while in the severe cases there is very little difference; and a given amount of proteid in a given case causes the same increase in glycosuria irrespective of the kind of proteid ingested. In milder cases proteids influence glycosuria in the following order: casein, serum albumin, coagulated egg albumin and serum globulin, the last having least effect. For carbohydrates in many cases, with the exception of maltose, there is little difference in their action (dextrose, galactose, levulose, oatmeal and wheat flour) if the urine for the entire succeeding twenty-four hours is analyzed. Maltose is assimilated very much more poorly than any of the others. In some cases levulose is borne better than dextrose and in general individual cases may show individual differences. This latter is especially likely to be true for the milder cases.

9. v. Leyden and Bergell point out that studies on the metabolism of malignant tumors may yield some knowledge of specific processes which may in turn be influenced in an inhibitory way. It is possible that they utilize specific proteids in their growth and so differ from simple benign tumors and in their destruction special enzymes may be active. Pancreatin in vitro has more action on them than does pepsin, and it has been demonstrated that its tryptic ferment after introduction into the body may appear in the urine, which is evidence for its presence in the circulating blood. Under these circumstances it is to be expected that pancreatin given per os or intravenously would reach the tumor and have some effect. They have tried it on some cases, but are not enthusiastic about the result. Still they have a hopeful attitude of mind toward it and believe it may eventually be of therapeutic use. Experiment along these biological lines they think may possibly lead to some better understanding of malignant tumors and should be undertaken.

11. Ohm reports a case of open foramen ovale with paradoxical embolism (embolism from venous system to arterial through the open foramen ovale). Diagnosis of the cardiac lesion during life is difficult. Localization of a murmur sometimes presystolic, sometimes systolic, at the base near the left sternal margin with enlargement of both ventricles and cyanosis suggests the diagnosis. A positive centrifugal venous pulse in the neck without evidence of tricuspid insufficiency is confirmatory. When associated with pulmonary stenosis, the condition cannot be diagnosed, since the symptoms of the stenosis overshadow those of the open foramen ovale. [H. A. C.]

Revue de Chirurgie.

March, 1907.

1. *Taffier, T., Jardry and Gy—. *Pleural Calcification.*
2. Guibé. *Volvulus of the Small Intestine and of the First Portion of the Large Intestine.* (Continued.)
3. Baumgartner, A., and Huguier, A. *Dislocations below the Astragalus.* (Continued.)
4. *Mercadé, S., and Lemaire, H. *Pathogenesis of Traumatic Serous Effusions.*
5. *Delage, J. *The Slow Development of Strangulated Herniæ from Lateral Pinching of the Intestine.*
6. Caubet, H. *The Structure of Callus.*

7. Dambrin, C. *Study of Dislocations of the Semi-Lunar Cartilages of the Knee.* (Continued.)
8. *Lenormant, C. *Colopexy; a Contribution to the Treatment of Prolapse of the Rectum.*
9. Bréchot, A. *Pylorectomy in Benign Stenoses of the Pylorus.*

1. Calcification of the pleura exists occasionally as the third stage in the process of repair of a chronic pleurisy. The first stage is that of organization of the fibrin into a fibrous layer which has relatively few blood vessels. The process usually stops here, but under certain conditions which are not yet clear this fibrous tissue becomes still further devitalized. Its blood vessels disappear completely and the tissue resembles very closely hyaline cartilage. This is the second stage in the process. Finally in this hyaline tissue salts of lime are irregularly deposited. Macroscopically layers of lime are found varying in extent from several small areas to a thick chalky membrane surrounding the whole lung. Their consistency is like that of bone and crepitation is easily elicited. From the cases described in the literature the most common location fo such plagues is on the diaphragmatic pleura. This layer of chalky deposit may be adherent to the lung, or to the inner surface of the chest wall, or, on the other hand, may exist as a separate lamella only slightly attached to either. This tissue examined under the microscope never shows any evidence of true bone formation. The condition rarely is made out during life except on the occasion of an aspiration or operative exploration. It causes no symptoms *per se* and the signs are usually only those of a chronic pleurisy with thickened pleura. Calcification of such a sort causes no alteration in the prognosis unless the thorax be opened, in which case the chronic suppuration due to the process of sequestration makes the outlook more grave because of the danger of amyloid disease. The authors were able to find but three cases in which the diagnosis had been made during life. Of these two died following operation, the third has a persistent sinus. Operation is rarely justifiable.

4. From a study of the cellular elements of traumatic serous effusions the authors conclude that the fluid is of purely lymphatic origin and that rupture of blood vessels and inflammation play only a secondary and relatively unimportant rôle in its formation.

5. Delage calls attention to the class of hernias which are due to a lateral pinching of the gut insufficient to cause occlusion of the lumen. He has collected nine such cases in which the symptoms were very slight or even absent. That such cases exist is important, for it is an accepted fact that strangulation of a portion of the circumference of the gut causes a much more rapidly progressing gangrene than in those instances where a whole loop is involved. Several cases have gone on to gangrene and the formation of a stercoral abscess in the hernial sac without any very urgent symptoms of trouble. This exceptional tolerance of the intestine may be due to the fact that there is usually found between the constricting ring of the sac and the knuckle of gut one of the fat appendages. Where no hernia has been noted, and a small acutely tender lump is found in the groin, one must differentiate carefully between such a condition as above described and a slowly suppurating bubo, a hernia of the appendix and a nodule of actinomycosis. When a mass has been noted before, one must consider an undescended testicle which has become inflamed, or a large ampulla-like dilatation of the saphenous vein as well as any of the abdominal structures which may be found in a hernial sac, such as Meckel's diverticulum or the appendix. The treatment of the condition should always be by operative reduction.

8. Lenormant has collected the statistics of the end results of prolapse of the rectum treated by resection, by rectopexy and by colopexy. Though in all cases the surgeon will adapt his operation to the conditions found, the operation of intra-abdominal fixation of the colon to the iliac fossa, after reduction of the prolapse (colopexy), has been found to be the operation offering the widest range of applicability and most uniformly successful results. The mortality of such an operation is *nil.* In those few cases where the proctitis is unusually severe, after fixation of the gut an artificial anus is made (colopexotomy), through which local treatment may be applied. The sutures should be either of linen thread or silk, and should extend through the muscularis of the colon itself, not attempting to rely on mesenteric fixation. The surface included should extend over about 8 cm. of the gut in an oval form, fixing it to a corresponding surface which has been previously deprived of its serous membrane. It should always be remembered that the conditions causing a rectal prolapse are identical with those causing a uterine prolapse, and depend on insufficiency of the levator ani and those other muscles making up the pelvic diaphragm. Therefore the operation of colopexy should always be supplemented by a perineorrhaphy, either anterior, posterior or both combined. [W. C. Q.]

Gastroscopy. Jackson (*Med. Rec.*, April 6, 1907) has devised an instrument by which he believes that gastroscopy will soon become a common diagnostic procedure. The instrument is a rigid straight tube with an electric light bulb which is passed into the stomach under general anesthesia. The area most readily seen is the middle third of the stomach. In certain cases by the aid of external manipulation the pylorus can be brought into view. Fourteen cases have been studied; among these the diagnoses of malignant disease was made five times (confirmed in 2 by specimens removed) and the diagnosis of peptic ulcer 5 times. In other cases observations of diagnostic value were made, and in one case a foreign body was removed from the stomach. The author is a laryngologist, but believes that gastroscopy can be learned by any physician. [F. W. P.]

Treatment of Acute Cardiac Affections in Children. Baginsky (*Med. Rec.*, April 13, 1907) reports observations illustrated by two cases of acute articular rheumatism with cardiac complications. In both cases acetylsalicylic acid was efficient in controlling the arthritis, but had no effect upon the endo- and pericarditis. Ichthyol ointment, ice bags and digitalis also had no effect. In both cases, however, rapid improvement followed the use of mercurial inunctions and potassium iodide. Venesection may give temporary relief, but is unsafe. Puncture of the pericardium is to be employed when symptoms are urgent; if a pleural effusion is also present, the pleura should be aspirated first, and this may obviate the necessity of puncturing the pericardium. Blistering is not advised. If renal irritation exists it is to be treated by accepted dietetic measures. [F. W. P].

Diagnosis of Early Pregnancy with Reference to a Particular Sign. Sadinski (*Med. Rec.*, April 13, 1907) describes a new sign of pregnancy, which he has found to be highly reliable and always perceptible, when the uterus is in normal position, as early as the sixth week. Sometimes as early as the fifth week and always in the sixth week of pregnancy an area of elastic fluctuation the size of the tip of one's finger can be made out in the anterior wall of the body of the uterus in the median line. As pregnancy advances this area of cystic fluctuation grows proportionately larger until, by the third or fourth month, it occupies nearly the whole of the anterior aspect of the body of the uterus. Two conditions only may cause confusion. Similar areas of softening may be felt in incomplete abortion or subinvolution, but are to be distinguished by their soft, doughy, non-elastic consistency. The only condition which can exactly simulate the sign described is a soft myoma of the anterior wall of the uterus in the median line. In extra-uterine pregnancy this sign is not present and its absence is of value in ruling out uterine pregnancy. [F. W. P.]

The Journal of the American Medical Association.

May 4, 1907.

1. *Edsall, D. L. *Observations Relating to the Nature of Atrophy of Intestinal Origin.*
2. *Freund, H. A. *Hemolysis in Pernicious Anemia Augmented by Urinary Retention.*
3. Allison, C. C. *The Field Wherein the Work of the Surgeon Approaches that of the Physician.*
4. Motter, M. G. *The State Board and the College Diploma.*

5. *Weiss, L. *Contribution to the Study of Erythema Induratum.*
6. *Crossen, H. S. *The Preferable Method of Anterior Fixation of the Uterus When the Abdomen is Open.*
7. Cullen, T. G. *A Series of Interesting Gynecologic and Obstetric Cases.*
8. *Knott, Van B. *Treatment of Traumatic Gangrene.*
9. *Reik, H. O. *Is Eyestrain Ever an Etiologic Factor in Epilepsy?*

1. Edsall's article describes an hypothesis which, if it can be established, will shed much light upon the pathogenesis of infantile atrophy. Hitherto no satisfactory theories as to the cause of infantile atrophy have been evolved. The absorption in cases of this condition is not sufficiently impaired to explain the wasting. Supposed organic changes in the intestinal wall have been disproved. The absence of ferments and presence of toxins in cow's milk, suggested upon theoretical grounds, are supported by very little evidence. In reviewing recent advances made in the physiology of digestion and absorption two facts are emphasized. The first is that the breakdown of protein in digestion is much more complete than was formerly supposed, much of the protein, perhaps nearly all, being carried beyond the peptone stage to the component amino-acids. The second is the existence of a proteolytic ferment (erepsin) in the intestinal mucous membrane which may with some likelihood have a reversible action and serve as an agent in the *reconstructive* process which is known to occur as the products of proteid digestion pass through the intestinal wall toward the circulation. Edsall's hypothesis is that in atrophic infants the fragmentation of proteins is not sufficiently complete and that the reconstructive process is also deficient, so that when the foreign proteins of cow's milk are ingested they remain foreign proteins even after absorption, since the process of fragmentation and synthesis has not been complete enough to convert them into the natural proteins of the human body. Foreign albumoses and peptones, it is known, can be absorbed and can be utilized to produce energy, but there is no evidence that they can be used in building new tissue. This may be a reason why infants that have not done well on cow's milk mixtures improve when fed even in part upon human milk, which does not need to undergo the homologizing process. This theory may well explain why, in spite of a fair amount of absorption, atrophy of tissues occurs. To determine the presence or absence of erepsin Edsall tested the intestinal mucous membrane of three fatal cases of uncomplicated infantile atrophy, of two cases of atrophy in adults for which at autopsy no cause could be found, and of three cases of atrophy from known causes. In the first two classes of cases no evidence of a proteolytic ferment could be found, while in the last three cases, taken for control, a marked proteolytic action was present in all.

2. Freund reports a case of pernicious anemia with urinary retention from enlarged prostate in which the periods of retention coincided with the exacerbations of the anemia. Cunningham has reported a similar case. From these cases the question naturally arises whether it is not the retention of hemolysins which should be excreted in the urine which causes these exacerbations. Morris, McCaskey and others have demonstrated hemolytic substances in the urine of cases of pernicious anemia, a fact which renders this theory plausible and makes its further investigation highly desirable.

5. Weiss discusses the disease erythema induratum of Bazin, a condition which has generally been regarded as a cutaneous tuberculide, since more than half of the reported cases have been in tuberculous patients, and in a few instances tubercle bacilli have been found in the lesions. The disease is characterized clinically by the appearance of hard deep-seated nodules, at first recognized only by touch, but later showing a purplish or violaceous hue as they work toward the surface. The lesions occur mainly on the legs; the condition occurs almost exclusively in young women. Many cases are undoubtedly taken for erythema nodosum, to which the disease is probably closely allied. The main difference is the more chronic sluggish course of the erythema induratum, with absence of pain and systemic disturbances. Weiss reports a case with microscopic examinations of a lesion. The sections showed giant and epithelioid cells in collections resembling tubercles. Tubercle bacilli, however, were not found, and inoculations of guinea pigs proved negative.

6. Crossen describes the courses of procedure which he advocates to remedy retrodisplacements of the uterus under different accompanying circumstances discovered when the abdomen is open. The point most strongly emphasized is the advantage of anterior fixation by suturing the stronger portions of the round ligaments to the anterior abdominal wall considerably internal to the inguinal ring, so as to secure a forward rather than a lateral traction. This operation can be performed whenever the ligaments and adjacent tissues are freely movable; the steps of the operation are given in detail. When the round ligaments are fixed in inflammatory infiltration it is necessary to fasten them to a point further out toward the inguinal ring than in uncomplicated retroversions. Restoration of normal position of the uterus when the cervix is too far forward requires repair of tears of the perineum and shortening of the sacro-uterine ligaments in addition to measures to keep the fundus forward. In certain cases with extensive chronic inflammation it is impossible to bring the uterus as far forward as its normal position. In such cases if the uterus is fastened in a position midway between the normal position and a retrodisplacement, and the intestines and omentum are placed behind it, symptoms will practically never recur.

8. Knott calls attention to the high mortality of traumatic gangrene, stated by Cheyne and Burghard as 95%. He advocates rapid circular amputation with ligation of vessels but without attempt to close the wound, which is simply covered with a dressing of gauze saturated with salt solution. After seven to ten days or later the amputation is completed by whatever method seems best. This procedure has been followed in 9 cases with but one death.

9. Reik writes in refutation of certain authors who have denied the influence of eyestrain as a factor in the etiology of epilepsy. Epilepsy is undoubtedly the combined result of predisposing causes in temperament and heredity and of immediate causes of great variety, ranging from dentition to disorders of menstruation. Statistics of institutions indicate that not more than 1% of the cases are ever cured; thus no measure which may ever give relief and no cause which can be removed should be overlooked. The importance of eyestrain in epilepsy has been recognized by such observers as Theobald, Standish and Reber. Reik reports 6 cases in which correction of ocular defects was followed by striking relief of the epilepsy. [F. W. P.]

The Lancet.

April 27, 1907.

1. Glover, J. G. *The Outlook of the Medical Profession: Scientific, Social, Financial.*
2. *Jamieson, J. K., and Dobson, J. F. *The Lymphatic System of the Cecum and Appendix.*
3. *Thomas, J. L. *A Series of Cases of Goiters Removed under Cocaine Anesthesia.*
4. *Bone, B. M. *Seven Cases of General Peritonitis Treated by Operation, with Five Recoveries.*
5. Heath, C. J. *The Treatment of Chronic Suppuration of the Middle Ear without the Removal of the Drum, Membrane and Ossicles.*
6. Snowman, J. *Recent Developments in the Therapeutical Applications of Arsenic.*
7. Kraus, O. *The Balneological Treatment of Urinary Diseases.* (Continued article.)
8. Haw, W. H. *Two Cases of Snake-Bite with a Suggestion for Treatment.*
9. Reid, J. *A Case of Poisoning by Coal-Gas.*
10. Nobbs, A. *A Case of Desquamative Erythema.*

2. Jamieson and Dobson present a careful anatomical study of the ileo-colic group of glands which drain the cecum and appendix. Although in acute and chronic suppurative conditions of this region a knowledge of these glands is of importance, it is in malignant disease of the appendix and cecum that this knowledge is essential. They believe that too much attention is paid to mechanical technique and not enough to anatomical details. It seems to be an accepted doctrine that glandular infection does not take place in the early stages of malignant disease

of the intestine; they think this a mistake and advise a careful investigation of all the glands, the exact position of which they describe. In most cases of malignant disease of the appendix alone such extensive operation is not often necessary.

3. Thomas reports 55 cases of goiter removed under cocaine anesthesia and 1 removed with no anesthesia, with *no mortality*. He uses the Kocher collar incision and the so-called Kocher position. One per cent cocaine is employed. He describes in detail the technique of his operation.

4. Bone reports 7 cases of general peritonitis with 5 recoveries. The points he emphasizes are: (1) the necessity of removing the cause; (2) removal of pus with dry sterile gauze swabs, (3) free drainage with tube and gauze wicks, the least possible manipulation of intestines and the counteracting shock by all means possible. [J. B. H.]

British Medical Journal.
April 27, 1907.

1. *Shaw, H. B. *Clinical Remarks on the Value of Blood Examination.*
2. Finny, J. M. *Remarks on Manacal Chorea.*
3. *Wilson, T. S. *On the Value af an Abnormal Rise in the Average Level af the Diaphragm as a Guide to the Volume of the Blood in Active Circulation.*
4. Thompson, H. E. S. *The Possibility of Actinomycotic Infection of the Vagina.*
5. *Watson, C. *A Plea far the Use af Oatmeal in the Dietary of Children.*
6. Ewart, W. *On the Present Pasition of the Treatment of Tuberculosis by Marine Climates.*
7. *Orr, O., and Rows, R. G. *Lesions of Spinal and Cranial Nerves Produced by Toxins.*
8. *Kilvington, B. *An Investigation of the Regeneration of Nerves with Regard to Surgical Treatment of Certain Paralyses.*

I. Shaw discusses the value of routine blood examination for the general practitioner, its scope and limitations. He believes thet most of the special post-graduate courses on the blood and books on this subject present far too many detailed procedures of difficult technique to be of value to the average practising physician. He discusses the value of leucocytosis as significant of a suppurative focus and as to the value of routine examinations in every case. The work of Lorrane and Smith as to the total amount of blood and hemoglobin in health and disease he believes to be of the greatest value, especially as explaining certain moot points in the essential anemias. He speaks briefly of cryoscopy and more at length on opsonins, urging that hospitals provide laboratories where this work can be done by experts in that line.

3. Wilson presents evidence in support of the two following propositions: (1) That when for any reason the total amount of blood is diminished, the total bulk of the intrathoracic viscera is correspondingly diminished by the relative emptiness of the thoracic vessels and that this results in an elevation of the diaphragm, which has to take place to adjust the cubic content of the thorax to the altered volume of its contained viscera; (2) and that such a rise can be detected clinically and when present is important as a guide to diagnosis and treatment. The level of the diaphragm is best obtained on the left side by means of stomach tympany. He discusses cases and presents diagrams of cases in which such a use had occurred, such as in limitation of food, toxic typhoid, hemorrhage, neurasthenia and heart disease where the cardiac weakness is one of the muscle. He presents at length his theory in explanation of this phenomenon.

5. Watson fed rats on an oatmeal diet and found a great increase in activity of the thyroid gland. For this reason and others he believes oatmeal should be more used than it is as an article of diet for children.

7. Orr and Rows, working for the Science Committee of the British Medical Association, report briefly the progress of their experiments in introducing bacteria and bacterial toxins into the peripheral nerves and then studying what lesions resulted in the cord or brain. They conclude: (1) Toxins readily travel up spinal and cranial nerves to the central nervous system; (2) these nerves in their intramedullary part where they have lost their neurolemma immediately undergo degeneration; (3) the first change is a primary degeneration of the myelin; axis cylinders and nerve cells are evidently affected later.

8. Kilvington, of the British Medical Association Science Committee, has experimented on dogs to see whether or not spinal nerves can be successfully transplanted, especially with a view of determining if the nerves supplying the pelvis, bladder and rectum can be done away with and their place taken by other motor nerves higher up, supplying the hind legs, etc. Their operations on dogs were quite successful. They made dissections on cadavers and elaborated a technique which they believe can render very great service in cases of fracture dislocation of the spine where the greatest cause of misery is incontinence of rectum and bladder, with death due to infection of the kidneys. They operated on one case but were not successful because they did it in two stages, and during the interval new scar tissue altered conditions so that transplantations could not be done. The operation will be advisable only in rare cases, but in a few such may do great good. [J. B. H.]

Miscellany.

EXPERT TESTIMONY IN INSANITY.

Before the Society of Medical Jurisprudence, on May 13, Dr. William Hirsch, professor in Cornell University and an eminent alienist, made an address on expert testimony and insanity, which devoted considerable attention to the recent Thaw trial (although the name of the defendant was not mentioned), in which he himself was one of the experts retained by the prosecution. In the course of it he said: " If a man deliberately kills another, and then tells why he did the killing afterward, I cannot see why any one should say that the slayer did not know the nature and quality of the act performed. Yet we have the spectacle, the phenomenon, of two sets of alienists disagreeing. In European countries experts are never retained. They are appointed by the court. In this country I have heard lawyers hold that their experts should always look out for the interests of their clients. This would make them disregard the truth, and no expert should serve with any such understanding. There are two ways of helping out the man on trial. One way is to substitute another form of insanity for that which really exists. It might be such a form as one might call a 'hurricane of the brain.' . . . When the Raines law was first enforced, saloon keepers would sell beer in tea-cups and call it cold tea. The moral is just the same as applied to expert testimony when given in this way. The expert who goes about his work in this manner is not as good as the saloon keeper, for he is supposed to be a man of higher intelligence. Some alienists will also take the view that no insane person should be punished for crime because no insane person ever knows the nature and quality of his act. They will testify that a crazy man eating a beef steak has an 'insane knowledge' of the steak, the knife and fork, etc. It seems hardly possible that this sort of thing should be permitted in a civilized community. There should be in this country, as in European countries, a partial responsibility recognized, and separate courts for the trial of the insane. There are more paranoiacs out of the insane asylums and prisons than in them. They are subject to punishment that will tend to deter them from crime. In insane asylums there is a system of punishment and reward, and the paranoiac who knows that he will be deprived of certain comforts if he does a certain act will avoid doing it. . . . An honest district attorney like the one we have will not go out after a man's life when he is in such a plight, but will appeal under the law which says that no man who is incapable of understanding the risk he is running should be put on trial for his life. Paranoiacs who deliberately shoot down people he believes are his enemies are not to be let free on the community." Dr. Hirsch went on to say that when patients suffering from psychical epilepsy committed crimes during attacks, they were invariably overwhelmed with horror when, on recovering their consciousness and reason, they were informed of the acts they had committed, instead of boasting of their crime and setting themselves up as heroes or modern knights. In illustration, he referred to the case of a certain prince whom he attended when practising in Germany. This patient had two lapses. In one he causelessly shot a number of persons from his window, and in the other, during a battle, he turned his cavalry squadron against an infantry formation of his own army, and tried to make them charge. Yet in both instances he knew absolutely nothing of his acts until afterward, when his mind resumed its balance.

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DEATHS UNDER CHRISTIAN SCIENCE TREATMENT.

On May 14 a coroner's jury, investigating the death of Mrs. Corinne McBride, a Christian Scientist, who " passed away " without medical attendance, rendered a verdict to the effect that the deceased came to her death by acute lobar pneumonia (as shown by autopsy), and that death might not have taken place if proper medical attendance had been furnished. The verdict then proceeds to censure the husband of the deceased for failure to provide such medical attendance, when this was demanded by the patient's sister, and also censures two Christian Science healers who attended the deceased, for a similar failure. Of course , such censure amounts to nothing, as there was no violation, by those censured, of the existing statutes; but the concluding portion of the verdict was very significant and timely, calling public attention to an abuse in urgent need of correction. It was as follows: " And we find that a number of medical doctors in New York City make it a practice to furnish death certificates for persons who die under so-called Christian Science treatment, thus enabling Christian Science practitioners to evade the laws of the state of New York in their so-called treatment. And we respectfully call the attention of the Health Department of New York City, the District Attorney of New York County, and the Medical Society of New York County to the practice of such physicians, and request them to take all necessary steps required by law to put a stop to such practices and to punish the perpetrators thereof." It is only proper to say that this very commendable action was due largely to the very decided stand taken in the matter by Coroner Acritelli, who, in his address to the jury, denounced in scathing terms those licensed medical practitioners who, for the sake of a little money, disgrace the profession by making out death certificates for persons whom they never attended during life. For the manner in which these unworthy members of an honorable profession were called to account, both the coroner and the jurymen are entitled to the gratitude of the community. The McBride case would undoubtedly have passed, like the vast majority of deaths among the Christian Scientists, without attracting attention, but for the fact that the husband of the deceased had his wife's sister arrested " for disorderly conduct " because she vehemently protested against his refusal to call in medical advice.

The past week has been a bad week for the Christian Scientists, for on May 17 another coroner's jury, investigating the case of a child, six years old, who was allowed to die from bronchopneumonia, without other attendance than that of a Christian Science healer, brought in a verdict censuring the father of the child (whose arrest has since been ordered) for criminal negligence. The verdict furthermore makes the recommendation to the state legislature that failure to provide medical attendance for a minor when ill be changed from a misdemeanor to a felony and be prosecuted as homicide. At present the maximum punishment for this offence, as provided in the Penal Code, is imprisonment for a year, $500 fine, or both.

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Correspondence.

MORPHINE IN TUBERCULOSIS.

Ann Arbor, Mich., May 17, 1907.

Mr. Editor: I take this method of trying to correct the outrageously false impression given by many of the newspapers of the country to the statement of Dr. Knopf before the Clinical and Climatological Section of the National Association for the Study and Prevention of Tuberculosis, at its recent meeting in Washington. I was present as chairman of the section when Dr. Knopf made his remarks. He was within a few steps of where I sat, and I was paying close attention to his remarks. I understood him, and all others with whom I have spoken on the matter since the meeting understood him, to state plainly the need of using morphine to relieve painful symptoms in the last stage of the disease. Any physician who heard the remarks must have known that the morphine was used not for shortening life, but solely for making it easier, and every physician also knows that life is generally prolonged by that sort of treatment. As I have expressed myself before this regarding the shortening of lives of seriously sick people, I need hardly say that had Dr. Knopf advocated anything like the administration of large or dangerous doses of morphine, I would have vigorously protested. I hope that physicians who are asked about the matter will contradict the newspaper statements, and seize the opportunity of explaining the real object of the treatment.

Very truly yours,

George Dock, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, May 11, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,558	449	Quincy	3	—
Chicago	—	—	Waltham	4	—
Philadelphia . . .	—	—	Pittsfield	12	—
St. Louis	—	—	Gloucester	12	2
Baltimore	185	43	Brookline	4	1
Cleveland	—	—	North Adams . .	6	2
Buffalo	—	—	Chicopee	9	4
Pittsburg	—	—	Northampton . .	4	3
Cincinnati	—	—	Medford	4	1
Milwaukee	—	—	Beverly	3	—
Washington . . .	—	—	Leominster . . .	1	—
Providence . . .	64	20	Hyde Park . . .	2	—
Boston	242	51	Melrose	5	2
Worcester	47	13	Newburyport . .	—	—
Fall River	35	18	Woburn	4	1
Cambridge	28	8	Marlboro	5	0
Lowell	43	17	Westfield	11	1
Lynn	22	5	Peabody	—	—
New Bedford . .	28	9	Revere	—	—
Springfield	21	8	Attleboro	3	2
Lawrence	21	7	Clinton	1	0
Somerville	11	2	Adams	8	3
Holyoke	17	7	Gardner	—	—
Brockton	13	0	Milford	—	—
Malden	8	3	Watertown . . .	2	0
Chelsea	14	3	Plymouth	—	—
Salem	8	1	Weymouth . . .	3	0
Newton	9	—	Framingham . .	1	—
Haverhill	9	1	Southbridge . . .	5	3
Fitchburg	5	1	Wakefield	—	—
Everett	9	2	Webster	—	—
Tannton	9	2			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MAY 18, 1907.

R. I. Longabaugh, assistant surgeon. Ordered to Naval Hospital, Annapolis, Md.

T. H. Richards, surgeon. Detached from the Naval Hospital, Norfolk, Va., May 19, and ordered to the "Kansas."

K. Ohnesorg, passed assistant surgeon. Detached from the "Mayflower" and ordered to Navy Yard, Boston, Mass.

P. S. Rossiter, passed assistant surgeon. Detached from the Naval Academy and ordered to the "Nevada."

C. M. Oman, passed assistant surgeon. Detached from the "Ohio" and ordered to the "Arkansas."

C. H. Delancy, passed assistant surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the "Florida."

J. R. Dykes, passed assistant surgeon. Detached from the Naval Station, New Orleans, La., and ordered to the "Mayflower."

M. A. Stuart, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

J. T. Duhigg, assistant surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the "Severn."

A. McK. Jones, acting assistant surgeon. Detached from duty with Naval Recruiting Party No. 4, June 1, and ordered to duty at Naval Recruiting Station, Chattanooga, Tenn., June 3.

S. Bacon, acting assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Station, New Orleans, La.

APPOINTMENTS.

Dr. Henry A. Christian has been appointed physician-in-chief of the Carney Hospital, South Boston.

Dr. T. F. Leen has been appointed physician at the same institution.

Dr. E. G. Brackett has been appointed surgeon to the orthopedic department of the Massachusetts General Hospital.

SOCIETY NOTICES.

The Medical Milk Commissions in the United States. — The organizations will hold a conference at St. Charles Hotel, Atlantic City, N. J., on Monday, June 3, 1907. There will be three sessions: 10 o'clock a.m., 3 o'clock p.m., and 8 o'clock p.m. The main objects of the conference are to determine the scope of the Medical Milk Commission, harmonize its working methods and requirements, and establish uniform standards for "Certified Milk."

Otto P. Geier, M.D., *Temporary Secretary.*

National Confederation of State Medical Examining and Licensing Boards. — The seventeenth annual meeting of the Confederation will be held at the Hotel Traymore, Atlantic City, N. J., June 4, 1907. The afternoon session will be convened at 2 o'clock, the evening session at 8. The following topics are announced for discussion: 1. "The Legality of State Medical Examinations and Inter-State Reciprocity in Medical Licensure." 2. "The Recognition of Sectarian Medicine by Statutory Law." 3. "Therapeutics: The Acme of Medical Art, the Bane of Sectarianism." 4. "One Board Laws for the Regulation of Medical Licensure." 5. "Definitions: (1) A Reputable Medical College; (2) The Practice of Medicine; (3) Preliminary Training." 6. "The Divided Examination for Medical Licensure." 7. "The Relative Functions of Degree-Conferring and Licensing Bodies." 8. "The Qualifications of Medical Teachers." 9. "The Qualifications of Medical Examiners."

Murray Galt Motter, M.D., *Secretary.*

RECENT DEATHS.

John Martin Harlow, M.D., M.M.S.S., died in Woburn May 13, 1907, aged eighty-seven years.

Dr. David H. Goodwillie, formerly of New York, died at his home in Yonkers on the Hudson, on May 15, in the seventy-fourth year of his age. He was born at Barnet, Vt., and after his graduation from the medical school of the University of Vermont, in 1868, pursued a course of study at Edinburgh. He was a well-known specialist in diseases of the mouth, nose and throat, and practised in New York City for more than thirty-five years. Six years ago he retired from active work and removed to Yonkers.

Dr. Walter Day Trenwith, of New York, died on May 16. He was graduated from the College of Physicians and Surgeons, New York, in 1895, and was especially interested in genito-urinary work, on topics connected with which he was a frequent contributor to current medical literature. At the time of his death he was one of the physicians of the Vanderbilt Clinic and of the out-patient department of the New York Hospital.

Dr. Milton See Sherwood, of New York, died at Pocantico Hills, Westchester County, N. Y., on May 14. He was graduated from the medical department of Yale University in 1898.

BOOKS AND PAMPHLETS RECEIVED.

Abstracts of a Year's Contributions to Internal Medicine. (From March 1, 1906, to March 1, 1907.) By G. W. McCaskey, M.D.

Around Africa via Lisbon, A Medical Tour. By Nicholas Senn, M.D., Ph.D., LL.D., C.M. Chicago: Press of the American Medical Association. 1907.

Evisceration of an Eyeball by a Single Mass of Heated Metal. By Charles A. Oliver, A.M., M.D. Reprint.

The Gross Appearance of the Tissues of the Iris in Epilepsy. By Charles A. Oliver, A.M., M.D., and Jay C. Knipe, M.D. Reprint.

Fernand Henrotin, A Commemorative Address. By Nicholas Senn, M.D., Ph.D., LL.D., C.M. Reprint.

Tendon Tissue versus Catgut. By N. Senn, M.D., Ph.D., LL.D. Reprint.

A Study of the Nativity, Sex and Age, Occupation and Social Condition of Three Thousand Four Hundred and Thirty-six Cases of Senile Cataract Operated Upon at the Wills' Hospital in Philadelphia. By Charles A. Oliver, A.M., M.D. Reprint.

The Cure of Consumption with Subcutaneous Injections of Oils. By Dr. T. B. Keyes. Reprint.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. IV. Edinburgh and London: William Green & Sons. 1907.

Cancer of the Rectum, Its Surgical Treatment, with an Appendix of 380 Cases. Jacksonian Prize Essay. Fifth edition. By Harrison Cripps, F.R.C.S. Illustrated. London: J. & A. Churchill. Philadelphia: P. Blakiston's Son & Co. 1907.

Original Articles.

GALLSTONES WITHOUT SYMPTOMS AND SYMPTOMS WITHOUT GALLSTONES.*

BY MAURICE H. RICHARDSON, M.D., BOSTON,
Professor of Clinical Surgery, Harvard University.

Measured by the percentage of correct deductions, the evidence upon which most diagnoses of gallstones are made is reliable — more reliable perhaps than the evidence upon which the diagnosis of any other deeply-seated and impalpable lesion is based.

Measured by the percentage of correct deductions, the evidence upon which some diagnoses are based is almost indisputable. Brief attacks of pain and jaundice with a tender and perceptible gall bladder make a group of symptoms so unmistakable that the deduction of gallstones is inevitable; in fact, any other deduction would be unreasonable. Brief attacks of pain with a tender and perceptible gall bladder, even without jaundice, will point almost indisputably to a gall bladder origin and to gallstones. In the great majority of cases the diagnosis of gallstones is easy. Indeed, the diagnosis in the typical case needs no further comment.

In the atypical and obscure case the diagnosis is much more difficult. Fortunately, the increasing frequency of explorations in the right upper quadrant has demonstrated so often the connection between these obscure and atypical symptoms and their pathological cause, that we can already in the great majority of cases make a correct inference, if not of gallstones, at least of a mechanical condition which for its relief demands mechanical measures.

The history and physical examination before exploration, with the anatomical demonstration of the biliary tract and adjacent viscera, afford both the physician and the surgeon indisputable control over their diagnosis. Such an opportunity as surgery now affords of studying the pathology of the whole abdomen in general, and of the right upper quadrant and epigastrium in particular, is not as yet appreciated by either physician or surgeon. The importance to the physician of a personal observation of the truth or error of his diagnosis, as demonstrated at operation, appeals to but few medical diagnosticians. And yet the opportunity of renewed physical examination under complete anesthesia is not one to be lightly thrown away. The importance to the surgeon of a thorough study of anatomical appearances during life is vital, for upon a correct interpretation of the anatomical changes depends the choice of operation and its success.

With such opportunities as are now afforded, a careful study is indicated of all symptoms which even remotely suggest gallstones, and especially atypical and obscure symptoms of the right upper quadrant, for which, until operations became frequent, no adequate cause could be predicted. Those symptoms, therefore, which suggest strongly but not markedly gallstones, but which may prove to be of quite different origin, must be seriously considered, lest, under the narrow limitations of a too positive diagnosis, an unnecessary operation be performed, or an imperative one be withheld.

Excepting lesions of the female pelvis and perhaps of the appendix, the most important diseases of the abdomen are situated in or near the right upper quadrant of the abdomen, where they manifest themselves by symptoms persistent, disabling and unresponsive to treatment. Organic diseases of the stomach, duodenum, liver, gall bladder, pancreas, right kidney, and hepatic flexure of the colon present symptoms of the widest diversity, some of which are commonly found in all; some of which are occasionally found in all; and some of which are found in but one. Pain, for example, in some of its forms is common to all; loss of weight, loss of appetite, and other constitutional symptoms may be present in all. But jaundice is present only in diseases which obstruct the biliary flow; hematemesis, only in diseases which involve the esophagus, stomach and duodenum; hematuria, only in lesions of the genito-urinary tract.

In the great majority of these lesions, especially at the operable stages, it can be taken for granted that the chief symptom will be pain in some form or other. The more pronounced any sign pointing to the cause of pain, the more positive the diagnosis, but the more advanced the disease. Gastric spasm, for example, locates the cause of pain in the pylorus, just as jaundice locates it in the biliary tract, or blood in the urinary. In the diagnosis of gallstones in their earliest stages without jaundice; in the diagnosis of pyloric growths without gastric spasm or hematemesis; in the diagnosis of renal tumors without hematuria — the chief symptom is usually pain and the character of that pain is the only guide at that early stage, when, in neoplasms, there is a chance of cure, or, in gallstones, an uncomplicated biliary tract. At a stage thus early, errors in diagnosis must occur; errors in indications for operation must occur; errors of judgment between the imperative and the needless operation must occur.

Fortunately, however, even if at operation no gallstones are found, other lesions are usually demonstrated and successfully remedied. It is the rarest of exceptions when the operation demonstrates only its own uselessness. It is excessively rare to find neither lesion nor relief, or to make the patient even worse than he was before operation.

These remarks are illustrated so frequently that no prolonged search for illustrative cases is necessary. The number of patients upon whom a needless operation is performed is very small, and yet improvement in our results demands that these cases be especially emphasized and avoided. But if we emphasize errors of commission, on the other hand we must emphasize with equal force the errors of omission. It is not difficult to find examples for both.

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* Read before the Southern Surgical and Gynecological Association, Dec. 11, 1906.

A gentleman of sixty-two, after a very severe attack of left abdominal pain, with vomiting, rigidity, and distention, *without tenderness*, — symptoms which disappeared completely, — passed bloody urine. No more natural inferences could be drawn than that of left renal stone and reflex abdominal symptoms. A second attack proved fatal. Autopsy showed perforation of the posterior wall of the stomach, with stone in the left kidney. The diagnosis was right as far as it went, but it did not go far enough. The man had the benefit of the opinion of clinicians in whom I have the greatest confidence. At the second attack he was in such desperate straits that it was clear to all that his only chance lay in palliation. Could the real lesion have been detected before the second attack, he might have been saved.

A woman of forty-one (Vol. 24, p. 63) had suffered for two years from abdominal pain. In 1897 she was operated on; the appendix was removed, and also the right tube, which was dilated to about the size of a mandarin orange. In 1901 she was operated on for hernia in the scar. Two years later she died after an operation for gallstones, the details of which I do not know. Were the gallstones the major lesion, and the appendix and tube the minor?

A woman of forty-two (Vol. lxii, p. 57) was operated upon for pain supposed to be due to gallstones. I removed several; but the pain persisted and was finally accompanied by visible and violent gastric spasm. Cancerous stricture of the jejunum was found. This had not been detected at the first operation. Thorough extirpation has so far given complete relief.

A man of forty (Vol. 60, p. 125) was operated upon by another surgeon for supposed appendicitis, diagnosticated chiefly from right-sided pain. Operation brought no relief. There is now for the first time bloody urine, and the diagnosis of renal stone is probably correct.

For pain in the region of the appendix I have operated many times, even when the diagnosis was not positive. In some — very few — of these cases other diagnoses have later become apparent; and the results, as a whole, have been of the most gratifying kind. But, as I have said, these few exceptions in the present splendid development of surgery are the only things left for us to study and improve upon.

Under the diagnosis of gallstones, even of the most positive character, lie possibilities of error; and no one knows this fact so well as the operating surgeon. Indeed, no one sees as he does the intimate relation between cause and effect, and no one can possibly be in a better position to avoid errors in diagnosis and in the indications for treatment. But, be he never so experienced, so accurate in his observations, so logical in his deductions, cases will arise in which he will find himself completely mistaken. Instead of gastric perforation, he will find acute cholecystitis (Vol. lxii, p. 32); instead of gallstones, he will find chronic pancreatitis (Vol. l, p. 90); instead of pancreatic disease, he will find gallstones; instead of gall-bladder abscess, he will find renal abscess; instead of tumor of the gall bladder, he will find a hypernephroma (Vol. 44, p. 155); instead of gallstones, disease of the pylorus; instead of gallstones, adhesions and faulty position of viscera; instead of gallstones and cholecystitis, perforation of duodenal ulcer and general peritonitis. Furthermore, he will find not only the disease that has been diagnosticated, but other lesions as well, and lesions perhaps more likely to be the cause of the symptoms than that for which the operation was undertaken, as in the case cited of appendix and tube with gallstones; jejunal cancer and gallstones (Vol. lxii, p. 57); pancreatic cancer and gallstones (Vol. l, p. 90); pyloric adhesions and gallstones (Vol. 40, p. 171); intestinal cancer and gallstones (Vol. lix, p. 114); hepatic cancer with gallstones (Vol. lxii, p. 67, and Vol. 60, p. 173).

The commonest experience, however, is that in which, after a very positive diagnosis of gallstones, nothing is found. Were not an adequate explanation at hand, — the fact that the last gallstone may have been expelled at the last attack of pain,— this experience would be indeed hard to explain. No doubt this explanation is in some cases a satisfactory one. Indeed, it cannot be said in any case that this may not be the right one. But, with multiplying observations, it seems to me impossible that a long history of repeated attacks of pain, without the discovery of gallstones in the stools, without jaundice or other evidence of a protracted passage through the common duct, this explanation can be accepted as the right one. We must therefore consider the significance of symptoms in cases which by some kind of pain suggest gallstones but in which no gallstones are found; and we must also consider the significance of the absence of symptoms when gallstones *are* found, perhaps filling a gall bladder which by its thickening and contraction expresses the slow and painless changes of many years.

Why is it that in some cases a single stone causes pain of the most excruciating kind, whereas in others many stones cause none? An answer immediately suggests itself — the difference in the impaction; its situation; the size of the stone. But have we not learned that this is much too easy and superficial a view of the subject? In one instance at least the attacks of pain recurred after the removal of about a hundred stones (Vol. 63, p. 43). The attacks became frequent and unbearable. Inasmuch as I had many times observed pain after cholecystostomy and drainage, I looked upon this case as similar to those in which there had been pain, which later disappeared. Dr. Jones operated on this patient for me, and removed the gall bladder. He found it adherent to the old cicatrix and surrounded by adherent omentum. It was dilated and contained about six ounces of dark — almost black — thickened bile. The adhesions extended down about the cystic duct, but no definite band or kink was found. The head of the pancreas was thickened to about an inch and a quarter. No stone could be found after a prolonged search. The cystic duct, when opened, proved to be very tortuous. The gall bladder wall was somewhat thinned by the dilatation, especially at the fundus where it had been drained. The patient made a good recovery. In this case, however, there was adequate cause for cholecystitis either in the presence of gallstones before the first operation, or in a possible lesion of the mucous membrane during tube drainage.[1]

I have for many years — but particularly of late — been impressed by the value and interest of diagnosis as a healthy and stimulating intellectual exercise which highly cultivates the powers of observation and deduction. The surgeon has opportunities of testing and verifying not only the significance of his histories, but the results of his own physical examinations and those of others, and especially the deductions that he draws from the evidence at hand.

Of all the areas in the body (excepting perhaps the field of cerebral diagnosis, where correct deductions from accurate observations offer the most extraordinary opportunity for the highest intellectual endeavor) none equals in the variety and frequency of disease the right upper quadrant of the abdomen, for there lie possibilities of widely differing lesions with symptoms more or less common to all. The similarity of symptoms, especially in the early and best operable stages of all these lesions, makes correct diagnosis extremely difficult; but it makes correctness of diagnosis and consequent efficiency of treatment of inestimable value to the patient. I cannot but feel, therefore, that at the present time there is no task set before the surgeon that is more productive of good than that of the early recognition of those lesions of the right upper quadrant which in their early manifestations are cured with little if any danger, but only with great and unavoidable danger in their later. But in emphasizing the importance of diagnosis in the right upper quadrant, as well as elsewhere, one must not in his enthusiasm forget that, delightful and satisfactory as it may be to make correct deductions from accurate observations, internal diagnosis is an exceedingly difficult and elusive problem, and the diagnostician must be particularly careful in making those diagnoses which condemn the patient, without even an attempt at relief, to an inevitable death. Even though the observer has, through years of general practice, of the practice of general surgery and of abdominal surgery, acquired great nicety of diagnostic accuracy, yet, skillful and logical though he may be, he must be on his guard lest he make such an error on the side of conservatism and inoperability as to remove the patient's only chance of cure.

We are told that, at the end of a long life devoted to the Greek definite article, the professor's chief regret was that he had not confined himself to the dative case. So may we sometimes feel, in spreading our observation over the wide field of general surgery,— we may regret that we have not devoted our lives to the abdomen, or to a single lesion in the abdomen. Seriously, however, the best way to study a particular subject is to approach it through subjects allied to it. The best education for the surgeon is general practice; for the abdominal surgeon, general surgery.

In the subject under consideration, I am convinced that further progress can best be made on frankly admitting the errors of diagnosis and treatment, but more especially the errors of diagnosis. In gall-bladder surgery, therefore, I wish to call attention to various errors in diagnosis and their results, whether beneficial or injurious, whether influencing the course of the real disease in a manner favorable or unfavorable.

These errors have come under my own personal observation in cases of my own, and are errors for which I have been partly if not wholly responsible. It seems but fair to myself and others concerned in them to explain that they are very infrequent. They are selected from many hundred cases, in which, operated and unoperated, there has been a correct diagnosis in an overwhelming majority. Indeed, were it not that the correctness of predictions has been almost invariable, I should not have been so deeply impressed by the occurrence of mistakes or so eager to prevent them.

The great deterrent to conservatism, especially in abdominal surgery, is the difficulty of demonstrating beyond a doubt that the greater rather than the lesser evil is present; that, for example, when gallstones are diagnosticated, there is a lesion more serious than that of gallstones, rather than one less serious — or even no lesion at all. Estimated by the chagrin which the surgeon feels, perhaps the worst error is that of performing an absolutely unnecessary operation, by which, however, the patient receives no injury; estimated by his remorse, he feels that there is none greater than that following a perfectly unnecessary operation by which the patient's life is sacrificed, unless perhaps, the self-reproach is as great when he has withheld an operation essential to life; estimated by the evil to the patient, none can be greater than the infliction of a fatal operation for a cause which does not exist, for the withholding of an operation does not always mean death; few lesions are essentially fatal without relief, and those few seldom unrecognized. Estimated by the evil to the patient when death follows, the infliction of an unnecessary operation or the withholding of a necessary one, has the same result; but, estimated by the probable evil, there is of course no comparison, because the great majority of unnecessary operations at least do no harm, whereas the great majority of lesions demanding operation are, without that operation, fatal.

Estimated by the good to the patient, the application of surgical measures to the lesions which may, however doubtfully, demand them, is vastly greater than the withholding of such measures on the ground that no lesions exist to demand them. Estimated by the sum total of evil and chagrin, self-condemnation and remorse, the worst are comprised in the inflictions of unnecessary operations and the withholding of necessary ones. Estimated by the least evil to the least number, the infliction of the unnecessary operation is incalculably less. Estimated by the greatest possible good to the greatest number, successful effort lies in the elimination of the unnecessary operation and the selection of the necessary one.

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[1] Not long after this operation the pain recurred with renewed violence. While we were discussing the question of what it was best to do, the patient passed by rectum a stone which we hope is the last one. This case illustrates what the probable cause of post-operative gallstone pain is,— an overlooked stone or fragment.

Successful effort then demands that one cultivate to its highest perfection the powers of diagnosis.

I must ask the indulgence of this association for emphasizing facts which are indeed truisms; but even truisms may be neglected or forgotten. The tendency is toward hasty, imperfect and inaccurate diagnosis, because operative diagnosis is so easy and unmistakable. This tendency is surely a pernicious one, and one to be resisted with all our might. No greater reproach can be brought against the surgical art than that it is only an art, and that, as ordinarily practised, it can never rise, in the hands of the surgeons themselves, to the plane of a science. Whenever time permits, the proposed operation should be based upon the most careful and exhaustive study of the patient; or, still better, no operation should be performed until that operation, by a positive diagnosis, has been found necessary. Every lesion should be regarded as one not demanding or justifying operation until, in the particular patient, that demand has been completely justified. The exploratory laparotomy, for example, should be reserved for those cases in which security of the patient demands *certainty* of diagnosis, and those in which there is everything to gain, and little to lose, by exploration.

The diagnosis of gallstones is usually easy and beyond doubt. The cases which require study are those comprised in my title, for those are the ones in which errors of commission and of omission are to be found. One will occasionally find nothing abnormal when he confidently expects to find gallstones. In some cases, though he will find no gallstones, he will find other lesions like chronic pancreatitis or pancreatic cancer; in others, the bile will be thick, black and tenacious, without gallstones — cases in which cholecystostomy and drainage are followed by complete and permanent recovery (Vol. 48, p. 117); in still other cases (Vol. 57, p. 167, and Vol. 59, p. 102) there will be an unchanged gall bladder and unchanged bile. When in the doubtful case, the diagnosis of gallstones seems, on the whole, the most probable, gallstones will in the majority of instances be found.

The errors in diagnosis are met with not only when no physical signs are present, but when the history is not characteristic — or at least not in accordance with our present and recent ideas; when, for example, the only complaint is that of an obscure, non-localized pain; a discomfort; a distress; a grinding, boring sensation (of which the patient will say that it is hard for her to tell when it begins, when it ends, or just where it is located). In a few instances the pain may be characteristic of gallstones, as to onset, situation, direction, intensity, "depth, breadth and length," persistence and termination. After a single attack of characteristic gallstone pain, failure to discover any stone or abnormality in the gall bladder is quite conclusive that the only stone or stones were actually expelled. Indeed, the more characteristic the attack is of successful ejection, the less will be the anatomical changes in the biliary tract. On the other hand, the more obscure and uncharacteristic the attack, the greater will be the anatomical changes.

In many of these cases of extensive anatomical changes the history will often be devoid of symptoms suggesting in the least the presence of a gallstone origin. When I have found gallstones in the course of other operations, and have been over the history in the light of the demonstrated facts, I have seldom found a characteristic history of gallstones. True, I have found complaints for which the demonstrated presence of gallstones and their anatomical effects offer an explanation, and doubtless the correct one; but except in certain cases this explanation, in the light of previous knowledge and experience, would have been regarded as absurd. Indeed, in the light of present knowledge, such histories would still be regarded, by some at least, as totally inadequate for a reasonable diagnosis of gallstones or for a justifiable operation.

In some cases I have been obliged to make the most searching cross-examination to detect a single suggestive symptom. I do not refer to gallstones harmlessly suspended in a gall bladder full of bile; but to gallstones filling to its utmost capacity a gall bladder not materially changed, and to gallstones so tightly grasped by a thickened and contracted gall bladder as to be deeply embedded in its mucous membrane.

In comparing the evils of an inaccurate diagnosis, we are forced, I think, to the conclusion that our failure to recognize early the presence of gallstones is by far the greatest evil that attends our treatment of disease of the biliary tract. An operation which demonstrates nothing organic in the right upper quadrant is a chagrin, not to say a humiliation; but it has the virtue of at least demonstrating the absence of organic disease — a by no means slight merit — and it has the virtue of comparative safety. I am not so sure that the satisfaction of knowing beyond a doubt that there is no anatomical cause for persistent and disabling symptoms in the right upper quadrant is not well worth the risk of exploration. Considering the numerous causes of symptoms in that anatomical area from diseases other than gallstones, the satisfaction of an unsuccessful search for organic lesions is all the greater.

It is a difficult task to satisfy patient and family and friends with the account of an unnecessary surgical operation, and especially a fatal one. We probably all have felt that, by the perversity of fate, our worst disasters have followed unnecessary, or at least not urgent, operations. When a patient dies from the anesthetic in a tooth extraction, in an operation for hemorrhoids, for a small shoulder lipoma; in a simple ovariotomy, appendectomy, or an unfruitful exploration; when she develops pneumonia, pleurisy, or a fulminating wound infection; when she bleeds to death from an operation upon a torn cervix; when death takes place from suppression of urine, acute parotitis, a spreading phagedena, a gas infection, a pulmonary embolism, tetanus, or even typhoid fever and other infectious diseases — when these things do occur, we have all felt the inadequacy of explanation or excuse.

So in operations for supposed gallstones in which nothing is found, we are forced to admit to ourselves the commission of a surgical mistake, one which would never have been committed were our powers of diagnosis more reliable. But can we ever hope to be free from occasional errors?

The only errors from which we can and ought to be free are those which depend upon inadequate study — upon haste and carelessness in observation and upon precipitancy of deduction. But we must not forget that these causes of error may lead the conservative man to overlook serious diseases quite as frequently as they may tempt the radical to explore for diseases which do not exist.

Under the heading of gallstones without symptoms may be classed those lesions in which there is in reality a gallstone origin, but in which the symptoms are dependent upon remote effects. Acute intestinal obstruction, for example, is occasionally caused by gallstones, and this fact must be borne in mind in the diagnosis of lesions causing acute obstruction. In the two cases which I now recall, a gallstone cause was not considered at all. The diagnosis of complete obstruction was so evident that immediate exploration was made and showed the gallstone cause. In the first case, however, no previous symptoms suggesting gallstones had ever been noticed; even the most searching inquiries were negative, and not a moment's pain or discomfort was described. I cannot but think, however, that, with our present experience, we should have elicited at least a history of indigestion. In the second case, that of a woman of sixty-eight (Vol. lxii, p. 45), my diagnosis was chronic intestinal obstruction, probably from cancer. Dr. Clara J. Alexander found a gallstone an inch in diameter, an inch and a quarter long, and three inches in circumference, completely obstructing the small intestine. In going over this history before making my diagnosis I paid little or no attention to two facts. This history (taken from the records of the New England Hospital for Women and Children) was as follows: "Patient aged sixty-eight. Family history negative. No acute illness, except children's diseases. Grippe seven years ago. Headache rather frequent. Three years ago was in hospital for *attack of indigestion*. [Italics mine.] Two years ago was in hospital twice; once for chronic bronchitis and again for *chronic gastritis*. Both times went home improved. Appetite good. Has gained flesh in last two years." "While in usual health, four days before entrance to hospital, began to have pain in region of the umbilicus, sharp and sickening in character, lasting only a few seconds and gradually wearing away. There were also nausea and vomiting. Attacks continued at varying intervals. Bowels moved up to the last day." In the light of the demonstrated cause, how significant the attacks of indigestion and chronic gastritis; how important the usual good health and the good appetite, and the fact that there had been no loss of flesh! As in this case, so, I dare say, in many another, the gallstones are reported as without symptoms, when the fact is that we are of insufficient acumen to recognize the symptoms, when, especially in the light of operative demonstration, they seem glaringly conspicuous.

The absence of gallstone pain and discomfort in histories must not receive too much weight in eliminating gallstones from the diagnosis; for, as I am saying, they may exist and cause serious anatomical lesions with few if any symptoms of pain or any of its manifestations. Nor must they be positively diagnosticated in the presence of jaundice; for many cases are met with in which jaundice exists without a gallstone cause; and many, it is true, in which the jaundice is the only symptom of gallstones. In considering gallstones without symptoms, therefore, the possibility of gallstones must always be borne in mind if a lesion is suspected anywhere in the biliary tract or contiguous to it, whether the lesion has symptoms suggestive of gallstones or not. Gallstones without symptoms are found usually in the course of abdominal operations for other lesions, when a systematic examination is made of the abdominal contents. They are also found when some other and more probable diagnosis has been made — ulcer of the pylorus or duodenum, for example, some lesion of the kidney, or even acute intestinal obstruction.

Scattered through my records of recent years are many cases which illustrate these statements. In most of them, however, the history is at fault. In the light of the operative demonstration, as I have said, the significance of apparently unimportant symptoms becomes apparent.

At an exploration of cancer of the ascending colon in a man of fifty-nine (Vol. lix, p. 117) the gall bladder was found tightly packed with gallstones, which had never been suspected. Review of the history taken in much detail shows the following expressions which might have been based upon the condition of the gall bladder: "Miserable, heavy pain in the left renal region"; "a dull, grinding pain,— it is awful." A tumor was later discovered in the ascending colon, and to this was attributed the pain. There was, however, no intestinal obstruction at any time, and intestinal cancer without obstruction is usually painless. Left-sided pain in serious gallstone lesions is not so very uncommon, and in this case it was probably caused by the gall-bladder lesion.

A woman of forty-four (36–27) was operated on for removal of a large fibroid, and at this operation a stone was found completely filling the gall bladder. Not a word in the history taken suggested gallstones. Later the patient had "cramps in pit of stomach and breast. No pain in right side. Have to be very careful what I eat, and cannot lie on right abdomen. I have a good deal of pain, but I have got used to it and do not mind anything about it." Over the liver was a raw blister. The patient declared that before the hysterectomy she had always been perfectly well except for "bilious attacks," on account of which she had to be very careful in her diet. The bilious attacks before operation and the obscure symptoms after were probably owing to the condition of the gall bladder.

A woman of forty-nine (vol. lvii, p. 59) at an hysterectomy for fibroid, was found to have a number of gallstones. Forty stones were removed by cholecystostomy. On reviewing the history of the case I find: "For six months was treated for gastritis and persistent pain in the epigastrium — colic spells without jaundice. Tenderness in gall bladder. Better examine under ether and explore gall bladder and pylorus." In this case I find that there were very positive indications of gall-bladder disease; but in the presence of a bleeding fibroid the significance of a gall-bladder involvement was lost.

At operation for removal of double multilocular ovarian dermoid cysts in a woman of fifty-one (62–159) we found the gall bladder contracted upon one large stone. A review of the history shows only this statement: "She has a fair appetite, but considerable gas in the stomach." In this patient it may fairly be said that there were at no time any symptoms of gallstones; and yet "gas in the stomach" may have been her way of expressing a gallstone irritation.

A woman of thirty (62–55), operated upon for double salpingitis "for a year had had pain low down in the back and in the right lower quadrant. Things seem to knot up like cramps." In this case there was nothing that could reasonably be attributed to gallstones, but a gallstone was felt impacted in the cystic near the common duct.

On inquiry I have been informed that "previous to her operation she had attacks of what was called acute indigestion, and several times she called a physician to get relief. She had not been troubled with this for at least two years prior to operation. Occasionally she was heard to complain for a moment, of a gastric pain but nothing of any consequence. This she never associated in any way with the trouble for which she underwent the operation. She has never complained of any attacks since."

From this patient's age, and from the records, no one would have had a suspicion of gallstones. Had she died of some acute disease, and had the stone been found at autopsy, her case would have been classed as one of the numerous instances of gallstones without symptoms. Knowing exactly the size and situation of the stone, I have little doubt that it will eventually be passed into the duodenum. An operation performed for gallstone symptoms would very likely prove useless; for there is but one stone, and that, as I say, small enough to be passed in a single brief colic. This information shows that the "acute indigestion" was the missing evidence of gallstone irritation, which, if we search carefully, we shall find in most if not in all cases.

In the case of a woman of sixty-three, at the removal of a large ovarian cyst, I found a large, flabby gall bladder containing many small stones. The abdominal symptoms had lasted six years. The only symptoms referred to the epigastrium was nausea, of which the patient complained a good deal, and which was probably due to the pressure of the cyst.

At an abdominal hysterectomy for fibroid (July 14, 1906) in a woman of sixty-six (62–59), a small gall bladder was found contracted upon several small stones, one of which — the size of a pea — was situated in the cystic duct close to the common. Going over her history I find (in the writing of Dr. F. W. Palfrey): "Is said to have a fibroid. Her only complaint is indigestion for two weeks — distress in stomach and vomiting. Bowels moved only with croton oil at the beginning of her trouble, two weeks ago; since then they have moved of themselves. She has no pain — no feeling of weight or pressure. Has noticed an enlargement of the abdomen. No bleeding from vagina. Appetite good until the past few days. No loss of weight. Thirty-eight years before had a 'typhoid dysentery' followed by 'consumption of the blood'." Three months later (Oct. 9, 1906) the patient reported to me "in splendid health. Looks extremely well; red cheeks. No pain from gallstones. Has had 'those vomiting spells.' She said, 'In the first place, I would feel as if my stomach refused to take anything I would swallow. That would be all there was to it. Some days I would vomit everything I would take into the mouth. Night before last something happened: I had dinner at 4.30. Had supper at eight or nine and went to bed. Soon began to have nausea. There was no pain. I didn't vomit. The attack lasted a short time, and next morning I was all right. Have never had any gallstone colic.'"

In this case as no doubt in a great many others, the operation, though plainly indicated, even demanded, was performed upon the less acute and less serious lesion. In the light of the operation, the nausea and indigestion had nothing to do with the fibroid. Though the growth was a large one, there was neither pain, pressure, nor hemorrhage,— in fact, it was causing no symptoms. But for my unwillingness to impose one capital operation upon another, I should have removed the gallstones.

These cases, taken mostly from the records of the past year, are by no means infrequent. In bringing them together I expected to show fewer signs of gallstones in the histories studied after the demonstration of stones. It is, I think, true that few gallstones exist which do not cause symptoms of some kind at some time or other. It is true, too, that these symptoms are so unusual, and so unlike our preconceived ideas, as to be of themselves either non-suggestive or wildly and absurdly so. I am seriously of the opinion, nevertheless, that any gastric or epigastric symptoms, persistent and unmistakable, recurring at irregular intervals or not recurring at all, are, in the presence of gallstones, usually due to those stones; and that progress in the direction of accurate diagnosis demands long-continued observation of patients in whom stones have been demonstrated and left undisturbed.

Recently one of the younger men to whom I referred a case of supposed gastritis, far away in the country, made a diagnosis of acute cholecystitis, and advised operation on subsidence of the acute attack, or in case the symptoms were growing worse. The patient suddenly and unexpectedly died of the perforation of the duodenum from unsuspected ulcer. A week or two later the same physician, in consultation with one of the younger men, a skillful and experienced surgeon in whom, as well as the physician, I have the greatest possible confidence, advised in another case an operation for supposed gallstones. Present at the operation was an older physician who had scouted the idea of gallstones and had diagnosticated gastric ulcer. One can imagine the chagrin of the younger men at finding no gallstones when gallstones had been confidently expected. There was no gastric ulcer; but the bile was thick, dark and tenacious; there were masses of mucus suspended in it. In a word, there was an abnormal condition of the gall bladder inviting infection, causing colics, and, in my belief and experience, making the gall bladder the nidus of future gallstones — a condition for which cholecystostomy and drainage are the best remedies. There was no cause whatever for chagrin. The only error in such cases is in limiting the cause of symptoms to an actual crystalline formation. This experience I have had several times. Furthermore, I have operated for gallstones and have not found even the changed bile, or any other abnormal condition in the biliary tract.

A physician from Philadelphia (57–167), thirty-nine years of age, six months after typhoid (in 1889) had his first attack of colic. During two years the attacks were repeated every three months, and were accompanied by jaundice. No stones were found in the stools. From that time to operation (in November, 1905) he occasionally had jaundice, induced apparently by fatigue, emotion, or indiscretion in diet. The colics ceased in 1891; but there has been ever since more or less pain in the region of the gall bladder. The pain has rarely been radiating, but has been distinctly circumscribed in the gall-bladder region. The diagnosis was cholecystitis. The patient was in the hospital two or three months with jaundice and clay-colored stools. He had a "subacute gastritis or duodenitis," and the temperature went as high as 104°. There was a good deal of gastro-intestinal fermentation with eructations. The diagnosis of gallstones was made by one of the best surgeons in America, upon whose diagnosis and recommendation I would willingly have operated even had I not concurred fully in his diagnosis. At operation I found the gall bladder rather large and full of fluid. No stones were felt in the gall bladder or cystic or common duct. Between the top and left side of the gall bladder, running over to the stomach and constricting slightly the pylorus, were a number of old adhesions, probably of inflammatory origin. These adhesions were dissected away, so that the gall bladder and pylorus were entirely freed.

I was much surprised to find no stones. The bile was distinctly changed; it was dark, dense, viscid and opaque. On drainage it became thin, transparent, and yellow, like normal bile. This patient was completely cured.

A girl of twenty-three from Honolulu (59–102) had been operated upon for appendicitis in 1904, just after an acute attack. There was said to have been sepsis, so that recovery was slow and imperfect. After the operation there was pain in the right side, with occasional severe exacerbations. The pain was intermittent and hard to bear, recurring every month or so. It radiated from one spot, and was accompanied by neither vomiting nor jaundice. After the pain there was tenderness in the gall bladder. Gallstones were diagnosticated by one of the most experienced and skillful of the younger physicians in Boston. The diagnosis was based chiefly upon the fact that, after an acute attack, he found definite tenderness in the gall bladder. At the operation the gall bladder was found filled with dark green bile of greatly increased consistency. The common and hepatic ducts were free of stones. The head of the pancreas seemed thicker than usual. By means of a tube the gall bladder was drained for two or three weeks. Then it was allowed spontaneously to close. The patient was completely relieved of her pain, and has been well ever since.

In this case the condition of the bile was such that its passage through the cystic duct was difficult. As in all such cases, it ran very slowly through the small aspirating needle.

In another case, that of a woman of about thirty-five (Operation Book, 1902, p. 213), the diagnosis of gallstones had been made from intermittent attacks of colic, with subsequent tenderness over the gall bladder. The diagnosis in this case was made by the husband, who was a surgeon of experience. The bile was precisely like that found in the two preceding cases. Drainage for two or three weeks resulted in perfect and permanent cure.

The last case I have seen was that of a man of forty-eight (Vol. 64, p. 77) who for two or three years had had pain in the right hypochondrium, gradually increasing in severity. The last attack, three days before my examination, was described as a sudden onset of severe pain, like the stab of a knife, in the exact region of the gall bladder. The pain radiated through the abdomen to the right shoulder. There was no jaundice. These attacks were irregular in their appearance. I found the gall bladder perceptible and prominent, and sent the patient to the Massachusetts General Hospital, where the assistant surgeon operated for me. The gall bladder was soft, non-adherent and not distended. It contained no stones, and was apparently normal in every way. The adjacent viscera were all normal to the touch. The gall bladder was not opened. The patient made a good recovery, and has had no pain since.

This is a very recent case; the patient has just been discharged from the hospital. I did not see this operation, but an absolute demonstration of the condition of the interior of the gall bladder was not made. I have found in the gall bladder gallstones which I could not feel before the gall bladder was opened. I have had the gall bladder out of the body, between my fingers, and then have been unable to feel a gallstone inside.

The final case was that of a woman of about fifty upon whom I have just operated for the closure of a large omental hernia, following an operation for supposed gallstones. This patient had the symptoms of gallstones, but at the first operation, which was performed by an assistant surgeon at the Massachusetts General Hospital, none were found. The head of the pancreas was thickened, as in the cases of supposed pancreatitis. The patient was entirely cured by the operation, and came back at the end of a year for closure of the hernia.

Scattered through my records in the past ten years are several cases of this kind. I am convinced that in many instances the real lesion is one of the gall bladder, with such changes in its contents that they are emptied through the cystic duct only with increased difficulty. This results in a painful spasm, just as does the passage of a stone through the duct. It is a matter of conjecture whether this condition of the bile is one which eventually produces gallstones. I have sometimes found, in bile thus changed, small, soft stones, apparently of recent formation. The chief symptom in these cases is pain — the gall bladder contracts with such violence as to produce a sudden severe spasm. The pathological changes may be slight or extensive, without gallstones or with them. The inference must not be too hastily drawn, that because no actual crystalline masses are found in the gall bladder, that viscus and its contents are healthy. I should not regard a gall bladder as demonstrated to be normal unless the interior of the gall bladder itself had been actually examined and the condition of its contents accurately demonstrated.

There remains much for us to learn as to the effect of gallstones in the gall bladder, especially in those early stages when the stones have hitherto been regarded as innocuous and without symptoms. In going over my histories in the light of the demonstrated lesion, I find it difficult in any case to establish an indisputable history of inoffending. So common are gallstones, especially in women beyond the menopause, that it seems to me wise, in all abdominal cases — no matter what the diagnosis — to question carefully with reference to obscure abdominal symptoms, especially those connected with digestion. Not only may the surgeon predict the presence of gallstones in patients operated upon for something entirely different, perhaps for a lesion in the pelvis, but he may discuss with the patient and her friends the desirability of removing such a menace to health whenever the additional operation would add but little to the risk. In proposing an operation for the removal of a fibroid, for example, one might, by the detection in the history of obscure epigastric symptoms, be prepared to relieve some abnormal condition in that region. I have found not only changes in the biliary tract, but many variations from the normal in the stomachs of women operated upon for pelvic diseases. I have not felt at liberty, without consulting the patient, to add the burden of operation upon the stomach, upon the gall bladder, or upon the appendix. In future I shall make as careful inquiry into digestive disturbances as into the condition of the heart, lungs and kidneys. Not that I have not always noted the appetite and the processes of nutrition; but, as in one of the cases already reported, previous attacks of indigestion and colic often are not mentioned by the patient, because she thinks that they are in no way connected with her complaint, which in the case mentioned was salpingitis.

I have sometimes felt, of recent years, that in writing much upon the surgery of the biliary tract I have been perhaps open to the criticism of telling a twice-told tale — of threshing out old straw; but still I must insist that for me, at least, the right upper quadrant is a field far from being fully satisfactorily explored and understood. Every day I see conditions for which, in my own experience or in the literature of the subject, there is no precedent. The two conditions which I occasionally meet with — comprised in the title of this paper — present questions which demand much more experience than I, for one, am able to give for their perfect solution, which can be settled only by renewed study and abundant discussion.

THE USE OF TUBERCULIN IN THE EARLY DIAGNOSIS OF TUBERCULOSIS IN A LARGE OUT-PATIENT CLINIC.

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In the rush of work in a large out-patient clinic there is nothing harder than to make what may be called an early diagnosis of pulmonary tuberculosis. Yet in such a disease as consumption, which if detected in an early stage offers every chance of a cure or an arrest, nothing can be of greater importance to the patient or to the community at large. By the term "early diagnosis" we mean that stage in the disease when the symptoms are more constitutional than local, when there is only a little throat cough, little if any expectoration, certainly no bacilli in the sputum, and no marked evidence of disease in the lungs. However certain the physician may be that a given patient has tuberculosis in this early stage, it is far more satisfactory to him and to the patient (and this is especially true in dealing with the poorer classes) to have at least one definite thing in addition to several other indefinite signs and symptoms on which to base conclusions. We firmly believe that in a certain number of selected cases a carefully given tuberculin test will in many instances give just such definite information and enable the physician to distinguish between debility and anemia due to tuberculosis and that due to other less important causes. We also maintain that good results can be obtained from the use of tuberculin even under the somewhat adverse conditions that are met with in a large out-patient clinic.

In a recent article on the subject of tuberculosis,[1] Dr. S. A. Knopf, of New York, comes out with the somewhat startling statement that the use of tuberculin in diagnosis is distinctly dangerous. He says: "I am not in favor of tuberculin as a means of diagnosticating tuberculosis. I know it is not infallible. . . . Such men as Profs. E. G. Janeway, of New York City, and Frank Billings, of Chicago, have expressed themselves to me personally the same opinion based on actual experience and advise against the use of tuberculin for this reason." It seems rather a pity that a man of Knopf's standing should make such a statement as this without qualifying it in any way. It is hardly worth while to quote statistics in answer to this. Tuberculin, both in diagnosis and in treatment, is used all over the world. The opinion of most of the great workers in this field is distinctly contrary to that expressed by Dr. Knopf. Koch, Moeller, Turban, Trudeau and scores of others indorse it. Osler said in 1901, "I remember no cases in which injurious results have followed injections." Trudeau says: "Any danger of aggravating the patient's condition lies in its faulty or reckless administration." Dr. F. C. Shattuck in a period of over ten years, during which he has constantly used tuberculin in diagnosis, has seen only one untoward result.

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[1] Knopf: Tuberculosis in Prisons, N. Y. Med. Jour., Nov. 7, 1907.

Thinking that there must be some misunderstanding in this matter, one of us wrote to both the gentlemen quoted by Knopf as supporting him in condemning the use of tuberculin.

Dr. Janeway said that he would not have expressed so unqualified a prejudice against the use of tuberculin; occasionally in carefully selected cases he thinks it useful. He has seen one or two sad results following its use. Personally he would prefer to "worry along" without it in the vast majority of cases.

Dr. Billings wrote: "My objection to its use as stated was that if used indiscriminately and carelessly it was a potent agent capable of producing serious harm. Used as you describe in the dose of .1 mgm., I think it would be entirely harmless. I have known of its use beginning with a dose of 5 or even 10 mgm. and I have also seen it used as a diagnostic agent in patients with temperatures ranging as high as 103.° I am opposed to its use in such doses and also to its use as a diagnostic agent in febrile conditions, for I believe that in the first instance it may be dangerous and in the latter it is of no value in febrile conditions. In other words, I am opposed to the indiscriminate use of tuberculin in doses which may be dangerous by individuals who do not use other methods of diagnosis which would ordinarily be sufficient."

We are quite in accord with this scientific and conservative point of view. Tuberculin is unnecessary in many cases and dangerous in others. Patients who have had recent severe hemorrhages, with definite signs in the lungs, with fever of over 99.5°, and all advanced or moderately advanced cases of tuberculosis whether of the lungs or elsewhere, should not be given tuberculin for diagnosis, nor, indeed, is it in any way needed in such cases, except in a few rare instances. Cases of suspected bilateral involvement of the kidneys are not available for this test, as acute congestion with subsequent suppression of urine may be brought on by the acute inflammation set up about foci in each kidney. Dr. Billings spoke of a case of Addison's disease which died shortly after an injection of tuberculin and apparently as a result of it. We have seen a similar case with the same result after an initial injection of 8 mgm. of old tuberculin; Dr. Ross, of Toronto, has seen a fatal result in two cases of Addison's disease after tuberculin. Such use of tuberculin is to be deplored and cannot be called either safe or conservative, especially where the patients are not under immediate close observation.

Excluding all these cases, however, there are many others whom it is not only safe but advisable to put through a tuberculin test. Patients with debility and anemia for which no cause can be found, those with a bad family history, a little cough and signs in the lungs which go under the term "suspicious," — these and many others will be benefited by a tuberculin test providing that it is given in the proper dosage and under proper precautions. We cannot urge too strongly that in every case all other means of diagnosis should first be tried, leaving tuberculin only as a final resort. There should be several careful examinations of the sputum, which may be digested and the residue centrifugalized; potassium iodide should be prescribed to loosen up the process; temperature records should be kept at home to find out if there is any evening rise, and there should be frequent and thorough chest examinations. Then, if no positive conclusion can be reached, and then only, should tuberculin be given. Furthermore, an agent as powerful for good or harm as tuberculin is certainly not the thing for the general practitioner or for the average untrained house-officer to use unless he has looked into the subject and understands its dangers. In a large out-patient clinic one or two men trained in its use who can tell a slight but positive reaction, who know when and how to give it without danger to the patient should be delegated to do this work. In their hands, results may be of great value with a minimum of risk.

The statement is often made that tuberculin is too delicate an agent; that it shows too much, and that people in perfect health will react to it. If, according to the German saying, "*Jedermann hat am Ende ein Bischen Tuberculose,*" if we all have a tuberculous focus somewhere in us, most of us will undoubtedly react to tuberculin in a greater or less degree; but as long as we are in good health, such a reaction need not worry us greatly. If on the other hand there has been loss of weight and strength, if there are suspicious signs and symptoms in the lungs and elsewhere, if under these conditions a person reacts to tuberculin properly given, it makes not the slightest difference where the process is, lungs, glands, kidney or anywhere else, such a person is tuberculous and should be treated as such.

In a recent article by one of us, mention was made of the need of an aggressive attitude in handling consumptives in a large out-patient clinic. We are more than ever convinced of the need of this, especially in using tuberculin. All of our patients come from the male and female departments of the Massachusetts General Hospital Out-Patient clinic. During the year 1905–1906, our patients were given tuberculin while attending the regular clinic; during the past year the tuberculous or suspected tuberculous cases were handled in groups, so-called "tuberculosis classes," and instead of isolated cases there were numbers of patients all of whom were taking tuberculin either for diagnosis or as a therapeutic agent. The advantage of this system is very manifest. Formerly it was only after a long argument that patients could be persuaded to undergo the test; in many instances, after the initial dose the patient felt better and disappeared from the clinic or refused to have another injection. Frequently a broken thermometer was the cause of the non-appearance of an interesting case. Under this system previous to the present year there were some fifty or sixty cases who received only a partial test. In contrast to this, under our present arrangement by which patients are seen in groups, of the last thirty cases all have been carried to completion owing to the force of example and the intelligent co-operation of patient and physician.

Under ideal conditions a patient who is to take tuberculin should be in bed during the entire test and for the three days previous and should have a nurse who could take the temperature every two hours and make careful observations of symptoms and the general condition. In our cases it was impossible to do this. There were no beds in the hospital that could be used for this purpose and we had to do the best we could under the circumstances. The chances for error are large, but with careful training of the patient and close questioning by the doctors many of these can be eliminated. We carry out a certain definite routine in every case. No patient is given tuberculin if the diagnosis can be made in any other way. Most of the patients have been under observation by the physicians in charge of the department from whence they come and are only turned over to us for a tuberculin test after all other means of diagnosis have been exhausted. The reason for giving tuberculin is first explained to the patient or to his friends. He deposits fifty cents for a thermometer which is refunded if it is returned unbroken. An assistant shows the patient how to take his temperature and gives him a card with the days and hours written out at which he is to take it. The patient then goes home, quits work if possible, and returns in three days at the next class meeting with his record. This is inspected and his ability to read the thermometer correctly is again tested. If he has not done it properly, he is sent home to take it for three days more. If the temperature taken at home when the patient is quiet is at any time over 99.5°, tuberculin is rarely given. In every case the range of temperature and the maximum is noted in the record. If all is satisfactory, the patient is now ready for the first dose, .1 mgm. In a few cases where a diagnosis is very important on account of a patient's close intercourse with a large family, and where not only is reading or writing out of the question, but there is mental deficiency as well, we give the patient a thermometer, tell him to put it in his mouth for five minutes every night for three days and then return with it. In this way we obtain the maximum temperature. We repeat this during the tuberculin test, thus detecting a rise of temperature which with constitutional signs or symptoms will sometimes help to make a diagnosis.

We use Koch's Old Tuberculin which in 2 cc. bottles costs about fifty cents. The date stamp be should looked at to see that it is not over two months old. One half per cent carbolic acid solution is used as the diluent. A 1 cc. glass pipette graduated into tenths of a cubic centimeter is needed. Beakers, large and small, a 10 cc. and a 100 cc. graduate, glass-stoppered bottles in which to keep the solutions and a 2 cc. glass subcutaneous syringe must be provided, as well as a sterilizer in which all this glassware is boiled prior to use. The accurate measurement of small amounts of fluid with the pipette is a rather delicate matter and should be practised with water before trying with the tuberculin. Some of the crude tuberculin is drawn up into the pipette and .1 cc. 100 mgm. is allowed to drop into 10 cc. of the carbolic solution. This forms solution No. 1, each cubic centimeter of which contains 10 mgm. of tuberculin. After shaking thoroughly, 1 cc. of this is mixed with 9 cc. of the carbolic, thus forming Solution, No. 2, each cubic centimeter of which contains 1 mgm. of tuberculin. This is shaken and again 1 cc. is mixed with 9 cc. of the carbolic, forming Solution No. 3, of which each cubic centimeter equals .1 mgm. These three solutions, if tuberculin is used at all extensively, should be labelled and kept on hand. A solution will last two weeks if kept in a cool, dark place, but it is better if possible to make it up fresh each time.

With the solution ready, a spot on the patient's back, usually under one shoulder blade, is cleaned with alcohol or corrosive, and the initial dose of .1 mgm. injected. This can either be 1 cc. of Solution No. 3, or, if the syringe allows of sufficient accuracy, .1 cc. of Solution No. 2. Many advise beginning with a dose of ½ mgm. or with 1 mgm. and consider that .1 mgm. is too small. We have seen reactions in strong, afebrile, adult patients after an injection of ½ mgm. of tuberculin which were far too prostating to be safe to the patient or advantageous to the physician. It takes very little longer and may save the patient much inconvenience to find out whether or not he will react to the smaller dose before trying the larger. One of our most violent reactions was after an initial dose of .1 mgm.

The question at once arises as to what constitutes a reaction. This is a point which every physician must settle for himself. It is impossible to lay down any exact rules. Each patient presents a problem a little different from any other, and what may be called a reaction in one case might not necessarily be called so in another. In a general way we observe the following principles: It is far better to err on the side of strictness. In any case mere rise in temperature is not considered nearly so significant as general constitutional symptoms or changes in the local signs. A local reaction at the supposed site of the process is most important of all. If before the injection there had been merely harsh breathing at one apex, and after giving tuberculin there was found fine crackles or moist râles with increased cough and sputum, the reaction would be called a positive one even without marked febrile changes. To detect these physical signs the patient must report at least three days after the injection is made, and if possible earlier. The fine moist râles, the slight friction rub of a quiescent pleurisy, the development of cog-wheel breathing in a suspected area are all of the greatest value. To detect these changes, however, the physician must be sure of his powers of observation and have a careful record of the exact condition in the lungs before the tuberculin was given.

After an injection of .1 mgm. of tuberculin a rise in temperature of one half a degree above the maximum that the patient has had before, together with some constitutional symptoms such as headache, nausea, malaise, pains in the joints, etc., would probably be called a positive reaction. The patient must be carefully questioned and cross-questioned without making too leading inquiries before a decision is reached. If there has been only a slight rise in temperature without any constitutional symptoms after waiting at least three days, the next dose of 1 mgm. should be given. After this dose a reaction should show a rise in temperature of at least one degree above the previous maximum, with definite constitutional or local changes. After a 5 or 10 mgm. dose, no temperature under 100° is significant and the constitutional symptoms should be marked. It must be borne in mind at all times that no absolute rules can be laid down. Neurotic and impressionable patients will present more active symptoms than others and results in such patients should be discounted. For this reason it is better not to tell any patient what he may expect in the way of a reaction, and thus avoid any element of suggestion as far as possible. With children, unless they or their parents are of an unusual degree of intelligence, one must depend more on the temperature and changes in the pulmonary condition than on subjective symptoms. Each case must be looked at from every possible point of view and no decision made one way or the other until every factor has been considered. This general routine in giving tuberculin often has to be modified to suit the individual case. If after the second injection of 1 mgm. there are a few uncertain indications of its effect, but not enough to be called a reaction, it is well to make the next dose 5 mgm. instead of 10. If after this a reaction occurs, it is just as positive and far less violent than that after the full dose of 10 mgm.

Lowenstein and Kauffman[2] describe a very interesting German method of using tuberculin for diagnosis. They do not increase the dose where no reaction follows a small one, but, beginning with the dose of .2 mgm. repeat this four times at three-day intervals before increasing the dose to 2, 5 and 10 mgm. They maintain that the small repeated doses of tuberculin sensitize the patient so that as definite a reaction is obtained as with a much larger dose, but with less violent symptoms. Out of 300 cases, the great majority reacted to the third injection of .2 mgm. We at present have not had any experience with this method in diagnosis, but in the future we hope to have something to say on the comparison of the two methods when we have had opportunity of thoroughly contrasting them.

The various signs and symptoms which constitute reaction can be grouped under these heads:

(1) Fever.
(2) Local signs.
(3) Constitutional symptoms.

(1) This has been considered above.

(2) Local signs are at the site of the tuberculous process, usually, of course, in the lungs. If there is a local reaction, increased cough and sputum will show that a loosening of the process has taken place, and on examination over the suspected area crackles and râles may be heard where there were none before. In one of our cases after repeated negative sputum examinations, tubercle bacilli were found in a small mass of mucus coughed up shortly after ½ mgm. of tuberculin had been given. If there is a process which can be seen or felt, such as lupus, glands or infected joints, a reaction will be plainly evident in the increased heat, redness and swelling of the part. If, however, the process is well shut off and cicatrized, little if any effect will be noticeable. At the point of injection we may get marked redness, swelling and tenderness after the dose of tuberculin giving the reaction. This occurs sometimes in a few hours and slowly subsides without any evidence of local infection and is a diagnostic sign as pointed out by Trudeau.

(3) The constitutional symptoms may be: Gastro-intestinal, — loss of appetite, nausea, vomiting, or diarrhea; cardiac, — dyspnea, palpitation, and faintness; nervous, — headache, pains in the joints, general malaise, "grippy sensations"; vasomotor, — sweating, chills, chilly feelings, erythemata, and other eruptions usually of a very transient nature.

Our cases in which tuberculin has been given in diagnosis have shown us its greatest value. In no case have we had any serious or untoward results. No old process has been permanently lighted up; no hemorrhages have followed, and even in the few cases where very severe reactions have taken place, the resulting improvement and tonic action of the tuberculin have more than justified its use.

Case XXXI is the only one we have had which gave an absolutely negative tuberculin test and yet afterwards by pathological examination was proved to be tuberculosis. The reason for this is not clear.

These cases, 29 positive, 9 negative, were given tuberculin while at one of our classes; in only rare instances did any patient stop work altogether or go to bed during the test. No case was admitted to the hospital for the tuberculin test.

An analysis of these cases gives some interesting facts. Out of 28 positive reactions, a local reaction in the lungs was found only 5 times; this is doubtless to be explained by the fact that tuberculin was given only twice a week, — Mondays and Thursdays, — and in consequence a local reaction might have taken place and disappeared before the doctor at the hospital had a chance to examine the lungs. The reaction came on in

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[2] Zeitschrift. für Tub. u. Heilstattenwesen, Bd. x, Heft 1, 1906.

Positive Cases.

Number of Case.	Age.	Previous Diagnosis.	Symptoms and History. Why Tuberculin was given.	Physical Examination. General Condition.
I	21	Pleurisy. Ph.?	Slight pyrexia; loss of weight. Pain in chest. Cough.	Few fine râles. Slight friction left apex.
II	22	Ph.?	Pain in left chest.	Harsh respiration. Occasional râle left apex.
III	35	Cirrhosis of liver. Ph.?	Vomiting of blood some months ago.	Large liver and spleen. Rare râle in chest.
IV	27	Ph.?	Cough six months. Loss 10 lb. weight. Pain in chest.	Dullness. Occasional fine râle, bronchial right apex.
V	22	Ph.?	Dry cough. Slight pain in chest.	Dullness. Rare râle, right apex.
VI	30	Ph.?	Cough. Once raised some bloody sputum.	Dullness. Rare râle at left apex behind.
VII	23	Ph.?	Night sweats. Slight cough. Stomach trouble.	Few râles and increased signs at left apex.
VIII	35	Ph.?	Pain in chest. Cough. Slight expectoration.	Signs at left apex increased. Rare râle.
IX	16	Ph.?	Cough. Expectoration. Night sweats two weeks.	Râles in left axilla, + signs at right apex.
X	35	Ph.?	Loss of weight. Night sweats. Dry cough three weeks.	Few fine râles right axilla.
XI	21	Ph.?	Cough and expectoration. Loss of weight.	Increased signs left apex.
XII	28	Asthma.	Cough and expectoration.	Increased signs at both apices.
XIII	32	Ph.?	Slight cough and expectoration.	Occasional dry râle left scapula.
XIV	16	Ph.?	Slight dry cough.	Dullness. Br. ves. br. occasional râle at left apex.
XV	40	Debility.	Run down. Little dry cough.	Occasional râle at left apex.
XVI	26	Ph.?	Cough two months, with loss of weight.	Occasional crackle at both apices.
XVII	18	Ph.?	Cough with bloody sputum three months.	Occasional dry râle at right apex.
XVIII	27	Debility. Ph.?	Cough. Loss of weight.	Right apex "suspicious."
XIX	17	Anemia. Sore throat.	Loss of weight. Debility.	Occasional crackle at left base.
XX	13	Ph.?	Cough. Debility.	Harsh breathing right apex.

Positive Cases.

Reaction.					Febrile Reaction.			Disposal
	Dosage.	Local Signs.	Constitutional Symptoms.		1st day.	2d day.	3d day.	of Case.
+	0.1 mg. 1 mg.	No. increase.	Headache, nausea, diarrhea, grippy sensations.	9 1 5	98 99.8 100.6	98 99 98.4		Went to country.
+	0.1 mg. 1 mg.	Râles increased at left apex.	Headache, nausea, pain in chest.	9 1 5	98.6 99 99.3	100.4 101.2 101	99 98 99	Tuberculosis class.
+	0.1 mg. 1 mg.	No increase.	Headache, nausea, vomiting, back swollen and tender. Grippy.	9 1 5	98.6 99 102			Lost track of.
+	0.1 mg. 1 mg. 5 mg.	Not obtained.	Felt mean, headache, back sore.	9 1 5	98.6 99 103.2	102 102.2 103	98 100 99	Tuberculosis class.
+	0.1 mg. 1 mg. 10 mg.	No increase.	Headache, nausea, diarrhea.	9 1 5	Marked use to 101.°			Tuberculosis class.
+	1 mg. 1 mg.	No increase.	Headache, nausea, redness and swelling at point of injection.	9 1 5 12	98.6 98.6 98 102	98.6 98.6 98.6		Went to country.
+	0.1 mg. 1 mg. 5 mg. 10 mg.	Râles increased over left apex.	Headache, nausea, grippy pain in back.	9 1 5	98.6 98.6 100	99.1 98.6 98.6		Lost track of.
+	0.1 mg. 1 mg. 5 mg.	No increase.	Headache, nausea, grippy.	9 1 5	98 99.6 102	98.6 98.6 98.6		Rutland.
+	0.1 mg. 1 mg. 5 mg.	No increase.	Headache, back sore, nauseated.	9 1 5	98.6 99.8 99.6	99.2 100.3 100.1	99.4 99 99	Rutland.
+	0.1 mg. 1 mg. 5 mg.	Signs increased.	Headache, nausea, diarrhea, loss of appetite.	9 1 5	98.6 99 99.6	99 98 100	98	Lost track of.
+	0.1 mg. 1 mg. 10 mg.	Not increased.	Headache, nausea, grippy sensations.	9 1 5	98.6 98.6 99	100 102 101.1	98 98 98	Day camp.
+	0.1 mg. 1 mg.	Not increased.	Headache, nausea, grippy.	9 1 5	98.6 99 100	100 99 100	98.6 99 99	Rutland.
+	0.1 mg. 1 mg. 10 mg.	Not increased.	Nausea, headache, grippy.	9 1 5	98.6 98.6 98	99.1 . . . 103.2	99. 99.2 99	Went to country.
+	0.1 mg. 1 mg. 10 mg.	Not increased.	Grippy, increased cough, throat dry.	9 1 5	99 102 101	99 98 98		Tuberculosis class.
+	0.1 mg. 1 mg.	Not increased.	Nauseated, headache, grippy sensations.	9 1 5	98.6 98.6 101	99 98 98.6		Tuberculosis class.
+	0.1 mg. 1 mg.	Râles more numerous.	Only slight constitutional symptoms.	9 1 5	 99.4	99.2 99		Tubercle bacilli in sputum; 2 mo. later.
+	1 mg.	Moist râles right apex.	Very slight symptoms.	9 1 5	99.5 six hours after injection.			Rutland. Tubercle bacilli in sputum next day.
+	2 mg. 5 mg. 10 mg.	Not increased.	Headache, hot chills.		Reached 101° after 10 mg.			Under observation.
+	0.1 mg. 1 mg.	Not increased.	Joint pains, nausea, vomiting, chills, headache, "grippy."	8 12 4 8	 98 98 100	 99.2 99 99		Tuberculosis class. Under observation.
+	0.1 mg. 1 mg.	Not increased.	Slight headache.	9 1 5	99.6 99.4 99.4	100.4 100.2 100		Tuberculosis class. Under observation.

Positive Cases.

Number of Case.	Age.	Previous Diagnosis.	Symptoms and History. Why Tuberculin was given.	Physical Examination. General Condition.
XXI	18	Ph.?	An occasional hemorrhage during past year.	"Suspicious" right apex.
XXII	12	Tachycardia. Ph.	Debility. Pallor.	Increased signs at right apex.
XXIII	31	Ph.?	Cough for eight months, with bloody sputum.	Signs at left apex increased.
XXIV	16	Ph.?	Pale. Slight evening temperature.	Nothing abnormal.
XXV	14	"Run down."	Slight evening temperature. Sister died of tuberculosis.	Nothing abnormal.
XXVI	13	Ph.?	Cough. Debility.	Nothing abnormal.
XXVII	16	Ph.?	Debility. Cough. Brother has tuberculosis.	Harsh breathing at right apex.
XXVIII	29	Ph.?	Cough with sputum for a long time.	Signs at right apex increased.

Negative Cases.

Number of Case.	Age.	Previous Diagnosis.	Symptoms and History. Why Tuberculin was Given.	Physical Examination. General Condition.
XXIX	35	Ph.?	Cough and sputum for eight weeks.	Dullness and occasional râle, right apex.
XXX	33	Tb. Pharynx.	Sore throat four months.	Ulcer in throat. Occasional râle right apex.
XXXI	12	Chronic Influenza. Ph.?	Cough and sputum. Loss of weight.	Dullness; br. breath. Râles at both apices.
XXXII	14	Chronic Influenza. Ph.?	Cough and sputum. Loss of weight. Pyrexia.	Dullness and + sign at both apices.
XXXIII	36	Ph.?	Pain in chest. Cough.	Slight dullness at left apex.
XXXIV	47	Ph.?	Slight cough for two years. Some bloody sputum.	Suspicious right apex.
XXXV	16	Anemia.	Pale. Debility.	Nothing abnormal.
XXXVI	26	Ph.?	Father died of tuberculosis. Cough. Loss of weight.	Occasional râle left apex and left base.
XXXVII	21	Ph.?	Cough. Pain in chest.	Nothing abnormal.

POSITIVE CASES.

Reaction.	Dosage.	Local Signs.	Constitutional Symptoms.	Febrile Reaction.	1st day.	2d day.	3d day.	Disposal of Case.
+	0.1 mg.		Chilly. Headache. Felt sick.	9		100		
	1 mg.	Occasional râle right apex.		1		100.4		
	5 mg.			5	99.3	100.4		Rutland.
	10 mg.							
+	0.1 mg.		Feverish; pains all over. Dizzy. Headache.	9	98.4			Class, with *marked* improvement.
	1 mg.	Occasional râle right apex.		1	100.2			
	5 mg.			5	100			
+	0.1 mg.	Slight increase.	Headache, nausea, could not sleep.	9	99.8			Class. Is going to Rutland.
	1 mg.			1	99.8			
				5	99.8			
+	0.1 mg.	Not increased.	Headache, nausea, vomiting.	9	100	100		
	1 mg.			1	99.9	98		Rutland.
				5	99.4	98		
+	0.1 mg.		Nausea, vomiting, grippy sensations.	9	99.4	98		
	1 mg.	Not increased.		1	100.2	98		Rutland.
				5	100	98		
+	0.1 mg.	Not increased.	Nausea, vomiting, grippy chills.					Rutland.
	1 mg.		Nausea, vomiting, chilly headache.					
	0.1 mg.			9		100		
+	1 mg.	Not increased.		12	100			Day camp.
	5 mg.			4				
				8	102.4			
+	0.1 mg.		Herpes, nausea, vomiting, chills, pains all over.	12	98			
	1 mg.	Not increased.		4	99.9			Tuberculosis class.
	10 mg.			9	102.6			
				12	102.9			

NEGATIVE CASES.

Reaction.	Dosage.	Local Signs.	Constitutional Symptoms.	Febrile Reaction.	Disposal of Case.
0 0	0.1 mg. 1 mg. 10 mg.	Not increased.	None.	None.	Reassured.
0	1 mg. 10 mg.	Not increased.	None.	None.	Proved to be tuberculosis of throat.
0	0.1 mg. 1 mg. 10 mg.	Not increased.	None.	None.	Class, with marked improvement.
0	0.1 mg. 1 mg. 10 mg.	Not increased.	None.	None.	Did not improve.
0	0.1 mg. 1 mg. 10 mg.	Not increased.	None.	None.	Tuberculosis class.
0	7 mg. 10 mg.	Not increased.	None.	T. 99.4 after 10 mgm.	Reassured.
0	0.1 mg. 1 mg. 5 mg.	Not increased.	Slight headache.	T. 99.1 after 5 mgm.	Hygiene class.
0	0.1 mg. 1 mg. 5 mg.	Not increased.	None.	None.	Hygiene class.
0	0.1 mg. 1 mg. 10 mg.	Not increased.	None.	Reached 99 once.	Reassured.

from six to twelve hours, rarely eighteen hours after the injection, and lasted twelve to eighteen hours, according to its severity. In no case was it suggested to the patient what he or she might expect in the way of a reaction; the constitutional symptoms were elicited by careful questioning, avoiding all leading inquiries. In 14 of the cases out of the 28, 50%, a definite reaction was obtained after the second dose of 1 mgm. of tuberculin which goes to confirm the statement made above that a dose of 5 or 8 mgm. is often quite unnecessary and, if given as an initial dose, is in many instances very dangerous.

The proper disposal of poor patients who react to tuberculin is not by any means an easy matter. While we are convinced that these are the patients who, if left untrained, are later to become openly tuberculous, it is often very hard to persuade them that there is urgent present need of strenuous measures. If the intelligence of the patient warrants it, in some cases we carefully explain the situation, tell the patient what he must do and keep him under observation in a class for a period of months until he seems to be in perfectly good condition again. All patients are expected to report once a month after they have left the class. We try to get into Rutland, the State Sanatorium for consumptives, those who have no facilities for carrying on home treatment. On their return they report at the class meetings once a month. Of our cases, 9 went to Rutland, 10 were admitted to classes, 3 were lost track of, and the remainder were disposed of as was found best. In an examination of Paris school children, Grancher found 15% to be in what he terms the "pre-tubercular stage." There is no reason to believe that American schools, at least in the city, would make a better showing. It is among this class that the tuberculin reaction in addition to other means of diagnosis is of great value. A few months' treatment at this stage may save many of these from becoming consumptives later on.

In conclusion then we believe:

(1) That tuberculin is an agent of great value in the early diagnosis of tuberculosis.

(2) That it should be used only as a last resort after all other means of making a diagnosis are exhausted.

(3) That it should be used only in carefully selected cases as specified above.

(4) That it should be given by men properly trained and qualified to do this work.

(5) That used in selected cases in the initial dose of not over .1 mgm., it is not in any way dangerous.

(6) That it is perfectly practicable to use tuberculin to advantage and to get good and trustworthy results in an out-patient department among ambulatory patients, but it would be far better to have beds in the hospital for this purpose.

(7) That it is much easier to get good results and to give tuberculin properly if the patients are handled in groups or classes.

(8) That if a patient has a history and signs that lead one to suspect tuberculosis and in addition to this reacts to tuberculin, he should be treated as any other early case of consumption is treated, and furthermore the exact state of affairs should be explained to the patient or to his friends.

TECHNIQUE OF SUBMUCOUS RESECTION OF NASAL SEPTUM.*

BY G. H. POWERS, JR., M.D., BOSTON.

The purport of this paper is to present to you the technique of the submucous operation as done in the Massachusetts General Hospital Throat Clinic.

Indications. — The primary indication for this operation is nasal obstruction, partial or complete. In cases where there is not sufficient deviation to produce *per se* obstruction to nasal respiration and yet the breathing space is materially encroached upon by the above condition and an hypertrophied lower turbinate, the tendency at the present time is to correct the faulty septum first. The turbinate may later be trimmed that it may more perfectly conform to the resultant change in the size of the affected nasal cavity.

The age of the patient must be taken into consideration. If the cause of deviations of the septum nasi lies, in a great measure, in developmental anomalies of the facial bones (a generally accepted theory), it would seem justifiable to defer corrective measures until the parts in question have attained their full growth, or until about the time of puberty. In cases of obstruction sufficient to cause annoying symptoms, this consideration would naturally be overlooked. Question of operation on the deviation of traumatic origin is not influenced by this contraindication. The existence of any of the acute infectious diseases, secondary syphilis, or active local tubercular processes are absolute contraindications. Decision to operate upon a hemophiliac should be guardedly reached.

Anesthesia. — The anesthesia most in use in this clinic is cocaine hydrochlorate 4% to 10% in solution with equal parts adrenaline chloride 1–1000. Pledgets of cotton are dipped into this solution and rubbed over the mucous surface to be cocainized. The patient will suffer less inconvenience if a hearty meal is eaten a short time before operation.

Preparation. — Very little preparation for the operation is necessary. The face may be thoroughly washed, the surrounding parts scrubbed with soap and water, and the usual aseptic precautions taken. A mask of several layers of gauze with a central opening for the nose will be found very convenient for both patient and operator. This mask is held in place by two strips of tape attached to the inner surface and tied around the head, one at the level of the forehead, the other passing just below the tip of the nose.

Position. — This is purely a matter of preference some operators being accustomed to operating upon patients in the recumbent or semi-recumbent position, while others prefer to have the patient sit upright in a straight-backed chair with a headrest.

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* Read at a meeting of the New England Otological and Laryngological Society, March 16, 1906.

Instruments. — The necessary instruments are: applicators, probe, specula (ordinary and medium Killian), knife, elevators (Freer and Jansen), Ballenger knife, biting forceps (Freer, Gruenwald, Jansen), chisel, gouge, mallet, hook-needle with sutures, scissors, angular forceps.

Operation. — The single anterior incision is used, the cut being made as far anterior as practical. This incision is occasionally modified to meet the requirements in different cases by a horizontal cut along the base of the septum, and by an extension of the original incision across the floor of the nose, the object being in each instance to afford readier accessibility to the operative field in cases complicated by spurs and basal protuberances.

The incision passes through mucosa and perichondrium and is, in the average case, from 1.5 to 2 cm. long. An elevator is now employed to dissect perichondrium and mucosa over as great an area as indicated. Freer's elevator will be found most useful in starting the dissection, the larger instrument of Jansen being used for the remainder, as with it there is less likelihood of injuring soft tissue. The cartilage is now incised in the line of original incision, care being taken not to perforate the opposite perichondrium and mucous membrane. The latter are now elevated in the same manner and to the same extent as above.

The medium Killian speculum is now inserted, the blades opening against the two layers of perichondrium, having between them the cartilaginous septum.

The removal of the requisite amount of cartilage is now accomplished with the Ballenger knife, punch or gouge, the former being preferred whenever practical. According to the advice of Menzel[1] a bridge of cartilage above from 1 to 1.5 cm. in width should always be left for support to the integument in preserving the external contour of the nose. In using the Ballenger knife, the first stroke is made upwards and backwards, the downstroke following along the synchondrosis of the cartilage with the ethmoid plate and the vomer, the final direction being along the lower border of the quadrangular cartilage. The excised portion of cartilage is readily removed through the anterior opening with a pair of forceps.

In case of basal protuberances, chisel gouge or biting forceps may be employed for their removal. For deviations of the bony septum the biting forceps of Jansen, Gruenwald and Freer are the most serviceable instruments. In removing portions of the ethmoid plate and vomer, the support afforded the nasal bones must always be borne in mind, and while we do not know just what proportion of this structure may with impunity be removed, it seems safe to remove one half. Future experiment may justify us in removing more than this, but at present the tendency is to allow at least one half of the bony septum to remain intact. The usual location for spurs in the posterior portion of the septum is along the border of the vomer. Such ridges are readily removed with a gouge, chisel, or biting forceps. When the gouge and chisel are employed great care must be observed in tapping with the mallet not to exert sufficient force to fracture the vomer.

Having removed the obstructing portion of the septum, the field of operation must be carefully inspected and probed in order to detect loose fragments of bone and cartilage which have been overlooked. Their removal is essential to insure a smooth surface of the mucosa and perhaps primary union.

Coaptation of the edges of the wound may be maintained by sutures or by packing. Sutures are inserted with the hook needle of Jansen, holding the loose flap of soft tissue with forceps, the needle passing through mucosa and perichondrium not less than one sixteenth of an inch from the free border and again through the anterior mucosa and perichondrium which have been left undisturbed. Silk, silkworm gut or horsehair may be used for suture material. A pair of forceps will be necessary in tying the suture.

The nose is now packed, usually with cargile membrane wrapped around a tampon of absorbent cotton. Strips of sterile gauze or plugs of cotton may be used for this purpose. The object of packing is two-fold: (*a*) to retain the layers of perichondrium in apposition and (*b*) to prevent secondary hemorrhage and the filling up of the operative field with blood. It is necessary to lightly pack the side opposite to that operated upon for the same reasons, though in this instance a lesser amount of packing is necessary, as it is possible to attain the desired result and allow at the same time for breathing space. A few strips of narrow gauze placed between the lower turbinate and septum will suffice, and if it does not reach to the floor of the nose will not obstruct the breathing. The medium Killian speculum should be used to protect the operative wound during the process of packing.

The after-treatment is very simple, consisting merely, in uncomplicated cases, in removing the packing at the end of twenty-four hours and keeping the nasal cavity clean. Aristol powder is usually insufflated for the first two days in order to reduce as much as possible post-operative hypersecretion which is very apt to follow when packing is omitted. Sutures as in other locations are removed in from three to five days. For any subsequent swelling Argyrol 10% to 15% or Protargol 4% proves very efficient. Primary union insures recovery in three to five days, a longer after-treatment resulting from granulations forming in the space left by imperfect coaptation of edges of the wound, or other complication.

The result of a successful resection is sufficient and equal breathing space in both nasal cavities, in so far as the septum is concerned. The untoward results are:

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[1] See White on Resection of Nasal Septum. Bost. Med. and Surg. Jour.

(*a*) Permanent perforation. This may be due to accidental removal of a portion of one or both layers of perichondrium and mucosa, or to subsequent sloughing from infection, etc. Sloughing has been known to follow the application of 1-1000 adrenalin chloride when the nose has been packed with saturated pledgets before operation.

(*b*) Hematoma with resultant fibrous tissue formation or subsequent abscess formation between the perichondrial layers.

(*c*) External deformity. Depression following too extensive removal of the bony septum or possibly in those cases in which no bridge of cartilage is left superiorly as previously mentioned.

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VOCAL NODULES IN CHILDREN.*

BY A. COOLIDGE, JR., M.D., BOSTON.

I briefly report this case, not because it is unusual, but because similar cases occur not very infrequently, and are often overlooked. The larynx in children is not always easy to see, and the hoarseness is ascribed to inflammatory conditions, adenoids, or some other similar trouble, resulting in a wrong prognosis or unnecessary treatment.

A girl, ten years of age, was brought to the Out-Patient clinic on account of hoarseness of some years' duration. It was first noticed five years ago, after she had acquired a habit of speaking in a loud voice on account of the deafness of a companion. At about this time her adenoids were removed, but without changing the character of her voice. This hoarseness varies much on different days, and even at different times on the same day, but the voice has at its best a slightly harsh sound. This harsh or cloudy character of the voice is noticeable in the speaking voice even more than in the singing voice. These are practically all the symptoms. On examination nothing essentially pathological is to be found except two pearly white nodules one on the border of each vocal cord between the anterior and middle thirds, a typical picture of so-called singer's nodes, or vocal nodule.

It is not my purpose to say anything about the nomenclature, etiology, pathology, or treatment of the nodules as seen in the adult, for an account of which I need only refer to F. I. Knight,[1] Chiari,[2] C. H. Knight,[3] Miller,[4] Cordes,[5] and especially to a discussion on the subject at the International Medical Congress of 1900 in the section of Laryngology.

In the description of singer's nodes in our textbooks, and in papers on the subject, their occurrence in children is often not mentioned, and it is implied that they are found almost exclusively in adult singers. On the other hand in the discussion mentioned above, Chiari says that they are not uncommon in children; Garel and Bernoud from a study of 144 cases conclude that they are very frequent in children. C. H. Knight quotes one of Murray's cases as only seven years of age.[6]

In my experience vocal nodules are not infrequently seen in children, and they may appear as early as four or five years of age. The symptoms vary from slight huskiness to distinct hoarseness of the voice, varying at different times as the size of the nodules vary, becoming worse with fatigue, excessive use of the voice and with colds or other local inflammation.

The etiology is undoubtedly similar to that in adults, — a faulty use of the voice, except that, whereas in adults it is frequently due to an abuse of the singing voice, in children it is probably caused by constant shouting and loud talking. If we listen to some children at play, it is surprising that their vocal cords stand the strain as well as they do. As in the case of adults, nodes are an infrequent result of abuse, but when they once appear they tend to persist. In children they get little chance for rest, and are themselves a source of irritation. They may be due to enlargement of glandular tissue, similar to the enlargement of the tonsillar ring, disappearing with the involution of this structure.

The diagnosis is easy if the vocal cords can be seen. The nodes are generally bilateral, and situated at about the junction of the anterior and middle thirds of the cords. They appear as small white excrescences on the free edge of the cords, exactly opposite each other. As the straight line of the cords is broken by these projections, their proper apposition in phonation is interfered with, with a resulting lack of clearness in the tone. If the larynx is inflamed or strained the nodules may become temporarily larger, with resulting increase of hoarseness.

Of the prognosis, I cannot speak with any degree of certainty. The nodules often persist for years, but I am inclined to believe that they often disappear during adolescence, especially in boys at the time of the change of voice. At this period the larynx grows, and the local conditions change, so rapidly that it is very probable that these local points of thickening disappear in the process. I have certainly seen the nodes much more frequently in boys than in men.

For treatment, rest and the proper use of the voice are the essential points. Even if the nodes do not entirely disappear, they become less prominent and the voice is improved. Rest of the voice with many children is not easy to enforce. I doubt whether anything is accomplished by local applications. Removal of the nodes, which may be indicated in an adult, is much less frequently so in children; not only is it much more difficult to do without danger of injury to the cord, but as there is a hope of the disappearance of the nodes in adolescence, it is well to wait until after this period before undertaking it.

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A school of malingering has been discovered in Rome in the course of inquiries made by insurance offices in regard to claims for injuries said to be the result of accident.—*American Medicine.*

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* Read at a meeting of the New England Otological and Laryngological Society, March 16, 1906.

[1] New York Med. Jour., Dec. 1, 1894.

[2] Arch. für Laryngol., xi, 415.

[3] Laryngoscope, November, 1901.

[4] *Ibid.*, November, 1902.

[5] Arch. für Laryngol., xiv, 215.

[6] *Loc. cit.*

PROPHYLAXIS OF POST-OPERATIVE DIPHTHERIA.*

BY HARRY A. BARNES, M.D., BOSTON.

In November of last year a fatal case of diphtheria following an operation for tonsils and adenoids in the Out-Patient Department of the Massachusetts General Hospital suggested an investigation of the prophylaxis of post-operative diphtheria.† Cultures from all tonsil and adenoid cases were decided upon, with a view to establishing the desirability of making such cultures a routine of hospital procedure.‡ As the results obtained are quite in accord with the published results of other investigators, I shall give no detailed account of them, but include them in a general consideration of the subject.

That the Klebs-Loeffler bacillus may be present in the upper respiratory tract of many persons showing no signs of clinical diphtheria is a fact long ago established by many observers. From the prophylactic standpoint this fact presents two points of especial interest. First, the frequency with which the bacilli occur and the conditions governing the frequency; second, the virulence of such bacilli, and the conditions governing the virulence.

I. The frequency varies markedly according to the conditions of life and exposure to contagion. Graham Smith[10] reported a series of 362 cultures taken from selected individuals giving no history of direct or indirect exposure. Of these, 198 were poor people of the type usually seen in our large hospital clinics. No positive cultures were found. He also reported that of 1,149 cultures from non-selected healthy individuals, only three (.26%) of the positives could not be accounted for by the history of previous exposure.

Denny[3] obtained only one positive culture out of a total of 235 (.43%) taken from school children in Brookline, living in good hygienic surroundings and not previously exposed to contagion. In this one positive, the bacilli were so few that a pure culture could not be obtained.

On the other hand, Corbett[2] found the bacilli in every member of a family of five persons, one of whom had a clinical nasal diphtheria.

Between these extremes all percentages have been reported, and direct or indirect exposure seems to be the determining factor in the percentage. In well persons, taken at random during a time when no specially severe epidemic is present, the number of positives is between 1% and 3%. In groups of individuals, such as are found in schools and asylums, where recent outbreaks of diphtheria have occurred, the number of positives is always high. I cite a few of the reported results in the order of the percentage of positives found.

The committee of the Massachusetts Association of Boards of Health[6] reported 1% positive cultures from Boston school children; 1.5% from Lowell mill operatives.

Kober[5] reported 15 positives from 600 healthy school children (2.5%).

The results at the Massachusetts General Hospital come next in the order of percentages. Cultures were taken from both nose and throat in 191 consecutive cases, coming to the hospital for operation on tonsils and adenoid. Five were positive (2.6%). Of these, 3 were from both nose and throat, 1 from the nose only and 1 from the throat only.

Denny[3] reported 22 positives out of a total of 200 cultures from a school in which 4 cases of diphtheria had recently occurred (11%).

Graham Smith[10] reported 54 positives out of a total of 519 cultures taken during an epidemic (10.4%).

Kober[5] reported 15 positives from 128 general contacts (11.7%).

Berry and Washbourn[1] reported 17 positives from 142 girls in a school in which there had been several cases of diphtheria (11.9%).

Goadby[4] reported 190 positives from a school of 800 children in which 31 cases of diphtheria had previously occurred (34.1%).

Park and Beebe[7] reported 24 positives from 48 children in 14 infected families (50%).

Spirig[8] reported 6 positives from 2 families of 4 and 6 persons respectively, living in a house where there was a case of diphtheria (60%).

Higher percentages have been reported, but the results here quoted are sufficient to show the progressive increase of the number of positive cultures with the degree and duration of contact.

II. *The virulence.* — Positive cultures from healthy individuals giving no history of contact are seldom virulent. The combined results of Smith and several other observers show that of a total of 1,511 cultures taken from noncontacts, only 2 were virulent (.13%).

The Committee of the Massachusetts Association of Boards of Health[6] reported 17% of the positive cultures from well people virulent (.34% of all such cultures). When, however, we examine the reports of cultures taken from recent contacts, we found the percentage of virulent cultures much larger. Park and Beebe[7] found that of 6 positive cultures obtained from 55 children in a foundling hospital where diphtheria was endemic 5 were virulent. They also reported 8 virulent cultures from 32 positives taken from 330 persons, chiefly hospital patients. All but two of these virulent cultures were accounted for by recent contact. In Kober's[5] series of 600 children, 5 of 15 positive cultures were virulent. All of the five were from recent contacts.

In none of the positive cultures of my own series was the virulence tested by the usual method. In two cases, however, nonvirulence to the individual was shown, as positive cultures were obtained from both nose and throat at the time of operation. The history of these two cases is of sufficient interest to warrant a detailed account. The first patient was one of the first operated upon after routine cultures were begun, and when no opportunity was given to take cultures before the morning of operation. Cultures from both throat and nose at that time were positive. After operation, the patient was under the care of a local physician in Malden. No signs of clinical diphtheria were observed, and one week after the operation both throat and nose were practically normal and gave negative cultures. There was no history of exposure.

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* Read at a meeting of the New England Otological and Laryngological Society, March 16, 1906.

† This work was done through the courtesy of Dr. A. Coolidge, Jr., of the Massachusetts General Hospital.

‡ All of the cultures of this series were examined by Dr. Oscar Richardson, of the Massachusetts General Hospital.

The second case gave positive cultures from both throat and nose on the day before the one appointed for operation. Subsequent cultures proved positive on three successive days, after which two consecutive cultures were negative from both throat and nose. The patient was then admitted for operation, which was done one week after the last negative culture was taken. During this interval the patient had not been out of doors, and had not been exposed, so far as could be ascertained, to contagion. There were four other children in the family, among whom there were no sore throats and no nasal discharges. Yet swabs taken from the excised tonsillar and adenoid tissues were positive. Subsequent cultures from the throat were positive on three successive days after operation, and from the nose on four successive days. No signs nor symptoms of diphtheria appeared during an observation of ten days. This suggests the possibility of the crypts of the adenoid and tonsils being the source from which the bacilli were derived.

SUMMARY AND CONCLUSIONS.

The Klebs-Loeffler bacillus may be present in the nose or throat of from 1% to 3% of average healthy individuals. The bacilli are usually not virulent and have little or no clinical significance. In contacts, direct or indirect, they may be found in a much larger percentage of cases, and are likely to prove virulent.

Routine cultures in all cases before operations on the nose and throat are unnecessary, even in large hospital clinics. Cultures in individual cases are, however, essential. In the place of indiscriminate cultures, I would suggest that the following precautions be observed:

Careful examination of every patient at the time the appointment for operation is made, and the condition of the pharynx, nasopharynx and nasal cavities noted. A second examination of the patient on the day before operation, and strict inquiries as to the possibility of contact. If there are suspicious signs or symptoms, such as undue redness of the fauces or profuse discharge from the nose, especially if combined with any excoriation about the nostrils; or if there is a history of recent sore throats in the family, or diphtheria in the immediate neighborhood, or among the child's playmates, cultures should be taken. I would also suggest a final examination of the patient by the operator before etherization. If these measures are conscientiously carried out, I believe post-operative diphtheria, arising from bacilli present at the time of operation, will be reduced to a minimum.

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[7] Park and Beebe: Med. Rec., Sept. 29, 1894.
[8] Spirig : Zeitschr. für Hyg., vol. xxx, 1899.
[9] Smith, G. S. Graham: Journal of Hygiene, April, 1902, vol. ii, p. 170.
[10] *Ibid.*: Journal of Hygiene, April, 1903, vol. iii, p. 216.

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ESSENTIAL POINTS IN THE TECHNIQUE OF SUB-MUCOUS RESECTION OF THE NASAL SEPTUM.*

BY GEORGE L. TOBEY, JR., M.D., BOSTON.

The technique of the operation for submucous resection of the nasal septum has developed with almost daily strides during the last two years. In practically every medical journal there is some new method or instrument for this or that. The man who has limited clinical material on which to perfect his own technique finds, on reading the journals, that the methods for doing a comparatively simple operation are legion, and unless he has had experience, he is unable to exercise proper discrimination.

The object of this paper is to discuss briefly certain points in the technique, the pros and cons of which one learns in doing a large number of these operations.

The first consideration is that of anesthesia.

The most efficacious method and the one most commonly used at this hospital and at the Massachusetts Eye and Ear Infirmary, is that of packing both sides of the nose with pledgets of cotton saturated in a mixture of equal parts of a 4% to 10% solution of cocaine and a one one-thousandth solution of adrenalin chloride for five to ten minutes followed by gentle rubbing with the same solution. By this method it is possible to cocainize all irregularities of the septum, the cotton conforming itself to such irregularities.

The anesthesia procured simply by rubbing the mucous membrane with a pledget of cotton, saturated with this solution, on a probe is thorough over all areas that are accessible. It will often be found, however, that it is practically impossible to reach portions of the mucous membrane immediately behind a sharp vertical ridge or a marked cartilaginous deviation obstructing the whole side of the nose and in contact with the turbinates.

In the use of the spray there is much more discomfort for the patient as the cocaine is blown into the pharynx and throat. If compressed air is used under a pressure of more than thirty pounds there is, as a rule, abrasion of the mucous membrane, which will be troublesome later, especially if the membrane is thin or adherent, in which case a slough is liable to occur.

A year ago several men advocated the use of a subperichondrial injection of a weak solution of cocaine and adrenalin to elevate and coincidently anesthetize the mucous membrane. This may succeed in a few very favorable cases, and then over the cartilage only, since the perichondrium is adherent at the junctions of the several parts of the septum. It will not work in cases where there has been previous trauma, owing to the adhesions between the cartilage and perichondrium. I tried this method in a series of seven apparently favorable cases. In two of these there was an almost unbearable reflex frontal headache, relieved immediately by puncture of the wheal. Practically no time is gained by this method.

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* Read at a meeting of the New England Otological and Laryngological Society, March 16, 1906.

Some advocate the use of cocaine crystals. I see no advantage in this over the 10% solution, and it is very expensive. As a rule a 4% solution is sufficient for an operation of sixty minutes. A 10% solution will be sufficient for two hours without renewal.

General anesthesia is advisable in children under twelve years of age. It is not necessary under any other conditions unless the patient so desires. There is, as a rule, much more hemorrhage owing to the vasomotor dilative action of ether, and unless ether is given by means of a tube there are frequent interruptions.

The use of the suprarenal dried extract is very expensive and the result does not warrant its use in preference to the 1-1000 solution of adrenalin chloride. A 1-5000 solution of adrenalin chloride is not sufficient in the majority of cases. There is no disadvantage in using a 1-1000 solution. Sloughs that have occurred were in my opinion due to trauma.

As to the position of the patient, the advantage of the upright position over the reclining or semi-reclining is obvious. In the former you are working on a horizontal plane and you are able to see the whole septum and floor of the nose without difficulty. If, on the other hand, the patient is reclining you will find that you have to work from one side, you have not a direct antero-posterior view of both sides of the septum, nor can you, without getting into a very uncomfortable position, see the lower posterior half of the septum. In this position if there is any hemorrhage it drops into the throat with consequent coughing *et cetera*.

While the reclining position is much more comfortable for the patient, it is most tiresome and awkward for the surgeon. Although it may seem advisable in some cases of nervous patients, I have never seen such a one who did not calm down when the actual operation was started.

Coming now to the question of the incision in the mucous membrane, I think you will find that the horizontal incision along the base of the septum is very seldom warranted. It may be necessary, however, if the septum is adherent to the lower turbinate. With the vertical incision on the convex side the most difficult dissection, namely, the nasal spur, is readily accessible. The disadvantage in making the incision on the concave side, is that you have to work at a very acute angle in dissecting the perichondrium from the convex side. In cases of sharp deflections and nasal spurs the vertical incision may be carried downward and outward, across the floor of the nose, to the anterior end of the lower turbinate. The mucous membrane is then dissected from the floor of the nose and upward on the septum to the sharp angle, the membrane being dissected from above to the same point. This method gives you more room and at the same time obviates the danger of perforation at the sharp angle of deflection. I have seen one case of marked thickening of the mucous membrane on the floor following this procedure. There have been no unfavorable results reported following the complete removal of the quadrilateral cartilage anteriorly.

The main point in starting the dissection is to be sure that your dissector is between the perichondrium and cartilage and not stripping the mucous membrane from the perichondrium. The operator when beginning submucous work finds his chief difficulty at this point. If the membrane does not strip readily, in the absence of cicatrices, you may be certain that you have not cut through the perichondrium.

There have been innumerable instruments devised for cutting through the cartilage. The knife edge has the disadvantage that, unless the operator has finished technique, he is liable to perforate the mucous membrane on the opposite side. The small olive tipped dissector devised by Freer is a most valuable instrument for this purpose. In using this instrument cartilage is cut through by using a vertical sawing motion in the line of the original incision through the mucous membrane; it goes through the cartilage very readily and pushes the mucous membranes before it.

The use of the punch in removing the cartilage is not necessary. If the punch is used it must be borne in mind that it is very easy to pinch the mucous membrane and so perforate.

The instrument best adapted to removing the cartilage is what is known as the Ballenger knife. In using this there is one very important point to bear in mind, namely, the incision should be started upward and backward to the ethmoid plate, then carried downward to vomer and then forward. To illustrate the danger of the reverse of this I will cite a case.

I started my incision backward along the base; in cutting upward the blade caught on a small bony projection. Slight leverage was applied to bring the blade upward and forward. The blade was suddenly freed sweeping upward and forward, removing the entire cartilaginous septum thus leaving no support below the nasal bones. The cartilage was removed before I discovered how much damage had been done; it was immediately replaced and fortunately did not necrose. There was no subsequent external deformity.

Another valuable instrument, especially adapted for the bony septum, is known as Jansen's biting forceps. In removing the bony septum you should never work unless your membranes are well separated with the speculum. The twisting motion advocated by several men is unsurgical because you are unable to see how much damage you are doing.

The bane of all septum work is the nasal spur. This must be entirely removed. The Jansen forceps and a chisel combined with a large amount of patience will accomplish this. A perforation in one membrane need cause no worry as it will heal very readily. The use of sutures obviates the retraction of the mucous membrane with the consequent slow granulation of the denuded area. Black horsehair sutures are preferable because they are easily found. The use of plain gauze packing will cause great discomfort, and, if there are denuded areas, a brisk hemorrhage on its removal. Cigarettes of cotton saturated with alboline are easily applied and removed without difficulty or very much discomfort. Cigarettes of cotton wrapped in cargile membrane are very easily removed and never cause hemorrhage.

One point which the surgeon oftentimes forgets, with subsequent suffering for the patient during the next twenty-four hours, is the fact that when he is packing the nose is cocainized and adrenalized, with consequent shrinkage of all erectile tissue. The action of the drugs gradually passes with subsequent engorgement of the tissues and as a result tremendous pressure is brought to bear. Any one who has ever had packing placed in his nose under these conditions will sympathize with the patient. When this point is borne in mind and a very light packing is used, I have never seen the tremendous edema of the external nose and face which sometimes occurs.

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Clinical Department.

A CASE OF FATAL MENINGITIS AFTER REMOVAL OF THE ANTERIOR END OF THE MIDDLE TURBINATE.*

BY HARRIS PEYTON MOSHER, M.D., BOSTON.

In the early fall I removed the anterior end of the left middle turbinate from a man of fifty who had a middle meatus full to overflowing with pus. I used a medium-sized ring punch. The patient had had unilateral nasal discharge of pus for some years. This alone gave discomfort. He never had much pain. The anterior end of the turbinate was removed in order to gain room for a systematic examination for the source of the pus. After operating I packed the region of the middle meatus with plain sterile gauze. The next morning the gauze was taken out and the antrum syringed. It was full of pus and foul. The man complained of severe frontal headache. He left the Out-Patient Department rational, but before he reached his home he became irrational. The next day, Sunday, a general practitioner took charge of the case. Late Monday afternoon the patient was admitted to the hospital as a house patient. He had all the symptoms of a septic meningitis. At six o'clock on this day, that is on the third day after the removal of the anterior end of the middle turbinate, I operated. I opened the frontal sinus; it was full of pus, but the cranial wall was intact. Then the antrum was widely opened through the canine fossa. After breaking down the upper part of the inner wall of the antrum the ethmoid region was curetted and the sphenoid opened. There was foul pus everywhere. The patient left the table in poor condition. He never regained consciousness and died within twenty-four hours. Every effort was made to get an autopsy without success.

The dread and the danger of such a happening as occurred in this case is constantly before the operator who does any serious work in the ethmoid region. A knowledge of nasal measurements to a certain extent lessens this dread and gives the operator an increased sense of security. If you will take the trouble, and you cannot satisfy your surgical conscience unless you do, to familiarize yourself with nasal operating measurements, you will find that they are much more uniform than you would suppose. On the table opposite there are a few specimens. Take the measured curette which is made for this purpose and lies beside them and see for yourself. If you ever have a case like this one I hope that you will have the comfort, such as it is, of feeling that you minimized as much as possible by such means as this the working in the dark which these cases necessitate.

What happened in this case? Of course the patient died as the result of the removal of the anterior end of the middle turbinate, but how did this come about? Was the cribriform plate broken or did the packing dam the pus back to such an extent that the infection was forced through the cribriform plate to the meninges?

I do not think that I broke through the cribriform plate because I was careful not to exceed the normal operating measurement of two and a quarter inches. The second question or supposition best explains to my mind the cause. I think that the packing walled back the pus and infected the meninges through the cribriform plate. If this is the fact the lesson to be drawn from this case is that it is dangerous to pack the nose after operations on the ethmoid labyrinth where there is pus in the middle meatus. After removing the anterior end of the middle turbinate I have been accustomed to pack the middle meatus for the first twenty-four hours in order to prevent bleeding. It must be borne in mind that the middle turbinate is but an offshoot of the ethmoidal labyrinth. It can, therefore, be removed with the snare or punch with but little bleeding. The snare will accomplish but little on the ethmoidal labyrinth proper. Here the punch or the curette is necessary. With either of these instruments considerable bleeding follows. If the patient can be put to bed or kept quiet there may be no need for packing, but if the patient has to stir about or has to take something of a journey in order to reach his home I think packing is required. Therefore, I have used it more or less as a routine. Naturally in the future I shall use it very carefully where there is pus in the nose, but I do not think that I shall go to the opposite extreme and never pack.

Would opening the cranial cavity have done any good in this case? Clinically the meningitis was general. In such cases the neurologists discourage operation. Operation offers hope only where the meningitis is localized and the point of infection can be found. Personally I wish that I had opened the cranial cavity. I might have found a frontal abscess, and if I had not found that but had found only a generalized meningitis the opening would have served for drainage. It is hard to believe that surgery will always hold its hands contentedly helpless even before generalized meningitis.

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* Read at a meeting of the New England Otological and Laryngological Society, March 16, 1906.

FATAL RESULT FROM INTRANASAL OPERATION.*

BY GEORGE L. TOBEY, JR., M.D., BOSTON.

Case: W. R. Male, fifty-eight years.

Children's diseases. Denies venereal disease.

During the last fifteen years he has had constant mucopurulent discharge from both anterior and posterior nares, and at intervals of from four to six months nasal polypi have been removed to relieve bilateral obstruction to breathing. Complete loss of sensation of smell for five years. During the last year there has been complete nasal obstruction, treatment having been neglected. When first seen his chief complaint was constant headache with sensation of compression at the base and forehead, loss of appetite and inability to sleep, with consequent neurasthenia.

Physical examination showed a man of medium height, poorly nourished and anemic. Chest negative. Both sides of nose filled with polypi and pus. The polypi presenting at the anterior nares. Nasopharynx filled with polypi protruding through the posterior nares. Naso-pharynx and pharynx bathed in muco pus.

On removing the polypi with snare it was found that there was a marked deviation of the cartilaginous septum, the septum being in contact with the left lower turbinate. Breathing space was obtained, on the right side, by removing a mass of polypoid tissue with snare and punch. Bleeding was insignificant. Four days later the middle turbinate on the right side was removed, the ethmoid cells opened with conchotome and curetted to os planum with Hajek's instruments.

Polypi could be seen protruding from the sphenoidal foramen. Anterior wall of sphenoid removed with punch. Cavity found to be filled with granulations and inspissated pus. Floor and inner wall lightly curetted. Few strips of iodoform gauze to sphenoid. Twenty-four hours later the packing was removed, and a few more polypi removed. Right antrum tapped and large amount of mucopurulent secretion washed out. One week later there were a few small polypi in the posterial ethmoid cells, which were removed with curette. The sphenoid was clean. It being impossible to reach the middle turbinate and sphenoid on the left side on account of the deflected septum, the cartilaginous and a portion of the bony septum were resected by the submucous method. Although the nose, on the side where the incision was made, was continually bathed in pus, there was complete healing in three to four days. Two weeks later the left middle turbinate was removed. The ethmoidal cells were found to be filled with granulations and pus. Cells curetted to os planum. Sphenoid opened as on the other side, and semi-solid cast of inspissated pus removed. Few strips of iodoform gauze to sphenoid. Bleeding insignificant. Six weeks later the right side of nose was clean. Practically no secretion in the antrum; the sphenoidal sinus was dry.

On the left side the same condition prevailed, with one exception. A little posterior to the nasofrontal duct and on the roof was a small mass of polypoid tissue bathed in pus. It was thought inadvisable to curette these, consequently a Grunwald punch was used to remove a portion of the mass. Twenty-four hours later he developed symptoms of a septic meningitis and four days later died from that disease. No autopsy.

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D., BOSTON,
AND
HARVEY P. TOWLE, M.D., BOSTON.

THE INFLUENCE OF LIGHT ON THE SKIN.

During the last ten years much interest has been taken in this subject, stimulated, without doubt, by the introduction of x-ray and Finsen therapeutics. As long ago as July, 1897, a paper on this subject was read by R. L. Bowles at the May meeting of the Dermatological Association of Great Britain and Ireland.

This paper offered much interest on account of the personal experiments of the writer on sunlight and snow-light in the Alps. By his experiments he showed that heat in itself is not the cause of sunburn, and that there is strong evidence for believing that it is caused by the action of the violet or ultra-violet rays of light. It was also shown that although these ultra-violet rays are very strong at high altitudes, altitude alone does not explain sunburn, as one may be unburned on rocks at 10,000 feet and yet be affected on descending to a glacier three or four thousand feet lower down. He considers it has been shown that rays from the electric light produce much the same results as sun's rays reflected from the snow, and that bronzing of the skin and browning of the wooden chalets are probably produced by rays reflected from the snow; also that freckles stop the penetration of these chemical rays through the skin; also that various pigments, chiefly those containing red and yellow, stop or alter reflected rays and prevent the pathological changes.

Immediately after the publication of Professor Röntgen's discovery, Dr. Bowles claimed for the x-rays as then produced an affiliation to those of light, and predicted that they would be found to affect the tissues in a way similar to the violet rays of light. This was found to be the case, as is shown by the numerous cases of x-ray burns, and he suggested that a form of energy which can produce such serious results on the skin may have a serious toxic effect. He declared that he would not be disposed, until more is known, to risk the effects of so powerful a form of energy on the cells of his own brain. Bowles is much impressed with the fact that reflected light burns much more rapidly than direct.[1]

Ehrmann's experiments on the action of light in hydroa estivalis are interesting.[2] This affection, first described by Bazin under the name of hydroa vacciniforme, begins, as is well known, by the eruption of vesicles on the parts exposed to the sun in people who evidently possess some extraordinary susceptibility. The affection as a rule appears in the first warm days of the spring and disappears in the autumn. There is some resemblance in the vesicle to that of smallpox, and the resulting pits may resemble those of that affection very closely.

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* Read at a meeting of the New England Otological and Laryngological Society, March 16, 1906.

[1] Brit. Jour. Derm., July, 1897.

[2] Arch. für Derm. und Syph., 1905.

Ehrmann's patient was a man of 31, whose affection began in childhood and had covered both hands and face year after year. At present it was becoming less pronounced. The experiments were made upon the skin of the patient by means of the Finsen light and the insertion of various lenses and objects between the tube and the skin.

He showed that the eruption could be produced in this patient by rays filtered through blue glass, as well as by the direct rays of the sun. On the other hand, the rays that passed through a red medium, whether a glass plate or a layer of fluid, produced no effect on the skin, although fewer heat rays were absorbed and the temperature was much higher. The long wave rays of the spectrum, and also the greater part of the heat rays, are absorbed by the blue medium, and only the short wave, chemically active rays pass through, and these alone give rise to the appearance on the skin. Hence he concludes that hydroa estivalis represents an idiosyncrasy of the skin to the actinic light rays, and is allied to epidermolysis bullosa, which represents a susceptibility to mechanical irritation, with the only difference that in the latter the susceptibility does not diminish with advancing years.

At the meeting of the British Medical Association in Toronto, in August, 1906, Dr. Hyde read a paper on the influence of light hunger in the production of psoriasis.[3] After commenting upon the frequent occurrence of this affection and its frequent beginning in childhood, he comes to the subject which was the object of his paper, namely, to show that there are facts which point to the conclusion that psoriasis is an expression of the resentment of the skin against long continued exclusion of light from the surface. He alludes to a paper recently published by him, in which he attempted to show that cancer of the skin was due in certain people to the influence of actinic rays of light, a proposition just the reverse of that here set forth.

His reasons for regarding the disease as caused or influenced by the exclusion of light are summed up in five propositions:

Proposition 1. — It is a well known fact that psoriasis is a disease that never affects the lower animals, whether wild or domesticated, and he considers this is owing to the reason that the skin of such animals is very rarely screened from the light by any covering.

Proposition 2. — If this affection is caused or largely influenced by the exclusion of light, it is clear that the number of persons whose skin is thus sensitive is relatively small. It is necessary to suppose a special sensitiveness of the skin in a certain small group of subjects. Ninety-nine per cent of human beings clothe themselves with garments which partly exclude sunlight without suffering from this affection.

Proposition 3. — If the theory under discussion be true, psoriasis ought to be most prevalent at those seasons of the year and in those countries in which sunlight is least abundant, and statistics bear out the truth of this proposition. It is always most prevalent and most severe in winter, when the sun's rays are less powerful and shorter in duration, and when also much thicker clothing is worn. Thus psoriasis is much more prevalent in the north than in the south, and is very rare in the negro race.

Proposition 4. — The localization of the disease should be largely determined by the opportunity of the part to exposure to the light. The scalp is a region where psoriasis is very common and very active, chiefly on the vertex, the front of the scalp and the occipital surface. This area he believes to be the part most covered by the hat, during the time spent out of doors. He considers also that the band of scaliness which is often present at the edge of the scalp upon the forehead also strengthens this proposition. The fact that psoriasis affects bald heads only exceptionally is emphasized, and also that at Christ's Hospital in London, where 50,000 children have been admitted since its foundation, there are few cases of psoriasis, and that the scalp has not been affected in any case except when there have been lesions on the body. These boys are required to keep the head uncovered when out of doors.

It is a well known fact that the face is less often affected than most other regions,—a further proof of the truth of this proposition. The hands which are exposed to light more frequently than most other parts are not frequently affected by psoriasis.

Proposition 5. — The favorable effect of x-rays and Finsen light in the treatment of psoriasis is also considered as an important aid to this argument. The treatment by sunlight has not as yet been sufficiently investigated. Removal to the South during the winter months often acts favorably on the disease. The writer mentions the case of a young man who had suffered from psoriasis for years, who spent several weeks in a place where he was free from observation, and where during the day he could rest in the sun completely nude. The result was a complete disappearance of the affection.

THE ETIOLOGY AND PATHOLOGY OF URTICARIA.

Stelwagon's statement[4] that "the disease [urticaria] is an angioneurosis, the lesions being primarily, at least, due to vasomotor disturbance which may be of diverse origin, but doubtless most commonly toxinic," expresses the theory which is commonly accepted to-day. Upon study of this theory it becomes obvious that our knowledge of the disease is not yet complete. Therefore as it is true that our treatment of a disease becomes more rational as our knowledge of its etiology and pathology increases several recent articles on various conditions found in urticaria have a very practical interest.

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[3] Brit. Med. Jour., Oct. 6, 1906.

[4] Stelwagon: Diseases of the Skin, 4th edition, p. 170.

Kreibich's experiments, made first in only one case[5] and repeated later on a more extensive scale in a series of five cases,[6] seem to support the angioneurotic theory. The conclusions drawn would be much more convincing if the experiments had not been made upon hysterical patients on whom, throughout the investigations, urticarial lesions were continually developing spontaneously. Török indeed would reject the entire series on the ground that nowhere in his text has Kreibich proved that he could distinguish the lesions supposedly due to artificial measures from those which were constantly developing in the ordinary course of the disease in these same patients.[7] Another point which Török makes is that it is impossible to rule out simulation, as the patients were under no control from the time the experiments were made in the clinic one day until they reported on the next. Kreibich thought that his experiments demonstrated that urticaria could be artificially produced not only directly but also by way of the reflexes. He reports that in his patients he was able to produce an urticarial lesion locally by pricking the skin with a pin or by rubbing in some irritating substance. More significant than this, however, he considers the fact that in certain experiments the production of wheals was not limited to the site of the irritation and did not cease with its withdrawal. Wheals continued to appear for from fifteen minutes to three hours after the original lesion had disappeared, not only at the site of the irritation but also on distant nonirritated parts. It is claimed that these results show that urticaria is a vasomotor disease in which the lesions are the result of an outpouring of serum from vessels whose walls have been intensely irritated by nervous influences. When the eruption is general and not confined to the region irritated it is explained that the irritation has been transmitted upward to the central nervous system by the nerve immediately concerned and that in the central nervous system the impulse " leaks over " and thus affects other segments.

Török[8] is a very vigorous opponent of the vasomotor theory of urticaria in general and of Kreibich's views in particular. He believes that it is not a vasomotor disease but on the contrary a true inflammation of the skin brought about by the direct local action on the vessel walls of certain substances circulating in the blood. He bases this theory upon Phillipson's experiments and upon his own studies. Phillipson[9] succeeded in producing urticaria both by the local application on the skin and by injection into the skin itself of such substances as atropine, morphine, peptone, etc. He lays the greatest stress, however, upon the fact that he could produce urticarial lesions upon the abdomens of dogs even after the cervical sympathetic had been cut, after the cervical ganglia had been removed and after the entire abdominal chain had been dissected out. He believes that the results of these last experiments prove beyond question that the vasomotor system has nothing whatever to do with the production of urticaria. Török carried his experiments on from this point. Accepting this theory of the direct local action on the vessel walls of certain substances circulating in the blood he endeavored to find out just which substances exerted this action. He also wished to determine whether there was in the normal organism a substance which could produce an urticarial edema of the skin by its local action; whether substances, such as ptomaines, toxins and antitoxins which are produced under pathological conditions, have such action; and whether there are drugs which can produce an urticaria by their local action on the vessels of the skin. He divided his results into three groups, substances producing no effect, those producing only a slight wheal and those producing a typical urticarial lesion. The composition of this last group is interesting as it included such substances as pepsin, trypsin, carbolic acid, phenacetin, antipyrin, morphine and bouillon containing the toxin of the staphylococcus aureus. His conclusions are that urticaria is an inflammatory disease because it shows all the classical symptoms of inflammation, "*en petit*," redness, pain, heat and swelling and because it shows histologically the same appearances as those found in experimental inflammation. It is not due to vasomotor disturbance but to such substances as have been indicated, or to substances like them, which, arriving by way of the circulation, act locally on the vessel walls.

Török's views are supported by Morichau-Beauchant's investigations. The latter puts forth a theory of the mechanism of the production of the urticarial lesions which it will be seen is strikingly like that of Török. His explanation of the process[10] rests upon the statement that certain substances, such as toxic-albumin, shellfish muscle, mollusks, microbic toxins, peptones and impure albumins are known to act as lymphagogues. From this he goes on to say that whenever there is abnormal microbic fermentation in the stomach or intestines defective elaboration results, in consequence of which peptones and toxic-albumins are formed. These products of imperfect elaboration then get into the circulation and are carried to the terminal vessels, *i. e.*, those of the skin. There they lodge and act directly upon the vessel walls. The resultant wheal is not due to a passive outpouring of serum but is the result of an active secretion from the endothelial cells caused by the direct action of these lymphagogues upon them. The production of the wheal is therefore an active process and may be entirely independent of all vasomotor influence. The situation of the wheal is determined by secondary causes (cold, trauma, etc.) which intervene to localize the edema at the points of least resistance.

Although the theories given above subsequently diverge widely yet they begin at the same point, the gastro-intestinal tract. For this reason Hirshberg's study of the gastro intestinal contents in urticaria [11] is important although the series is small. Hirshberg first washed out the stomach and then gave the patient an Ewald-Boas test breakfast. One hour later the stomach contents were removed either by expression or by aspiration. Analysis showed in the majority a hyperacidity which was most marked in the chronic or persistent cases. This suggests that a more extended study of the gastric contents in urticaria would yield valuable results.

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[5] Kreibich: Wien. klin. Wochenschr., 1904, xvii, 147.
[6] *Ibid.* Die Angioneurosen, 1906.
[7] Török: Rev. des Mal. Cut., Syph. et Ven., 1906, v, 363, 1907, vi, 2
[8] *Ibid.* Pest. Med.-chir., Presse, xxxix, 768, 785.
[9] Phillipson: Arch. für Derm. und Syph., 1900, li.

[10] Morichau-Beauchant, Ann. de Derm. et Syph., 1906, 4 s., vii, 22.

Paramore's careful study of the blood [12] has added one more fact to our knowledge of urticaria, for it showed that in certain types of the disease the blood is deficient in the amount of calcium which it contains and is slow to coagulate. Paramore states that these conditions do not obtain in all cases of urticaria but only in certain forms which he terms decalcification urticarias. The conclusions drawn from the examinations of the blood were confirmed clinically by the fact that he found that a cure followed in these decalcification urticarias if, as shown by continued examinations, the calcium content was increased and the coagulation time accelerated. This was accomplished by the administration of calcium chloride by mouth in drachm doses. It is interesting to note in this connection that he states that magnesium and milk, which have long been used in the treatment of the disease, act like calcium in increasing the calcium content and the power of coagulation. Clinically he found that sour fruit, unripe apples and sour wine tended to produce the disease by decreasing the calcium content and the coagulability. Paramore used Wright's method to determine the amount of calcium and the coagulation time. To measure the calcium, mixtures of freshly drawn blood were made with solutions of different strengths of ammonium oxalate, five cc. of blood was drawn into each pipette and mixed with one of the ammonium solutions. These mixtures were then allowed to stand for twenty-four hours. If the blood was completely decalcified, no clot formed and the corpuscles sank to the bottom. The incompletely decalcified mixtures clotted. A comparison of the pipettes thus showed at once which strength of ammonium oxalate solution just decalcified the blood. This gave the amount of calcium in terms of ammonium oxalate. The coagulation time was found by exposing a column of blood to a water bath at a temperature of 37° C. The tube was examined after thirty seconds and every fifteen seconds thereafter. The time required for the appearance of the first signs of fibrin was taken as the coagulation time. Although the absolute normal calcium content and coagulation time could not be given, Paramore adopted as his standard the known normal for non-milk drinkers, *i. e.*, a calcium content of one-one thousand five hundredth ammonium oxalate and a coagulation time of one minute and forty-five seconds.

It seems probable that each of these various observations expresses a part of the truth in regard to the conditions in urticaria, but further investigation is needed to determine what relation they bear to one another. The facts quoted suggest that while all cases of urticaria may have their starting point in certain conditions in the gastro-intestinal tract the process by which the eruption is produced is not always the same. In one case the wheal may be the result of a vasomotor disturbance; in another of certain substances, acting directly upon the vessels; in other cases it may be what Wright calls a serous hemorrhage due to changes in the blood, or it may be due to various combinations of these conditions. These are questions still unsettled.

Reports of Societies.

THE NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Meeting held at the Massachusetts General Hospital, March 16, 1906.

The president, Dr. F. L. Jack, in the chair.

Dr. H. A. Barnes read a paper on

PROPHYLAXIS OF POST-OPERATIVE DIPHTHERIA.

DISCUSSION.[1]

Dr. J. W. Farlow: In a day or two I am to operate on a girl, nine years of age, who has had nine attacks of diphtheria. The tonsils have large crypts in which are large, cheesy masses. Cultures have been taken in these cases of diphtheria and they have been positive.

In making the examination the other day, I found the child was in normal condition, but I think that in view of what I have heard to-night, I will have the tonsils examined and see if they contain the Klebs-Loeffler bacillus. The child has practically been incapacitated for a number of years.

Note. Two days later I operated on the child under ether, removing both tonsils and a fair sized adenoid. Cultures from the right tonsil showed the presence of the diphtheria bacillus, while the cultures from the left tonsil and the adenoid were negative.

Dr. A. Coolidge, Jr.: By this series of cases Dr. Barnes shows that it is not necessary to take cultures before every operation, although it is better to take many cultures than to have a fatal case. I take it that one reason that these bacilli are found in a certain number of healthy cases, is due to the fact the child has an immunity in some way, and of course a child having immunity is protected. If our conclusions from this series of cases show that it is unnecessary to take a routine culture, we should always give careful directions to whoever has charge of the child, in case it shows any signs of being sick after the operation, to report it at once, on account of the possibility of its having diphtheria. Also, no case should be operated upon without a previous culture, if there is a nasal discharge or rise of temperature.

I should like to express my thanks to Dr. Barnes for the work he has done and the time he has spent in following these cases, and taking the great number of cultures. The conclusions he has arrived at are of great value.

The President: We are very much indebted to Dr. Barnes for the work he has done in preparing a paper of this kind.

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[11] Hirshberg: Am. Med., 1906, 398.

[12] Paramore: Brit. Jour. Derm., 1906, xviii, 239.

[1] Page 705.

Dr. H. P. Mosher reported a case of

FATAL MENINGITIS AFTER THE REMOVAL OF THE ANTERIOR END OF THE MIDDLE TURBINATE.[2]

Dr. G. L. Tobey reported a case of

FATAL RESULTS FROM INTRANASAL OPERATION.[3]

DISCUSSION.

Dr. F. E. Kittredge, Nashua: I have had a similar case. My patient had severe frontal headache with some rise of temperature. I amputated the anterior part of the middle turbinate, and passed a probe into the frontal sinus with difficulty. Upon withdrawing probe a few drops of pus appeared. Inside of twelve hours the man developed symptoms of meningitis, and though I did an external frontal sinus operation immediately, freeing a large amount of pus, he died within twenty-four hours.

Dr. E. E. Foster, Fall River: I would like to add a somewhat similar case: A female, sixty-four years of age, who had had at several different times during the last thirty years of her life, polypi removed from both nasal cavities, without anything having been done for the sinusitis which was the causing factor.

I first saw her three weeks before she died. Both nasal cavities were completely filled with polypi and pus. She had signs and symptoms of meningitis.

On account of age and very poor constitutional condition, radical procedure did not seem advisable. I removed the polypi and carefully curetted the necrotic anterior ethmoidal area. No packing was used. Nose was douched several times a day with warm normal salt solution. Improvement was reported to me for about a week when I was again called on account of return of previous symptoms. I found a few small polypi and some pus.

Following the second removal of polypi, without curetting, there was a slight improvement, but at the end of a week or ten days all symptoms became more severe, with death following in a few days. An autopsy could not be obtained.

This case was without doubt meningitis from a chronic purulent sinusitis. Good nasal drainage seemed to relieve the symptoms for a time. No packing or powder was used. It was evident that without the removal of the polypi, and the establishment of good nasal drainage, death would have occurred much earlier. I am sure in this case that extension to the cranial cavity had occurred prior to any surgical undertaking.

Dr. F. C. Cobb: I think we all owe a debt to the gentlemen who have described these cases. If medical literature reported its unsuccessful cases in detail and with the accuracy with which the successful ones are described, our advancement would be much more rapid.

The President: I think they are coming out.

I have had very little experience with the intranasal operation in these cases. I am quite satisfied with the results in five cases of Killian's operation.

I feel, after listening to the various reports of fatal cases of internal operations, that the Killian method, or the external operation, is the one to select for these cases.

We are told that packing is one of the dangers in the internal operation. The Killian operation is free from this danger. The scar is the only objection, so far as I know, and the scar in my cases has proved to be a very small matter, hardly more than a red line a few days after the operation, gradually fading away until in a short time it is hardly more noticeable than a wrinkle. I am very strongly in favor of the external operation in most cases.

Dr. G. H. Powers, Jr., read a paper on

TECHNIQUE OF SUBMUCOUS RESECTION.[4]

Dr. G. L. Tobey, Jr., read a paper on

ESSENTIAL POINTS IN THE TECHNIQUE OF SUBMUCOUS RESECTION OF THE NASAL SEPTUM.[5]

DISCUSSION.

Dr. F. B. Sprague, Providence: I am very much interested in these papers and it seems to me I have nothing especial to add except a little personal experience.

In making the incision I have always made it on the left side of the septum, because it is handiest to my right hand, regardless of the position of the deflection, and I find it is just as easy to cut into either the convex or concave side. I think the point Dr. Emerson has made in regard to the incision is very valuable; I have done it in several operations.

Instead of suturing the mucous membrane I have used ordinary linen paper, sterilized, and cut out in a little patch and placed right over the incision, pulled the mucous membrane into place, and then packed against it. In that way there is no adhesion to the packing and the wound heals by primary union, and it is very much easier than suturing. I have used this paper patch for many years, in all forms of septum surgery, in removing ridges and spurs. After removing these excrescences I place this paper patch along the raw surface, covering it entirely and it allows me to pack it and remove the packing without any pain to the patient, and without tearing open the blood vessels and getting blood when the packing is changed.

In regard to instruments, the greatest difficulty is to find instruments that are small enough and strong enough to get into the nose and do any work. Freer's forceps are very large and bungling. A pair of forceps devised by Foster, of Denver, Colo., is the best one I have ever seen.

The packing I have left in two or three days, and then removed it and replaced it, in order to be sure of having a good position, prevent hematoma, and keeping things in a cleanly state.

I have been somewhat opposed to doing septum operations on children under twelve or fourteen years of age, but I have done one on a child of eight, where the obstruction was so great it seemed as though something must be done, and I had a very good result.

Dr. L. E. White: The papers were so complete that I do not feel as though there is very much to be said.

I use weak solutions of cocaine. When the deflection is anterior, as it frequently is, I inject one eighth of one per cent. of cocaine. If it is within the nose I I simply pack the nose with a one per cent. solution, with good results.

The anterior incision, of course, can be used if there is a moderate deflection in the cartilage with not much involvement of the vomer, and is the desirable one, because the wound heals by primary intention, and this saves a great deal of after-treatment. In trying to remove a large part of the vomer by this anterior incision, I have torn the flap, more or less, so I now make a horizontal incision in addition to the vertical, if the deflection is excessive.

In speaking of the age at which it can be done, as a rule I think it is wise to wait until the child is thirteen or fourteen years of age. I recently did a case of eight years, where there was great deformity in the nose (both sides being obstructed), and when it was necessary for the development of the child. The result in this case was everything that could be desired.

The sitting position is easier for the operator. There are some nervous patients who feel better lying down, and with a proper arrangement of the light and by having a pillow to move the head, not having the head perfectly flat on the operating table, it is then possible to see the lower part of the septum as well as the upper.

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[2] Page 708.

[2] Page 709.

Page 702.

[5] Page 706.

When patients get tired it is a great comfort for them to lie down, and they have often expressed their gratitude for the privilege. In some cases, namely, where we have adherent mucous membrane, or where some spur has been sawed off, it is a tedious operation, and in order to get a good result, it is necessary to take considerable pains in resecting the membranes. I use cylindrical plugs of absorbent cotten surrounded by cargile membrane. It makes the discomfort of removing the packing almost *nil*, the only annoyance then being from the pressure of the packing during the first twenty-four hours.

Dr. F. P. Emerson: This operation is comparatively of so recent date that I take it the practical difficulties we have to work out individually are the things that are of the most interest. Certainly Dr. Powers and Dr. Tobey have covered very completely the operation, and the after-treatment. The difficulty which I have found the hardest to overcome, was that of perforation, and it seems to me that one could control that very largely after one's technique was established by making an incision upon the convex side, through the mucous membrane and perichondrium before making an incision through the cartilage, and then after elevating this tissue, make the incision in the cartilage a little further back.

Another thing of practical value which I have found after going through the convex side, the mucous membrane, perichondrium and cartilage, is to introduce the speculum on the concave side, for then you can judge very accurately just how much pressure to put upon your elevator, and you can watch your perichondrium, as it is pushed away from the convex side. This may be done very accurately provided your elevator is in close contact with the cartilage.

The operation itself, it seems to me, has but very few contra-indications. It is practically painless and the time limit on that account is of very little consequence. I am sure that where there is a cartilaginous and a bony deflection I need from an hour to an hour and a half to do the operation well. It takes nearly half an hour to cocainize your field and prepare your instruments.

A very important thing, I think, is the strength of the cocaine solutions that are used. Personally I do not believe in using anything stronger than 4%. If you allow half an hour, 2% will anesthetize, in my experience, completely,

After the elevation of the mucous membrane and perichondrium the various methods of removing the cartilage, as described by Dr. Tobey, make that portion of the operation very rapid. The removal of the bony deflections is more difficult, and if it is a ridge well back on the vomer, it is a question of very careful work not to tear the mucous membrane on the proximal side, but as far as the functional results later go, if you have preserved your mucous membrane on the opposite side, the after-results are very good. The nose molds into place, all the redundant tissue has been removed and the patient is very comfortable, as soon as you are able to remove the packing. The two things which I have found of most discomfort to the patient, are the removal of the packing, and the cocainization of bony spurs. If it is a sharp spur, just upon the point of the spur is the most sensitive area.

The cargile paper, spoken of by Dr. Tobey, is very important in covering the packing as there is no pain in its removal, thus obviating a very unpleasant part of the treatment of the patient. In my experience, if the packing is removed after twenty-four hours, that is all the time that is necessary for it to remain in place. I think the vertical incision, in the majority of cases, is all that it is necessary to make. If this is made and the flap brought into position, the sutures can be dispensed with. As one works out his technique, he simplifies a great many of the measures, used at first, and the number of instruments which he employs grows less.

Dr. G. A. Webster: In regard to Dr. Ballenger's knife, it seems to me that it is necessary to separate the mucous membrane so you can see what you are doing, otherwise it is very easy to cut the membrane with the edge of the knife. I have found it very easy to get through the cartilage, by cutting through with a septal gouge, watching the mucous membrane on the side to which you are cutting; as soon as it gives a little finish the cut with a Freer's dissector. In this way you can easily get through the cartilage without perforating the mucous membrane of the other side.

Dr. D. C. Greene: About two years ago I began doing the submucous operation. The technique that I employed, at that time, was essentially that of Hajek, that is, using a very far anterior vertical incision, and taking out all the cartilage to the very anterior border, leaving simply a small ridge along the roof of the nose. I did quite a number of cases in this way and I think the greater proportion of them did not show any deformity, but I have had some cases where there was a distinct flattening of the tip. It seems to me that it is a bad thing, on general principles, to take out the whole of the cartilage anteriorly. It is better to leave a little column of cartilage to support the bridge of the nose.

The President: With experience, the time for performing the window-resection can be surprisingly lessened. In case of deflection anteriorly, eight or ten minutes may be sufficient. But why hurry?

Dr. A. Coolidge, Jr., read a paper on

VOCAL NODULES IN CHILDREN.[6]

DISCUSSION.

Dr. J. W. Farlow: I recently examined a boy, seven years old, who had a very hoarse voice. There were no nodules on the vocal cords, but the cords came together at the nodal point, the junction of the anterior and middle thirds. If the boy continues to shout and use his voice as he has been doing, I suppose that thickenings will soon appear at the nodal point. I advised rest of the voice and vocal lessons under direction of a teacher.

Such cases are probably more common than we think, because the larynx is often difficult to see in children, and attention is naturally directed to the more accessible parts of the nose and throat.

Dr. D. C. Greene: I have noticed this same occurrence in children that Dr. Coolidge has spoken of, in fact it was called to my attention first by him. I think it is much more common than is ordinarily recognized. I have seen several cases in the Children's Hospital and I took occasion, yesterday, to look up the records here. I found that during the last three years in twenty-one cases of singer's nodes, on our records, twelve occurred in children below the age of fourteen, and most at the ages of eight, nine and ten years.

One point in regard to the treatment. Theoretically, these nodes being caused by strain of the voice with excessive friction of the cords at the nodal point, the ideal way to do away with the condition would be to use a tone of voice that would produce the least amount of rubbing at that point. This object may be obtained by the practice of vocal exercises on the vowel *oo*, on which vowel the cords are more widely separated than in the use of any other vowels.

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[6] Page 704.

Dr. Coolidge: I did not intend to go into the question of nodes in adults, but only in children. I am very glad that Dr. Greene has looked up the statistics; the cases are more frequent than I thought, although I have seen two cases in the last two months. I think that this subject is important largely from the fact that it is so frequently overlooked by the specialist. I have seen more than one case where an adenoid operation has been done for hoarseness due to this condition, without benefit.

Book Reviews.

The Nursling. The Feeding and Hygiene of Premature and Full-Term Infants. By Pierre Budin, Professor of Obstetrics, University of Paris; Director of the Clinique Tarnier; Member of the Academy of Medicine. Authorized translation by William J. Maloney, M.B., Ch.B., Fellow of the Obstetrical Society of Edinburgh; Ettles Scholar, Houldsworth Research Scholar, etc., with an introduction by Sir Alexander R. Simpson, M.D., LL.D., D.Sc., Emeritus Professor of Midwifery and Diseases of Women and Children, University of Edinburgh. Illustrated. London: The Caxton Publishing Co. New York: Imperial Publishing Co. 1907.

This most interesting book is a collection of Budin's lectures to his students and gives a very clear idea of his beliefs and methods.

He first takes up the care and feeding of weaklings, largely, of course, premature infants. He then considers breast and artificial feeding and concludes with a chapter on " The Consultations for Nurslings " and the " Gouttes de Lait." He favors breast-feeding very strongly and shows very clearly the advantages of human milk over that of other animals. We commend these chapters most strongly to those physicians and nurses who discourage breast-feeding and claim that modified cows' milk is as good or even better as an infant food than human milk. We cannot approve, however, of his methods of artificial feeding, and feel that in common with most foreigners he is far behind the times in this respect. The illustrations and tables are remarkably good and most enlightening. We are sure that every one who is interested in the care and feeding of infants will find this book not only most interesting but very instructive.

Lessons on Massage. By Margaret D. Palmer, formerly masseuse and manager of the Massage Department of the London Hospital, instructor of massage to the Nursing Staff of the London Hospital. Third edition. Illustrated. Pp. 272. New York: William Wood & Co. 1907.

This book has been a success as evidenced by the demand for a third edition. It is a straightforward, simple presentation of the principles of massage, excellently illustrated. This third edition has been thoroughly revised and several articles entirely rewritten and enlarged. Among these latter are the sections on flat foot and wry-neck.

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TYPHOID SPINE.

This affection has been variously considered a neurosis, a functional aberration, an inflammation, and as being the result of a chronic toxemia. Some observers believe it to be due only to one among these factors; it is probably the resultant of all of them.

It is easy to understand how the typhoid spine — or as MacRae[1] would probably more correctly term it, typhoid spondylitis — comes about. During several weeks the patient has been suffering from one of the most serious infections with which we have to deal. Its toxins have deranged well nigh every function and invaded nearly every tissue in the body. They have been particularly destructive of nerve force; and the nervous mechanism, which is the first to suffer from the toxic invasion, has become quite exhausted by the long strain. In perhaps no other acute disease is the convalescence so protracted; in no other has the patient's strength been so long depleted, his mentality so completely enervated. Quite naturally then may be expected the manifestations attending the typhoid spine, pain in the lumbar and sacral regions, especially on jarring or after a slight shock, tenderness on pressure, stiffness in the back, changes in reflexes and sensations, even wasting of the lower limbs, neurasthenia, hysteria, irritability, whining and crying by even strong men. Possibly such local symptoms as redness and swelling may appear, and in prolonged cases even kyphosis or lateral curvature.

There have been intestinal ulcerations during the disease and much scarring has followed upon reparative processes; so that, although there is no direct anatomical relation between the vertebræ and Peyer's patches, the lumbar and sacral symptoms referred to are logically akin to those in the same region which are familiar to the gynecologist. Those who hold the typhoid spine to be merely a functional affection do not recognize that gradations from functional aberrations to structural lesions are oftentimes extremely slight and really appreciable only by the microscope — and not always even then. Gibney who in 1889 first described the typhoid spine, believes it to be an inflammation of the parts holding together the bony vertebræ — the spinal ligaments, the periosteum and the intervertebral disks. MacRae has found, by the x-ray, bony changes in two cases, one of which was due to a paratyphoid organism. This is, of course, not conclusive evidence that such bony growths characterize the typhoid spine; but we may fairly assume that if the inflammation of the periosteum is sufficiently prolonged, exostoses will follow. The inflammatory process seems in no known case to have proceeded to suppuration; we would judge then that the typhoid spine is not directly due to the specific organisms, for such lesions nearly always suppurate. No deaths are recorded as following actually upon the typhoid spine, so that there have been no actual pathological findings. The differential diagnosis is from perinephritic abscess or Pott's disease, in both of which there is suppuration, and from arthritis deformans or spondylitis deformans. There should be no difficulty here, by reason of the history of recent typhoid fever. The prognosis is very good, and complete recovery is assured by rational though prolonged treatment.

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[1] MacRae (22): Typhoid Spine. Johns Hopkins Hosp. Bull., April, 1907.

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HOUSING PROBLEMS.

It is interesting to note that the International Congress for Improved Housing, having its headquarters at Brussels, has formed an American section. This congress seeks to interchange between countries records of successful remedial action. As the result of their deliberations legislation in European countries has been stimulated. Its eighth annual meeting will be held in London from the 5th to the 8th of August; there will then be considered such subjects as slum improvement and slum destruction, house building and managing, housing finance, taxation, the land question, town planning and building, building regulations and the transit question. Tours will also be made to the model villages and cities of England, such as the Garden City at Letchworth and the model village of Bournville.

Mr. Robert W. de Forest has been made president of the American section; Richard Watson Gilder (that most practical of poets) is the vice-president; and Dr. William H. Tolman the secretary. There are surely no three men who have worked more faithfully and more wisely to improve the tenements in which the very poor live; we may be sure their presence in the London meetings will arouse special interest in American housing problems.

Such men as these have realized full well that it is useless to talk about cutting down our enormous infant mortality, or to prevent dreadful infections — especially tuberculosis — unless we are ready to remove the factors upon which these conditions thrive. The Tenement House Commission, appointed some seven years ago, to investigate these structures in New York City led to the establishment of its Tenement House Department, with ample powers under the law. Mr. de Forest was the first commissioner, and with his able associates, among whom was Mr. Lawrence Veiller, a leading expert on housing reform in the United States, he immediately set about the task of improving the tenements in the most densely crowded region in the whole world. They achieved vast renovations, and although many landlords fought the department, many others gladly made the improvements required by modern sanitary principles, because they had the prescience to discern that these improvements were, in the end, bound "to pay." And by their humanitarian labors Mr. de Forest and his associates compelled a new standard, so that sensible architects and builders have, more than ever before, realized the desirability —and the necessity—of calling expert sanitarians into their counsels. It has been realized that we have in the United States an urban population of some twenty-six millions; and furthermore that during this generation and the next practically all the large towns in this country will have to be rebuilt, not to speak of those which will arise in regions now uninhabited.

Philanthropic people in this city, in New York, in Philadelphia, in Washington, and in other cities have made excellent use of their capital in the erection of "model tenements," in which laboring people are assured sanitary and clean housing condition, and it by no means detracts from their humane purposes that they have intelligently adopted and put into practice the motto, "philanthropy with four per cent." There can be no investment which could give greater satisfaction to the altruistic.

SCIENTISTS AT PLAY.

"A man," declared Dr. Johnson, "should pass a part of his time with the laughers"; and he would himself surely have been delighted could he have read Mr. Leonard Huxley's paper in a recent number of the *Cornhill Magazine* on "A Great Darwinian and His Friends," the venerable Sir Joseph Hooker, now in his ninetieth year, Darwin's closest friend and one of the survivors of the famous X Club, being referred to. There is in this paper to be had a very human and pleasing glimpse of great men at play.

This X Club was essentially a dinner club. The nine members who attended the first meeting in 1864 were T. A. Hirst, William Spottiswoode, Tyndall, Edward Frankland, Huxley, Sir Joseph Hooker, G. Busk, Lord Avebury and Herbert Spencer. "It has happened," said Huxley, "that these cronies had developed into bigwigs of various kinds, and therefore the club has incidentally — I might say accidentally — had a good deal of influence in the scientific world." It had, indeed, despite its amiable aimlessness, earned a decided reputation, all the greater, no doubt, because of its mysterious character. Huxley once overheard two members of the Athenæum: "I say, do you know anything about the X Club?" "Oh, I've heard of it." "What do they do?" "Well, they govern scientific affairs; and really, on the whole, they don't do it badly." Nevertheless, any outsider present at the meetings must surely have been shocked and pained at the sadly frivolous tone of the conversation. The observation of Herbert Spencer seems to have been lived up to: "It is a great mistake for adults, and especially for adults who work their brains much, to give up sports and games. The maxim on which I have acted is, Be a boy as long as you can."

Mr. Leonard Huxley deplores what he considers the popular misconception of the man of science as a morally shrivelled specialist who unwillingly and remorselessly sacrifices romance and adventure and human ties in the pursuit of cold science. The comparison of this misconception with the behavior of these famous clubmen is rather ludicrous. There were no rules, save the unwritten law not to have any. But skeleton minutes were kept, as for instance: "Talked politics, scandal, and the three classes of witnesses, liars, —— liars, and experts. At one time excursions were organized for the members and their wives, symbolized by the algebraic notation, "x's + yv's." The minutes stated that the "x's" of the outings were paid by the "x's."

Among the names suggested for this club were "The Blastodermic," that being the part of the ovum in which the rudiments of future organization first appear. Apparently "x" was eventually chosen because it stood for the unknown quantity, and therefore committed the club to nothing.

It may be that the members of the American Medical Association will visit Atlantic City next week somewhat in the spirit indicated by Mr. Leonard Huxley.

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MEDICAL NOTES.

Plague. — According to recent reports from India, plague is wide-spread, and an enormous number of deaths are occurring in certain regions. In one week in April there were 87,161 cases, with 75,472 deaths, an increase of 12,000 deaths over the number of the preceding week.

Women Nurses in the Navy. — Surgeon-General Rixey, of the United States Navy, has recently drawn attention to the somewhat extraordinary fact that the American Navy is without a single trained nurse. In time of illness a hospital steward and an apprentice are available, but this, it is maintained, is insufficient to meet the demands oftentimes and patients are necessarily deprived of proper nursing. A plan has been developed by means of which a corps of trained nurses may be organized for the navy, such as now exists in the army. Men will naturally be employed on board ship, but women will take charge of the nursing in the navy hospitals on shore. The surgeon-general is said to be seeking support for the furtherance of this plan.

Professor Killian's Visit to Boston. — Dr. Killian, professor of laryngology at the University of Freiburg i. B., widely known for an operation named after him, visited Boston last week as a part of an extended tour in the United States. He came as the guest of the American Laryngological, Rhinological and Otological Society, and was also entertained by the American Laryngological Society which recently met in Washington. He is expected to be present at the coming meeting of the American Medical Association. While in Boston he operated at the Massachusetts General Hospital, and demonstrated at the Harvard Medical School the technique of his procedure in disease of the frontal sinus.

Delegation for the Adoption of an International Auxiliary Language. — The Delegation for the Adoption of an International Auxiliary Language comprises the representatives of more than two hundred and fifty learned societies and professional associations of all countries; it has also received the adherence of more than one thousand members of academies and of university faculties. Because of this two-fold support it proposes to proceed in the course of the year 1907 to the choice of the auxiliary language through the intermediation of a competent international authority. In order to give this decision the greatest practical effect the delegation now addresses a last and pressing appeal to all those who desire the adoption of a neutral language-medium for international relations of every sort, which will increase in number year by year.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, May 29, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 43, scarlatina 40, typhoid fever 6, measles 22, tuberculosis 36, smallpox 0.

The death-rate of the reported deaths for the week ending May 29, 1907, was 22.34.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, May 25, 1907, was 208, against 214 the corresponding week of last year, showing a decrease of 6 deaths and making the death-rate for the week 18.01. Of this number 111 were males and 97 were females; 202 were white and 6 colored; 134 were born in the United States, 66 in foreign countries and 8 unknown; 55 were of American parentage, 132 of foreign parentage and 21 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 40 cases and 5 deaths; scarlatina, 33 cases and 0 deaths; typhoid fever, 9 cases and 1 death; measles, 59 cases and 2 deaths; tuberculosis, 48 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 22, whooping cough 2, heart disease 27, bronchitis 3 and marasmus 7. There were 14 deaths from violent causes. The number of children who died under one year was 46; the number under five years 63. The number of persons who died over sixty years of age was 42. The deaths in public institutions were 68.

There were 15 cases and 13 deaths reported from cerebrospinal meningitis during the week.

A Centenarian. — The death of Joseph O'Connell at the reputed age of one hundred and two years is reported from North Adams, Mass. He had been in this country upwards of sixty-five years, and until this spring was in good physical condition.

A Loving Cup Presented to Dr. William L. Richardson. — On the occasion of Dr. Richardson's last lecture to his class in obstetrics, which was the final lecture of the year, and also his last in his official relation with Harvard University, he was presented with a loving cup by his students, preceded by an appreciative speech from the president of the class.

General Baron Kuroki Visits the Harvard Medical School. — On May 23, during General Kuroki's visit to Boston, he and his suite visited the new Harvard Medical School buildings, and were received by Dean William L. Richardson and others of the faculty, who showed the party about the buildings. General Kuroki is said to have been particularly interested in the skull and bar of the so-called "crowbar case" in the Warren Museum.

NEW YORK.

Bequest to Hospital. — By the will of the late Congressman, Norton P. Otis, of Westchester County, N. Y., $5,000 is bequeathed to St. John's Hospital, at Yonkers.

Public Health Defence League. — The board of directors of the Public Health Defence League, which was organized as the result of the conference held at the Hudson Theatre, New York, in November last, has just issued a first report of progress, announcing the completion of the organization of the society under a charter granted by the State of New York. The objects of the league are: 1, To combat all forms of quackery and charlatanism; 2, to prevent food adulteration and drug substitution; 3, to prevent the sale of narcotics and alcohol disguised as patent medicines: 4, to prevent the circulation of indecent medical advertisements; 5, to advocate the establishment of a National Department of Health; 6, to carry on an educational campaign for the spreading of accurate knowledge concerning the public health and the inculcating of higher health ideals; 7, to protect the public health by assisting the constituted authorities in the enforcement of existing laws, and by urging the enactment of uniform legislation in all the states on matters relating thereto; 8, to co-operate with other societies interested in any public health problem, and ultimately to effect a plan of union or co-operation of all organizations interested in the public health. The president of the league is Austen G. Fox, of New York, and among the medical members of the board of directors are the following New York physicians: Walter Lester Carr, president of the Medical Society of the County of New York, Thomas Darlington, president of the board of health, William M. Polk, Henry S. Stearns, Silas F. Hallock, Floyd M. Crandall, Frank Van Fleet, and Wendell C. Phillips. The league begins its existence with an enrollment of two thousand members, representing every state in the Union, and also some foreign countries. The board of directors desires to rapidly increase this enrollment very greatly, and to have flourishing branches in all the states, believing that the militant work of the league cannot be accomplished without the resources and influences that must come with an enormous membership. From time to time the board hopes to issue letters and bulletins chronicling the progress made in further enrollment and in carrying out the purposes of the league, and a pamphlet is now in press containing a record of the convictions of a large number of so-called medical advertisers in some of the New York newspapers. The headquarters of the league are in the United Charities Building, 105 East 22d Street, New York.

Current Literature.

BERLINER KLINISCHE WOCHENSCHRIFT, No. 13.
APRIL 1, 1907.

1. *RUEDIGER-RYDYGIER, L. R. *Dislocations of the Hip Joint.*
2. FERRATA, A. *Why Complex Hemolysins are Inactive in Salt-Free Solutions.*
3. *RAUENBUSCH, L. *Therapeutic Injections of Oxygen into the Knee Joint.*
4. KOZICZKOWSKY, E. *Turgo-Sphymography.*
5. *GALLI, G. *Hereditary Heart Disease.*
6. *HEYMANN, P. *On Hay Fever.*
7. *POSNER, C. *Congenital Stricture of the Urethra.*

1. A good clinical lecture on dislocations of the hip-joint, their symptoms, mechanism of production and reposition.

3. Injections of oxygen into the knee-joint have produced marked benefit in cases of chronic arthritis and tuberculosis reported by Rauenbusch. Effusions, if present, are first removed through a trocar, and then the joint is tightly filled with the gas, generated by means of Wollenberg's apparatus. The injections are repeated at intervals of one to three weeks. The chief effect seemed to be the abolition of pain and the consequent better motion in the joint. How oxygen produces this effect is not understood.

5. Galli divides hereditary heart disease into three groups. The first is Huchard's "aortism," in which there is a hereditary tendency to disease of the blood vessels (apoplexy, aneurysm, arteriosclerosis, etc.). This tendency is not manifested until late in life. The second class includes the rheumatic families in which the disposition to acquire rheumatism and endocarditis is shown early. The last, to which the name "myocardism" is applied, consists of cases in which a disposition to myocardial changes is apparently inherited. Galli describes a family in which the father died of some form of heart disease and all the four children showed evidences of myocarditis. Two died suddenly after rather long periods of cardiac insufficiency, and in one autopsy was performed. No lesion of the valves was found, only myocarditis. In a third child examination with the ortho-diascope showed a pear-shaped heart (*cœur en goutte*).

6. Heymann reports favorable results in 19 cases of hay fever from the use of thyreodin, administered for some time before the expected outbreak of the disease.

7. Posner discusses the question of congenital stricture of the urethra, which occurs either at the meatus or at the junction of the membranous and bulbous portions. In the latter situation there is normally a small valve-like projection. In a few cases this is more marked, constituting an inpediment to the passage of urine. Symptoms of obstruction may be lacking for many years, as in the author's case. [W. T.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 15.
APRIL 11, 1907.

1. KLEBS, E. *Origin and Treatment of Pulmonary Tuberculosis.*
2. *VIERHUFF, W. *X-Rays in Diagnosis of Incipient Phthisis.*
3. *STRAUSS, H. *Digestive Gastrosuccorrhea.*
4. *FRIEDEMANN, U. *A Complex Hemolysin in the Pancreas.*
5. *KEUTHE, W. *The Functional Significance of the Leucocytes with Different Diets.*
6. BRATZ and LEUBUSCHER. *"Affektepilepsie."*
7. KOWALEWSKI, R. *Toxic Working of Cantharides on the Eye.*

2. Vierhuff claims that the x-ray discloses the existence of thickenings in the lung tissue before they will show auscultatory or percussory signs, and that when such signs are present it is an invaluable means of showing the extent of the process. He cites cases and gives radiograph illustrations.

3. Strauss claims priority in describing gastrosuccorrhea and says that Boas, in an article in *Deut. Med. Woch.*, *No.* 4 (reviewed BOSTON MEDICAL AND SURGICAL JOURNAL, Feb. 21), does not give him credit. He agrees in general with Boas as to the symptoms and treatment of this condition. The hypersecretion only takes place after food and then may be excessive. But it is a true hypersecretion and not a hyperacidity. The symptoms are those of a nervous dyspepsia with emaciation. Motor insufficiency may or may not be present. The diagnosis is made by examination of the gastric contents after test breakfast. Treatment consists of nourishing diet, avoiding all substances which stimulate secretion, and a substitution of sugars and dextrins for starches.

4. Friedemann sums up his investigations on the pancreas as follows:

(1) The secretion from pancreatic fistulæ contains a lecithid, analogous to that in snake and bee poison.

(2) The alcohol extract of the pancreas gland contains a very complex hemolysin.

(3) The active substance of the pancreas behaves like an amboceptor and can be united to the blood corpuscles: it is different from the ordinary amboceptors through its high resistance to heat.

(4) Small amounts of the gland extract cause a complement inhibition. Hemolytic and inhibitory substances are identical.

(5) The hemolytic action is active against the blood corpuscles of similar animals (autohemolysin).

(6) The pancreas contains a paralyzing and a hemorrhagic poison, which is very similar in its action to rattlesnake poison.

5. Keuthe in his experiments on dogs finds that by albuminous and fatty nourishments a marked absolute and relative increase of the neutrophilic cells is produced in circulating blood, while the lymphocytes are relatively diminished. By carbohydrate diet the lymphocytes are relatively and absolutely increased. [L. G. M.]

April 18, 1907.

1. *Wassermann, A. *Our Knowledge of Immunity and Its Relation to the Clinician.*
2. Kolle, W. *Serum Therapy in Acute Infectious Diseases.*
3. *Ebstein, W. *The Nature and Treatment of Gouty Predisposition.*
4. Sahli, H. *A New Method for Investigating the Circulation (Sphygmobolometrie).*
5. *Rihl, J. *Atrio-Ventricular Tachycardia.*
6. *Eppinger, H. *Jaundice in Cholecystitis.*
7. Steinert, H. *Vibration as a Test of Muscle Sense.*
8. *Jezierski, P. V. *Animal Experiments with Leprosy Bacilli.*

1. In a short article, Wassermann reviews our present knowledge of immunity with especial emphasis on the standpoint of the practicing physician.

3. Ebstein claims that obesity, gout and diabetes owe their origin to cellular changes in metabolism, and a predisposition to these conditions may be inherited. In gout this predisposition often manifests itself in early childhood. Children with this predisposition look strong with good color and appetite, but are subject to sudden dyspepsias; their skins and mucous membranes are irritable, outbreaks of eczema and urticaria are common, as are also catarrhal affections of head and air passages, obstinate coughs without purulent sputum, pharyngitis, migraine attacks, tendency to nose bleeds without discoverable cause, joint and muscle pains. Such symptoms in children whose parents have had gout are significant and they should be put on a careful diet and hygiene to ward off, if possible, later typical gouty attacks.

In 194 cases of typical joint gout, Ebstein found a heredity taint in 77, while in 136 cases of "gouty tendency," *i. e.*, cases without either of the cardinal symptoms, joint attacks or tophi. Fifty-six had a history of gout in the family. Among these same 136 cases he found 34 who suffered from one or the other form of metabolism disturbance, 30 with obesity and 4 with diabetes. One hundred and thirteen of these cases had chronic forms of joint disturbances, the hands and fingers being involved in 53, the great toe joints in 40. Twenty-four had renal symptoms and about an equal number cardiac troubles, palpitation, angina, asthma.

Ebstein's treatment consists of a strict hygiene and regular life with a diet similar to that he uses in the closely-allied disorder, obesity. Sugars and carbohydrates are strictly limited and a sufficient amount of fats and albumin, either animal or vegetable, given instead, usually from 60–100 gr. a day. Alcohol in all forms is prohibited.

5. Rihl analyzes, with the aid of tracings, a case of tachycardia in which the disturbance was brought about by a series of extra systoles. The attacks were short and of moderate severity.

6. Eppinger gives some additional results of his study of the pathology of jaundice. At the autopsy of a case of cholecystitis with slight jaundice, dying from other causes, he could find no mechanical cause for the jaundice, either by anatomical or histological investigations, but the mucous membrane of the gall bladder was ulcerated in spots and in the nearby tissues bile coloring matter could be found. In experiments on dogs, after injuring the mucous membrane of the gall bladder and tieing off the cystic duct, he was able to produce bile in the urine. Eppinger concludes that there is a possibility that the slight jaundice often found in cholecystitis attacks may be produced by the passage of bile coloring matter through the injured wall of the gall bladder into the blood.

8. Jezierski's attempts to inoculate various animals with leprosy bacilli were unsuccessful. Pure cultures and fresh human material were used and the injections made in various ways. [L. G. M.]

The Journal of the American Medical Association.

May 11, 1907.

1. Wilson, E. B. *Some Recent Studies on Heredity.*
2. *Davis, D. J. *Bacteriology of the Respiratory Tract with Special Reference to Influenza Bacilli.*
3. *Pershing, H. T. *The Gradual Cure of Hysterical Paralysis.*
4. *Pottenger, F. M. *The Underlying Principles of Tuberculin Therapy.*
5. *Cannaday, J. E. *Conservative Surgery of Arms and Legs.*
6. *Carpenter, H. C. *Buttermilk Feeding.*
7. Crowder, T. R. *Problems of Car Sanitation.*
8. *Hoffa, A., and Wollenberg, G. A. *Chronic Articular Rheumatism and Arthritis Deformans.*
9. *Riesman, D. *Development of Cardiac Murmurs during Attacks of Biliary Colic.*
10. *Richardson, W. W. *Torsion of the Great Omentum.*

2. Davis has studied the sputa in various infectious diseases with special reference to determining the frequency of influenza-like bacilli. Both smears and cultures were made to insure certain identification. Influenza-like bacilli were present in 61 out of 68 cases of whooping cough, 13 out of 23 cases of measles, 7 out of 11 of varicella, 5 out of 12 of bronchitis. In 17 cases of typical clinical influenza the bacilli were found only 3 times, and in 20 normal throats they were found twice. Streptococci, pneumococci and the micrococcus catarrhalis are also mentioned as of frequent occurrence. One culture of influenza bacilli from a case of whooping cough was transplanted to the throat of a healthy man and produced a slight fever with profuse mucous expectoration, containing many of the bacilli. From the absence of influenza bacilli in many cases of clinical influenza and from their presence in normal throats it is concluded that the symptoms of the disease can be caused by organisms other than Pfeiffer's influenza bacillus, and also that influenza bacilli may occur in the throat without causing disease. Experiments in agglutination and phagocytosis are also recorded, but without results of general interest.

3. Pershing believes that although the sudden cure of hysterical paralysis may be the more striking and dramatic, its attempt should be largely abandoned in favor of the more gradual and more certain method of re-education. The sudden cure by powerful mental influences risks all on the attempt; if it fails the further treatment is rendered much more difficult, and if it succeeds the patient has not received the training and discipline which is so necessary to future welfare in hysterical cases. The gradual cure is, therefore, in the long run more satisfactory. Hysterical paralysis is most constantly accompanied by loss of the kinesthetic sense, even the thought or idea of motion often being impossible; the kinesthetic center is probably overwhelmed by a preponderance of inhibitory impulses incidental to perverted ideas and emotions. The emotional tone of the patient is therefore first to be raised by all possible means. Exhilarating influences both in the mental atmosphere and in the physical surroundings are to be employed in every possible way. Parallel with these general measures the dormant kinesthetic sense is to be acted upon by sensory stimulation, such as strong faradic currents and vigorous passive motion, the patient paying close attention to note the beginning of the slightest sensation. When some degree of sensibility has been awakened, exercises in voluntary motion are to be commenced, the motions being at first made passively, the patient only attempting to aid in their accomplishment. The extent and strength of the motion can gradually be increased until the patient is able to practise them in the absence of the physician. The patient is all the time to be encouraged and educated in self-reliance, which is essential to permanent relief from the disease.

4. Pottenger's article is an attempt to describe in a somewhat elementary manner the present status of tuberculin therapy from the point of view of a somewhat sanguine adherent. Bacterial diseases result when the bacteria which cause them gain a foothold in the body. The outcome of these diseases depends upon the relative strength of the infecting agents and the body resistance. The power of body resistance, therefore, when once the infection has taken place, is the chief factor by which the outcome can be influenced. The defensive forces of the body are believed to reside in various substances, antitoxins, bacteriolysins, etc., but most important, according to Pottenger, who accepts without question Wright's teachings, is the action of the opsonins. It is in the study of the opsonins by Wright and others that the use of tuberculin, first introduced fifteen years ago, has recently

received a new impetus. Many observers, following Wright's methods, have found that injections of tuberculin have been followed by an increase of the opsonipower of the blood toward the tubercle bacillus. Pottenger himself has collected 1,200 first-stage cases of tuberculosis, of which 611 were treated in sanatoria without tuberculin, and 589 were treated mostly outside of sanatoria, but with tuberculin. Of the first series 64% were apparently cured, and of the second series 84.2% were apparently cured. In 15 cases of tubercular laryngitis he has reported complete cure in 11. From these and from other statistics he concludes that tuberculin deserves more general use.

5. Cannaday urges that every effort should be made to avoid amputations, even in spite of slightly increased risk to life. Some writers go so far as to say that no primary amputations should be done. Certainly wherever the distal circulation is at all good, there is reason to believe that the limb can be saved, and recent work in the anastomosing of blood vessels promises even better results in future. Tourniquets and probing the wound are to be avoided. The wound should be irrigated with hot salt solution followed by 0.5% solution of iodine. Bones may be sutured if the patient's condition warrants it, but too much should not be attempted at the beginning. Drainage is usually necessary. Moist gangrene calls for radical treatment. Much of the success of the final result depends upon the after-care of the patient.

6. Carpenter reports twelve cases of babies with infantile atrophy, gastro-enteritis, etc., in whom he had generally good results from the use of the following mixture: Buttermilk, 1 quart; wheat flour, 3½ teaspoonfuls; granulated sugar, 15 teaspoonfuls. The ingredients were carefully mixed, heated up to the boiling point, but not boiled, and then rapidly cooled and kept till used. Full directions are given for the preparation, precautions against curdling, etc. The cases were not selected as likely to do well, but in every case regular milk mixtures had been tried and failed before the buttermilk feeding was begun. The ages ranged from one to fifteen months; the average gain in weight during the use of buttermilk was 8 oz. a week. Carpenter remarks the advantage of cheapness in the buttermilk feeding and believes it a most excellent food for infants suffering from intestinal indigestion, enteritis and marasmus. He has observed no unpleasant effects from its use; children almost invariably take it well. A few, when first put on the diet, vomited slightly, but, with one exception, this ceased in a day or two. The point he specially emphasizes is that the success is not so much due to the absence of fat as to the great ease with which the proteid of buttermilk is digested. He has observed this in almost every case. Several of the infants who were unable to digest 0.75% of calcium casein digested perfectly the 2% or 3% of casein lactate in the buttermilk.

8. Hoffa distinguishes from arthritis deformans a type which he calls polyarthritis chronica progressiva primitiva, or, shorter, arthritis destruens, on account of the characteristic destruction of the joint ends. It begins in the small joints and spreads to the larger ones, causing deformities of various types, is markedly progressive in its course and is accompanied with pronounced atrophy of muscles and bones. The breaking down of the cartilage is also significant, the outlines of the joints disappear, the ends of the softened bones press on and into each other, producing deformities that have been taken for new bony growths. Sometimes, in addition to the typical alterations at the base of the phalanx, there is slight new formation of bone, but, unlike arthritis deformans, the x-ray shows complete destruction of the joint, the reparative forces active in arthritis deformans are exceptional here. The x-ray gives different pictures in the two affections: in arthritis destruens the pathologic process begins, in striking contradistinction to the other disorder, in the synovialis; in arthritis deformans we have to deal with a primary affection of the skeleton parts of the joint; in polyarthritis progressiva, on the contrary, with a primary affection of the soft parts of the joint. The former Hoffa classifies among the non-infectious joint diseases, the latter among the infectious. The treatment of arthritis destruens is much more difficult than that of the other disorder. Hoffa, however, has had good results in some cases with the use of supporting apparatus after stretching the contractures, fixing the limb in the stretched position, removing the supports only when the joint swellings have largely disappeared and the pains are entirely gone. He advises against doing this too early, as relapses are liable to occur. Mud baths are a useful accessory, and with massage of the atrophied muscles the patient may, after years, be able to dispense with the supports.

9. Riesman reports two cases in which during or soon after an attack of biliary colic a systolic murmur not previously present was heard at the heart apex. A small number of similar cases have been reported by other observers. Riesman believes the murmur to be due to a relative mitral and perhaps also a tricuspid insufficiency caused by dilatation of the heart during the colic.

10. Richardson reports a case of torsion and strangulation of the great omentum and summarizes the literature of the subject. In all, sixty cases have been described, and undoubtedly the condition is more frequent than is recognized, since the diagnosis has only once been made except at operation or autopsy. The principal predisposing cause is hernia, which fixes the normally free edge of the omentum. No definite symptomatology can be given. Most cases have been taken for intestinal strangulation, appendicitis, or peritonitis. The presence of an old omental hernia continuous with a mass within the abdomen might make the diagnosis possible in some cases. The treatment is operation, as early as possible. [F. W. P.]

THE JOURNAL OF MEDICAL RESEARCH.

MARCH, 1907.

1. Henderson, L. J., and Webster, H. B. *Preservation of Neutrality in Culture Media with the Aid of Phosphates.*
2. McConnell, G. *The Elastic Tissue of Carcinomata.*
3. *Buxton, B. H. *Absorption from the Peritoneal Cavity.*
4. *Tyzzer, E. E. *The Pathology of Brown-Tail Moth Dermatitis.*
5. Dutton, E. J., Todd, J. L., and Tobey, E. N. *Trypanosomes of the Trumpeter Hornbill.*
6. Austin, A. E. *The Uricolytic Enzyme.*
7. Rivas, D. *B. Coli Communis, "The Presumptive Test," and the Sewage Streptococci in Drinking Water.*
8. Southard, E. E. *Lesions of the Granule Layer of the Human Cerebellum.*
9. Alsberg, C. L. *Oxidative Ferments in a Melanotic Tumor of the Liver.*
10. Keenan, C. B., and Archibald, E. W. *Fatty Tumor of Kidney Suggesting a Metamorphosis of Adrenal Cells into True Fat.*

3. Buxton finds that bacteria injected into the peritoneal cavity of experimental animals even in minute doses reach the circulation in a few minutes, this immediate absorption taking place by the lymphatics of the diaphragm. Assuming that the same process takes place in human beings, Fowler's (sitting) position is indicated in peritoneal infections, and flushing of the peritoneal cavity is contra-indicated. It may be that deaths soon following operations for perforation with irrigation are due not to "shock," but to rapid absorption of bacteria. These conclusions apply mainly to infections by B. coli communis and allied species; there is reason to believe that streptococcus infections behave differently.

4. Tyzzer describes the results of his investigations as to the cause and method of production of the brown-tail moth dermatitis. It has been known for some time that the lesions are produced by the so-called "nettling hairs" of the caterpillar, present also in the moth and in the cocoons, which penetrate the skin and remain lodged in the tissues. It has been thought that the action of these in producing irritation was merely mechanical. This, however, Tyzzer disputes, on account of evidence of a chemical irritant which the following facts seem to establish. Heating the hairs to 115° C., or extracting them with dilute alkalies or with water at 60° C., deprives them of their irritant power, although their penetrating power remains undiminished. After subjection to these processes the action of the hairs is identical with that of glass, wool or other chemically inactive penetrating particles which produce only a slight redness when they are rubbed into the skin. Further evidence of the presence of a toxic substance is the reaction which takes place when the active

nettling hairs are mingled with a drop of mammalian blood and observed under the microscope; about the point of the hair the rouleaux of red blood corpuscles are broken up and the individual corpuscles become crenated and spherical. In lesions excised from human skin and in the tissues of inoculated animals necrosis and inflammatory exudates were observed about the hairs. It seems reasonably certain, therefore, that the main factor in production of the dermatitis is an irritant substance present in the hairs. The chemical nature of this substance was studied by Alsberg, but no conclusions could be reached with the small amount of material so far obtained. There is some reason to believe that the irritating substance is a secretion of the cells lining the hair sockets and that this substance is transmitted through the hair and discharged through a minute opening at its point. This theory, however, is only suggested and requires further investigation. [F. W. P.]

The Lancet.

May 4, 1907.

1. Halliburton, W. D. *New Facts in Relation to the Processes of Nervous Degeneration and Regeneration. Lecture I.*
2. Wall, C. *Cerebro-Spinal Fever.*
3. *Houston, T., and Rankin, J. C. *A Note on the Opsonic Power of the Serum with Reference to the Meningococcus of Cerebro-Spinal Fever Occurring in the Belfast Epidemic.*
4. Waterhouse, R. *Notes on a Case of Osteitis Deformans, and an Account of the Skeleton of a Typical Example.*
5. Carmichael, E. W. S., and Wade, H. *A Case of Primary Sarcoma of the Liver in a Child Aged Four Months.*
6. *Salvin-Moore, J. E., and Breinl, A. *Note on the Life Cycle of the Parasite of Sleeping Sickness.*
7. *Arnold, M. B. *On the Effect of the Exposure to Tobacco Smoke on the Growth of Pathogenic Micro-Organisms.*
8. *Stuart-Low, W. *The Use of Animal Blood in Surgery: Preliminary Notes.*
9. *Kraus, O. *The Balneological Treatment of Urinary Diseases.* (Concluded.)

3. The writers believe that with the meningococcus the opsonic method gives two methods of showing the presence or absence of infection, one the opsonic index, the other the agglutination reaction. The opsonic index is the more delicate test of infection, the culmination of both a specific test of great value in diagnosis. This method may be of value in diagnosing sporadic cases and cases of posterior basic meningitis in infants as well as in determining the nature of a doubtful coccus.

6. It is known that trypanosoma gambiense can be transferred directly from animal to animal for many years, and that a third intermediate host is at least quite unnecessary. In infected rats, the disease runs a fluctuating course with respect to the number of parasites to be found in the peripheral blood, there being a succession of periods when no trypanosomes can be found at all. When the number is rising there is seen only amitotic division of macro- and micro-nuclei; as the number falls a disintegration of the organisms takes place, and when no more are found there are present in the blood so-called resistant-forms, hitherto erroneously interpreted, spore-like bodies, which enlarge and divide off into small trypanosomes.

7. Arnold tested the bactericidal properties of tobacco smoke and smoke from a nonnicotine-producing substance on the organisms of diphtheria, typhoid and on the colon bacillus staphylococcus aureus and the streptococcus. Different tobaccos were used and no variation in their effect produced. The results were as follows: (1) The bacillus of diphtheria was always markedly affected, often not growing at all. (2) Typhoid bacilli grew, but less in tobacco smoke than in smoke from hay, as did the colon bacillus. (3) The staphylococci were hardly affected at all. (4) With streptococci no growth took place in the smoked tubes. The writer wishes to make clear that he did not do this as an argument in favor of tobacco smoking.

8. Stuart-Low believes that serum exuding over the surface of any wound is essential to rapid repair. He has experimented with sterilized sheep's blood serum as a dressing for his surgical cases with remarkably satisfactory results and recommends its further use.

9. Kraus of Carlsbad gives his opinions of the value of Carlsbad treatment of various diseases based on eighteen years' experience. He believes patients should be sent to Carlsbad whose progress at home has been unsatisfactory, whether for local or for general treatment. In invalids and elderly people the season of the year at which they are sent should be selected with care. Recently they have been having very satisfactory results with cases of acute and subacute nephritis if without edema and ascitis. If these are present a course at Carlsbad will do no good. With cases of chronic uremia the best results are obtained. The gastric and intestinal disturbances, headaches, asthma, dyspnea, etc., rapidly disappear. If there are signs of failing cardiac compensation, the case should not be sent. Pyelitis, due to whatever cause, is relieved and often cured. Kraus's feeling about kidney stone is that if found by x-ray and if greater in size than an almond, an operation should be done at once. If less than that, Carlsbad will help it. Strangely enough, many cases of vesical calculi are sent which should have been operated on at home. It is in the *after-treatment* of nephrolithiasis and vesical stone that a course at Carlsbad is invaluable. He discusses at length the futility of the term "uric acid diathesis," and speaks of the importance of dumb-bell-shaped and pointed uric acid crystals as prognostic of renal or vesical stone in the future. He cites cases of this. A simple non-gonorrheal cystitis clears up at once at Carlsbad.

The "pseudo-urinary" cases, *i. e.*, patients with symptoms such as painful or frequent micturition, colic, etc., pointing to disease of the kidneys but really due to some other cause, are often sent to Carlsbad and generally greatly helped. Carlsbad treatment is contra-indicated in cases of tuberculosis of the genito-urinary tract. [J. B. H.]

British Medical Journal.

May 4, 1907.

1. Lane, W. A. *Clinical Remarks on the Operative Treatment of Fractures.*
2. Pollard, B. *Clinical Observations on a Case of Diverticulum of the Esophagus.*
3. Halliburton, W. D. *New Facts in Relation to the Processes of Nervous Degeneration and Regeneration.*
4. M'Eldowney, W. P., and Cousins, J. W. *Remarks on a Case of Severe Compound Fracture of the Skull with Recovery.*
5. Cowen, G. H. *Case of Subcutaneous Injury of the Pancreas. Operation: Recovery.*
6. Walters, C. F., and Hall, I. W. *Retroperitoneal Sarcoma of Douglas's Pouch.*
7. Leach, E. *Acute Pelvic Abscess Followed by Acute Obstruction.*
8. Thomson, J. *Note on the Peculiarities of the Tongue in Mongolism and on Tongue-Sucking in Their Causation.*
9. Rolleston, J. D. *The Accidental Rashes of Varicella.*
10. Millar, J. G. *Merycism or Rumination in Man.*

Münchener Medizinische Wochenschrift, No. 15.

April 9, 1907.

1. *Geigel, R. *Endocardial Friction Sounds.*
2. *Strasburger, J. *The Elasticity of the Aorta in Beginning Arteriosclerosis.*
3. *Zacharias, P. *The Treatment of Mastitis with Passive Congestion.*
4. Deutschländer, C. *The Treatment of Bone and Joint Tuberculosis with Passive Congestion.* (Continued article.)
5. *Thorel, C. *A Case of Primary Melanotic Sarcoma of the Spinal Meninges.*
6. Barlach. *The Treatment of Anthrax.*
7. Runck, T. *Bromural, a New Sedative.*
8. Grünewald, R. *A Method for the Detection of Sugar in the Urine.*
9. Maurer, G. *Are the Polyneuritis of Hens and Beri-Beri Due to Chronic Oxalic Acid Poisoning?* (Re-

marks on the above-named article of C. Eijkman in No. 3 of this Journal.)

10. Lange, F. *What Can the General Practitioner Do to Ameliorate the Lot of the Cripple?* (Concluded.)

1. Geigel believes in the existence of an endocardial friction sound. This is said to occur in acute endocarditis affecting the mitral or tricuspid valve. The murmur is rough, interrupted, often not strictly limited to systole, and may resemble closely the pericardial friction. Signs of regurgitation are frequently lacking. The conditions for the production of the sound are excrescences or ulcerations along the line of closure of the valve. As soon as retraction of the valve segments has taken place, the irregularities will no longer touch one another and no friction sound will be produced. Geigel bases his theory partly on theoretical considerations, partly on cases in which a friction sound, supposedly pericardial, was heard during life, for which not other cause than a fresh endocarditis could be found.

2. Strasburger's researches on the elasticity of the aorta in early arteriosclerosis show that in this condition the distensibility is diminished. These results are exactly the opposite to those obtained by Thoma, who, as the author shows, worked with a faulty method.

3. Zacharias has used the Bier congestion method in mastitis, with excellent results; out of 30 cases treated by the old methods, 33% came to incision, while of 33 cases treated with congestion, only 6% required the knife. The passive hyperemia is produced by the application of a glass bell-jar, from which the air is exhausted by means of a syringe. It is put on two or three times a day for thirty minutes; after ten minutes the bell is removed and reapplied.

5. The possibility of a primary melanotic sarcoma of the central nervous system has been denied by some. Pigment, identical with that of the skin and the choroid is normally present in the meninges in certain places, *i. e.*, near the pons and medulla in the Sylvian fissure. In certain cases this pigmentation becomes increased and general, giving rise to the so-called melanosis of the membranes. And finally, true melanosarcoma may arise, as the case of the author and two others in the literature show. [W. T.]

Beiträge zur Klinischen Chirurgie. Band liii. Heft 3.

March, 1907.

15. *Boettcher, T. *The Prognosis of Operations for Spina Bifida.*
16. *Suter, F. A. *Peru Balsam in the Treatment of Wounds.*
17. *Henschen, K. *Fracture of Spinous Processes of the Vertebræ by Muscular Violence.*
18. Zaayer, J. H. *Staining of Tumors for Macroscopic Examination.*
19. *Mandry, G. *The Serum Therapy of Traumatic Tetanus.*
20. Veit, E. *One Hundred and Fifty Cases of Lumbar Anesthesia.*
21. Stark, W. *The Operative Treatment of Tuberculosis of the Mesenteric Lymph Glands.*
22. Steinthal. *"Essential" Renal Hemorrhage.*
23. Hofmann, A. *Gunshot Injuries During Times of Peace.*
24. Rimann, H. *Neurofibromatosis Congenita.*

15. Boettcher bases his paper on 64 cases of spina bifida collected at the clinic of Professor Garrè. The anomaly is best divided, according to the anatomical findings, into (1) a meningocele, (2) a myelocystocele, (3) a myelocystomeningocele, and (4) the rare instances of spina bifida occulta. In the first instance the walls of the hernia consist of the meninges only, the cord being uninvolved except that it may be prolapsed into the sac. In the second instance the cavity of the sac is formed by a dilatation of the central canal of the cord, the walls consisting of its substance. The third variety consists of a combination of the preceding two. Thirty-nine of the 64 cases were operated on, only 4 of this number being over a year old. In general, the prognosis depends largely on the localization of the fissure in the spinal canal, and on the condition of the tumor. The lower down the seat of the tumor, the more favorable is the outlook, especially when it is situated in the region of the cauda equina. The thicker and better preserved the skin covering the tumor, so much the less danger is there of infection following operation. The less the cord is involved in the anomaly — that is the nearer the condition approaches that of a pure meningocele — the better the outlook. Of the 39 operated cases 25 died, giving a general mortality of 70%. As a direct result of the operation 13, or 52%, died. The cause of death was given as meningitis in 6 cases, post-operative hydrocephalus in 4 cases and in the remaining 3, unknown. Aside from the age at which this operation must be done, the great dangers leading to the above mortality are ulceration of the sac at the time of operation, making asepsis extremely difficult, and hydrocephalus. The type of case in which the cord itself or a portion of it forms the wall of the cyst is usually to be considered inoperable. The prognosis of spina bifida as regards hydrocephalus Boettcher sums up as follows: (1) Cases presenting hydrocephalus at or before operation are unfavorable, for without exception this increases after the sac is closed. (2) Post-operative hydrocephalus is most to be feared in those cases where, because of ulceration of the sac, local asepsis is practically impossible. Under ordinary conditions the occurrence of a hydrocephalus after operation is rather rare.

16. Suter has used balsam of Peru in 552 cases of recent accidental wounds with very good results. In remarkably few cases were there any untoward occurrences, though the balsam was used in every variety of wounds including compound fractures. None of the common antiseptics were used, but after cleaning the skin about the wound with benzine, sterile balsam was poured into it and a gauze dressing applied. In cases where it was difficult to be sure that all portions of the wound were filled by pouring, it was introduced by means of a syringe. This dressing was allowed to remain in place a few days unless there was some special indication for its removal. The same treatment with the balsam was repeated at the subsequent one or two dressings, and then only dry gauze used. The experience is based on careful animal as well as bacteriological data. The action of the balsam seems to depend on (1) its ability by inclosing bacteria to make them harmless; (2) on a somewhat slight bactericidal property, and on (3) its power to call forth an increased number of leucocytes by chemotaxis. It has no power over the toxin of the bacillus of tetanus. One should not attempt to use the balsam on any but recent non-suppurating wounds.

17. Two cases of fracture of the spines of the vertebræ are reported. In the first case the first and second dorsal spines were the ones involved; in the second case, besides these, the seventh cervical was also broken. Lifting or swinging to or from the shoulder a heavy load was the cause in each instance. The diagnosis was made on the presence of limitation of motion of the arm and shoulder, pain, local crepitus and by the x-ray.

19. From his experience in the treatment of tetanus by serum injection Mandry concludes that the mild cases recover without its use, while, in spite of its use, the severe cases die. [W. C. Q.]

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Miscellany.

THE AMERICAN MEDICAL ASSOCIATION.

American Medicine devotes the editorial columns of its May number to a discussion of the possibilities and dangers lying before the American Medical Association. We quote the general sentiments expressed:

"The defects in the plan of organization of the American Medical Association are few, but are becoming apparent through the experiences of five years' trial. The evils of too much officialism are recognized generally throughout the profession and protest is common; centralization of power means opportunity for corruption by a concentration of temptation. The provision of the referendum in the constitution of the association was intended to protect the members against these possibilities, but in its present form it is inadequate. The rights of individuals in professional organizations are strongly upheld by the vast majority of the right thinking men of the profession. The establishment of the principle of self government is necessary; important matters of general policy should be referred to the body of members of the association: the *Journal* is the property of the members of the association, not of its trustees or officers; it must, therefore, be conducted in the spirit of the profession at its best, not as may seem good to any individual or coterie. Every constituency is entitled to know how its representative represents. Concerning this contention, President Bryant has nobly said, 'Since every rose has its thorn, it should not be overlooked at this time that the flowery probabilities of mutual scientific medical journalism might easily be inhibited, and even destroyed by the thorny possibilities of selfish, time-serving desires.' The powers and functions of certain officers are too great. This applies not only to elected officers, but to those appointed by the trustees. The duties and functions of the editor of the *Journal* must be more clearly defined. The secretary of the association represents the association most peculiarly, not alone to individual members, but also among the scientific bodies of the world. Constituent ownership should be the keynote of both the association and its journal. Independent professional medical journals are more peculiarly representative of the profession than the society organs. Any attack upon their existence by organized power is a direct blow at the profession itself. Trades-union methods are not in the spirit of the profession.

"Reforms demanded in the interest of progress may be summarized as follows:

"1. Verbatim reports of the proceedings of legislative and governing bodies.

"2. Intemization and utmost publicity of financial matters.

"3. Proper representation in the offices of secretary, of editor, and of business manager by separate individuals, with proper compensation.

"4. Nondiscretionary power of the editor, with government by the sections of the published proceedings.

"5. The rendering impossible of trades-unionism and monopolistic methods,.

"6. Provision for general secret ballots upon important questions of policy by means of the machinery of the association and its *Journal*, through district and county societies.

"7. The extension of the referendum and initiative from the optional legislative to the popular and obligatory form.

"8. In order to protect apparent minorities, placing the vote necessary for both referendum or initiative upon a reasonable basis.

"9. The rights of individual members must be held inviolate from attack by those in power.

"10. The association and *Journal* must be enjoined from entering into purely commercial competition to the detriment of its professional rivals.

"11. No paid agent of the association should be permitted to be a member of, or take part in the deliberations of, the bodies governing or directing his actions or compensation.

"These reforms are demanded by a large and increasing body of the profession, among whom are many members of the association and not a few of its officers. They are here presented for discussion by the House of Delegates at the approaching annual meeting. May that body have wisdom sufficient for reform from within lest reform be forced from without."

REDUCTION OF MEDICAL FEES BY LIFE INSURANCE COMPANIES.

At a meeting of the Essex North District of the Massachusetts Medical Society, held in Lawrence, Mass., May 1, 1907, the following resolutions were unanimously adopted:

I. That the following preamble and resolutions are adopted by this society in session at Lawrence:

Whereas, Many of the life insurance companies have notified their medical examiners of reduction of examining fee from $5 to $3; and

Whereas, We, as physicians, realizing the responsibility incident to proper examination of the individual, believe such reduction to be unjust; therefore, be it

Resolved, That the Essex North District of the Massachusetts Medical Society, and the medical profession in sympathy with them, in session assembled, do hereby declare such reduction to be unjust, and respectfully request that no physician legally authorized to practice medicine in the cities of Haverhill, Lawrence, and Newburyport, and the towns of Amesbury, Andover, Boxford, Georgetown, Groveland, Merrimac, Methuen, North Andover, Rowley, Salisbury and West Newbury accept such reduction of fee; and further, that any physician accepting such reduction be guilty of a breach of professional courtesy.

Resolved, That it is the sense of this society that hereafter in each examination for life insurance in which urine analysis is required the minimum fee shall be $5.

Resolved, That the several component societies forming the State Association be requested to adopt these resolutions.

II. That the above rates shall not apply to industrial medical inspections, without urinary analysis, for amounts less than $1,000.

III. That no member of this society enter into any contract or agreement with any corporation, society, association, company, or individual, to examine applicants for insurance for any stated salary or lump sum, thereby evading the spirit and instinct of the foregoing resolutions.

IV. That the payment of all fees shall be authorized by the home office of the society or corporation to which such application is made, and under no circumstances shall an examiner receive or accept any part of this fee from an agent or any other person or corporation, unless the full fee be paid by authority of the home office.

V. That each member of this society pledge himself or herself, in case a fellow-member be removed from the position of examiner for any corporation or society solely because of this action of the medical profession, that he or she will not accept an appointment from such corporation of society as examiner, nor make any examination for same in the jurisdiction of this society.

VI. That each member of this society bind himself or herself, by a pledge to be presented by him or her to the Secretary, to abide by these resolutions.

VII. That the Secretary be instructed to forward a copy of these resolutions to each district medical society in Massachusetts for adoption.

VIII. That these resolutions be printed in the Boston Medical and Surgical Journal and a copy forwarded to *The Journal of the American Medical Association.*

M. D. Clarke,
Secretary.

Haverhill.

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REPORT OF MILK COMMISSION.

May 22 the mayor's specially appointed milk commission, consisting of Drs. Jacobi, Bryant, Prudden, Holt and Freeman, handed in its report. It declared that the danger from the transmission of tuberculosis bacilli had been greatly overestimated. This was in reality slight, and legislation was pending to overcome what danger there was from this source. Protection from other diseases could not be secured without adequate inspection, and it was therefore recommended that there should be an additional inspection force for the country districts supplying the city, of one hundred men, fifteen of whom should act as supervisors and receive higher pay. The use in all dairy farms of a standard equipment was also suggested. For New York City there were recommended twenty-five additional inspectors, five additional bacteriologists, and five additional chemists, together with such an increased clerical force as might be required. Score cards were suggested for rating the dairies, as well as labels to be placed on cans and bottles with the names of the farms and creameries from which the milk came. Score cards were advised also for the shops of milk dealers, and only those whose premises presented proper sanitary conditions should be allowed to handle milk. The sale of skimmed milk is now prohibited by law, and the commission recommended that such prohibition should be withdrawn, expressing the opinion that the sale of skimmed milk, labeled as such, would be advisable and harmless under thorough inspection. Another recommendation was that milk stations, such as had been maintained by Nathan Strauss, for the distribution of pasteurized and modified milk to the poor, should be provided to as great an extent as possible, and the education of the poor as to the care of milk in the home was suggested. In conclusion, the report recommended that the Health Department should, according to circumstances, require efficient pasteurization of all milk which it found unsafe for consumption as raw milk, on account of a suspicion of the presence of tuberculosis or other disease in the cows, or unsanitary conditions at the dairy, or of a persistent high bacterial content. But, in every instance, milk so heated should be rapidly cooled to at least 40° F. and be put, after sterilization or pasteurization, into sterilized containers under antiseptic precautions. The pasteurization of milk should be done only a few hours before delivery to the consumer, and the container should be marked with the time and date of pasteurization, as well as the degree and the duration of temperature employed for the purpose. The department should make frequent bacteriological examinations of all pasteurized milk, and should destroy such milk as contained more than 50,000 bacteria to the cubic centimeter.

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INTERNATIONAL LARYNGO-RHINOLOGICAL CONGRESS:

TÜRCK AND CZERMAK MEMORIAL FESTIVAL.

Laryngo-rhinological Exhibition in Vienna, April 21 to 25, 1908.

It has been decided by the managing committee of the International Laryngological and Rhinological Congress, which is to take place in Vienna from the 21st to the 25th of April, to add an exhibition of objects connected with laryngology, rhinology, esophagoscopy and bronchoscopy, instruments for examination, operation and treatment, inhaling, electro-medical and illuminating apparatus and other technical aids, protheses, manuscripts, books, preparations, drawings, etc. All those interested are invited to take part in this undertaking.

All communications, accompanied by an exact description of the objects to be exhibited, are to be addressed not later than the 31st of December, 1907, to the Secretary of the Congress (Prof. Dr. Michael Groszmann, Wien, IX, Garnisongasse 10), in order that the objects may be correctly catalogued. Exhibits should be sent at latest by the 15th of February, 1908, to Herrn Ober-Ingenieur Jaroschka, Inspektor des k. k. Universitätsgebäudes in Wien, with whom they will be deposited. All objects will be insured against robbery, fire and damage. The import and export of exhibits has been declared as duty-free by the authorities.

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UTERUS OF THE OPOSSUM.

Dr. John P. Furniss, in the *Medical Record,* says that there is only one species of opossum in America, none in Europe, and that they resemble the Australian animals. They are omnivorous and nocturnal in habits. The uterus is developed from the Müllerian ducts, which are first noticed in the fifth week of intra-uterine life, parallel with the Wolffian ducts. In the second month they unite near their centers; in the third and fourth months they blend in their lower parts; at the fifth month the cervix can be distinguished. The ducts diverge to form the Fallopian tubes. The anus and uro-genital fissure are surrounded by a common sphincter. The glans penis is bifurcated, the urethra opening in the center. The opossum is a nonplacental mammal. The young when expelled are the size of a bean, naked and immature. The mother attaches them to the teats and carries them in her bag until they are covered with hair, injecting the milk into their mouths by means of strong compressor muscles around the mammary glands.

RECORD OF MORTALITY

For the Week ending Saturday, May 18, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,471	431	Quincy	13	4
Chicago	707	184	Waltham	4	1
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	2	—
Baltimore	196	39	Brookline	5	1
Cleveland	—	—	North Adams	8	5
Buffalo	—	—	Chicopee	7	1
Pittsburg	—	—	Northampton	6	0
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	3	—
Washington	—	—	Leominster	6	—
Providence	74	19	Hyde Park	0	—
Boston	229	51	Melrose	4	0
Worcester	41	13	Newburyport	—	—
Fall River	44	21	Woburn	5	2
Cambridge	33	7	Marlboro	6	0
Lowell	40	7	Westfield	2	—
Lynn	24	9	Peabody	—	—
New Bedford	30	8	Revere	2	—
Springfield	28	5	Attleboro	3	2
Lawrence	27	9	Clinton	4	0
Somerville	21	1	Adams	8	3
Holyoke	18	8	Gardner	—	—
Brockton	15	10	Milford	—	—
Malden	8	2	Watertown	3	2
Chelsea	11	0	Plymouth	—	—
Salem	7	2	Weymouth	4	—
Newton	7	2	Framingham	4	1
Haverhill	10	2	Southbridge	—	—
Fitchburg	—	—	Wakefield	—	—
Everett	9	—	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING MAY 25, 1907.

J. S. Taylor, passed assistant surgeon. Ordered to Naval Hospital, New York, N. Y.

W. H. Short, assistant surgeon. Ordered to the Naval Hospital, New York, N. Y.

R. B. Chapman, assistant surgeon. Resignation accepted, to take effect July 1, 1907.

RESIGNATION.

Dr. Nathan P. Thayer has resigned from the position of resident physician at the Long Island Hospital.

APPOINTMENT.

Follen Cabot, Jr., M.D., has been appointed Professor of Genito-Urinary Surgery at the New York Post-Graduate Medical School and Faculty.

SOCIETY NOTICES.

The Tenth Annual Meeting of the Association of Medical Librarians (founded 1898). — The tenth annual meeting of this association will be held June 3, 1907, at the Marlborough-Blenheim Hotel, Atlantic City, N. J.

Albert T. Huntington, M.D., *Secretary*.
Brooklyn, N. Y.

Meeting of the Board of Medical Examiners for the State of Texas. — The last meeting of the Board of Medical Examiners for the State of Texas (regular) for examination will be held in Austin, Tex., June 25, 26 and 27, 1907. This examination will be held in accordance with the old medical law of Texas, and will be the last meeting of this board for examination, as the new medical law of Texas, the one board bill, becomes effective on the thirteenth day of July, and under the provisions of this law applicants only will be permitted to appear for examination who are graduates from medical colleges of not less than four terms of five months each. For further information concerning this examination address the secretary.

T. T. Jackson, M.D., *Secretary*,
San Antonio, Tex., Hicks Building.

S. R. Burroughs, M.D., *President*,
Buffalo, Tex.

American Association for the Study of the Feeble-Minded. — The thirty-first annual session of this association will be held at Waverley, Mass., June 5, 6 and 7, 1907. All those interested are cordially invited to attend. Communications may be addressed to

Dr. W. E. Fernald,
Waverley, Mass.

RECENT DEATHS.

Joseph D. Mansfield, M.D., M.M.S.S., died in Wakefield May 22, 1907, aged ninety years.

James Bradley Everett, M.D., M.M.S.S., died in Everett May 20, 1907, aged seventy-eight years.

George Henry Watson, M.D., M.M.S.S., formerly of Bridgewater, died in Flatbush, N. Y., May 26, 1907, aged fifty-nine years.

Dr. A. C. Bernays died in St. Louis May 22, at the age of fifty-three years. He graduated in medicine at the University of Heidelberg in Germany, and was a fellow of the Royal College of Surgeons of England. He had a large surgical practice in the Southwest.

Dr. Guy Davenport Lombard, of New York, died on May 22, after a short illness. He was descended from John Lombard, who settled at Springfield, Mass., in 1646, and from Thomas Davenport, who came to this country in 1840, and was born, on Jan. 11, 1872, in Northampton, Mass., where his father, the late Rev. James K. Lombard, was rector of St. John's parish. He was graduated from the medical department of the New York University in 1896, and afterwards served as interne in Bellevue Hospital. Since 1898 he had been instructor in histology in Cornell Medical College, in the laboratory of which he did considerable research work, and for several years he was secretary of the New York State Medical Association.

Dr. Charles A. Foster, one of the medical staff of the Manhattan State Hospital for the Insane, Ward's Island, New York City, died suddenly on May 19, at the age of fifty-eight years. He had long been a resident of Saugerties on the Hudson, and only came to the Manhattan Hospital a few months ago. Dr. Foster was well known as a specialist in psychiatry and a writer on insanity.

Dr. Richard Caldwell Brewster, of Brooklyn, N. Y., died on May 18, after a long illness. He was born in Goshen, Orange County, N. Y., in 1844. He was first graduated in dentistry, which he practised with success, and in 1890 was graduated from the Long Island College Hospital.

Dr. Henry W. Carpenter, of Oneida, Madison County, N. Y., died on May 20, at the age of seventy-five years. He was graduated from the medical department of the University of the City of New York in 1858, and was for some time coroner of Madison County. He was also formerly a member of the State Legislature.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Commission on Industrial Education. March, 1907. Boston.

The Psychic Element in the Practice of Medicine. By David W. Wells, M.D. Reprint.

The Overtreatment of Syphilis. By George Henry Fox, A.M., M.D. Reprint.

Diet as a Therapeutic Measure in Diseases of the Skin. By George Henry Fox, A.M., M.D. Reprint.

Annual Report of the Lynn, Mass., Hospital for the Year 1906.

Tenth Annual Report of the Trustees of the Massachusetts State Sanatorium at Rutland. Nov. 30, 1906. Boston.

Manual of Anatomy, Systematic and Practical, Including Embryology. By A. M. Buchanan, M.A., M.D., C.M., F.F.P.S. Glas. Vol. II. Illustrated. Chicago: W. T. Keener & Co. 1907.

Transactions of the Twelfth Annual Meeting of the American Laryngological, Rhinological and Otological Society held in Kansas City, Mo., June 11, 12 and 13, 1906. St. Louis. 1907.

The Importance of the Early Discovery and Treatment of Defectives in Special Public School Classes. By Walter E. Fernald, M.D. Reprint.

Die Hilfsmassnahmen bei der Zerstörung von San Francisco. Von Carl Beck. Reprint.

Um die Weihnachtszeit nach Florida. Von Carl Beck. Reprint.

The George Washington University Publications. Medical Science Series. The Influence of American Surgery on Europe. By Carl Beck. Reprint.

A New Method of Orchidopexy. By Carl Beck, M.D. Reprint.

Address.

THE AMERICAN MEDICAL ASSOCIATION, ITS AIMS AND INTERESTS.

President's Address at the Fifty-eighth Annual Session of the American Medical Association June 4–7, 1907.*

BY JOSEPH D. BRYANT, M.D., OF NEW YORK CITY.

The fifty-eighth consecutive session of the American Medical Association is now at hand. Those members whom you kindly honored one year ago with your confidence in official station are now before you in token of their loyalty to your undertakings and of their obedience to your behests. These annual conferences are of prodigious moment to the entire medical profession and to the country at large; they serve to broaden the scope of general understanding; they extend the sphere and increase the vigor of professional fellowship and of healthy civic brotherhood, and they correspondingly elevate the station of our calling in the appreciation of thoughtful right-minded people everywhere in the land. Who of us was not made a better physician because of the visit to Boston a year ago? Who of us, then inspired by patriotic emotions, aroused by the memorable examples so abundantly at hand, did not again renew unalterable allegiance to the perpetuity of his country? In whom of us was not incited a higher fraternal sentiment by the warm grasps of fellowship which, while inviting delay a bit, everywhere urged us to a completed hospitality?

Again, for the third time, in the dawn of the twentieth century, we find ourselves in the warm embraces of the hospitable people of Atlantic City. Its wealth of sunshine and cheer, its pure and invigorating eastern breezes, and the joyous acclaim of its citizens assure us that we are in " honest waters which ne'er left man i' the mire," and, therefore, we feel entirely secure and correspondingly happy. We who before never yielded to subtle solicitation or to pressing demand now acknowledge that we have the Atlantic City " habit," and we refuse all treatment except that founded on the therapeutic virtue of the hair of the canine that inflicted the delightful traumatism! In the presence of such a felicitous environment as this, who is there among us who would be so thoughtless, or who could be so unfeeling as to countenance a trifling with the sense of justice, by individual favor, or of commendable desire by vain objection?

In looking about for a topic on which to base my allotted remarks on this occasion, I am, perhaps, unduly impressed with the idea that impersonal open-hearted introspection might not be amiss at this period of the association.

In this bearing I refer more especially, 1, to the organizing of the medical profession of the country and its potential perplexities; 2, to the elevating of the standard of medical education and its possible afflictions, and, 3, to the urgent demand for trustworthy medicinal means and of sincerer efforts on the part of every physician in securing a betterment of therapeutic methods.

Equity, consequent power and the durability of human designs are the legitimate assets of wisely conceived organization. Power and durability, not thus sustained, are of uncertain tenure, and organization resting thereon can be likened to a house of blocks tethered with ropes of sand. And it should be recognized at all times that the virile activities of the principles of human justice are wonderfully potent in all organized bodies of mankind.

THE OBJECT OF THE ASSOCIATION.

It is of great moment that this association has (as set forth in its constitution) but one significant object in view, viz., " The Promotion of the Science and Art of Medicine." And it is purposed in attaining this end " to unite into one compact organization the medical profession of the United States," in order to foster " the growth and diffusion of medical knowledge"; to promote " friendly intercourse among American physicians"; to safeguard " the material interests of the medical profession"; to elevate " the standard of medical education"; to secure " the enactment and enforcement of just medical laws"; to enlighten and direct " public opinion " regarding the " broad problems of hygiene," and to present " to the world the practical accomplishments of scientific medicine."

It follows, therefore, that the promotion of the science and art of medicine as provided by the constitution of the association is, in effect, the promotion of the methods and the development of the means and the opportunities for relieving human suffering and thereby the adding of years and comfort to human existence. And true it is that to no class of persons is fraternal spirit and vigilant co-operation so essential as to those who are engaged in combating the insidious and tireless encroachments of the agents of human affliction and in relieving the abundant miseries which they beget. A transcendent service like this should be sheltered by the zeal of healthful personal and professional devotion and in no way depleted by the wiles of business ambitions. Those who regard the practice of medicine as a business enterprise should class themselves as brokers in a market of human affliction. To those who would infect the sound spirit of professional devotion and fellowship with the virus of sordid gain little heed need be given at the counsels of thoughtful men in the ranks of a beneficent profession.

The uniting of the medical profession of the United States into " one compact organization," making to the wise purposes already stated,.is progressing in a decided maner, guided by the earnest activity and abundant experience of Dr. J. N. McCormack, of Kentucky. Already the constituent members of the organization number nearly 65,000, of which the fully constituted members are about 27,000, showing a substantial increase of the former class during the present year of about 10+% and of the latter about

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* Published through the courtesy of the Journal of the American Medical Association.

12.5%. And when it is recalled that the regular medical profession of the United States numbers about 112,000 it is not difficult to understand that in the near future the medical profession of these states might easily be united into one compact organization. But how compact it may be and how enduring it may become will depend on the degree of wisdom exercised by its builders and on the measure of justice dispensed by those in control of its affairs.

"Justice without wisdom is impossible," said Froude. "Wisdom is only truth," said Goethe. Therefore, justice and truth are inseparable, say we all. The search for truth and understanding is the inherent right of all men, and they who inhibit the effort are for some reason (or pretext) opposed to justice and to knowledge. Obviously the consensus of men of widely separated habitation, of differently constituted environment and opinion, is a wiser and a safer guide in the conduct of important and comprehensive human affairs than is the consensus of men of contiguous localities. The judgment of the former class represents the concentrated wisdom of the whole, of the latter only that of a part of the country. The principle of utterance or of action relating to matters of common interest and general effect in organized bodies should, in all cases, be known and approved and be co-ordinated through the deliberate wisdom of broad constituted authority, rather than by the anxious thought or the hasty vocabulary of a few persons, no matter how experienced they may be or how wise they may be regarded as being. History not infrequently has demonstrated by untoward results the need of this rule of action in governmental and in other human affairs.

The lamented Lincoln emphasized the importance of this principle in no uncertain manner by the famous utterance, "The government of the people, by the people, for the people, shall not perish from the earth."

And in this relation it is well for us to keep in mind that a failure on the part of the responsible many, to plan and co-ordinate wisely the official acts of the few, often renders effeminate and inoperative the subsequent inhibitory efforts of those in established control.

Among the inspiring benefits provided by the constitution of this association is embraced the fostering of the growth and the diffusing of medical knowledge and its beneficence, throughout the various channels of human intercourse. The promoting of the growth and the diffusing of medical knowledge should appear with equal vigor to the people who experience relief and to those who contribute the products of medical enlightenment.

Every physician can contribute a definite share to the healthy growth and wise diffusion of medical knowledge and to its bounties. Those who strive in the workshops of medicine, the laboratories and the hospitals, more especially the former, have already bestowed a bountiful portion toward the attainment of this end. Scientific laboratory deductions, however, could not be regarded as final; they yet required the leavening proof from out the complex laboratory of the human body, as demonstrated by practical applications in the treatment of disease, to establish their worth. To the general and to the hospital practitioners of medicine belonged the duty of dispensing the fruits of laboratory research, and thus far so well has concurrent effort accomplished its purpose, that life's expectancy during the first forty years of existence has been advanced quite 30%. But following this period only a little advance in this regard has yet been made, and principally because of the differences in the nature of the diseases which afflict those of the earlier and of the later periods of life.

The present and prospective civil worth of the toll levied by disease on the wisdom and experience of mankind during the later period of life cannot well be estimated. But the physical sufferings of this period are largely the characteristic outcome of its peculiar diseases, many of which might be prevented and perhaps cured by means of progressive investigation and therapy related to a full term of years, and thus life's span becomes yet longer extended.

As just observed, every physician, if he will, can contribute a definite share to this pre-eminent undertaking. The opportunities of the country practitioner in this regard are of special significance, because of the knowledge gained through the differing effects of environment on the disease of the country and urban patients. Painstaking co-operative effort directed to the solution of the problems of disease can be made wherever two or more physicians are in mutual contact with each other and shall undertake the task.

MEDICAL EDUCATION.

It cannot be gainsaid that the comparatively few of the people constituting the medical profession of this country are tireless in their efforts to advance the scientific and practical status of medical knowledge. But what can be said regarding the great multitude of others of the people, referable to mutual response commensurate with the earthly blessings which they receive? As an earnest of the sentiments of those persons who give bountifully to beneficent ends, I quote from a comprehensive address delivered by President Keen at the annual session of this association, held here in June, 1900, and based on the United Education Report of 1898. President Keen presented to the audience the following startling facts regarding the comparative endowments bestowed on theological and medical schools for teaching (not foundation) purposes in this country. It was shown that each of the 8,000 theological students had the income of $2,250 provided for his instruction, and that each of the 2,400 medical students had the income of $83 provided for the same purpose. Also that of the 178 endowed chairs in teaching, only five related to medicine. Then we were solaced by the thought, "A hard beginning maketh a good ending."

In this address President Keen gave as his opinion that the difference in the amounts of these endowments was chiefly in consequence of the "vicious methods of the conduct of medical teaching as represented in preparatory medical schools." And it is fair to say that many were of the same opinion. In view of this hypothesis, and of the fact that since the time of the report on which it was based up to the final one [1] of five years later, and notwithstanding that distinct improvement in the administration and the teaching in medical colleges had taken place, and broader laboratory avenues of well-known scientific outcome were in operation, still it does not appear that a sufficient rising in the tide of advancement was reached to influence satisfactorily the inclination of munificent givers. For, according to the report of 1903–4, each of the 7,400 theological students of 1904 had the income of $3,031 provided for his instruction, and each of the 27,000 medical students of that year had the income of $54 provided for the same purpose, thus showing a gain over the previous report in favor of the theological student of $781 per capita, and a loss to the medical student of $29 per capita, for teaching purposes.

ENDOWMENTS.

Substantially the benefit of $22,500,000 was available for the purposes of theological education as against the benefit of $1,450,000 for medical educational use at the time of the report of 1903. At this time, of the 153 theological schools 77 report endowments and 76 report no endowments. And of the 152 medical schools 19 report endowments and 133 report no endowments. Also five of the theological schools had endowments varying in amount from $853,000 to $1,525,388 each. Now, more than ever, are we impressed with the force of another expression, "Help yourself and Heaven will help you."

In view of this later increase in the difference of the incomes bestowed for direct educational purposes and under improved medical conditions it seems quite likely that opposing factors, more potent than first assigned, are extant. When, however, it shall happen that bountiful givers regard us in health as in acute affliction perhaps greater heed will be given to the wisdom of making larger medical educational gifts. Irreverent comment has hinted of another compelling influence, especially related to generous adult minds, embodying the notion that the hope and faith of celestial expectancy are more attractive than are the faith and outcome of terrestrial realization.

Whatever may be the reason for the continued paucity of medical endowment, I am not prepared to say, but I hope that substantial improvement will be secured through the convincing influence of beneficent subjective and objective lessons, patiently, discreetly and thoughtfully impressed by us on the public mind. Yet, confronting this hope, there appears an ominous specter pointing to the fact that only by laborious effort, chiefly supported by the medical profession, were the memory and brilliant services of the late Dr. Walter Reed meagerly characterized. Those who experienced the greatest blessings because of them gave the least to the care of those whom he loved most.

The simple, commonplace remark, "the promoting of friendly intercourse among American physicians," I regard as the most important announcement set forth in the opening declaration of the constitution of the association, looking to the "Promotion of the Science and Art of Medicine." For, without the stimulating and guiding support of professional good-fellowship in all that the term implies, discord and discredit are likely to delay or cripple the realization of this one great object in view.

THE JOURNAL.

I know of no agent so well fitted to contribute to the fostering of the growth and the diffusing of medical knowledge and the promoting of friendly intercourse among American physicians as rightly falls to the lot of *The Journal of the American Medical Association.* A journal with a weekly circulation of over 50,000 and accounted as the utterance of many more than this number of the organized medical profession of the country may well be regarded in things of professional concern as the voice of the multitude proclaiming its will. Therefore, it is important that the tone and wisdom of its speech be in accord with the judgment of the great majority of our profession. I am inclined to believe that when the pages of our journal are the forum of temperate and instructive discussion of the policies of common interest to our membership greater impetus will be given to just causes and a broader scope to fraternal comfort among American physicians. One, however, cannot be reminded of *The Journal* without being impressed by the creative ability, the abiding energy and overtaxed assent of the editor, the Secretary of this Association.

I am deeply impressed with the belief that at this time the greatest danger to continued harmonious unity in the Association lies ill-hidden in the constituted expression, "to safeguard the material interests of the medical profession." It requires no special discriminating sense to foresee the devious interpretations which eager desire might willingly give to the phraseology of this declaration. Fortunately, however, no rendering of the language of this expression can be properly entertained which conflicts with that of the antecedent one, "the promotion of friendly intercourse among American physicians." However this may be, the following suggestive lines of Froude should not be overlooked: "Where all are selfish the sage is no better than the fool, and only rather more dangerous."

THE WAR AGAINST DISEASE.

The genuine products of completed organization of the medical profession are of infinite importance to the well-being of the country. The potent factors of common prosperity will be encouraged and protected; the hearts and homes of the well-to-do and the hopes and hovels of the needy will each reflect, in joyous ways, the benefits of co-operative action in fixing the nature, overcoming the causes and lessening the burdens of disease. The war now under way against cancer and tuberculosis, two of the insatiable inflictions of humanity, can, along with that opposing ophthalmia, be waged with comprehensive rational designs and improved prospective results.

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[1] Commission of Education, Department of the Interior, 1903–4, ii.

The broader the field of opportunity in this regard, and the greater the activity of the contest, the more bounteous will be the return and the greater a final victory. When, for instance, it is recalled that for unknown reasons the death-rate from cancer is slowly advancing in spite of intelligent, earnest opposition; that acquired tuberculosis yet adds 13% to the total death-rate; that unrestrained ophthalmia causes over 25% of the blindness from disease; that over 30% of the school children of New York, and perhaps of other large cities, suffer from defective vision, and that in 75% is their mentality impaired by causes yielding to curative measures of a simple and permanent nature, then, indeed, is the necessity for united action relating to control of human infliction emphatically demonstrated.

The alleviation and cure of such afflictions serve to lighten the burdens of public care, to lessen the tenantry of charitable and penal institutions and to lay the foundation of good citizenship.

A NATIONAL BOARD OF HEALTH.

The fact that communicable disease has no boundary restraints in the presence of unguarded human pursuits is quite as familiar to the lay as to the medical mind. Also that human indifference and human ignorance and established sectional state policy often contribute an unfortunate share to human distress is well known to the medical profession. It would seem wise, therefore, that interstate sanitary regulations should be established, thus affording even-handed opportunity of protecting interstate enterprise from the effects of concurrent disease. Duties of this nature and others of national sanitary importance can be properly met when an awakened sense of the need on the part of those controlling the affairs of the country shall invite the co-operation of our profession looking to the acquiring and preserving the best results, which wise statesmanship and wise sanitation can jointly secure.

A national board of health having in charge such things as properly fall under its consideration and action would be a national blessing of ever-increasing importance. But in this relation candor compels me to state that I find little encouragement for those of our profession who at the outset would demand a seat in the executive council at the head of the nation as an acknowledgment of professional capacity, or as a retainer for prospective service. Instead we and others laboring in mercy's cause should be willing to serve in allotted capacity as Jacob served for Rachel, with unostentatious patience, tinctured perhaps with cruel disappointment, but leaving the results of our labors as an earnest of our worth and of the reward which best befits it.

Not a little has been said in the near past regarding the possibility of securing national incorporation of the American Medical Association, with power to hold property and transact business anywhere in the United States. The gaining of such incorporation is no longer speculative, for within the last year several charters of similar scope to that framed by Judge Ray for us have been secured for other organizations. I am inclined, however, to hesitate in recommending a renewal of endeavor in this respect until assurance can be had of earnest, genuine effort on the part of all, looking to the securing of incorporation and also co-operation in the adjustment of the business matters essential to a completed consummation of the act. A policy which would contemplate the locating of the business affairs of the Association at Washington in the event of incorporation, I regard as hostile to the best interests of the profession and contributive to the impairment of fraternal peace.

MEDICAL LEGISLATION.

The enactment and enforcement of just medical laws is a matter of superlative importance. Fair and equitable relations, founded on uniform standards, should be established between the respective states regarding the requirements of medical education. Under this arrangement, fully qualified physicians going from one state to another would not be obliged to submit to annoying state board scrutiny concerning fitness to practice medicine. Since no unusual professional attainments are necessary to meet the exigencies of practice in any state of the Union, but little difficulty should be experienced in establishing a grade of educational requirement, permitting of practice though reciprocal comity.

The unwelcome thought arises at this time that, in the absence of equitable state reciprocity, one or more states not blessed with first-class educational opportunities might endeavor to protect their own interests against the professional encroachments of the graduates of first-class medical schools by requirements to practice of such character as not to merit serious thought on the part of the faculties of highly reputable medical institutions. It is difficult, however, to conceive that this idea can be more than a passing fancy, for how a course of this kind could receive the sanction of good judgment is not easily understood. Relative to competent practitioners of long standing who may desire to change their state environment, a greater difficulty attends a proper adjustment of their situation. It seems to me, however, that common justice requires that a form of examination should be given in these instances, which in its scope is measured by practical methods consistent with the experience of the applicant, rather than by one of modern requirement. For I am quite certain that if a member of the teaching faculty of a modern medical school were unexpectedly to find himself outside the halls of his own institution, a creditable return through the enlightened channels prescribed by his catalogues for students, would be shadowed with great doubt and probably attended with humiliating disaster.

MEDICAL EDUCATION.

Beneath this opinion lies a thought pregnant with important professional responsibility relating to all those who have to do with regulating the requirements to begin the study of medicine. Should it occur to them that ideals may not everywhere be needed and that the object might be to meet the requirements of the whole country — a country yet comparatively new in professional opportunities and rewards for ambitious young men in a great part of its area? Should it occur to them that the coming into the field of action of vast business enterprises has begotten corresponding opportunities with less preparatory drudgery and expense and by greater prospective rewards than generally attend the practice of medicine? Ought they to keep in mind that the increase in educational requirements above a certain point has not resulted, at least in New York State, in a corresponding increase in medicine of those of the highest qualifications, but instead their comparative numerical status (21+%) in this and in other common respects has remained practically unchanged for the last ten years? Is it not possible, therefore, that many worthy and able young men who are less favored than their fellows have sidestepped because of the comparative hardships imposed by educational requirements and the uncertain and delayed rewards that attend earnest endeavor in the medical profession?

Whether or not the standard of medical education should be raised in this country to equal that of the old world is a matter concerning which honest differences of opinion are earnestly pronounced. While no one can consistently contend that knowledge is not power, yet the adjustment of more than a requisite amount of knowledge in the practice of medicine, to be sparse occupancy of many broad areas of this country, is a matter which for some time to come may concern the stern power of economics more than the needs of ideal culture. Possibly, therefore, those who are blessed with commendable professional dignity and with pleasing remunerative environment might willingly pause for a time while giving thought to the demands for professional care in broad necessitous surroundings.

The analytic work being done by the Council of Medical Education is mercilessly disclosing the comparative *status* of the medical schools in this country to the discredit of many heretofore differently regarded. The active manner in which the labor is carried on under the chairmanship of Dr. Arthur D. Bevan is creditable to the committee and to the cause in hand. Inasmuch as the standard of suitable preparatory medical attainment depends more on the capacity of a faculty to impart knowledge and beget character than it does on the phraseology of the curriculum the outcome of the committee's efforts is being watched with solicitous interest by all concerned in honest standards of moral and medical qualifications.

Apropos of the importance that the faculties of medical schools should lead the way to higher station in professional ethical conduct, both by precept and example, I am prompted to say that there appears to be no doubt that uncanny business instincts are encroaching in the reciprocal vulgar ways characteristic of lay methods not a little on the sacred domain of professional propriety. I am of the opinion that trespasses of this kind are chiefly the outcome of acquisitive intentions based on delusive self-seeking desires. The remedy for the cure of this unprofessional propensity rests largely in the hands of the faculties of medical schools. They should inculcate a high sense of professional honor in those who come under their tutelage. Ample instruction of medical students in the tenets of moral philosophy, as applied to the practice of medicine, and substantial disapprobation of offending practitioners by their colleagues will, in my judgment, hasten the reduction of this evil to a minimum.

In this glorious country of ours, " the will of the people is the law of the land." And in this bearing it is needful that we should act with good sense concerning our *personnel* in all matters which are of special interest to the commonalty, so as not to encounter the adverse activity of popular desire. In this connection it is important to know that in the United States there are about 84,000,000 people, the great majority of whom are capable of satisfactorily judging of the practical things of life relating to themselves as they come into thought. Also in the United States there are about 112,000 physicians who are eligible to membership in the American Medical Association, but of which as yet little more than one half are afflicted in any capacity with the organization. It logically follows, therefore, that a judicious estimate should be made of how the great majority of the 84,000,000 of people plus nearly half of our own calling would regard our intentions before venturing at all rather than prematurely to court defeat and corresponding loss of station. The question is *not* altogether what we think of ourselves and our causes, but the question *is* how we ourselves and our causes may be regarded by the people concerned and by their friends, to say nothing of the balance of our own profession. And, too, it should be kept in mind that it is not likely that general mutual accord will prevail in all matters of common interest which arise in organized bodies of men. In a humane profession appeals should be made to judgment, not to passion or prejudice. It is within the easy recollection of most of us that sturdy efforts were made by the united medical profession of a state in what was regarded to be a justifiable cause. Yet, as it appears, decided defeat was the outcome, because the majority of the interested people were not in harmony with the contention. This suggestive lesson should not pass unheeded, if experience and good judgment are to become available assets in the conduct of the affairs of medical organization.

THE NEED OF HONEST DRUGS.

It is written that Oliver Cromwell, while fording a river with his army to attack the enemy, exclaimed, "Put your trust in God, but mind to keep your powder dry!" No less determined than Cromwell was, do many physicians now feel on account of the fact that their figurative powder (drugs) is quite apt to be worse than wet, being alarmingly defective in quality and fickle in strength. As an illustration of these facts, no evidence more convincing can be presented than that of the Health Department of New York City. This efficient department has for some time labored with discreet energy and with astounding results in this heretofore comparatively untilled field of interrogative scrutiny. That the crude drugs and standard preparations approved by the United States Pharmacopeia and prepared and exploited by reputable pharmacists should, in all instances, be found trustworthy admits of no denial.

It appears, however, from the reports of the Board of Health of New York City, on the analytic findings incident to the examination of crude drugs, tinctures, fluid extracts, etc., as compared with corresponding standards adopted in the United States Pharmacopeia, that reputable pharmacists have, because of commercial indifference or studied intention, not infrequently contributed to therapeutic misfortune through the quality and strength of their drugs. I will call your attention to only a few illustrations which are an emphatic earnest of the need of general scrutiny of the pharmaceutical part of our therapeutic armamentarium.

It is a matter of general knowledge that aconite is a drug of potent nature and in comparatively common use. Of this drug five of the thirteen samples analyzed were of the tincture and fluid extract of the root. Of the three specimens of the tincture one had 9% more, and of the remaining two 6% and 20%, respectively, less of aconitin in than the standard requires. The two samples of extract of the root had 13½% and 25½%, respectively, more aconitin in than is required. The remaining six samples were of the powered root which in no instance was sufficiently abnormal to call for admonition. The samples of belladonna showed, respectively, from 35% to 45% less of mydriatic alkaloids in the powdered extract of the leaves, 11½% less in the fluid extract of the root, 17% more in the tincture of the leaves and 47½% in the fluid extract of the leaves than is required by the United States Pharmacopeia. Powdered nux vomica was found to be comparatively worthless, but in the tincture and fluid extract was revealed an excess of strychnin above the required standard of 19% and 17%, respectively. In the tincture of opium was found, of morphin 7% to 13% more than the accepted standard of composition.

In 1-100 gr. tablet triturate of nitroglycerin was discovered only 1-1600 of a grain of the drug. It is said that this preparation of nitroglycerin was known by the manufacturers to be unreliable and, therefore, should not have been exploited at all or in a guarded manner. It is not difficult to foresee from the failing to secure proper response from the use of these or other tablets of uncertain strength that the substitution therefor of a fresh solution of the drug might result unfortunately, especially if the dose of the fresh preparation were of the same amount as was that of the tablet last given. I have in mind an instance of this kind in which the use of a fresh solution of strychnin caused a fatal result. .

It further appears that of the first sixty-one samples of drugs examined by the health department, all of which "articles are of exceptional importance, most of them potent poisons, and all are represented by definite chemical standards in the Pharmacopeia," only about 28% of the whole number was considered good and 16% were so bad as to justify legal action. It is proper to say that the majority of the manufacturers, recognizing the awkward position in which they were placed, with a spirit of yielding opposition complied with the reformatory demands of the health department. This list of producers is small in numbers compared with those who are engaged in similar business in the United States, and, no doubt, present as favorable a picture of this class of the drug evil as can be drawn.

Nor is the aforegoing distress the only torment in pharmacy with which the medical profession has to contend. The idealized, savory products of pharmacy with which the market is cloyed are often quite as fickle in their nature and virtues as was a certain ancient queen of the Nile. Discreditable business thrift supplemented by co-operative professional contentment and convenient indifference, patronized by confiding and credulous people, yields princely returns for the diminutive cash and equivocal integrity invested in it.

Not all of those, however, engaged in the pharmacal trade are unworthy of the trust and confidence given to men in other avenues of business. Very many, indeed, thus engaged are as sincere and trustworthy in their business affairs as are the best of those in other undertakings. Therefore, the old and revered principle of common justice, while emphasizing the fact that every person should be regarded as being honest until the contrary is proven, should be kept in mind and action. Consequently, in our conduct of matters imbued with professional or business virtues, the resolution should be to estimate uprightness of character by the tenets of common justice, and not by preconceived notions hostile to the principles of established equity. Purposes thus graciously fortified command respect, and gain in strength because of opposition. The reverse, however, will beget distrustful thought and may finally cause defeat. In this recital I cannot overcome the belief that we ourselves contribute a major share to the inception and success of many medicinal ventures by our indifference or ignorance relating to savory prescribing and also by our thoughtless employment of proprietary medicines. Here, too, is a chance for medical teachers to instill proper notions regarding consistent ethical and therapeutic refinements.

When John Dryden wrote, "virtue is her own reward," he expressed a sentiment in keeping with the self-sacrificing spirit characteristic of the members of the Council on Pharmacy and Chemistry of the American Medical Association. I am creditably informed that these gentlemen are serving the profession and the people in this labor without the expectation of vulgar reward or the anticipation of special favor. I desire to commend their motives, approve of their work, and bespeak on the part of the profession an earnest support of all wise conclusions. Those who labor in a just cause without stipend are deserving of great praise; those, however, who serve for pay can only expect approbation.

But little less important than the preceding, in some respects, would be the careful scientific consideration of the therapeutic value of the abundant springs of our country. There is much, indeed, of special significance regarding their popular use which might well be garnered and put on a sound basis. A scientific co-operation with those who are in charge of certain baths possessed of traditional specific value might readily guide to improved conditions of significant importance to all those who seek relief. A country as rich as ours in these spontaneous endowments can well afford, in proper ways, to court the attention and support of the afflicted and to the decided advantages of all concerned.

THE MEDICAL PROFESSION IN CIVIC LIFE.

The sincere belief, on my part, that the outcome of professional governing policies of common interest in our affairs are practically alike in county or state prompted me, in a recent parting address to the united medical profession of the State of New York, to say: "The organization of the medical profession here and everywhere throughout the country contemplates the realization of more than the scientific advantages arising from personal contact and local co-operative thought. It should be regarded as an earnest that the medical profession intends to take an active and controlling part, if possible, in those affairs of civic life which relate to the well-being of the body politic. There should be no question regarding the status of the medical profession in all matters relating to the securing of pure food, pure drugs and wise public sanitation." Also it was said: "It would be sadly amiss, indeed, were I not to admonish you at this time, the opening of a united career, of the grave perils begotten by a spirit of paternalism which not infrequently is a pernicious by-product of organized power. The seductive and aggressive influence of this spirit often usurps and may inhibit that nobler, more enduring and beneficent spirit characteristic of common manhood and professional brotherhood. And it should not be forgotten that the greater and more extended is the membership of a fraternal body the greater and more extended are self-seeking desires apt to be. Consequently, the longer the chain of affiliation is the weaker it may become, for, as you already understand, 'no chain is stronger than its weakest link.' I pause to inquire, Is there any good reason to doubt that the medical organization of the nation might not respond to similar influences? Let us, however, cherish the belief that wise discretion fittingly stimulated by just conceptions of fraternal spirit will guide us securely along the pathway of increasing professional attainment and good fellowship to the end of useful life."

And, finally, when by the aid of Divine Providence, the medical profession of the United States shall have been made into "one compact organization" and impelled in dutiful desires only by the highest motives of professional purpose and of public welfare, no enlightened opposition will oppose its desires nor will irrational outcry, nor vagrant motives, find patient listeners or available foothold in the councils of the organization or in those concerned in the requirements begetting of public confidence and respect

Original Articles.

COINCIDENT EXTRA- AND INTRA-UTERINE PREGNANCY.

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Coincident extra- and intra-uterine pregnancy has been reported by both European and American writers, but is of sufficient rarity and importance to deserve attention. Parry [2] found 22 cases among 499; Schrenkh [7] 4 in 610; Weibel 1 among 40 extra-uterine pregnancies. So far as can be found, no case of this character appears in records of the Gynecological Service at the Boston City Hospital previous to the one reported at the close of this article.

In this instance, the exact condition was not appreciated at the time of the operation for the ruptured extra-uterine pregnancy; but it is consoling to find that many others have been in the same predicament and all acknowledge the great difficulty of diagnosis. According to Zinke's [1] statistics, a diagnosis of the extra-uterine pregnancy has been made in very few instances other than post-mortem, after the uterus was empty, or at the time of operation.

Although the first case of this nature was published in 1708 and the second about one hundred years later, Parry [2] apparently published the first series of 23 cases in 1876.

Subsequently, various articles have appeared, and the number of recorded observations has increased wonderfully during the past ten years. Weibel was able to collect data concerning 119, including the table of previous writers, and including one of his own; therefore his statistics are the latest. Neugebauer, in the *Zentralblatt für Gynäkologie* No. 46, 1905, stated that he intended shortly to publish conclusions based on 129 cases, but I cannot find that they have yet appeared.

The best monographs on this subject are those of Zinke,[1] 1902; Bichat,[6] 1903; Simpson,[5] 1904; Weibel,[3] 1905.

To the work of Christer Nilsson [4] (1903) I have not had access, but it is commended by others. Weibel [3] considers only those cases in which both embryos have been alive at the same time, during some portion of the pregnancy. Superfetation is not considered possible in this connection by most investigators.

Although some writers have insisted on fine distinctions as to when coincident extra- and intra-uterine pregnancy could be said to exist, the classification of Simpson [5] seems to me most reasonable and simple. For convenience he calls this condition "compound pregnancy."

SIMPSON'S CLASSIFICATION.

Compound pregnancy, Class I. The woman becomes pregnant while carrying the dead products of an ectopic gestation.

Compound pregnancy, Class II. The ectopic and intra-uterine products of conception are both living at the same time.

(*a*) Ectopic gestation precedes the uterine.

(*b*) Ectopic gestation follows the uterine.

(*c*) Ectopic and uterine conceptions occur coincidently.

Of Class I, Simpson found 16 in his series, and Parry 22 in a study of 499 ectopic gestations. Under Class II (*a*), he includes all cases in which the extra-uterine ovum appears to have begun its development at least one month before the uterine. Only 3 were found.

He concludes, under Class II (*b*), that there is no positive proof that the ectopic ovum may become fecundated after the uterine, as difference of size is probably due to insufficient nourishment. In this he agrees with Weibel and others. In Class II (*c*), where the two ova seem to have been fecundated at the same time, he places 98 "recorded cases."

From the figures of Wiebel [3] this form of twin pregnancy occurs most often during the period between 25 and 30 years, which corresponds to the time of greatest frequency of normal twin pregnancy, according to the statistics of Kleinwächter.

Christer Nilsson's statistics (quoted by Weibel) make the period somewhat later (30 to 35 years), and he also claims that this abnormal condition of twin pregnancy is almost as frequent from 36 to 40 years. It is found about 3 times more often in primiparæ and has been considered primarily due to morbid changes in the reproductive organs, resulting from age or disease.

The general course of such pregnancies may proceed undisturbed, and there is at least one case on record where mother and both children survived delivery. Bleeding from the uterus may occur as in ordinary extra-uterine pregnancy and the intra-uterine embryo remain undisturbed. However, bleeding as a rule signifies a beginning uterine abortion or changes in the extra-uterine pregnancy. When both embryos are living at the same time, a disturbance of one or the other is apt to bring both pregnancies to an end. It is possible that there is some interdependence, and that an interruption of the intra-uterine pregnancy may result from the shock of the extra-uterine disturbance or that a uterine abortion may end the ectopic gestation, either mechanically or by altering its nutrition.

Cases are also reported in which the uterine abortion failed to disturb the ectopic ovum, and *vice versa*. Several writers (Wertheim, Christer Nilsson, Weibel) agree that the ending of the uterine pregnancy is less liable to affect the course of the extra-uterine, than tubal rupture or abortion to influence that of the uterine gestation.

In our own case it is impossible to say exactly what happened. The condition of the fetus thrown off by the uterus showed that it must have been dead for some days at least, and it seems probable that it perished before the tubal rupture took place.

Data concerning the uterine gestations is given by Weibel in 110 cases: 42 went to the ninth month; 32 were living at full term; 61 ended prematurely. Of these ending prematurely, 12 resulted from: death of fetus (9); extirpation of uterus (2); criminal abortion (1). In 6, the duration was not stated. In approximately one half of 95 cases, the extra-uterine pregnancy came to an end during the first four months, and although 28 extended into the ninth month, only 3 were saved by operation at the full term.

From the foregoing figures, it will be seen that the chance of the survival of the extra-uterine embryo is so small that it should not be considered for a moment when it comes to a question of saving the life of the mother and the uterine pregnancy.

The prognosis for the mother grows progressively worse as gestation advances. Not only is there constantly increasing chance of intra-abdominal hemorrhage and mechanical difficulties, both before and after uterine labor, but also the added risk of celiotomy. If, by any chance, the ectopic pregnancy is broken and the fetus becomes encysted, the uterine pregnancy may proceed without special danger to full term. Lithopedions have been carried for over thirty years without trouble, while in other instances, infection of the sac and abscess formation have led to a spontaneous discharge of its contents.

In a majority of the published records, the disturbance of one of the twin pregnancies, usually the extra-uterine, has ended the other. Of the cases reported before 1880, according to Bichat, about 40% of the mothers perished; but since that time, Weibel's figures show a mortality of only 20%.

To lay down any rule for the treatment of such cases is certainly impossible. Early diagnosis and sacrifice of the ectopic pregnancy seems to be the ideal treatment, as by this the greatest danger to the mother is obviated and the normal pregnancy possibly spared.

If it is reasonably certain that the extra-uterine fetus is dead and become encysted, then, according to some writers, it may be permissible to wait. As it is impossible to be sure of this fact, operation, at least in the earlier months, offers the best chance for the mother. In the later months, it may seem best to wait, hoping for the death of the extra-uterine child and curtailment of the placental circulation before abdominal section. Uterine labor is apt to interfere with the abdominal pregnancy, either mechanically or by altering its blood supply.

Any pregnancy accompanied by peculiar pains or thickening of the appendages should be carefully watched, and it will be only by this means that we can make an early diagnosis. Even then, many will escape us, if we are to judge by the records of the past.

CASE.

S. Q. Twenty-nine years of age and single, was admitted to the Gynecological Service of the Boston City Hospital on the evening of Jan. 7, 1906.

She had enjoyed good health, and the catamenia had been painless and regular, except when pregnant, since their first appearance at fifteen years. The last regular period ceased on Oct. 30, 1905, and was regular in every respect. Some six to eight months previous to entrance she had an induced abortion.

At the time of admission, she considered herself about two months pregnant.

On the evening of Jan. 6, she was seized with sudden, sharp pain in the lower abdomen, which persisted. She vomited considerable during the night and felt chilly. Late in the afternoon of Jan. 7, she summoned a physician who at once sent her to the hospital.

When she reached the hospital there was no doubt as to diagnosis and my house officer gave an infusion of salt solution and adrenalin, as well as some strychnia and morphia.

Physical examination: A well developed and nourished young woman, with blanched cheeks and slightly coated tongue. The pulse rate was 120, slightly irregular, and of poor volume and tension. The heart action was rapid with sounds short and of fair quality.

The abdomen was distended, with tenderness most marked in the lower quadrants. Signs of a large amount of fluid in the peritoneum were present, and a slight, general rigidity of the abdominal wall. Vaginal examination showed the uterus to be slightly enlarged and the cervix soft, but not patulous. There was no bloody discharge, and nothing in the feel of the uterus differing from its condition in other ectopic gestations which I have seen. Nothing further could be made on account of the straining and rigidity of the patient on examination.

It was decided to operate at once, and on opening the abdomen by a median incision, the black blood gushed like a fountain, being under greater pressure than it had ever been my chance to see previously. Scattered over the intestines and in both flanks, large recent clots obstructed the view. They were bailed out with the hands and the outer third of the left tube found completely shattered, and surrounded by a moderately dense laminated clot, which was evidently the result of hemorrhages at least three or four days old. The portion of the tube remaining was filled with clot, and the broad ligament considerably damaged. In order to stop hemorrhage, it was necessary to sacrifice the ovary, which contained what appeared to be a single large ruptured corpus hemorrhagicum. After washing out the abdomen, it was closed without drainage. There were no old adhesions anywhere in the abdominal cavity.

The patient received a shock enema at the close of the operation. The pulse was 96, and later rose to 128, but the quality remained good.

On Jan. 8, a small macerated fetus came away from the vagina without pain or flowing.

Jan. 11, the hemoglobin was 60%; Jan. 15, 65%; Jan. 19, 70%.

Jan. 30, she was discharged. The uterus at that time was freely movable, in good position, and of normal size, with no induration to be felt in the pelvis and no vaginal discharge. The abdominal wound was firm. She still had the yellow skin which follows acute hemorrhage.

About six months after the operation, the patient reported herself in good health.

I am indebted to Dr. O. R. Mabee of the Pathological Department of the Boston City Hospital, for the following pathological report:

The specimens received are two in number,—a small fetus from the uterine cavity and the right Fallopian tube.

Gross examination.—The fetus measures 3.5 cm. in length, its neck is well formed, and all the branchial clefts are closed except the first. The eyes, ears and nose are well formed. The external genitalia are visible but the sex cannot be determined. (Fetus of about ten weeks.)

The tube measures 7 cm. in length and at its proximal end is 8 mm. in diameter. Its fimbriated extremity spreads out into an irregular funnel-shaped mass, the walls of which are thickened and the mucous membrane roughened by numerous shaggy tags of blood stained material.

Microscopic examination. — Sections made through the Fallopian tube at various points show the following conditions: In sections from the proximal and central parts the blood vessels are distended; the lumen contains a small amount of blood; the mucosa is intact and there is no evidence of inflammation, of decidual cells, or of chorionic villi. The muscular and serous coats are normal. The general picture presented by sections through the distal portion is as follows: The vessels are congested. The mucosa is torn, irregular in contour, and adherent to its surface are fibrin, red blood corpuscles and polynuclear leucocytes. The muscular coat in some areas is thickened and in others much thinned. The serous surface like the mucous has adherent to it fibrin, red blood corpuscles and polynuclear leucocytes. Some sections near the fimbriated end show numerous gland and tube-like remains of the ducts of Müller surrounded by smooth muscle fibers.

The following is a specific description of individual sections through the distal portion: At the fimbriated extremity many epithelial cells of the mucosa are flattened and beneath them are seen many large, pale, staining cells with vesicular nuclei (decidual cells). On the peritoneal surface in this region the changes are more marked.

Clumps of chorionic villi are seen. There are masses of large decidual cells scattered through the connective tissue beneath the serous layer and in the walls of the larger blood vessels.

DIAGNOSIS.

1. Uterine pregnancy (ten weeks).
2. Right tubal pregnancy (fimbriated extremity).

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THE BIER SUCTION TREATMENT OF TUBERCULAR SINUSES.

A Report of Sixteen Cases from the Convalescent Home of the Children's Hospital.

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During the past year I have had the opportunity to observe a great number of convalescent tuberculous cases at the Convalescent Home of the Children's Hospital at Wellesley Hills, and owing to the kindness of Dr. Augustus Thorndike I am able to report on a number of them.

It has always been a difficult thing to cause a sinus from a tuberculous abscess, complicating tuberculous disease of the spine, hip disease, tumor albus or tuberculous disease of the bones of elbow, wrist or ankle, to heal, following either spontaneous rupture or operation. In fact, after trying all the various special forms of treatment, none of which have seemed to hasten the closure of the sinuses, no attempt is usually made now beyond the necessary application of a dry sterile dressing as often as need be, according to the amount of discharge; and Nature is allowed to take her own time.

However, such abscesses are not always so situated that they can drain well from a purely mechanical point of view, especially if the patient is not an ambulatory one, and consequently they are never fully drained, but simply overflow when the contents of the abscess cavity becomes too much for it to hold. This condition is noted in cases of Pott's disease or hip disease with abscesses which are obliged to undergo frame treatment. These abscess cavities then need some assistance in draining, so as to give them and the focus of the disease an opportunity to heal.

These sinuses presented conditions, then, which seemed suitable for the application of the suction cup apparatus as described and used by Professor Bier, of Bonn, Germany. By the cup suction method the contents of such cavities are daily completely drawn off, thus removing the pus. This method creates a vacuum, this being its first and mechanical action, and, secondly, by reason of this vacuum causes a hyperemia, thereby stimulating the healing process.

The cups used in this series of cases were small circular ones of glass, about one and one-half inches in diameter and about two inches in height. The top end is tapered to fit a rubber tube with a rubber bulb. This bulb should have no valve. The cup is applied wet, the bulb being compressed at the time, thus creating a vacuum, which is of a great enough degree to cause the cup to stay in place.

In some cases the cup method was augmented by the Bier compression bandage, *i. e.*, in such places where it was applicable, as knee, elbow, hand or ankle.

The treatment was carried out daily for one hour at a time. At no time was the suction strong enough to cause pain. The cups were removed every few minutes to clean them, and to renew the vacuum. The compression bandage was not removed during the hour.

An individual card was kept of each case, showing the gain in weight, hemoglobin and the results of the treatment.

Some cases did well from the start, especially cases one and seven. Others did well, the sinuses closed, only to reopen, and especially in such cases as had the suction omitted and the compression continued. This was especially to be noted in cases four and six in which the sinuses would heal and reopen alternately. In these last two cases both suction and compression had to be omitted on account of the occurrence in each of considerable hemorrhage from the wounds.

Histologically there has been noted a general dilatation of the capillaries and lymph channels, and an increased migration of the white corpuscles.

It must be borne in mind, however, that the active treatment of the main focus of the disease, which is the underlying cause of the abscess formation, must be kept up so as to reduce the irritation and destruction of the diseased area as much as possible.

It was by these methods, then, that we hoped to show that at last we had found something which would hasten the closure of such sinuses. It must not be forgotten, however, that many of these cases had had discharging sinuses for long periods of time and were consequently in poor general condition, for it is true that such cases are the hardest to get up to the normal, or to create, without a very long course of treatment, any marked improvement in their weight, color-index or general health.

Several cases, including these in which the hemorrhage occurred, either lost ground in general condition or did not gain at all, but promptly improved again following the omission of the treatment, as especially noted in case three.

It was noted that at first there was a very considerable increase in the amount of the discharge, which usually later diminished as the suction was continued. Some cases, however, had a considerable increase in discharge which persisted throughout the course of the disease and seemed to impair the general condition to such an extent that the treatment was discontinued.

The following list is a brief summary of the cases:

Case I. Boy; age seven. Hip disease with sinus. Duration of the disease, four years. Duration of sinus, eight days following incision and drainage. Suction one hour daily. Sinus closed in eight weeks. Gained about 5 lb. in weight. At discharge general condition was excellent. Hemoglobin 100%.

Case II. Boy, age two. T. B. hands and ankle with sinus in hand and two in ankle. Duration of the disease, one year. Duration of sinuses, two months following operation in hospital. Suction and compression bandage one hour daily. Ankle was swollen and indurated, with two discharging sinuses, and the right hand presented a thick, boggy, indurated swelling on dorsum with a discharging sinus. Treatment in this case was only carried out for about two weeks, for the parents wished the child at home. The treatment had apparently not improved the condition. The weight increased two pounds, but the hemoglobin remained at 60%.

Case III. Girl, age three. Pott's disease, hip disease with two sinuses. Duration of the disease, eight months. Duration of sinuses, two months. Suction one hour daily. Suction caused considerable discharge from the sinuses, and the child began to lose in general condition. The cupping was omitted after one month, and the child picked up again. The sinuses continued to discharge freely, but less than when the suction was used. Gained four pounds in weight, and at the time of leaving the hospital was having less discharge. The hemoglobin was 90%.

Case IV. Boy, age six. T. B. knee. Numerous sinuses. Duration of the disease, two years. Duration of sinuses, since erasion of the knee two weeks previous. Suction to sinuses and compression bandage one hour daily, beginning July 11, 1906. Leg in split plaster. Case showed a steady gain in weight from 40 to 47 lb. Hemoglobin remained at 90%. At first, the treatment seemed to do good, but by Aug. 10 the sinuses were nearly closed. During the treatment, on Aug. 17, however, the sinuses bled freely, especially on the application of the bandage. This was omitted, but the suction still caused hemorrhage, so they were both discontinued. The last note on December, 1906, was that the four sinuses still continued to discharge slightly. The child left the Home soon after the discontinuance of the treatment.

Case V. Boy, age seven. Pott's disease with sinus. Duration of the disease, three years. Duration of sinus, one and one-half years. Suction one hour daily. Plaster jacket. Up and about. Sinuses on the outer side of the left thigh in upper third from psoas abscess. This was a case of such general poor health that the child has never reacted well to any treatment, general or local. The sinus was under treatment for a period of about eleven months without any marked change. At one time the hemoglobin went as high as 90%, but is down again now to 70%. His weight varies from 30 to 35 lb. The treatment apparently had no marked effect.

Case VI. Girl, age 5. Hip disease with sinuses. Duration of disease, two years. Duration of sinuses, two months after operation. Two sinuses on the left thigh connecting with the hip-joint and with each other. The suction was carried out daily from May 8, 1906, to July 13, 1906, when her general condition became so poor that she was sent to the Children's Island for a change. She lost weight slightly, but managed to keep her hemoglobin up to 90%. She was the second case in which bleeding followed the use of the cupping, so that it was finally discontinued.

Case VII. Boy, age four. Hip disease with sinus. Duration of the disease one and one-half years. Duration of sinus, one month following operation on hip abscess. Gain in weight in five months, 6 lb. Gain in hemoglobin, 70% to 100%. Suction one hour daily. June 22, 1906, fair amount of discharge. July 27, 1906, discharge much less, hip not sensitive, up and about. Splint. Aug. 2, 1906, general condition good. Sinus practically healed. Discharged.

Case VIII. Boy, age three. Hip disease with sinuses. Duration of the disease, one and one-half years. Duration of the sinuses, four months, following hip disease. Sinuses in Scarpa's triangle and in perineum. Duration of treatment, five months. Gain in weight, 4 lb. Gain in hemoglobin, 70% to 100%. Sinus in Scarpa's triangle healed, but sinus in perineum still discharging slightly. This child's general condition was at all times poor, although every effort was made to improve it. In November he contracted pertussis and was discharged.

Case IX. Boy, age eight. T. B. hip with sinus. Duration of the disease, five years. Duration of the sinus, five years. Duration of treatment, two months. Gain in weight, 11 lb. Hemoglobin, 80% to 100%. Hip very sensitive from the first, with practically no motion. Discharge from the sinus profuse for five years. With the suction treatment this child improved well locally, the discharge diminished steadily after the first month, during which no marked change was noted, and at the time of his leaving the Home the discharge was very much diminished.

Case X. Boy, age three. T. B. knee with sinus. Duration of the disease, six months. Duration of the sinus, ten days following spontaneous rupture of abscess of the knee-joint. This case was treated for about six months in the Out-Patient Department, and at home by the daily application of the compression bandage. During all this time the child wore a split plaster, and walked about on the leg as before the onset of the disease. The decrease in pain and the increase in motion of the joint were marked, not even being interfered with by the development of an abscess involving the upper part of the knee-joint, which opened spontaneously three months after the onset of the disease. The treatment was continued as before, the sinus being covered with a sterile dressing. In June he was sent to Wellesley on account of his poor condition generally, and the suction treatment was begun, which resulted in a closure of the sinus sixteen weeks later. He now has about 15° motion in the knee-joint, but still continues to wear a knee splint for protection. His weight increased from 29 to 54 lb. in seven weeks.

Case XI. Girl, age two and one-half years. Osteomyelitis femur. Operated on Nov. 2, 1906. Sent to Wellesley and treatment was begun there with compression and suction. The left thigh presented an operation wound in its lower third on inner aspect, discharging profusely. Rubber drainage tube. Under suction and compression the wound closed rapidly, the drainage diminished, and the wound was closed by Dec. 27, 1906. There was moderate thickening along the lower one half of the shaft of the femur, not different apparently in degree from that usually observed.

Case XII. Boy, age three. Double T. B. knees, T. B. hip amyloid disease. Duration of the disease, one and one-half years. Duration of sinus about knees, fifteen months following incision of abscesses of both knees.

This case was about hopeless from the start, but the attempt was made in the hope that some of the discharge could be stopped and the bad effect on the general condition diminished, for it is a fact that in these sinus cases the children are never so well as in other cases of the same nature, which may have abscess but which do not have discharging sinuses. There was profuse discharge from both knees, and also a large fluctuating area over the right hip. The liver was much enlarged, the abdomen distended and free fluid was present in the peritoneal cavity. The child was of course confined to a Bradford frame and bed. The hemoglobin rose from 50% to 70%, but he lost weight from 32 to 26 lb. The treatment apparently had no good effects, the child developing symptoms of T. B. meningitis, and was taken home.

Case XIII. Boy, age nine. T. B. spine with sinus. Duration of the disease, four years. Duration of sinus, nine months following incision and drainage of a psoas abscess. Suction was begun on Sept. 5, 1906, at the Convalescent Home. At that time there was profuse discharge from the sinus which had persisted for nine months. Early in October, about five weeks later, the discharge was greatly diminished and the boy's general condition was much improved. He was up and about in a plaster jacket from the time of his entrance.

Case XIV. Boy, two years. Periostitis tibia. Was admitted to the Convalescent Home nineteen days after his operation for periostitis of tibia. He presented at entrance a large granulating wound over the anterior surface of the right tibia with considerable discharge. Bier bandage one hour daily. At the end of five weeks the wound was healed, having closed in rapidly.

Case XV. Boy, T. B. hip with sinus. Duration of the disease, five and one-half years. Duration of the sinus, two and one-half years. At entrance his hip was very sensitive, motion was limited in all directions and there was a discharging sinus on the outer side of the upper third of the left thigh. The discharge was moderate cup suction one hour daily. Ten days later there was very much less discharge, the hip was much less sensitive and the boy was up and about with his splint and was discharged home.

Case XVI. Boy, age five. T. B. knee with sinus. Duration of the disease, one and one-half years. Duration of sinus, one year. This case had the compression and suction carried out daily for a period of five months. His gain was steady, both locally and in general condition. During the third month there was a marked increase in the amount of the discharge, accompanied by a fluctuating area on the anterior surface of the thigh in the upper part of the knee-joint. The compression bandage was omitted, but the suction continued, and at the end of four weeks this fluctuating area had disappeared. The discharge was steadily decreased and all the sinuses were healed at the end of five months. There was practically no motion in the knee-joint at any time. Gained 4 lb. in five months. Hemoglobin, 90%.

CONCLUSIONS.

By a study of this series of cases it is shown that in a number of them their condition was much improved generally and locally.

To be sure the conditions with which the children were surrounded tended to improve them in every way, but it can be definitely stated that these conditions alone would not have been enough to have caused them to do so well in view of our past experience with similar conditions, and without the use of the suction treatment.

Eight, or one half of the cases reported, were either wholly healed or markedly improved, generally and locally. In five the conditions were not apparently improved locally, but there was distinct gain in weight and color-index. Three cases lost ground to such an extent that the treatment had to be omitted. The improvement in their local condition was largely due to the cupping, seconded by the improvement in their general condition as a result of their hygienic surroundings, good and sufficient food and fresh air night and day.

The occurrence of hemorrhage was noted in but two cases, and was probably due to the rupture of a small vessel in the wall of the abscess cavity, or to bleeding from the granulations. In both cases the general condition was much below par. Cases of long duration were not so greatly benefited as those which had existed for a short period of time. This was probably due to less destruction going on in the main focus in the recent cases, or to a less firmly established sinus cavity. The effect on the cases of osteomyelitis and periostitis was marked, and resulted in a rapid convalescence.

The suction treatment, combined with the compression, where applicable, should be used as a routine measure in every sinus case.

The occurrence of hemorrhage, or failure in general condition, should be indication for its discontinuance, at least temporarily.

It will undoubtedly cause a stimulation of the healing process in the majority of cases. It is simple, easily applied and carried out at home and in the hospital.

THE PHYSICIAN'S RESPONSIBILITY IN THE TRAINING OF INFANTS.*

BY A. C. EASTMAN, M.D., SOUTHBOROUGH, MASS.

Twenty-five years ago diseases of infants and children were not treated as separate subjects in the medical schools, but were brought in as a part of general medicine. In other words, if a physician could treat an adult he could treat a child.

Gradually this idea has been reversed until now it might be said that any physician who can treat a child can treat an adult.

As far as children are concerned this is a result of the special study of their development and diseases, whereas in adults it is a result of a growing tendency to place treatment by drugs in its proper place, viz., as only one of the branches of therapeutics in general.

Diseases of children have been carefully studied as a separate subject, until, in the short time above stated, this department has reached the point where it stands on a par with the other branches of medicine.

In the cases of infants, splendid work has also been done in connection with their general development and especially their feeding, so that at the present time the general practitioner, as well as the specialist, is becoming educated to the proper methods of modifying milk and to the general principles of treating the diseases resulting from the use of poor food.

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* Read before the Framingham Medical Society, March 14, 1907.

But it seems to me there has been, and still is, a failure to teach and practice one of the most important subjects in connection with a child's and therefore a man's development, viz., the education and training of the infant, especially during the first six months of his life.

The old controversy between heredity and environment must be brought forward again, only in connection with this subject it is also a case of instinct versus training.

Parents have had, and still have, the idea firmly fixed in their minds that a child is born with inherited characteristics, and that these characteristics must be considered from the very beginning of a child's life. They believe that because they themselves are nervous, or have weak stomachs, or some other " ill which man is heir to," therefore the child has inherited the same long list of troubles and must be treated accordingly, and as a result cannot be treated like other children. It is a significant fact, however, that these same characteristics diminish in importance in direct proportion to the number of children in one family.

Add to this the natural instinct of a mother to coddle and love her child and to feel that the slightest cry means that something is wrong, and immediately we have the sum total of the reasons for the failure to properly train an infant. On the other hand the extreme scientist steps in with his so-called " modern methods " and says the child is an animal and the maternal instincts must be thrown aside; that the child must be reared and educated according to laws and rules which under no circumstances should be ignored or neglected, and the result will be a perfect child. As a matter of fact both sides must be considered, and instead of ignoring the mother's instinct, it should be held in restraint and educated for its proper sphere, that of a wise and loving protector during these important months. The mother must be taught to consider the future welfare of her child, and the physician must respect the mother's instinctive love.

What is the outcome of heredity and instinct in relation to the future welfare of the child? Why are not these the best guides to follow? Simply because, although an infant is an animal and animals are reared by instinct, yet an infant is also a human being and potentially has the wisdom and intellect of a human being. Therefore, if instinctive love rules the training of an infant, in a very short time the infant with his potential human characteristics will begin to rule the maternal instinct. This means that a mother who rules her child by instinct alone puts herself on a level with the animals as far as methods of discipline are concerned; that is, she unconsciously recognizes only the animal in her child in spite of her protests against the word "animal" when scientifically applied. In so doing she also unconsciously forgets the higher intellectual faculties present in her child in a potential form, and it is a result of this mistake which allows the child's intellectual faculties as they gradually unfold to dominate the mere instinctive habit of the mother's mind.

In all special departments of education it is becoming more and more recognized that the earlier an individual starts the better are his chances. Therefore it is still more important that in the general education of an individual we should begin at the earliest possible time. It is my firm belief that this early date in general education is the day an individual is born.

When a baby is born it is a physiological necessity that he should cry in order to expand the lungs, but that does not mean that he is hungry. On the other hand having the natural instinct of an animal to associate cause and effect he soon recognizes that a cry followed by food means that to get food he must cry. The same rule applies to holding, rocking, or even playing with him. Association of ideas in connection with cause and effect soon leads to temporary habits and these in turn lead to permanent habits; and in the course of development we have the spoiled child who does not recognize a negative answer to his various wants. Some one has called a baby a bundle of habits, and this being the case it is our duty to make the habits good and serviceable ones. The habits started in infancy make the foundation for the other characteristics later in life, and may be the turning point on which the making or marring of higher faculties depends. Isn't it therefore of vital importance that these habits be formed under the influence of good training rather than of mere instinct?

The first requisite in systematic training is a careful physical examination, because if there is any physical defect, no matter how slight, it may be the one stumbling-block in the way of success. Apart from any abnormalities which are easily noticed there are two which must be especially looked for, viz., the condition of the tongue and of the genitals. It is not at all uncommon to find a baby to be tongue-tied and this alone will interfere with the nursing, and hence upset any attempt at regularity. Within the last six months I have had four babies who were tongue-tied and until this was relieved nursing was difficult and unsatisfactory.

In connection with the genitals it is my habit to examine every boy and by the end of the first week, either stretch the prepuce and pull it back, or if necessary circumcise him. In cases where the prepuce can be stretched and pulled back it is necessary to instruct the nurse, and also the mother, how to do it, and that it must be done every day as a part of the child's bath. After the first one or two weeks the prepuce will slip back easily and then the mother will have no trouble in considering it a routine duty. But if stretching is impossible then the infant should be anesthetized and a careful circumcision performed.

Invariably there will be found behind the glans penis a varying amount of smegma which, if left there, cannot help being in time a source of irritation. If left until the boy grows older the damage has been done to the nervous system, and the effort at training the child has been greatly handicapped.

This is one of the most difficult parts of treatment to carry out as a routine measure chiefly because of the deep-sown prejudice against circumcision. Although it is a Jewish religious rite as far back as Old Testament times, the religious part is secondary, and there must have been a sound physiological basis behind it. In fact as far as is known it was practised by the Egyptians as an hygienic measure before it was adopted as a religious rite by Abraham. There is practically no race of men who are as chaste, as sexually clean, as the Jews, and it seems to me this is the simple explanation. The boys, as they grow older, do not have their attention drawn to that portion of their anatomy by the irritation of a long or sensitive prepuce, and consequently their minds are not saturated with sexual subjects as they approach puberty. If in addition to this, parents will drop much of their false modesty, as they are beginning to do, and in a sensible way explain the changes of puberty to their children, we will begin to solve some of the difficult problems in connection with sexual evils.

Apart from this side of the question the mere irritation due to lack of cleanliness during infancy is a cause, it seems to me, of much of the nervousness of older children which has been laid at the door of heredity. Irritable babies who are fretty and restless and do not sleep soundly at night gradually grow into more irritable and nervous children.

With girls it is just as important to instruct the nurse that during the bath the labia should be carefully bathed and the smegma removed. In both cases enuresis can often be avoided, and the child's nervous system will be given a very much better chance for normal development.

Apart from these more important, because more frequent, abnormalities we should correct as far as possible any conditions which may interfere with normal digestion or sleeping, so that we may now start with a physically sound baby and teach him good habits.

After his first bath he should be placed in his cradle and left there, only to be taken up for feeding, bathing, changing his clothes, and exercising. As to his feeding the nurse and the mother should be carefully instructed as to the absolute necessity for regular feeding, and by regular feeding they should understand that they must go by the clock. Five or ten minutes leeway in either direction soon grows to a half hour and in a short time the whole schedule is upset. If the baby cries make him wait, and if he is asleep wake him during the day, and before many weeks he will awake approximately at the right time for his feeding.

Why is this strict schedule necessary? Simply because we well know that if our adult stomachs are not used at regular intervals we soon have indigestion and loss of appetite, and far more is this true in the case of a baby's sensitive stomach.

Furthermore, if the mother nurses her child, regularity is absolutely necessary in order to keep her milk in good condition, as too frequent nursing diminishes the supply and increases the total solids, whereas too long intervals increase the proportion of water and decrease the total solids. Moreover, the mother's physical condition is of the greatest importance, and irregular nursing is a tremendous strain on her vitality. Too much stress cannot be laid on the necessity for regular nursing, and we will find it necessary to reiterate again and again to the mother why this is so absolutely important.

It is also necessary that the baby should not be allowed to take his food too rapidly, but at the same time should keep steadily at work while he is nursing. It is a good plan for the mother to hold the child over her shoulder and pat his back immediately after nursing and oftentimes in that way gas, which has formed in the stomach from too rapid nursing, will escape and so prevent discomfort and subsequent crying when he is put back in his cradle.

As to bathing and clothing in connection with training, it is simply necessary to keep the baby clean and dry. An infant should not be left to lie in a soiled and wet napkin, for chafing will surely be the result and thus again we have cause for restlessness and irritability as well as enuresis. There is also a tendency to put too much clothing on babies so that they are uncomfortable, and at the same time become more susceptible to changes of atmosphere. As a result instead of preventing colds which is the object of the extra clothing, in reality it makes them more liable to catch cold. At the same time the physical discomfort makes them fretty and cross and this adds another difficulty to the success of training.

A baby's nervous system demands quiet and physical comfort for its best development. As far as possible for his own sake as well as the mother's he should sleep in a separate room and under no circumstances be allowed to sleep in the bed with his mother. Also during the day, when awake, it is better to train him to entertain himself as much as possible. Do not give him too many toys at one time and do not allow him to be constantly entertained by an admiring audience. The latter part of the afternoon before his six o'clock feeding is the best time for parents to play with him and give him his exercise. Then after his feeding he will be ready for a good night's sleep. After his last evening feeding, which is usually either at nine or ten, according to his age, he should not be awakened until six in the morning. During the first six or eight weeks he will usually wake himself, and should be given one feeding about one or two o'clock, according to the time he wakens; otherwise, unless you are positive that something is wrong, he should be left in his crib and compelled to cry it out. If this requirement is rigidly enforced from the first night after his birth, it is surprising how quickly he learns his lesson, and then as he grows older the parents will not be so familiar with the historical night parade and its accompaniments. This is also an additional reason for the infant sleeping in a separate room when possible, for in that case it is not so great a trial to the mother when she is obliged to hear him cry.

This uninterrupted night's sleep is especially important as an acquired habit, for the older he grows the less he sleeps during the day, and then the quiet sleep necessary for a normal nervous system must come at night. Moreover, the mother needs her sleep in order to keep strong and well, and this she can have if only she will begin early to train the infant.

For exercise the mother should be instructed to rub the baby once or twice a day, usually in connection with his bath and when put to bed for the night, and also he should have a certain amount of freedom in the use of his legs and arms.

And now the mother says, "The baby will hurt himself crying if not picked up." Not only will the baby not hurt himself, but gradually if made to cry it out he will recognize the futility of crying. The earlier he learns this lesson the better for him and for the mother. The longer it is delayed the more difficult it becomes. "But he will rupture himself," the mother says. Rarely does this happen if a proper binder is worn, but if it does happen, the hernia should be reduced and the skin folded over it and strapped with adhesive plaster and the training can be safely continued. Again the mother will argue that the child is not strong enough to be allowed to cry, and yet that same mother would not question the necessity for keeping a weak premature baby quiet in his crib in spite of his crying. The weaker the baby the more necessity for quiet, is an absolute rule, and the louder he cries the stronger he is, may be taken as an axiom.

As the child grows older and it is necessary to change the intervals of feeding or to give up the night feeding, such changes should be carried out with a firm hand, and when once made, the child should not be allowed to go back to the previous schedule, unless because of illness and by the physician's orders.

Sleeping out of doors should be a part of the daily routine in the infant's life after the first few weeks, varying according to the natural physical condition of the infant.

These absolute rules of living are especially important and necessary during the first six months of life, because if carried out faithfully during that period the habits have obtained a good start, and furthermore after the sixth month the individual characteristics begin to be more prominent and the physician's responsibility is turned over to the parents.

What then is our responsibility as physicians? It is to take a more personal interest in the training of infants, thus making it more systematic, and not leaving it to the various eccentricities of an ignorant nurse or to the misguided instinct of the mother.

Too long it has been the habit of physicians to forget the child as soon as he is born and devote their attention to the mother. With our present knowledge of asepsis properly carried out, the mother is bound to stand every chance of normal convalescence, and if anything goes wrong it will speedily be brought to our attention. But the child cannot speak for himself and we cannot take things for granted as far as the intelligent care of the nurse or mother is concerned.

With the exception of a few specially trained nurses the vast majority of obstetrical nurses are ignorant along these lines, and the natural instinct of the mother is surely not sufficient to carry out such training,

Not long ago I had a graduate nurse on a confinement case who came to me at the end of a week and asked me to go into more detail with my instructions, because, although I had taken it for granted that she understood the ordinary rules of regular feeding, etc., in reality she said she was absolutely ignorant as to the first principles of training infants.

It is our duty to take nothing for granted until we find the nurse or mother knows these fundamental principles, and even then we must keep an oversight of the infant during these first few months. Only in this way can this important branch of preventive medicine be made a recognized part of a child's development.

We owe it to the future generations that they enter active life without the handicaps so long made a stumbling-block to their normal development. This may be medical suicide but even so it is preventive medicine and along this line the greatest advances are being made, and we should be proud to do our share in making the medical profession progressive, broad and honored.

THE TREATMENT OF RIGID FLAT-FOOT. EXCISION OF SCAPHOID.

BY ARTHUR T. LEGG, M.D., BOSTON.

By the term "rigid flat-foot" is meant that type of flat-foot in which, after the falling of the longitudinal arch has taken place, and especially the downward displacement of the scaphoid bone, alterations in the shape of the tarsal bones have taken place, making impossible by the use of plates the correction of the deformity or the relief of pain due to the body weight resting, to a more or less extent, on the displaced scaphoid.

It should be understood that this type of case does not include the cases of rigid valgus, due to static errors, in which there is no displacement of the scaphoid. There is, however, in the former class of cases, valgus, secondary to the falling of the longitudinal arch.

Rigid flat-foot is almost always a result of congenital flat-foot, the patients having always noticed that their feet were flat but not having experienced much discomfort until after puberty, when, by their increased weight and the body weight resting more or less on the scaphoid, much pain is experienced. It is not to be understood that all cases of congenital flat-foot will become rigid; many cases of congenital flat-foot go through life with a perfectly flexible foot.

Interesting to note in connection with congenital flat-foot is the fact that it is often hereditary. In two cases operated upon by the writer other members of the family were afflicted with the same congenital deformity, one having a father and two brothers, the other a father and a brother.

There are several operations described for the relief of rigid flat-foot. Nearly all these have been advocated for the relief of both rigid flat-foot and rigid valgus, while but one, that of excision of the scaphoid, is, to the writer's mind, applicable to rigid flat-foot.

Forcible manipulation under complete anesthesia, manually or by the use of the Thomas wrench, is an excellent procedure for the early cases of rigid flat-foot where much change in the shape of the tarsal bones has not taken place, preventing the raising of the scaphoid and the correction of the secondary valgus. This procedure is followed by retention of the foot in the corrected position in plaster, followed by the use of plates.

Where marked changes, however, have taken place in the tarsal bones, and the scaphoid is well down, it is impossible to restore the foot to its normal position by this method.

Ogston's operation, or the ablation of Chopart's joint. — The objects of this operation are to denude as much of the cartilaginous surface of the astragalo-scaphoid joint as possible, to place the foot in the proper position and to secure immobility by pegging the bones together. The operation is spoken of by Professor Ogston as highly successful in relieving both pain and deformity, but other operators have met with but little success.

Mr. Hare's operation is a modification of Ogston's whereby he dovetails the astragalus and scaphoid together in place of pegging.

Sir William Stokes describes removing a wedge from the head and neck of the astragalus. This procedure is not sufficient in all cases to restore the shape of the arch.

Larabrie's operation, or cuneiform resection of the tarsus. — Larabrie removed the whole of the scaphoid, the head of the astragalus, a portion of the internal cuneiform and a corner of the cuboid in a very severe case of congenital flat-foot in which the sole was convex, the dorsum concave. The bones, after the deformity was rectified, were united by wire sutures. The result was a useful foot.

Gleich's operation, or transplantation of the posterior part of the os calcia. — Gleich, in order to raise the posterior pillar of the arch, makes an oblique section through the posterior part of the os calcis, and having divided the tendo Achillis slides the posterior fragment forward and downward. The effect of this operation would be, according to Sir William Stokes, to raise the heel and thus lead to troubles similar to those which follow the wearing of high-heeled shoes.

Trendelenburg's operation of supra-malleolar osteotomy. — This operation was devised primarily to correct the valgus resulting from poor results in Pott's fracture, the idea being that by dividing the bones of the leg above the ankle and turning the distal fragment in, thus creating a bow leg, the body weight would be directed upon the outer border of the foot. A number of operators have used this procedure for the correction of rigid flat-foot, but it seems hardly rational to the writer, in that the deformity resulting from Pott's fracture is in the ankle joint itself, whereas in rigid flat-foot the change is in the sub-astragaloid joint. The operation in cases of rigid flat-foot would thus make a compound deformity.

Allison's report of a case in which this operation was performed for a marked rigid flat-foot well illustrates the inadvisability of performing a Trendelenburg osteotomy for this type of case. The patient after the operation was more crippled than before. He, after unsuccessful manipulation, excised the scaphoid, correcting the deformity and giving absolute relief to the patient.

Excision of the scaphoid. — The removal of the scaphoid was probably first performed by Richard Davy and Golding Bird. The objects of the operation are to remove a wedge from the inner side of the foot, thus allowing the correction of the arch and the relief of pain by the removal of pressure. They report several cases in which pain was immediately relieved and the arch restored in most cases.

The operation is a simple one, consisting of making a curved incision over the scaphoid, the convexity directed downward. After laying back the skin and soft parts, the scaphoid is grasped with lion forceps and enucleated by freeing its articulations with the tarsal bones. By making the incision with the convexity downward, room is gained by which the scaphoid is more easily freed from its articulation with the cuboid. After the removal of the scaphoid, the foot is corrected and put up in plaster in the corrected position. The writer has, in the majority of cases operated by him, sutured the remaining joint capsule of the head of the astragalus to that of the internal cuneiform in order to better hold the corrected position. The tendons of the peronei, and in some cases the tendons of the tibialis anticus, extensor proprious hallucis and extensor longus digitorum should be divided in order to fully correct the valgus.

The after-treatment in these cases is of great importance. The foot should be kept in plaster for three to four weeks, being sure the foot is held in the corrected position. The plaster may now be omitted and the patient allowed to wear a shoe, holding the position of the foot by a properly fitting plate. The patient may have to use crutches for a week or so after the omission of the plaster on account of the pain from the recent operation and in order to become accustomed to walking on a foot in a new position. Massage, manipulation and exercises designed to strengthen the foot are of great benefit in the after-treatment. The plates may be omitted in five to six months.

In the Orthopedic Department of the Carney Hospital thirteen operations of excision of the scaphoid for the relief of rigid flat-foot have been performed. From the results of these cases, one to five years after operation, the writer draws the following conclusions:

The pain is relieved in all cases.

The deformity in most cases can be corrected by excision of the scaphoid and the tenotomies previously mentioned.

In one case operated upon by the writer the deformity was so extreme that the sole of the foot was convex and the dorsum concave, as in the case reported by Larabrie. Here the excision of the scaphoid was not sufficient to correct the deformity. The writer believes, however, that the deformity could have been entirely corrected if a portion of the cuboid had been removed.

The flexibility of the foot cannot be regained. More or less change has taken place in all the bones of the tarsus, and excision of the scaphoid can in no way regain flexibility already lost. From this viewpoint we cannot promise a cure.

That this operation weakens the foot as some claim, the writer does not agree. The scaphoid in the normal foot may be said to act as the keystone of the longitudinal arch, but displaced it fails to act as such; so by removing it and having the internal cuneiform take its place, the writer believes the arch is really strengthened.

THE TREATMENT OF CHRONIC ANTRUM DISEASE.

BY RICHARD H. JOHNSTON, M.D., BALTIMORE,

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In the classification of antrum disease it is well to separate empyema of the antrum from chronic sinusitis; the former indicates pus in the antrum without much involvement of the mucous membrane, the cavity acting as a reservoir. In the latter form the mucous membrane is inflamed and often covered with granulation tissue or may present polypoid formations. In simple empyema the cause is usually found in a diseased tooth, especially a root, which may be covered by the mucous membrane of the antrum or may project into the cavity itself.

In true sinusitis the infection comes from the nose and is usually found in an attack of "grip" or one of the other infectious diseases.

It is obvious that the treatment of the two varieties must be entirely different. In empyema the diseased tooth must be gotten rid of and drainage obtained through the alveolar process; recovery is generally prompt after the extraction of the cause. It is easy to see that no treatment through the nose will cure if the pus formation is due to dental conditions. In view of this fact it might be well to subject the patient to a careful examination of the teeth before undertaking the treatment of the antrum. Sometimes a tooth is diseased and examination by a competent dentist does not reveal it. A very instructive case, in which examination of the teeth showed nothing, is reported by Moure. A patient with bronchitis and suspected tuberculosis was sent to him for nasal examination. He could find nothing abnormal in the nose or mouth; the teeth all seemed sound. Transillumination gave opacity of the right antrum. A proof puncture yielded pus. Before undertaking the treatment of the case, he directed the patient to a dentist who reported all teeth sound. Moure, however, insisted on the extraction of a tooth which he thought might have some connection with the antrum. The dentist extracted the tooth under protest; the roots were found diseased and in ten days the pus had entirely disappeared and the bronchial cough with it. Such cases are very significant and should make us careful in the choice of treatment. With the x-ray the position of the roots with reference to the antrum can easily be obtained and may be of great value in treatment.

During the past few years many papers have appeared on the treatment of chronic antrum sinusitis and many opinions expressed as to the best and most conservative operation. Leaving out the radical operation which is, of course, the best because healing following it is the quickest, the choice narrows down to treatment through the mouth or through the nose. Grayson discards the intranasal route as unscientific and unnecessary; he prefers to gain access to the cavity through the alveolar process after extracting a tooth. He claims that this conservative method effects many cures. The adherents of the intranasal operation are just as enthusiastic over their method. Both operations can be performed under local anesthesia and in the office. Both are attended with some shock, the latter being the more severe. I am inclined to think that both operations have their place in the treatment of chronic antrum disease. When a diseased tooth is the cause of the pus formation, the mouth operation is undoubtedly proper. I had occasion to observe this fact some time ago. In a patient with pus in the antrum, intranasal treatment, of several months' duration, benefited but did not cure. Great difficulty was experienced in keeping the hole in the antrum open, and each operation to secure good drainage was a source of great shock to the patient. Finally an x-ray picture was made and showed that a root of the second bicuspid tooth projected into the antrum. The tooth was extracted, drainage made through the alveolar process and recovery was rapid. The importance of a careful examination of the teeth was clearly shown in this case. Where the pus formation has extended over a period of years and the patient is old — sixty years or more — I believe the alveolar procedure is the better. Such cases do not give a very favorable prognosis as to permanent cure, and, with a tube in the cavity, the patient is enabled to keep it clean and is made fairly comfortable for the remainder of life. In such cases the shock of the intranasal operation is much greater. In all other conditions the intranasal operation is undoubtedly better and, in my opinion, should be tried in all cases before resorting to more radical measures. Many instruments have been devised for this method of operating, some of them very ingenious. After trying a certain number of them, I came back to the chisel and mallet for making the opening into the antrum and the cutting forceps for removing the bony pieces. Recently I have tried the electric trephine for cutting into the antrum and consider it the best method I have employed. It is quick, certain, causes little hemorrhage, gives a perfectly round hole and is practically painless. It enables one to do a quick operation — much quicker than with other instruments — and thus save the nerves of the patient. Because of the speed of the motor, the laceration of the soft parts is reduced to a minimum.

The operation as I perform it is as follows: after the application of cocaine, 10%, and adrenalin, 1 to 3000, the anterior end of the inferior turbinate is removed with the conchotome or with scissors and snare. If the conchotome is used, as much of the turbinate is bitten off as may be necessary, care being taken to get as near the insertion of the bone to the superior maxilla as possible. With the scissors a cut is made along the insertion of the bone for about half an inch; the snare is introduced so that the wire passes along the incision in the bone and the canula is below on the floor of the nose. The snare is then drawn tight and the turbinate cut through. I do not find it necessary to remove as much of the turbinate as in operations with other instruments. The trephine slides under the turbinate, so to speak, since it cuts obliquely. After the removal of the turbinate, if the patient is much shocked, I postpone the second stage of the operation for a few days. If the patient is in good condition, I enter the antrum immediately with the trephine attached to a number 6 Victor transformer. The trephine cuts in an oblique direction which is a distinct advantage in making a long, round opening. With such an instrument, thickness of bone does not need to be considered and the opening can be made on a level with the floor of the nose. A guard attachment surrounds the trephine except at the cutting end and prevents injury to the soft parts from the rapidly revolving shaft. If a larger opening is desired, the trephine is withdrawn, the bony piece removed, the instrument applied at another place and the current again turned on. A perfectly smooth hole is made and it is not necessary to use forceps to remove the bony pieces. The bone comes out in the cutting end of the trephine. With the Victor foot piece, the current can be made and broken at will. The trephines are of various sizes and large or small holes can be made at the will of the operator. Very little pressure is made on the trephine when it is cutting through the bone; the moment that it enters the antrum, the current is broken and it is powerless to do harm. For ease of execution and quickness of action, the trephine cannot be excelled. Patients do not object to it as they do to the slow and more clumsy cutting instruments. After cutting into the antrum, the curette is introduced and the cavity cleaned out as well as possible. It is then irrigated with sterile, normal salt solution. From time to time if pus continues to form, the curette is used and a 10% solution of nitrate of silver instilled. The patient is instructed how to pass a tube into the cavity which is washed out daily one or more times with mild antiseptic solutions. This method of treatment will cure many cases. If the opening closes before pus ceases to form, the trephine is again used with little inconvenience to the patient. I do not believe that strong antiseptics have much place in the treatment of chronic antrum disease. I have gotten the best results with occasional curetting and persistent washings with mild solutions.

Medical Progress.

PROGRESS IN PATHOLOGY.

A CRITICAL REVIEW OF VARIOUS METHODS EMPLOYED FOR ISOLATING TYPHOID BACILLI FROM STOOLS.

BY JOSEPH. H. PRATT, MD., BOSTON.

I. Media devised to check the growth of colon and liquefying bacteria.
  (a) Carbolic acid media.
  (b) Riedel's iodine trichloride gelatine.
  (c) Rawitsch-Stcherba's naphtol gelatine.
  (d) Hammerschmidt's creosol bouillon.

II. Media devised to produce colonies of characteristic size or form.
  (a) Holz's medium.
  (b) Elsner's medium.
  (c) Klie's low-percentage gelatine.
  (d) Hiss's plate media.
  (e) Piorkowski's urine gelatine.
  (f) Krause's urea gelatine.
  (g) Capaldi's gelatine agar.
  (h) Kraus's glucose glycerine agar.

III. Media devised to produce colonies of characteristic color.
  (a) Noeggerath's medium.
  (b) Gasser's fuchsine agar.
  (c) Marpmann's media.
  (d) Uffelmann's methylene blue gelatine.
  (e) Phenolphthalein media.
  (f) Roux's artichoke medium.
  (g) Neutral red media.
  (h) Wurtz's litmus-lactose agar.
  (i) Kashida's litmus urea agar.
  (j) Chantemesse's litmus-lactose agar.
  (k) v. Drigalski-Conradi's litmus-lactose agar.
  (l) Endo's fuchsine agar.

IV. Enrichment methods devised to favor the growth of typhoid bacilli and to inhibit the growth of colon.
  Caffeine media.
  (a) Roth's bouillon.
  (b) Ficker and Hoffmann's method.
  (c) Reischauer's agar.
  Malachite green media.
  (d) Loeffler's media.
  (e) Lentz and Tietz's method.
  (f) Nowack's agar.
  (g) Peabody and Pratt's method.

V. Chemical precipitation devised to separate bacteria from fluids.
  (a) Vallet-Schüder's method.
  (b) Reischauer's method.

VI. Biological precipitation devised to agglutinate and separate typhoid bacilli from fluids.
  (a) Windelbandt-Schepilewski's method.
  (b) Chantemesse's method.

VII. Methods based on motility of B. typhosus in fluids.
- (*a*) Ali Cohen's method.
- (*b*) Reischauer's method.
- (*c*) Gabritschewsky's method.
- (*d*) Kleine's method.
- (*e*) Hayashikawa's method.
- (*f*) Cambier's method.

On Oct. 16, 1881, Gaffky[40] isolated Bacillus typhosus in pure culture from the spleen of an individual dead of typhoid fever. That was the first time this micro-organism was ever grown on artificial media. Three years later he reported that he had cultivated the typhoid bacillus from the spleens of 13 cases. He did not claim to be able to demonstrate the presence of the bacilli in stools. Pfeiffer,[115] in 1895, was the first to make this assertion. For the diagnosis he depended upon the appearance of the colonies on agar and the invisible growth on potato. Merkel and Goldschmidt,[98] Karlinski[67] and Wiltschour[152] believed that they could find typhoid bacilli in the stools without difficulty. The tests used by these investigators did not suffice to distinguish typhoid from colon bacilli. Until the introduction of the glucose fermentation test and litmus milk, or litmus whey, it was not possible to differentiate typhoid bacilli from certain varieties of colon and allied bacilli. Chantemesse and Widal,[19] Petruschky,[114] Theobald Smith,[141] Wurtz,[157] Péré,[111] Germano and Maurea,[44] Capaldi and Proskauer[15] all called attention to the different action of B. typhosus and B. coli on carbohydrates. So great was the activity in this field of research that in 1895 Lösener[91] was able to collect references to 689 articles dealing with the bacteriological diagnosis of Bacillus typhosus.

A great number of methods have been devised for isolating typhoid bacilli from the stools. Wathelet[149] and others showed that the results of earlier investigators were erroneous and that the chance of obtaining typhoid bacilli from the stools by the use of ordinary gelatine was very small. Wathelet[149] examined 600 colonies that presented on gelatine plates the appearance of B. typhosus and found that only 10 of these were typhoid colonies. It should be remembered that B. coli was not discovered by Escherich until 1885 and not for ten years from that time were the difficulties of distinguishing B. typhosus from B. coli generally recognized. The colon bacillus is so much more vigorous than the typhoid that if a tube of bouillon is inoculated with a large number of typhoid and a very small number of colon bacilli, in twenty-four hours all, or nearly all, the typhoid bacilli will have disappeared. (Lösener.[91]) In 1896 Roux stated that it was impossible to isolate B. typhosus in the presence of colon bacilli.

I. MEDIA DEVISED TO CHECK THE GROWTH OF COLON AND LIQUEFYING BACTERIA.

(*a*) *Carbolic acid media.*

Chantemesse and Widal[19] (1887) used a carbolic acid gelatine for isolating typhoid bacilli from the stools. This was prepared by adding four or five drops of 5% carbolic acid to 10 ccm. of gelatine. The chief value attributed to the carbolic acid was its inhibitory action over the bacteria that liquefy gelatine. Holz,[62] Dunbar,[29] Lösener,[91] Mathews[96] and many others obtained unfavorable results with this method. Kitasato,[72] Holz,[62] and also Dunbar[29] found that the amount of phenol used by Chantemesse and Widal[19] was sufficient to prevent the development of B. typhosus. It is now known that carbolic acid checks the growth of typhoid more than of colon bacilli. Thoinot[144] the same year sought to isolate typhoid bacilli from the River Seine by adding 0.25 gm. of pure carbolic acid to 100 cm. of the water, and from this inoculated gelatine plates. Péré[112] and Vincent[148] added carbolic acid to bouillon in their attempts to isolate Eberth's bacillus. Lösener[91] obtained negative results with carbolic acid bouillon. Working with feces to which a large number of typhoid bacilli had been added, he found that B. coli and allied bacteria grew luxuriantly. Only in rare instances did he recover the typhoid bacillus. Parietti[107] advised the addition of definite amounts of hydrochloric acid and carbolic acid to culture medium. This restricted the growth of typhoid bacilli more than of colon bacilli and hence was discarded. Vincent[148] incubated tubes of phenol bouillon at 42 ° C. He admitted that by this method the typhoid bacillus could not be separated from B. coli. Remy[124] devised a complicated medium containing carbolic acid.

(*b*) *Riedel's iodine trichloride medium.*

Riedel[126] claimed that typhoid bacilli grew in gelatine containing one part of iodine trichloride to 850 parts of medium, while all other micro-organisms failed to grow in a dilution of 1: 1600 of iodine trichloride. Lösener[91] could not confirm these observations.

(*c*) *Rawitsch-Stcherba's α naphtol gelatine.*

Rawitsch-Stcherba[121] employed α naphtol 0.1% in gelatine. According to Lösener[91] this method is valueless. Reischauer[122] found that a 2 pro mille solution of salicylic acid inhibited completely the growth of B. coli, but allowed B. typhosus to develop. His attempt to devise a satisfactory medium for typhoid diagnosis ended in failure.

(*d*) *Hammerschmidt's creosol bouillon.*

Hammerschmidt[50] claimed recently that a solution of creosol destroyed colon bacilli but did not injure typhoid bacilli. Bouillon containing 2.5% liquor cresoli saponatus is inoculated with a fecal suspension. After twenty-four hours v. Drigalski-Conradi plates are inoculated. (*Vide infra*, v. Drigalski-Conradi medium.)

II. MEDIA DEVISED TO PRODUCE COLONIES OF CHARACTERISTIC SIZE OR FORM.

(*a*) *Holz's potato gelatine.*

This was an acid gelatine prepared from the fresh juice of raw potatoes. It was claimed that on this B. typhosus formed colonies that were characteristic. To hinder the development of liquefying micro-organisms 0.05% of carbolic acid was added. Grawitz[46] introduced a new procedure. The stools were frozen for twelve to twenty-four hours. They were then thawed and cultures were made on the potato gelatine. Failure to eliminate contaminating bacteria resulted, for the reason that B. coli and related micro-organisms resist freezing and thawing as well, if not better than B. typhosus. Germano and Maurea[44] by means of Holz's[62] medium isolated B. typhosus a few times. Dunbar,[29] Elsner[30] and Lösener[91] concluded that the so-called characteristic typhoid colonies were due to the inhibitory action of carbolic acid. Sometimes, as Dunbar[29] observed, the development of colon colonies is delayed, and in that case they cannot be distinguished from typhoid colonies.

(b) *Elsner's medium.*

Elsner[30] in 1896 modified Holz's[62] potato gelatine by replacing the carbolic acid by 1% potassium iodide. The typhoid bacilli formed small refractive colonies, looking like drops of dew, that were easily recognized. This was the first method for differentiating colonies of typhoid and colon bacilli that possessed any practical value. By means of it Elsner[30] isolated typhoid bacilli from the stools in 15 out of 17 cases. Pollak,[118] working in von Jaksch's clinic, was able to recover typhoid bacilli by Elsner's method from the stools in 19 out of 20 typhoid cases he examined. Jemma,[63] from Maragliano's clinic, used Elsner's method with success. He obtained B. typhosus from the feces of 30 out of 33 cases. Mark Richardson[125] isolated typhoid bacilli by this procedure in 19 out of 55 stools. The bacteriological diagnosis was made in 10 of the 13 typhoid cases investigated. Sterling[142] obtained positive results in 41 (66%) of 63 stools. In the second and third week 31 examinations were made and 87% of these were positive. Horton Smith[140] examined the stools of 3 typhoid patients on or before the seventeenth day and in each, at the second examination, typhoid bacilli were found in the stools. Of 20 observations made during the later periods of the disease only one gave a positive result.

Brieger,[12] Chantemesse[16] and Lazarus[80] claimed they obtained excellent results with Elsner's medium, but their results cannot be accepted, as they failed to prove that the micro-organisms they isolated were typhoid and not colon bacilli.

Later observers found that Elsner's medium inhibited the growth of typhoid bacilli. In fact, it prevented the development of many of the typhoid micro-organisms. Grimbert and Besson pointed out another serious objection. Bacteria present in feces frequently caused liquefaction of the gelatine, and this vitiated the results.

(c) *Klie's low-percentage gelatine.*

Loeffler[90] had at one time in his laboratory a certain nutrient gelatine in which the typhoid bacilli grew luxuriantly. The colonies possessed projections of unequal length which clearly distinguished them from the colon colonies. The cause of this peculiar growth was not at that time understood. Later it was shown by W. Rosenthal[129] and Klie[73] that these remarkable colonies were due to the soft consistence of the gelatine. Klie[73] used a low percentage (2.5–3.3%) gelatine and on this the typhoid bacilli formed characteristic spreading and thread-forming colonies. He admitted that the colon bacilli sometimes formed similar colonies. Baginsky,[5] while studying cases of cholera infantum, had noted colonies with peculiar ramifying outgrowths not usual to B. coli. Probably the medium was of reduced consistence. With Klie's medium it was necessary to keep the plates at a temperature below 22° C. in order to prevent the gelatine from melting.

(d) *Hiss's plate media.*

Hiss[59] in 1896 devised a plate medium composed of 1% agar, and 2.5% gelatine, 0.5% Liebig's beef extract, 0.5% sodium chloride and 1% dextrose. It was made 2% acid to phenolphthalein. Typhoid bacilli formed in this medium light colonies "with irregular outgrowths and fringing threads." He also employed a semisolid glucose medium which was used in tubes. This contained 0.5% agar and 0.8% of gelatine. In a tube of this the typhoid bacillus produces uniform turbidity at 37° C. within eighteen hours. The colon bacillus does not give this clouding and forms gas from the dextrose. Stroddart invented a similar tube medium composed of 0.5% agar and 5% gelatine.

Hiss[66] later reported that by his method he had been able to isolate B. typhosus in 45 out of 108 cases. Of 19 febrile cases at the New York Hospital he recovered B. typhosus from the stools in 17, that is in 89%.

In 1902 Hiss[58] published the description of simpler media for differentiating typhoid and colon bacilli. The one recommended for the practical examination of typhoid stools consists of 1.5% of agar, 1.5% of gelatine, 0.5% of Liebig's extract of meat, 1% of dextrose and 0.5% sodium chloride. No correction of the reaction is necessary. One or more loopfuls of the stool are transferred to a tube of bouillon or sterile water. With this suspension 5 or 6 plates are inoculated and poured into Petri dishes. The typhoid colonies have the characteristic appearance described.

Higley[57] isolated typhoid bacilli by this method from the feces in 20 out of 21 cases.

Orton and Pratt[108] have seen Proteus colonies on Hiss's medium that closely simulated typhoid colonies.

(e) *Piorkowski's urine gelatine.*

In 1896 Piorkowski[117] introduced a medium containing either 10% to 12% gelatine or 2% of agar and in which beef infusion was replaced by 0.5% peptone urine after the method of Heller. Krause found it was useless for typhoid diagnosis. Piorkowski[117] in 1899 published the description of an improved method. He used a combination of Rosenthal's[129] 3.3% gelatine and Heller's[54] peptone urine. He claimed that typhoid bacilli formed on this, colonies with characteristic wavy hairlike projections.

Unger and Portner[146] examined the stools of 31 cases and found the typhoid bacillus in every case; sometimes in pure culture. The findings of Piorkowski[117] were also supported by Schütze[139] and Mackenna.[94] Other observers found that some species of B. coli formed similar colonies. (Wittich,[154] Bischoff and Menzer,[10] Hayaschikawa,[51] Peppler,[110] Clemm,[21] Gebauer,[43] Herford[56] and others.) All agreed, however, that Piorkowski's urine medium was of aid in isolating B. typhosus from stools. It was difficult to work with it in summer as the gelatine became fluid above 22°. The employment of urine was also an objection. Weil[150] attempted to do away with these defects by using instead of gelatine and urine a mixture of potato juice and beef infusion to which was added 0.75% of agar. On this medium typhoid bacilli formed characteristic colonies with wavy outgrowths. Krause[77] was unable to confirm the claim of Weil.[150] Mayer used urine after it had been inoculated with a culture of Proteus vulgaris. With the urine of individuals on a high proteid diet he was not able to prepare a satisfactory medium. Krause[78] thinks this was due to the high percentage of sodium chloride present in such urines. Krause[78] found that only 2 of 80 different urines examined were suitable for the preparation of Piorkowski's urine gelatine. Klinger[74] called attention to the danger of the plates being ruined by liquefying bacteria which are not uncommon in the feces. Furthermore, the composition of the urine gelatine is not constant, and hence there is no possibility of comparing results. (v. Drigalski-Conradi.)

(*f*) *Krause's urea gelatine.*

Krause[77] recommended an agar gelatine medium containing 2.5% urea and of 0.3% acidity.

(*g*) *Capaldi's gelatine agar.*

In 1896 Capaldi[14] advocated a medium containing 2% of agar, 1% of gelatine, and 1% of glucose or mannite. The surface typhoid colonies are flat, homogeneous and lighter than the colon which are thicker and more granular. He isolated B. typhosus from the stools several times. According to Hiss this medium is of practical value, although Capaldi[14] admitted that similar colonies might be formed by other micro-organisms.

(*h*) *Kraus's glucose glycerine agar.*

Kraus[76] (1900) used glycerine agar containing 2% glucose, and claimed that with this medium he was able to isolate B. typhosus from the stools of all the typhoid cases he examined, 4 in number.

III. MEDIA DEVISED TO PRODUCE COLONIES OF CHARACTERISTIC COLOR.

(*a*) *Noeggerath's medium.*

Grancher and Deschamps[45] used Noeggerath's[102] medium which contains a mixture of aniline dyes. They claimed that the typhoid bacillus could be distinguished from other bacteria by the color of the colonies. Holz,[62] Gasser,[41] and Germano and Maurea[44] found that the medium could not be used for this purpose. The color of the colonies was influenced greatly by slight variations in the mixtures of the dyes, in the nutritive substances, the reaction, the presence of air, etc. (Roth.)

(*b*) *Gasser's fuchsine agar.*

Gasser[41] for recognizing typhoid colonies depended upon the amount of decolorization of an agar containing fuchsine. This method was soon proved to be useless.

(*c*) *Marpmann's media.*

Marpmann[92] devised media containing reducible dyes. Lösener[91] found that in these the typhoid and colon bacilli produced colonies of similar appearance.

(*d*) *Uffelmann's methylene blue gelatine.*

Uffelmann[145] proposed the use of an acid gelatine colored with methylene blue. For differentiating typhoid from colon bacilli Dunbar[29] found that it was "*nicht eine Erleichterung, sondern eine Erschwerung der Aufgabe.*" Robin[127] mixed bouillon with methylene blue. He claimed that in this typhoid bacilli could readily be differentiated from colon bacilli.

(*e*) *Phenolphthalein media.*

Phenolphthalein was used as an indicator in fluid media by Abba,[1] Ramond,[120] Graziani,[47] and Gautié,[42] and Merrieux and Carr.[99] Phenolphthalein media have recently been recommended by Zielleczky,[158] Omelianski,[105] and Wolff.[155]

(*f*) *Roux's artichoke medium.*

Artichokes were used by Roger[128] and their decoction by G. Roux.[134] Colon colonies are yellowish on this medium and the typhoid colonies are colorless.

(*g*) *Neutral red media.*

Rothberger[132] found that in neutral red agar typhoid and colon bacilli could readily be differentiated. In the case of the typhoid bacillus no change in the color occurs, but with B. coli there is developed a beautiful canary yellow with a greenish fluorescence. He prepared a neutral red agar containing 0.3 gm. glucose and 1 ccm. of an aqueous saturated solution of Ehrlich's neutral red added to 100 cc. of neutral agar. A higher concentration of neutral red checks the fermentation of glucose.

Oldkop[114] improved the medium by using only a 0.3% agar. This had the advantage that fluorescence and decolorization of the neutral red begins within sixteen to twenty hours at 37° C. Czaplewski[24] prefers a neutral red gelatine to the neutral red agar.

FitzGerald and Dreyer[37] have shown that an important factor is the reaction of agar or glucose agar. They employ a 3% lactose bouillon, to which 0.5% of a 1% watery neutral red has been added.

Grünbaum and Hume[43] modified MacConkey's[93] bile-salt agar by the addition of 1% of ½% watery solution of neutral red. Surface colonies of B. coli are crimson and can easily be distinguished from the yellowish white typhoid colonies. Reischauer[122] does not speak favorably of this medium.

(h) *Wurtz's litmus-lactose agar.*

Wurtz[157] in 1891 devised a medium containing lactose and litmus. The colon bacilli ferment lactose with the formation of acid, while typhoid bacilli do not act on lactose. For this reason the colon colonies became red while the typhoid had a bluish hue, and hence could be readily picked out.

In 1894 Mathews,[96] working in Professor Sedgwick's laboratory at the Massachusetts Institute of Technology, employed a modification of Wurtz's medium in examining suspected water. He added 1 ccm. of the water directly to the litmus-lactose agar and plated it in the usual manner. Lösener[91] found Wurtz's method unsatisfactory for the examination of stools. A few colon colonies caused a reddening of the entire plate. v. Drigalski and Conradi[28] showed that failure to obtain constant results was due to the fact that Mathews[96] did not realize the importance of surface inoculation.

(i) *Kashida's litmus urea agar.*

Kashida[69] modified Wurtz's litmus lactose agar (*vide infra*) by the addition of 1% urea. For differentiating colon bacilli he depended not on the acid reaction, but on the subsequent alkali production, which results from the action of B. coli on proteids. The alkali reaction is hastened by the addition of the urea to the medium. The red color produced in about sixteen hours by B. coli is changed to a blue in twenty-four hours. The typhoid colonies and the medium surrounding them undergo no change of color.

(j) *Chantemesse's litmus-lactose agar.*

In 1901 Chantemesse[17] advocated a new method. Inoculations were made on agar containing carbolic acid. Surface colonies that resembled typhoid were transferred to a litmus lactose medium. If the micro-organisms grew characteristically in this the agglutination test was performed. The following year Chantemesse[17] simplified his procedure by adding the lactose and the litmus to the carbolic acid agar. Petri plates were prepared and the surface of the solidified agar was inoculated. A series of 5 or 6 plates was used for each test.

(To be continued.)

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The King of Spain has conferred upon Dr. Gutierrez, the physician in attendance upon the Queen of Spain in her recent confinement, the title of Marquis San Diego and the Grand Cross of the Order of Isabella the Catholic.—*British Medical Journal.*

Reports of Societies.

THE AMERICAN SURGICAL ASSOCIATION.

Report of Meeting Held at Washington, D. C., May 7, 8 and 9, 1907.

ABSTRACT OF THE PRESIDENT'S ADDRESS, BY DR. DUDLEY P. ALLEN, OF CLEVELAND, OHIO, ENTITLED "THE TEACHING OF SURGERY."

In this most interesting address Dr. Allen goes briefly over the ground of both good and bad methods of teaching surgery, summarizing his paper as follows:

The purpose of this paper is to urge for the training of surgeons, first, thorough and broad instruction; second, prolonged hospital residence and post-graduate study; and third, the establishment of some standard of attainment which must be reached by men to gain them general recognition by the profession. If these ends be attained, the community and the general profession will not long remain in doubt as to the men who are deserving of their confidence and support. Such a standard would do much to protect the public from incompetent men, and to place in the hands of capable surgeons those facilities which they alone are able to utilize to the best development of their profession and the best interests of humanity.

ABSTRACT OF PAPER ON "SPINAL ANESTHESIA," BY PROFESSOR KÜSTER, OF MARBURG.

Professor Küster, in this very interesting paper, dealt particularly with the drug known as novocain as a spinal anesthetic. He presents his conclusions based on about 300 cases of spinal anesthesia induced by this drug. His results have not only been most satisfactory, but most convincing to him, that in operations upon the lower extremities and, in fact, in operations up to the umbilicus, spinal anesthesia is justifiable. He also believes it very suitable for examinations and for the introduction of instruments. Although he has frequently gone above the line of the umbilicus when using novocain, he finds that it sometimes is necessary to induce general narcosis.

It has been Küster's experience that patients during operations under this method feel absolutely no pain, and suffer almost no after-effects. There is, however, generally a feeling of sickness and desire to vomit, but, on the average, at the end of an hour and a half the action of the anesthetic will be over and the patient will begin to experience genuine sensations of pain.

Some patients, who during the anesthetic experience motor paralysis, later assert that they still feel a sensation of weakness in their legs, which, although it does not prevent their walking, makes them limp a little. After a few hours the power of movement is completely restored. It is noteworthy that sensation more quickly returns than does motion.

The principal ill-effect following lumbar anesthesia is headache, which appeared in 14% of Küster's first 200 cases. He states, however, that this can be readily relieved by puncture of the dural cavity and the withdrawal of about 10 cc. of fluid.

The author has only once seen pneumonia follow this anesthetic, and it is noticeable that in this case a general narcosis was finally necessary. He therefore believes the fact that pneumonia seldom or never follows spinal anesthesia is one of the most powerful arguments in favor of its employment.

Abstract of Dr. John B. Roberts' (Philadelphia) paper on

CONTINUOUS PASSIVE HYPEREMIA IN DELAYED UNION OF FRACTURES AND IN HASTENING THE CONSOLIDATION OF FRACTURES.

DR. ROBERTS called attention to the fact that continuous hyperemia, produced by a rubber bandage carried around the limb above the seat of fracture, had a tendency to cause the formation of callus in cases of delayed union of fractures. During the use of the rubber bandage calcium salts, phosphorus in some form, and tonics were to be used. The patient was to be encouraged to live as much as possible in the open air and placed in circumstances where he would be happy. The method is a simple one, but efficacious when the delay in union is not due to entanglement of the fragments in the muscles so that correct apposition cannot be obtained. Where there is such a mechanical impediment to union, incision with readjustment of the relations of the soft tissues and the bone is necessary. Fixation with nails or staples can then be employed, and continuous hyperemia used as an adjuvant. It is probably best to have the resection wound healed, if possible, before using the congestion method.

Dr. Roberts had also employed continuous hyperemia in the treatment of recent fractures of the extremities with the hope that consolidation would thereby be hastened.

When the author first proposed this method of treating delayed union about twelve years ago, he thought it was novel, but subsequently found that Helferich had used it previously. Years before Helferich had employed the rubber bandage for this purpose; Nicoladoni had made the same suggestion when discussing a mode of producing local congestion which had been used by von Dumreicher in ununited fractures.

Abstract of DR. ROBERT W. JOHNSON'S (Baltimore) paper on

RESECTION OF THE SOUND FEMUR IN GIGANTISM AND ASYMMETRY.

DR. JOHNSON suggests the shortening, by operation, of sound femora in order to decrease height, or make even the legs of those suffering from shortening due to previous fracture or other cause.

His proposal is as follows:

After the patient has accepted the operation with a full knowledge of its possibilities, under the most rigid asepsis and careful constitutional building up, the surgeon should cut down on the femur at the junction of its middle and lower third, and from that region excise from two to two and a half inches from the shaft, then bring the proximal and distal ends together by chromicized catgut, silk or silver wire; then, dressing the wound with or without a catgut drain, encase the limb from toe to pelvis in plaster of Paris, so to remain until union becomes firm. Without infection the limb should unite in about ten weeks.

Dr. Johnson does not propose, in cases of performing this operation for excessive height, operating on both femora at the same time, but suggests an interval of at least three months between the operations.

Abstract of DR. FREDERICK KAMMERER'S (New York) paper,

REMARKS ON A CASE OF TEMPORARY RESECTION OF BOTH SUPERIOR MAXILLÆ (KOCHER) FOR NASO-PHARYNGEAL TUMOR.

DR. KAMMERER reports the case of removal of a fibroid tumor of the nasopharynx by temporary resection of both superior maxillæ after the method of Kocher. This method consists in separating the alveolar processes of both superior maxillæ with a chisel in a horizontal direction, beginning in each anterior opening of the nares. Both superior maxillæ and, if necessary, the entire soft palate, are then divided in the median line, after which the alveolar processes can be forced to either side, opening up the nasal cavity after division of the mucous membrane lining its floor. This method has been fully described by Lanz in 1893.[1] It not only opens up a passage of such size that the largest tumors can be removed *en masse*, but it has the additional advantage of bringing into view the origin of the tumor at the base of the skull or the anterior surface of the upper vertebræ, thus enabling thorough removal of the same.

In the case reported the patient had already undergone an attempt, by the Chassaignac-von Bruns method at the hands of another surgeon, at removal of the tumor.

Dr. Kammerer performed the operation in 1904. Several months ago he examined the patient and could find no recurrence of the growth. No injury resulted to the upper row of teeth, and there was no deformity in the upper jaw.

The great advantage Kocher's operation possesses over the other osteoplastic methods is the slight ultimate deformity it causes, the line of suture through the upper lip being the only resulting disfiguration.

Abstract of DR. J. M. T. FINNEY'S (Baltimore) paper on

A NEW METHOD OF RHINOPLASTY BY MEANS OF ONE OF THE FINGERS.

DR. FINNEY reported two cases of reconstruction of the nose by means of the ring finger. In both cases the bony support of the nose, including the septum, was entirely destroyed; the integument remained but was retracted and distorted. Instead of the usual prominence of the nose, in each case there was a depression.

The method employed in making use of the ring finger was as follows:

After complete removal of nail and matrix the dorsum of the finger up to the distal end of the first phalanx was denuded of skin. For about the distance of 1 cm. the entire circumference of the tip of the finger was likewise denuded of skin, leaving exposed the end of the distal phalanx. All bleeding was stopped. The skin covering the nose was freed from its attachments without making any external scar. The skin of the nose was then stretched carefully and thoroughly, in order to give as much integument as possible for the new nose. Next, the soft parts were freed from the nasal process of the frontal bone within the nose by means of a knife passed through the nasal opening. The inner surface of the skin forming the nasal opening was denuded on the inner side in the middle line so that a raw surface might be opposed to the denuded surface of the dorsum of the finger, which was now inserted into the nasal opening, until the tip of the distal phalanx rested upon the nasal process of the frontal bone. Sutures passed through the free border of the tip of the nose and the edge of the skin over the dorsum of the first phalanx held the finger in place. Raw surfaces were now in opposition so that it was possible to obtain a new blood supply for the finger at the tip and dorsum. The skin covering the palmar surface of the finger, which was to form the inner lining of the nose, remained undisturbed. After about two weeks, during which time the hand had been held in position by adhesive strips and plaster-of-Paris bandages, the finger was disarticulated at the metacarpophalangeal joint and left for another week. At the end of this time the tissues in the middle line over the nasal spine of the superior maxilla were split and the finger flexed at right angles at its proximal phalangeal joint. There was then inserted into this opening the free end of the first phalanx, which was held there by stitches through the soft parts; this phalanx formed the columna of the nose, the second and third phalanges proving a very satisfactory support for the dorsum.

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[1] Deut. Zeitschr. für Chir., vol. xxxv.

Later on simple plastic operations under cocaine were performed to improve the appearance of the columna, which was too large.

The nose is freely movable from side to side, bone not having been opposed to bone.

Dr. Finney's first case was operated upon in 1902. He has lost track of this patient but on last report the operation had proved most satisfactory.

His second patient was a young woman of sixteen years of age, upon whom he operated some six months ago. He presented photographs showing the improvement in her appearance.

Dr. Finney then briefly reviewed the literature on the subject of reconstruction of the nose by means of one of the fingers.

Abstract of Dr. Charles H. Mayo's (Rochester, Minn.) paper on

THE TREATMENT OF THE POSTERIOR CAPSULE OF THE GLAND IN THYROIDECTOMY DEVELOPED FROM 375 OPERATIONS FOR GOITER.

The physiologist, in expanding our knowledge of the thyroid and associated ductless glands, has shown the necessity for greater care and changes in technique in the surgical treatment of goiter.

The early loss of the thyroid prevents mental and physical development, and the total loss of its function in the adult causes myxedema; this latter condition is well known and the surgeon avoids producing it.

The tetany which follows operation for goiter we know to be from injury or removal of the parathyroid epithelial bodies, which are located posterior to the thyroid gland.

By preserving the posterior capsule of the thyroid gland in operations for goiter we save the parathyroids and avoid much of the danger of injuring the recurrent laryngeal nerves.

Abstract of Dr. George Tully Vaughan's (Washington) paper on

ANEURISMAL VARIX: A CASE OF PULSATING EXOPHTHALMOS. TWO CASES OF ENORMOUS DILATATION AND ONE CASE OF MODERATE DILATATION ON THE CARDIAC SIDE OF THE WOUND.

Dr. Vaughan reported a case of pulsating exophthalmos probably caused by communication between the internal carotid artery and cavernous sinus, treated by ligation of the internal carotid artery near its origin. Death resulted from cerebral anemia. He also reported three cases of aneurismal varix with dilatation of the vein on the proximal or cardiac side of the point of communication between the artery and vein, and discussed the causes of the dilatation which occurred where it would least be expected to occur.

Abstract of Dr. Oscar H. Allis's (Philadelphia) paper on

GUARDED VERTICAL TRACTION IN ITS APPLICATION TO THE REDUCTION OF CONGENITAL DISLOCATIONS.

Dr. Allis calls attention to the method of horizontal traction upon the extended femur, stating that its adoption is based on the principle that dislocations of the hip occur from violence exerted upon the extended limb, and the teaching of the early surgeons that the chief obstacle to reduction lay in the resistance of the muscles.

To overcome this resistance Sir Astley Cooper resorted to blood-letting, emetics and the compound pulleys. Surgeons, in attempting to restore the congenitally dislocated hip, have resorted to prolonged traction and tenotomies with only trifling encouragement. Tenotomy leaves so much unaccomplished that Lorenz abandoned it and resorted to rupture of all resisting structures. He then reduced his cases, often with extreme difficulty, by means of horizontal traction.

The obstacles to reduction after rupture of the muscles must lie in the ligaments and fasciæ which cannot be torn. The chief difficulty lies in the iliotibial band, which in experimental work resists all efforts at extension, even after the muscles are cut. To cut this band as an adjuvant to efforts at reduction would be but a temporary makeshift, as it is one of the chief dependencies after reduction for a useful limb.

Dr. Allis therefore resorts to vertical traction. In this position the head of the femur lies directly below the socket, and the obstructing muscles, fasciæ and ligaments are relaxed. By means of a lever, traction is applied to the vertical femur, and to guard against over-action from such advantageous force, a spring balance is placed between the knee and the short arm of the lever. In young children he applies about twenty pounds of traction for fifteen minutes and then unhooks the apparatus and attempts reduction. This he does by raising the flexed limb vertically, and when it has reached the level of the socket he abducts and presses the head inward by using the thumb of his unoccupied hand. If the reduction is easily accomplished a fixation dressing is applied. If not, a second series of traction exercises is resorted to. The apparatus used permits of every motion that will be likely to meet with resistance. The limb can be adducted, abducted, flexed, or extended, and even circumducted, while gradually increasing traction is being made, and the operator proceeds with the utmost confidence, since he can read upon the register of the spring balance the exact amount of force he is exerting.

Experience with the lever proved that the long fulcrum of the lever did not give the operator the freedom that was desirable, hence an instrument was devised with parallel fulcra, and instead of a lever a screw is employed.

The following is a summary of the paper by Dr. J. Collins Warren, of Boston, and compiled by Drs. R. B. Greenough, C. C. Simmons and J. D. Barney:

CANCER OF THE BREAST.

Out of 416 cases of primary operation for cancer of the breast at the Massachusetts General Hospital from 1894 to 1903, inclusive, 376 were traced to a conclusive end result at an average period of eight years after operation.

Sixty-four cases were alive and well and 7 died, without recurrence over three years after the operation.

Counting in the operative mortality, there were 320 attempts at radical cure, 67 of which, or 20%, were successful.

During this same period palliative operations were performed on 56 patients (15%) and 52 cases were discharged untreated.

Cases in which the tumor was ulcerated, or was adherent to the skin or to the chest wall, and cases in which the axillary glands were palpably enlarged gave notably less promising results than when these conditions did not exist.

No case with palpably enlarged cancerous glands above the clavicle and no case of cancer of both breasts was cured.

Medullary carcinoma was more grave than scirrhus, and adenocarcinoma and colloid were relatively of a far less malignant type.

The duration of the disease, other than in the individual case, exerted little influence on prognosis.

Extensive operations with wide removal of skin gave the greatest freedom from local recurrence. Removal of the pectoralis minor appeared to be of slight significance. Incomplete operations in early cases yielded better results than extensive operations on cases which were well advanced.

Recurrence in the scar occurred in less than one half of the cases. Internal metastasis was most frequent in the lungs and mediastinum, in the axillary and supraclavicular glands, the liver and the spine.

Seventeen out of 88 cases, or 19%, of those passing the three-year limit without evidence of recurrence showed recurrence later, and 4 cases developed recurrence six years or more after the operation.

Dr. Frederic S. Dennis, of New York, presented a contribution to the symposium on

THE END RESULTS FOLLOWING CANCER OF THE BREAST.

He calls attention to a paper which he read in 1891, reporting 116 cases of cancer of the breast with less than 1% mortality, 5% local recurrences and 45% permanent cures. In 1895 he read another paper before this association and reported a smaller number of cases with a much larger percentage of permanent cures. From these two series of cases he has selected 50 upon which to base the present paper. These 50 cases are selected solely upon the knowledge of their subsequent histories, and no cases are included in this list the subsequent histories of which are not known.

In the list of 50 cases he divides the entire number into three groups, the first group comprising cases all of which have been cured beyond the three-year limit of time, and a few even twenty-five years. The second group cured beyond the three-year limit of time and died many years after the operation from causes independent of carcinoma. The third group comprises cases all of which have been cured beyond the three-year limit of time, but which have died many years after from metastases in the internal organs.

In the first group he reports 39 cases permanently cured and nearly all of these patients have been seen or heard from very recently. He calls attention, besides the radical character of the operation, to a study of the morphological condition of the tumor, as that has much more to do with the prognosis than has hitherto been supposed.

In the second group there were 4 cases. They died from acute diseases, though they lived many years after the operation.

The third group, of which there were 7, died many years after their operation from metastasis of the internal organs.

The results of these investigations have demonstrated some important clinical facts: (1) That cancer of the breast is sometimes permanently cured, or at least twenty-five years have elapsed with no evidence of a return. (2) That cases may go as long as eighteen years and yet finally have a return in some other organ. (3) That in the cases in which no return has been observed the operation was performed almost without exception within six months from the incipiency of the disease, thus showing the great importance of early operation. (4) That the more radical the operation within reasonable limits, the better the prognosis. (5) That in some cases in which the outlook was most unfavorable as manifested by extensive ulceration, hemorrhage, widespread axillary involvement, the end results have been entirely satisfactory.

Under each of these headings remarks were made.

The author lays particular stress upon the following points: That early operation is most important; the radical character of the operation is most earnestly advocated; that in some cases with extensive ulceration and hemorrhage with widespread axillary involvement, the end results have been satisfactory. In proof of this he cites several cases where the patients are well at the present time after four and eight years following operations under these most unfavorable conditions.

Finally, from a review and study of these fifty cases, it follows that surgery has made distinct advances in the cure of this most dreaded disease. It also follows that much is to be learned in regard to the accomplishment of a more uniform percentage of recoveries. It is also obvious that surgery must direct its attention to a study of the factors which influence the results of operative treatment. It is likewise evident that a more unanimity of opinion must be arrived at by surgical pathologists whose work in the histological formation of cancer is yet far from satisfactory, as one pathologist denominates a certain tumor cancerous, while another calls it by some other name. This leads to confusion and destroys the value of the results of operative treatment. The question of metastasis, too, demands more careful research, as it is yet far from clear as to where the metastasis is likely to occur in the individual case. The tendency of certain benign breast tumors is not yet understood. The period of time as to what constitutes a permanent cure following an operation is not agreed upon by all surgeons. The radical character of the operation is admitted by all as the one essential factor in the operative treatment. This widespread discussion before this association should have an influence for good on behalf of those suffering from cancer of the breast, and in years to come operative treatment in this department of surgery should give satisfactory and brilliant results.

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Book Reviews.

Anatomical Terminology. With Special Reference to the BNA. By Lewellys F. Barker, M.D., Professor of Medicine, Johns Hopkins University, Baltimore, formerly professor of Anatomy, Rush Medical College, University of Chicago. Illustrated. Pp. 103. Philadelphia: P. Blakiston's Son & Co. 1907.

In descriptive anatomy, as in systematic zoölogy, synonymy has been a heavy burden. In a current text-book a paragraph of five lines begins with "*The Corium, Cutis vera, Dermis,* or *True Skin*"; and another, which is not exceptional, announces "*The Simple Follicles, Intestinal Glands, Crypts,* or *Glands of Lieberkühn, glandulæ intestinales* [*Lieberkuehni*]." In America since 1871, Prof. Burt G. Wilder has been active in reform with the following results: In 1889 the Association of American Anatomists voted to employ the adjectives *anterior, posterior, dorsal* and *ventral,* in the sense of toward the head, tail, back, and abdomen, respectively. They substituted *thoracic vertebra* for dorsal vertebra, and approved the terms *calcar, hippocampus, pons, insula, pia* and *dura.* In 1896 the Neurological Association adopted forty terms pertaining to the nervous system. The Association for the Advancement of Science went so far as to sanction the most unfortunate principle of Professor

Wilder's system, namely, that terms should be single words rather than descriptive phrases. This principle leads (1) to the introduction of shorter new names to replace more familiar older ones; (2) to the omission of nouns, making the descriptive adjective the complete term; and (3) to the fusion of two words in one, often combined with the elimination of certain syllables. The omission of *mater* from dura mater, and of *tunica* from tunica muscularis is common and desirable in the laboratory, but the noun is understood and is an essential portion of the name. Nothing is gained by ruling it out of existence. The following are examples of fused words,—*transection* for transverse section; *postcava* for vena cava posterior; *alinjected* for injected with alcohol; *terma* for lamina terminalis. In this system the elimination of synonyms becomes secondary to a kind of anatomical spelling reform.

In 1889 the *Anatomische Gesellschaft* appointed a committee of nine eminent anatomists to revise anatomical nomenclature, and after six years' labor it reported a list of about forty-five hundred Latin terms. An even larger number of synonyms were rejected. Unfortunately *anterior* is used as equivalent to *ventral*, *superior* is sometimes employed for *anterior*, and in some other instances, as in naming the dorsal pancreas *accessory pancreas*, the bias of human anatomy is apparent. In this respect Professor Wilder's rejected principle ought not to be abandoned. The German committee has adopted thirty-four of the forty terms sanctioned by the American Neurological Association; in ten of these, however, nouns which had been dropped as superfluous are retained. In general, the committee declined to introduce new terms, to combine nouns and adjectives, or to eliminate syllables or letters for brevity. It followed Professor Wilder's advice in preferring descriptive to personal names, definitely retaining only two of the latter, *Wolffian* and *Muellerian*. Intestinal glands, parotid duct, splenic nodule and renal corpuscle replace glands of Lieberkuehn, Stenson's duct, and Malpighian corpuscle, the last term having been applied to radically different parts of the spleen and kidney.

After a trial of more than ten years the anatomical nomenclature adopted at Basle, and known consequently as the BNA, has become the standard terminology. The writer has found it necessary to have the report of the German committee always at hand. This report has been made easily available by Professor Barker of Johns Hopkins University. In a preface of twelve pages he describes the origin of the Basle nomenclature. On the left-hand pages of his book are the Latin terms in two columns, reprinted in full and without modification from the German report. On the right-hand pages there are two corresponding columns of English translations of the terms, together with some of the current rejected names. He says, on page 1: "The English vocabulary is simply explanatory; in many instances it would be unwise to use the English synonyms given, and in many more instances anatomists would differ as to the most suitable English equivalent to be chosen. Each anatomist is, of course, at liberty to use whatever English equivalent he desires for the official Latin terms. Students are strongly advised, however, to use the original Latin terms as English words. The Latin terms are the only authorized ones." We agree with Professor Barker that "the sooner a general decision to adopt these terms is reached, the better it will be for anatomical instruction and research, and the easier it will be for teacher and taught."

F. T. L.

Retinoscopy. By James Thorington, A.M., M.D. Philadelphia: P. Blakiston's Son & Co. 1906.

That this little book of some sixty-seven pages, an abstract of the author's previous writings and lectures on the subject, has reached a fifth edition is sufficient evidence of the popularity accorded by those for whom it was intended. A careful revision and the incorporation of illustration and description of several new instruments including, of course, the electric retinoscope, brings the work thoroughly to date. W. D. H.

The Ophthalmoscope and How to Use It. By James Thorington, A.M., M.D. Philadelphia: P. Blakiston's Son & Co. 1906.

It has been the intention of the author to prepare for the medical student and general practitioner a book of convenient size and not too technical in character, from which may be obtained a fair working knowledge of the ophthalmoscope together with the ability to correctly interpret the observations thereby obtained. In the preparation the author's endeavor has been to arrange the subject matter systematically and practically as regards the chapters and pages. The sketches in color were prepared, under the personal supervision of the author, by an artist of well-known ability and especially skillful in that particular variety of illustration. The volume is compact, it contains two hundred and ninety-eight pages, seventy-three illustrations, of which twelve are in color, is well bound and indexed. W. D. H.

Problems in Animal Metabolism. A course of lectures given in the Physiological Laboratory of the London University at South Kensington. By J. B. Leathes, Lecturer on Physiology in the Medical School of St. Thomas's Hospital. Philadelphia: P. Blakiston's Son & Co. 1012 Walnut Street. 1906.

These eight lectures are a valuable asset for the student of medicine who desires to keep in touch with modern work in metabolism. The first lecture gives a delightful résumé from a fresh point of view of physiological chemistry and metabolism. Then follow six lectures on the assimilation, synthesis and catabolism of carbohydrates, fats and proteids, with a concluding lecture upon the metabolism of cyclic formations. The lectures are technical and can be appreciated only by advanced workers. To such we would recommend them most highly.

The Massachusetts Medical Society

ONE HUNDRED TWENTY-SIXTH ANNIVERSARY

The Annual Meeting will be held at 9.00 o'clock A.M., Wednesday, June 12, 1907, in the building of the Massachusetts Charitable Mechanic Association, on Huntington Avenue, Boston.

Meetings of Sections will be held in the same building, on the preceding day, Tuesday, June 11.

FRANCIS W. GOSS, *Secretary.*

Roxbury, May 14, 1907.

OFFICERS OF THE SOCIETY, 1906-7.

GEORGE W. GAY, *Newton*, President.
LEONARD WHEELER, *Worcester*, Vice-President.
FRANCIS W. GOSS, *Roxbury*, Secretary.
EDWARD M. BUCKINGHAM, *Boston*, Treasurer.
EDWIN H. BRIGHAM, *Brookline*, Librarian.

STANDING COMMITTEES.

Of Arrangements

A. P. Perry
G. S. C. Badger
Lincoln Davis
L. W. Gilbert
C. C. Simmons
G. H. Francis

On Publications

O. F. Wadsworth
G. B. Shattuck
H. L. Burrell

On Membership and Finance

F. W. Goss
A. Coolidge, Jr.
Walter Ela
C. M. Green
H. A. Wood

To Procure Scientific Papers

J. B. Blake
M. D. Clarke
B. P. Croft
R. C. Larrabee
Chas Harrington

On Ethics and Discipline

C. G. Carleton
Leonard Wheeler
Edward Cowles
J. F. A. Adams
J. A. Gage

On Medical Diplomas

H. E. Marion
O. F. Rogers
H. W. Newhall

On Medical Education

E. H. Bradford
H. C. Ernst
H. D. Arnold

On State and National Legislation

G. W. Gay
G. G. Sears
H. P. Bowditch
S. D. Presbrey
D. D. Gilbert

TUESDAY, JUNE 11, 1907, 10 O'CLOCK A.M.

The Fellows of the Society are invited to visit the Massachusetts General Hospital, on Blossom Street; the Boston City Hospital on Harrison Avenue; the Massachusetts Eye and Ear Infirmary, 223 Charles Street; the Children's Hospital on Huntington Avenue; the Carney Hospital, South Boston; the New England Hospital for Women and Children, Roxbury; the Free Hospital for Women, Pond Avenue, Brookline; and the Clinical Laboratories at the Massachusetts General and the Boston City Hospitals.

Prof. Thomas Dwight has an interesting collection of anatomical specimens which he will personally show at the Warren Museum in the Harvard Medical School (top floor of Administration Building) on Tuesday, from 3 to 5 P.M.

2 O'CLOCK P.M. MEETINGS OF SECTIONS.

Unless previously adjourned, to be closed at 4 P.M., that Fellows may attend the meeting of the Committee on Tuberculosis, and hear the paper by Dr. Theobald Smith.

Papers will be read as follows:

Section in Surgery

Dr. H. L. BURRELL, Boston . . . . Chairman.
Dr. J. BAPST BLAKE, 178 Beacon St., Boston, Secretary.

OPERATIVE TREATMENT OF VARICOSE VEINS. — By Dr. J. T. Bottomley, of Boston.

THE PROSTATE FROM THE SURGICAL STANDPOINT. — By Dr. C. S. Benson, of Haverhill.

LANTERN-SLIDE DEMONSTRATION OF THE FACTS CONCERNING STENOSIS OF THE PYLORUS IN INFANCY; ITS DIAGNOSIS AND TREATMENT, WITH THE REPORT OF THREE CASES SUCCESSFULLY OPERATED UPON. — By Dr. C. L. Scudder, of Boston.

TWENTY-TWO YEARS' EXPERIENCE IN THE TREATMENT OF STRICTURE OF THE URETHRA. — By Dr. F. S. Watson, of Boston.

Section in Medicine

Dr. LEONARD WHEELER, Worcester . . Chairman.
Dr. R. C. LARRABEE, 912 Beacon St., Boston, Secretary.

SUBACUTE POLYMYOSITIS, WITH A REPORT OF THREE CASES. — By Dr. B. T. Burley, of Worcester.

OPSONINS AND BACTERIAL VACCINES. — By Drs. L. S. Medalia and Timothy Leary, of Boston.

CLINICAL EXPERIENCE IN THE USE OF BACTERIAL VACCINES IN THE TREATMENT OF JOINT DISEASES, TUBERCULOUS AND NON-TUBERCULOUS. — By Dr. C. F. Painter, of Boston.

THE TREATMENT OF TYPHOID FEVER WITH SPECIFIC SERA, FILTRATES AND RESIDUES. — By Dr. M. W. Richardson, of Jamaica Plain.

history and excellent achievement, will be in a measure submerged by the great national organization of which they form a part. We have long felt, and on various occasions expressed the opinion, that the future welfare of the medical profession depends upon the proper relationship between the larger central body and the smaller state societies. We are convinced that anything which tends toward sapping the autonomy of the state organizations will be likely in the long run to disintegrate the central body. It is altogether desirable, therefore, that the state societies should meet each year with enthusiasm, should present programs of vital interest to the profession at large, and should assert their legitimate independence, while perfectly realizing their relationship to the central society. It has before been pointed out that, with the rapid development of the country at large, the medical interests of its various sections are likely to become more and more divergent, and that, in consequence, the natural evolution will be the development of relatively independent local organizations with some ultimate affiliation to a central society. The whole question is one of much interest and one which it is possible may work out to a successful conclusion. In the meantime, however, it is desirable that the state societies do not lose sight of their own privileges and prerogatives, and that they do their utmost to perfect their own organizations, and, secondarily, the geographical group to which they may belong. By this means the best good of a central society will be subserved.

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HOSPITAL SERVICES.

The rapid development in the last few years of medical instruction, and the accompanying modifications of hospital clinics to meet the changing conditions is of interest from many points of view. The increasing recognition of the fact that the wards of a hospital constitute the final laboratory training of the student has naturally led to an inquiry as to the most efficient means of subserving the interests of both patient and student. In this country the growth of medical schools and hospitals has for the most part been along independent lines. The hospital has only in rare instances been the center from which the medical school has sprung. On the other hand the medical school has rarely been able to affiliate itself closely with a great hospital. This artificial separation between medical teaching and practice has undoubtedly been detrimental to each. Hospitals have developed without the stimulus of the presence of medical students and all which that implies, whereas, medical schools have quickly reached the limit of their growth when independent of clinical facilities.

A notable exception to this unfortunate independence of development is the Johns Hopkins Hospital, of which the school of medicine is an integral part and has been from the beginning. Other medical schools of the first rank are emulating this example, and the true university hospital is likely soon to be widely realized, to the manifest benefit of a comprehensive medical education.

The problem which meets such a university-hospital, regarding the appointment of its medical staff, is a simple one. Those men are naturally appointed to positions in the hospital who hold places as teachers in the associated medical school. In other words the medical school has the privilege of appointing its clinical teachers, and the head of a department in the school likewise becomes the head of a department in the hospital. A service is under the immediate and continuous jurisdiction of a single head. This plan has long been in vogue at the Johns Hopkins Hospital, with what success is generally known.

It is, however, altogether natural that in large communities where hospitals have grown up independently of medical schools a divided form of service should have been adopted, without definite gradations of rank, except as designated by the terms, "out-patient" and "house." The manifest advantages of this system are that more men attain to high hospital rank; that the service is not so exacting, and that the hospital derives a certain benefit from the varying points of view of its numerous staff. The disadvantages of such divided services, especially from the point of view of teaching, are that a single policy cannot be carried out, that the teacher has an incomplete control of clinical material and that research is thereby hindered.

The university system, as adopted in Germany, solves many educational problems. The peripatetic method is rendered possible by uniformity of standard, so that a teacher, if checked in his career at one university, may be summoned to a higher position in another. It is therefore natural that hospital services with single heads and graded assistants are there in vogue to the great benefit of medical education. How far it is possible or desirable to introduce this method completely into this country is becoming a question of increasing importance.

A move of significance in this connection is that begun by the Carney Hospital in South Boston some years ago and completed within the past few weeks. About five years ago, the surgical service of that hospital was placed under the charge of a single surgeon, Dr. John C. Munro, and the service was made continuous. Within a month similar action has been taken with regard to the medical service, and here also a continuous service has been instituted under the control of Dr. Henry A. Christian. It is not to be questioned that the plan will prove a success from the medical standpoint, as it already has on the surgical side, but it is of chief interest as inaugurating a method long used in Europe and in a few hospitals of this country. There are many and obvious reasons, some of which we have suggested above, which render the adoption of this plan of service by other large hospitals unlikely if not impossible.

The experiment at the Carney Hospital, therefore, if such it may be called, will be watched with great interest by all who are concerned with hospital management, and the development of the highest possibilities of teaching and research.

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THE ABSINTHE QUESTION.

Of late the French Government has stopped the manufacture of absinthe on account of the ever-progressing havoc which its use has been producing among the people, and from accounts in political journals it would appear that Switzerland is to follow this example.

The history of absinthe hardly dates back a century. It is said that a French physician, Dr. Ordinaire, who was a refugee in the Canton of Neuchâtel, invented this liqueur, which he prescribed for his patients. The latter soon developed a taste for it and it was not long before it was manufactured in large quantities. From Neuchâtel absinthe passed into France and rapidly became popular, especially in the Army of Africa, and its use extended all over the country. The amount consumed has increased in enormous proportions; in France, in 1890, it represented one-sixteenth part of the total amount of alcohol consumed; in 1905, it represented the seventh part and from 105,258 hectoliters in 1890, it has reached 350,000 hectoliters in 1906. There are few Swiss statistics which are of any real value, but it may be said that the annual amount consumed in the Canton of Vaud has been estimated at 260,000 liters for a population somewhat over 300,000. The commission appointed by the Superior Council of Geneva has placed an estimate of 500,000 liters as the annual amount taken by a population of 140,000.

Referring to clinical studies on absinthe, the first of which were due to Lancereaux and Magnan, it will at once be noticed that the conviction has become more firmly rooted that special disturbances exist in individuals using absinthe exclusively or, at least, in large quantities. Joffroy and Serveaux have carried out a methodical study on the toxicity of the various alcohols, and they quite properly distinguish an experimental toxic equivalent, that is to say, the quantity of poison which may be injected in order to produce the death of one kilogram of the animal; and secondly, the true toxic equivalent, in other words, the necessary and sufficient quantity to determine by itself the death of one kilogram of the animal in a short lapse of time. In order to obtain this result, a certain quantity of the poison is injected in the venous circulation, and the dose is progressively increased until that one is obtained which causes certain and sure death. Now, if this method of experimentation is applied in the case of absinthe, it has been found that from the fact of the dissolution of alcohol the experimental results are interfered with. Without doubt the very important fact will at some time be determined, viz., to ascertain what is the toxic equivalent of absinthe, taking into consideration the various commercial preparations.

Gautier's thesis on chronic absinthe poisoning was published under the inspiration of Lancereaux. He found that most characteristic symptoms of absinthism are spontaneous or provoked painful phenomena; absinthism produces more frequently than alcoholism a weakening of the lower limbs which may even go as far as paralysis.

The genital sense and activity rapidly diminish in the male and subjects addicted to the use of this liquor almost invariably die of pulmonary tuberculosis. The mild digestive disturbances occurring in the beginning of the habit finally lead the subject to pronounced alcoholism, and when for one reason or another he becomes infected by the tubercle bacillus, he has no longer any resource to fall back upon. In reality it is the vital force which is wanting in these subjects, and their capacity of reaction against bacteria and their toxins is absolutely *nil*. Experimentally, Leonidoff noted that in dogs who had been given absinthe by mouth presented varied digestive disturbances and rapidly lost flesh.

Hasemann's thesis contains numerous observations of homicide in chronic absinthe drinkers, and he believes that one should denominate an absinthic as an alcoholic using absinthe more especially. He designates under the name of acute and chronic absinthism this condition met with in alcoholics having the same delirium that ordinary drinkers have, but where absinthe has added its distinctive characteristics. This author also admits that many falsifications of the alcohol serving to manufacture absinthe exist, most of them having a convulsive action. The factor, alcohol, which brutalizes, and the factor, essences, which convulse, easily lead the absinthe drinker to homicidal impulse, especially when he is a degenerate, and the suddenness of the act and the amnesia following it are its distinctive characteristics.

Motor excitability is much more pronounced in the absinthe drinker than in the ordinary alcoholic; the hallucinations described by Hasemann are the proof. He also insists on the brutal character, ferocious jealousy and distrust, making the absinthic very similar to an epileptic.

The Canton of Vaud, having adopted the law promulgated by its Superior Council, caused the distillers to resort to the Federal Council on the plea of a violation of the Constitution. This body appointed three experts, namely, Dr. Gaule, Professor of Physiology at Zurich, Jacquet, Professor of Medicine at Bâle, and Weber, Professor of Psychiatry at Geneva. The first question was the following: Does absinthe have a more deleterious action on the human body than other liquors containing the same amount of alcohol and taken in equal quantity? If yes, in what consists this deleterious action? The following is briefly the reply of the experts: Our experimental knowledge of the action of the essences contained in the liqueur absinthe are as yet incomplete, but what little is at present known is sufficient to confirm the opinion that the essential oils possess a very considerable toxic power. The regular use of absinthe is a greater danger for the health than that of equivalent quantities of alcohol.

Relative to the mental condition of alcoholics entering the insane asylum at Geneva, Weber has made certain observations which are all the more valuable from the fact that they contrast with those of the asylum formerly under his charge and situated in a canton where the use of absinthe was unknown. He has noted the great number of dangerous alcoholics and states that absinthe gives to alcoholism a special symptomatology characterized by states of anxiety, violent reactions, epilepsy and body disturbances, such as pain, tendency to paralysis and a weakening of the sexual power. He also mentions the frequency of miscarriages and the premature death of the newly born.

The concordance of clinical observations with the results of the laboratory can certainly not be denied in this question. It goes without saying that one hardly meets with a case of pure absinthism, because the effects of both types of intoxication become added and intermingled, but in the case of the absinthic the intensity of the painful phenomena, convulsive attacks, impulsive delirium, violent hallucinations, jealousy and the frequency and gravity of tuberculosis are the special characteristics of intoxication from this liquor.

MEDICAL NOTES.

Successor of Professor von Bergmann. — It is reported that Dr. August Bier, of the University of Bonn, has been appointed successor of the late Professor von Bergmann as professor of surgery at Berlin.

Bequests under the Will of the Late John M. Harlow. — By the will of the late John M. Harlow many bequests are made. Among those of particular interest to physicians are approximately $40,000 to the Massachusetts Hospital for the establishment of a John M. Harlow Ward, or, if not so used, for the support of free beds in the hospital. Six thousand dollars is given to the Middlesex East District Medical Society for the purpose of defraying its ordinary expenses, "including therein the expense of the annual dinner." These sums become available upon the death of his widow.

Folia Therapeutica. — A new journal on therapeutics with the name *Folia Therapeutica* has recently been started in London. The aim of the journal will be to record the progress of modern therapeutics and pharmacology and to present in a brief manner methods of treatment and preparations which may be safely recommended and which appear to constitute a real therapeutic advance. The publication is under the editorship of Dr. A. Babinski, professor in Berlin, and Dr. J. Snowman, of London. The list of contributors to the number before us augurs its success. Prof. C. A. Ewald, of Berlin, writes a letter, and Senator, Brieger and other well-known men contribute articles. There is also an abstract department, a review of books and a bibliography. In view of the uncertain condition in which for various reasons much of our therapeutics now is, this new publication is particularly acceptable. We commend it as a further step toward a rational attitude in various therapeutic matters.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 5, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 41, scarlatina 39, typhoid fever 2, measles 40, tuberculosis 33, smallpox 0.

The death-rate of the reported deaths for the week ending June 5, 1907, was 19.14.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 1, 1907, was 246, against 240 the corresponding week of last year, showing an increase of 6 deaths and making the death-rate for the week 21.30. Of this number 124 were males and 122 were females; 236 were white and 10 colored; 151 were born in the United States, 89 in foreign countries and 6 unknown; 52 were of American parentage, 167 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 46 cases and 3 deaths; scarlatina, 39 cases and 1 death; typhoid fever, 7 cases and 2 deaths; measles, 35 cases and 2 deaths; tuberculosis, 42 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 24, whooping cough 1, heart disease 33, bronchitis 3 and marasmus 4. There were 20 deaths from violent causes. The number of children who died under one year was 40; the number under five years 58. The number of persons who died over sixty years of age was 59. The deaths in public institutions were 86.

There were 11 cases and 10 deaths reported from cerebrospinal meningitis during the week.

Annual Meeting of the New Hampshire State Medical Society. — The New Hampshire Medical Society held its one hundred and sixteenth annual meeting in Concord, May 16 and 17, 1907, with an unusually large and enthusiastic attendance. Dr. John H. Neal, of Rochester, was elected President; Dr. John M. Gile, of Hanover, Vice-President; Dr. D. E. Sullivan, of Concord, Secretary, and Dr. D. M. Currier, Newport, Treasurer.

A committee was appointed to consider the question of a medical defense fund, to report at the next annual meeting.

The number of papers was limited to twelve in order that there might be plenty of time for discussion. Considerable interest was manifested in the papers, and the discussions were full and free.

The next meeting will be held in Concord, May 14 and 15, 1908.

Brookline, Mass., Antituberculosis Society.—An antituberculosis society has recently been organized in the town of Brookline. At the meeting of organization Dr. V. Y. Bowditch spoke on the general subject of the work hitherto done and methods of treatment. Mr. A. M. Wilson pointed out the means by which the campaign could be rendered effective, and Miss Alice L. Higgins, of the Associated Charities, spoke on the legislative phases of the subject. Other speakers were Drs. L. W. Gilbert, R. C. Cabot, H. Lincoln Chase, Francis P. Denny. Officers elected were: President, Moses Williams; Vice-Presidents, James M. Codman, Jr., and Dr. Walter Channing; Secretary, Hilda Williams, and Treasurer, Albert H. Lincoln.

Nurses for the Boston Schools. — Through a recent act of legislature the Boston School Committee has been enabled to appropriate $10,000 toward the establishment of a system of nurses in the public schools. Twenty-two nurses will be employed at the beginning who will enter upon their work Sept. 1. These nurses are to be employed in vacation schools, as well as in the regular schools, and each nurse is to have a vacation of four weeks during the year. Examinations to be held this month will be required of those desiring positions. We have in general commended the plan of experienced nurses for the public schools for some years. It is a matter for congratulation that the innovation has finally been accomplished.

NEW YORK.

Bequests by Martin L. Sykes. — Among the charitable bequests in the will of the late Martin L. Sykes, of Mount Vernon, N. Y., are $5,000 to the Mount Vernon Hospital and $2,000 to the Martha Wilson Home.

Pasteurization of Milk not Compulsory. — After a debate lasting nearly five hours, the Board of Aldermen on May 21 finally voted down the proposed ordinance making the pasteurization of milk compulsory in the city. It had been before the board for many months, and a number of hearings had been held upon the subject.

A Bailey Memorial Hospital. — Mrs. Ruth Bailey, widow of James A. Bailey, who was associated with P. T. Barnum in business, has announced her intention to build, at a cost of at least $100,000, a hospital at Mount Vernon, Westchester County, N. Y., in memory of her husband, and to endow it with sufficient funds for its maintenance. It is to be called the Bailey Memorial Hospital, and will constitute a portion of the present Mount Vernon Hospital, to which Mrs. Bailey recently contributed $10,000.

Bequests from Edward W. Currier. — Among the charitable bequests in the will of the late Edward W. Currier of New York, are $22,500 to the Presbyterian Hospital, to endow three beds, and $20,000 to the New York Society for the Relief of the Ruptured and Crippled, to endow four beds in its hospital. The residuary estate is left to Amherst College, from which Mr. Currier was graduated in 1865.

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Obituary.

SIR JOSEPH FAYRER.

In the death of Sir Joseph Fayrer, which occurred recently in England, the medical profession loses a man of prominence and versatility. Sir Joseph was born in 1824, and distinguished himself through the Indian mutiny, retiring as surgeon-general. Apart from his great eminence as a physician, he was widely known for his scholarship and for his many contributions to literature, both medical and otherwise. He was honorary physician to Queen Victoria, and in 1901 was made physician extraordinary to King Edward VII. He received his medical degree at the University of Edinburgh, and later became a fellow of the Royal College of Physicians in London, Royal College of Surgeons of London and Edinburgh, and of the Royal Societies of London and Edinburgh. Entering the medical service of the navy, after receiving his degree, he was identified with various disturbances during the middle period of the last century. He was present at the siege of Rome in 1848, served through the Burmese war in 1852, and the Indian Mutiny of 1857, being present at the defense of Lucknow. From 1859 to 1874 he was professor of surgery in the Medical College of Bengal, and also for two years president of the Medical Faculty of Calcutta University. Honors were showered upon him, both in the far East and in Europe. He was the recipient of many honorary degrees and of the various distinctions peculiar to England and the continental countries. His books were numerous and concerned themselves not only with medical problems, but also with other matters relating to the East, where so large a portion of his life was spent.

Current Literature.

The Journal of the American Medical Association.

May 18, 1907.

1. *Simmons, G. H. *The Commercial Domination of Therapeutics and the Movement for Reform.*
2. Young, H. H. *The Cure of Unilateral Renal Hematuria by Injection of Adrenalin Through a Ureter Catheter.*
3. Hilton, D. C. *Strangulated Hernia.*
4. *Dorland, W. A. N. *Vascular Lesions Occurring Subsequent to Abdominal Section.*
5. *Miller, J. L. *The Action of the Extract of the Suprarenal Gland and the Method and Indications for its Use.*
6. Moher, T. J. *Occupation in the Treatment of the Insane.*
7. Ambler, C. P. *Tuberculin Test.*

1. Simmons's article is a good concise statement of the patent medicine situation past and present, with a description of the work of the American Medical Association to secure reform. To combat the use of nostrums the trustees of the American Medical Association in 1905 established the Council on Pharmacy and Chemistry to investigate preparations on sale. This council has been actively at work and is about to publish in book form a descriptive list of new and non-official remedies which conform to its requirements. These requirements are set forth in the form of rules, of which some of the most important are that the formulæ shall not be secret, that the preparations shall not be advertised directly or indirectly to the public, and that no extravagant therapeutic claims or other false statements shall be made in their description. Every physician should co-operate in this fight against the nostrum evil by giving preference in his prescriptions to preparations approved by the Council, by inquiring into the objections raised against the preparations used by him which are not approved, and by protesting against advertisements of non-ethical preparations in his medical journals.

4. Dorland reports cases illustrative of the vascular complications which follow abdominal operations, — hemorrhage, thrombosis and embolism. Post-operative hemorrhage is most often due to improperly applied ligatures. It may occur, however, from oozing surfaces, from the spontaneous rupture of pelvic veins or from sub-peritoneal vessels. The rupture of veins is probably the result of changes in the circulation which follow operations such as the removal of large tumors. The occurrence of this rupture after the abdomen has been closed may be due to the increased venous pressure which results from the discontinuance of the Trendelenberg position. Dorland therefore advises that the patient be lowered from the Trendelenberg to the dorsal position and search for bleeding points be made before the abdomen is closed. Thrombosis is a condition which may follow abdominal operation. It has been attributed to mild degrees of sepsis, to prolonged operation and to hemorrhage, but in certain cases, as in the one reported, all of these factors seem to be absent. A striking feature of cases in which thrombosis develops after operation is the increase of pulse rate out of proportion to the temperature, a fact which may be of diagnostic value.

5. Miller describes the physiologic action of adrenalin, the therapeutic uses to which the drug has been put and the dangers which have to be considered before it is given. The local action of adrenalin in blanching mucous membranes does not require discussion. The constitutional action may be described as a general stimulation of the sympathetic nervous system, producing an increase in blood pressure mainly by vasoconstriction, but also by direct accelerative action upon the heart. The action upon the cardiovascular system does not occur when the drug is given by mouth, but only when it is given by injection, most rapidly and most certainly by intravenous and intramuscular methods. Therapeutically adrenalin is used in conditions of vasodilation with strong heart muscle, as in chloral poisoning, shock, and collapse in chloroform or ether anesthesia. In acute pulmonary edema it is probably contra-indicated. In inaccessible

hemorrhage the harmful action by increasing blood pressure is probably greater than the benefits of vasoconstriction and increase in coagulability of the blood. In bronchial asthma favorable results have been reported from the subcutaneous use of adrenalin. It is said that the injections of adrenalin give relief within three minutes which continues several hours, but has no effect in preventing the return of the attack. This treatment should not be tried except where heart and blood vessels are in good condition. In certain cases of recurrent abdominal and pleural effusion adrenalin has been injected after withdrawal of the fluid, with the result that re-accumulation ceased; the safety of this treatment, however, is somewhat uncertain. The special dangers from the use of adrenalin are: (1) rupture of an artery from sudden increase in blood pressure; (2) glycosuria; and (3) arterial degeneration. [F. W. P.]

The American Journal of the Medical Sciences.
May, 1907.

1. *Babcock, R. H. *The Diagnosis and Treatment of Cardiac Degeneration Apart from Valvular Disease.*
2. Berry, J. M. *A Proper Shoe as an Aid to Treatment in Flat (or Weakened) Feet.*
3. *Pelton, H. H. *The Treatment of Compressed-Air (Caisson) Disease.*
4. *Fraley, F. *A Study of Five Hundred Cases of Pleurisy Occurring at the Pennsylvania Hospital.*
5. *Benedict, A. L. *The Relation of the Kidneys to Gastro-Enterology.*
6. Butler, G. R. *Heart-Block (Adams-Stokes Disease).*
7. Gordinier, H. C. *Position of the Motor Areas of the Human Cortex.*
8. *Clark, L. P. *A Contribution to the Pathology of Refrigeration Facial Palsy.*
9. Warthin, A. S. *The Changes Produced in the Kidneys by Roentgen Irradiation.*
10. Gordon, A. *The Pathogenesis of Reflexes, Apropos of a Case of Tuberculoma of the Spinal Meninges.*
11. Mayer, E. *Scleroma of the Larynx.*
12. Wright, J. *The Heredity of Form as Illustrated in Pathology by a Study of Cysts of the Middle Turbinated Bone.*
13. Brooks, H. *Concerning the Occurrence of Neoplasms in Wild Animals.*

1. Babcock considers cases of myocardial degeneration in two groups: (1) Those in which the diagnosis is comparatively easy, resting upon good and sufficient data, and (2) those in which diagnosis is possible only by exclusion or inference from few but significant signs. The former group is made up of cases in persons past middle life in which symptoms of cardiac incompetence develop, with sclerosis of arteries and hypertrophy and dilatation of the heart, with angina pectoris and dyspnea, in the absence of nephritis. The second group comprises those cases in which sudden death may occur without preceding distinctly cardiac symptoms. In these cases it is only the most careful search that will reveal symptoms or signs. In patients who after a general examination are looked upon with suspicion on account of advancing age, myocardial degeneration is to be thought of. In such cases symptoms which the patient has considered unimportant, such as slight precordial distress or slight shortness of breath on exertion, may be significant. Increase in the deep cardiac dullness, particularly to the left, must be looked for with special care. Dullness which extends more than 10 cm. to the left of the median line at the level of the fourth rib indicates hypertrophy of the left ventricle even though the apex may be within the nipple line. A loud ringing aortic second and increased blood pressure are of importance, since they establish a probability that the myocardium is being overtaxed. In treatment, cases with marked signs of cardiac insufficiency should be managed in the same way as cases of waning heart power from any other cause. When signs and symptoms are slight, however, treatment is to be directed mainly toward the prevention of further progress of the disorder. Acute strain of the heart and continued hypertension are to be avoided, but absolute rest in bed is not indicated, or if it seems advisable should be combined with massage and resistance exercises or Nauheim baths. Digitalis and strophanthus are needed at times, but should be given with caution. Daily mild saline catharsis is beneficial, and a comfortable night's rest is to be insured when necessary by small doses of morphia or heroin. In cases of the second group, special stress is to be laid upon the dangers of overexertion. Systematic and carefully regulated medical gymnastics, on the other hand, are of the greatest benefit. The diet is to be supervised to prevent overfeeding; the bowels are to be regulated by laxative. The medicinal treatment has but a small place in management of these cases. Vasodilators are as a rule to be avoided.

3. Caisson disease occurs as the result of work in compressed air, in tunnels, etc., and is supposed to be due to gas emboli in the circulation. The cases fall under four main types according to relative prominence of the four following symptoms: pains, vertigo, paralysis (usually not permanent) and coma. Workmen who are employed in the caisson should be required to pass physical examinations. The treatment is to place the patient again in compressed air, either in the caisson or in a " hospital lock " until symptoms are relieved, and then to lower the pressure by slow gradation before the patient is taken out. Stimulation, artificial respiration and oxygen may also be required.

4. Fraley has made a careful study of 500 cases of pleurisy occurring in the past ten years. His statistics include a great number of interesting facts which, although they are too numerous to include in this abstract, form an important contribution to the literature of the disease. A few of the more important results are as follows: Pleurisy occurs most frequently in the winter and early spring months. Although in children the sexes are affected equally, in adults the disease occurs four times as frequently in men as in women. The tendency to pus formation is greater in the young. In a majority of cases the onset could be traced to exposure to cold, to bronchitis or to pneumonia. Symptoms and signs are tabulated according to the frequency of their occurrence. The complications are enumerated, nephritis, which occurred 106 times, heading the list. In treatment, strapping in dry pleurisies, aspiration of effusions, and drainage by resection of ribs in empyema, were measures whose beneficial effects were strikingly demonstrated by the results. In massive effusions the average duration of the disease in cases aspirated as compared with that of cases where aspiration was refused was 24.7 days against 55 days. No uncomplicated non-purulent pleurisy died; among the 315 serous effusions there were 16 deaths from a large variety of complications. Of 95 empyemas 21 died. Of 10 empyemas which refused operation only 1 is known to have recovered.

5. Benedict's article is a discussion of the renal conditions encountered in the observation of a large number of cases with symptoms referred to the digestive tract. Movable kidney is extremely frequent in association with stomach disorders, but its exact connection with them is not understood. Renal calculi often cause vomiting and constipation by reflex action; renal colic may also simulate biliary colic, appendicitis or gastric ulcer. Acute nephritis seldom causes confusion; chronic nephritis is more frequently met, and as shown by comparison of clinical with autopsy findings the urine is not always a reliable indication of the presence or importance of kidney lesions, since unimportant local inflammation may give albuminuria and casts, and occasionally with extensively diseased kidneys the urine may show no abnormality. In certain conditions the alimentary tract and the kidneys, as well as the heart, lungs and liver, are involved together in disorders due to disturbances of the circulation, which may be due primarily either to the heart, to the liver or to the kidneys. Renal paresis is very frequent in disease of the digestive organs. In asthmatic and other patients there may be periods of almost absolute paralysis both of renal and gastric secretion.

8. Clark has examined sections of the facial nerve in two cases of the refrigeration facial palsy of Bell, and has found them degenerated. From this fact and for other reasons he believes that the paralysis is not due to a disturbance of motor nerve endings, but to a more central lesion, perhaps to compression by inflammatory swelling in the Fallopian canal. [F. W. P.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT, No. 17.

APRIL 25, 1907.

1. GOLDSCHEIDER. *Symptoms of Psycho-Reflex Origin.*
2. *KOLLE, W. *Serum Therapy in Acute Infectious Diseases.* (Concluded.)
3. *SAHLI, H. *Sphygmobolometry: A New Method of Studying the Circulation.* (Concluded.)
4. GIEMSA, G. *The Staining of the Spirochete Pallida in Smear Preparations.*
5. KLEINSCHMIDT, P. *The Treatment of Ischemic Muscle Contractures.*
6. BAERWALD, RICHARD. *Hay Fever Resorts in the Alps.*
7. KOLACZEK, H., and MULLER, E. *Simple Method of Differentiating Tubercular from Other Forms of Pus.*

2. Kolle summarizes for the practicing physician our present knowledge of serum therapy. Vaccinations or protective inoculations he calls indirect serum therapy, while the injection of antitoxic or antibacterial serums constitute the direct. After reviewing the theories and results of serum treatment in all the specific infectious diseases he concludes that it is not unlikely that mixed passive and active immunization will be of great service in many instances, and quotes the successful campaign recently carried on in the Philippines against the rinderpest by this means. The blood of infected cattle contains the virus, which as yet has not been cultivated artificially. The serum of cattle which have recovered from the disease, or which have been immunized cautiously with infected blood, contains the specific antibodies. Both the immune serum and the virulent blood are used for inoculations. This principle is found effective in experimental work with cholera, typhoid and plague.

3. Sahli demonstrates again the importance of the mean blood pressure for diagnosis as well as for determining the efficiency of certain therapeutic agents, and in sphygmobolometry thinks that he has devised a simple and accurate method of obtaining it. This method, which gets its name from the Greek " βολις," a projectile, measures and records graphically the projectile force of the blood in the aorta. The apparatus cannot be described intelligently without the aid of the mechanical drawings with which Sahli's article is illustrated, but it is practically the Riva-Rocci, with a cuff 8 cm. broad and the caliber of the glass manometer 5 mm. The oscillations of the Hg. column are recorded through pneumatic means by the registering apparatus, and readings are taken at various pressures until the point of greatest oscillation has been passed. By a simple mathematical calculation the work of the pulse can be ascertained. After the establishment of a normal for healthy men of different weights, this will be of importance in disease. The action of drugs on the circulation can be seen with greater certainty by the sphygmobolometer than by any other hydraulic means. It is technically simpler and more time-saving than the graphic maximal and minimal pressure estimation of Janeway. [L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHREFT, No. 16.

APRIL 16, 1907.

1. *LENHARTZ, H. *Acute and Chronic Pyelitis.*
2. *MORAWITZ, P. *The Treatment of Severe Anemias by Transfusion of Blood.*
3. EITNER, E. *Observations on the Living Spirocheta Pallida.*
4. *STURSBERG, H. *Addison's Disease without Pigmentation.*
5. *GIERKE, E. *Hypertrophy of the Thymus Gland in Exophthalmic Goiter.*
6. *EICHHOLZ. *Experience with Vaccination against Typhoid Fever in German Southwest Africa.*
7. *DEHLER. *The Treatment of Typhoid Bacillus-Carriers.*
8. *STOLZENBURG. *Report of the Results of the Use of the Kuhn Aspiration-Mask at the Sanatorium Slawentzitz.*
9. *KUHN, E. *Further Experience with the Congestion Treatment of Lung Diseases by Means of the Aspiration-Mask.*
10. HERZ, M. *Testing the Movability of the Heart.*
11. FISCHER, B. *The Discovery of the Cause of Cancer by Dr. H. Spude.*
12. *DEUTSCHLÄNDER, C. *The Treatment of Bone and Joint Tuberculosis by Passive Congestion.* (Concluded.)

1. This interesting article by Lenhartz gives the fruit of his unique experience at the Eppendorf Hospital. It deals only with primary pyelitis, excluding those forms resulting from stone, stricture, enlarged prostate, etc. Of his 80 cases, 92½% were women. This is explained by the mode of infection, which is ascending from the external genitalia. In the female, bacteria from the feces readily gain access to the vulva, and thence to the urethra. Pregnancy, menstruation and puerperium act as predisposing causes. The colon bacillus was found in pure culture in the urine in 85% of all cases; in a few instances the proteus, paratyphoid or lactic acid bacilli were cultivated. Acute pyelitis often sets in suddenly with general symptoms, high fever, widespread pains, etc., and in fully one half the cases there is no complaint referable to the kidneys. Examination, however, shows tenderness over one kidney, most often the right, and frequently a swelling of the organ. The urine contains pus, bacilli and often caudate cells. These latter, however, may be absent, and their presence is by no means pathognomonic of pyelitis. The duration of the fever is eight to fourteen days, the chart often exactly resembling that of croupous pneumonia. Very important is the evident tendency to relapses, which are not seldom coincident with menstruation. In treatment little is to be expected of the so-called batericidal drugs, such as urotropin; rest in bed and the copious use of mineral waters are indicated. It is interesting to note that out of 54 cases discharged clinically well 38 still showed the presence of bacteria in the urine.

2. Morawitz reports on the use of transfusion in the anemias, on the basis of 6 cases treated in Krehl's clinic. The results were surprisingly good in 3 cases, 2 were under observation only a short time, 1 died in spite of treatment, the autopsy revealing a plasia of the bone-marrow. Improvement never set in before three or four days, which fact, together with the small amount of blood injected (200 cc.), would seem to exclude direct action and point rather to a stimulation of the blood-producing organs. Defibriniated blood was used for the injections. Often chills, fever, dyspnea, hemoglobinurea follow, but these symptoms are transitory. Death has never been reported as the immediate result of the injection.

4. Stursberg reports 3 cases of Addison's disease without pigmentation. The diagnosis may be made in the presence of (1) marked progressive prostration without assignable cause and accompanied by good nutrition; (2) great reduction of the blood pressure and (3) gastro-intestinal disturbances.

5. Gierke saw in 2 malignant cases of Graves's disease very striking enlargement of the thymus, the organs weighing 53 and 97 gms. respectively. This finding has been reported before, especially in cases dying soon after extirpation of the (exophthalmic) goiter. The relationship between thymus and thyroid remains hypothetical, but there is some ground for assuming an interaction between the two glands. On this theory the sudden removal of a large part of the thyroid might lead to an intoxication with the product of the hypertrophied thymus.

6. Eichholz makes a comparison between 34 cases of typhoid fever occurring in soldiers previously vaccinated against typhoid, and an equal number among the non-vaccinated. The mortality among the former was zero, as against 8% in the latter; the course was shorter and the complications fewer among the vaccinated. His statistics are too small for definite conclusions, but are certainly suggestive.

7. Dehler reports the first operation on the gall bladder to be performed as a prophylactic measure to prevent the spread of typhoid bacilli by the feces. The patient, an inmate of an insane asylum, gave no history of typhoid fever. For two years her feces constantly contained typhoid bacilli in large numbers, and previous to this she had been the cause of a small epidemic of typhoid. The

operation consisted in a wide opening of the gall bladder with drainage, and resulted in obliteration of the gall bladder. Typhoid bacilli were obtained in pure culture from the bile. The result was excellent, the feces showing only one positive culture, two months after the operation, although no less than 76 stools were examined.

8. Kuhn's aspiration-mask (*lungensaugmaske*) is an apparatus by means of which respiration through the nose can be obstructed to any desired amount. Inspiration is made through the nose, expiration unhindered through the mouth. By this means hyperemia of the lungs is produced. The mask is worn for gradually increasing periods up to two hours twice a day. Stolzenburg has had gratifying results with this method; the respiration became easier and more vesicular, cough less troublesome and in many cases râles rapidly diminished. He regards it as a valuable adjunct to the sanatorium treatment.

9. Kuhn reports further on hyperemia in the treatment of lung diseases as obtained by the use of his mask. An autopsy on a case of recent phthisis treated by his method, in which death was due to intestinal tuberculosis, showed the process in the lung to be in the process of healing. While the passive hyperemia produced is very important, no small part of the good effects is ascribed to the strengthening of the muscles of respiration. The use of the mask is found to produce a marked rise in the number of red corpuscles, and to a less extent in the leucocytes, similar to that found in residents of high altitudes. The method never produces untoward symptoms, and may be employed soon after a hemorrhage without danger. Kuhn's hospital material is not suitable for statistics, but in cases in the second stage an increase of weight, with decrease of cough and of the physical signs was almost invariably obtained. Favorable results are reported also in asthma, overdistention of the right side of the heart and pneumonia.

12. Deutschländer has treated 44 cases of tuberculosis of the bones and joints by Bier's congestion method, with results far better than those obtained with the old ways. The congestion should be intense and of short duration (one to two hours daily); it should never cause pain or edema. It should be used over long periods of time, and long after apparent cure has been attained. After each four weeks of congestion it is best to interpose a week without congestion. Fistulæ and abscesses are treated by a combination of passive congestion and suction; abscesses and large effusions are evacuated by the trocar with strong aspiration. Immobilization is not necessary, but moderate active movement of the joints is desirable. [W. T.]

DEUTSCHE ZEITSCHRIFT FÜR CHIRURGIE. BAND 87. HEFT 1–3.

MARCH, 1907.

1. BORCHARD. *The Treatment of Injuries of the Musculo-Spiral Nerve.*
2. *DOERING, H. *Renal Surgery.*
3. FERTIG, J. *Traumatic Rupture of the Liver Followed by Sequestration of a Large Fragment.*
4. JENCKLE, A. *The Pathology of the Multilocular (Alveolar) Echinococcus.*
5. *BRAUN, W. *The Exposure of the Central Portion of the Middle Cranial Fossa (Gasserian Ganglion).*
6. *ALDEHOFF, G. *Jaundice Complicating Appendicitis.*
7. HAECKEL, H. *Intestinal Obstruction in Appendicitis.*
8. JAECKH, A. *Meckel's Diverticulum as a Cause of Intestinal Obstruction.*
9. EVERS. *A Case of Spontaneous Gangrene of Several Finger Tips of the Left Hand.*
10. ROSENBERGER, W. *Hemolymphangioma of the Scrotum.*
11. *LINKENHELD, F. *Bilateral Avulsion of the Tibial Tubercle.*
12. MATTHIOLIUS. *Naval Surgery in the Russo-Japanese War.*
13. *CREITE, O. *The Surgical Treatment of Cancer of the Stomach.*

2. The article of Doering reports the results of the clinic of Professor Braun at Göttingen in the treatment of (1) hydronephroses, (2) pyonephroses and (3) renal calculi. As regards the treatment of hydronephroses, primary nephrotomy is to be avoided because, in itself, this operation rarely cures the condition. Primary lumbar nephrectomy in the presence of a well-functioning second kidney is the safest and quickest method of cure. Of 13 cases of hydronephrosis occurring in this clinic, 6 primary lumbar nephrectomies were done, with complete cure in from five to six weeks. One case of transperitoneal nephrectomy died. Two secondary nephrectomies (after nephrotomy) resulted in cures, as did two nephropexies. Of two primary nephrotomies one has had the resulting fistula closed by a secondary operation; in the other it still exists. In the treatment of pyonephroses nephrectomy should also be done whenever practicable. If for any reason it is impossible to demonstrate the integrity of the other kidney, a nephrotomy should be done, to be followed by nephrectomy as soon as is feasible. Eleven cases of this class are tabulated as follows: Simple nephrotomy, 3 cases, — 1 cured, 2 discharged with fistulæ. Primary nephrotomy with secondary nephrectomy, 6 cases, of which 5 were cured while 1 died. One case was cured by primary nephrectomy. Two cases bearing fistulæ were cured by nephrectomy. In the treatment of renal stone the ideal operation is extraction of the stone by splitting the kidney. In cases where a hydro- or pyo-nephrosis co-exists with the stone, if there has been very extensive destruction of the kidney substance, a nephrectomy should be done. In cases of anuria bilateral nephrotomy should be done without delay. There occurred 18 cases of this class. Primary nephrectomy done in 4 cases was followed by cure, as was also secondary nephrectomy after nephrotomy in 3. Of 2 simple nephrotomies, 1 died, the other recovered. One case was cured by extraction of the stone by pyelotomy, while in 1 case removal of the stone by this method resulted fatally. One case of perinephritic abscess died after incision, as did also 2 cases of anuria following exploratory laparotomy. Three cases were not operated.

5. From an anatomical investigation of the various methods of reaching the gasserian ganglion carried out fifty times on the cadaver, and from the application of this experience in 3 clinical cases, Braun concludes that the best and easiest route of approach is through a low temporal incision. In no instance did he find it necessary to resect the zygoma. To avoid hemorrhage he much prefers ligation of the external carotid in the neck to that of ligation of the middle meningeal. To reduce brain tension as much as possible he employs in the sitting posture. The infratemporal route should not be employed.

6. Aldehoff calls attention to jaundice as a complication of appendicitis. He reports 5 cases and concludes as follows: "After an operation for appendicitis of the suppurative variety, there can arise, without any signs of peritonitis, a condition of generalized sepsis, the most important symptom of which is jaundice, varying in intensity. Its occurrence must always make the prognosis doubtful, for it may disappear after two or three days, or may cause death in delirium and coma."

11. Linkenheld reports a case of simultaneous avulsion of the tubercles of both tibæ by muscular violence occurring in a boy of sixteen. On one side the fragment was held in place by sutures, while on the other a wire nail was necessary. A perfect result was obtained in each instance. The article then reviews the whole subject *in extenso*, 27 cases from the literature being reported.

13. From 1884 to 1906 Professor Braun has done 211 operations on the stomach for malignant disease. In this number are 50 cases of gastrectomy, the details of which are given in this paper by Creite. This operation was only done as a rule in those cases where the tumor was movable and in which there were no demonstrable metastases. In 9 cases the stump of the duodenum was sewn into the lower portion of the gastric incision, while in 41 the operation of Billroth was the method used. This method consists of closure of both gastric and duodenal ends, followed by union of the upper jejunum and the posterior stomach wall, either by suture or the Murphy button. Of this series of 50 cases 19 died from the operation, giving an immediate mortality of 38%. Twenty-four have died at some later date: 7 still live. The average time of recurrence was found to be sixteen months. Only 1 case of those now living has existed beyond the three-year period. [W. C. Q.]

RECORD OF MORTALITY

For the Week ending Saturday, May 25, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,447	423	Quincy	9	2
Chicago	641	199	Waltham	5	—
Philadelphia	—	—	Pittsfield	6	0
St. Louis	—	—	Gloucester	5	1
Baltimore	204	50	Brookline	5	—
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	10	4
Pittsburg	—	—	Northampton	5	0
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	5	—
Washington	—	—	Leominster	2	—
Providence	69	12	Hyde Park	4	1
Boston	208	63	Melrose	4	—
Worcester	41	7	Newburyport	—	—
Fall River	35	12	Woburn	3	—
Cambridge	17	1	Marlboro	4	1
Lowell	34	13	Westfield	3	—
Lynn	13	1	Peabody	—	—
New Bedford	23	6	Revere	3	1
Springfield	17	7	Attleboro	4	0
Lawrence	22	3	Clinton	3	0
Somerville	19	3	Adams	—	—
Holyoke	22	13	Gardner	—	—
Brockton	16	9	Milford	—	—
Malden	10	1	Watertown	2	1
Chelsea	16	4	Plymouth	—	—
Salem	8	2	Weymouth	4	0
Newton	11	2	Framingham	5	1
Haverhill	10	4	Southbridge	4	1
Fitchburg	6	2	Wakefield	—	—
Everett	5	—	Webster	—	—
Taunton	10	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JUNE 1, 1907.

F. X. Koltes, assistant surgeon. Ordered to Mare Island Yard, Cal.

R. P. Neville, pharmacist, having been examined by retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service May 23, under provisions of Sect. 1453 R. S.

C. J. Decker, surgeon. Sick leave further extended three months from May 23.

R. R. Richardson, passed assistant surgeon. Detached from the "Boston" when placed out of commission and ordered to the "Albany" when placed in commission.

E. H. Marsteller, surgeon. Sick leave further extended six weeks from May 28.

W. B. Smith, passed assistant surgeon. Detached from the "Raleigh" and ordered to the "Helena."

R. E. Stoopes, assistant surgeon. Detached from the "Concord" and ordered home.

W. D. Owens, assistant surgeon. Detached from the "Villalobos" and ordered home.

C. T. Grayson, assistant surgeon. Detached from the "Maryland" and ordered home.

C. K. Winn, assistant surgeon. Ordered to the "Villalobos."

T. W. Raison, assistant surgeon. Ordered to the "West Virginia."

I. F. Cohn, assistant surgeon. Ordered to the "El Cano."

H. Butts, assistant surgeon. Ordered to the "Maryland."

E. C. J. Eytinge, assistant surgeon. Detached from the "El Cano" and ordered to the "Concord."

L. H. Wheeler, assistant surgeon. Detached from the "Helena" and ordered to the "Raleigh."

APPOINTMENTS.

The following appointments have been made at the Carney Hospital: Dr. John B. Hawes, 2d, Dr. William B. Robbins and Dr. Nathaniel K. Wood, assistant physicians to the Out-Patient Department.

SOCIETY NOTICE.

Medical Society of New Jersey. — Important change in the place of the annual meeting. Owing to the fact that the new hotel at Cape May will not be completed in time, the Medical Society of New Jersey has been obliged to change the place of its annual meeting. The trustees have selected Long Branch, and the next meeting of the Society will be held in that city at the Hotel Scarboro on June 25, 26, 27, 1907.

By order of

May 27, 1907. The Board of Trustees.

RECENT DEATH.

Alonzo Lawrence Stickney, M.D., M.M.S.S., died in Ashburnham June 4, 1907.

BOOKS AND PAMPHLETS RECEIVED.

Foods and Their Adulteration; Origin, Manufacture and Composition of Food Products; Description of Common Adulterations, Food Standards and National Food Laws and Regulations. By Harvey W. Wiley, M.D., Ph.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Introduction to Infectious and Parasitic Diseases, Including Their Cause and Manner of Transmission. By Millard Langfeld, A.B., M.D. With an Introduction by Lewellys F. Barker, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C. M. (Aberdeen). Third edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Proceedings of the American Medical Editors' Association. Thirty-seventh Annual Meeting held in Boston, Mass., June 5, 1906.

Etude Expérimentale de la Pleurésie Séro-Fibrineuse Tuberculeuse. Par M. le Docteur P. Cartier. Paris: G. Steinheil. 1906.

Ueber Lungengangrän. Von Carl Beck. Reprint.

Ueber die Bewertung der Fruhsymptome bei der Entzundung des Wurmfortsatzes. By Prof. Dr. Carl Beck. Reprint.

A New Method of Incision for Removal of the Breast. By Carl Beck, M.D. Reprint.

A New Method of Operation for Epispadias. By Carl Beck, M.D. Reprint.

Cholelithiasis. By Carl Beck, M.D. Reprint.

Skiagraphic and Therapeutic Factors in Tuberculosis of the Bones and Joints, with Some Reference to the Iodoform Treatment. By Carl Beck, M.D. Reprint.

The Röntgen Method in Lithiasis of the Urinary Tract. By Carl Beck, M.D. Reprint.

Diseases of Women, A Clinical Guide to their Diagnosis and Treatment. By George Ernest Herman, M.B. Lond., F.R.C.P. Illustrated. New York: William Wood & Co. 1907.

The Diagnosis and Modern Treatment of Pulmonary Consumption, with Special Reference to the Early Recognition and the Permanent Arrest of the Disease. By Arthur Latham, M.A., M.D. Oxon., M.A. Cantab., F.R.C.P. Lond. New York: William Wood & Co. 1907.

The Essentials of Chemical Physiology. For the Use of Students. By W. D. Halliburton, M.D., LL.D., F.R.S. Sixth edition. Illustrated. New York, London, Bombay and Calcutta: Longmans, Green & Co. 1907.

A Handbook of Skin Diseases and Their Treatment. By Arthur Whitfield, M.D. (Lond.), F.R.C.P. Illustrated. New York and London: Longmans, Green & Co. 1907.

On Extensive Separation of the Periosteum in Displaced Bone Fragments. By Carl Beck, M.D. Reprint.

On the Use of the Temporal Fascia to Cover in Cranial Defects. By Carl Beck, M.D. Reprint.

Address.

THE RELATION OF THE CLINICAL LABORATORY TO THE PRACTITIONER OF MEDICINE.

ORATION ON MEDICINE AT THE FIFTY-EIGHTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 4–7, 1907.*

BY JAMES B. HERRICK, M.D., CHICAGO.

The change that has been brought about in our conception of disease and in the manner of its detection through the discovery and invention of instruments and methods of precision and the application of improved laboratory technic is one of the most striking characteristics of the marvelous advance in medicine of the last half century. To realize what this means, think for a moment how comparatively helpless we should be were we suddenly deprived of bacteriologic aid in diagnosis with its attendant specific serum reactions; of the improvements in technic of the last fifty years in the way of microscopy, stains, section-cutting, etc.; of the study of the corpuscles of the blood and the estimation of its hemoglobin; of our knowledge of the chemistry of the stomach; of the cytologic, bacteriologic, chemical and physical facts concerning normal and pathologic fluids of the body; of the means of measuring blood pressure; of the numerous electric light appliances that enable us to explore nearly all the orifices and cavities of the body; of the Rœntgen ray; of the improved qualitative and quantitative chemistry of the urine and feces; of aids from physical chemistry. Think of how poverty-stricken we should feel were these aids taken from us — and they are by no means all of this class that might be enumerated — and then, and then only, do we begin in faint measure to realize the enormous value of these additions to our knowledge that have been made in the last few decades and the almost revolutionary change they have wrought in the methods of diagnosis.

These instrumental and laboratory methods, depending as they do on applied physics, chemistry, anatomy and physiology, have to do with the more exact sciences. They are, therefore, commonly regarded as having in them something of mathematical exactness, something of the element of finality. A piece of tumor viewed under the microscope, a bacillus obtained from the blood, grown, studied and seen with oil immersion lens, a chemical test of urine with the substance in question not only proven to exist but actually recovered and weighed in the balance — what are these but accurate procedures whose results must be correct? The physician, not clearly understanding all the workings of the laboratory, and dazzled by the brilliancy of the splendid results that have come from it, stung by the taunt that this practice is but empiricism, and smarting because conscious that the taunt is justified, has hailed the laboratory as his deliverer from the thralls of empiricism, irrationalism and mere experience and has looked up to it as the embodiment of science, as a never-failing aid in solving the mysteries of disease. The laboratory method has, therefore, in the minds of many, acquired a transcendent importance; anamnesis and physical examination seem old-fashioned and unreliable. The laboratory is viewed as a *sanctum sanctorum* pervaded by a purer light than the wards of the hospital; and the laboratory man as a superior being, the incarnation of all that is scientific in medicine and whose word cannot be questioned. Dr. L. Emmet Holt [1] recently put it in this way:

"The men of the laboratory to-day dominate medical thought. They form a sort of oligarchy, to whose decrees those who study medicine at the bedside only must needs submit, often with a subsconcious feeling of their own inferiority."

And he adds:

"I cannot myself resist the opinion that the man of the microscope and the culture tube occupies just now a place of too great importance, at least in the minds of the medical student and the younger practitioner."

Now, nothing has given a greater uplift to medical thought and practice, and especially to diagnosis, than the laboratory. Its aid is indispensable. But it has its own proper place. The earlier tendency to overvalue its work and to undervalue that done at the bedside is having the natural result in a swing back of the pendulum, and we are now hearing voices on either side of the Atlantic cautioning against the undue magnification of the laboratory at the expense of other aids to diagnosis. In our own country several writers have recently referred to the subject, and within a few weeks a large body of select medical men — the Congress of American Physicians and Surgeons — has considered the subject in a symposium, "The Relative Value of Laboratory and Clinical Methods in Diagnosis."

I have thought the matter of sufficient importance to be made the subject of this address. And particularly because I feared the papers of the symposium just referred to might not reach the bulk and sinew of the profession, viz., the general practitioner, and because I felt that too much emphasis could not be laid on certain points, I shall, even at the risk of seeming to repeat much that has just been said by others, venture to speak on "The Relation of the Clinical Laboratory to the General Practitioner."

It should be understood at the outset that I am not referring to laboratories devoted exclusively to research, such as the Pasteur Institute, Koch's or Ehrlich's laboratories, the Lister Institute of Great Britain, the Rockefeller Institute or the Memorial Institute for Infectious Diseases. I refer particularly in this discussion to what is commonly called the clinical laboratory, the laboratory that is run as a utility, as an instrument of precision, if you please, in the armamentarium of the physician, the place to which he takes to examine himself or to have examined by others his specimens of blood, sputum, stomach contents, cultures from the throat, or fragment of tumor, hoping for aid in diagnosis and hints as to prognosis and therapy.

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* Published through the courtesy of the Journal of the American Medical Association.

[1] Holt (L. Emmet): Medical Tendencies and Medical Ideals, The Journal A. M. A., March 9, 1907, p. 845.

But let me add that unless such clinical laboratory, no matter how small it may be, has in it the essence of research its work becomes routine and nonprogressive. It is the search for the new that activates. A slow but sure death overtakes the laboratory as it does the ward in which there is no spirit of investigation.

It seems to me that certain mistaken notions obtain regarding these laboratories, which lead at times to strained relations and misunderstandings between the practitioner and the laboratory expert. These are due to faults that lie partly in the laboratory worker, partly in the physician.

First as to faults of the laboratory. And I dismiss from this criticism laboratory work that is done by incompetent men, poorly trained or careless. That some of these men pretending to do scientific work are entirely unfitted for it is, of course, true, but this is no just reflection on the laboratory method as such, any more than an incompetent practitioner of medicine should lead us to condemn the entire system of practice.

In the first place there is often a failure on the part of the laboratory to acknowledge frankly its inherent limitations. The truly great men in this line of work are ever the most conservative in the expression of opinion. There is too clearly present before their minds the possibility of error in technic, of false interpretation of that which is seen, of our poverty of knowledge concerning some of the even common laboratory reactions. These are the men who are always on the lookout for artefacts, who refuse to state positively, from microscopic examination alone, that a smear from the throat does or does not contain diphtheria bacilli, who hesitate to declare that a cellular form is the ameba coli, who may decline to pronounce whether a given section is from a sarcoma or an inflammatory swelling. These are the laboratory men who have the courage to say, " I don't know," or " It is impossible for any one to tell." Were there a franker willingness on the part of the laboratory expert to admit these limitations of knowledge, just as the clinician must at times acknowledge his inability to interpret physical signs, there would be in the end a distinct gain in confidence in the laboratory rather than a loss when the practitioner finds from subsequent history of the disease, as he sometimes does, that the opinion of the laboratory so positively expressed was wrong.

In the second place there is at times a failure on the part of the laboratory to realize the gravity of the duty imposed on it by the physician. The family doctor, with the medical or surgical consultant, may have exhausted their means of diagnosis. The laboratory expert is called on. On his findings depends, perhaps, the loss of the uterus in a young wife for supposed carcinoma, the sacrifice of a limb for what seems to be sarcoma but may be really gumma, the giving up of life's plans and hopes because of supposed tuberculosis of the lung or kidney, the diagnosis being based on some doubtful tubercle bacilli in the sputum or urine. The laboratory worker is often so remote from his patient that he fails to feel that personal responsibility of which the family physician is all too conscious, and so, scarcely realizing the importance which attaches to his decision, he may make it on insufficient grounds. Were he to feel the full import of this decision, in doubtful cases he might admit more frankly to himself and to the physician his inability to reach a positive conclusion. Repeated or later examinations could then be made, thus clearing up the diagnosis. Or, in the event that uncertainty still remains, the matter could be frankly discussed with the physician and the family and the best combined decision possible under the circumstances could then be honestly reached.

Third, there is a tendency for some laboratory workers to step beyond their province and make diagnoses that are unwarranted by the facts and perhaps unasked for, and even to advance a prognosis and advice as to treatment. Strictly speaking, the laboratory's function stops when it announces its findings. The interpretation of the laboratory findings rests with the practitioner. I am aware that no sharp line can or should be drawn here, for, as I believe, these two men should work together and should both be practitioners, both be in close touch with the patient. But I criticise such things as this. I have seen, and more than once, reports from clinical laboratories reading somewhat as follows: " This urine is from a typical case of chronic interstitial nephritis," when forsooth it was not; it was from a typhoid drinking huge quantities of water passing urine of low specific gravity and of large amount, with a trace of albumin and an occasional cast. Often I have seen the positive diagnosis of pernicious or secondary anemia made from a blood smear alone sent into a laboratory. We know this is possible, but it is risky. And many times have I seen a report that said in substance, often in so many words on the basis of a Widal reaction: " This is (or is not) a case of typhoid fever." And when free hydrochloric acid has been found in the stomach contents the statement is returned: " This is not a case of carcinoma." Such reports, I need scarcely say, are wholly unwarrantable. They are as inexcusable as for the clinician to percuss the chest and listen with the stethoscope and declare positively that the case is or is not tuberculosis of the lung, without paying attention to the anamnesis or to the other physical findings, the sputum, etc. Nothing has done more to bring the laboratory into disrepute than this irrational, almost meddlesome, method of venturing a diagnosis on wholly insufficient grounds. It is hardly an excuse that the laboratory is often asked for a diagnosis by the physician who is unable to interpret the findings. The answer even then should be a guarded one and one liable to revision in the light of clinical findings. The laboratory man should stand, if you please, in the nature of a consultant, the opinion in the case, while influenced, of course, largely by the laboratory findings, should always be the combined opinion of the practitioner and his colleague, the laboratory man.

On the part of the practitioner there is often a failure to recognize the limitations of the laboratory. As I have said, the physician too often has the notion that the laboratory methods are supreme and that it renders unnecessary and obsolete the old-time careful bedside observation. The possibility of error on the part of the patient or of the physician who provides the specimen for examination, particularly a specimen for bacteriologic examination, the personal element of carelessness, haste, hurried conclusions in the laboratory operator, faulty or balky instruments or reagents, the intrusting of important details to immature assistants,—these are some of the ways in which error may creep in and ways concerning which the practitioner untrained in the laboratory is ignorant.

But while this kind of limitation of the power of the laboratory has to be reckoned with, it is, after all, not so much a fault of the laboratory itself as of the individual worker. But misinterpretation of laboratory findings by the practitioner is common and is grave. And this is due to no fault on the part of the laboratory, but rather to the shortcomings of the methods themselves and the failure on the part of the practitioner to take cognizance of this fact. Many of the aids to diagnosis are regarded as more far reaching and comprehensive than is the reality; they are looked on as pathognomonic and as, without exception, infallible. This comes about because often earlier reports as to the value of these tests are rosy-hued and conclusions are sweeping and definitely stated. The later observations throwing doubt on the method are slower to get into print and are less likely to attract the attention of the busy practitioner than is the heavy headlined favorable report. Frequently, too, he trusts for his information to a brief conversation with a friend, to an incomplete abstract in a corner of a medical journal, or to a half understood discussion in a medical society; and he grasps at this new supposedly infallible method as he may grasp at the " patent medicine " or the newly-advertised drug that promises to cure so much. How many physicians to-day are treating cases for something else than typhoid because a single serum test, made perhaps early in the disease, has failed to show the specific reaction, overlooking the fact that this reaction is very capricious as to the time of making its appearance, and overlooking, what a few years ago would have enabled them to make a diagnosis, the course of pulse and temperature, the spleen, rose spots, tympany, facies, etc.? Or how many times has the failure to find free hydrochloric acid been regarded as conclusive evidence of carcinoma of the stomach? And who among us has not had his hard fall from placing too great reliance on the presence or absence of leucocytosis? We should remember that many of the tests are not yet clearly understood, that in a sense they are still on probation and still to be regarded as only approximately correct. It is a good thing to have appear occasionally such papers as those of Richard Cabot[2] on the "Limitation of the Urinary Diagnosis", and of Emerson[3] on the "Accuracy of Certain Clinical Methods," the one showing how the interpretation commonly put on certain laboratory findings is not always in accord with the facts as shown by the examination of the patient *intra vitam* or post-mortem, and the other how some of our methods, by many regarded as quantitatively accurate, are in reality subject to a rather wide margin of error.

Unfortunately, some of our laboratory work is still more or less empirical. What Bismarck said about politics, "*Die Politik kann nicht im Laboratorium gemacht werden denn sie hat überäl mit dem Menschen zu thun,*" might be applied, as it has been,[4] to medicine. Medicine cannot be made in the laboratory alone, for it has to do with living man.

Numerous observations may show that there is some general law that lies back of a certain laboratory reaction, but exceptions here and there to the law as tentatively enunciated make the wiser man realize that in dealing with the complex living body the conditions are different from those found in the test tube or the incubator; that his law may after all not be so general and broad as he had supposed, and that great judgment and, in a measure, an empirical judgment must be exercised in interpreting the findings. As Dr. Barker[5] has well said, the science of medicine is only slowly reaching the stage of development when the formation of brief laws — so-called general laws — is possible. We are still largely busy establishing and collecting facts, comparing them and arranging them according to their mutual relations, and only occasionally cautiously venturing to hint at some general law.

Then, again, too often the difference between a positive and a negative finding is not clearly kept in mind. Because no plasmodia are found in the blood on a single, even though careful, search, malaria is not necessarily excluded, though the finding of even a few proves malaria.

This fault that I have just referred to is entirely on the part of the practitioner. The laboratory has reported exactly what it has found; the physician has misinterpreted the finding. Most diseases have yet to be recognized, not by some one symptom or sign that is pathognomonic, but by a *complexus* of symptoms and signs. Nearly all the laboratory findings should be viewed in the same light as important symptoms, greater or less weight being attached to them as we learn from experience or know from their inherent character that they approach the pathognomonic. To illustrate: The finding of typhoid bacilli in the blood is of greater diagnostic value than the Widal test; the latter outweighs in importance the diazo reaction of Ehrlich, and this in turn is of more diagnostic value than the finding of a concentrated urine with perhaps a trace of albumin.

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[2] Cabot, R. C.: Bull. Johns Hopkins Hosp., 1903, xv, No. 158.

[3] Emerson: Bull. Johns Hopkins Hosp., Jan., 1903, xiv, No. 142.

[4] Hemmeter: Science in Medicine, Jour. A. M. A., Jan. 27, 1906, p. 244.

[5] Barker, Lewellys F.: Methods in Medicine, Boston, 1905.

The first test is conclusive of typhoid infection — at least, according to present notions — and outweighs anamnesis and physical examination. The Widal reaction, either positive or negative, must be more carefully interpreted because not yet clearly understood, because possibly delayed in making its appearance or perhaps influenced by a typhoid long passed, and, possibly, even due to micro-organisms closely related to the typhoid bacillus; the history of the case and the physical findings must here be taken into account. The diazo reaction found in other conditions than typhoid is so far removed from the category of a specific reaction as to be viewed only as confirmatory and as outweighed by many other findings. A concentrated urine and a trace of albumin are so common in febrile conditions as to lose nearly all real diagnostic importance. The physician must have some reasonably clear conception of the relative importance of these and analogous procedures or his interpretation is liable to be faulty and misleading, even to the extent of grievous error. The laboratory finding must be fitted into the symptom-complex as a cardinal symptom perhaps, but must not be permitted to usurp the position of prime importance unless its inherent nature entitles it to such a position. The fact that its place of birth was the laboratory does not give it such rank that it may look down on the symptom or finding whose origin was the lowly ward bed.

And, lastly, while the laboratory expert shows at times a lack of appreciation of the responsibility he is assuming in expressing his opinion, the physician has no right to throw the entire responsibility of an important decision on the laboratory. The decision in a perplexing case should be a combined one, the men working as colleagues, and each man sharing in the responsibility, each entitled to his reasonable fee.

Now these faults that I have specified are remediable. The solution lies in two directions: first, in a better practical training of the undergraduate in laboratory technic and methods so that he realizes the difficulties, limitations and possibilities of the laboratory; second, in the closer relation between the laboratory expert and the clinician and, when possible, their union in the one individual. The closer the laboratory and the patient the less the liability to error; the less the scattering of responsibility the surer is the responsibility to be met.

To these ends there should be laboratories in our medical colleges for the training of undergraduates, and these should be as closely connected with the wards of the hospital and the clinic as possible. No modern hospital should be regarded as well equipped that does not make provision for a laboratory. The " show room " of the hospital should not be alone the marble wainscoted, well-lighted operating room, but as well the laboratory where material aid is obtained in telling the physician or the surgeon the nature of his patient's illness, or, perhaps after he has operated, telling the surgeon for what malady he operated.

Departmental laboratories are desirable and, on the same principle of keeping the laboratory and the attending staff in close touch and removing the dangers coming from divided responsibility, there should be, when possible, ward laboratories, or laboratories for the individual attending man. And the time will soon come, if it be not already here, when the laboratory of the clinic or the ward must have its subdivisions into chemical, bacteriologic, anatomic, etc.

And in private practice how is it? Ideally each practitioner should have his private laboratory. He attempts it now, thus admitting the truth of the statement, with his few begrimed test-tubes, his bottle of nitric acid and his Fehling's solution and the binocular microscope under that large glass globe on the marble-topped table in front of the window in the parlor. But there are many men, and their number is rapidly increasing, who have a microscope that they use, who are equipped to do in their own offices good work in the examination of urine, blood, sputum, feces, stomach contents, pieces of pathologic tissue, etc. And as they grow too busy to do these things themselves they employ the young man fresh from the college laboratory; and, guiding and directing him, instructing him in the practice of medicine, instructed by him in the later improved methods just taught him in college, they work together, mutually benefiting, keeping up with the times, and exemplifying the union of the laboratory and the clinical side of medicine. But not every man is able to do this or feels that he can afford it. Cannot groups of men combine to employ some young man to do much of this laboratory work? These group laboratories, or what amounted to such, I have seen in small towns where a recent graduate, perhaps not on any salary, was yet the man to whom the other physicians by common consent submitted their specimens for laboratory examination, and because all did it there was no feeling of lowered dignity or of acknowledged inferiority, but perfect harmony, good feeling and mutual profit.[6]

And similarly the county medical society might have its clinical laboratory under the charge of some young man paid a salary or fees for separate examinations who conducts a laboratory to which any member might feel free to go for the help that for various reasons he cannot get in his own office. Laboratories for counties have already been established and, if not too much entangled in politics, ought to be successful, especially in the way of guarding the health of the community and in aiding in the diagnosis of charity cases.[7] In the same way municipal laboratories have become a recognized feature of the modern city, though the carelessness of the political appointee or his incompetence, with that lack of feeling of personal responsibility that comes from the remoteness of the physician and the patient, detract oftentimes from the value of their results. Commercial clinical laboratories in our large cities are of

[6] Cowan, J. R.: Value of Laboratory Methods to the Country Practitioner, Boston Med. and Surg. Jour., March 8, 1906.

[7] Westbrook: The Public Health Laboratory, Am. Med., March 3, 1906.

great service and have a legitimate place, their value depending on the *personnel* of their staff and on how far they permit the commercial side to overshadow the scientific.

What I would contend for, therefore, is not less laboratory work but more, more for the undergraduate and more for the practitioner. So well trained should our graduate be that certain laboratory procedures of established value should be no more the exclusive property of a select few — the laboratory men — than is the clinical thermometer, the stethoscope or the obstetrical forceps; all should understand and be able to practice them. And I would plead for the closer relation between the laboratory and the patient. Clinical means bedside. Let us have the microscope, the test-tube, the culture medium, the x-ray, at the bedside, making a real clinical laboratory. And not only should there be a training of the physician in laboratory technic, but a training of the laboratory worker in observation of disease. The more familiar he is with illness the better does he understand the import of his decision, the more acutely does he feel the responsibility resting on him and the more helpful does he become as the co-worker of the practitioner. In exceptional cases exceptional laboratory knowledge or skill may be necessary, and can be obtained of some one who has made a special study of some particular branch of pathology, bacteriology, physiology, chemistry, etc., in just the same way that the practitioner in exceptional cases calls for the help of the expert oculist, neurologist, laryngologist or other specialist. Because he asks the opinion of the ophthalmologist on the appearance of a retina is no reason why he should not himself have a practical working knowledge of the use of the ophthalmoscope or why he should not have the final decision as to the nature of the patient's ailment — using the findings of the oculist as one of the cardinal symptoms and the opinion of the oculist as that of a consultant but not necessarily the final arbiter of the case.

And I cannot let this occasion pass without urging that we have care lest we underestimate the value of close observation of the patient himself. Much of this is still empirical, at least in its results, *i. e.*, its interpretation. But the stored-up and collated observations of keen-eyed and keen-brained students of disease, from the time of Hippocrates down to the present, are not to be lightly thrown aside. The laboratory must not be permitted to drive out the arts of auscultation and percussion. Because bacteriology, the microscope and the x-ray often enable us to make an early diagnosis we should not rely on these agencies to the exclusion of the older methods. Rather should we be led to greater care in examination because of the possibility of earlier recognition of disease and more accurate interpretation of slight deviations from the normal, for the laboratory has sharpened our insight into the meaning of signs and symptoms otherwise obscure. To repeat what I have several times said, it is only by the correlation of the results of the examination by all methods that the conclusion is reached as to the nature of an illness.

I might quote from various writers who have recently deplored the tendency to overestimate the importance of laboratory methods at the expense of bedside observation and who urge the more close union of the two methods. Let me cite just two: Von Noorden,[8] well known for his laboratory research, in his inaugural address on assuming the Vienna chair left vacant by the death of Nothnagel, while speaking of the enormous advances made in the way of chemical, microscopic, bacteriologic and electric diagnosis, deplored the fact that auscultation and percussion were treated in a step-motherly fashion and that students were graduated who were only superficially trained in these methods of physical examination, the very foundation stones of practical medicine.

Strümpell,[9] emphasizing the importance of the Rœntgen ray, of bacteriology and of a study of function in diagnosis, warns against permitting the old reliable methods of physical diagnosis to be relegated to the background.

" The fine art of observation of the older physician, the painstaking attention to the minutest changes, the careful consideration of all anamnestic statements of the patients — all this may seem oftentimes trifling and unnecessary to the modern physician. But he is very much in error."

And again:

" Therefore, I think that while employing all the newer methods of examination we should not allow to fall into disuse the art of pure clinical observation, the instrument of the practitioner whose place can be taken by nothing else."

A caution along another line ought also to be given. The use of instruments of precision and of laboratory methods in diagnosis has tended, at least in some quarters, toward a slighting of the study of pathologic anatomy. Changes in the size, shape, consistency and other physical properties of organs with resulting alteration in function, have been, and of necessity must be, the basis for many of our diagnoses. No bacteriologic or blood findings can detract from the detection and identification by physical examination of a large spleen, though the interpretation of such enlargement may be impossible without the study of the blood. There should be as careful comparison of clinical findings with those of the autopsy as in the days of Skoda and Rokitansky.[10] And encouragement should be given any method of diagnosis that tends to emphasize a study of function as altered by disease. Pathologic physiology, I believe, will play a far more important rôle in the diagnosis of the future than at present.

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[8] Von Noorden: Antrittsvorlesung. Deut. med. Wochenschr., 1906, xxxii, No. 32, p. 1750.

[9] Strümpell: Eröffnungsrede zum xxiii Kongress für innere Medicin in München. Deut. med. Wochenschr., 1906, xxxxii, No. 18, p. 726.

[10] Concerning the value of the study of pathologic anatomy two European clinicians of prominence, men well versed in the theoretical and practical side of laboratory work, speak as follows: Romberg (Erfahrung und Wissenschaft in der inneren Medicine in therapie der Gegenwart, 1905) says: " For the internist, pathologic anatomy is even to-day indispensable. . . . A thorough study of pathologic anatomy is the best school for the diagnostician." Neusser (Ueber Diagnostik und Therapie in der inneren Medicin. Vienna, 1893) speaks of pathologic anatomy as even to-day the " mistress of our diagnostic art," and says a little later, concerning the value of a control of our clinical work by autopsy: " Even yet the dead speak a language, and this language brings to the intelligent physician at the bedside of his patient calm satisfaction and lends him strength and accuracy."

And then, in conclusion, we should not look on the laboratory as a short cut to a diagnosis. Sometimes it is, but often its workings are slow and cumbersome, and because of their complexity the results are not easily expressed in practical, every-day usable terms, and are, therefore, inconclusive or confusing. In other words the laboratory diagnosis is not yet one of machine-like accuracy; it is no nickel-in-the-slot affair, if you will pardon the homely comparison. The time has not yet come, let us hope it never will, when a diagnosis can be made without the exercise of brain power. We do not wish our professional work to be degraded by being " dementalized," to use Weir Mitchell's [11] expression. Anamnesis, physical and laboratory findings, are to be studied and compared and a result reached that not only gives a name to the disease but gives us a conception of the disease as it exists in the particular individual, with all that such a comprehensive diagnosis implies in the way of prognosis and hints as to therapy.

Original Articles.

NOTE ON THE ARTERIES OF THE CORPUS STRIATUM.*

BY JAMES B. AYER, M.D., BOSTON,
AND
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Two years ago while studying the gross appearances of arteriosclerosis in the arteries of the brain, we were impressed with the barren descriptions of and the lack of available information relating to the circulation of the corpus striatum.

The plan was then formed to make fresh dissections. These were made and as the result of this work revealed new and interesting material, it was decided to publish an informal report, a part of which is now presented.

The following is a representative textbook description of the circulation of the corpus striatum: The a. cerebri anterior near its base throws off several inconstant branches which go to the caput nuclei caudati; and a group comes from the a. cerebri anterior in the region of, and sometimes from, the a. communicans anterior and pursues a retrograde course to the innermost part of the substantia perforata anterior and thence into the caput nuclei caudati. The a. cerebri media near its base gives off numerous branches, some of which supply the nucleus lentiformis and pass through the capsula interna into the nucleus caudatus, while others supply the thalmus (which also receives blood from the a. cerebri posterior) and one of these is longer than the others and is called by M. Charcot the artery of hemorrhage.

This description has been condensed from the reports of M. Duret in five numbers of *Le Progrès Medical* for 1873 and in the *Archives de Physiologie*, 1874, wherein he published the account of his investigations, though he communicated them to the Société de Biologie on Dec. 7, 1872, which, by remarkable coincidence, was the same day on which Dr. Heubner of the University of Leipzig published at Berlin an account of the circulation of this region which in all essential points was identical with M. Duret's.

J. M. Charcot, in his " Localization of Cerebral and Spinal Diseases," translated for and published by the New Sydenham Society, London, 1883, has by frequent quotation absorbed the above mentioned reports of M. Duret to such an extent that one cannot readily separate them; therefore M. Charcot will be referred to with the understanding that all relating to the circulation shall be accredited to M. Duret.

The published illustrations of the circulation of the corpus striatum are quite misleading. By following M. Duret's first drawing, they have been drawn invariably in cross section, though one can readily see from his description that they should be shown in sagittal section — for although the arteries of the corpus striatum enter the substantia perforata anterior in an order that is about at right angles to the fissura longitudinalis cerebri, those predominating at once bend outward toward the exterior wall of the nucleus lentiformis, and in so doing spread out, some going frontward and some backward, thus forming a " fan," so that their collective position is at right angles to that formed at their entrance of the substantia perforata anterior and parallel to the fissura longitudinalis cerebri.

M. Charcot's method of approach in dissecting out the arteries " consists in removing successively the gray matter of the island of Reil, the subjacent white substance, the claustrum and, lastly, the external capsule. In this manner the external surface of the lenticular nucleus is exposed in its whole extent. By means of this preparation they are seen to be arranged like a fan on the surface of the gray nucleus."

This method was followed in a general way, and it was noticed that these arteries formed themselves into three groups, each supported by one larger artery, there being one artery a little more than 1 mm. in diameter, taking a backward course, one medianward and one frontward; with these are several smaller arteries which grouped themselves in a manner suggesting the slats of the " fan."

These three groups will be referred to as
Group 1, which spreads frontward.
Group 2, medianward, and
Group 3 will be that which runs backward.

The present description will be confined to Group 1.

The arteries thus exposed were presumably from the a. cerebri media and an attempt was made to classify these three divisions and see if there were any precise order in which they were thrown off from the a. cerebri media.

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[11] Mitchell, S. Weir: The Early History of Instrumental Precision in Medicine. New Haven, 1892.

* These anatomical investigations, which are being conducted by Mr. Aitken, are a prefixed portion of a study on arteriosclerosis.

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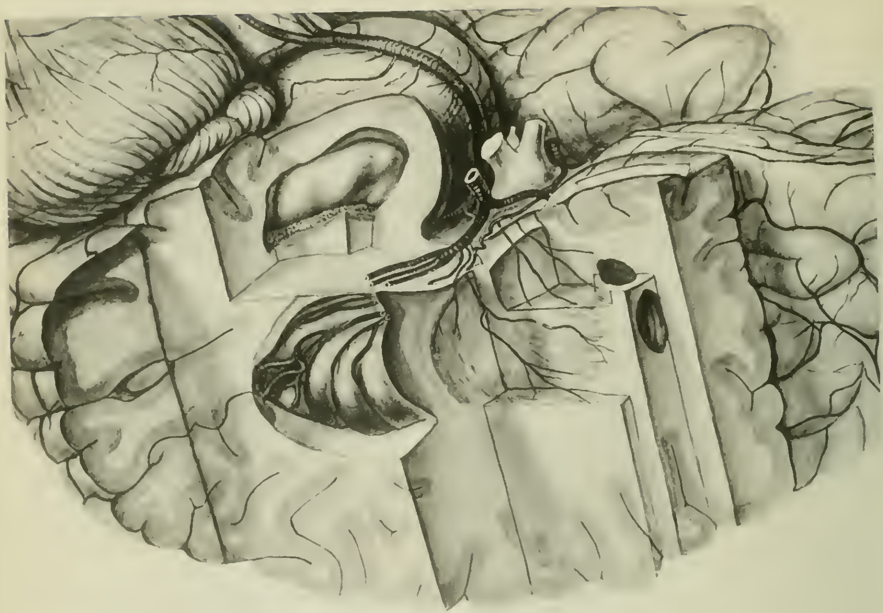

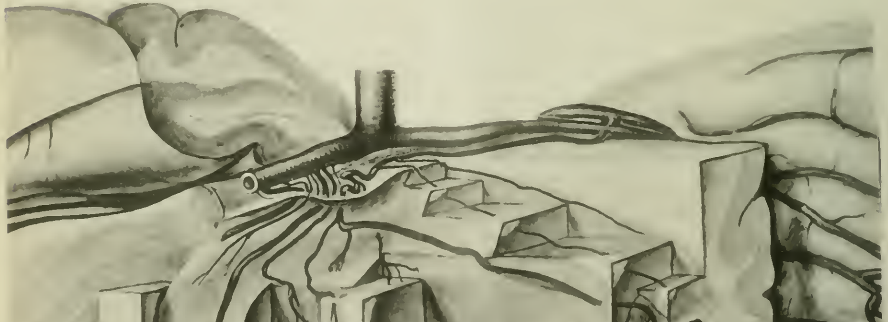

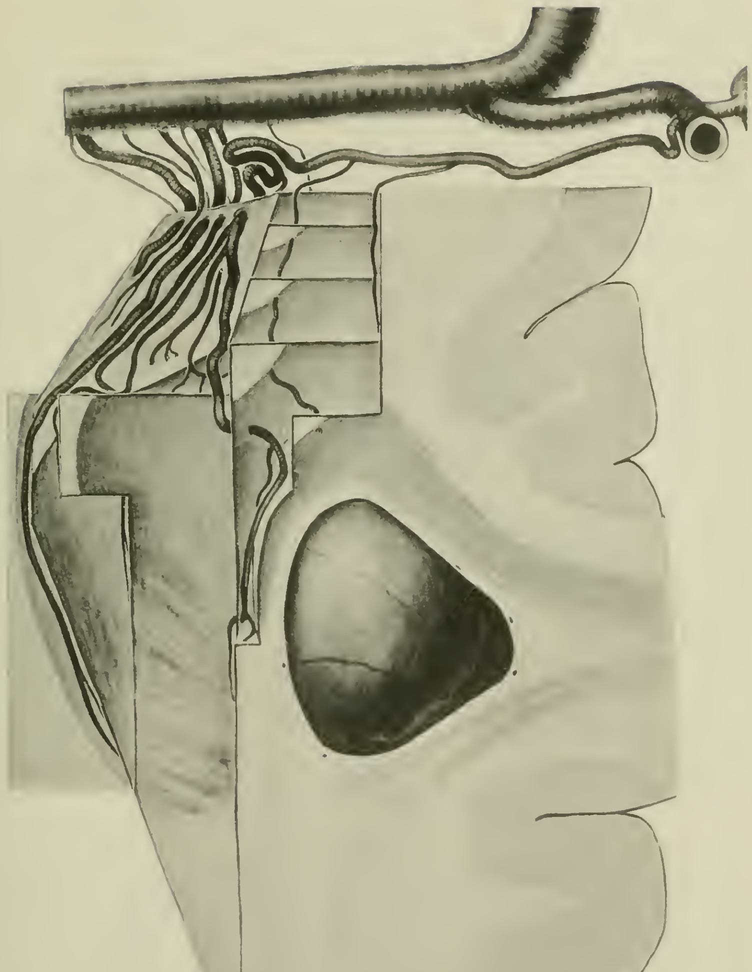

To accomplish this it was necessary to follow each artery to its origin in the a. cerebri media.

Between the substantia perforata anterior and the trunk of the a. cerebri media there is a tangled and confused mesh of pia mater and vessels, and in tracing one of these little arteries through this snarl without losing or breaking it, or destroying any of the adjacent and sometimes adherent vessels, is a tedious and difficult task.

Had M. Duret and M. Charcot traced these vessels to their origins, they would not have written the following:

"The predominant share of the circulation of the corpus striatum belongs to the sylvian artery which supplies: (1) the greater part of the caudate nucleus; (2) all of the lenticular nucleus; (3) a portion of the optic thalmus; (4) the whole extent of the internal capsule. The anterior cerebral, on the other hand, has a very unassuming position in this system. It furnishes twigs to the head of the caudate nucleus only and even this distribution is not constant."

This statement regarding the relative importance of these two arteries is repeated throughout the writings of these authors and has been preserved in anatomical textbooks.

While one hesitates to dispute such well established authorities, the dissection of numerous brains made evident the need of modifying the statement when it was found that Group 1 had its origin in the *a. cerebri anterior.*

The main artery of this group has its course in the a. cerebri anterior, directly opposite the a. communicans anterior. It starts backward on the superior surface of the a. cerebri anterior and is sometimes adherent to it, and is not visible unless the a. cerebri anterior is freed from it and drawn to one side. It can then readily be traced back to the bifurcation of the a. carotis interna where it takes an outward turn and follows the a. cerebri media and enters the tangle of the pia mater and vessels that lie between the a. cerebri media and the substantia perforata anterior.

This artery differs from the other arteries of the corpus striatum by giving off branches before it enters the substantia perforata anterior. As soon as it takes the outward turn at the bifurcation of the a. carotis interna it sends a branch through the substantia perforata anterior into the inferior surface of the nucleus lentiformis, and remaining close to the surface it passes frontward into the lower portion of the caput nuclei caudati. Near this branch the artery gives off a similar branch which takes a parallel course and is a little longer, ending in the nucleus caudatus at its extreme anterior portion. The greater portions of these two branches are in the putamen and supply it with minute branches. The artery, just before it enters the substantia perforata anterior, sends one more branch which spends itself in the putamen.

The artery itself then goes through the substantia perforata anterior into the nucleus lentiformis where it gives out several branches that are more or less confined to the putamen, though sometimes they enter the capsula interna; it then changes its course to one more anterior, sometimes bifurcating, and continues to the capsula interna through which it passes into the nucleus caudatus to its extreme anterior part. It here breaks up into numerous branches, some of which turn back along the cauda nuclei caudati, while others enter and end in the capsula externa.

This description is founded on the dissection of 25 brains in which the artery was found on both sides in 100% of the cases, though there were a few cases where this artery was not so highly developed as is described above. In such cases the remainder of the circulation was taken up by the a. cerebri media.

There can be little doubt that M. Charcot has described the main trunk of this artery after it has entered the brain, and both he and M. Duret, if they speak of the first three branches, describe them also as coming from the a. cerebri media. M. Charcot says:

"An artery is of special importance from its size and from the pre-eminent part which it plays in the intra-encephalic hemorrhage. We should in a manner be justified in styling it, *the artery of cerebral hemorrhage.*" "After penetrating the lenticular nucleus it gains the substance of the caudate nucleus by crossing the upper part of the internal capsule. It then continues forward and extends to the most anterior part of the caudate nucleus."

The three plates show the bases of the brains in superior positions, necessitated by the requirements of light and shade. They are drawn in a manner that is somewhat diagrammatic. Plate I is about actual size, showing the situations of the insula; the hippocampus; the chiasma opticum; the cornu anterius ventriculi lateralis, etc., in relation to the corpus striatum. Plate II is enlarged one diameter; groups 1 and 2 are easily distinguishable. Plate III is a front view of the same dissection shown in Plate II and is enlarged three diameters above actual size.

We wish to here thank Dr. J. H. Wright for his valuable advice and Dr. Oscar Richardson for generously supplying material which made possible our work in this region.

PNEUMATURIA, WITH REPORT OF A CASE.

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Pneumaturia may be defined as the passage of free gas with the urine, either during micturition or on catheterization. The earliest case on record is probably that quoted by Raciborsky, from the "Curiosities of Nature," of 1671, in which there is mentioned "a leading citizen of Gotha who was afflicted by anal colic, with rumbling, tension of the abdomen, pain about the naval and, what is strange, wind was passed by the penis as if through the usual and accustomed channel, sometimes with, sometimes without, urine.*

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* "Est vir primarius hic Gothæ, qui collica per anum affligitur, cum borborygmis, tensione abdominis, doloribus circa umbilicum, et quod peculiare est flatus per penem quasi solemni et consueta tunc excernuntur via, saepe cum, saepe sine urina." Miscellanea curiosa, decuria prima, annus, secundus, p. 85.

In the same connection is quoted a statement that Ribes, when prosector to the Medical School at Paris, showed his students an infant whose only malady was the passage of gas by the penis (" *qui n'avait pour toute maladie que cette emission de gaz* "). The urine was stated to be in no way decomposed, but apparently that of a healthy individual.

The first case, however, to be described in any detail, was that reported by Raciborsky[1] in 1860. The patient, a neurotic and hypochondriac man, of forty, came complaining of pneumaturia. On catheterization a free flow of urine was obtained, followed by bubbles of a gas which upon analysis was pronounced to be nitrogen. The urine was examined and pronounced normal, although, of course, no examination that would be satisfactory to-day was then possible. The pneumaturia disappeared spontaneously.

All the cases reported within the next twenty years were more or less brief notices of vesicorectal fistula in which rectal gases entered the bladder and were passed with the urine.

Two cases reported in 1882, by E. L. Keyes,[2] are of more interest. The first was that of a man of sixty-seven with prostatic hypertrophy, and the usual symptoms of obstruction and cystitis, who occasionally passed gas with his urine. No careful examination of gas or urine was made. At the autopsy the rectum was found normal, there being in particular no communication between gut and bladder. At the time, this report aroused much interest, all cases of pneumaturia being then interpreted as due to the passage of intestinal gases into the bladder. The second case was very similar, but somewhat less interesting, there being some inflammatory thickening of the vesicorectal septum and the possibility of a vesico-rectal fistula being not excluded.

Guiard[3] and Dumenil[4] were the first to point out the relation between pneumaturia and diabetes mellitus and to show that glucose may, under favorable circumstances, undergo the some fermentation within the bladder that it does without. C. H. Ralfe,[5] in 1887, reported such a case. The patient, a middle-aged man, had been treated for an aortic lesion for some time. His urine had always been normal. Compensation failing he was put to bed. Delirium developed, he became very drowsy, and apparently had some urinary retention. The urine was found to contain sugar, with a specific gravity of 1,024. An hour later another specimen was passed with a considerable quantity of gas. This urine had a specific gravity of 1,040, and contained 3% sugar. The glycosuria and with it the pneumaturia then disappeared not to recur.

Müller,[6] in 1889, reported a case in an old man with diabetes mellitus and prostatic hypertrophy. The urine obtained by catheterization was acid, contained much pus, many bacteria, sugar varying from 0.6 to 2.5%, and bubbles of a gas that on analysis was found to consist chiefly of hydrogen. The latter indicated a bacterial fermentation of the glucose, though no bacteriologic examination was made. Senator's[7] case, on the other hand, reported two years later, is of interest in being probably the only case on record in which the gas producing agency was yeast.† The patient, a man aged sixty-six years, had for eight years been a diabetic. Early in 1889 a prostatic enlargement with cystitis, developed. He was compelled to use the catheter, and soon noticed that bubbles of an odorless gas passed with the urine. In the fall of the same year there was nearly constant pneumaturia and in November he died of diabetic coma. The fresh urine was always acid, contained much pus, little albumin, sugar varying from 1.95% to 3.3%, and considerable quantities of alcohol. The gas consisted of nearly pure CO_2, and the urinary sediment contained, beside the pus, only large quantities of beer yeast.

Van Loghem[8] has reported a case of diabetic pneumaturia, due to still another micro-organism. In his case, the intravesical fermentation of the sugar was due to the Bacillus proteus vulgaris.

A much more interesting form of pneumaturia is that in which the urine is free from sugar, but in which, there being a cystitis present, it contains albumin and pus, and is alkaline in reaction. The first case of this kind to be reported in a satisfactory manner was that of Tisné,[9] in 1887. The patient, a man of seventy-seven, with a large prostate, was passing a fetid, ammoniacal urine. On catheterization, urine was first obtained, then gas bubbles alternating with spurts of urine. This phenomenon was observed five times in ten days, the amount of gas varying inversely as the improvement in the condition of the urine. During the next two and a half months the pneumaturia occurred twice, became constant when a left perinephritic abscess appeared, but ceased permanently after operation. At no time did the urine contain sugar. No bacteriologic examination was made.

Schnitzler's[10] case, reported in 1894, was similar. His patient, a woman forty-six years old, complained of pain on urination. Since the fall of 1893, she had had pneumaturia, and when catheterized for the first time in December of that year, much gas was said to have passed with the urine. When first seen by Schnitzler, the bladder was tympanitic, the urine was acid and contained much pus, a little blood, albumin to correspond, no sugar, much gas. She remained in the hospital one month, voiding bubbles of gas with her urine, whether catheterized or micturating spontaneously. The urine contained in pure culture a bacillus, wrongly thought by him to belong to the coli group, producing gas in sugar-free culture media, pathogenic for guinea-pigs and encapsulated when obtained from the spleen of these animals. When injected into the bladder of animals, however, it did not produce a pneumaturia, even in the presence of a cystitis, unless a glycosuria had been produced by phloridzin injections and the urethra ligated. When inoculated into normal urine, or into that of the patient, no gas formation took place. When, however, blood was added to the urine to be inoculated, a very slight gas formation sometimes occurred.

Our real knowledge of this form of pneumaturia dates from the exhaustive monograph of Heyse.[11] His patient was a young woman who, in January, 1893, was admitted to Leyden's clinic, with transverse myelitis, that rapidly ascended until there was complete paraplegia involving the legs and the abdominal muscles. Both rectum and bladder were paralyzed, the sphincters as well as the detrusor vesicæ sphincters, so that the patient had to be catheterized three to four times daily. There was some vaginal leucorrhea. The urine, at first entirely normal, soon became turbid, as a severe cystitis set in. On the following day the hypogastrium was seen to be occupied by a round tumor, the size of a child's head, over which percussion gave a tympanitic note. Upon the introduction of the catheter, a little urine escaped followed by large quantities of gas. The tumor grew softer, but did not disappear. On the following days it steadily increased in size until it reached the umbilicus. Large quantities of gas escaped with each catheterization, but it was only when the bladder was thoroughly irrigated by means of a return flow catheter that it could be so completely emptied of its gaseous contents as to be invisible for a few hours. At this time the urine was alkaline in reaction, contained much pus, blood, bladder epithelium, mucus, and had a peculiar moldy odor. The amount of gas present in the bladder was estimated at from 60 to 80 cc., of which, however, only small quantities could be obtained for analysis. It was found to consist chiefly of CO_2 and H_2. Sugar and yeast cells were always absent. The pneumaturia resisted all treatment, being absent in all only eight days between Jan. 19 and March 3. On the latter date the patient succumbed to a bronchopneumonia. At the autopsy the bladder was found much dilated and full of gas. There were a few bubbles in the right ureter and in the pelvis of the right kidney. The bacillus responsible for the pneumaturia was found in the bladder, the left ureter, the pelves of both kidneys, the transverse colon, the lower portion of the ileum and in the vaginal secretion. In its cultural characteristics it closely resembled Escherich's Bacillus lactis aërogenes and was probably identical with it. It consisted of short thick rods, with rounded ends, not motile, decolorizing according to Gram. It grew vigorously on all the usual culture media, produced much gas in nutrient agar or gelatin, in milk and on potato, coagulated milk in twenty-four hours; no capsule formation is described. An interesting feature of this case is the probable mode of infection. Since the same bacillus that was responsible for the pneumaturia was found, not only in the intestine, where it is not an unusual inhabitant, but also in the vaginal secretion, it seems probable that the latter was infected from the former on account of the *incontinentia alvi*. With the frequent catheterization, it was hardly possible to avoid infecting the bladder from the vaginal discharge. The presence of the bacillus in ureter and kidneys is readily explained as an ascending infection.

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† Naunyn (Der Diabetes Mellitus, Nothnagel, 1898, p. 203) mentions a diabetic whose urine, usually rich in sugar, was for a time passed in an active state of fermentation, no sugar being demonstrable, but the urine containing a little alcohol and much yeast. He does not, however, specifically state that the phenomenon of pneumaturia occurred.

During the past twelve years very few cases of pneumaturia of this sort have been reported. Baccari,[12] in 1899, described a case in which for five months gas was passed at the end of urination. The patient had never been catheterized and the mode of infection could not be ascertained, there being no rectovesical fistula. The urine was usually acid, turbid, contained no sugar, but 0.05% albumin and considerable pus. Culturally a few colonies of Staphylococcus pyogenes aureus grew and about twenty times as many of a motile bacillus, closely resembling the Bacterium coli commune but not identified in detail. Some years later, in 1901, Wildholz [13] reported a case in a man of fifty-two, with gonorrheal stricture of the urethra. The urine contained no sugar, but 0.15% of albumin. The pneumaturia was found to be due to a bacillus that was identified as the Bacillus lactis aërogenes. The patient was put to bed on a nephritis diet. The albuminuria soon disappeared, and with it the pneumaturia.

More recently two cases have been reported by Wiesinger [14] and Gottstein,[15] in both of which the pneumaturia was due to a rectovesico-rectal fistula, produced by the perforation into rectum and bladder of an abscess in the vesicorectal septum.

Early in 1907, four cases of peculiar interest were reported by Adrian and Hamm.[16] They may be briefly summarized as follows:

Case I. Male, sixty-six years old, is said for twenty-two years to have had a hard tumor in the left iliac fossa. For several years there had been nocturnal urination and, of late, attacks of frequent micturition. On Jan. 15, 1906, violent bladder pain set in and symptoms pointing to urinary retention. The patient was catheterized, but the bladder found empty. Some forty-eight hours later, the urine, which had hitherto always been clear, became turbid, there was marked strangury, and an odorless gas was passed, chiefly towards the end of micturition. Three days later, a careful physical examination revealed only a hard tumor in the left iliac fossa and just palpable per rectum. The urine was acid, contained a little albumin, no sugar, much pus, little blood, and Bacterium coli commune in pure culture. Under treatment the cystitis improved, the hematuria disappeared, but the pyuria and pneumaturia persisted, the latter ceasing on only one occasion for thirty-six hours. In March, 1906, feces began to be passed with the urine, the pneumaturia still being very marked. Four months later, intractable diarrhea set in, the patient became cachectic, and died on Sept. 8. The tumor had increased greatly in size, and had apparently produced metastasis in the liver. There was no autopsy, but the diagnosis of rectal carcinoma leading finally to rectovesical fistula seemed inevitable.

Case II. A woman, aged sixty, multipara, had always enjoyed good health. In November, 1905, without known cause, frequent painful urination set in, and in December the urine became turbid. In February, 1906, an odorless gas began to be passed with the urine, often with considerable noise. The patient had never been catheterized, and there had never been symptoms of urinary retention. In March, a physical examination revealed merely a hard, nodular mass in the region of the left ovary and indurated inguinal glands on the same side. A cystoscopic examination showed merely a severe cystitis. The urine was acid, turbid, contained a little albumin, no sugar, much pus, a little blood and Bacterium coli commune in pure culture. Under treatment, the patient became subjectively more comfortable, but objectively there was no change. The pneumaturia in particular persisted. In May, the urine took on a fecal odor, and when seen again in July, the patient was emaciated and cachectic. The pneumaturia had ceased, but the urine, besides blood and pus, contained fecal matter. The ultimate diagnosis, while still obscure, was a vesicorectal fistula, due to some deep-seated bowel trouble. In this case, however, as in the previous one, the occurrence of pneumaturia antedated by several months the formation of a vesicorectal fistula.

Case III was a woman, nullipara, aged thirty-five. In March, 1906, she had violent attacks of what was said to be cholelithiasis, occurring at intervals for three weeks. During convalescence she suffered from frequent, painful micturition, which became progressively more severe. In April, the strangury had become excessive. The urine was turbid and contained much mucus. Towards the end of April, pneumaturia set in, especially towards the end of micturition. The patient had never been catheterized. When first seen, in May, physical examination was practically negative. The urine was turbid, acid, contained albumin, no sugar, much pus, no blood or casts. A single bubble of gas escaped with the last few drops of urine. Bacteriologically a pure culture of Bacterium coli commune was found. The pneumaturia persisted with varying intensity as long as the patient remained under observation.

Case IV is somewhat less striking in this respect. The patient, male, aged twenty-seven, had a hypospadias. In April, 1906, without known cause, a urethral stricture developed and led to a penoscrotal abscess resulting in the formation of three urinary fistulas. When seen in May, he was told to urinate. At the end of micturition, a considerable amount of odorless gas escaped from the meatus as well as from the three fistulous openings. This was the only occasion on which this phenomenon occurred. The urine was acid, turbid, contained pus, a few casts, no blood, and Bacterium coli immobile in pure culture. The patient was later found to have an orthostatic albuminuria.

The following case was observed in the gynecologic clinic of the Washington University Hospital in the service of Prof. H. S. Crossen, with whose kind permission I was enabled to make a study of the urine. I am indebted to the first assistant, Dr. F. J. Taussig, for the clinical notes.

Mrs. G., colored, aged thirty-four, multipara, came to the clinic in January, 1904. For some nine months she had suffered from back-ache and from profuse vaginal discharges, always purulent, sometimes bloody in character. On examination, a carcinoma of the cervix uteri was found involving a considerable portion of the posterior and left vaginal fornix with some infiltration of the left parametrium. She was admitted to the Provident Hospital, where a radical panhysterectomy, with removal of the parametrial connective tissue, was done by Professor Crossen. As is usual after such operations, the patient was unable to void urine spontaneously, and catheterization at regular intervals became necessary. The urine itself at this time was entirely normal, in particular free from sugar, albumin, blood and pus. On the sixth day after operation, the urine became cloudy and when on the following day the catheter was introduced as a preliminary to vesical irrigation, the urine was expelled, alternating with bubbles of an odorless gas. The pneumaturia continued for ten days, at first increasing in amount, then slowly growing less and finally ceasing. During the last few days of this period the patient again became able to micturate spontaneously and regular catheterization was discontinued. The patient herself was not able to perceive the escape of gas from the bladder when urinating, probably because of the presence of considerable pain and tenesmus which completely occupied the attention of the not very intelligent woman. Whenever the catheter was introduced, however, the escape of considerable gas could be observed. First came a varying quantity of turbid urine, then puffs of gas interrupted the flow of urine and, finally, a quantity of frothy urine. For two weeks the patient's bladder was irrigated daily with a 4% boric acid solution and, at intervals, for a month longer. The cystitis gradually ceased and the patient made a good recovery. Two months later the cystitis recurred, this time without gas but with the usual alkaline, purulent urine, and continued until the patient's death, from recurrence of the cancer and from tuberculosis, nine months after the operation. The complete autopsy findings, which were interesting in another direction, will be published elsewhere. Suffice it here to say that the bladder showed only the characteristics of long-continued cystitis. Neither at the autopsy nor previously was there any indication of the existence at any time of a communication between rectum and bladder.

The urine obtained during the period of pneumaturia was fairly uniform in character. It was usually faintly acid in reaction, always very turbid and had a specific gravity varying in the neighborhood of 1,020. It was free from sugar, contained albumin corresponding in quantity to the large amount of pus present, a few red blood cells, no casts. The sediment contained great numbers of a short bacillus, corresponding in appearance to that described below, and apparently in pure culture. No tubercle bacilli were found. A number of samples of urine were plated out on nutrient agar, both aërobically and anaërobically. In all cases, but one micro-organism was found. The latter evidently identical with that observed in the urinary sediment, was a short, thick bacillus with rounded ends, in young cultures often so short as to resemble a micrococcus. It was slightly motile, grew readily on all the ordinary culture media, and produced no spores. It stained readily with aniline dyes, and was decolorized according to Gram. On gelatin, it formed heavy, rapidly growing, non-lignifying colonies, of the typical appearance of coli cultures. On potatoes, it grew somewhat less luxuriantly than is usual with coli commune, and never formed gas bubbles. Milk was promptly coagulated with the formation of acid; gas production was not observed on this medium. In neutral-red-glucose agar, gas was produced, and the red color changed into a fluorescent green. Small but distinct amounts of indol were produced in bouillon cultures.

A peculiar behavior was noted when stab cultures were made in nutrient agar or gelatin. About the third day after inoculation, one or two small gas bubbles appeared to one side of the stab. These rapidly grew in size, other smaller ones appearing elsewhere. In the course of a week or ten days, these bubbles were again slowly absorbed. While the media used for these stab cultures were not certainly free from sugar, they were made from meat that had lain for several days, and in which the sugar had presumably disappeared. At all events, control cultures, made in other tubes of the same stock of media, with typical coli bacilli obtained from stools, showed no such gas formation. In successive generations, the bacillus seemed rapidly to lose its power of producing gas in ordinary nutrient gelatin and agar, so that the cultures in my possession a few weeks later behaved like the ordinary coli bacillus.

Various attempts were made to imitate the intravesical formation of gas by inoculating fermentation tubes filled with normal urine, nephritic urine, cystitic urine, etc., as well as with the urine of the patient herself. No gas formation could ever be obtained, a result which is at one with the experience of all other observers. Animal experiments were not made.

A number of attempts were made to obtain some of the gas for analysis, but a sufficient quantity could never be collected. Fermentation tubes were filled with water and the end of the catheter introduced through the bulb into the vertical arm, while the urine was flowing. The gas that bubbled up into the end of the tube evidently consisted in part of CO_2, for on introducing into the tube a solution of NaOH, a small portion (roughly one fifth) of the gas was absorbed. Whether the rest of the gas was hydrogen or not remains uncertain; certainly, on applying a match to the gas as it escaped, no flame was visible.

A consideration of the above observations show that cases of pneumaturia can be divided into two groups. The entrance of atmospheric air into the bladder during the catheterization, irrigation, etc., need not be considered, as it involves no pathologic change.

The first group consists of those cases of rectal cancer or tuberculosis in which a vesico-rectal fistula is established. Here the pneumaturia may be caused either by the direct passage of rectal gases into the bladder, or, more usually, by the entrance into the bladder of fecal matter with its accompanying micro-organisms, whereby intravesical putrefaction and gas formation is brought about.

In the second and more important group of cases, there is no such lesion; but the urine itself is fermented with the production of gas. Here again, two sub-groups must be distinguished,—the the diabetic and the non-diabetic. In the former the glucose is fermented with the production of CO_2, occasionally by means of yeast, more usually by the Bacterium coli commune, rarely by other bacteria. In the non-diabetic cases, the albuminous urine of cystitis is fermented with the production chiefly of CO_2 and H_2.

It is this last class of cases that is of chief clinical and bacteriologic interest to-day. Only 8 cases have been studied with sufficient care to justify any conclusions as to the nature of the micro-organism responsible for the conditions. The 3 cases reported by Schnitzler, Heyse and Wildholz were clearly due to the Bacillus lactis aërogenes of Escherich, an organism closely resembling the members of the coli group, but characterized by the production of slime, by capsule formation and especially by the vigorous production of gas on all ordinary culture media. The four cases of Adrian and Hamm were due to the Bacterium coli commune (or the closely related Bacterium coli immobile). The bacteriologic position of my case seems somewhat doubtful. In all essentials my micro-organism was a Bacterium coli commune. It resembled the Bacillus lactis aërogenes, however, in that the first few generations on artificial media were able to produce gas on ordinary nutrient gelatin and agar. If, as is generally held by bacteriologists, the Bacillus lactis aërogenes and the Bacterium coli commune belong to radically different families my bacillus must be classed with the latter. On the other hand, if Jensen [17] and Abel [18] are right in maintaining the close relationship between these two forms, my micro-organism may well represent an intermediate type.

For the production of a pneumaturia, then, the existence of two factors seems essential, and that of a third one nearly so:

1. It is clear that when the gas is produced by means of intravesical fermentation, the presence of a fermenting micro-organism, whether yeast or bacterium, is essential. This micro-organism may enter the bladder in one of three ways,—through the blood stream, directly through the tissues from the rectum, or through the urethra in the process of catheterization. The last two methods are probably the most usual ones.

2. The urine must contain a substance capable of being split up by means of fermentation with the production of an unabsorbable gas. Where there is glycosuria, the case is simple enough, the sugar being broken up, setting free CO_2, which cannot be absorbed by the acid urine. In ordinary ammoniacal fermentation of the urine, on the other hand, as well as in putrefactive decomposition with formation of H_2S, pneumaturia hardly ever results, on account of the solubility of the gases formed in the decomposed urine. When the urine contains the Bacillus lactis aërogenes, on the other hand, the albuminuria, due to the inevitable cystitis, furnishes a culture medium in which this bacillus is able to produce gas. In those cases, however, in which the process is apparently due to the Bacterium coli commune, the method of gas production is still very obscure. If the ordinary albuminuria of cystitis and the ordinary Bacterium coli commune were alone responsible for the occurrence of pneumaturia, this condition would be far less infrequent than it is. Either the urine in these cases must contain some unusual albuminous constituent, capable of yielding a gas when attacked by coli bacteria, as suggested by Adrian and Hamm, or the strain of coli responsible for the pneumaturia must have abnormally great gas-producing powers. The latter explanation seems the more probable.

3. It is significant that in the great majority of all cases of pneumaturia hitherto reported there existed some interference with the urinary outflow, due either to obstruction or to vesical paralysis. In most of the cases there was an actual anatomic obstruction, such as urethral stricture, enlarged prostate and the like. Raciborsky and Schnitzler do not specifically mention any obstruction, but since their patients required catheterization, the existence of such a lesion may be inferred. In Heyse's case and in mine, the bladder was unable to empty itself on account of vesical atony. The first three cases of the group by Adrian and Hamm alone seem to be exceptions to this rule. In none of them was there apparently any obstruction to the outflow of urine.

The prognosis in cases of pneumaturia depends upon the condition responsible for the gas formation. In the diabetic cases, if the glycosuria can be made to disappear, the pneumaturia also will cease. In the nondiabetic cases, the gas production sometimes ceases spontaneously, and always, as in my case, disappears when the cystitis gets well. More usually, however, both cystitis and pneumaturia prove intractable. In its effect upon the patient's general health the pneumaturia is of no more significance than the cystitis to which it is due.

The above considerations also govern the treatment. In diabetes, the urine must be made sugar-free; where interference with the urinary outflow plays a part, this condition must be treated. In other respects the treatment of the pneumaturia is that of the accompanying cystitis.

The conclusions to be drawn from the above considerations may be summarized as follows:

1. Pneumaturia may occur either as the result of a rectovesical fistula or of intravesical fermentation.

2. In the latter type, the gas may originate either from the fermentation of glucose in diabetes, or from the decomposition of proteid substances in cystitis.

3. Of the nondiabetic cases, the micro-organism responsible for the pneumaturia has been isolated in only eight cases: in three, it was the Bacillus lactis aërogenes, and in five (including the one reported above) the Bacterium coli commune (or immobile).

4. In pneumaturia due to the Bacillus lactis aërogenes, the gas formation is readily referable to the peculiar characteristics of the bacillus.

5. In pneumaturia due to the Bacterium coli commune, the gas formation may be due:

a. To the presence of some proteid, not yet definitely determined, that yields a gas when broken down anaërobically by the Bacterium coli commune, as suggested by Adrian and Hamm, or

b. To the presence of a peculiar strain of Bacterium coli commune that is capable of producing gas where the usual varieties fail to do so.

6. The fact that the bacterium isolated from my case had in its earlier generations an abnormal gas-producing power on ordinary culture media lends support to the second hypothesis.

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THE REPAIR OF CYSTOCELE.

BY EDWARD REYNOLDS, M.D., BOSTON.

The repair of cystocele, formerly the least satisfactory of all the plastics, has of late become an exceedingly successful operation, not as the result of any single new procedure but as the result of a new understanding of the mechanical and anatomical conditions involved. This has been reached gradually through the labors of numerous observers, prominent among whom may be mentioned Dr. J. R. Goffe, of New York, and Dr. E. C. Dudley, of Chicago. Since the success of the modern operations is based upon their relation to the anatomy, any description of even one of them must necessarily be prefaced by a recapitulation of the anatomy of the normal vagina and of cystocele.

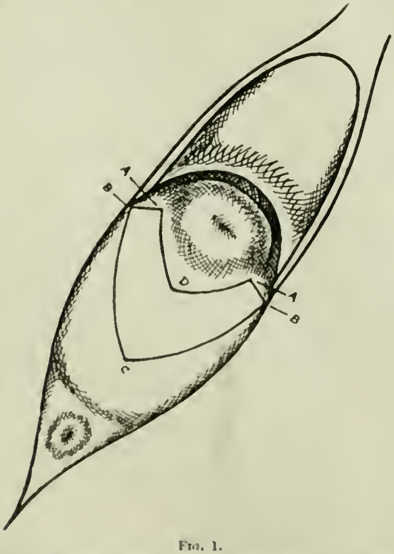

Fig. 1.

If we consider a cross section through the pelvis at right angles to the axis of the vagina we shall see, proceeding from before backwards, first the mucous membrane of the bladder, then the submucous muscular tissue, then a loose connective tissue which attaches the bladder lightly to the next layer, the strong muscular and fascial tissues of the anterior vaginal wall; next come the mucous membranes of the anterior and posterior vaginal walls, the submucous tissue of the posterior wall, connective tissue, and the rectum, successively. The vagina lies in the pelvis as a transversely flattened tube, *i. e.*, with its anterior and posterior walls in contact with each other, and its so-called H shape is due to the fact that the free edges of the H receive its only firm attachments to the surrounding structures. By far its firmest attachments are inserted into these edges near its upper and lower extremities. If we look at the familiar mesial section of the pelvis we note at once the so-called S curve of the normal vagina. This, like its transverse flattening, is due to its attachments. At its lower end, and indeed throughout almost the whole of its lower third, it receives the insertions of the levator ani and its allied muscles, which hold it upward and as a whole draw it forward behind the pubes. These insertions form by far the strongest attachment of the anterior wall, and even in the most extreme cystoceles this lower fixed point is seldom lost, being almost invariably, if not always, marked by a transverse fold between the distended and descending cystocele and the fixed post-urethral plate. The upper fixed point in the lateral fornices at the side of the cervix is derived from the very strong band of muscular and connective tissue fibers which pass down through the base of the broad ligament along the course of the uterine arteries to be inserted into the sides of the cervix and into the vault of the vagina in the same lateral plane. Every operator knows that this is the only part of the attachments of the genital canal to the pelvic bones which cannot be readily separated with the finger, except those of the levator ani already referred to. This attachment is never lost, but in cases in which cystocele is complicated by prolapse of the uterus these supporting bases of the broad ligaments may be so much overstretched that the cystocele cannot be satisfactorily repaired unless the uterus has been previously or coincidently operated upon. Many operations have been devised for this purpose, but it is best that we should restrict our present subject to the repair of uncomplicated cystocele.

Cystocele is anatomically a hernia of the bladder through the ring formed by the four attachments of the anterior vaginal wall (the upper and lower fixed points and the comparatively fixed lateral edges), and this hernia is effected by thinning and distention of the tissues of the anterior vaginal wall before the descending bladder. It usually begins at the upper end of the wall and extends progressively downwards.

The fault of the old operations for cystocele was that they trusted to a mere denudation of the surface of the already distended and weak vaginal wall, after which their sutures inverted the coverings of the hernia through the ring and trusted to the mere union of these inverted surfaces to hold them in. In no other situation in the body would any sane surgeon dream of excoriating the surface of the coverings of a hernia, invaginating them into the ring, and trusting to their superficial union to restrain the hernia from reformation. On the contrary, it is an accepted principle in all other herniæ that we should dissect off all the weakened coverings of the lesion until firm fascial edges are brought into sight, and after inverting the hernial sac itself, should then attempt a radical cure by a suture of these strong, exposed, fascial edges directly to each other. This is the principle which underlies the new operations for the repair of cystocele.

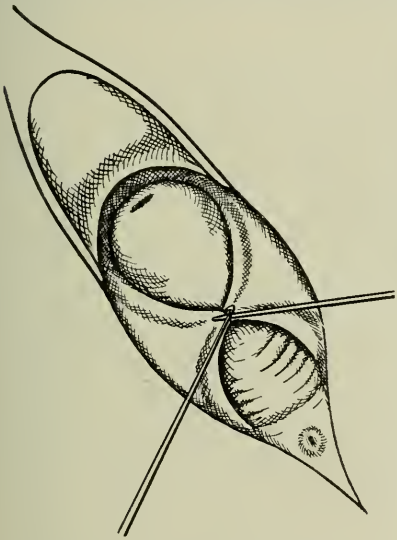

Fig. 2.

It only remains for me to describe to you the technique of the operation which I myself use and I shall then have the pleasure of performing it before you.

Fig. 1 represents a cystocele exposed through a Sims speculum, and the six points indicated by letters are the guiding points in the denudation. The proper selection of these points is the first and most important step in the operation. The points A, A′ lie upon the lateral vaginal wall as close as possible to the cervix uteri.[1] The points B, B′ lie directly lateral to A, A′, or very slightly anterior to them, and upon their correct selection rests the whole success of the operation. (It must be remembered that although in the illustration the points B, B′ necessarily appear directly lateral to A, A′ they are in reality a short way down the lateral wall of the vagina when in its natural position.) These points B, B′ should be selected by the following method: a point which appears to the eye to be at about the proper position is seized with a tenaculum and drawn to the median line immediately in front of the cervix, which is, perhaps, pushed a little backward into the hollow of the sacrum by the maneuver. (Fig. 2.) If the point selected cannot be drawn into the median line without undue tension one a little further from point A should be selected. If it can be carried beyond the median line one a little nearer to A should be chosen. The exact selection of these points B, B′ is of extreme importance. If the points B, B′ are too far from the points A, A′ the resulting union will be too low upon the anterior vaginal wall to be effective in the cure of cystocele and will leave a cicatricial bridge which will narrow the vagina too much and interfere with subsequent labors. If B, B′ are too near A, A′ the cervix will be thrown excessively far backward into the hollow of the sacrum and there may be too much tension to permit of satisfactory union. These points having been selected and held in tissue forceps or marked with scissors, the point C is next selected. This lies in the median line and is the lowest portion of the anterior wall which can be

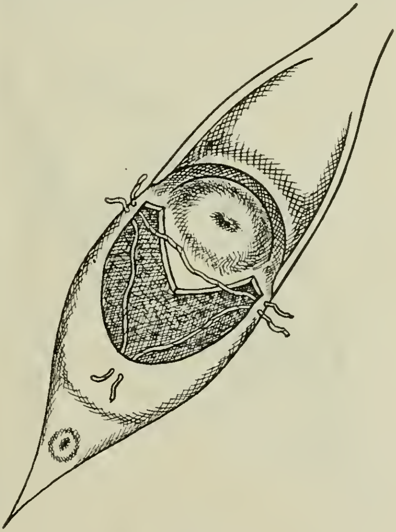

Fig. 3.

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[1] If an extensive laceration of the cervix has been repaired the selection of these first points should be omitted and the line of excision of the tissues should be carried in a straight line from B to D in order to avoid cutting off the nutrition of the vaginal wall above B.

brought without tension to the junction of the points B, B′ when held together. The point D is then selected. It lies upon the median line and its exact situation is unimportant, but the tissues come together most conveniently when it is about three quarters of an inch anterior to the cervix. These points having been selected and marked, the wall at C is put upon the stretch antero-posteriorly by two tenacula and a very short transverse incision is made between them at C and carried through the whole thickness of the vaginal wall until the plane of cleavage between it and the bladder is found. The handle of the scalpel is then inserted into the plane of cleavage and made to separate the vagina and bladder in the median line to the point D, care being taken that its edge is directed toward the vaginal wall and away from the bladder. The vaginal wall is then divided in the middle line from C to D in order to permit the freer use of the handle of the scalpel or finger. The handle of the scalpel, or preferably the finger, is then made to separate the vagina and bladder over the whole area marked out for resection and, so far as possible, under the whole triangular flap between D and the cervix; but if any difficulty is found in the latter situation the separation can be postponed until a later stage in the operation. The vaginal wall is then cut with scissors along the lines marked in the first figure, thus removing the whole crescentic area which is included between the six selected points. The point D is then lifted up and the flap above it separated from the bladder over its whole extent. This separation may, however, require the careful use of scissors against the vaginal wall in the median line since the vesico-uterine ligament is, as has been pointed out by Goffe, exceedingly strong and tendinous at this point. The cervix is then seized with double hooks and the bladder is separated from the uterus and broad ligaments with the fingers to, or nearly to, the level of the peritoneum and as widely as possible to the side. This is a very essential step in the operation, permitting as it does the complete replacement of the bladder and a considerable elevation and backward displacement of the cervix, which is in itself a fairly effective remedy against the tendency towards prolapse which is always present, and against the re-formation of the cystocele.

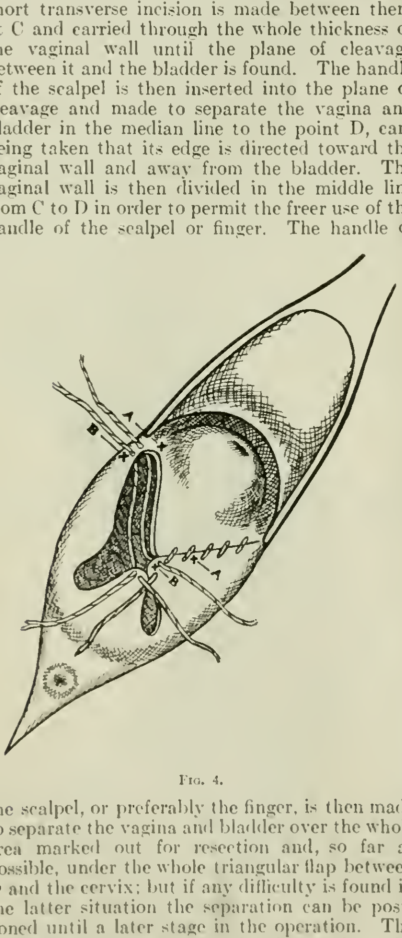

Fig. 4.

We are now ready for the sutures. The first suture is entered as nearly as possible in the median line about a quarter of an inch below C (Fig. 3) and made to pass deeply through the whole thickness of the anterior wall to emerge at the free edge at C. It is re-entered at the point B where it again passes deeply through all the tissues of the vaginal wall to emerge slightly above B. (It is thus free from the tissues except as it passes through the whole thickness of the vaginal wall at or about the points C and B.) A similar suture connects C with B′ on the opposite side. A third suture passes through all the tissues of the wall at B on the one side to pass freely across the denuded surface without entering the tissues until it re-enters the vaginal wall of the opposite side at B′. These three stay sutures make up the only important and supporting portion of the suture, the remaining portion of the union consisting only of a running whip suture designed first to secure accuracy of apposition of the remainder of the cut edges and, second and more important, to control hemorrhage. Hemorrhage is frequently somewhat abundant during the progress of the operation, but is never dangerous and always ceases with the application of the sutures, since if the bladder has not been wounded the only hemorrhage is from the vaginal vessels in the cut edges. If, however, the muscularis of the bladder is injured at any point in the course of its separation the resulting ooze is easily controlled by a catgut ligature.

In tying the sutures the following procedure is most convenient. The first stay suture is drawn tight but not tied, thus approximating the points C, D, and is so held by an assistant. The point D is then seized by tissue forceps and approximated to B, thus bringing into evidence one of the four divisions of the four-leaf clover (Fig. 4) which will be formed by the tying of the three stay sutures. The tip of this first leaf of the clover is then seized by forceps and its sides are whipped together by a running suture, which passes through the cut edges of the vaginal wall only, but must include the whole thickness of the wall in order to control hemorrhage. This first of the four divisions of the clover having been thus closed, the same thing is done with the upper leaf upon the other side. The three stay sutures are then tied and the two lower leaves of the four-leaf clover are easily whipped together and the operation is completed.

It is well before the last suture is put in to hold the edges of the incision apart and remove any small clots which may have collected between the vaginal wall and bladder.

This operation may, of course, fail by lack of first intention if good asepsis is not secured. It may result in insufficient support of the cystocele, or, upon the other hand, in over-tight closure of the vagina if the points B, B′ are incorrectly selected; but these dangers are to be avoided by the plastic sense of the operator, and are common to all plastic operations. In my experience it differs from the old operations for cystocele in that what has been once gained is never subsequently lost. I have yet to see a good primary result lost from subsequent stretching, though I think that this, like any cystocele operation, should always be followed by a careful repair of the perineum.

PULSE-PRESSURE ESTIMATION.

BY SHEPHERD IVORY FRANZ, PH.D.,

Psychologist, Government Hospital for the Insane; Professor of Physiology, George Washington University Medical School, Washington, D. C.

The recent article, with the above title, by Dr. J. J. Putnam, in the Journal (March 14, 1907, page 330) appears to me to be a natural reaction and protest against the exclusive use of the more elaborate methods for the estimation of arterial pressures. The instruments that have been recently devised and advocated are not always suitable for clinical purposes, however good they may be for testing certain individuals or in special situations, *e. g.*, in a laboratory or at the bedside in hospitals. To say the least, it is often inconvenient to use these methods in private practice. Moreover, with restless and violent patients the danger to the apparatus makes it undesirable (sometimes expensive) to bring near them instruments constructed of glass, and at times it is impossible to keep such patients quiet long enough to adjust the "cuff" properly. This I have found to be especially true in dealing with the insane.

The personal method used by Dr. Putnam may answer very well with one thoroughly accustomed to estimate pressures, but not many can make estimations that will be sufficiently accurate. For much of the clinical work there seems to be needed a method that will be sufficiently exact, that can be conveniently used, and that does not depend so much upon the personal equation as the method suggested by Dr. Putnam. Instead of making an estimation of the pressure by muscular effort needed to obliterate the pulse I have used for some time a modified form of an instrument (sphygmometer) devised some years ago by Dr. A. Bloch. The use of such an instrument appears to me to meet the requirements of both accuracy and ease. Many physicians to whom I have shown this instrument have been unaware of its invention, and it seems worth while to call the attention of the profession to it by giving a brief description and noting some of its advantages.

The instrument consists of two tubes, one of which (A) fits into the other (B), and which in turn incloses an extension spring (E), (partly shown at about the middle of the accompanying figure after both tubes have been cut away). On the inner tube there are engraved the pressure constants of the spring, both in grams and in centimeters of mercury. The inner tube is prolonged as the shaft (C) and the foot plate (D). The figure shows the instrument with part of the outer tube cut away and part of both tubes cut away to illustrate respectively the location of the inner tube and the extension spring. The user places a finger over an artery, such as the radial, to feel the pulse, the foot plate is then set over the artery central-wards, and pressure is exerted by the instrument on the artery to obliterate the pulse. The pressure required to overcome the combined blood and arterial tension is read from the scale. After this determination has been made the pressure may be gradually reduced, as is done in using the Riva-Rocci or similar type of instrument, and we can determine the pressure at which the first pulse appears.

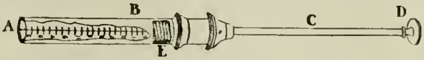

Fig. 1. Diagram of spring sphygmometer. Illustration about one half size of instrument.

There are a number of different styles of the instrument. One has three foot plates for different kinds of work. The one illustrated here is sold for 20 francs; others cost as high as 35 francs.[1] The length is 14 cm. (5½ inches). It weighs 35 gm. (over an ounce). It measures pressures from 30 to 250 mm. Only centimeter divisions are marked, but it is easy from these to estimate fifths, so that the instrument can be said to be useful for determinations within 2 mm. of the actual pressures. A determination can be made in ten seconds.

The advantages in the use of such an instrument over the method of finger pressure advocated by Dr. Putnam is the obvious one of an objective measure of the pressure. The advantages of the instrument over the other types of sphygmomanometers may briefly be mentioned.

The chief advantage is that it can be used at times when other instruments cannot be used. It is as easy to use it with restless or excited patients as it is to count their pulse rate. One of the great objections to the use of sphygmomanometers is that they can be used only on the arm or leg. This instrument can be employed to estimate the pressure in any superficial artery. At times the pulse in the radial or the brachial cannot be felt easily, but a good measure may be made of the pressure in the carotid.

It is so small that it can be carried in the pocket just as a thermometer is carried. In fact, it is not much larger than the ordinary clinical thermometer.

There is no rubber to rot, no leaks to be repaired and no glass to be broken. Within the limits of the instrument the spring will remain accurate for years with care, and often without any special care. If it does after a long time become inaccurate, it is a very simple matter to calibrate the spring by holding the instrument vertical with the plate upwards, placing weights on the plate, and noting the amount of distention. The instrument I am now using has been employed for about six or eight years and the spring has not yet become weaker to any appreciable extent.

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[1] Made by C. Verdin, of Paris.

In neurological work, for the determination of pain sensations, the instrument can be used by unscrewing the foot plate, thus giving a small area for stimulation. As an algometer it is placed on a part of the body, pressure exerted, and a record taken when the pressure just causes pain. The small area of the end when the foot plate is unscrewed makes it possible to use the small amounts of pressures that are possible with this instrument.

The advantages of the instrument may be summarized as follows: it is convenient, sufficiently accurate, inexpensive both in first cost and in necessary repairs, it does not get out of order easily, is not easily broken, and can be used in situations when the more elaborate and more expensive instruments cannot be used.

It is said that every science advances only by refinement of methods and measurements. The history of medicine shows that this statement is especially applicable in dealing with the sick. New methods and the refinement of old ones are needed if we are to diagnose and treat diseased conditions better than those that have preceded us. Blood pressure determinations are now admitted to be a valuable aid in diagnosis, but the current methods of making these with any of the sphygmomanometers on the market are too inconvenient for the general practitioner, however good they may be for office or hospital use. The use of the finger for estimating the pressure is too inexact for any but the most expert. With the instrument described above it is possible to obtain the accuracy needed in any case, and it requires little practice to make one an expert.

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Medical Progress.

PROGRESS IN PATHOLOGY.

A CRITICAL REVIEW OF VARIOUS METHODS EMPLOYED FOR ISOLATING TYPHOID BACILLI FROM STOOLS.

BY JOSEPH H. PRATT, M.D., BOSTON.

(Continued from No. 23, p 718.)

(k) v. Drigalski-Conradi's litmus lactose agar.

These investigators sought to separate typhoid and colon bacilli by means of their different actions on sugars. They did not wish to check in any way the growth of B. typhosus; on the other hand they aimed to provide the most favorable conditions for its growth. The method that bears their name differs from the litmus lactose agar of Wurtz in two important particulars: first, all the colonies are surface colonies; second, the crystal violet in the medium checks the development of a large number of fecal bacteria. In the strength used it does not interfere with the growth of the typhoid bacillus. Uffelmann[145] had previously made use of crystal violet, but he used a solution in his culture medium 2½ times as strong as Wurtz's solution. (Loeffler.[89]) The addition of nutrose caused the typhoid colonies to assume a deeper blue color and favored their growth.

Technique.— (*a*) To 1,500 gm. of chopped beef add 2 liters of water and allow it to stand until the next day. Boil the beef infusion one hour; filter; strain through a cloth; add 20 gm. of Witte's peptone, 20 gm. of nutrose, 10 gm. of sodium chloride. Boil one hour, then add 60 gm. of the best agar; boil three hours (or one hour in the autoclave), make weakly alkaline to litmus; filter; boil one-half hour.

(*b*) Litmus solution made according to the formula of Kubel and Tiemann, 260 cc.; boil ten minutes then add chemically pure lactose 30 gm. and boil together fifteen minutes.

(*c*) The hot lactose litmus solution is added to the fluid nutrient agar. Shake well, restore the weak alkaline reaction if it has been lost. The addition is now made of 4 cc. of a hot sterile solution of 10% anhydrous sodium carbonate and 20 cc. of crystal violet prepared by taking 100 cc. of warm sterile water and adding 0.1 gm. of crystal violet (B. Höchst). Prepare Petri plates with a portion of the medium and place the remainder in small flasks, about 200 cc. to a flask.

When examining stools several series of plates should be made in order to bring the largest possible number of germs beside one another upon the plates. Firm formed stools should be rubbed up with a little normal salt solution and the plates inoculated from the suspension thus prepared. The Petri dishes into which the fluid medium is poured should measure 15 to 20 cm. in diameter and have a height of 1 to 2 cm. About 20 to 25 cc. of the medium should be poured into each dish. The agar layer should never be less than 2 mm. in thickness. The dishes should stand open for at least an hour until the water has evaporated and the agar is dry and hard. For the first plate of the series which, owing to the large number of colonies is useful only for dilution, an ordinary Petri dish may be used. A glass spatula is used for making the surface inoculation. This is made by taking a glass rod 5 mm. thick and about 15 cm. long and bending it at right angles 5 or 6 cm. from one end making it L shaped, then the tip of the horizontal part is rounded in a Bunsen flame and turned upward. The horizontal arm is placed in contact with the infected material and then rubbed over the surface of the plates one after the other. By this method it is possible to secure discrete surface colonies. After inoculation the plates should remain uncovered for at least an hour, in every case until all the water of condensation has evaporated from the surface leaving it perfectly dry. The presence of crystal violet in the medium will prevent contamination of the culture with air bacteria. The plates are then placed in the incubator which should be kept at 37° C. After twenty to twenty-four hours colon bacilli form opaque red colonies 2 to 6 mm. or more in diameter. The typhoid colonies have a diameter of 1 to 3 mm. and their color is blue and their appearance resembles drops of dew.

v. Drigalski and Conradi [28] tested this procedure in 50 typhoid cases in different stages of the disease and in all cases demonstrated the typhoid bacillus in the stools. Bassenge,[6] in a paper published in 1903, stated that the source of the litmus tincture was most important. In Koch's Institute good results were obtained only with the litmus prepared by C. A. F. Kahlbaum, of Berlin. Months are devoted to the preparation of the litmus stock. Media made from other litmus does not show the finer differences of color. Kahlbaum's litmus tincture is prepared according to the formula of Kubel and Tiemann. It can now be obtained in this country from importers of chemical and bacteriological supplies. The method of preparing Kubel and Tiemann's litmus tincture is not described in bacteriological works. Dr. Charles Harrington informs me that it is an old method formerly used in hygienic laboratories. The formula for its preparation will be found in Kubel and Tiemann's book on analytical methods. Marschall [95] objects to v. Drigalski and Conradi's medium owing to the difficulty of preparing litmus tincture by the method of Kubel and Tiemann. With the litmus tincture bought in the shops the results were unsatisfactory as the fine nuances of color could not be obtained. Apparently he did not use Kahlbaum's litmus. [For three years I have used Kahlbaum's litmus tincture (nach Kubel-Tiemann) and have not had any difficulty in the preparation of a medium that permitted of sharp color differentiation of typhoid and colon colonies. J. H. P.]

Eyre [34] from personal investigations in the laboratory of the Institute for Infectious Diseases in Berlin found that the v. Drigalski-Conradi medium as prepared there was distinctly variable in composition, reaction, color and the appearance of the colonies growing upon it. He tested several lots of media in Berlin and found the reaction varied from 0.5% to 1.5% acid. Eyre introduced several modifications which made the preparation of the medium still more complicated. Owing to traces of glucose in meat infusion he used as a substitute ox or sheep serum. The medium was made 1.5% acid to phenolphthalein by the addition of a normal solution of lactic acid.

v. Drigalski and Conradi have made slight modifications in their medium. These will be found in Bassenge's article.[6] See also v. Drigalski.[27] They now use a 3.5%, instead of a 3% agar. The object of this is to make the plates firmer so that their surface will be less liable to be torn by the glass spatula. Horse flesh was substituted for beef in preparing the medium for the sake of economy, and for the same reason tropon is used instead of nutrose. (Bassenge.[6]) The difficulty of filtering a 3.5% agar is obviated by the use of the sand filter devised by Paul.[108] Bassenge [6] cautions against over-heating the lactose. It is well to boil the litmus solution for twenty minutes, then add the lactose and heat only ten minutes on a water bath. v. Drigalski and Conradi found that the degree of alkalinity recommended by them was too high. It is better to add 2 cc. instead of 4 cc. of the 10% solution of anhydrous sodium carbonate.

Klinger [74] used a 4% instead of a 3% agar and substituted for the beef infusion 20 gm. of Liebig's extract to 2 liters of water. In spite of the fact that the v. Drigalski-Conradi medium contained 4% of agar, Klinger [74] found that the fermentation of the lactose by some fecal bacteria was so intense that the colonies were surrounded by a wide red zone. If a typhoid colony developed in this red area it could not be distinguished from one of the smaller colon colonies. Klinger [74] noted that the transparent, dew-like appearance of the typhoid colonies was not constant. It was not in his experience rare to find typhoid races that produced in addition to transparent colonies some that were denser and with moist surfaces. In the center of the typhoid colonies were sometimes seen a distinct umbilical depression.

Harris [53] modified the v. Drigalski-Conradi medium by the employment of dextrose-free bouillon, instead of ordinary bouillon. Czaplewski [24] recently suggested that the litmus and lactose solutions be kept on hand in sealed tubes, and then added to melted agar just before the plate cultures are to be made. He found the addition of crystal violet of no advantage. He has practically abandoned the medium of v. Drigalski-Conradi for that of Wurtz.

Many observers have found that the v. Drigalski-Conradi medium permits of satisfactory differentiation of typhoid and colon colonies. (Lipschütz,[86] Clauditz,[20] Dönitz,[26] Krause and Stertz,[79] Petkowitsch,[113] Klinger,[74] Friedel,[38] Herberich,[55] Ruata,[135] Marschall,[95] Nowack,[103] C. Cole.[22]) Klinger [74] showed that more colonies sometimes develop on the v. Drigalski-Conradi medium than on ordinary agar, owing probably to the greater amount of nutrient material in it.

(*l*) *Endo's fuchsine medium.*

Endo [31] devised a method of demonstrating typhoid bacilli in the feces that is less complicated than that of v. Drigalski and Conradi and he claimed that it gave equally good results. The essential ingredients of the medium are lactose, fuchsine and sodium sulphite. The colon colonies are red while the typhoid are white. The medium is prepared as follows: to 500 gm. of finely chopped beef 1,000 cc. of water, 10 gm. of peptone, 5 gm. of sodium chloride and 30 gm. of agar are added. After boiling well, filter, neutralize, and then add 10 cc. of a 10% sodium carbonate solution in order to make it alkaline. Add 10 gm. of pure lactose, and 5 cc. of alcoholic fuchsine solution. The medium will now be red. Pour in 25 cc. of a freshly prepared 10% sodium sulphite solution. Do not let the agar solidify until the medium becomes entirely decolorized. The medium must be kept in the dark. It is used in Petri dishes. After they have been filled, allow them to stand in a room free from dust for about fifteen minutes before the covers are replaced. The plates are inoculated with a v. Drigalski-Conradi spatula. With Endo's medium some investigators have had better results than with the v. Drigalski-Conradi (Klinger,[74] Marschall,[95] Petkowitsch,[113] Scheller,[136] T. Müller,[100]) while others have had poorer results (Clauditz,[20] Herberich,[55] Ruata [135]). Petkowitsch [113] states that the paratyphoid bacilli as well as the colon bacilli form red colonies on Endo's fuchsine agar. He advises the use of both the Endo and v. Drigalski-Conradi media. Klinger [74] prepared the fuchsine solution by allowing 10 gm. of crystallized fuchsine to stand twenty hours in 100 cc. of 96% alcohol. If the alcohol acts for a shorter time the medium will contain too little color; if for a longer time the result is unsatisfactory. Upon the Endo plates the development of weak typhoid bacilli is checked, sometimes only half as many colonies develop as on the v. Drigalski-Conradi plates. This defect of the medium is partly compensated by the simultaneous inhibition of other fecal bacteria. Klinger [74] in his examination of typhoid stools isolated B. typhosus by Endo's fuchsine plates 68 times in febrile cases, while the v. Drigalski plates were positive only 46 times. Marschall [95] also found that the development of micrococci and other contaminating micro-organisms was less on the Endo than on the v. Drigalski-Conradi medium. Scheller [136] states that on Endo's agar a single typhoid colony can be recognized on a plate covered with colon colonies.

Marschall [95] insists on the importance of using sodium sulphite crystals that have undergone no disintegration in preparing the medium. Klinger [74] found that a solution ten hours old was worthless owing to the quick decomposition of the salt in the presence of water. Marschall [59] attributes the unfavorable results obtained by Ruata [135] to the fact that he used too large a quantity of sodium sulphite and in other essentials failed to carry out Endo's directions. If the Endo medium has a slightly reddish color it is of no disadvantage, as then the typhoid colonies are, if anything, more readily distinguished than on colorless plates.

IV. ENRICHMENT METHODS DEVISED TO FAVOR THE GROWTH OF TYPHOID BACILLI AND TO INHIBIT THE GROWTH OF COLON.

(a) *Roth's bouillon.*

Roth,[130] at the suggestion of Rubner, studied the influence of alkaloids on bacteria. He found in caffeine (trimethylxanthine) a substance that in 1% solution checked the development of B. coli but did not interfere with the growth of the typhoid bacillus. Numerous investigations showed, however, that the growth of bacteria not belonging to the colon group was not sufficiently inhibited to make Roth's caffeine method of practical value. Ficker and Hoffmann,[36] to prevent the growth of other bacteria, added crystal violet to caffeine bouillon. They also tested a large number of caffeine derivatives with the hope that something might be found that would act even better than caffeine in differentiating typhoid and colon bacilli. But of all the substances examined, caffeine alone had this selective action.

(b) *Ficker and Hoffmann's method.*

Stock solution.— Place 1 kg. of chopped beef in an enameled boiler with 2 liters of distilled water; weigh the boiler; heat to 50–55° C. for thirty minutes; then stir with a glass rod while raising the temperature to the boiling point; boil thirty minutes; weigh; add water lost by evaporation; filter through gauze; measure; add 6% peptone (Witte) and 0.5% sodium chloride; heat until peptone is dissolved; filter; place in Erlenmeyer flasks; steam two hours.

Enriching solution.— One hundred cc. stock solution is measured in a sterile graduate, then placed in a sterile Erlenmeyer flask; normal NaOH is added until the solution is 2.7% acid to phenolphthalein and steam ten minutes; cool; add 105 cc. of a 1.2% caffeine solution; measure in a sterile graduate, then by means of a sterile pipette add 1.4 cc. of a 0.1% crystal violet solution. The caffeine solution must be sterile. Avoid heating the solution. Both the caffeine and crystal violet should be weighed on delicate chemical balances. Crystal violet should be dissolved in cold sterile distilled water.

Inoculation of feces.— If the stool is of thin fluid consistence it should be allowed to stand a few minutes in a test tube; from the surface 8 or 9 cc. should be taken and added to the enriching solution. If the stool is semi-fluid it should be rubbed up with one part of a 1.2% caffeine solution and filtered through sterile cotton. If the stool is formed a portion should be taken and rubbed up with 2 parts of caffeine solution. Inoculate 6 or 7 v. Drigalski-Conradi agar plates; 3 of the plates are inoculated with varying amounts of the enriching solution; if the growth has not been abundant, from 0.1 of a cc. to 0.35 cc. are used. If there has been rich growth, 0.1 to 0.2 of a cubic centimeter. The other plates are inoculated from the primary plates.

The enriching solution is preserved in an ice chest; if the plates give a negative result biological precipitation is produced by the addition of agglutinating serum. The v. Drigalski plates are inoculated from the sediment.

Ficker and Hoffmann [36] performed a series of experiments in which a definite number of typhoid bacilli were added to a known number of fecal bacteria. They isolated by their method typhoid bacilli from one mixture containing 1 typhoid bacillus to 40,000 fecal bacteria, and from another in which the ratio was 1 to 53,000. In no case could typhoid bacilli be recovered by the v. Drigalski-Conradi method if there were more than 310 fecal bacteria to 1 typhoid bacillus.

Ficker and Hoffmann [36] examined 11 typhoid stools from patients in the second and third weeks of the disease and in all a positive result was obtained.

Klinger[74] in his bacteriological study of typhoid stools isolated B. typhosus in a larger percentage of cases examined by the caffeine enriching method than by either the litmus or fuchsine method.

v. Jaksch and Rau[64] state that they isolated virulent typhoid bacilli by the Ficker-Hoffmann[36] method three times from the drinking water of Prague.

Reischauer[122] by this method was able to isolate typhoid bacilli from fecal mixtures which contained 1 typhoid bacillus to 34,000 fecal bacteria. He maintains that the value of the method depends chiefly on the check it exerts on the development of colon bacilli. Both Reischauer[122] and Friedel[38] hold that a true Anreicherung of B. typhosus does not occur in the caffeine medium. Friedel[38] rejected the medium as impractical, owing to the demands it made on the time of the laboratory workers. Klinger[74] raised the same objection. In Kloumann's[75] hands the method failed. He obtained better results with v. Drigalski-Conradi plates. In tests made by Herberich[55] the number of typhoid bacilli actually diminished in the caffeine solution. Klinger[74] said that negative results were often due to the fact that caffeine failed to prevent the overgrowth of some fecal bacteria. Reischauer's[122] experience led him to the same conclusion. Courmont and Lacomme[23] examined the stools from 8 typhoid patients. Neither typhoid nor colon bacilli grew in the caffeine medium. They found that 4 out of 11 typhoid races were more sensitive than B. coli to the inhibitory action of caffeine. Rietsch[123] showed that the strength of caffeine solution that could be tolerated by 22 strains of typhoid was variable, and growth was not infrequently arrested by a small percentage of caffeine. Birt[9] studied 31 typhoid strains and found that 26 of these would not grow in the caffeine medium. He examined the dejecta of 5 typhoid patients but was unable to isolate B. typhosus in a single instance. Eyre[33] used Roth's caffeine bouillon with negative result.

Ficker and Hoffmann,[36] as well as Kloumann,[75] found that B. paratyphosus was even more sensitive to the action of caffeine than B. coli: hence the caffeine method is not applicable to paratyphoid diagnosis.

(c) *Reischauer's agar.*

Reischauer[122] prepared a medium composed of ordinary agar to which 3% of caffeine and 1 : 100000 crystal violet were added. He made tests with mixtures of typhoid bacilli and fecal bacteria and found that with the caffeine agar the growth of B. typhosus was slightly less inhibited than with malachite green agar. When there was only 1 typhoid bacillus to 7,000 fecal bacteria positive results were obtained both with malachite green and caffeine agar. When the number of typhoid bacilli was reduced to 1 : 10,500 the typhoid bacillus could not be recovered by either method. In order to avoid contamination with air bacteria, Reischauer[122] used Koch's old method of making plate cultures.

In the description given by Reischauer[122] for preparing caffeine agar Lentz and Tietz[83] think "3% of caffeine" must be a typographical error, and that it should read 0.3%. They found that when agar contained 0.4% of caffeine the growth of B. typhosus was scanty; with higher concentrations of caffeine it did not grow at all.

(d) *Loeffler's media.*

Loeffler[87] realized that something more than the development of typhoid colonies with definite characteristics was necessary in an ideal medium. The formation of distinctive colonies is not the only requirement. The ideal medium must favor the growth of the typhoid bacillus while it inhibits the growth of all other micro-organisms. If the typhoid bacillus was present in small number, in material rich in bacteria, there would be little chance of finding this micro-organism if one depended simply upon the difference in appearance of typhoid colonies from those of other bacteria. He pointed out that even upon a large plate not more than 600 isolated colonies are able to grow. Hence the method of v. Drigalski-Conradi and all others based upon the distinctive appearance of the typhoid colonies are only of value when there is more than 1 typhoid bacillus to 600 other micro-organisms in the material to be examined. Ficker and Hoffmann[36] and Jorns[66] were unable to isolate the typhoid bacillus on v. Drigalski-Conradi plates when the ratio of typhoid to fecal bacteria was less than 1:300.

In the course of a systematic study carried out in the Hygienic Institute at Greifswald by Loeffler's students the discovery was made in 1903 that malachite green possessed the remarkable property of checking the development of colon bacilli while it did not interfere with the growth of typhoid bacilli, at least this was the claim.* Loeffler prepared a variety of liquid and solid malachite green media. He maintains that upon a malachite green agar the typhoid bacillus grows in a characteristic manner. In a second paper Loeffler[89] states that the particular preparation of malachite green he employed was malachite green 120, which he obtained from the Höchst dye works. The medium he recommends most highly is a peptone-nutrose gelatin which contains 13% of gelatin. The experiments with media containing a low percentage of gelatin such as Piorkowski[117] and Rosenthal[129] employed were unsuccessful because then the malachite green interfered with the growth of the typhoid bacillus. In order to check the development of some saphrophytic intestinal bacteria that develop in the presence of malachite green, particularly Bacillus fecalis alkaligenes, he adds 3 cc. of a double normal phosphoric acid solution to every

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* In my study of the literature I find that the first investigator to use malachite green for the purpose of differentiating B. typhosus and B. coli was Marpmann in 1894. He was seeking for a substance that would give to typhoid and colon colonies distinctive colors. He overlooked entirely the selective action of the dye on B. coli. This was due to the fact that he decolorized the malachite green with sodium sulphite. The acid malachite green was thereby changed into its leuco-base, and this, as Lentz and Tietz[83] and Peabody and Pratt[109] have shown, has no inhibitory power over the growth of bacteria.

100 cc. of the gelatin. Malachite green is added in the proportion of 1 part of the dye to 2,500 parts of the media. Tubes of fluid gelatin are each inoculated with a drop of a fecal suspension and placed in a thermostat at 37° C. After eighteen to twenty-four hours other gelatin tubes are inoculated from these and poured into Petri dishes. These are kept at a temperature of 25° C. After twenty-four hours the typhoid colonies are easily recognized. They appear as strongly refractive, granular colonies, each about the size of a pin-head. After thirty-six to forty-eight hours they have a grayish yellow color with characteristic projections. A number of bacteriologists have tested Loeffler's methods during the past year and have all been unable to confirm his findings. (Kiralyfi,[70] Doebert,[25] Neumann,[101] Peabody and Pratt.[109]) None of these observers have seen the typhoid colonies assume the characteristic forms described by Loeffler. Neumann [101] thought there must be an error in regard to the addition of double normal phosphoric acid.*

He wrote Loeffler, who replied that 5.6 cc. of the official (25%) phosphoric acid should be used. But the medium with this modification was no more satisfactory. Loeffler [89] stated at the last meeting of the *Vereinigung für Mikro-biologie* that he now uses a chemically pure malachite green that he obtained from the Höchst dye works. It is "*Malachitgrünkrystalle-Chlorzinkdoppelsalz.*" He adds 3 cc. of a 0.2% solution of this to 100 cc. of gelatin. The amount of phosphoric acid required with this strength of malachite green varies between 0.05% and 0.09%.

(*e*) *Lentz and Tietz's method.*

Lentz and Tietz [82] the same year (1903) reported their success with malachite green media in isolating B. typhosus from the stools. v. Drigalski-Conradi litmus agar was inoculated with the growth on malachite green agar plates. They demonstrated typhoid bacilli by this enriching method eight times when the v. Drigalski-Conradi method was negative. They used malachite green 1 in a dilution of 1:6000 added to a 2% agar. Klinger [74] tried the malachite green method of Lentz and Tietz, and obtained better results than with any other method. Comparative examinations were made in a series of 43 typhoid stools. The typhoid bacillus was demonstrated with the v. Drigalski-Conradi agar 13 times; Endo's fuchsine agar 16 times; Ficker and Hoffmann's caffeine method 20 times; Lentz and Tietz's malachite green method 26 times. Klinger's malachite green agar differed somewhat from that recommended by Lentz and Tietz.[82] He used a 4% agar and malachite green 120 in a dilution of 1 : 2000. He found that the reaction of his malachite green agar had to be 2% acid in order to check the development of the colon bacilli and at the same time allow the typhoid to grow. He drew attention to the fact that different typhoid races have different powers of growth on malachite green. A typhoid bacillus recently isolated grew upon 0.1 malachite green (1:1000) while the stock typhoid did not. A typhoid bacillus isolated three months before from the feces was able to grow on only 0.05% malachite green. Even this small amount of malachite green did not permit all the colonies even of the sturdiest typhoid races to develop.

In their original article Lentz and Tietz [82] directed that after the green plate had been flooded with normal salt solution, the surface growth should be rubbed up with the glass spatula. Jorns [66] pointed out that this procedure broke up the colon and proteus colonies. Now Lentz and Tietz [83] advise that, instead of using the spatula, the plate should be inclined from side to side a number of times. The typhoid and paratyphoid colonies are more readily detached than the colon colonies. Formerly, they used a medium neutral to litmus; now they recommend a slightly acid reaction. By this change in reaction the growth of the alkali-forming bacteria is diminished. The reaction point selected corresponded closely to 1.8% acid to phenolphthalein. They pointed out that malachite green 120 contains dextrin and that the dextrin is readily decomposed forming an acid, probably lactic acid. They asserted that the hygroscopic properties of malachite green caused the dye to lose strength rapidly. For these reasons they used malachite green 1 instead of malachite green 120. The concentration employed was 1:5000. Practically identical results were obtained with malachite green crystals (Höchst) in a concentration of 1,22,000. Leuchs,[85] the following year (1906), advised the use of malachite green crystals because they are pure preparations, while malachite green 1 as well as malachite green 120 contains dextrin.

The modified technique of Lentz and Tietz [83] is as follows: a 3% agar is made from a beef infusion (1,500 gm. of meat and 2 liters of water). The agar is boiled for three hours and then 1% peptone, 0.5% sodium chloride and 1% nutrose (this may be omitted) are added. To a portion of the stool to be examined a small amount of 0.85% sodium chloride solution is added and a thin mass prepared. Two large drops of this suspension are placed on a green Petri dish and spread over the surface with a v. Drigalski-Conradi spatula. Then the spatula is immediately rubbed over the surface of 2 large v. Drigalski-Conradi plates (20 cm. in diameter). After sixteen to twenty hours' growth in the thermostat the blue plates are examined. If the blue plates are negative the green plates after twenty-four hours' growth are each flooded with 8 to 10 cc. of 0.85% salt solution. After this fluid has been in contact with the surface growth about two minutes the plate is tipped to and fro so that the fluid rises close to the rim. After the large colon colonies have settled to the bottom — and this occurs in less than thirty seconds — 1 to 3 loopfuls taken from the surface are smeared over a v. Drigalski-Conradi plate and from this first plate a second is inoculated.

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* The preparation of a double normal phosphoric acid solution is not easy and requires the facilities of a chemical laboratory and the services of a chemist.

In some instances Lentz and Tietz [83] found the increase in the number of typhoid bacilli was enormous. In one case a series of 8 v. Drigalski-Conradi plates showed a single typhoid colony among about 24,000 colonies of fecal bacteria. The second series of blue plates, made after the enrichment produced by growth on the malachite green agar, showed 350 typhoid colonies to a single colony of a fecal bacterium. This was an increase of four and a half million.

They admit that alkali-formers present in the feces sometimes grow so profusely on the green plates as to render the method valueless. In the examination of 6 out of 51 typhoid stools the second series of blue plates showed either fewer typhoid colonies than the first series, or none at all. With paratyphoid stools there was always an increase. Lentz and Tietz [83] examined during one year at the Bacteriological Institute in Idar 2,737 stools. In 540 of these typhoid bacilli were found, in 144 paratyphoid bacilli. The paratyphoid bacilli were found in the stools of all the 44 cases of paratyphoid fever examined. In 25 of the 44 cases the diagnosis could be made solely by means of their malachite green method.

Klinger [74] and Symanski [143] have reported favorable results with the procedure of Lentz and Tietz. Friedel [38] found it of value in paratyphoid infections but did not succeed in isolating the typhoid bacillus. In tests made by Bonhoff,[11] B. coli grew in malachite green media that inhibited the growth of B. typhosus. In a concentration that checked both colon and typhoid bacilli both types of paratyphoid bacilli developed profuse growths.

(To be continued.)

Reports of Societies.

THE AMERICAN SURGICAL ASSOCIATION.

Report of Meeting Held at Washington, D. C.,
May 7, 8 and 9, 1907.

(Continued from No. 23, p. 751.)

Dr. Willy Meyer, of New York, in his contribution to the symposium on

END RESULTS FOLLOWING OPERATIONS FOR CARCINOMA OF THE BREAST

presented his personal statistics covering 84 cases (86 operations) with carcinoma of the breast, operated upon by his radical method [2] between September, 1894, and April, 1907.

All his cases, with the exception of one, were females; the youngest was twenty-eight, the oldest seventy-two years of age. The greatest number occurred in the fifth decade of life.

His figures show that 28, or 35%, of the 80 patients traced are alive and well to-day, 9 having been operated upon within the last three years. Four others died from six to eight years after operation, when 2 died of recurrence; the other two of diseases not connected with the original trouble. Five lived from three to five years after operation. Three, though living, show signs of recurrence. Forty to 50% died within three years after operation.

Dr. Meyer calls attention to the fact that eight of his fatal cases died of metastases in the absence of either local or regional recurrence.

Regarding the wisdom of invariably cleaning out the supraclavicular space at the time of operation, he states that his own experience has pointed rather against such a procedure. It was done in none of his cases that remained well from five to twelve and one-half years after operation.

Concerning the preservation of the subscapular nerves, as advocated by Küster in 1887, he states that he himself always tries to do so; still, he has in three instances seen a recurrence take place around the second subscapular nerve. In spite of this observation he would, of course, not consider the removal of these nerves warranted, in view of the resulting disability with regard to the proper use of the arm.

Dr. Meyer emphasized the fact that every one of his patients has the perfect use of her arm. Only one of his living patients has a somewhat pronounced edema of the arm. The post-operative neuralgia or neuritis of the brachial plexus has proved to be transitory in every instance.

As to prognosis, he considers the cases with involvement of the supraclavicular glands to offer little hope of permanent cure. Nevertheless, he believes it imperative, even in these cases, to extirpate whatever can be reached with the knife, so long as metastases do not forbid such a procedure.

So far as he has been able to determine from the partially, somewhat incomplete pathological records of the cases reported, the prognosis is less favorable in the case of adenocarcinoma than of scirrhus.

Dr. Meyer expresses the opinion that it is often more the degree of malignancy of the disease than its duration prior to operation that determines the final result. He has seen several cases in which, despite most timely and thorough operation, internal metastases occurred with astonishing rapidity.

But, just because of the known treacherous, perhaps even infectious, nature of malignant disease, he thinks it would be wrong, even in view of the apparent hopelessness of such cases, to encroach upon the magnitude of the operation. It is because of the uncertainty as regards the virulency of the disease in the given case that radical work becomes a necessity in every instance, and this, he thinks, is best accomplished by an operation such as he practices, consisting in the removal of both pectoral muscles, with the diseased breast, glands and surrounding fat in one mass.

Dr. Lewis S. Pilcher, of Brooklyn, presented a contribution to the symposium on

END RESULTS FOLLOWING OPERATIONS FOR CARCINOMA OF THE BREAST.

His paper dealt particularly with 18 cases in which the evident extension of the disease at the time they first presented themselves was great enough to arouse suspicion of possible infection of the lymph nodes above the clavicle. In 4 cases glandular masses in the neck were distinctly palpable; of the 14 in which the examining finger could not appreciate the presence of diseased nodes in the neck, section revealed infected nodes present in 11; and in only 3 cases appreciable disease was not recognizable upon section. Of these last mentioned 3 cases all have remained well from the time of operation, a period of five, one and one-half and one year respectively.

Of the four cases in which the supraclavicular glands were palpable before operation, one case died three months after operation, evidently from internal metastasis. The second case had two periods of recurrence and died five years after the primary operation. The third case died two years after operation, it is thought from a carcinomatous element in the pulmonary condition, she having been said to have died from pneumonia. The fourth is now, two years after operation, perfectly well without any evidence of recurrence.

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[2] N. Y. Med. Rec., Dec. 15, 1894; Jour. A. M. A., July 29, 1905.

In each of the foregoing cases the supraclavicular spaces were cleared out and the typical operation performed upon the thorax and axilla.

Of the eleven remaining cases one died from myocarditis seven weeks after operation; three developed speedily both regional and distant metastases, all dying within a year; a fourth was re-operated upon for a recurrent nodule in the lateral thoracic region a year after the primary operation; she died three years after primary operation from carcinoma of the liver. A fifth case remained well for five years, but has now developed both supraclavicular and thoracic recurrences. Four cases remain free from recurrence after periods of three, three, two and one year, respectively.

Abstract,

END RESULTS IN OPERATIONS FOR CARCINOMA OF THE BREAST.

DR. ALBERT VANDER VEER, Albany, N. Y.

Dr. Vander Vere said he had intended including the histories of cases he had operated upon during the past twenty-five years, but time only permitted of those from May, 1899, to May, 1906, the period of occupancy of the Albany Hospital.

There were 103 cases from which to draw conclusions, the relative proportion in different decades being as follows:

20 to 30 years of age,	1 case
30 ,, 40 ,, ,, ,,	15 cases
40 ,, 50 ,, ,, ,,	35 ,,
50 ,, 60 ,, ,, ,,	32 ,,
60 ,, 70 ,, ,, ,,	16 ,,
70 ,, 80 ,, ,, ,,	4 ,,
	103 cases

Family history negative,	53 cases
,, ,, tubercular,	25 ,,
,, ,, carcinomatous,	18 ,,
,, ,, ,, and tubercular,	5 ,,
,, ,, not stated,	2 ,,
	103 cases

Left side,	60 cases
Right side,	41 ,,
Both sides,	2 ,,
	103 cases

Later, DR. VANDER VEER intends giving statistics of all his work in this field of surgery. The operation forty years ago and now is another striking illustration of the advance in surgery. It is more and more scientific, more and more thorough, as our knowledge of pathology has increased and our association with laboratories where careful examination of specimens and original investigation can be made. Forty years ago few surgeons entered the axillary region and thoroughly removed its contents. Step by step the thoroughness of the operation has been increased until, if cases were classified in periods of a half decade, it would show a marked improvement in end results and permanent recoveries.

We should emphasize most earnestly the importance of impressing upon the profession at large an early diagnosis, the physician and surgeon in consultation studying the case carefully, and employing such excellent methods as have been suggested by Dr. Warren and others. If the case be non-malignant give the patient the benefit of mental relief from the fear of cancer she has entertained. If the concensus of opinion is in the direction of malignancy she, or her friends, should know it, and the experience of many candid surgeons and careful pathologists is that in these cases the earlier a thorough and complete operation is done, the better for our patients and for statistics as to complete relief. To know her tumor has been removed, that she has made a good recovery, with all the chances in her favor, is a prognosis of no mean importance. She can forget her condition when only a gradually disappearing scar remains. Dr. Vander Veer prefers the incision beginning well up in the axilla, almost on an oblique line to a point below the nipple, thence along the under surface of the breast to the median line, with a corresponding elliptical incision above, traversing the upper segment of breast area, joining with the incision just underneath the outer edge of the pectoralis major, enabling the operator to reach the breast and lymphatic spaces quite satisfactorily, even to removal of the pectoral muscle. This also affords good drainage. Plastic work for covering areas where large amounts of diseased tissue have been removed is thoroughly serviceable, and the doctor is favorably impressed with the small percentage of return in the scar, metastases to internal organs being the principal factor causing death.

Careful laboratory examination tends decidedly to indorse the value of the work of the pathologist in diagnosis, and there is no greater field for the philanthropist than the endowment of pathological laboratories for investigation along these lines.

Although operations in hopeless or unfavorable cases bring little credit to the surgeon, yet they relieve the patient of much mental and physical suffering. Very little good has resulted from x-ray treatment, except relief from pain, and in many cases it seemingly prolongs life.

Could such men as Parker, March, the elder Gross, the senior Warren and others look in upon an operation for carcinoma of the breast they would be as much surprised as at the advances made in abdominal surgery at the present time.

Where cases are reached early it is not yet convincing that removal of the pectoral muscle is called for, but the younger men would be impressed with the necessity of careful examination and dissection of the axillary spaces.

There were a few cases noted where tumor appeared early, did not worry the patient, yet later developed into carcinoma. We cannot but feel that had the original simple adenoma been looked after in a judicious manner the patient might have escaped the carcinomatous element.

Some patients are unconcerned in reference to growths about the mammary gland, while others are greatly alarmed at the slightest disturbance, the latter often unwilling, even amidst their fears, to have surgical intervention, yet a class we should always endeavor to reach early.

DR. VANDER VEER cited some interesting cases of return of the disease very late after the first operation, one occurring twelve years after the first surgical intervention.

The shortest period of recurrence was three months.

The element of pain is not always so marked until the tumor begins to increase actively.

Careful study of statistics impresses one with the knowledge that where operation is done before involvement of the axillary region a better percentage of recoveries follows.

DR. VANDER VEER presented two cases of metastasis to the long bones, one three years after amputation of right breast, patient finally dying about four weeks later from all the evidence of carcinoma of pleura, possibly of lung, on left side.

Many cases presented with well-defined carcinoma of breast, also uterine fibroids. In operations for both conditions patients have usually done well, but there is a greater degree of anxiety for the surgeon. Where only the breast was removed patients seemed to live comfortably for many years, with no apparent disturbance from the uterine fibroid. Patients do best who have passed the menopause.

The element of traumatism has ever commanded careful thought. Is it a factor? We must heed carefully the history of such cases as Dr. Vander Veer presented.

In exceedingly fleshy patients it is interesting to note the difficulty that sometimes presents in reaching an early diagnosis, yet these cases are usually very susceptible to the least disturbance about the glands, and pain, however slight, attracts their attention at once. A clinical diagnosis is not always so easy.

It is very instructive to note how short a time sometimes elapses in the period that a tumor is apparently developing. As an illustration a case presented where tumor had only been noticed three months in left breast. At the time of operation the growth was ulcerated, rectangular in shape, measured 17 by 12 cm., seemed movable, had a very offensive odor and glands of axilla involved. Patient made an excellent recovery from operation. Pathological report: very cellular medullary carcinoma.

Several very impressive cases with a tubercular history were given, one in particular where operation was first done Dec. 31, 1903, metastases in scar, and operation Oct. 28, 1904, and patient still living, although gradually growing weaker, and immense swelling of right arm, which gives her much pain.

This case has shown a degree of malignancy, yet a power of resistance remarkable to observe.

Dr. A. J. Ochsner, Chicago, contributed a paper on the

FINAL RESULTS IN 164 CASES OF CARCINOMA OF THE BREAST OPERATED DURING THE PAST FOURTEEN YEARS AT THE AUGUSTANA HOSPITAL, CHICAGO.

Of these cases 101 have been traced to the present time. Fifty-seven of these cases are still living, all but two without recurrence. Thirty-nine of these cases have lived more than three years; 25 cases more than 5 years; 5 cases more than ten years; 5 cases died from shock; 20 cases died with one year; 6 cases within two years; 6 within three years; 1 within four years; 2 within five years and 1 case each, six, seven, eleven and fourteen years after the primary operation. Five cases died free from recurrence. Two of these lived for three years, and 1 each for seven, nine and ten years.

During the past six years all patients have received post-operative x-ray treatment while in the hospital, and 22 cases continued this treatment after returning to their homes. Several cases were apparently benefited by this treatment.

Dr. August F. Jonas, of Omaha, Neb., read before the American Surgical Association a paper entitled

THE END RESULTS IN OPERATIONS FOR CANCER OF THE BREAST,

the same being one of the contributions to a symposium on this subject.

He stated that it has been shown that from 80% to 86% of all breast tumors are carcinomata, and that this is his personal experience.

The total number of neoplasms of the female breast that have come under the author's observation and which were operated upon during twenty years, and of which it has been possible to obtain more or less complete data, comprises a list of 260 cases. Of these 260 cases 211 were carcinomatous. He divides these according to microscopical findings as follows: Acinous carcinoma, 105; tubular carcinoma, 75; scirrhus carcinoma, 25; colloid carcinoma, 6.

The tubular carcinoma is the most frequent; in this form cell degeneration is slower and takes place much later than in the acinous form.

In all the cases referred to the author did a radical operation — complete removal of the entire breast and axillary contents in the very early cases, and in the later ones removal in addition of both pectoral muscles and the fat from the supra-clavicular triangle. In a number of instances portions of one or several ribs were removed wherever there was the slightest indication of the neoplasm having approached a rib.

The author's operative experience comprises 211 primary operations for cancer of the breast; 30 operations for local recurrences in his own cases; and 14 cases done primarily by other operators, totalling in all 255 cases. Out of this number there were 6 deaths.

He presents the following table of end-results. Primary operations:

	Total.	Disappeared.	Considered in paper.	Recurred in 1 yr.	Recurred in 2 yrs.	Free after 3 yrs.
Acinous,	105	21	84	25	19	40
Tubular,	75	10	65	12	8	45
Scirrhus,	25	1	24	1	5	18
Colloid,	6	2	4	0	2	2
Total,	211	34	177	38	34	105

Secondary operations for recurrence, author's cases, 30; other surgeons' cases, 14. The final outcome of most of the secondary cases is unknown with regard to the functional results obtained, the movements of the arm on the whole were good. A more or less post-operative swelling of the arm occurred in a number of instances, owing, no doubt, to a removal of all the axillary lymphatics. This swelling usually disappeared in a few weeks, after the establishment of collateral lymphatic circulation.

The author believes there will be a steady improvement in the end-results in operations upon the breast for cancer, as both the profession and the laity are becoming more alive to the fact that early and radical operation is essential.

Dr. Nathan Jacobson, of Syracuse, N. Y., read a paper before the American Surgical Association, entitled

END RESULTS FOLLOWING OPERATIONS FOR CARCINOMA OF THE BREAST,

this being a contribution to the symposium on this subject. The following is a short abstract of his paper:

The rapidity with which carcinomatous disease of the breast manifests itself is of the greatest importance. Scirrhus cancer can present as acute manifestations as those of the medullary type. One case referred to, in which death followed spinal metastasis within six months after the first evidence of the disease, confirms this statement. These acute forms of carcinoma, whatever their pathological character may be, are not amenable to permanent relief by operation, recurrence either local or general appearing in a short period despite any form of surgical operation.

A second group of cases is one in which marked susceptibility to carcinomatous invasion is evident by repeated outbreaks of the disease in various parts of the body, without recurrence at the site of primary disease. Several cases of this type are referred to, two in which the first manifestation was in the uterus, the breast being involved at the end of two or three years subsequently. One of these patients died of recurrences which appeared rapidly for eight years; the other died within five years of cancer of the stomach. In this class of patients individual susceptibility to cancer cannot be overlooked.

Advanced age is not a contra-indication to operation, this statement being confirmed by the history of two cases, one operated upon at eighty years of age without recurrence, the second at seventy-eight with no recurrence, the woman living five years after operation, and dying of vascular disease of the brain.

Reference is made to a paper by the author presented to the Medical Society of the State of New York in 1896, in which the statistics of a so-called cancer cure institution were presented. Fifteen cases of cancer of the breast treated in that institution by cancer pastes were followed to their end result, and in each instance death followed from cancer.

The possibility of permanent cure following secondary operations for cancerous recurrence was emphasized.

The writer refers to his method of operative procedure, in which during the past ten years he has followed the technique of Dr. Halsted, except as to the removal of the supraclavicular glands. In the decade preceding the last ten years his method was that suggested by the late Dr. Samuel W. Gross to this Association at its first meeting in 1881. He refers to 71 cases of his own which he was able to follow to their end results. Thirty-five of these patients are still alive, having outlived the three-year period. Three died of intercurrent disease not cancerous. The remainder died of cancerous metastases.

Reference is also made to late recurrences, in one case thirteen and in the other sixteen years after primary operation.

ABSTRACT.

Dr. J. C. Oliver gave complete histories of 35 patients upon whom he had operated for carcinoma of the breast. The patients were all women. The histories of the living patients were complete to April 1, 1907. No case was reported which had not passed the three-year limit or which had died before the expiration of that length of time after an operation had been performed.

Twenty-two (62.85%) of the patients are dead. Twelve (34.28%) are alive and well from three to ten and one-half years after operation. One is alive more than three years after operation, but has an inoperable recurrence.

The radical operation, without removal of the supraclavicular glands, was performed thirty times. The breast was removed and the axilla cleared out seven times. (The two additional operations are accounted for by the fact that the remaining breast became involved in 2 patients, and these were subsequently removed.) The percentage of recovery after radical operations was 33⅓; that after the simpler operations was 57.15.

The reports prove that recurrences and death are unusual after the patients have remained well for three years subsequent to operation. But 3 cases died after three years of immunity — these lived respectively five, four and three and one-half years.

Three patients developed recurrences or metastases after three years,—four and three quarters, three and one-half and three and one-half years after operation.

Two or more operations were performed upon 8 of the patients. Three of these patients are alive and well more than three years after the last operation.

Twenty-one of the patients had known of the existence of a tumor for one year or longer. Fourteen (66⅔%) are dead; 6 (28.5%) are alive and well. One is alive, but with an inoperable recurrence.

Eight patients knew of the existence of a tumor from six to twelve months prior to operation. Four (50%) are alive and well.

Six were operated upon in less than six months after the recognition of a tumor. Two (33⅓%) are alive and well; 4 (66⅔%) are dead.

Recurrence above the clavicle took place in but 2 patients. The remaining breast was the seat of recurrence in 5 patients.

Lymphedema supervened in 5 patients. Three died, 1 is alive with recurrence and 1 is alive and well five years after operation.

The mortality was least in those patients in whom the tumors were located in the central area of the breast, and in those whose tumors were in the lower third of the breast.

The average duration of life after operation in fatal cases was twenty months.

The average time of recurrence was fourteen and one quarter months.

Fourteen of the 35 patients were afflicted with the disease so extensively as to give no promise of cure by operation. When these are eliminated from the statistics the author's percentage of recoveries is 57.6%.

The author concludes that the most potent factor in prognosis is the histologic character of the neoplasm. The prognosis becomes better when dealing with the hard, fibrous, slowly-growing varieties.

Dr. Joseph Ransohoff, of Cincinnati, presented a paper on

VERY LATE RECURRENCES AFTER OPERATION FOR CARCINOMA OF THE BREAST,

in which he shows that 20% of patients passing the triennium of safety still had recurrence either in scar or died of metastases. After five years recurrence is less common. Eighteen of the fellows of the American Surgical Association have seen no recurrence after five years. The essayist presented a case in which the disease returned in the scar twenty-one years after the first operation. A second operation at this time was followed by return of the disease within a year, and death from pulmonary carcinoma a year later.

To ascribe the improved end results now obtained altogether to the radicalness of the operation is fallacious. The public has been educated to the dangers of delay and primarily bad cases, the ulcerated, for example, are very rarely seen in advanced communities.

The author collected from the fellows of the Association, including his own, 37 cases developing seven years or more after the first operation. Of these 26 were clearly local and 11 were doubtful. He would not include cancers of the other breast or of internal organs, like the stomach or uterus, as recurrences. Of clean local recurrences, 10 occurred during the seventh and eighth years, 2 after the ninth, tenth, eleventh, twelfth and fifteenth years and 1 each at varying intervals from fifteen to twenty-five years.

(To be continued.)

According to the *Journal of the American Medical Association*, Dr. S. Weir Mitchell has received the honorary degree of LL.D. from the University of Toronto, Canada.

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THE ULTIMATE RESULTS, INDICATIONS AND CONTRA-INDICATIONS OF EPIDIDYMECTOMY, IN TUBERCULOSIS.

In the April, 1907, issue of the *American Journal of Urology*, appears a very complete and interesting article by E. L. Keyes, Jr., M.D., on the treatment of tuberculosis of the testicle. In this paper the author concludes very favorably for the operation of epididymectomy and records thirteen instances of this interference on eight patients. Seven of the patients recovered from the operation, and of these five were well as far as their seminal gland was concerned from one, three to ten and thirteen years afterwards.

Quenu not long ago expressed himself as follows, at a meeting of the Surgical Society of Paris: "The results that I have obtained by economical interferences have appeared very encouraging. We have followed patients from six, eight and ten years, who have never had relapses and were the possessors of their testicles. Others, especially those possessors of tuberculous epididymitides and subacute tuberculosis had relapses, but usually the recurrences were partial and easily curable; and for that matter where have we a tuberculous localization which is not susceptible to absorption of the cicatrix and the development of a new ulcerative process? Does castration prevent these recurrences? It is in reality only a partial operation to which has been added to the resection of a diseased portion, the sacrifice of an organ that has remained healthy."

A thesis was upheld at Paris in 1900 by Audebal who records thirty-one cases of partial or total epididymectomy and gives the ultimate results as follows: In twenty-five no recurrence took place; two of these patients were seen five months and six months respectively, after the operation; while the remainder were seen anywhere from one to eight years afterwards. In three cases the disease developed in the opposite testicle, in one, three years after the operation, and in one and two years afterwards respectively in the remaining two. It should be pointed out that one patient had undergone removal of the right testicle some time before epididymectomy was done on the left. There were also some cases of local recurrence. One patient developed tuberculosis of the vas deferens three years after epididymectomy; a fistula was present three years after the operation in another case, while still another patient developed a focus of tuberculosis in the vas two years after the operation. Another patient had a local recurrence in the skin immediately after the operation, while in still another case three months after epididymectomy there was a small mass adhering to the skin and the testicle. And, lastly, one patient presented two fistulæ at the time of leaving the hospital.

Humbert has performed fourteen epididymectomies, thirteen successfully, while in one case necrosis of the testicles occurred.

Atrophy of the seminal gland has nothing to do with the operation in question and is never met with when the technique has been properly carried out, when the spermatic vessels have not been injured or tied with the cord. From this point of view the genital gland cannot be compared to the liver, salivary glands or pancreas, which become atrophied after ligature of their excretory ducts. The testicle is a gland having an internal secretion just like the ovary and thyroid gland. In order to corroborate this conclusion we may mention Bardenhaur's thirty-four cases, in none of which, even as late as six years afterwards, was atrophy of the testicle observed.

It would also appear from the recorded cases that prostatic lesions and those of the vesicles are improved by the conservative operation on the epididymis, and it is quite possible that the operation may have the same action as resection or ligature of the vas deferens in prostatic hypertrophy. Duplay has expressed himself as follows on this subject: "After these economical operations on the testicle or epididymis, slightly advanced tuberculous lesions of the prostate or seminal vesicles remain stationary, or may even regress."

It is important to mention other tuberculous lesions occurring after epididymectomy. Audebal records an instance of a perinephritic abscess and caries of the sternum in the same patient arising six years after the operation; in another, caries of the ribs occurring five years after; a third developed cystitis four years after, while a fourth developed white swelling of the wrist at the end of the same time. And lastly tuberculosis of the elbow joint took place, followed six months later by meningitis in another patient.

To sum up what has been said it would appear that the ultimate results of epididymectomy are about as good as can be expected, because by this interference the patient is freed from a painful lesion and also a dangerous focus of disease.

In order to establish the operative indications of this operation, the manner of infection of the male genital organs should be thoroughly understood. This occurs either by ascending or descending routes. The ascending form is practically the only one met with in the adult. The bacilli are stopped at the first narrow point they encounter, that is to say at the tail of the epididymis, and it is here that a number of isolated nodules are met with.

Descending tuberculosis is, on the contrary, much more frequent in children. The bacilli become naturally arrested at those points which receive the arterial supply, namely, at the apex of the testicle and in the head of the epididymis. This accounts for the presence of foci in the testicle, alone or associated with foci in the head of the epididymis.

In instances of ascending tuberculosis one may be dealing with a distinctly primary infection, the urethra having acted as the point of entrance. Instead of a localized tuberculosis, one may meet with a uro-genital tuberculosis, having already involved the kidney or the bladder, and then secondarily throwing down the bacilli into the urethra, from which point they enter the vas deferens.

The indications for operation are here to be drawn from the gravity of the co-existing uro-genital tuberculosis. More frequently the latter simply consists of a slight infection of the bladder which is not a contra-indication for operation. In cases of descending tuberculosis one may be dealing with a genital infection in a case of advanced lesions in the lung, in which case operation is to be proscribed. Then again one may be dealing with a genital tuberculosis with only very slight pulmonary lesions, in which case the operative indications are drawn from the relative importance of the two lesions. All this recalls Ollier's law, relative to local tuberculosis of the bones: (1) There are bone tuberculoses that should be resected; (2) there are bone tuberculoses which must not be resected; (3) there are bone tuberculoses which may be resected. In the same way it may be said that there are tuberculous epididymitides which *should* be operated on; there are those which *must not* be operated on, while there are other instances which *may* be operated on. Such are the general indications for the interference.

If one is in presence of a case which should be operated on, one has only to choose between epididymectomy and castration. Now what are these particular indications for the former operation? Castration is a far more radical operation than epididymectomy, or at least it appears to be a more radical interference. But although castration is a more radical operation it has, generally speaking, the same inconveniences inherent to all radical operations, namely, it completely removes the diseased organ. There is between epididymectomy and castration the same difference as between amputation of the thigh and resection of the knee in the case of tuberculosis of the knee joint. Castration is more radical than epididymectomy, but it frequently necessitates a useless sacrifice, especially when there exists, as in the case of ascending tuberculosis, only a few isolated nodules in the tail of the epididymis. And still more, castration not only means the removal of the seminal gland, which as far as it is concerned amounts to nothing since its functions are abolished by epididymectomy, but above all the removal of the interstitial gland whose action on the organism in general is at present well known.

Epididymectomy is a necessary operation in ascending tuberculosis; it is quite sufficient in the majority of cases and is, above all, an interference which respects the testicle and its interstitial gland. Occasionally this operation is insufficient, but it at least allows one to make a complete exploration of the genital apparatus and at the same time, besides removing the epididymis, any focus in the testicle can be eliminated, or if necessary the entire organ can be removed.

REPORT OF MASSACHUSETTS SCHOOL FOR FEEBLE-MINDED.

The fifty-ninth annual report of this institution is before us, including fourteen months, ending Nov. 30, 1906. It is always a satisfaction to allude to the work which is being done at this institution, not only because of its intrinsic worth, but also because, on account of its character, it is not so widely known as its importance warrants. It is evident to those who look at all into the future, and who are in the least acquainted with certain social problems, that the care and development of the feeble-minded, using that term in its broadest sense, is a work which may well demand the attention of citizens wholly without the confines of institutions. That this recognition is coming is not open to doubt. The problem which the public schools present in the classification of pupils of feeble intellect, the social questions connected with the moral delinquency of girls, and the possibility of rendering to some degree useful the deficient classes in general are all matters which find much explanation in the conduct of a great school for the feeble-minded, such as that at Waverley has become.

In this last report it is stated that there are, at the institution, 1,147 feeble-minded persons, of whom 1,067 are at Waverley and 180 at Templeton, the farm colony which has been developed during the past few years. The phenomenal growth of the institution naturally demands many new buildings, and several have been constructed, or are about to be, to meet the increased demand. The demands for admission have, however, come faster than the enlargement of the capacity of the institution could be made. It will be remembered that in the opinion of the trustees the limit for one institution has been reached. As a result of the recommendation of the board, provision has been made for a second school for the feeble-minded in this State. It is particularly gratifying to note the unquestioned success of the colony at Templeton. This colony affords the outlet for the energies of the older boys who do practically all the work on the farm with admirable results in the way of good crops and general improvement in the surroundings.

It is also a noteworthy fact that of 222 admissions during the time under consideration 107 were young, teachable pupils, some capable of very great improvement. The number of improvable cases admitted was greater than for many preceding years. The report in general cannot give one a complete conception of the extent and diversity of the work accomplished at the institution. Last week, however, an unusual opportunity was offered many persons to inspect the work in detail through the meeting of the American Association for the Study of the Feeble-Minded, which held its annual meeting at the hospital, many of the visitors being guests of the superintendent during their stay. The papers read at these meetings by persons interested in the various phases of the subject, both social and otherwise, gave an excellent idea of the widespread interest which the whole subject is exciting and of the remarkable progress which is being made toward the solution of the problem of the feeble-minded.

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A DAY CAMP FOR CONSUMPTIVES.

It will be remembered that for the past two summers a day camp for consumptives has been maintained on Parker Hill in the immediate neighborhood of Boston. The work, which was somewhat experimental at first, proved a decided success. The object was to receive for daily treatment patients in the early or moderately advanced stages of tuberculosis, the patients returning to their homes at night and provision being made for their transportation when necessary. The expense of the treatment was placed at twenty-five cents a day, not including car fares. This fee, however, is not necessarily fixed and may be remitted or modified when circumstances demand.

We are glad to make note of the fact that the camp is to be continued this year and was opened for the season on June 5. Instead, however, of using Parker Hill for the purpose, the camp is to be on the grounds of the recently constituted Boston Consumptives' Hospital on River Street, Mattapan. We have on previous occasions commented on the excellent results which have been accomplished through this camp. It is a rational and relatively simple way of instructing persons afflicted with tuberculosis in the necessary details of hygiene, and such instruction should extend far beyond the persons who first receive it. It is, of course, evident that the campaign against ignorance and carelessness must be long continued before entirely satisfactory results may be reached. It is, therefore, essential that by every possible means the education should go on, and certainly the design of summer camps must prove an efficacious aid in the general propaganda. We heartily indorse the movement and beg to call the attention of our readers, particularly those who live in this neighborhood, to the further possibilities which this camp offers of alleviating the situation regarding tuberculosis.

Applications for admission to the camp should be made by mail or telephone to the office of the Boston Association for the Relief and Control of Tuberculosis, 4 Joy Street, Boston.

MEDICAL NOTES.

An Unusual Operation. — An interesting operation is reported in a recent number of the *Indian Medical Gazette* on "Extra-peritoneal transplantation of ureters into the rectum." This operation was performed by T. B. Armugan, Medical Officer in Charge, Victoria Hospital, Bangalore.

American Gastro-Enterological Association. — At the tenth annual meeting of the American Gastro-Enterological Association, held in Atlantic City, N. J., June 3 and 4, 1907, the following officers were elected for the ensuing year: President, Dr. J. P. Sawyer, of Cleveland; Vice-Presidents, Dr. J. A. Lichty, of Pittsburg, and Dr. G. D. Kahlo, of Indianapolis; Secretary and Treasurer, Dr. Charles D. Aaron, of Detroit.

President of the American Medical Association.— Dr. H. L. Burrell, of Boston, was elected president of the American Medical Association for the ensuing year at the recent meeting held at Atlantic City.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 12, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 30, scarlatina 47, typhoid fever 10, measles 60, tuberculosis 47, smallpox 0.

The death-rate of the reported deaths for the week ending June 12, 1907, was 18.70.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 8, 1907, was 197, against 224 the corresponding week of last year, showing a decrease of 27 deaths and making the death-rate for the week 17.06. Of this number 116 were males and 81 were females; 191 were white and 6 colored; 109 were born in the United States, 83 in foreign countries and 5 unknown; 34 were of American parentage, 137 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 32 cases and 2 deaths; scarlatina, 47 cases and 3 deaths; typhoid fever, 4 cases and 1 death; measles, 57 cases and 0 deaths; tuberculosis, 24 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 25, whooping cough 0, heart disease 16, bronchitis 3 and marasmus 7. There were 20 deaths from violent causes. The number of children who died under one year was 36; the number under five years 47. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 76.

There were 8 cases and 4 deaths reported from cerebrospinal meningitis during the week.

Endowment of the Professorship of Otology in the Harvard Medical School. — Mr. Francis D. Lecompte, of New York, has endowed the professorship of otology in the Harvard Medical School in the sum of fifty thousand dollars in memory of his nephew, Dr. Walter Augustus Lecompte.

NEW YORK.

Bequests to St. Luke's Hospital. — By the will of James Morris, a son of Dr. Stuyvesant F. Morris, of New York, who died on May 22 at his home in Ridgefield, Conn., $37,000 is bequeathed to St. Luke's Hospital, New York. Gifts amounting to $8,000 had previously been made to St. Luke's by Mr. Morris and his wife.

Dr. Charles W. Pilgrim Returns.— Dr. Charles W. Pilgrim has resigned the presidency of the State Commission in Lunacy, in order to resume his former position as superintendent of the Hudson River State Hospital for the Insane, at Poughkeepsie. For some time past, it is stated, the managers of the latter institution have been endeavoring to induce him to return.

Death-Rate of the State. — The last monthly report of the State Department of Health shows a low death-rate, also, in the state at large. During the month of April there were reported 12,447 deaths, giving an annual death-rate of 17.9, while the average rate for April of the past five years was 18.7. The three largest causes of death were pulmonary tuberculosis, with 1,394 deaths, pneumonia, with 1,185 deaths, and organic heart diseases, with 1,027.

Seventy-fifth Anniversary of New York University. — The seventy-fifth anniversary of the New York University was held on May 25, when 425 degrees in all (the largest number in the history of the institution) were conferred. Dr. Joseph D. Bryant received the honorary degree of Doctor of Laws, and in the medical department (University and Bellevue Hospital Medical College) the Valentine Mott medal was awarded to Maurice J. Lippman and the William T. Lusk prize to Louis H. Tuckerman.

Typhus Fever and Smallpox on Incoming Steamer. — In consequence of the presence of typhus fever on the Red Star liner *Kroonland*, from Antwerp, and of small-pox on the Holland-America liner *Statendam*, from Rotterdam, both of which arrived in port on May 28, all the steerage passengers of the two vessels (over 3,000 in number) were transferred to Hoffman Island for observation.

Death from Beri-Beri. — A young midshipman of the Brazilian cruiser *Tamayo* died of beri-beri on May 29, shortly after admission to the J. Hood Wright Hospital. The *Tamayo*, which with two other Brazilian men-of-war arrived a few days before from the Jamestown Exposition, was anchored in the Hudson, opposite the upper part of the city, and the patient was sent ashore for hospital treatment.

Conviction for Criminal Negligence. — Edwin Watson and his wife Mary, Christian Scientists, of Moorestown, N. J., were committed to jail on May 31, in consequence of the verdict of a coroner's jury accusing them of criminal negligence in permitting their son, seven years old, to die without proper medical attendance. The verdict also censured two Eddyite healers who had been "treating" the child. The cause of death is stated to have been pneumonia and meningitis, and shortly before the end, when the patient was comatose, a physician was called in. He very properly refused to sign a death certificate, and reported the case to the authorities.

Tuberculosis Statistics. — Dr. H. M. Biggs, medical officer of the Health Department, has been making a study of the city's tuberculosis statistics, and the results which he reports are most encouraging for continued and increased efforts for the suppression of the disease. In 1881 the death-rate from pulmonary tuberculosis in New York City (the present boroughs of Manhattan and the Bronx) was 4.27 per thousand of the population, while in 1906 this death-rate had become reduced to 2.16 in the Greater City of New York. The figures show that in 1881 there were reported 5,312 deaths from the disease, in an estimated population of 1,244,511, and in 1906, 8,955 deaths in an estimated population of 4,152,860.

Transfer of Dying Patients. — Both houses of the legislature have passed, over the veto of Mayor McClellan, a bill making the transfer of patients in a dying condition from one hospital to another a misdemeanor, punishable by a fine of $100. It has long been asserted that the large private hospitals of New York were in the habit of shipping dying patients to Bellevue Hospital, in order that their own death-rate might be kept as low as possible, and the design of this bill is to put an end to the alleged practice. The bill was regarded by the Mayor as too sweeping in its provisions, being objectionable in that it does not permit hospital authorities to refuse cases such as those of contagious disease or delirium tremens or other cases unsuitable for the wards that might be available.

Physician's Fees at Bellevue Hospital. — It has long been a rule in Bellevue Hospital and the other public hospitals that no fee should be received for any medical or surgical services; but apparently this has of late been disregarded, and some of the visiting staff of Bellevue, it is stated, have sent private patients to the hospital and charged payment for their treatment. Consequently, on June 5 the board of trustees of the Bellevue and Allied Hospitals unanimously adopted a formal resolution to the effect that the collection of fees by any member of the medical staffs of these institutions for services rendered to patients in them is, in the opinion of the board, improper and likely to lead to serious abuse and public scandal. Therefore, no member of the medical staffs of Bellevue and Allied Hospitals shall either directly or indirectly be a party to any charges made to actual or prospective patients in such hospitals.

Examining Board for Opticians. — Despite the efforts of the medical profession, the State Senate has passed a bill creating an examining board for opticians and giving them the right to practice in a limited way what is defined by the new medical law as a specialty of medicine. In consequence of this, Dr. Frank Van Fleet, chairman of the committee on legislation of the Medical Society of the County of New York, has written a circular letter to the members of the society urging them to send to the members of the Assembly and the Governor protests against the making of this bill a law. In the course of it he says: "Year after year we have successfully fought these efforts to create new boards, and we had hoped that the law creating a single board for all sorts of doctors would do away with the need for such effort; but the refracting opticians seem not to be satisfied. One of the checks on 'Christian Scientists' doing harm is that the law requires parents and guardians to secure the services of physicians when children are sick, but this optometry bill gives the opticians the right to fit children with glasses for the relief of headache and other reflex symptoms. If four years of study is necessary properly to equip physicians to treat children, why should opticians receive similar privileges without complying with the same requirements?"

Bad Meats. — The last bulletin of the State Department of Health reports that bad meats are still sold in New York. In several sections of the contents of a sample of potted ham encysted embryos of *trichina spiralis* were found, and in an outbreak of trichiniasis the origin of the disease was traced to shoulders of Western pork sold by a certain butcher. Two samples of a product labeled "Fine old English luncheon meat as prepared at Haddon Hall in the reign of Queen Elizabeth," were found to consist of large amounts of fibrous tissue and fat, with scattered pieces of skin, glands, hair, and a little muscular tissue. In a sample of "Selected chickens, finest quality," the digestion test showed 11% of insoluble residue, and in one brand of potted ham, 13% of insoluble residue. In a number of instances preservatives were detected in canned goods, while adulterations with harmless substances, such as corn meal, were used to a considerable extent. It is stated at the department in Albany that prosecutions will shortly be instituted against a number of provision dealers and canning firms as a result of this investigation. While the department has, of course, no power to stop the canning of impure food outside of the state, evidence will be furnished which will enable the federal government to prosecute the offending parties in other states.

Single Board of Medical Examiners. — On May 29 the Regents of the University of the State of New York named the nine members of the single board of medical examiners substituted by the recent medical unification bill for the previously existing three separate boards. While the new board contains several well-known physicians, its composition is distinctly disappointing. The names, as announced, are as follows: Drs. W. W. Potter, of Buffalo, W. S. Ely, of Rochester, Floyd M. Crandall, of Manhattan Borough, New York, Eugene Beach, of Gloversville, Lee H. Smith, of Buffalo, W. S. Searle, of Brooklyn Borough, New York, F. W. Adriance, of Elmira, F. S. Farnsworth, of Plattsburgh, and Ralph H. Williams, of Rochester. The first five of these are all members of the Medical Society of the State of New York, and Dr. Potter has been, until now, president of the board of medical examiners appointed by that society. Of the remaining four, two are said to be eclectics, and one, Dr. Williams, an osteopath. Dr. Smith is a graduate of the medical department of the University of Buffalo (in the year 1887), but he is not credited with any society affiliations in the State Society Medical Directory. Dr. Searle was graduated from the University of Pennsylvania Medical School, but has long been a prominent homeopathic physician in Brooklyn. Drs. Adriance and Farnsworth are both graduates of the Hahnemann Medical College of Philadelphia. The name of Dr. Williams, who is stated to be an osteopath, does not appear at all among the registered physicians of the state, as given in the medical directory, and it seems most extraordinary that a body like the State Board of Regents should have made such an appointment.

Current Literature.

Medical Record.

May 11, 1907.

1. *Janet, P. *Disturbance of Vision Due to Exaggeration of Binocular Association.*
2. *Erdmann, J. F. *Appendicitis in Infants and Children.*
3. Wise, F. *Pityriasis Rosea.*
4. *Gross, M. *Insufficiency of the Gastric Muscle.*
5. Sheffield, H. B. *Vulvovaginitis in Children with Especial Reference to the Gonorrheal Variety.*
6. *Birchmore, W. H. *Is an Herpetic Origin of Pleurisy Possible?*
7. Scripture, E. W. *The Treatment of Stuttering.*

1. Janet describes an interesting case of peculiar ocular symptoms occurring in a very hysterical subject after the loss of sight in one eye. The loss of sight was accompanied by severe pains in the blind eye, for which a section of the optic nerve was made, leaving a normal looking eye, but with divergent strabismus, and some defects in the movements. There remained also an exaggerated effort to secure binocular vision, which caused the presence of a luminous cloud before the eye, and prevented any accurate sight. After study of the case the author found that by the use of a tube before the eye, as in a telescope, a microscope, or a mere tube of paper, these symptoms disappeared and the patient saw correctly. He believes that the consciousness of the blind eye, more or less confused by the defect of accommodation in a very neurasthenic subject, caused trouble in fixation and accommodation of the seeing eye. By placing before the good eye a short tube in spectacle frame he succeeded in educating the patient to see and read well with the good eye. The author observes that the treatment of nervous diseases is in the main a re-education, but it is necessary to determine accurately through psychological analysis the factor on which re-education must work.

2. Erdmann says that the diagnosis is more difficult in children with appendicitis than in adults, on account of the absence of a good history, and the complication with gastro-intestinal complaints. He discards the idea that the eating of meats is one cause of appendicitis, because he finds appendicitis occurring in milk-eating infants. The rapidity of intoxication of the child due to the spreading of the peritoneal invasion and the marked lessening of resistance in the infant are evident. The appendix has not descended to its normal position until the third or fourth year, and is often found under the costal arch, so that the point of pain and tumor is much higher than in the adult, being located in the loin. There are many gastro-intestinal symptoms, the child vomits and the temperature is elevated, while he wards off the examining hand by protecting the abdomen. Rectal palpation and

blood examination give little aid in diagnosis. Concretions have been found by the author in the appendix. Pinworms have also been found in ten cases. Floating kidney has been present in several. The author is a firm believer in early operation, with a small incision. The bowels should move the day after operation. The patient is allowed to roll, and sits up in bed by the third or fourth day.

4. Gross says that insufficiency, or atony, of the stomach is a relatively frequent affection. It differs from ectasy only in principle, not degree. Atony is a manifestation of local or general disturbance of nutrition and circulation, such as leads to general muscular and nervous debility. A simple insufficiency may be changed into a mechanical one by reason of mechanical impediments and permanent hypersecretion. In simple atony the contents are always evacuated, while in ectasy they are never entirely driven out of the stomach. Insufficiency of the gastric muscle is curable, and not of a serious nature. In addition to the wave motion of the stomach in digestion there is a lifting factor due to contraction of the powerful longitudinal fibers radiating from the cardia to the pylorus. In atony this lifting force is absent. The muscle may overcome the obstacle presented completely, by means of reserve force, or by compensation, from muscular hypertrophy. This is dependent on the integrity of the regulating system of the stomach, and that on the circulation and enervation. Retardation of digestion is the first sign of insufficiency. The best method of diagnosis of insufficiency is by drawing out the stomach contents after a test meal. There should not be more than 100 cc. of fluid. Inspection of the stomach shows stiffening of the stomach, and splashing sound and percussion aid in the diagnosis. One to three glasses of water drunk on an empty stomach show its size and the elasticity of the walls. Enlargement indicates diminished tone. After a test meal percussion and splashing sound show capacity. Auscultatory percussion is best. The prognosis is favorable when the condition is early recognized. The vis medicatrix naturæ, aided by irrigations, or douches, mechanical, electric and hydropathic measures, is the best method of treatment.

6. Birchmore details a case in which there had been repeated attacks of herpes in different locations, synchronous with pains of the chest in which no physical examination had been made. An attack occurred in which pleurisy signs were localized over a limited area, but no effusion occurred. The pain was not so much of the shooting character that is typical of pleurisy, but a general condition of pain over the chest muscles. Over the area of pain there appeared a series of herpetic vesicles. The author brings up the question of whether rheumatism and pleurisy may not be caused in some instances by a condition of the system that also produces ordinary herpes, the external lesion alternating with the lung or joint condition.

May 18, 1907.

1. Gorgas, W. C. *Sanitary Work on the Isthmus of Panama during the Last Three Years.*
2. *Starr, M. A. *A New Type of Ataxia.*
3. *Barringer, B. S. *The Diagnostic Value of the Cystoscopic Examination in Carcinoma Cervicis Uteri.*
4. *Crowley, C. R. O. *Internal and External Remedies in Urinary Diseases and their Comparative Value.*
5. Brown, W. E. *Twenty-five Years' Experience in the Treatment of Malignant New Growths with Escharotics.*
6. Morton, W. J. *Pre-operative Radiation and Surgical Treatment of Cancer.*

2. Starr presents a case of ataxia of auditory origin. There were no symptoms of cerebellar disease or of tabes. There had been a gradual atrophy of the cochlear division of the auditory nerve, accompanied by deafness. At the same time there had been an atrophy of the vestibular division of the auditory nerve, cutting off the impulses from the labyrinth which are necessary to preserve the balance.

3. Barringer discusses fifteen cases of carcinoma of the cervix and bladder observed by him, in the examination of which he endeavored to determine the value of cystoscopic examination in such cases. He gives us his conclusions. Cystoscopic examination in early carcinoma confined to the cervix is valueless. It is the most accurate method of diagnosis of the condition of the vesicovaginal septum in carcinoma involving the lateral or anterior vaginal walls. Examination should be made of the direction of the urethra and position of the trigone; for tumors encroaching upon or causing retraction of the bladder and alterations similar to those occurring in vesicle and paravesicle inflammation and of alterations caused by carcinoma of the bladder. Cystoscopic examination also reveals any inflammatory condition of the bladder which might prevent success of an operation. This examination becomes more important as the growth extends and the nearer it approaches the border land between operative and nonoperative cases.

4. Crowley brings to our notice the comparative value of the drugs used in urology, contrasting the old and new. Diluents, pure and mineral waters are useful, because of their water solely. Sodium benzoate is the best acid used to alkalinize the urine. Potassium acetate, nitrate, citrate and tartrate are most useful as diuretics and antacids. As antiseptics hexamethylenetetramine is most valuable in subacute and chronic urinary diseases. Opium and its alkaloids and belladonna are both useful as sedatives and antispasmodics. Antihemorrhagics are of little use. Digitalis is useful only by its action on heart pressure and should not be used in acute kidney troubles. It must be used with discrimination. Caffeine is especially useful in dropsy, but is a stimulant to the kidney and not applicable in acute nephritis. Among antiblenorrhagics sandalwood is least irritating, and copaiba next. The irritation depends on the contained terpenes. The newer silver preparations do not depend for their value on their antibactericidal power, which is small, but upon their greater penetration into the urethral submucosa and effect on the gonococci and their nonirritating character. For irrigation saturated solution of boracic acid and formalin are recommended. Astringents are useful after the germs are gone from the urine.

New York Medical Journal.
May 11, 1907.

1. *Schott, T. *On Chronic Muscular Diseases of the Heart and Their Treatment.*
2. *Hoke, M., and Andrews, C. R. *Treatment of the Bone Deformity of the Thorax and Spine in Scoliosis by Plaster Jackets, Utilizing the Expansion of the Lungs as a Corrective Force.*
3. Taylor, J. M. *Artificial Supports for the Viscera.*
4. Vineberg, H. N. *Appendicitis in Pregnancy.*
5. Webster, D. *Two Cases of Traumatic Cataract with Operation.*
6. Campbell, J. T. *The Relation between Disease of the Tonsils and Enlargement of the Glands of the Neck.*
7. Hollmann, H. T. *The Use of Baths in the Treatment of Leprosy.*
8. Friesner, I. *Unrecognized Diphtheria in Children.*
9. La Wall, C. H. *Danger of Fire in Formaldehyde Disinfection.*

1. Schott calls attention to the results of modern physiological studies in showing the importance of the condition of the cardiac muscle to the proper fulfillment of the functions of the heart. Coronary sclerosis produces fibrous changes; fibrile diseases, intoxications, kidney disease, errors in diet, hygiene and work, all have their effect upon cardiac muscle. Formerly the treatment of heart disease was confined to rest and digitalis. More recently substitutes for digitalis have been tried, and other drugs have proved of benefit, salts of iodine especially, sodium iodide and amyl nitrite in angina pectoris, morphia and drugs of the antipyrin group. But in all drug treatment the danger of doing harm must be considered. Of late much attention has been directed to physical methods in the treatment of chronic cardiac disease, mechanical, balneological and dietetic measures. The diet in heart disease should be planned to avoid distention of the stomach, flatulence or difficulty of digestion. Food should be taken in small quantities and at frequent intervals. Even in fatty heart the total nourishment should be great enough to prevent any but a very gradual loss of weight. Large quantities of fluid at one time, especially effervescent drinks, are to be avoided, but severe restrictions of fluid intake are harmful, since such treatment detracts from the patient's

general condition. To improve the functioning power of the heart muscle marked success has been obtained by the use of thermal saline baths containing carbonic acid, by carefully graded mechanical exercises and by these two methods in combination. Cases are reported illustrating results; the courses of treatment, however, are described only in general terms.

2. Hoke and Andrews describe their method of applying plaster casts to correct deformities of the chest which result from scoliosis. The plaster is applied as usual, but after its application a considerable area over the less prominent side of the chest so that this depressed side will expand more easily than the other and tend to regain its normal prominence. The article is well illustrated. [F. W. P.]

MAY 18, 1907.

1. *EINHORN, M. *Diagnosis and Treatment of Acute Intestinal Obstruction.*
2. *COLLINS, J. *Symmetrical Adenolipomatosis.*
3. *LILIENTHAL, H. *Drainage in Operations upon the Biliary System.*
4. *VANCE, J. *The Surgical Treatment of Fibroid Tumors of the Uterus Complicated by Pregnancy.*
5. OLIVER, J. *External Hemorrhage in Association with Ectopic Pregnancy.*
6. VOORHEES, E. B. *State Regulation of the Milk Supply.*
7. SIMPSON, F. T. *A Case of Hydrophobia.*
8. TURNER, J. B. *Acute Superior and Inferior Polio-encephalitis.*
9. SHOEMAKER, H. *Backward and Defective Children.*

1. Einhorn reviews the symptoms of acute intestinal obstruction and considers especially the determination of the point at which the obstruction lies. The initial pain if localized usually points to the seat of the disease. There may also be localized tenderness, and there may be a visible or palpable distended coil of intestine above the seat of obstruction. Obstruction of the small intestines gives more violent symptoms than obstruction of the large, and an earlier appearance of indicanuria. Experimentally in frogs it was possible to determine the point of occlusion by the x-ray. This Einhorn was also able to do in a case of chronic obstruction of the large intestine in man, the patient having been given bismuth solution twenty-four hours previously. The treatment is operation as early as possible, previous to which the patient is to be kept at rest, without nourishment by mouth, with salt solution by rectum or subcutaneously, and morphin and atropin subcutaneously. Lavage of stomach and colon may give temporary relief. In extreme cases where operation is impossible, puncture of the bowel is justifiable.

2. Collins reports four cases of symmetrical adenolipomatosis. The condition is one in which multiple fatty tumors develop in bilaterally symmetrical positions in various parts of the body. It is often associated with signs of an alcoholic neuritis; in all probability it is a neurotrophic disorder. It may bear some relation to adiposis dolorosa. While some cases recover, the course of the great majority is progressive, the patients finally dying of the cachexia which accompanies the disease or from compression in the mediastinum. In Collins's cases no treatment had any beneficial effect.

3. Lilienthal urges that in cases with obstructive jaundice nothing but drainage of the gall bladder should be attempted at the first operation, deferring all attempts to remove the cause of disease until the cholemia has subsided.

4. Vance concludes from the fact that the maternal mortality of pregnancy complicated by fibroid is estimated at from 25% to 55%, and the child mortality 77%, all such cases should be treated surgically and not obstetrically. All cases of abortion or miscarriage which cannot be stopped, and all cases in which pressure symptoms endanger the life of the mother should have immediate hysterectomy. Myomectomy is possible in but few cases. Hysterectomy is the procedure which is attended with lowest maternal mortality. In primiparæ and when the patient can be kept under close observation the pregnancy may be allowed to go on to term and then before labor begins a cæsarean section hysterectomy performed with maternal mortality of 15.6% and a child mortality of less than 5%. [F. W. P.]

THE LANCET.

MAY 11, 1907.

1. HALLIBURTON, W. D. *New Facts in Relation to the Processes of Nervous Degeneration and Regeneration.*
2. MORISON, A. *The Causes of Cardiac Motion and Disordered Action.*
3. LANE, W. A. *On the Treatment of Fractures in the Vicinity of Joints.*
4. *SHAW, C. J. *The Opsonic Index to Various Organisms in the Sane and Insane, with the Results Produced by Injecting Tuberculin.*
5. HAWTHORNE, C. O. *On the Clinical Aspects of Metastases to the Central Nervous System and Other Parts in Malignant Disease of the Viscera.*
6. THYNE, W. *A Case of Paratyphoid Fever Following the Removal of an Ovarian Cyst.*
7. *SHEPPARD, A. L. *Perforation in Typhoid Fever and Its Relation to the Blood Pressure, with a Report of Five Cases.*
8. VINTRAS, L. *Status Lymphaticus.*

4. Shaw concludes that the insane are particularly liable to tuberculous infection. His paper consists of a careful study of the opsonic index of the insane compared with normal individuals, with remarks on the use of tuberculin in the diagnosis of tuberculosis in its earlier stages.

7. Sheppard does not believe that the rise of blood pressure as a sign of perforation in typhoid fever is so certain a sign as Crile's figures indicate, although it is one of the lesser indications which should be considered. He reports his results in 5 cases. He thinks it quite as constant as a leucocytosis. [J. B. H.]

MAY 18, 1907.

1. BLAND-SUTTON, J. *The Cancer Problem.*
2. BARLING, G. *Pelvic Appendicitis with Parappendical Abscess and Cystitis.*
3. *OLIVER, G. *Some Notes on the Control of Super-Normal Arterial Pressure.*
4. POPE, F. M., and REYNOLDS, W. E. *A Case of Chloroma.*
5. KELSON, W. H. *Diseases of the Upper Respiratory Passages in Relation to Life Assurance.*
6. LIDDELL, J. *Some Clinical Observations on Muco-Membranous Colitis.*
7. PORTER, C. R. *A Case of Confluent Hemorrhagic Eruption in Varicella.*
8. BOSANQUET, W. C. *A Note on the Albuminous Bodies Present in Pathological Effusions.*

3. Oliver speaks on the various methods of controlling super-normal arterial pressure. He used a modification of the Riva-Rocci instrument. As to diet he advises carefully limiting the total solids and fluids as well as animal extractives and salt. Absolute rest is of the greatest importance except in patients of a lethargic disposition, when moderate exercise is invaluable. A carefully regulated course of baths may help. He has had especially good results with the D'Arsonval current, with falls from 220 to 150 mg. of mercury in pressure. The care of the skin is very important and a warm equable climate is invaluable as an aid to this. Venesection he has rarely used. As to medicinal treatment, it should be directed along the lines of securing free evacuation and correction of the liver and bowels with gastro-intestinal antisepsis and, secondly, vasodilatation and sedatives of the vasomotor system. He empahsizes the fact that high blood pressure is often a necessary evil and not to be reduced without a careful consideration of the causes producing it. [J. B. H.]

BRITISH MEDICAL JOURNAL.

MAY 11, 1907.

1. STODDART, W. H. B. *Remarks on the Early Symptoms of Mental Disorder.*
2. HURRY, J. B. *Vicious Circles.*
3. PARRY, T. W. *On the Differential Diagnosis between Ménière's Disease and Other Cases Exhibiting Ménière's Complex of Symptoms.*
4. WALLACE, D. *Nine Cases of Carbolic Acid Gangrene, with Short Notes.*

5. Forsyth, J. A. C. *An Early Specimen of Total Enucleation of the Prostate Removed by the Late Mr. McGill.*
6. Halliburton, W. D. *New Facts in Relation to the Processes of Nervous Degeneration and Regeneration.*

May 18, 1907.

1. *Saundby, R. *Remarks on Chronic Splenomegalic Polycythemia.*
2. Parker, G. *A Case of Splenic Leukemia Complicated with Gout and Albuminuria.*
3. Pare, J. W. *Local Anesthesia by Novocain.*
4. Bond, C. J. *Regeneration of Nerves with Regard to the Surgical Treatment of Certain Paralyses.*
5. Strangman, M. S. P. *Morphinomania Treated Successfully with Atropine and Strychnine.*
6. Charteris, F. J., and Cathcart, E. P. *The Physiological Action of Whiskey on the Circulation.*
7. Cree, J. D. *Calcium Salts in the Treatment of Certain Types of Pneumonia.*
8. Wilson, W. J. *New Method of Isolating the Bacillus Typhosus from Infected Water.*
9. *Forsyth, D. *The Structure and Secretion of the Parathyroid Glands in Man.*

1. Saundby describes this disease as a condition characterized by debility, high blood pressure, general redness or cyanosis of the skin, splenic enlargement and polycythemia with a corresponding increase of the hemoglobin, but with no increase of the white cells. As in pernicious anemia there are periods of remission when the patient feels quite well. The disease extends over seven to eight years, generally ending by heart failure or cerebral hemorrhage. Out of 46 recorded cases 26 were males and 20 females. The writer gives 2 cases in detail. The theories as to the origin of this disease are as follows: (1) A primary over-production of the red cells in the bone marrow. (2) Stasis. (3) Diminished respiratory capacity of the blood. (4) Diminished destructibility of red blood corpuscles. According to Haldane and Smith there is an actual increase in the total amount of the blood and not merely peripheral stasis. Saundby, however, believes that the disease is not a primary one of the bone marrow or spleen, but that it is due to some obstruction of the circulation, probably in the middle-sized arteries and arterioles.

9. Forsyth presents a detailed study of this histology and physiology of the parathyroid glands. He concludes that this gland, like others, presents the histological variations of activity and rest. Its secretion in its physical characters and in its micro-chemical reactions appears indistinguishable from the colloid of the thyroid. During the first few months of life it shows little if any activity. [J. B. H.]

The Edinburgh Medical Journal.

May, 1907.

1. *Croom, H. *Exophthalmic Goiter in Its Relation to Obstetrics and Gynecology.*
2. Porter, W. G. *Some Points in the History and Technique of the Submucous Resection of the Nasal Septum.*
3. Peters, G. A. *The Treatment of Gall Stones in the Gall Bladder and Cystic Duct.*
4. Smith, W. G. *The Integrative Action of the Nervous System.*
5. *Stewart, T. S., and Ritchie, L. C. *On the Use of the Opsonic Index in the Diagnosis of Tuberculosis.*
6. Eason, J. *Phagocytosis of Erythrocytes, and the Question of Opsonin in Paroxysmal Hemoglobinuria.*
7. Carter, A. H. *Two Cases of Periodic Fever Resulting from Animal Bites.*

1. Croom concludes as a result of his personal observation of exophthalmic goiter as complicating pregnancy that the goiter is enlarged during pregnancy, that exophthalmic goiter and pregnancy are a very rare combination, he having met this not once in 15,000 cases of pregnancy in hospital practice. Pregnancy usually aggravates the disease, while the exophthalmic goiter does not affect pregnancy. Finally he concludes that as a complication of pregnancy or as a bar to marriage exophthalmic goiter need not be considered.

5. Stewart and Ritchie have experimented on the opsonic index and injections of tuberculin as a means of making an early diagnosis of pulmonary tuberculosis. They conclude that a single estimation of the opsonic index is an unsatisfactory procedure; that if a negative phase appears after inoculation the presence of tuberculosis may be diagnosed, while the absence of a negative phase indicates the absence of a tuberculous infection. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 18.

May 2, 1907.

1. Morgenroth and Rabinowitsch. *The Immunity Reaction of Tubercular Tissues and Its Relation to the Action of Tuberculin.*
2. *Determann. *Diagnosis of Subphrenic Abscesses.*
3. *Trappe, M. *A Sporadic Case of Anguillula Intestinalis.*
4. *Hartmann, A. *Nasal Headache and Nasal Neurasthenia.*
5. Ewald, P. *Etiology and Diagnosis of Loose Bodies in the Knee Joint.*
6. Dreyer, A. *Spirochetæ in Venereal Warts.*

2. Determann recounts in detail the history and postmortem findings of a case of subphrenic abscess in which the diagnosis of empyemia was made. There were no symptoms referable to the abdomen or liver and the physical signs were those of the chest. Pus was obtained by puncture in the eighth and ninth spaces and encapsulated empyema seemed most probable. At autopsy a subphrenic abscess was found to be the cause of the trouble. After discussing the value of the various signs, the author concludes that the x-rays offer the surest means of diagnosis in doubtful cases.

3. Trappe relates a case of chronic diarrhea occurring in Silesia in which large numbers of the Anguillula intestinalis were found. This parasite is very commonly found in the chronic diarrheas of lower China and the Indian Archipelago, but is very rare in Europe. The most recent investigators claim a casual relationship between this parasite and the diarrhea, but as yet this is not fully established.

4. Hartmann considers that the irritation of pathological processes in the upper air passages, especially in the nose, are not ordinarily given due importance as a cause of migraine and its accompanying neurasthenic conditions, and that consequently treatment is often inefficient. [L. G. M.]

Correspondence.

LETTER FROM PARIS.

[From our Special Correspondent.]

The Clinical Sense.

Paris, May 31, 1907.

Mr. Editor: I am sometimes moved to wonder at the degree to which the clinical sense is lacking in some physicians, who have had the best possible training and a wide hospital experience, but whose inclinations have been rather toward laboratory work and research than to the sterner problems of actual medical practice. Here is a recent instance.

A woman of sixty, in the frailest of health from advanced bilateral pulmonary lesions, developed a skin eruption of a pruriginous character which caused her a great deal of discomfort. Her physician, a well known man, admirably qualified, proceeded to put her on a strict treatment for gouty eczema, the sort of thing that would be prescribed for a florid, high-living Englishman, with generations of port-drinking ancestors behind him; suppression of all butcher's meat and of alcohol; internal lavage by means of liquids in abundance; the juice of several lemons *per diem;* and massive doses of citarine.

Now to treat such a case on this line is to show oneself lacking in the clinical sense that ought to go so far toward making the successful practitioner. With this woman the feature entirely predominating in the clinical tableau was the pulmonary condition with its ensuing cachexia; the skin lesion was a mere intercurrent detail, that should have been held in abeyance by purely local measures, every effort being expended toward safeguarding what remained of the woman's digestive and assimilative powers. All of the means prescribed — dilution of digestive juices, an excess of acid, meager diet and large quantities of drugs — could have but one result: to hasten the patient onward toward the fate that is approaching only too fast at the best. Her physician acted here as a theorist; as a practitioner his view of the case was deplorable. When the laboratory man deserts his bouillons and guinea-pigs, and undertakes to deal with disease as manifesting itself in human beings, trouble is apt to result.

Now as regards the citarine prescribed for the patient, admire the clinical sense again.

Citarine, a chemical friend of mine tells me, is a disodic salt of anhydromethylene citric acid, analogous to helmitol, which is a combination of this acid with urotropine. I didn't know that, and I'll venture to say you didn't either. It is one of the latest "physiological eliminators" of uric acid. Have you ever paused to run over in your mind the history of these "physiological eliminators"?

We began with lithia, both pharmaceutical and in natural waters, effervescent or still; and the vogue of this drug was a protracted one. On what grounds was it administered? Solely on examination of urine, and generally on but one single examination. An analysis showed uric acid in excess. "That will never do," exclaimed the physician, "this tendency must be checked: no meat, lithia, etc." Now he knew that there was more uric acid in the urine than is customary; but what did he know about the state of the blood or tissues, granting for the moment uric acid to be a causative factor of disease? Or how did he know but that the excess was a mere temporary state, that would pass off in a few days, and depended on causes of which he was entirely ignorant and on processes with which he would do better not to interfere? Are biological problems of such childlike simplicity that we can reduce them to a mere algebraic equation: uric acid=lithia? Suppose, for instance, that there was an excess of uric acid in the blood and that Nature was busy throwing it off; does it show much clinical sense to interfere in our blind and clumsy way with something that Nature is already attending to herself? It would really seem more logical to give these patients lithia when the uric acid is below the average, if urinary analysis is all we are to be guided by.

After a while, however, lithia no longer seemed to fill the bill, exactly, and piperazine made its *début*, advertised, as I remember, as a solvent of uric acid twelve times as powerful as lithia (in a tube!); and for a time this drug with its bizarre name held the floor undisputed, while the worshipers of the uric acid fetish took it in large quantities with becoming credulity.

Then came lycetol, with still greater advantages over its predecessors (said the prospectus); but somehow or other the "physiological eliminator" never seemed to catch on seriously, and its career was not a very brilliant one. Maybe it appeared at too short an interval after piperazine, before the latter had ceased to cure the faithful, or perhaps it was not sufficiently widely advertised in the daily public press, where the uric acid crowd could see it, cut it out and come and ask their physicians about it.

After that, one of our leading consultants, who goes in for new, and especially startling, things, and who always likes to be just a wee bit ahead of the times, began prescribing an apparently unknown substance, sidonal; and each of us, as opportunity occurred, dropped in confidentially at our chemist of predilection to ask him what the new Messiah might be, — and found that it was nothing more than a *nom-de-plume* for quinate of piperazine! Finally this same consultant fairly staggered the medical community by prescribing for all of his uric acid patients globularine and globularetine associated together!

Since then I only remember citarine (mentioned above), and, what appears to be the latest comer in the field, solurol (a term for pure thymic acid); though undoubtedly "*j'en passe, — et des meilleurs.*" But what a collection of names! Would it not seem as though these drugs acted mainly by their mysterious appellations, which serve as a cloak to hide their possible worthlessness, — *omne ignotum pro magnifico?*

Now this is an approximate list of a remarkable class of drugs, which only sins once, and that is, in its very foundations. Is uric acid the cause of the disorders for which these substances are prescribed; and if it is, does their administration get it out of the system any faster than Nature chooses?

The uric acid idea is one that has taken such a firm hold of the public mind, and has been used as a conjuring word so often by physicians in times of need, that to hope that we shall be able to bring people some day to grasp the fact that the term is merely "sounding brass or a tinkling cymbal" seems little less than quixotic. So thoroughly has it been inculcated into the public mind that if it were possible to kill it, nail it up in a coffin and bury it under six feet of earth, it would still find means to ooze out through the pores of the wood so that the earthworms could bring it again to the surface, like Pasteur's anthrax bacilli.

What physician does not constantly meet the patient, generally female, who informs him before he has even a chance to begin that "My trouble is uric acid," or "My system is saturated with uric acid." And this is launched at his head with a self-complacent tone, such an air of finality (as though that settled the whole business and all that was wanted of you was to prescribe) as it is quite impossible to describe in words.

The idea has a perfect fascination for the lay mind, which likes nothing so much as to be able to find a cause for disease. Look at a woman with mammary carcinoma; she has but one idea and never rests until somewhere in the remote past, twenty or thirty years previously, she can recall having fallen against the angle of a piece of furniture or something of that sort. The uric acid theory seems to them so plausible, so easy to understand, and explains everything (to them).

For nearly a century now has uric acid held its sway almost undisputed. Is not somebody soon going to bring this tyranny to an end? Who is the coming David? A number of the best men are already on record as to their entire disbelief in uric acid as a causative agent in disease; but the rank and file of the profession still seem to accept this tenet with as much faith as ever.

We have, however, all sinned in this connection, and it behooves one to be circumspect in sitting in judgment. But although it is difficult to stem a current of such force as the uric acid belief, we can at least preserve our self-respect and show clinical sense by only prescribing these remedies when we see that there is no other way out of the predicament and that the patients have made up their minds to have "the same stuff that cured Mr. X." But how it does go against the grain to have to truckle to such impertinent ignorance; for who can conscientiously say that he ever saw definite clinical results, that he felt could be demonstrated, produced by the administration of this class of remedies? And if lithia, which was prescribed for so many years with such perseverance, gave any real results, why have so many drugs been devised to take its place? The truth is that we are sad creatures of routine, and that the clinical sense has not been so largely poured out over even the best of us as could have been desired.

The worthy Plato was wont, when he observed that his audience were lolling out their tongues with *ennui* toward the end of one of his dialogues, to interrupt his interminable cross-questioning and proceed to cheer up their drooping spirits a bit with one of those tales known as his "myths." Now as all this talk about medical deficiencies and "physiological eliminations" may not have proved very lively reading, coming from a city of the reputation of this one, let me in my turn endeavor to do something of a similar nature.

For many years now I have lived on terms of close companionship with a fox terrier, not an animal of pedigree or medals, just a plain dog. During this time he has undoubtedly improved my character in several particulars, and I trust that my efforts in turn have not been without effect on his moral betterment. Time only increases my admiration for the good qualities of this dog; but where this feeling simply knows no bounds is in connection with his clinical sense. His eating of grass (*poa canina*) I have never yet been able to fathom; it seems to correspond to no special need; he just does so when it happens to occur to him, and it produces no particular effect so far as I can see. But where he is simply grand, epic, is when he undertakes to see himself through an acute attack of dyspepsia.

Dogs when they were wolves always hunted, killed and ate in packs; they also lived in constant uncertainty as to where they would get their next meal. They consequently always ate as rapidly as possible for fear of the rest of the pack getting more than its share of the kill, and they loaded up to the fullest extent in view of the constant uncertainty as to future supplies. These traits of atavism the dog of the present day still exhibits, with (now that they are generally alone and food is more than ample) more or less constant overeating and subsequent attacks of acute dyspepsia occurring at regular intervals.

Well, observe your dog in one of these attacks and take the lesson to heart. He is seized with vomiting, diarrhea, fever and pains in his underneath. Now a *man* who has been going in for gastronomic indiscretions and develops this symptom-complexus, immediately jumps to the conclusion that he has appendicitis and gets his wife in great alarm to send for the doctor, who in this up-to-date period talks of "ptomaine poisoning" and sends for a nurse, and then the racket begins: stomach washing, intestinal antiseptics, medicine, broths, milk, vichy, beef extracts, etc., piling on the fuel hammer and tongs to keep the fire up as long as possible. If the patient is a man of importance, the doctor stays in the house a night or two, to be ready for emergencies and to convey a due impression of the seriousness of the affair, and finally the patient is "pulled through" the attack, to use the consecrated term. What would our good old ancestors, the men of the blue pill and black draught times, have thought of this rumpus over what they would no doubt have irreverently called an ordinary belly ache!

Note now what your dog has done. Curled up in his basket in a tight little ball, with dry nose and face a picture of utter woe, he lies motionless; at most he gets up now and then to drink a little fresh water, but that is all. Think of his special "vanities," — milk, fried liver, rare meat, — anything he is gluttonous over when well and try him with them; he will not even move his head, but looks at you with eyes of wonderment that you should even think of proposing such things at a time when, as he seems to say, any one can see that luck has clean gone back on him. Then with a gesture of decision he tucks his nose more securely under his bent forepaw and resolutely closes his eyes, to try to forget his troubles till the clouds roll by. And he will stick this out for three, four or five days, until you are really growing anxious, when he suddenly bobs up as good as new, perfectly well.

There is clinical sense for you. No milk and vichy, condensed extracts or antiseptics for him; absolute quiet and a plain water diet will, he knows, do the trick, — the diet which we now use with success for children in all their gastro-intestinal disorders and which we could have had at our disposal from all time if we had been possessed of the common sense of the ordinary household dog, the animal we refer to disparagingly as *canis vulgaris sive domesticus*.

"Spectator."

P. S. I wish to qualify one remark. There is a picture of even greater woe than a sick dog. Give a monkey some common rum mixed with preserves, stewed guavas, for instance, of which his kind is very fond, and then go and look at him the next day as he sits in a heap, with swelled head and burning insides, recovering from *his* "ptomaine poisoning" in the ashes of sorrow and repentance!

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THE BOSTON SOCIETY OF EXAMINING PHYSICIANS AND SURGEONS.

Office of the Secretary,
141 Milk St., Boston, Mass.,
May 27, 1907.

Mr. Editor: With the increase in numbers of physicians who regularly make physical examinations of various kinds for purposes other than for the prescribing of drugs has come a demand for organization, that these men by frequent intercourse and discussion with others along similar lines may improve their efficiency and enhance the value of their examinations.

Boston alone of all the large cities of the country had, until recently, no organization of this character. The Boston Society of Examining Physicians and Surgeons was organized in April of this year, and already has a membership of over 60. The membership is composed of physicians and surgeons, and men of special lines, who regularly examine cases for life, casualty and fraternal organizations, for the purpose of testifying in court, for admission to institutions, or for the purpose of giving opinions as to disability from accident or sickness.

The scope of the Society is broad enough to invite to its membership all qualified persons engaged in this work. Its object is to bring together practical workers three or four times a year for the discussion of the problems incident to the various lines of endeavor represented in the Society, that we may be broadened by contact with others and be strengthened in our search for truth.

The next meeting of the Society will be in September, at which meeting Chief Justice Aiken, of the Superior Court of Massachusetts, Dr. Brandreth Symonds, Medical Director of the Mutual Life Insurance Company of New York, and our own member, Dr. Geo. B. Magrath, Medical Examiner for Suffolk County, will address us.

For those who are interested in this work, there is no question but that affiliation with this Society will broaden their ideas and keep them in touch with the problems which confront us daily. By sending their names to the Secretary, they will receive an application blank and their names will be acted upon so that they may be able to take advantage of the fall meeting. The dues are nominal, being $2.00 per year.

Any further information in regard to the purposes of this organization will be gladly furnished by the Secretary.

Very truly yours,
Francis D. Donoghue, *President.*

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"GALLSTONES WITHOUT SYMPTOMS AND SYMPTOMS WITHOUT GALLSTONES.[1]"

New York, June 3, 1907.

Mr. Editor: In the New York *Medical Record* of Oct. 20, 1894, pp. 485, 486, I wrote a short article on "Acute biliary distension of the gall bladder." At that time these cases had not been fully and accurately described, as I believe. In my paper I stated that: "To my mind, these attacks of acute distension of the gall bladder with bile are not unlike, in their analogy with the development of calculous disease of the gall bladder, to what we have similarly defined, when we consider the relationship of the pre-albuminuric stage of chronic Bright's disease with the development of nephritis as a clearly formed malady. To give a plausible explanation of the etiology of these cases, I am almost forced to admit the existence of a spasmodic contraction of the gall bladder which is sufficient to shut off in part temporary connection with the cystic duct."

To the readers of Dr. Maurice H. Richardson's very able and interesting article, I am confident my own small contribution of many years ago will be considered as a complementary addendum that merits being referred to.

Very truly yours,
Beverley Robinson, M.D.

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A SYMPOSIUM ON HYDROTHERAPY.

Atlantic City, N. J., June 6, 1907.

Mr. Editor: A conference of physicians interested in hydrotherapy was held at the Hotel Marlborough, Atlantic City, on the 4th of June, 1907. Dr. Simon Baruch was called to the chair and Dr. Frank E. Brown was appointed secretary.

Representative physicians from several states discussed the importance of furthering the study, teaching and practice of hydrotherapy and other physiologic methods. A committee consisting of Professors Hare, of Jefferson, Thayer, of Johns Hopkins, Baruch, of Columbia, and Dr. F. E. Brown, of Baltimore, were appointed to formulate a symposium on these subjects for the next meeting of the American Medical Association.

Very truly,
Frank E. Brown, *Secretary.*

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[1] Bost. Med. and Surg. Jour., May 30, 1907.

RECORD OF MORTALITY

For the Week ending Saturday, June 1, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,344	400	Quincy	1	—
Chicago	643	176	Waltham	7	—
Philadelphia	—	—	Pittsfield	7	0
St. Louis	—	—	Gloucester	5	1
Baltimore	154	52	Brookline	6	0
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	10	3
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	6	—
Washington	—	—	Leominster	1	—
Providence	53	15	Hyde Park	5	1
Boston	246	58	Melrose	—	—
Worcester	38	8	Newburyport	—	—
Fall River	30	18	Woburn	3	—
Cambridge	26	8	Marlboro	1	0
Lowell	31	9	Westfield	3	1
Lynn	31	9	Peabody	—	—
New Bedford	20	5	Revere	6	—
Springfield	25	6	Attleboro	3	0
Lawrence	—	—	Clinton	3	0
Somerville	16	4	Adams	3	—
Holyoke	19	6	Gardner	—	—
Brockton	13	3	Milford	—	—
Malden	10	6	Watertown	1	0
Chelsea	11	4	Plymouth	—	—
Salem	9	2	Weymouth	2	0
Newton	7	—	Framingham	9	2
Haverhill	11	3	Southbridge	—	—
Fitchburg	5	1	Wakefield	—	—
Everett	6	2	Webster	—	—
Taunton	—	—			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED MAY 29, 1907.

White, J. H., surgeon. Detailed to attend meeting of the American Society of Tropical Medicine, Philadelphia, Pa., June 7. May 27, 1907.

McIntosh, W. P., surgeon. Granted leave of absence for one day, May 24, 1907.

Rosenau, M. J., passed assistant surgeon. Detailed to attend meeting of the American Medical Association, and also the Section on Pathology and Physiology, June 4 to 8, 1907. May 22, 1907.

Wickes, H. W., passed assistant surgeon. Directed to proceed to Perth Amboy, N. J., June 18, for the purpose of assuming temporary charge of the Service, during the absence of Assistant Surgeon Mullan. May 29, 1907.

Anderson, John F., passed assistant surgeon. Directed to proceed to Savannah, Ga., for special temporary duty, in connection with the outbreak of typhoid fever. May 28, 1907.

Robinson, D. E., passed assistant surgeon. Relieved from duty at Baltimore and directed to proceed to Ellis Island, N. Y., reporting to the chief medical officer for duty. May 28, 1907.

Wille, C. W., passed assistant surgeon. Granted leave of absence for eight days from May 12, 1907. May 11, 1907.

Berry, T. D., passed assistant surgeon. Granted leave of absence for one day, May 23, 1907.

McLaughlin, A. J., passed assistant surgeon. Granted leave of absence for two months from July 1, 1907. May 25, 1907.

Burkhalter, J. T., passed assistant surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Baltimore, Md., reporting to the medical officer in command for duty and assignment to quarters. May 28, 1907.

McCoy, G. W., passed assistant surgeon. Directed to proceed to Bransford, and other places in Tennessee, for special temporary duty; upon completion of which to rejoin his station at the Hygienic Laboratory. May 25, 1907.

Mullan, E. H., assistant surgeon. Granted leave of absence for two days from June 18. May 28, 1907.

Olsen, E. T., assistant surgeon. Relieved from duty at Chicago, Ill., and directed to proceed to Ellis Island, N. Y., reporting to the chief medical officer for duty. May 25, 1907.

Bailey, C. W., acting assistant surgeon. Granted extension of leave of absence for five days from May 27, 1907. May 25, 1907.

Glascock, Alfred, acting assistant surgeon. Granted extension of leave of absence for three days from May 29, 1907. May 25, 1907.

Hunter, W. R., acting assistant surgeon. Granted leave of absence for two days from May 25, 1907. May 24, 1907.

Owen, Henry, acting assistant surgeon. Granted leave of absence for thirty days from June 1, 1907. May 27, 1907.

Tarbell, B. C., acting assistant surgeon. Granted leave of absence for ten days from April 15, 1907. May 27, 1907.

Watson, H. J., acting assistant surgeon. Granted leave of absence for thirty days, on account of sickness, from Jan. 22, 1907. May 29, 1907.

Watson, H. J., acting assistant surgeon. Granted leave of absence for thirty days from Feb. 21, 1907. May 29, 1907.

Wright, F. T., acting assistant surgeon. Granted leave of absence for fifteen days from May 28, 1907, and excused for a further period of fifteen days without pay, from expiration of said leave. May 28, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Vancouver, B. C., June 8, 1907, for the purpose of examining a person suspected of being afflicted with trachoma. Detail for the Board: Surgeon W. G. Stimpson, chairman; Passed Assistant Surgeon J. H. Oakley, and Passed Assistant Surgeon W. C. Billings, recorder. May 28, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JUNE 8, 1907.

H. W. Smith, assistant surgeon. Ordered to report to the Surgeon-General of the Navy, Navy Department, for special temporary duty.

F. E. Campbell, passed assistant surgeon. Detached from the "Constellation" and ordered to the "Washington."

W. H. Short, assistant surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, Philadelphia, Pa.

M. C. Baker, acting assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the "Franklin."

R. B. Chapman, assistant surgeon. Detached from the Naval Recruiting Station, Oklahoma City, O. T., June 27, and ordered home.

R. Hayden, assistant surgeon. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the Naval Hospital, Annapolis, Md.

R. I. Longabaugh, assistant surgeon. Detached from the Naval Hospital, Annapolis, Md., and ordered to the Naval Hospital, Mare Island, Cal.

H. W. Smith, assistant surgeon. Ordered to duty at the Naval Medical School Hospital, Washington, D. C.

APPOINTMENTS.

Clarence J. Blake, M.D., has been appointed Lecompte Professor of Otology in the Harvard Medical School.

H. A. Christian, M.D., has been appointed Assistant Professor of the Theory and Practice of Medicine in the Harvard Medical School.

W. L. Richardson, M.D., has been appointed Professor of Obstetrics Emeritus in the Harvard Medical School.

Dr. William Seaman Bainbridge, of New York City, received the degree of Doctor of Science at the annual commencement of the Western University of Pennsylvania, June 7.

RECENT DEATH.

Dr. Valentine Mott Francis, of Newport, R. I., died at the home of a relative at West Roxbury, Mass., on June 7, in the seventy-fourth year of his age. He was the son of a distinguished physician of New York, in which city he was born and educated. He was graduated from the medical department of the University of the City of New York in 1859, and practiced in New York for a number of years before removing to Newport.

BOOKS AND PAMPHLETS RECEIVED.

The Mastoid Blood-Clot Operation, Theoretically Good; What Results Will Show. By Henry Glover Langworthy, M.D. Reprint.

The Care of the Baby. A Manual for Mothers and Nurses. By J. P. Crozer Griffith, M.D. Fourth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co. 1907.

Original Articles.

ON MOUNTAIN-CLIMBING FOR PROFESSIONAL MEN.

BY CECIL KENT AUSTIN, M.D., PARIS, FRANCE.

> "Every now and then a man's mind is stretched by a new idea or sensation, and never shrinks back to its former dimensions. After looking at the Alps, I felt that my mind had been stretched beyond the limits of its elasticity, and fitted so loosely on my old ideas of space that I had to spread these to fit it." — *The Autocrat.*

Our dear old friend, the Autocrat, wrote just a little too early in the century. He visited the Alps in the thirties, while evil spirits still guarded their virgin heights, and Scheuchzer's dragons had not yet ceased to flit about their cliffs; his book was published in the fifties, the dawn of mountain-climbing.

A great mind can generally be relied on to grasp situation, but only so far as the times admit. Thus in the quotation cited, and in other passages besides, the Autocrat clearly recognizes the possibilities of mountains; but he could not foresee the treasures of delight that the next few decades were to disclose among them. Observe that he says "after *looking* at the Alps"; what an interesting chapter would he not have written had he been privileged to really know them, to have felt at home up, in and among them.

Shall I say that it is such a chapter as this that I have now tried to write? The Autocrat would have looked on my attempt with an indulgent eye and feigned not to notice my presumption. Whether or not his readers and admirers will give evidence of an equally charitable turn of mind is, perhaps, another question.

Such articles as the one this purports to be have at different times been written for the English medical press by admirably qualified men. For it is noteworthy that the English physician was among the very earliest to realize the advantages of Alpine climbing for professional men and to go in for it; even to-day a goodly proportion of the English-speaking climbers in Switzerland is supplied by the medical corps. In fact, all of the early exploration in the Alps was done by Englishmen, — nor is this surprising. They have always been pioneers in matters of sport, and, besides, you can get to any part of Switzerland in less than twenty-four hours from London, good hotels abound there, and living is reasonable.

But in America very little seems to be known about mountaineering. Thus the illustrated magazines decline articles on the subject on the score of the small general interest it presents. True, the case is different in the United States from what it is in Europe; the nearest suitable range is the Rockies, three or four days distant; there is no organized system of hotels there yet, and no corps of experienced guides, — which makes it necessary for the climber to fit out an expedition for himself and to camp in the wild. This requires both time and money, so that it is perhaps not remarkable that so little has as yet been done by Americans in this line.

Unfortunately my knowledge of the apparently infinite climbing possibilities of our great Northwest is practically *nil*, and I shall consequently have to restrict myself to the Playground of Europe. As regards this region, however, I think I can claim to have had a certain degree of experience. For the past thirteen summers I have frequented the Alps, and throughout their western portion, from the Maritimes to the St. Gothard, I am familiar with the various centers and have done most of the good climbs.

Entering then into my subject without further preamble I will say that I look on mountain-climbing in the Alps as the perfection of a vacation for a professional man. "The usual exaggerated enthusiasm of the advocate of a given sport," will be the reply. No; I think that in the present instance this criticism cannot fairly be advanced. I am now well past the age of youthful exuberance, and have seen the great mountains from too near and read too much of Alpine literature not to be cognizant of the arguments there are to present for the contrary view of the case. Still, mere statement of opinion is no proof, and my proposition requires demonstration; so I will endeavor to acquit myself of the task in a manner creditable to this very fine sport.

It would not occur to any physician of experience to deny that in all our therapeutic armament there is any agent to compare in efficacy with *change*. Change, of every sort and applied in every possible manner, is the great remedy that the wise man seeks to advise whenever feasible; when he does not do so, it is generally because circumstances forbid, not through lack of belief on his part.

The extent to which we all stand in need of change can be only too easily demonstrated. We are most of us little better than tops, spinning about in circumscribed areas and by dint of our humming making more or less disturbance therein. It is perfectly appalling to note the depth of the mental ruts we get into, unless at periodic intervals there occurs some great upheaval in our existence to make clear to us the automatons we were becoming. We most of us spend our lives walking along looking at our toes and thinking; in parenthesis, one of the many merits of mountaineering is that it takes us where the foundation of all things is to hold up the head and look about.

Change, then, being what we all so sorely need, and physicians applying this fact to their own case when they leave their practice and take a vacation, — in what manner can they use the remedy to a maximum advantage? For my part I am firmly convinced that in mountain-climbing and its accessory mode of life professional men will find a greater degree of *absolute change* than in any other known way.

For what are the different methods in which a physician can take a vacation? He will either go to the country or to the seaside; while there he will either go in for farming, gardening or other useful occupation, or, taking up some favorite sport, he will sail, row, fish, bicycle, ride, drive, hunt, motor, golf, play tennis and so on. He may, if possessed of friends of means, go yachting, which Prof. Clifford Allbutt, of Cambridge, classes with mountaineering as " the two sports which above all others restore life and vigor to hard-worked men."

But the merest glance at these different pastimes shows that while all very well in their way, and infinitely preferable to nothing at all, the *degree of change* they present is at best a moderate one. With them we remain in our own country, among familiar faces, conditions and surroundings, and are only taken out of ourselves in a relative manner. This sort of change is only good for those who cannot compass greater things. Change to be effective implies more or less *shock,*— the more the better; but there is very little shock here.

View from the Charpoua hut. Mont Blanc on the right. (Kind permission of Signor Guido Rey.)

Another serious criticism of these sorts of vacation is that many of them afford merely *automatic* exercise, that does not in the least turn the mind into new channels but allows it to flow on unimpeded in its usual grooves. A man fishing, riding, cycling, or rowing, for instance, does so *mechanically,* and in the meantime his unoccupied brain inevitably reverts to " shop," in which loom up prominently the worries that would have been best left behind in the city.

But, you will argue, a man can and often does travel; he goes abroad, and in this way will certainly get a thorough change. Yes, this is true; but the fact that has struck me more forcibly than any other, with my special opportunities for observation, is to note how little rest and amusement such travelers get out of their summer. They do obtain a fair amount of change, that is evident; but traveling on the part of those not used to it is attended with so many offsets, that the balance of profit at the end of a trip to Europe is apt to be not very great. Such a man comes abroad in the heat, very likely accompanied by his family, and plunges into new scenes, struggles with strange customs and endeavors to express his emotions in languages with which he is unfamiliar. He spends his few weeks rushing from country to country, hurriedly visiting galleries and churches, always anxious about catching trains, bothered with luggage, annoyed and imposed on wherever he goes, and finally sails for home with a deep sigh of relief that it is all safely over. This is what you might call taking a holiday hard! Will people *never* understand that traveling of this sort is the severest kind of mental wear and tear? Persons are often sent abroad for rest and change on medical advice, and this is the way in which they carry out their instructions! It is *common* to meet such travelers intending to do the entire western centre of Europe — France, Italy, Switzerland, Germany and England — in the course of a few weeks!

These being the usual ways in which professional men spend their vacations, let us see in what particulars a season's mountain-climbing surpasses them, — to such a degree as to render all comparison futile, — and whether it does not afford more change than can possibly be obtained in any other manner. The difference will be more readily perceived if the reader clearly understands what is implied by climbing in the Alps.

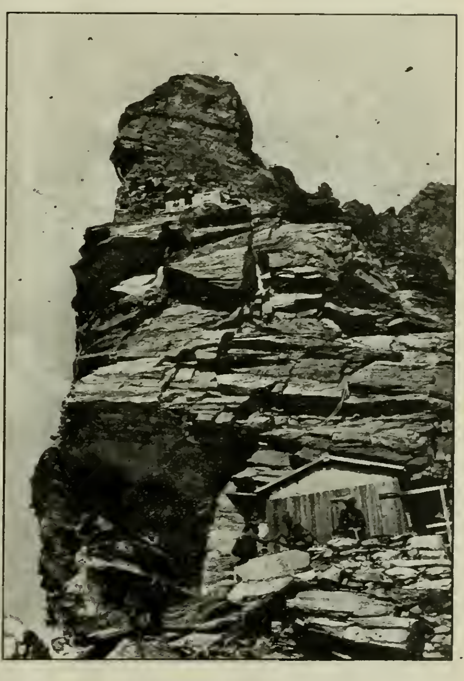
A man going to the Alps for a few weeks' climbing usually engages guides some months ahead; then, after laying in a supply of such articles of food as he has found best suited to digestion in high altitudes, he makes straight for some favorite center and settles down with his things about him. In this way he will be able to receive his mail regularly, be provided with occupation for off-days and spells of bad weather, and feel more or less at home and comfortable; he will also thereby eliminate the two great drawbacks to ordinary traveling: the being constantly hounded along from hotel to hotel like a Wandering Jew, and the exposure to heat. There are now, in all the chief Alpine districts, very fair hotels at altitudes of from 5,000 to 7,000 ft. At that height the temperature is always pleasant, however sultry may be the weather below; and any storm on the plain means snow up there, even during July and August. We will suppose our man to have designs on the Chamonix Aiguilles, and to have taken up his abode with old Simon at that pearl among mountaineering centers, the Montanvert.

Climbing the Alps has reached such a degree of organization, thanks to the efforts of the Alpine clubs of various nationalities, that most ascents can now be made under conditions of relative comfort. The "good old times," when climbers had to pass the night in the herdmen's sheds on the highest pastures, or in the open, under projecting ledges, at altitudes of 10,000 ft., with everything around them freezing hard, are fortunately things of the past. Warm and (all circumstances considered) fairly comfortable wooden huts have been constructed at distances of a few hours higher up than the hotels, for use as resting places the night before an ascent, and also as havens of refuge in stress of weather. A good idea of what is meant by climbing Aiguilles in the Mont Blanc range can be gathered from a brief description of the traverse of the Dru, one of the show feats of Chamonix.

A man bound for this peak will set out from the Montanvert at about 3 P.M. with two guides, outfitted with an extra rope and with provisions for twenty-four hours; and after a rough scramble of three hours across the glacier and up steep moraines he will reach the Charpoua Club hut. It is well to arrange to arrive at these huts in good season, so as to rest before the evening meal, and also to have leisure to thoroughly enjoy the sunset view. Alpine scenery shows to the greatest advantage either early in the morning or at sunset; during the heat of the day the glare and haze make things very indistinct. In the present instance the view up the long glacier valley to Mont Blanc, with the line of Aiguilles on either hand, all lighted up by the wonderful pink and salmon tints of the setting sun, is as fine a thing as can be seen anywhere in the Alps; it is worth the trip to the Charpoua, only to see this view and return the following morning. Many of these club huts have been placed in the most stupendous sites, that on the Italian side of the Matterhorn deserving special mention on account of its wild, fantastic position and great height, nearly 13,000 ft.

After a brief meal, cooked by the guides with wood which they have had to carry up from the Montanvert where the tree-belt finishes, the climbing parties, of whom there may be two or three, bound for different peaks, lie down on the sleeping shelves for a few hours' rest; and by 8 P.M., broad daylight still, all is quiet.

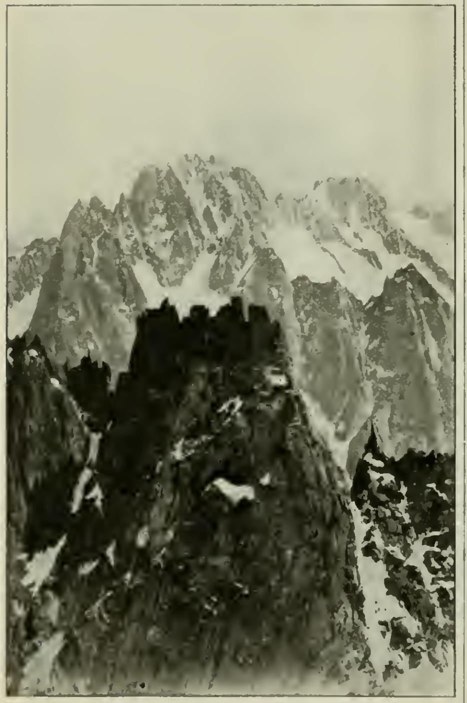
To sleep at such a height is not easy, particularly when discomfort and excitement are added to the rarefaction of the air; but still, a certain amount of physical rest is obtained by assuming the recumbent position. Heart action is liable to be accelerated for the first hour or two, but finally quiets down; at the Sella hut on the south side of the Lyskamm, at 12,000 ft., I noticed during the night that the mere effort of turning the body on the shelf from one side to the other induced very distinct panting.



The Matterhorn hut, Italian side.

Toward midnight the guides begin striking matches to look at the time, and by 1 A.M. every body is up, preparing tea, which, well sugared and with bread and jam, composes the first meal of the day. On the up-climb it is difficult to eat solid food or much at a time; little and often is the secret, and only muscle fuel, not albuminoids. Personally I go best on the very hard part of climbs on sugar-water, twenty lumps of cut sugar to the liter; it is surprising the way this drink will pick you up when tired; actual tissue restoration can be attended to on reaching the hotel again. Half an hour later everybody is off, and during the next few hours they witness another alpine wonder, the insensible transition from black, sparkling night to the splendors of an Alpine morning.

At first you trudge along mechanically, keeping a sleepy eye on the heels of your next-ahead, just visible against the glacier. The leader steadily scratches steps in the hard snow with his ax and the monotony of the rhythmical strokes lulls your senses. At regular intervals, so many times per minute, you raise your body-weight twelve or fifteen inches. You can see nothing around you, of course, and this part of the trip has undoubted analogies with the tread-mill.



Chamonix Aiguilles. The battlement ridge in the foreground is the Grépon. On the skyline the snow tipped peak in the centre is the Verte, to the reader's left of which is the Dru. (Kind permission of Sydney Spencer, Esq.)

By dawn you are at the top of the glacier and at the foot of the granite wall of the Dru, about as perpendicular as anything can be and not topple over; and now for a very different kind of exercise. Everything is silent, no water is trickling yet; the rocks are icy and glazed, as we are on the west or cold side of the mountain. Up the party goes, one at a time, slowly but steadily, progress being measured by comparison with neighboring peaks, as you cannot see anything of your own. The leader squirms and wriggles his way up a fissure in the rock, the other men waiting below; he will go as far as his fifty feet of rope allow him, and then anchor himself solidly while No. 2 struggles up, less gracefully, as he is weighted with the sack. He in turn fixes himself and then *you* go at it, to be received at the top with a derisive snort owing to your all-round awkwardness. And so on it goes, over and over again, following successive cracks and breaks in the rock right up the face, until you begin to feel as though there were simply no end to that wall. At any moment a biscuit could be tossed down to the point from which you started, so steep is this mountain. But after about three hours of this sort of work you have a feeling that you are gradually "coming to things"; your surroundings grow lighter, and there seems to be less rock piled up above you. And finally, all of a sudden, there you are, the summit, and best of all the warm sun, in whose welcome rays you sit down to breathe and rest, rather pleased with your person, while the guides unpack the bag and sample old Simon's sour wine. Five hours and ten minutes from the hut without a halt; not so bad, — the leader seems almost cheerful when you tell him.

The Dru (north face).

But five minutes are certain not to elapse before two small shadows will float noiselessly over the rocks. There will be a soft rustle of feathers somewhere in the immense stillness above you:

> . . . τί ποτ᾽ αὖ κινάθισμα κλύω
> τέλας οἰωνῶν; αἰθὴρ δ᾽ἐλαφραῖς
> πτερύγων ῥιπαῖς ὑποσυρίζει.
>
> [*Æschylus*, “ *Prometheus*.”

and finally with triumphant caws, a sort of "here we are again," two little black choughs will pounce down on a neighboring rock and fall to eying your food. Fine little chaps they are, with glossy black plumage, daintily fringed wings, yellow beak and red legs, — a very smart get-up. You always meet them on climbs, where they live off of your meal scraps. But time presses and you must soon be moving again. Your next step is to get over the deep gap between the summits of the big and little Dru.

To seekers after the sensational I would suggest the take-off from the big Dru. After squeezing down a steep iced crevice between two big bowlders you come to a small ledge below which the drop is practically vertical for many hundred feet. Strange as it may seem, vertical cliffs are not so very common in the Alps; but there is no mistake about this one. You are here told to back off over this ledge, swarm down as best you can for a short distance, and then work across to your right out of sight, until you reach a point at which your way becomes evident, down into the gap. After you have accomplished all this it proves less dreadful than it appeared on looking down at it; but *ex-post-facto* knowledge is unfortunately of no help to you in making the start. A feature that concurs in rendering this step particularly moving is that the climber has to go first, the guides remaining above to manage the ropes. As you crane your neck over the edge you cannot see where you are to go nor how you are to work it, and I frankly confess that the great hereafter never seemed more proximate than when I dangled off that ledge on two ropes. There is in Alpine climbing not so much of the really sensational as is imagined; but this take-off can be fairly entered under that heading.

An hour and a half later you have crossed the gap and reached the summit of the little Dru. You are now right opposite the Montanvert; friends descry you through the glass, and heliograph congratulations with a mirror. All about you, as far as the eye can reach in every direction, the peaks of the Alps, ice and rock, rise in orderly disorder like the billows of a wildly tossing ocean suddenly frozen into immobility; above you, the indigo sky is cloudless, and the entire prospect before you is bathed in light, light, light, — such light as no one can conceive of who has not himself witnessed the bewildering illumination of an Alpine day at that height. For the light comes not only from above, but from below and all sides as well, where it is reflected from snow-field and glacier and broken up and bandied about until everything seems fairly quivering with the intensity of the ether vibrations. Ah, my brethren, believe me it is worth discomfort, toil and risk to stand and witness such a scene as this, and, perched on this almost inaccessible fastness of Nature, surrounded by primeval rock and ice alone, to breath for at least one brief period an atmosphere unsullied with dust, morbid germs, smells and miasmas.

But you have yet to get back home, a livelier scramble still down the sides of the Little Dru, where the fissures in the granite are longer and distinctly less practicable even than those by which the ascent was effected. The guide slips the middle of the spare rope over some projection, throws the two ends down the cliff, and with an "Allez, Monsieur," over you swarm, time and again, for hours in succession; this descent will in every probability abide in your memory as the liveliest preformance of your entire existence. Finally, easier rocks are reached, where the four extremities suffice, without the spare rope; then the glacier once more; and at last, at about five, you are safely back at the hut, and you arrive at the hotel by seven thirty, eighteen hours out.

But pray do not infer that all climbing is like this! As I said above, the Dru traverse is a *tour de force*, the most difficult thing most climbers attempt in the Alps. On an ordinary ascent there is none of this spare-rope work, or dangling over precipices like a cork on a thread; you keep on all-fours and enjoy yourself.

Resuming our interrupted argument once more at this point, I shall now have less difficulty, probably, in obtaining acquiescence to the claim that if the proper basis of a professional man's holiday is change, in no way can this be so satisfactorily procured as by a season's climbing. In time of good weather at the Montanvert an active man in fit condition will put in three big climbs a week, or, may be, four smaller ones. Now a mere glance shows that a life of this sort contains novelty in its every condition: Europe, high altitude, fresh surroundings and occupations, and an entirely new set of associates of various nationalities. If that is not change, then, pray, what is?

The invigorating action of life at such a height (the Montanvert is about 6,300 ft. above the sea) is universally understood; but when it is combined with frequent trips to twice that altitude and more, the result is very similar to putting forced draught on to a fire that is already bright and clear. Furthermore, bear in mind that the muscles perform this enormous amount of work on a scanty food-supply. This means that these climbs gradually burn up every atom of refuse, every degenerate cell in the entire body. No weakling cell has a chance of surviving such physiological cyclones as the ascent of big mountains. Men lose flesh quickly when they reach the Alps, but this is an excellent thing; for it is the mere rubbish that disappears, while what remains is the proper article, which gradually becomes so hard that by the end of a season a quadriceps femoris could almost serve as an anvil. This extraordinary increase in the circulation through all the organs must also undoubtedly open up anew quantities of capillaries that are either not used at all under ordinary circumstances or have become obstructed and are preparing the way for diseased conditions.

In my own case the result of a season's climbing is about as follows: Towards the end of each year's work, June and July, my energy of attention falls to a minimum and there would then be no use in my attempting any serious work either in the line of reading or writing. Ten months of unbroken routine produce a condition of mental staleness that is very much to be deplored. A few weeks' exercise in the Alps, however, changes all this completely. I return to town not only feeling but looking years younger. Mental concentration, so far from being an effort, is a pleasure, ideation is active and satisfactory, and my views as to men and things have again become supra-diaphragmatic, whereas before the trip they were what might have been called decidedly abdominal. An English physician of distinction, Sir Hermann Weber, himself formerly a climber, holds that so extraordinary is the tonic effect of a season's mountaineering that he has seen a man's hair that had begun to turn gray be brought back to its proper color at the end of such a course. Truth compels me to state that although I have tried this means of treatment with more than perseverance for many years, I have been unable to observe any retrogradation of the relentless progress of capillary canescence in my own case!

We saw above that a large number of sports fail to furnish sufficient occupation for the mind, which continues to work in its usual grooves, many of them distinctly undesirable. But I will ask you to take my word for it that in rock climbing there is nothing of that sort; this is a sport that is anything but automatic, ideas flowing most vigorously along new and very important lines, those of seeking to preserve the anatomy from sudden and violent dissolution, one moment's inattention being sufficient to wreck an entire party. On difficult rocks absorption in the work in hand is so intense that everything else ceases to exist. You have to watch very closely just where the man who precedes you puts his hands and feet. On the way up some passage he may tap a piece of rock and tell you that it is unsafe; this you must make a careful note of, as one of the really serious dangers in climbing is the sudden giving way of a piece of rock to which the weight of the body has been trusted. You have constantly to follow the movements of the rest of the party and be prepared to start the moment your turn comes, your hand-holds all mentally arranged in advance so as not to lose time. You have to see that the rope does not catch and give the man in motion a violent jerk or bring things down on your head. In extra steep passages you have to shelter on one side, whenever possible to get out of the line of fire, and keep a very watchful eye aloft, since so inoffensive a thing as a mere chip of ice, if coming from sufficiently far above, may give you a very severe blow on head or arm, *a fortiori* anything in the way of a stone. If you are in the middle of the rope you have to draw it in as the man below ascends and never be off your guard one instant, as you never know when the awful moment may come when he will have to be held; such emergencies are not frequent, but they do occur, and woe betide the man taken unawares. These details will suffice to show how little of the mechanical there is about mountaineering.

The effect of setting altogether aside the professional mind, of putting it out to grass, so to speak, and of using in its place a set of faculties entirely new even though of a more everyday order, is wonderfully resting, especially when they have to work as actively as does the sense of preservation on a mountainside. And there is still another aspect to this question: the possibility in the mountains of pursuing off-days and in uncertain weather some out-of-door hobby, which, if a man be wise, he will have cultivated assiduously beforehand, — photography, entomology, geology (with fossils, crystals, etc.), and the whole glacier question, a most fascinating study, in which can be lived over again the emotions and delights of de Saussure, Agassiz, Desor, Forbes, Ruskin, Huxley and Tyndall.

Perhaps the most attractive side of climbing in the Alps to some people is the class of men with whom it brings them in contact, and the charming friendships that thence arise. The most interesting acquaintances I have ever made have been in these remote and often unknown little centers. For it is a very remarkable fact that, at least among English-speaking people, the class that mountain-climbing appeals to is that of the brain-workers; and they come from every profession, the intellectual *élite,* the men who know things and do things: professors at the great universities, littérateurs, the clergy, bishops, officers in the army, scientists, of course, of every category, physicians, barristers and judges. The merely blatant rich, on the other hand, are conspicuous by their almost total absence, nor is this perhaps the least of the sport's titles to preeminence; explain this peculiarity who can, I have no solution to offer; perhaps the opportunities for throwing money around are inadequate! If I had to single out one argument to substantiate the claim that mountaineering is the finest of all sports, I should be quite satisfied with the following: look at the kind of men to whom it appeals; take the list of the members of the English Alpine Club, past and present, and examine it carefully. The attraction that mountain-climbing has for brain-tissue of the very finest texture is, however, a phenomenon for which an entirely satisfying explanation has yet, I believe, to be given.

A curious feature about this " high life " is the almost absolute immunity to disease that reigns there. It seems impossible, for instance, to catch cold on these climbs, no matter what the exposure may be or what follies may be committed voluntarily or involuntarily. Starting for the Dent Blanche one afternoon we were caught while crossing the glacier by a furious storm;

we lay in our wet clothes, just as we were, all night under a rock, with little rills trickling down on us, and at dawn were driven back home by more bad weather — and no one of us even sneezed. I have known Englishmen, with centuries of port-drinking ancestors back of them, to do precisely the same thing, — without a twinge of gout or rheumatism ensuing. It is amazing, and brings to mind the experience of Nansen's party, who never had a cold in the Arctic circle, but who all began to cough and blow their noses as soon as they regained the coast of Scandinavia.

Leaving, now, the argumentative for the more practical aspects of this subject, let us inquire who the persons are to whom this sport is adapted.

Not to every one, manifestly. That the climber's viscera must be sound is self-evident; a tubercular lung, inadequate heart, damaged kidney or bad brain-vessel would soon get its bearer into difficulties if it did not precipitate a catastrophe, at such work as this, in which not only is a great strain thrown on all the organs but there always exists the possibility of dangerous exposure through being benighted high up in the cold, or by the sudden advent of a storm.

Again, while mountain-climbing in its severest forms is clearly an occupation suited to life's palmy days, twenty-five to forty, it need by no means be restricted to this halcyon period alone. A person of over forty taking up the sport for the first time will do well to moderate his ambition, go slowly on the ascent and avoid employing young guides. But even with these limitations he will still find ample to occupy the remainder of his active days, and by pursuing the pastime in a reasonable manner will derive from it nothing but benefit to both body and mind. But a man who began mountaineering young, whose viscera have shown their ability to stand the strain and whose arteries retain their elasticity, can keep it up to a ripe old age, gradually diminishing the severity and duration of his climbs as the years accumulate.

Noblesse oblige, and in youth's exuberant days severe trials of endurance present a fascination so great that there is no refraining from them; but little by little, and by the sole process of time, climbers from having been "peakers," become "passers." If the truth were only acknowledged, the greatest joys in the mountains are these easy trips, the "pottering" days, when a man is not rushed, has a decent night's sleep behind him and the comforting prospect of a good *table d'hote* in the evening. These are the occasions when he tries his own little efforts as leader, after filling the guide's pipe and relegating him to the rear to jaw with some other *confrère* in their atrocious patois; finding a way unaided up the ice-fall of a glacier, with perhaps the cutting of a hundred steps in hard ice through having taken a bad course, is productive of much experience, and at the same time awakens a fuller realization of the magnitude of the work guides occasionally perform when, on an ice tour, they for hours at a time cut steps of such size that their Herr can comfortably stand in them with both feet.

It is not unusual to meet in the Alps old white-haired Englishmen knocking about over cols and doing easy climbs with guides of the same age as themselves and young porters to carry the sack. These men are often well over sixty, but the sacred fire still burns brightly; they will sometimes have been in the mountains with one particular guide for twenty, thirty or even more consecutive seasons. I well remember once finding such a party lunching at the foot of the Géant ice-fall. The guide was sixty-five; the gentleman, who was sixty-four, had been a climber in his younger days, but had then ceased coming to the Alps for a number of years. Finally, his health appearing unsatisfactory, his physician advised Wiesbaden "to get your skin into better working order." "O," replied this choleric old party, "you want me to sweat, do you? I know how to accomplish that all right: I'll go back to the Alps. Wiesbaden be d——d!" And sure enough, back he came, hunted up his old guide and resumed his annual jaunts, which he had now been pursuing anew for seven summers. Still, as a man gets on in years it is a wise precaution to have the thorax examined by x-rays each season before starting; any calcification or distention of the aorta would be a formal counter-indication to this sort of work. The best per-

Summit of the Grépon.

formance I have yet heard of in the way of age was the Grépon at fifty-eight, by an Englishman who during the remainder of the year leads an active out-of-door life in the country, shooting and riding to hounds. This is a truly remarkable feat.

Climbing is as a general thing to be discouraged in youths. At that time of life ambition is under such imperfect control as to be liable to carry them far beyond their not yet fully developed physical powers. If they can be restricted to reasonable efforts, and handicapped by old and prudent guides, permission might be accorded; but even then there is always the risk of the exposure from being benighted on a mountainside. Some terrible catastrophes have been caused in the Alps by the inability of an unseasoned physique to withstand even moderate exposure when exhausted and discouraged.

Finally comes the mooted question whether women should climb. Every one knows that there both are and have been remarkable lady-climbers. But setting aside these exceptional instances women will do well to keep away from all long and heavy work for the following reasons, in regard to which they are badly handicapped when compared with men:

1. In this as in all sports women labor under the disadvantage of going with men. If parties could consist of women only, as well guides as climbers, the situation would be different; but when a woman climbs with a party of men, even though the latter try to bring themselves down to the level of her physical powers, she is still pretty certain to overdo herself.

2. While many women's walking powers are good they all necessarily fall short in arm and shoulder work, and on steep rocks there is any amount of this. If you lift an average woman up to a horizontal bar, let her take hold, and then ask her to try and pull up her weight, you will, I think, find that she cannot do so one particle, not a fraction of an inch. I fancy also that there are very few women who can lower their weight down a rope, — not to speak of working up one. This weakness of the upper extremities constitutes a serious drawback in stiff climbing, as it necessitates their being pulled by the rope up many places where men would experience little trouble; and for obvious reasons a tight rope tugging heavily around a woman's thorax is not a desideratum.

Lastly, women, who can sometimes do marvelous things on their nerve force, seem to have a distinct and clearly defined limit to their physical strength; when this limit is reached there appears to be no reserve whatever behind it, but they give out suddenly, altogether and for good. A man now and then becomes exhausted on a mountain; but if his guides know their business, refrain from stimulants, rest and feed him, or even give him half an hour's sleep, he will most likely react and be good for several additional hours. This absence of reserve power in women may become a grave matter on a really big climb. Thus, there arise emergencies in which a party has to make a sudden and tremendous effort whereon a great deal depends. It may be imperative, for instance, to get off the rocks before darkness comes down, the penalty being to remain motionless all night in a freezing wind at the spot where it became no longer possible to see. Or sudden bad weather not infrequently envelops a party, who either have to hustle off their peak at the double, or risk being struck by lightning or finding rocks that were passed without difficulty in half an hour on the ascent, glazed with ice and frightfully dangerous on the descent, requiring hours to pass over. It is not easy to demand such an effort as this from a woman, whose physical limitations may then put the entire party's life in jeopardy.

Let me suggest to married men going to the Alps for a season's climbing not to take their wives with them. In the first place they are apt to put in the time, while their husbands are off on a mountain, panicking around the hotel in a condition of such visible mental anguish as to be depressing to the other inmates; and in the second, they have a special weakness for organizing rescue parties every time the dear one is a few hours later home than was expected. Now nothing makes a man who has whiled away too much time smoking his pipe on a mountain top look so cheap as to be met by a valiant rescue party half a mile from the hotel! Besides, that sort of thing comes expensive, every idle guide in the community jumps at a rescue party, and all expect to be handsomely remunerated whether they rescue anything or not. I shall never forget the suppressed fury of one first-rate climber who was triumphantly brought in to the hotel by the rescue party which his loving spouse had promptly and energetically despatched after him because he had become benighted on a perfectly safe mountain in heavenly weather. There was a coolth in their bearing toward each other, for several days after, that was very painful to onlookers.

These remarks on mountaineering — although already unduly protracted, I fear — can be fittingly closed perhaps by a few practical suggestions, in case some reader may have been roused, through what has been said above, to wish to try climbing in the Alps for himself.

Climbing season. — This begins in the early part of July, and may last from six to ten weeks, according to the weather. In some years the really big climbs cannot be thought of, so unfavorable are the atmospheric conditions; thus there occurred recently a series of seven consecutive seasons during which the Zmutt ridge of the Matterhorn was not even attempted.

Climbing centers. — Zermatt, to my thinking, possesses the finest individual mountains; Chamonix, the most difficult and sensational rock-climbing; Grindelwald, the ascents most suitable for a beginner. But Zermatt has been utterly ruined by its great popularity, and is now little better than a den of thieves where the visitor is swindled at every turn. All *débutant* climbers aspire to Zermatt and the Matterhorn. But this mountain is no longer the peak it once was; the ordinary Swiss ascent is now so crowded on a fine day that a regular trail has been worn up the rocks by the scratching of the trippers' bootnails. Forty or fifty men, not counting the women and little children, as Rabelais says, foregather at a time on its summit in good weather! The opinion held among real climbers as regards this fashionable scramble can be surmised from the following, written to me not long ago by a member of the Alpine Club: " I feel that I must go to Zermatt once and do the Matterhorn; I suppose that by going up by the Zmutt ridge and down by the Italian side, I shall be able to avoid the *worst of the crush!* "

The Matterhorn is unquestionably a fine mountain, and well worth doing; but when you go to this region do the climb from Breuil, on the Italian side, and give Zermatt as wide a berth as possible.

Grindelwald is a picturesque and characteristic Swiss commune, unspoiled and with good guides; but at the height of the season the mountain huts there are apt to be crowded with Swiss and German students, attracted by the cheap mode of life and by the relative easiness and great beauty of the Oberland climbs, which they undertake in parties by themselves unaccompanied by guides. It is these venturesome youths who, together with that candid specimen of humanity, the clamberer after edelweiss, make up the nineteen twentieths of the Alpine accidents that are reported each year in the daily press.

Of the three centers mentioned, greater satisfaction will be derived, I feel sure, from the Montanvert than from either of the other two.

And now, *two pieces of advice*, of the first importance: it is impossible to take too much care in your outfit as to clothes, mittens, boots, goggles, rope, ax, etc., and the necessary information *ad hoc* can be obtained, with addresses, from the books mentioned below. A man improperly clothed may lose his fingers and toes from frostbite, or even freeze to death; a bad rope may give way in a sudden emergency; a climber has fallen and been dashed to pieces through the heel of his boot coming off, — and so on; instances of the paramount importance of care in these particulars are too numerous to mention.

Secondly: no precautions are too great in selecting guides. *Never* take a man who accosts you on the street, or who is recommended by any one at the hotel, from proprietor down, or, in fact, by any native of the place; the local peasants have always a necessitous relative who would be glad of a job, and all they think of is to do him a good turn, irrespective of his suitability for the undertaking. In my early days I found once after doing the Dom that the porter we had had with us was a cousin of the guide's and had never been on a big mountain in his life! At each climbing center there is one hotel frequented by the members of the English Alpine Club; go to it, make friends with these men, and get your tips from them: the Bear, at Grindelwald; Couttet's and the Montanvert, at Chamonix; the Mont Rose, at Zermatt. Between the merits of different guides there is an abyss, and you cannot be too closely on your guard. There are only a few first-class guides in the Alps; the besetting sin of the genus guide is drink.

The danger side of climbing can only be summarily referred to in this article. A party with proper physique, suitably outfitted and with good guides rarely gets into trouble. Such a party ought not to slip, get kept out by bad weather, be carried away by falls of stones or ice, or disappear into crevasses; but it is useless to deny that a certain element of risk does exist in mountain-climbing, even for parties that seem beyond criticism. These risks are: the sudden advent of a storm, before the party can shelter or get off the mountain; lightning; falling stones, and the unexpected giving way of a foot- or handhold on which a climber is relying. But fortunately, in spite of these unavoidable dangers, accidents among good climbing parties are the great exception. The annual death-rate is almost entirely made up of the inexperienced and rash parties referred to a few moments ago.

Books on the subject. — Mountain-climbing is a much more important sport than people imagine; thus the Austro-German Alpine Club has a membership of over 60,000. It naturally follows that the literature on the subject is very extensive; but I shall here mention only a few books of general information, through which any one so desiring can gain access to the others.

1. " Mountaineering." Claude Wilson, M.D.
2. " Mountaineering." The Badminton Library.
3. " Equipment for Mountaineers." Alpine Club.
4. " Ball's Western Alps." Alpine Club edition.
5. " Hints and Notes for Travellers in the Alps." A general introduction to No. 4, but published separately.
6. " The Training of Mountaineers." Prof. Clifford Allbutt, in " Pioneers of the Alps," by Cunningham and Abney.
7. " In den Hochalpen." Dr. Paul Güssfeldt.

No. I contains in a very concise form a great deal of valuable information, including a list of addresses for equipment and supplies. No. 4 is indispensable. No. 5 is very interesting indeed, containing among other things an excellent catalogue of mountain literature in all languages. No. 7 is highly recommended to those familiar with German, its supplement, fifty pages of generalities on mountaineering, being one of the best monographs on that subject. This book contains, besides, the most graphic description of a climb that I have ever encountered in a fairly extensive perusal of Alpine literature, Gussfeldt's account of that mad performance, his descent with Alexander Burgener from the Col du Lion on the north side. Being a German, Gussfeldt could naturally only take his sport seriously; so he has gone into physics and mechanics of climbing in a sober and scientific manner, talking about centers of gravity, bringing in trigonometry, and awakening such hoary remembrances as sines, cosines, and angles of inclination! Fancy the reception you would get were you to shout to your breathless guide, whose leather-patched seat and frantically gesticulating legs you just descry above you as with painful wriggling he is slowly drawing himself up over some projecting ledge, to inquire how the cosine of his inclination was getting on! My word! you *would* have the gospel of truth expounded to you that time, if never before!

It is quite possible for a city professional man to keep himself in such condition during the working months that with one week of preliminaries after his arrival in the Alps he will be able to undertake anything in reason. This can be accomplished by leading a regular life, by practicing Swedish setting-up movements every morning (for which no apparatus whatever is required), and by putting in as much walking exercise as possible. On the street a man should keep his spine erect, chin in and chest out, breathe deeply, make it a point at certain intervals first to empty the lungs and then to fill them up to their maximum, and proceed on his way with the vigorous and decided gait of the person who has somewhere to get to, and not with the listless loll of the valetudinarian killing time or taking a half hour's constitutional by doctor's orders.

Sir Hermann Weber has published an interesting little book entitled: "On means for the prolongation of life," and in it he bestows an important mention on mountain-climbing. He also lays much stress therein on the desirability of cultivating everything likely to develop will-power, decision of character and fixity of purpose. Now few things will be found to do this with such efficacy as frequentation of the Alps.

To a young man, full of vigor and keen on the sport, the difficulties and hardships of mountaineering are perhaps not very formidable, and make no very great calls on the qualities just mentioned. But with the man of fifty the case is considerably different, and at that age it requires no moderate degree of determination to lie down to rest at 7 P.M., in broad daylight and on top of a brief supper, be called at eleven, get under way before midnight, stumble along steep paths and the crests of moraines by lantern for four hours before dawn, and then to spend the entire day making some long and tedious traverse from one district to another across a difficult mountain, with a storm or two interspersed, reaching an inn at nine or ten in the evening, perhaps to find every bed occupied and have to sleep on the parlor chairs in dirty climbing outfit, — when not forced to halt for the night at the upper cattle-sheds through having lost time in taking a bad direction! This sort of thing can be recommended in all security as the very best of discipline for will, temper and general saintliness of disposition.

Doing the Weisshorn once, in bad condition, under the leadership of the guide whose photograph accompanies this article, and the determination of whose character can be estimated from the cut of his lower maxilla, we reached, after a toilsome ascent of nine hours, the final stretch on the north ridge that leads in thirty minutes to the summit. But whereas everything on the slopes below had been perfectly quiet, at this point we suddenly found ourselves exposed to the full brunt of an icy wind from the west that was surging up over the crest with such force and velocity that in a few moments I felt that my vitality was rapidly disappearing; I therefore shouted to the leader that I was afraid "it wouldn't go." "*Nä,*" *Nä, Herr,*" came back to me through the Arctic blast, "*es muss gehen,*" — and go it had to! Truly this is a most excellent school for the training of the will.

In short, the great thing in this world is to lead the strenuous life, — the supposed parent of which term I here brand as a plagiarist, — it appears in the "Autocrat." This, I think, can be accomplished to better purpose in the mountains than elsewhere; but the essential point is to take heed that it be accomplished, whatever the means employed. By so doing, the vessels of the body will remain elastic and the visceral capillaries permeable, — the secret of perennial vigor; this in turn will lead, not to mere old age, which would be no gain, but to a *useful* old age, — an entirely different matter.

A representative Swiss guide.

FLUSHING THE INTESTINAL CANAL THROUGH MULTIPLE ENTEROTOMY OPENINGS.

WITH THE REPORT OF ONE CASE.

BY GEORGE H. MONKS, BOSTON,

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Starting with the assumption that patients with acute peritonitis frequently die from the absorption of septic products from the intestinal canal, as well as from the peritoneal cavity, I carried out at the Harvard Medical School, during the winter of 1906–1907, a series of experiments on cadavers and on animals for the purpose of determining whether the intestinal canal could be cleansed by flushing through multiple enterotomy openings, and whether, if so, it could probably be done without any great degree of danger to the patient.[1]

As a result of these experiments (which will be published later) I came to the conclusion that to flush the intestinal canal of a patient suffering with acute intestinal toxemia, whether or not peritonitis was also present, was a perfectly practicable procedure, and that, in certain cases after the simpler methods of treatment had been used without result, that it was thoroughly justifiable. It also seemed obvious to me that the removal of the intestinal contents by flushing with warm salt solution would be of great advantage to such a patient, especially for the following reasons: first, because it would remove an active source of septic infection; secondly, because it would place within the intestinal canal a large quantity of salt solution where it could be readily absorbed into the circulatory system; thirdly, because the warm solution would re-enforce the bodily heat, the whole intestinal canal being thus converted into a long tortuous hot-water heater within the abdomen. For these reasons I felt willing to carry out this procedure on a patient, provided the conditions which the patient presented seemed to me to justify it.

Finally, a case, in which the treatment outlined above seemed particularly applicable, entered my service at the Boston City Hospital.

HISTORY OF THE CASE.

The patient was a little girl, eight years old, with acute general peritonitis which, by culture, was later found to be a pure streptococcus infection. The condition of this little patient when I first saw her was deplorable. The face was pale, and the features drawn and sunken. The skin was cold and "clammy," and was here and there covered with perspiration. The pupils were dilated. The respirations were shallow, and the pulse "thready" and scarcely perceptible. It registered 180 beats to the minute. In short, the patient presented the appearance of one about to die. The tongue was covered with a thick, dry, brown coat, the lips were parched, and the patient articulated only with great difficulty. There was general tympanites and general tenderness, and there was a board-like spasm of all the abdominal muscles. A high turpentine enema, that had been given without result, had been expelled.

The child was evidently dying of sepsis. I determined, therefore, to open the abdomen, clean the peritoneal cavity, and, if I then thought it best, to flush the intestine also, for it seemed to me probable that the retained intestinal contents were furnishing a large proportion of the general sepsis that was killing the patient.

The essential details of the operation and of the subsequent history of the case are as follows:

Ether. Median incision below umbilicus. Abdomen opened. Intestines slightly reddened and free, pus everywhere. Culture taken. Many thick, yellowish flakes of fibrin adherent to intestinal coils. Abdomen rapidly explored. No obvious cause of peritonitis found. Appendix slightly swollen and vessels injected. Removed. Peritoneal cavity thoroughly irrigated through long glass tube.

Numerous coils of much distended small intestine were brought into the wound.

An incision was then made into the gut at the point estimated to be high up, *i. e.*, near the duodenum. The incision was in the free border of the intestine, and parallel with its axis. Much gas escaped. A glass tube was then introduced into this opening with its tip directed downward, a gauze pad pressed about the intestine at this point held the tube in place and prevented leakage. The coils outside of the abdomen were gradually distended with hot salt solution, then a second incision was made in the lowest intestinal loop presenting in the wound. It was roughly estimated that the length of the intestine between these two wounds was 2 to 3 feet. Much gas and foul-smelling intestinal contents escaped from the lower wound, and finally the wash water came out clear. The upper wound was now sewed up with Pagenstecher thread (Cushing right-angled suture) and from the lower wound the rest of the intestinal canal was flushed, a large amount of fluid being introduced. The lower intestinal wound was then sewed up, the peritoneal cavity again irrigated, and the abdominal wound closed except at its lowest extremity where a small cigarette drain had previously been inserted into the pelvis. It is hardly necessary to add that during the flushing the greatest care was taken to avoid contamination of the peritoneum by the intestinal contents. The enterotomy openings were drawn well away from the wound, and carefully packed about with gauze. After the dressing had been placed on the abdominal wound a rectal tube was introduced, and a large quantity (nearly one quart and a half) of intestinal contents with salt solution came away. Finally, the fluid escaping from the tube became quite clear.

During the intestinal flushing the etherizer who could not see what was being done called the attention of the operator to the fact that the pulse of the patient had become conspicuously stronger and its rate dropped to 140. This condition of the pulse persisted throughout the operation. While the dressing was being applied $\frac{1}{12}$ gr. of morphine and $\frac{1}{120}$ gr. of atropin was administered subcutaneously. No "shock enema" was given.

Good ether recovery. Toward evening the patient became somewhat restless, and another $\frac{1}{12}$ gr. of morphine was given. About midnight the rectal tube was introduced without result. The patient was given saline solution by rectum, one pint every four hours; and it was well retained. Water and cracked ice were given by the mouth, but as they were vomited, no further attempt was made to give anything in this way. At six o'clock on the morning after operation a nutrient enema was given and retained. Temperature at this time was subnormal, and the pulse was 140 and of fair quality. There was considerable vomiting. Nutrient enemas were given from time to time, and for the most part they were retained. From this time on, for the next three or four days, the patient was given nothing by mouth, and was nourished entirely by rectum. Occasionally a cleansing enema was given, with fair result. On the fourth day albumin water and brandy in water were given in small quantities by the mouth.

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[1] I wish to express my thanks to Dr. W. E. Faulkner for his valuable assistance during these experiments, and to Profs. W. T. Porter and W. B. Cannon, who, for the animal experiments, kindly placed the laboratory facilities at my disposal.

The general condition gradually improved. The abdomen was not distended, and the abdominal spasm lessened. From this time on the condition of the patient showed progressive improvement from day to day. The vomiting ceased entirely. The patient was able to take more food by the mouth, and her general appearance became greatly improved. The tongue still remained dry and parched. There was a moderate purulent discharge from the drainage wound, which was flushed daily.

The remaining history of the case is uneventful, for the patient's condition became better each day until she was out of danger. The record made on the twentieth day after the operation showed the temperature normal, the pulse 112, and of good quality. The patient was taking a liberal diet of soft solids and eggs, and the bowels moved occasionally without enemas. She was gaining rapidly in strength. On the thirty-first day after the operation she was up and about the ward, and on the thirty-sixth day she was discharged from the hospital in excellent condition, there being only a small granulating surface at the lower end of the abdominal scar.

REMARKS.

It is obviously impossible to state with any degree of certainty that the recovery of this patient was due to the flushing of the intestine, but, judging from my experience in "forlorn hope" cases of general peritonitis, I find it hard to escape the conviction that the flushing did accomplish that happy result. The removal of a large amount of liquid feces and gas from the lower part of the small intestine and the colon must have greatly diminished the absorption of septic products, while the introduction of a large quantity of warm salt solution must have rapidly increased the amount of fluid in the vascular system, and favorably influenced the body temperature.

The change in the character of the pulse, while the intestinal canal was being flushed, was one of the most striking features in the case. While, during the first part of the operation it was weak and "thready" and registered about 180 beats to the minute, it suddenly improved during the flushing to a pulse which might, by comparison at least, be called "strong," and which was only 140 beats in the minute. This improvement in the pulse persisted throughout the rest of the operation. In fact, after the flushing of the intestine was done until the patient left the hospital for her home, the pulse was at no time less good in quality than what might be called "fairly strong."

If what I have just written in reference to the effect of injections of hot saline solution into the intestine under such conditions is true, it would seem to indicate that these flushings may be useful in other conditions, in which there is acute intestinal toxemia associated with ileus, for example, in selected cases, typhoid fever in some of the acute infectious diseases of the intestine, and in cases following as of abdominal operation where the patient is suffering from a high degree of sepsis or of shock, where it is desirable to introduce, as soon as possible, into the body a large amount of heated fluid at a place where it can be most readily absorbed into the circulation, to improve the pulse and to combat shock. Even if, in a case, one is not successful in flushing (that is, in washing the intestinal contents through the colon and out of the anus), presumably no harm has been done, and the intestinal contents will have been at least washed nearer the anus, while the presence of a large amount of hot saline solution in the colon should improve the condition of the pulse and assist in combating shock.

In concluding this paper I wish to say that I have tried to refrain from making extravagant claims as to the usefulness of this new procedure, but I cannot help feeling that its employment in this individual case, where the patient was evidently dying from a streptococcus peritonitis, was as severe a test as could have been selected for it. I hope that the facts here recorded will interest the profession sufficiently to induce surgeons to give the method a more thorough trial than at present I have been able to give it, and, if the method proves to be efficient in their hands, to determine its degree of efficiency, and the proper limits of its usefulness.

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Massachusetts General Hospital.

CLINICAL MEETING OF THE STAFF, MAY 17, 1907.

A CASE OF MULTIPLE PAPILLOMATA OF THE BLADDER.

BY LINCOLN DAVIS, M.D.

J. H. R., forty-seven, married, worker in woollen mill, was first seen by me in the Genito-Urinary Department of the Out-Patient on Sept. 1, 1906.

He gave the following history: Family history unimportant. Never had any venereal disease. About one year ago first noticed dull pain over the pubes. Six months later the urine became bloody. The bleeding was intermittent in character; the urine would be continuously bloody for two or three days, and then clear for a week or two. One week ago had an attack of severe pain in the testicles, shooting up into the bladder. At no time was there pain on micturition or frequency.

Examination showed a rather poorly developed and nourished man. There was a left-sided varicocele. The right epididymis was markedly thickened, and contained a distinct nodule. By rectum, the prostate was found soft and full, without nodules; the vesicles were not felt. The kidneys were not palpable. The urine was slightly cloudy, but not bloody. The sediment was not examined microscopically.

A provisional diagnosis of tuberculous epididymitis and cystitis was made. A note appears in the record to the effect that a specimen of urine should be saved for guinea-pig inoculation. This, however, was not done.

At the next visit of the patient, on Sept. 8, the urine was perfectly clear. A Kollman cystoscope was introduced into the bladder, and a very beautiful view obtained of the source of the alleged hemorrhages. Just above the left ureteral orifice there was seen a pedunculated lobulated papilloma, the size of a strawberry, and not unlike it in appearance, standing out in bold relief against the normal white of the bladder wall. A similar smaller growth was seen above the right ureteral orifice, and still another close to the internal urethral orifice. The bladder wall was not inflamed, both ureteral orifices were normal and functionated normally; the prostate was not enlarged.

The instrumentation caused no pain or bleeding. The patient was recommended to the House for operation, with the diagnosis of papilloma of bladder.

On Sept. 29, 1906, he entered on the service of Dr. Mumford, who very kindly turned the case over to me.

On Oct. 2, I did a suprapubic cystotomy and found in addition to the three tumors seen with the cystoscope, four others of small size which were scattered over the floor and left wall of the bladder in the vicinity of the larger growth. Each tumor was grasped with forceps and excised at its base with curved scissors, a fair margin of bladder wall being taken. The defects in the bladder wall were closed with chromicized catgut sutures, which controlled the bleeding fairly well. The bladder incision was closed about a rubber drainage tube. There was some post-operative bleeding which was controlled by irrigation with adrenalin solution. There was practically no blood after the third day. The tube was removed on the sixth day and urethral drainage through a catheter instituted. On the twentieth day there was a sharp rise of temperature, with a chill; there was at this time considerable pus in the urine, evidently from an infection of the bladder wall. There was also a slight systolic murmur noted for the first time. The urine cleared up gradually with daily irrigations, and the other symptoms likewise subsided, so that at the end of a month he left the hospital. At this time the suprapubic wound was healed, and he was passing urine per urethram, with slight frequency and burning. The urine was cloudy, but without macroscopic blood.

Dr. Whitney's report on the largest of the tumors was as follows:

" A fungus growth 2.5 to 3 cm. in diameter, with a small base. The bulk of the growth was made up of fine villous-like papillary projections. Microscopic examination showed the growth to be composed of solid masses of large epithelial cells in many layers covering a thin walled blood vessel. Over the greater area of the base it was sharply circumscribed, with a well-defined basement membrane, but here and there there seemed to be a slight evidence of ingrowth of the epithelial cells.

"Diagnosis: Villous papilloma (malignant)."

On Dec. 7, 1906, I again saw the patient. He was looking rather pale and emaciated. The urine was slightly cloudy and contained the slightest possible trace of albumin; no blood. I made a cystoscopic examination, and found the bladder wall everywhere smooth and white. A slightly depressed stellate scar above the left ureteral orifice was the only evidence of the former operation to be seen. There was no sign of the catgut stitches.

At the present time the patient is working hard, driving a furniture delivery wagon, and doing considerable lifting. His only symptoms are slightly increased frequency of micturition, and slight urgency. The urine is clear and sparkling. There has been no recurrence of blood.

The points of interest in this case are, first and foremost, the value of the cystoscope in making a diagnosis; without its use the case might easily have passed for one of tuberculous cystitis. The multiplicity of the tumors I regard as of particularly bad prognostic import, and for that reason shall keep the patient under close observation, with frequent cystoscopic examinations.

The situation of the growths in this case, as in others I have observed, suggests strikingly the fact that these tumors may be propagated by simple contact.

MYASTHENIA GRAVIS; DEMONSTRATION OF A CASE.

BY W. E. PAUL M.D.

A. L., twenty-six, widower, was transferred in November, 1906, to the Neurological Department by Dr. A. K. Stone.

The patient was a polisher in a jewelry shop. The family history was not remarkable.

Eight years ago he had a hard chancre and was treated twenty-four months.

He used tobacco to excess, but has used none for a year. Alcohol has been used excessively at times.

Eighteen months ago, in the course of a severe cold, the first myasthenic symptoms developed in his arms at his work. Within a month, at times, the myasthenic symptoms had appeared in the facial, ocular, chewing, swallowing, and many other muscles of the trunk, and all extremities. The sphincters have escaped. There has been no disturbance of sensation.

Examination showed active knee jerks, Achilles present, plantar normal. The pupils were equal, slightly irregular and reacted normally.

The urine is about 32 oz. in twenty-four hours and shows nothing abnormal.

The heart and lungs are not diseased.

There was no " myasthenic reaction " and the knee jerk could not be exhausted.

The patient has died since this report was made.

REVIEW OF CASES OF CANCER OF THE LARYNX TREATED IN THE WARDS OF THE MASSACHUSETTS GENERAL HOSPITAL SINCE 1874.

BY D. CROSBY GREENE, JR., M.D.

Since the year 1874, 24 patients have been treated in the wards of this hospital for cancer of the larynx. The card index gives the names of 7 others. Some of these were discharged untreated, and in the rest the diagnosis was not definitely established and I have, therefore, excluded them from this series. In 12 of the 24 which I am reporting, the diagnosis was not confirmed by the microscope. These were all advanced cases in which, with one exception, palliative tracheotomy for the relief of dyspnea was performed. The diagnosis in these instances was made by laryngoscopic examination, and was later, to some extent, confirmed by death from malignant disease of the throat, as recorded in the death records at the State House.

In view of the rapid increase in growth of cancer in this situation following the removal of even a small section, this procedure is not regarded as justifiable in those cases in which it is purely for the purpose of confirming the diagnosis, and is not a preliminary to radical operation.

I propose to report briefly the statistics of the 24 cases with reference to age, sex, the operations performed, the mortality from operation, and the duration of life in those cases which survived operation.

Age: The youngest case was twenty-seven years of age and the oldest seventy-three. By decades the cases may be classified as follows:

Age, 20 to 30 years,	1
,, 30 ,, 40 ,,	1
,, 40 ,, 50 ,,	6
,, 50 ,, 60 ,,	8
,, 60 ,, 70 ,,	6
,, 70 ,, 73 ,,	2
Total,	24

Only two were under forty-five years of age.

Sex: In the matter of sex there is a distinct selection of the male; 20 of the cases being men against 4 women.

Operations: Two of the 24 patients were not operated upon. One died of asphyxia while in the hospital and one three months after leaving. The latter was a case of advanced and extensive disease of the posterior portion of the larynx, largely extrinsic and without dyspnea.

In 12 of the cases the disease was so extensive that tracheotomy for the relief of dyspnea was the only treatment given. All but one of these patients survived the operation for several months. This one exception died in nine days. At autopsy he was found to have extensive tuberculosis of both lungs.

It is interesting to note the duration of life after the disease has advanced to such an extent as to demand tracheotomy.

Three of these cases died in about three months, one in four and a half, one in five, one in six and one half, one in eleven, one in twelve and one in thirty-six months. In two instances I did not find the date of death.

The case which lived for three years after tracheotomy was a sea-captain from Yarmouth, sixty-nine years of age at the time of operation.

He was tracheotomized on May 16, 1892, and died in Yarmouth, May 1, 1895. His death was certified by the attending physician as being due to cancer of the larynx.

Coming now to the operations for cure, epiglottidectomy by subhyoid pharyngotomy was performed for cancer of the epiglottis twice. In both instances operation was followed by death from pneumonia, in two and four days respectively.

Laryngotomy with removal of soft tissues from the interior of the larynx was performed three times. One case died eight hours after the operation. Autopsy was not allowed. This patient was anesthetized with ether by rectum. Death was preceded by the passage of bloody stools. The heart, lungs and trachea were examined by extracting them through the laryngo-tracheal incision and no cause of death was found in them. The other two cases of laryngotomy recovered from operation. In one there was no recurrence at the end of four years, and in the other there was recurrence in two months, in consequence of which a total laryngectomy was done. In 4 cases in which total laryngectomy was done, death from the operation resulted twice, — in one case from aspiration pneumonia, and in one from shock. Of the 2 who survived operation, one died of recurrence in five months, and one has recurrence at four months, from which he will probably shortly die. One case of adenocarcinoma involving the larynx was operated upon. In this operation the tumor was excised without removal of the larynx.

To sum up the results of 10 operations for cure:

The mortality from operation was 5,	or 50%.
Recurrence in 3,	or 30%.
No recurrence in 2,	or 20%.

In the 12 cases in which histological examination was made, the growth was found to be epithelioma in 10, medullary cancer of the epiglottis in one, and adenocarcinoma in one.

In one case there was a definite history of benignant papilloma of the larynx existing for eight years previous to admission to the hospital. The papilloma, which was on one ventricular band, was recurrent, and portions of the growth were removed from time to time and examined microscopically. No evidence of malignancy was found until a short time before the patient was admitted for operation.

In reviewing the records of these cases the most striking fact was the advanced stage of the disease in the great majority of the patients who presented themselves for treatment. In only 4 was the growth apparently confined to a small area, — in 2 within the laryngeal cavity and in 2 on the epiglottis.

This appears to be especially unfortunate when we consider the peculiarly favorable conditions for extirpating cancer situated within the laryngeal cavity. On the one hand its extension by growth is partially limited by the cartilaginous wall, in most cases more or less ossified. On the other hand its extension by metastases is apparently rendered less rapid on account of the attenuated lymphatic circulation in those parts which are the most frequent site for the starting point of cancer, namely, the vocal cords and ventricular bands. It has been repeatedly observed that cancer of the larynx, as a rule, grows very slowly at the beginning and that glandular metastases are usually late in making their appearance.

In epithelioma of the vocal cords or ventricular bands, the only symptom for a long period, a year or even more, may be persistent and gradually increasing hoarseness.

It cannot, therefore, be too forcibly stated that every case of hoarseness in a person over forty years of age, persisting for two or three months without improvement, should have a laryngoscopic examination. This is not meant to imply that cancer is a common cause of hoarseness in persons of cancer age, as compared with other causes, such as chronic laryngitis and forms of laryngeal paralysis; but if laryngoscopic examinations were made in all these cases of persistent hoarseness, there would be a much larger percentage of truly operable cases of cancer discovered in which a cure might reasonably be expected.

CASE OF FOREIGN BODY IN THE BRONCHUS.

BY A. COOLIDGE, JR., M.D.

This case of foreign body in a bronchus is reported here because it was by far the most difficult case which I have seen, and the first fatal case. R. H. B., aged five, entered the hospital March 21, 1907, in the service of Dr. C. L. Scudder, who kindly turned the case over to me. The child had inhaled a sharp steel shawl pin, a little over two inches long, one hour before admission. X-ray showed the pin, head down, in the left bronchus. On the next day the child was etherized, and a bronchoscope passed into the trachea. To my surprise no foreign body was visible at the bifurcation, where I expected to find the point of the pin. On entering the left bronchus this at first also appeared to be empty, but after searching, the shank of the pin was seen and seized, but was evidently so firmly held that its extraction would necessarily be difficult. I therefore withdrew the bronchoscope, and did tracheotomy, in order to reach the bronchus by shorter tubes of larger caliber. It soon became evident that the pin was so long that it was held firmly, the head at the bottom of the bronchus as far as it could go, and the point pinned into the upper part of the bronchus near the bifurcation. I could not cut the pin in two with any instrument within reach, and as the child's condition was poor I sent him back to the ward. The next day I extracted the pin by inserting a small blunt hook around the pin where it entered the mucous membrane, pulling on this hook, while I seized the shank of the pin with forceps and pushed it downwards. In this way I finally succeeded in unpinning and extracting it. The child failed and died twenty-fours after the operation. As there was no autopsy the cause of death was not evident.

END RESULTS OF 376 PRIMARY OPERATIONS FOR BREAST CANCER AT THE MASSACHUSETTS GENERAL HOSPITAL BETWEEN JANUARY 1, 1894, AND JANUARY 1, 1904.

BY R. B. GREENOUGH, M.D., C. C. SIMMONS, M.D.,
J. D. BARNEY, M.D.

A brief abstract was presented of the report read at the meeting of the American Surgical Association in Washington, on May 8, 1907. The report was based on 376 consecutive cases of primary operations for cancer of the breast performed during the ten years prior to Jan. 1, 1904.

The conclusions reached as the result of the study of these cases were as follows:

SUMMARY.

I. Out of 416 cases of primary operations for cancer of the breast at the Massachusetts General Hospital, from 1894 to 1903 inclusive, 376 were traced to a conclusive end result at an average period of eight years after operation.

II. Sixty-four cases were alive and well and 7 died without recurrence over three years after the operation.

III. Counting in the operative mortality, there were 320 attempts at radical cure, 67 of which, or 20.9%, were successful.

IV. During this same period palliative operations were performed on 56 patients (15%) and 52 cases were discharged untreated.

V. Cases in which the tumor was ulcerated, or was adherent to the skin or to the chest wall and cases in which the axillary glands were palpably enlarged gave notably less promising results than when these conditions did not exist.

VI. No case with palpably enlarged cancerous glands above the clavicle and no case of cancer of both breasts was cured.

VII. Medullary carcinoma was more grave than that of the scirrhus type, and adenocarcinoma and colloid were relatively of a far less malignant type.

VIII. The duration of the disease, other than in the individual case, exerted little influence on the prognosis.

IX. Extensive operations with wide removal of skin gave the greatest freedom from local recurrence. Removal of the pectoralis minor appeared to be of slight significance. Incomplete operations on early cases yielded better results than extensive operations on cases which were well advanced.

X. Recurrence in the scar occurred in less than one half of the cases. Internal metastasis was most frequent in the lungs, mediastinum, in the axillary and supraclavicular glands, the liver and the spine.

XI. Seventeen out of 88 cases, or 19%, of those passing the three-year limit without evidence of recurrence, showed recurrence later, and four cases developed recurrence six years or more after the operation.

Medical Progress.

PROGRESS IN PATHOLOGY.

A CRITICAL REVIEW OF VARIOUS METHODS EMPLOYED FOR ISOLATING TYPHOID BACILLI FROM STOOLS.

BY JOSEPH H. PRATT, M.D., BOSTON.

(Concluded from No. 24, p. 783.)

(f) Nowack's malachite green agar.

Nowack[103] employed malachite green 120 in a concentration of 1 : 2000 or 1 : 2500. He also used with success malachite green crystals "superfein" in a concentration of 1 : 50000. Only a small proportion of the typhoid bacilli planted on malachite green agar formed colonies (5% to 30%). He inoculates the green plates with a larger amount of the fecal suspension than do the other investigators. Two large plates are prepared, and 0.5 to 1.0 cc. of the fecal material (10 to 30 drops— see Neumann[101]) are spread over the surface of each. Nowack[103] employed Liebig's beef extract instead of beef infusion in the preparation of the agar.

Into a 2-liter flask is placed 1 liter of distilled water, 5 gm. of sodium chloride, 10 gm. of peptone sicc. (Witte), 10 gm. of Liebig's beef extract and 20 gm. of agar. These ingredients are dissolved by heating the flask in a boiling salt bath (a saturated sodium chloride solution boils at 107°), or less quickly in an ordinary water bath. The best results were obtained with a medium whose reaction was 0.8% acid to phenolphthalein. Doebert[25] and, more recently, Neumann[101] have obtained better results with beef extract agar of Nowack[103] than beef infusion agar of Lentz and Tietz. Lentz used Nowack's agar with unsatisfactory results.

Jorns[66] stated that only 25% (approximately) of the typhoid bacilli grew on malachite green Ia* media, and 50% on malachite green 120. Nowack[103] found that only 15% of the typhoid bacilli grew on his medium. Klinger[74] had previously noted that some strains of typhoid bacilli formed a very meager growth on malachite green agar. Lentz and Tietz on the other hand have asserted that the growth of B. typhosus was inhibited "in only slight degree." Doebert[25] studied this question with care. In his experiments with Lentz and Tietz's malachite green agar not more than 74% of the typhoid bacilli ever grew. The agar was made "slightly acid" as Lentz and Tietz directed.

Doebert[25] in Rubner's laboratory used the same stock of malachite green with which Nowack[103] had worked eight months previously, but found that during this period the dye had become considerably weaker. He used the dye in the same concentration and with the same agar, but he does not state that the reaction was the same. He rejected for this reason malachite green 120 and used instead *"Malachitgrünkristalle superfein,"* only to find that the pure malachite green crystals had deteriorated. Nowack[103] obtained no growth of colon bacilli when the concentration of the dye was 1 : 100000. Doebert[52] found nine months later that some colon colonies appeared even when a concentration of 1 : 60000 was used. Doebert[25] seems unacquainted with the fact that the inhibitory power of malachite green depends in part on the reaction, and the proper reaction must be determined for every specimen of malachite green. This has been shown by experiments made by Peabody and Pratt.[109]

Leuchs[85] advises the use of malachite green crystals because these are pure preparations, while both malachite green 120 and malachite green I contain dextrin. He tested a number of preparations obtained from different dye works. These included the oxalate, the chloride and a zinc double salt of tetramethyl di-p.-amidotriphenylcarbinolanhydrite. These acted similarly although the zinc double salt appeared less adapted to the purpose of differentiating typhoid and colon bacilli than the two other kinds of malachite green crystals. He found that the specific action of each was increased by adding 1% or more of dextrin. Leuchs[85] maintained that the crystals are of constant strength and that unlike malachite green 120, the pure substance does not weaken with age. The more recently published observations of Doebert[25] would indicate that the crystals deteriorate. It is possible that Doebert did not use media of the same reaction as did Nowack, and this may account for the apparent loss of strength of the dye. Jorns[66] pointed out that malachite green solutions gain in strength on standing. Doebert[25] found that if kept too long the malachite green solution loses its power of inhibiting the growth of B. coli. A solution thirty days old was stronger while one fifty days old was weaker than one freshly prepared. Malachite green agar loses its green color and its bactericidal property if allowed to stand several days in the sunlight. Peabody and Pratt[109] studied a specimen of malachite green which, added to agar in a dilution of 1 : 20000, permitted the typhoid bacillus to grow luxuriantly while the development of colon colonies was completely inhibited *provided the reaction of the medium was 0.5% acid* to phenolphthalein. But on a plate containing the same proportion of malachite green but an acidity reduced to 0.1% acid, 60 colon colonies developed and the typhoid colonies grew profusely. When the medium was 1.0% acid neither typhoid nor colon bacilli grew on the plates. It is apparent from reading Doebert's article that he does not realize how profoundly a slight change in the reaction of the medium may affect the action of malachite green.

(*g*) *Peabody and Pratt's malachite green method.*

This is simpler than that of Lentz and Tietz. Instead of using malachite green agar they employ a malachite green bouillon as an "enriching" culture. The proper dilution of malachite green and the proper reaction of the medium must be determined for the particular stock of malachite green 120 that is used. The bouillon is prepared from beef infusion, and placed in medium sized test tubes, 10 to 15 cc. in each tube. To each tube of malachite green bouillon is added a drop of a fecal suspension. At the same time one or two large v. Drigalski-Conradi plates (15 cm. in diameter) are inoculated. After eighteen to twenty-four hours' growth at 37° C., 2 more v. Drigalski-Conradi plates are inoculated with a drop of the malachite green bouillon culture rubbed over the surface of the agar by means of the end of a small sterile test tube which has proved to be a satisfactory substitute for a v. Drigalski-Conradi spatula. If the growth in the bouillon is profuse a dilution is made in salt solution and from this v. Drigalski-Conradi plates are inoculated.

Pratt and Long[110] examined 41 typhoid stools by the malachite green agar of Lentz and Tietz, the malachite green bouillon of Peabody and Pratt,[109] and the v. Drigalski-Conradi[28] method. Positive results were obtained 7 times by the method of Lentz and Tietz, 13 times by that of Peabody and Pratt,[109] and 18 times by the v. Drigalski-Conradi plates. Other observers (Bonhoff,[11] Friedel,[38] Lentz and Tietz[83]) have also noted that the paratyphoid bacilli grow more vigorously on malachite green media than the typhoid bacillus. B. typhosus was isolated more times by the litmus plates alone than by means of the malachite green enriching cultures. This indicates that the typhoid bacilli present in the feces belonged to those strains that do not grow well on malachite green media. For isolating paratyphoid bacilli malachite green media seems almost ideal, but so far as the typhoid bacillus is concerned they certainly do not fulfill the requirements for ideal media that were mentioned at the beginning of this section.

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* This is the trade-name for one preparation of malachite green.

	Number of times B. typhosus was isolated.	Number of times B. paratyphosus was isolated.
Lentz and Tietz's malachite green agar method	1	6
Peabody and Pratt's malachite green bouillon method,	2	11
v. Drigalski and Conradi's litmus-lactose method,	12	6

V. CHEMICAL PRECIPITATION DEVISED TO SEPARATE BACTERIA FROM FLUIDS.

Recent work supports the view of Jacqué [65] that a perfectly satisfactory method for isolating typhoid bacilli will have as its basis something more than the inhibitory action of a chemical body on the other bacteria present in the feces. Another objection to the method at present in use is the small amount of material utilized for the tests. Usually not more than 1-1000 part of the entire stool is examined bacteriologically. (Reischauer.[122])

Precipitation of the bacteria has been employed with success in the examination of water.

(a) *Vallet-Schüder's method.*

Vallet [147] used a combination of mechanical and chemical precipitations. He added 4 drops of a saturated sodium hyposulphite and 4 drops of a lead nitrate solution to 20 cc. of water and centrifugalized for four to six minutes. Elsner plates were inoculated from the precipitate. Klempner found that in certain cases centrifugalizing alone gave better results. An experimental study led Schüder [138] to conclude that the method of Vallet [147] in modified form was of definitev alue. He used v. Drigalski-Conradi instead of Elsner plates. When the method was applied to the examination of feces a voluminous precipitate was produced that was only slightly dissolved in a 100% solution of sodium hyposulphite. Twice, however, he recovered B. typhosus from feces and urine. Reischauer [122] found Schüder's [138] procedure valueless for the examination of stools, owing to the formation of the bulky insoluble precipitate. He also obtained poor results with Ficker's [35] process in which the precipitating agent is ferrous sulphate. Willson [151] has described an alum precipitation but he did not test it on fecal suspensions.

(b) *Reischauer's method.*

Reischauer [122] states that Liq. ferri oxychlorate precipitates bacteria from a suspension of feces without injuring them. He recommends its use in those exceptional cases in which there is much water and relatively few bacteria in the stools.

VI. BIOLOGICAL PRECIPITATION DEVISED TO AGGLUTINATE AND SEPARATE TYPHOID BACILLI FROM FLUIDS.

(a) *Windelbandt-Schepilewski's method.*

In distinction from the chemical precipitation one might speak of the sedimentation of agglutinated bacteria as a biological precipitation. This consists of adding typhoid serum to a suspension of bacteria. This method was introduced by Windelbandt [153] and it is usually described as the Windelbandt-Schepilewski method. It has been employed in the examination of water by Windelbandt,[153] Altschüller,[4] Schepilewski,[137] Hagemann[49] and Adami and Chopin.[2] Hagemann [49] would combine the chemical precipitation of Schüder [138] with the method of biological sedimentation used by Windelbandt and Schepilewski.

(b) *Chantemesse's method.*

Chantemesse [18] inoculated 10 cc. of peptone water with typhoid dejecta. After six or seven hours' growth in the incubator the culture was filtered and to the filtrate a few drops of typhoid serum were added, the fluid after allowing the serum to act for fifteen minutes, centrifugalized, and plates inoculated from the sediment. Reischauer [122] was unable to obtain the favorable results that Chantemesse claimed for this method. He had no better success when he worked with larger amounts of feces — up to 10 cc.— added to large amounts of peptone water — 200 to 500 cc.

Ficker and Hoffmann,[36] as well as Klinger,[74] found biological precipitation to be a valuable addition to the caffeine method. Bassenge [6] concluded that biological precipitation was of no value in the examination of milk, and Sobernheim did not find it of service in the examination of water.

VII. METHODS BASED ON MOTILITY OF B. TYPHOSUS IN FLUIDS.

(a) *Ali Cohen's method.*

Pfeiffer,[115] the botanical physiologist, was the first to study the chemiotaxic movement of bacteria. Ali Cohen [3] soon afterwards attempted to utilize the property of positive chemiotaxis in isolating B. typhosus. He placed capillary tubes containing raw potato juice in a suspension of feces with the expectation that typhoid bacilli alone would be drawn into the tubes. Lösener [91] showed the uselessness of this method. All the motile bacilli were attracted to the potato juice, and hence no separation of typhoid bacilli from motile colon bacilli was possible.

(b) *Reischauer's method.*

Reischauer [122] added caffeine to a fecal suspension for the purpose of inhibiting the colon bacilli and used a glass tube provided with about 50 capillary projections. Diffusion currents made the experiment a failure.

(c) *Gabritschewsky's method.*

Gabritschewsky[39] covered an agar plate with a moist sterile sheet of filter paper and inoculated the central portion with the bacterial mixture. After a few hours the typhoid bacilli reached small bits of filter paper placed at varying distances from the center. Bouillon tubes were inoculated with these small pieces of filter paper. He succeeded in isolating typhoid bacilli from the stools in 1 out of 2 cases. In order to prevent the progressive movement of the motile colon bacilli he added a colon agglutinating serum. The value of this method has never been demonstrated As colon and typhoid bacilli are not the only motile bacteria the chance of success with this method would appear to be small; furthermore there are many varieties of colon and allied bacteria and no single agglutinating serum will act on them all.

(d) *Kleine's method.*

Kleine devised a simple method which is described in the monograph by v. Drigalski and Conradi. A suspension of a typhoid stool is made in normal saline solution and this is centrifugalized for some time and allowed to stand for fifteen minutes; then several series of plates are inoculated from the surface of the fluid at intervals of ten minutes. After centrifugalizing the typhoid bacilli will rise more quickly from the bottom of the tube to the surface than micro-organisms that have little or no power of motion.

(e) *Hayashikawa's method.*

Hayashikawa[52] inoculated with fecal material the centers of hanging drops of gelatin, each drop being 7 mm. in diameter. They were placed upon a warm stand. After some time the preparations were removed and the melted gelatin allowed to solidify. He claimed that in the periphery of the gelatin B. typhosus was frequently present in pure culture. As proteus, B. fecalis alkaligenes and other fecal bacteria are as motile as the typhoid bacillus, this method would seem to have slight value.

(f) *Cambier's method.*

Motile bacteria will pass through the pores of a porcelain filter immersed in a nutrient fluid more quickly than non-motile bacteria. Light has been thrown on this subject by the investigations of Pfuhl[116] and v. Esmarch.[32] Cambier[13] found that if Chamberland candles (Marke F) were placed in bouillon at 37°, typhoid bacilli were able to pass through in about eight hours. To hold back the motile species of B. coli he employed instead of bouillon, a 3% peptone solution to every 100 cc. of which 12 cc. of a 1% sodium hydroxide solution saturated with sodium chloride. Bienstock[7] indorsed this method. In the hands of Biffi,[8] Lesieur,[84] Kirsch,[71] Jacqué,[65] the procedure was a failure, owing to the fact that B. coli frequently appeared in the filtrate earlier than B. typhosus. Reischauer modified the procedure by the use of caffeine. He hoped thereby to prevent B. coli from penetrating the wall of the filter. Unfortunately the experiment failed, because caffeine rendered B. typhosus almost non-motile. Reischauer's[122] tests with Berkefeld and Kitasato filters were also unsuccessful.

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Reports of Societies.

THE AMERICAN SURGICAL ASSOCIATION.

Report of Meeting Held at Washington, D. C., May 7, 8 and 9, 1907.

(Concluded from No. 24, p. 786.)

Abstract of paper on

FOUR CASES OF RUPTURE OF THE KIDNEY; WITH REMARKS UPON CONSERVATIVE OPERATIVE TREATMENT,

by Thomas R. Neilson, M.D., Philadelphia.

The 4 cases occurred in the experience of the writer at the Episcopal Hospital, Philadelphia.

Case I was that of a farm-hand, age twenty-five years, admitted to hospital April 14, 1901, having, late on the preceding day, fallen from and been run over by a heavy farm wagon which he was driving.

The symptoms on admission were: pain in the left chest (due to fracture of tenth rib); hematuria; distention of the abdomen with muscular rigidity, especially in the lower part; temperature 99°, pulse 80, respiration 40.

Later in the day, when seen by the writer, the patient presented evidences of continuing hemorrhage and increase in the abdominal condition.

The abdomen was opened through the left rectus muscle, and found to contain a large quantity of blood and clots. None of the viscera were injured and the source of bleeding was the left kidney, which was ruptured, the peritoneum in front of it being torn. A gauze pad placed against the kidney through the opening in the peritoneum controlled hemorrhage while the abdominal cavity was cleared of blood and clots and the wound closed, a glass drainage tube being inserted into the pelvis.

An oblique lumbar incision was then made, blood and clots removed from the region about the kidney and the latter examined. A number of lacerations were found chiefly in the lower half. Strip of iodoform gauze packed firmly about the kidney stopped the bleeding.

Normal saline solution was given during the operation both by intravenous transfusion and by hypodermoclysis. Immediately after operation the condition was critical, but the patient soon improved and gradual recovery took place, a fistulous tract which formed finally healing on July 17.

Case II. A boy, sixteen years old, struck in the right hypochondrium and on the head by the fender of a trolley car.

On admission, there was pallor, dilated pupils (but responding to light), some abdominal pain and distention, no muscular rigidity, hematuria. Vomiting occurred during the night. The general condition was much improved by the next day, and there was less pain.

On the following day the patient complained of great abdominal pain, and tenderness in the loin had increased.

Operation was then done. Abdomen opened through right rectus muscle. Nothing found but a small quantity of blood which had come from the kidney through a tear in the peritoneum. Abdominal incision was closed and an oblique lumbar incision made, blood and clots removed and the kidney found almost bisected by a transverse tear. Hemorrhage was severe. Firm packing with gauze arrested it.

The patient did well until the twelfth day, when after dressing and removal of the last of the gauze a violent secondary hemorrhage occurred. Repacking of the wound, intravenous transfusion of normal saline solution and stimulants failed to cause reaction, and the boy died eight hours later.

Case III. A laboring man, age fifty, working at a coal wharf, was struck in the back by a heavy iron bucket and was taken at once to the hospital, where he was admitted on Dec. 17, 1904.

There was a large hematoma in the right lumbar region, which was exceedingly tender, and the patient voided urine containing a large amount of blood.

Immediate operation was done, the kidney being exposed and delivered through an oblique lumbar incision. There were a number of lacerations of the convex border and of both the anterior and posterior surfaces as well as several contusions. The transverse processes of the first and second lumbar vertebræ and the last two ribs were fractured. Pressure upon the pedicle of the kidney controlled bleeding while loose fragments of bone were removed and the sharp bases of the fractured transverse processes cut off with bone forceps. The kidney was returned, firmly packed with strips of iodoform gauze and the wound partly sutured.

The patient did well and was discharged from hospital on Feb. 11, 1905.

Case IV. A boy, six years old, fell from a pile of lumber. When brought to hospital he was pale, and complained of pain in the left lumbar region, where he was tender to pressure. Bloody urine was obtained by catheter.

Operation was immediately done. Oblique lumbar incision was made and the kidney delivered. There were a number of small tears of the convexity and anterior surface, but it was most severely injured at its lower pole, from which a large piece was entirely detached. This was removed. The kidney was replaced, being firmly held by hammock strips of gauze at its poles, and gauze was firmly packed against it, entirely controlling the bleeding.

The patient did well after operation. For a time urine was discharged from the wound, but only for a few days. The wound was completely healed, and the boy was discharged from the hospital in fifty-one days.

In connection with these cases mention was made of a case, which also occurred in the experience of the writer, of a severe rupture of the liver associated with rupture of the right kidney, the result of a fall. This case was reported to the Philadelphia Academy of Surgery in April, 1903.

The patient was not seen until the third day after the injury. Gauze packing of both kidney and liver wounds stopped the bleeding and recovery took place.

A brief allusion was made to some of the more comprehensive contributions to the literature of injuries of the kidney, beginning with the study by Maas, in 1878, of 71 cases. Dr. F. S. Watson, in June, 1903, published a paper analyzing 660 cases. The writer has been able to find but 30 cases published since then, 16 being included in a table published by A. H. Barkley, in February, 1907. The four cases now reported raise the number to 34.

The highest mortality in subparietal injuries of the kidney is in the cases not treated surgically.

Comparison of the results of conservative operative procedures and nephrectomy, including the statistics of Watson, is made. The results of operations other than nephrectomy give a far smaller death-rate than the latter. This may be thought largely due to the fact that in the former group of cases the injuries were less severe than in those treated by nephrectomy. The writer does not think that this applies to many of the cases, however.

Surgical interference in rupture of the kidney is called for, in the first place, for the control of hemorrhage and the prevention of extravasation of blood or of urine into the tissues, or into the abdominal cavity, in case the peritoneum be torn; secondly, for the treatment of injuries of other organs in addition to those of the kidney which may have occurred; third, to place the kidney, whenever possible, under circumstances most favorable to repair; and lastly, to provide means against the occurrence of infection.

If there are grounds for believing that hemorrhage is taking place, — lumbar tumefaction, severe or persistent hematuria, evidence of fluid in the abdomen, constitutional signs of hemorrhage and indications of complicating abdominal injury, — operation should be done without delay.

Expectant treatment is permissible only when local symptoms are insignificant and slight hematuria alone indicates renal injury.

The choice between abdominal section and lumbar incision must be made upon the merits of individual cases, but if laparotomy be done, the loin should be opened for drainage.

Nephrectomy will be necessary if the kidney is so injured as to be mostly pulpified, if one of its principal blood-vessels is torn, or if it be surgically diseased. But when the injury consists of a single, or even two clean tears, nearly dividing the kidney, or when, as more often happens, there are several or many more or less deep lacerations and contusions, not devitalizing the organ, an effort to save it is justified, if there are fair grounds for believing that there is reasonable hope of repair. If a portion of only the kidney be badly mutilated, partial is preferable to complete removal.

Hemorrhage can be thoroughly controlled by packing with gauze, either plain sterile or iodoform gauze, which can be quickly done, and serves well for drainage, although any dead apices in the perirenal region outside of the packing should be drained by rubber tubing.

Suture of the kidney wounds is applicable instead of packing in only those cases in which there are one or two clear tears, but not for ragged lacerations. It has been done only ten times in 125 recorded cases of conservative surgical treatment. Recovery from operation in all was prompt, a much shorter time being required than in cases treated by packing, but in two the ultimate results were not good, a fistula in one (Watson), and secondary nephrectomy was required in the other, with a fatal dermination. In spite of the abbreviation of the period of recovery by suturing of the renal wounds, the number of cases to which it is suited will be small and gauze packing, satisfactory both for hemostasis and drainage, must be relied upon in the larger number.

Dr. Charles A. Powers, of Denver, Colo., read a paper entitled

PRIMARY SARCOMA OF THE PROSTATE.

His patient was a man of sixty years who had had no bladder trouble until two months before seen, at which time he began to notice a little pain and discomfort on urination and began to rise in the night to urinate. Symptoms rapidly increased and coincidently the patient lost flesh and strength.

On examination the man complained of constant severe pain in the hypogastric region with a constant pain, less severe, in the recto-perineal region. He was urinating about every one and a half hours, urination being attended by increasing difficulty and pain. The urine was entirely normal. Catheterization found no residual urine whatever. Rectal examination revealed a very large, rounded, slightly nodular balloon-like prostate. The finger did not reach the upper margin. The impression gained on digital examination was an unusual one. A tentative diagnosis of sarcoma was made. Operation performed Feb. 12, 1907, perineal prostatectomy. The finger entering the mass through the prostatic urethra began the process of enucleation, which was attended by profuse, alarming hemorrhage. This was difficult to check. Frequent hemorrhages obliged one to stop and pack. Nowhere could a lead be gained between gland and capsule. Friable masses were reamed out from both sides of the gland; these had to the eye the appearance of sarcoma. It was not possible to entirely get beyond the growth. The patient succumbed to a double pneumonia on the fifth day. Histological examination of the growth made by Dr. J. A. Wilder showed it to be a small round-celled sarcoma.

A careful search of the literature revealed but 19 additional authentic cases of primary sarcoma of the prostate microscopically proven. Twelve of these were in children under fifteen years of age, 7 of them were of the small round-celled type. Each of these cases succumbed to operation or to a recurrence of the growth.

Dr. Archibald MacLaren, of St. Paul, Minn., presented a paper on

PROSTATECTOMY.

During the past year two excellent works on this subject have appeared: one by Young and the other by Deaver, in which the two extremes are found, *i. e.*, perineal and suprapubic route. Young always removes the prostate through the perineum; Deaver usually uses the suprapubic operation of Freyer.

The author quotes from Charles Mayo, Murphy and Bellefield, giving their reasons for following one or the other of the above methods. He says that the results obtained by such men as Young, Deaver, Mayo, Goodfellow and many others makes one feel that both operations have been established on a firm and lasting foundation.

As follows, he describes his methods, and reports cases:

"For several years I made the suprapubic operation with excellent results. Some bled profusely and had to be packed; a few old men had infection of prevesical space; these bad cases did better when they had a perineal drain, therefore it seemed best to make the drainage opening first and explore from below, then if it seems easier and safer to remove the prostate from above, we can later make a suprapubic opening. Since adopting this method of perineal exploration I have met with very few cases which could not be successfully removed through the perineal wound. First making a median perineal incision, opening the prostatic urethra and after exploring the bladder with the finger, I have usually found that the prostate could be removed through the prostatic urethra. After exploring the bladder with the finger, withdraw the finger into the prostatic urethra and pass into the urethra a sharp-pointed, short-bladed bistoury, and with the finger as a guide make a slit one inch long in the side wall of the prostatic urethra, cutting deep enough to be certain that the capsule is well divided."

The author objects to Young's method because too much anatomy is exposed, and on account of the danger of rectal fistula, which developed in the only case that he has tried Young's method in. His personal experiences in this operation are given, and some cases reported.

In his last 25 prostatectomies there has been but one death. In this case the man, seventy-five years of age, lived six days after the removal of his prostate, dying of exhaustion. The post-mortem showed double pyelitis with almost total destruction of the kidney substance. There were no cases of fistular with the exception of one rectal fistula in the only case in which Young's method was tried, and all were able to urinate normally.

Dr. William J. Mayo, of Rochester, Minn., in collaboration with Dr. L. B. Wilson and Dr. H. Z. Giffin, of the same city, presented a paper entitled

ACQUIRED DIVERTICULITIS OF THE LARGE INTESTINE.

Diverticulitis of the colon is essentially confined to the sigmoid and is due to the pressure of the hardened feces against the mucous membrane, which herniates through defects in the musculature. The weakness of the intestinal wall which permits this may be congenital or acquired.

Enteroliths form in these little pockets and give rise to infection and suppuration, or to tumor formation, constituting the disease. As a rule, only a few inches of the bowel is involved, although an enormous number of diverticulæ may be exhibited in this space.

The patients are usually obese, and over forty-five years of age. The physical evidences of the disease will be found in the middle and lower left quadrant of the abdomen. A tumor frequently exists with attacks of obstruction of the bowels, or attacks of peritonitis.

The cases seen by the authors naturally drop into three clinical groups: (1) Those in which an intraperitoneal abscess forms with spontaneous evacuation into a neighboring viscus, or evacuates externally by means of operation. (2) Those cases giving rise to acute or chronic obstruction necessitating operation. (3) Those in which the symptoms are mild and recovery occurs spontaneously.

Five of the specimens, secured by resection, enabled accurate pathological study.

The disease is usually mistaken: (1) For left-sided appendiceal abscess; (2) for cancer; and a large number of the cases reported as cures of cancer by resection of the intestine are really cases of diverticulitis. It requires microscopic study to tell the difference. (3) The milder cases are supposed to be fecal impaction.

The surgical treatment of diverticulitis of the colon depends upon the condition present. First, localized suppurative cases must be treated by free drainage. If in conjunction with the infective process, acute obstruction of the bowels develops as in the cases reported, a temporary artificial anus should be made, and if necessary after the infection has subsided, the involved colon may be resected. Second, if a considerable tumor is present and the symptoms do not show a tendency to disappear, it is better to make a primary resection of the affected part of the bowel before abscess and fistula supervene to render patients prolonged invalids.

Dr. Frederic H. Gerrish, of Portland, Me., read a paper entitled

THE DIVERTICULUM ILEI AS A CAUSE OF COMPLETE INTESTINAL OBSTRUCTION IN A MANNER HITHERTO UNDESCRIBED.

The history of a case was given in which, after four days of absolute occlusion of the small intestine, surgical help was invoked. The seat of the difficulty was determined to be near the lower end of the ileum. The abdomen was opened in the right linea semilunaris, and the cause of the obstruction readily found. A diverticulum, starting from the ileum about 50 cm. from the cecum, had passed from right to left through an opening in the attached border of the mesentery, and was held there by a cord extending from its free extremity to the anterior abdominal wall. The intestine proximal to the obstruction was distended and congested; distal to this point was shriveled and pale. The diverticulum was released and cut away; the pedical was sutured, depressed into the lumen of the gut and its site covered with peritoneum. The abdominal wound was closed without drainage. Recovery was rapid and perfect.

The author has failed to find a reported case in which a diverticulum has established just such relations to neighboring parts, and considers the case to be unique in this respect. He advocates early operation for the relief of obstruction, as the high mortality in diverticular cases is plainly due to delay and not to the surgical procedure.

Dr. George Emerson Brewer, of New York City, presented before the American Surgical Association a paper on

THE ETIOLOGY OF CERTAIN CASES OF LEFT-SIDED INTRA-ABDOMINAL SUPPURATION. (ACUTE DIVERTICULITIS.)

The following is an abstract of this paper:

Three cases of left-sided intra-abdominal abscess were reported by the writer, in which no definite cause for the infection could be ascertained at the time of operation. In a fourth case a very definite cause for the symptoms was found. The history of this case was briefly as follows:

A man, forty-eight years of age, was attacked with a sudden right-sided abdominal pain associated with nausea and vomiting. These symptoms continued during the night, and on the following morning there was intense, well-marked tenderness in the lower left quadrant of the abdomen. There was no abatement of the symptoms during the following twenty-four hours, at the end of which he was found to have an elevation of temperature and increase in the pulse rate and all the evidences of a mild infection. When seen by the author two or three days later, there was well-marked rigidity of the left rectus muscle, tenderness on palpation throughout the left half of the abdomen and a distinct mass in the neighborhood of the anterior superior spinous muscles of the left side. Under ether anesthesia the abdominal wall was incised and a large abscess encountered which lay to the outer side and behind the descending colon and sigmoid. This abscess contained several ounces of foul-smelling pus, and in the bottom of the abscess cavity was a definitely formed fecal concretion about the size of a date seed. Careful inspection of the abscess wall showed a small perforation into the sigmoid.

A fifth case was that of a man fifty-eight years of age who was admitted to the Roosevelt Hospital with a diagnosis of acute appendicitis, with generalized peritonitis. On examination the abdomen was everywhere distended and tender, generalized muscular rigidity was present. On opening the abdomen the cavity was found to contain a large amount of foul-smelling pus, the intestines were everywhere injected and in places covered with fibrin. The appendix showed no definite lesion, but on removing the intestines from the pelvic cavity a perforation of the sigmoid was found, and in the immediate neighborhood an oval fecal concretion about the size of an orange-seed was detected. The rent in the sigmoid was closed, the abdomen washed out, but the patient died at the end of forty-eight hours.

From these cases the writer concludes that a rupture of an acquired diverticulum of the descending colon or sigmoid not infrequently gives rise to symptoms of intra-abdominal infection, simulating the appendix very closely. In fact, in the first two of his cases the writer was inclined to regard them as cases of appendicitis with transposition of the viscera.

Acquired diverticula of the colon are not unfrequently observed in elderly people, particularly in those who have suffered from chronic constipation. The diverticula are multiple, varying in size from a small pea to the size of an English walnut. These pouches are herniæ of the mucous membrane through the separated fibers of the muscular coat. They not infrequently contain fecal concretions.

During the past fifty years a few cases of inflammation from gangrene and perforation have been reported by pathologists, but these reports have either been buried in the records of pathological societies, or have been published in journals not largely read by clinicians. For this reason practically no mention of this condition is found in our textbooks, or in current literature. While inflammation of the congenital diverticula has been recognized for a very considerable period of time, the importance of the acquired diverticula from a pathological point of view has not been appreciated by the profession.

Dr. Leonard Freeman, of Denver, presented a paper entitled

THE DESIRABILITY OF EARLY OPERATIONS UPON THE NERVES IN ISCHEMIC PARALYSIS.

Ischemic paralysis (Volkmann) is generally seen in the forearm and is due to tight splints or bandages which lead to death of the muscles by depriving them of blood. The muscle-cells degenerate and are replaced by connective tissue, which slowly hardens and shrinks, causing more or less permanent contracture of the muscles accompanied by flexion of the fingers and wrist. Often the nerve trunks are pinched and injured, being transformed into bands of cicatricial fibrous tissue. This gives rise to pain, loss of sensation and trophic disturbances, often of a serious and permanent disabling nature.

In treatment, energetic massage, passive and active movements, electricity, etc., should be given a faithful trial, and will often succeed, but if improvement in nerve function does not begin promptly and progress satisfactorily, an early operation should be done to relieve the nerve trunks from pressure before they become hopelessly injured, and also for the purpose of aiding the recovery of the muscles by improving their innervation, as the condition of a muscle depends largely upon the condition of its nerve.

If this rule were followed, which seems heretofore never to have been emphasized, the author is convinced that the usefulness of many hands would be preserved which, under the present form of treatment, are doomed to remain more or less useless appendages, owing to hopeless lesions of the nerves. Several illustrative cases are given.

In operating, the nerves are loosened and placed subcutaneously. They are usually compressed at certain definite points (which may easily be reached by appropriate longitudinal incision), the median by the pronator radii teres, the ulnar by the flexor carpi ulnaris and the posterior interosseous by the supinator brevis. Sometimes the removal of a section of hopelessly damaged muscle may be of service in relieving pressure.

Dr. William B. Coley, of New York, reported

A CASE OF OIDIOMYCOSIS (BLASTOMYCOSIS), THE EARLY LESIONS CLOSELY RESEMBLING GIANT-CELLED SARCOMA.

The patient, male, aged twenty-seven years, policeman by occupation, of unusual strength and physique (6 feet 3 inches in height; weight, 270 lb.), was in perfect health up to the 10th of December, 1906, when he was seized with an attack of severe pain in the lumbar region. Two to three days later he had severe pain in the dorsal region of the left foot, which became markedly swollen, and a few days later fluctuation developed. At the end of ten days a small sinus appeared between the great and second toes, from which exuded a dirty, pus-like fluid. A week later a similar lesion developed in the dorsum of the other foot, while in the outer aspect of the right thigh two small flat papillary tumors appeared in the skin itself. These were irregularly circular in shape, depressed in the center, with indurated edges slightly elevated. They quickly became covered with crusts which, on removal, showed pus-like material in the center. Five to six similar lesions, somewhat larger and more protuberant, shortly afterwards developed on the face and nose. Almost simultaneously with the appearance of the skin lesions there developed numerous subcutaneous tumors, widely distributed over various parts of the body, varying from the size of a hazel-nut to that of a small egg. They always began subcutaneously, within the deep layers of the skin, appearing first as smooth, spherical tumors of moderately firm consistence, but slightly elevated above the level of the skin. After a few days they would grow rapidly in size, become much more protuberant and soon begin to show fluctuation. In a few days the entire tumor would seem little more than a thick-walled abscess cavity. If left to themselves, they usually broke after a week or ten days, discharging a cream- or chocolate-colored material. Coincidentally with the appearance of the first tumors, the patient developed a dry, hacking cough, which has persisted up to the present time. Two weeks after the beginning of the symptoms, one of the small subcutaneous tumors was removed for microscopical examination by a well-known pathologist, who pronounced it giant-celled sarcoma. The patient was admitted to Dr. Coley's service at the General Memorial Hospital on Jan. 23, 1907, a little over six weeks from the beginning of the disease. At this time there were altogether about twenty subcutaneous tumors in different parts of the body, in addition to the skin lesions already described. Jan. 25 Dr. Coley opened several of the subcutaneous tumors and Drs. Beebe and Tracy, of the Huntington Cancer Research Fund, made cultures from various media and inoculated several dogs and guinea-pigs. Before these cultures were taken, Dr. James Ewing made the diagnosis of blastomycosis from a slide of the tumors. This diagnosis was made from the peculiar formation of the giant-cells. At the end of about four days pure cultures developed of an organism which was at first regarded as blastomycosis. Similar subcutaneous lesions were produced upon dogs from pure cultures of the organism.

Numerous blood counts were made during the course of the disease; these were always a moderate leucocytosis, 18,000–30,000 increase in polynuclears and gradually diminishing hemoglobin.

By the 18th of April the patient had developed sixty lesions similar to those described throughout the body. Since then a very large number of new tumors has developed and the patient has become greatly emaciated, his temperature sometimes falls as low as 95° and he is not expected to live more than a few days. He has recently begun to raise a purulent-looking sputum in which the organism has been found. He has also had a purulent discharge from the rectum which has, likewise, shown pure cultures.

The clinical course of this case has been strikingly similar to that of coccidioidal granuloma, as reported by Philip King Brown, of San Francisco.[2]

Dr. C. A. Porter and **Dr. C. J. White**, of Boston, presented a paper on

A CASE OF MULTIPLE CARCINOMATA FOLLOWING CHRONIC X-RAY DERMATITIS.

This article reviews ten cases found in the literature on the subject, and presents in detail an additional case of the authors'.

They state that the clinical appearances of the chronic x-ray dermatoses suggest a precocious and extreme senility of the skin; that microscopic examination also shows the most extraordinary changes, always of a degenerative character, unequalled in their severity and chronicity by the effects of any other agent.

In view of these facts and the histories of the 11 cases reported, Dr. Porter has reached the following conclusions:

1. For the atrophic condition of the skin and the telangiectases nothing can be done.
2. Hypertrophic changes, keratoses and warts may, with safety, be treated in the usual manner. If such treatment fails, excision with or without skin grafting will probably relieve the pain and result in a cure.
3. Excision and grafting will prove to be the best treatment for recurrent fissures.
4. All ulcerations which, under ordinary treatment, remain open after three months, should be thoroughly excised and very carefully examined. The subsequent treatment, to be determined by the result of the microscopic examination, should be skin grafting, further excision and grafting or amputation.
5. As the history of almost all of these cases of severe and chronic dermatitis dates back to early exposure, with the protection which our present knowledge demands, it is to be hoped that the number of victims of too enthusiastic work in an untried field will steadily diminish.
6. In the meantime there is no hesitation in recommending the *early excision of all persistent x-ray ulcerations* in order that subsequent malignant degeneration may be prevented.

Dr. Stephen H. Weeks, of Portland, Me., contributed a paper at the meeting of the American Surgical Association, entitled

SOME CONSIDERATIONS IN REGARD TO BRAIN SURGERY.

His conclusions were as follows:

1. There are two essential preliminaries to any operation on the brain. The first is the diagnosis of the nature of the disease which is present and the second is the diagnosis of its location.
2. The most important landmarks upon the surface of the head by which certain motor and sensory areas are determined are the fissure of Rolando, fissure of Sylvius, the parieto-occipital fissure and the fissure of Bichet.
3. It has been determined by recent experiments and observations that the motor area is largely in front of the fissure of Rolando, and the sensory area is largely behind this fissure.
4. Each hemisphere controls movements on the opposite side of the body, but as the right hand is more generally used and is better trained than the left, this area is larger on the left hemisphere than on the right.
5. The speech areas are limited to the left hemisphere in right-handed persons, and to the right hemisphere in left-handed persons. The speech hemispheres are of four kinds: the motor speech area, the auditory speech area, the visual speech area; and the power of writing is a part of speech and is usually lost when the motor speech area is destroyed, but its exact location is not fully determined.
6. Operations may be performed for the relief of Jacksonian epilepsy, for the cure of imbecility, for the removal of clots, for the opening of abscesses, for the excision of tumors, for the relief of intracranial pressure with or without drainage of the lateral ventricles and for the cure of traumatic insanity.
7. Tumors of the brain, collected by Starr and other authors, show that in order of frequency they stand about as follows: tubercular gumma, glioma, cysts, carcinoma, syphilitic gumma, with a small proportion of fibroma. In all probability gummata, either of tubercular or syphilitic nature, are much more frequent than all the other varieties put together.
8. The question of anesthesia in brain operations is a very important one. My experience has been limited to general anesthesia. I have never made use of intraspinal injection of cocaine. Sir Victor Horsley uses chloroform altogether. He claims that ether causes, besides a rise of blood pressure, a notable increase of blood venosity, and therefore much additional and

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[2] Jour. Amer. Med. Asso., March 2, 1907.

troublesome hemorrhage. Chloroform, on the contrary, causes a fall of blood pressure with less blood venosity. Sir Victor uses Mr. Vernon Harcourt's apparatus, by which the chloroform can be used in known quantities. The dose can be regulated by the movement of a hand on top. During the administration of chloroform there is generally induced a moderate degree of asphyxia which has the effect of raising the venous pressure, with an increase of oozing of blood. To relieve the asphyxia which causes the oozing, a stream of oxygen gas is directed through the air inlet of the Harcourt regulator which quickly relieves the asphyxia. The oozing of blood quickly stops as the color changes from dark purple to a bright scarlet.

9. Intracranial disease is liable to produce optic neuritis, which usually ends in total blindness. The optic neuritis is due to intracranial tension and is amenable to surgical treatment. In no case of optic neuritis should the process be allowed to continue after it has once been diagnosed. Blindness can be averted by opening the subdural space early in cases of intracranial disease. This operation can best be done in the basal temporal region of the right side, assuming that no attempt is made to attack the disease itself.

10. Shock may be in great part avoided by dividing the operation into two stages, the interval between them being about five days.

11. To avoid the danger of septic invasion, which is greater in operation on the brain and spinal cord than operation involving the abdominal cavity, the less drainage employed the better, and consequently every effort should be made to close the skin wound as early as possible.

Book Reviews.

The Muscles of the Eye. By Lucien Howe, A.M., M.D. In two volumes. Volume I, Anatomy and Physiology. New York and London: G. P. Putnam's Sons. 1907.

Dr. Howe states that the object of this study is: "To collect data relating to this subject, separating, as clearly as possible, demonstrated facts from statements based on theory, and to formulate these facts concisely in the simplest terms possible." A few mathematical statements have been retained, "either because they cannot be found elsewhere, or because they show the basis of other facts." In this first volume, which is a digest of an investigation carried through several years, it has been the intention to present what is known up to the present time about ocular muscles, from an anatomical and a physiological standpoint. Its opening chapter, besides being a very strong plea to the ophthalmologist to supplement his reading of standard textbooks by actual dissection, is found to be an excellent monograph on laboratory technique. It will likewise be noted that mention has been made of primary and secondary muscular insertion, the possibility of detecting a malposition of the lens by an ingenious modification of the ophthalmometer of Javal, the estimation of the lifting power of the adductors, and the measurement of lateral movements by photography. In part first, anatomical relations have been described quite thoroughly and convincingly, and in part two, the physiological problems have been discussed first, by considering the behavior of one eye while in a state of rest, afterwards while in action, although not actually in motion (accommodation), and then while in motion. The behavior of both eyes is then taken up and studied, first, in a state of rest, in order to determine the visual and vertical axes, and then, while in motion, by which it will be seen that the excursions of both eyes, while in motion, admit of classification into four groups of associated movements, under which headings the question of torsion, true and false, the laws of Donders and Listing and experiments with after-images have been carefully explained. As a result of this well sustained effort, Dr. Howe has come to believe that, considering the complexity of the subject, it is not amiss to emphasize as far as possible "the axiomatic truth, that thorough study of the anatomy and physiology of muscles is essential to a working knowledge of their pathology"; that, in order to clear up the confusion of ideas, more exact anatomical and physiological definition is necessary; and that, "physiologically it is necessary for us to distinguish the passive states (the 'phorias) from active conditions (the 'ductions)." There should also be a greater uniformity in the methods of making examination. Novel, but practical, and probably also original, is appendix C, in which will be found a list of thirty-five important ophthalmological periodicals, with tabulated information as to their distribution among twelve professional libraries at several medical centers. This volume contains four hundred and fifty-five pages of text, many illustrations of the subject matter, and also several biographies and photographs "of a few eminent students of the ocular muscles." W.D.H.

The Medical Student's Manual of Chemistry. By R. A. Witthaus, A.M., M.D., Professor of Chemistry and Toxicology in Cornell University. New York: William Wood & Co. 1906.

This standard work in chemistry has grown in comprehensiveness and size until it is no longer a manual, but rather an extensive treatise on chemistry. Repeated favorable mention has been made in this Journal as the five previous additions have been reviewed, and it seems fitting now to point out some of the changes which have taken place in this sixth edition.

The section on chemical physics and general chemistry has been entirely rewritten and brought up to date. That portion devoted to organic chemistry has been rearranged in the light of further information upon the relationships of substances, and it has been also somewhat extended. The greatest change noted is in the section on Physiological Chemistry which has been almost entirely rewritten and greatly enlarged.

We take pleasure in again recommending the work as a textbook and for reference.

THE BOSTON

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THE MEETING OF THE MASSACHUSETTS MEDICAL SOCIETY.

The one hundred and sixteenth annual meeting of the Massachusetts Medical Society, held in Boston, last week, added another highly successful meeting to the many which have preceded it. Fortunately for the comfort of the physicians in attendance the weather was cool, in marked contrast to the usual condition at the time of this meeting.

The report of the Secretary, Dr. Francis W. Goss, showed that one hundred and seventy new members had been admitted during the year and that twenty-seven had died. Attention was drawn to the desirability of maintaining a high standard of medical education, and there was strong expression of opinion that the society should maintain such a standard. The management this year adopted the plan, which has been in successful operation for several preceding years, of reducing the number of formal papers and of substituting in part demonstrations of clinical methods. Although these demonstrations were not carried out in so great detail as when first instituted, they proved a valuable and instructive part of the meeting. There can be no question that this plan meets with the approval of the visiting physicians and that it should be continued from year to year as a regular part of the program. The usual exhibits were in evidence; particularly noteworthy among these were the Kaiserling pathological preparations from the Boston University School of Medicine and the Harvard Medical School.

Perhaps the most striking feature of the entire meeting was the attention given to the general subject of tuberculosis which reflects, no doubt, the general interest which the disease is exciting in the community at large. In the Shattuck Lecture Dr. F. C. Shattuck gave an admirable practical *résumé* of the present status of the subject and made a strong plea for further co-operation between physicians and various corporate interests. It is at least a comfort to realize, as Dr. Shattuck put it, that "the remedy is so simple as to be within the reach of the least intelligence and the most slender purse." Dr. J. F. Alleyne Adams, of Pittsfield, added to the discussion of the general subject in the annual discourse, in which he spoke especially of "The Segregation of Consumptives." The section meetings also took up the matter from a more technical standpoint and the after dinner speakers likewise found opportunity to make comment from their points of view. His Excellency Governor Guild was particularly emphatic in his expression of opinion.

The dinner was held as usual at one o'clock on the second and last day of the session and was very largely attended. The Glee Club under the direction of Dr. R. C. Cabot did its full share toward increasing the festivity of the occasion. Speeches were made by a number of men high in professional and civic life. Perhaps the most noteworthy of the after-dinner remarks were those by the Hon. Louis C. Southard on the subject of expert medical evidence. Mr. Southard first pointed out the evils which are sufficiently apparent to all, and perhaps particularly to physicians, who are often made the victims of the present system. The suggestion as to a remedy for the present somewhat unfortunate state of affairs has been made before, but must always appeal to the common sense of the average citizen, namely, that experts be appointed by the Court absolutely irrespective of one or the other side in the controversy. We trust that this consummation may not be long in coming, but, if the experience of the past is to be any criterion of the future, the opposition in influential quarters is sure to be determined. Other speakers were Governor Guild, the Rev. Dr. George A. Gordon, Dr. Joseph D. Bryant, President of the American Medical Association, and Dr. Frank G. Wheatley, of Abington, Mass.

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ANAPHYLAXIS.

Many new words find their way into the medical vocabulary from year to year. This one, "anaphylaxis," we owe to Richet (Compt. rend. Soc. biol., 1905.). It means an increased susceptibility to a substance shown by animals which have survived a small dose of this same substance. Guinea-pigs may receive a large dose of horse serum and the effect will be practically *nil*. Yet if instead they are given an inoculation of a very small dose, .0001 to .01 cc., of horse serum and then after ten days or two weeks receive a larger dose, 5 cc., of horse serum they have violent and characteristc symptoms and, as a rule, shortly die.

Gay and Southard (Jour. of Med. Research, 1907, xvi, 143) have very recently published from the laboratory of the Danvers Insane Hospital an interesting study of this reaction. They consider the hypersusceptibility to be due to the presence in the guinea-pig of a substance for which they suggest the name, "anaphylactin," which is not neutralized and not eliminated by the animal body. This anaphylactin causes a heightened power of cellular assimilation for other toxic constituents of the horse serum and so produces toxic symptoms when the second dose of horse serum is given. For the increased susceptibility to develop, an incubation period of ten to fifteen days is necessary, but once developed it lasts for a long time. If the primary dose is a large one, a much longer time is required for the development of hypersusceptibility, in other words there is a delay in the incubation period. There is no evidence that the anaphylactin increases in amount within the guinea-pig but simply persists.

The lesions produced by the toxic phase of this reaction are multiple hemorrhages, more frequent in the stomach, cecum, lungs and heart. These hemorrhages appear to be the result of extensive fatty changes in the capillary endothelium. Fatty changes also are common in many other cells as in the gastric epithelium and in the myocardium and voluntary muscle. Of particular interest is the rapidity with which these fatty changes take place, sometimes only a few minutes being required. At first thought this might seem impossible, but in the light of much of our present knowledge of so-called fatty degeneration this is not the case. We know that cells frequently contain extractable fat which at the same time is not visibly demonstrable by microchemical staining methods, and that visibly demonstrable fat may be present in large amount without the presence of an increased amount of extractable fat. In other words, it is very generally believed that, in part, the fat of fatty degeneration arises within the cell as the result of some physical or chemical change in fatty substances by which fat not previously visibly demonstrable appears in the form of fine demonstrable and stainable droplets. This change apparently takes place with very great rapidity in this serum disease of guinea-pigs as demonstrated by Gay and Southard, and there, as under many other conditions, a fatty change is no evidence of the chronicity of a process, an assumption not infrequently made.

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AN EXPERIMENTAL STUDY OF THE ACTION OF COLEY'S MIXED TOXINS ON SARCOMATA.

The method of treatment of inoperable sarcomata by injections with the mixed toxic products of the streptococcus of erysipelas and the bacillus prodigiosus as introduced by Dr. W. B. Coley, of New York, has received extensive clinical application, frequently with very gratifying curative results. Among some, however, there has been a feeling of distinct skepticism as to the value of this treatment. New evidence of the favorable action of such toxins on sarcomata has been adduced, however, by the results of the animal experimentation of Drs. Beebe and Tracy, of Cornell University Medical College, reported before the Section on Pathology and Physiology of the American Medical Association at its recent meeting. These, added to the accumulating clinical reports, indicate a distinct curative action for these toxins, and especially emphasize the important rôle played by the bacillus prodigiosus toxin.

In dogs occurs naturally a tumor transmitted by a coitus and regarded by many as an infectious granuloma. Dr. S. P. Beebe has conducted a series of studies of these tumors by inoculating them from dog to dog. He regards them not as infectious granulomata but as tumors of the sarcoma group capable of transmission by inoculation as is true of mouse carcinomata. Transmissions by coitus he considers as an inoculation of the tumor into an abraded epithelial surface.

Dr. Martha Tracy has inoculated such dogs with mixed toxins and bacillus prodigiosus toxin alone. As a result she obtains a marked diminution in the size of the tumors and eventually their disappearance with a reaction similar to that following inoculation with the toxins in man. Frequently larger tumors break down and softened necrotic tumor material may be removed by aspiration. Dr. Tracy (Jour. of Med. Research, 1907, xvi, 307) has further shown the distinctly toxic action of substances contained in the bacterial cell of the bacillus prodigiosus, one of which locally consists in the formation of an area of coagulation necrosis with surrounding inflammatory reaction.

This work of Drs. Beebe and Tracy is of very great interest in connection with the clinical work of Dr. Coley on the treatment of sarcoma. It indicates further the activity of a Cancer Research Commission directed toward improving the treatment of neoplasms, for this work was carried on under the auspices of the Huntingdon Fund for Cancer Research.

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MEDICAL NOTES.

Centenarians. — It is reported that Mrs. Catherine C. Langlands died in Newburyport recently at the age of one hundred and three. By birth she was a Scotchwoman.

Thomas E. Sauls died in Joplin, Mo., June 17, also at the reputed age of one hundred and three years. He took part in the Seminole, Mexican and Civil wars.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 19, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 52, scarlatina 37, typhoid fever 7, measles 77, tuberculosis 41, smallpox 0.

The death-rate of the reported deaths for the week ending June 19, 1907, was 17.15.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 15, 1907, was 210, against 190 the corresponding week of last year, showing an increase of 20 deaths and making the death-rate for the week 18.19. Of this number 101 were males and 109 were females; 205 were white and 5 colored; 138 were born in the United States, 68 in foreign countries and 4 unknown; 15 were of American parentage, 129 of foreign parentage and 36 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 11 cases and 4 deaths; scarlatina, 52 cases and 0 deaths; typhoid fever, 9 cases and 1 death; measles, 75 cases and 1 death; tuberculosis, 46 cases and 26 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 20, whooping cough 1, heart disease 10, bronchitis 5 and marasmus 8. There were 18 deaths from violent causes. The number of children who died under one year was 36; the number under five years 55. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 77.

There were 10 cases and 5 deaths reported from cerebrospinal meningitis during the week.

The Beverly Hospital. — Beverly, Mass., is to have a new hospital. The new group of buildings will occupy an elevated position off Herrick Street, and will cost about $250,000.

Dr. George F. Jelly Honored. — Dr. George F. Jelly, of Boston, received the honorary degree of Doctor of Science at Brown University at its recent commencement exercises.

Bequests. — It is reported that owing to the settlement of disputes regarding the will of the late Henry Mulliken, of Boston, Harvard University, Tuskegee Institute and the Waltham Hospital will each receive about $300,000, the division of property to be made after three years.

Accidents of the Seventeenth of June. — Bunker Hill Day is likely to prove a rival to July Fourth as regards accident, if this year is to be taken as a criterion. Upwards of one hundred were more or less seriously hurt, some of whom have lost fingers and hands. The accidents in general occurred from the careless use of firearms and explosives.

An Epitaph: Stone in the Bladder and on the Tombstone. — The following epitaph was copied from an old tombstone in the cemetery at Rocky Hill, Conn. It reflects the surgical situation in the time of the Revolutionary War.

Edmund Barnes Son of
Mr. John and
Mrs. Esther Barnes
who passed the Painful Operation
of Cutting for
The Stone in the Bladder
March 3, 1779 and died
on the 23d, In the 10th
year of his age.

Another Epitaph: Copied from an old tombstone in the Groton, Mass., Burying Ground, June, 1907.

Here lies the body of
Silas Barron
son of
Mr. Silas Parker Barron
and Mrs. Abigail, his wife,
who died of the 108
convulsion fit.
Aug. 7. A.D. 1766.
aged 3 wk. 1 da.

NEW YORK.

Fellowships of Alumni Association of College of Physicians and Surgeons. — At the commencement of Columbia University, on June 12, the two fellowships of the Alumni Association of the College of Physicians and Surgeons, of the value of $500 each, for scientific research work in anatomy, physiology or pathology were awarded respectively to Dr. Hermann von S. Schulté, for research work in anatomy, and Dr. Wilbur Ward, for research work in pathology. This is the second time that this fellowship has been won by Dr. Schulté, who is connected with the department of anatomy in the Columbia medical school. The Alonzo Clark Scholarship, to promote the discovery of new facts in medical science (annual value about $600), was awarded to Dr. Augustus B. Wadsworth.

First Medical Lectures in New York. — The first medical lectures in King's College (afterwards Columbia) were given in a course on anatomy delivered in 1763 by Dr. Samuel Clossy, a graduate of Trinity College, Dublin. Four years later Dr. Clossy and five other physicians laid before the governors of the college a proposal to institute within it a school of medicine, and offered to give courses of lectures on the various branches of medical science. On Aug. 14, 1767, the board of governors voted to establish the medical school and to appoint these six physicians as professors in it, and by this action King's College founded the second school of medicine in America. It was only two years earlier that the medical school in Philadelphia, which was the forerunner of the University of Pennsylvania, was established.

Special Observance at Closing Exercises of College of Physicians and Surgeons. — The College of Physicians and Surgeons celebrated its one hundred and fortieth anniversary with a special observance in connection with the closing exercises of Columbia University, of which it is the medical department. On June 10 the graduates inspected the laboratories and museums and attended clinics at the Roosevelt and other hospitals, and in the evening there was a smoker at the Columbia University Club. On June 11, in the afternoon, a University conference was held, at which President Nicholas Murray Butler gave the address of welcome, Prof. John G. Curtis delivered an address on the history of the medical school and Prof. William H. Welch, of Johns Hopkins University, one on medicine. In the evening a banquet was given at Delmonico's by the Alumni Association of the school. Dr. Timothy M. Cheesman, president of the association, was the toastmaster, and addresses were made by President Butler, the Rev. Dr. Aked, recently of Liverpool, George L. Rives, president of the board of trustees of Columbia, Dr. Samuel Lambert, dean of the College of Physicians and Surgeons, and Dr. Thomas Darlington, president of the Health Department. On this occasion Dr. L. Bolton Bangs, chairman of the prize essay committee, announced that the Cartwright Prize of the Alumni Association had been awarded this year to Dr. R. M. Yerkes, of Cambridge, Mass. The essay which won in this competition bore the somewhat curious title: " The Physiology of the Senses and the Behaviour of the Dancing Mouse."

Installation of Mechano-Therapeutic Apparatus. — Through the efforts of Dr. Charles H. Jaeger, instructor in orthopedic surgery in Columbia University and attending surgeon to the orthopedic department of the German Hospital and Dispensary, a complete system of mechano-therapy has been inaugurated in the new Anna Ottendorfer Dispensary building of the hospital. On June 11 a private inspection of the apparatus was given, and Dr. Jaeger made an informal address, which was in part as follows: " It seems strange that the practice of medicine confines itself to the curing of the disease, and entirely omits thorough regular systematic exercises to achieve a restoration of the normal functional activity. As soon as a wound is healed the patient is discharged from the hospital, though the hand, foot, leg, or whatever other part to which the injury may have happened, is stiffened and useless. It is left entirely to the will of the patient or to the efforts of a more or less capable masseur to restore the part to its normal condition. Of course, the masseur is within the reach of only the rich man, while the poor man, who most needs a quick restoration of his physical abilities, is left to his own ill-directed efforts. These machines have been so planned that there is not a joint or muscle in the entire body which cannot be exercised; the idea being, not to develop strength, but to secure a return to the normal condition. The system might be termed medical gymnastics, by means of which any one who has suffered from a fracture or injury which has disabled a joint or set of muscles can have the part restored to full working capacity." Dr. Jaeger went on to say that America was the only large nation in which these machines were not now being used in its public hospitals. In Germany, where the plan originated, they were considered a necessary part of their plant in 265 public hospitals and 33 military hospitals, while they were also employed by 15 universities and 28 trade unions. Even where patients were able to obtain the services of masseurs, the experience which had now accumulated justified the estimate that these machines reduced the period of convalescence about 50%.

Mortality in May. — That an unusually late and cold spring need not be an unhealthy one is again demonstrated by the Health Department statistics for May. During that month the reports show that the mortality in the city represented an annual death-rate of 17.49, while in May of last year, an average season as regards temperature, the death-rate was 18.53. The corrected rate, excluding non-residents and infants under one week old, was 16.59. It is noteworthy that there were exactly the same number of deaths, 30, from cerebrospinal meningitis in the corresponding week of last year. In the following week of 1906 the deaths declined to 17, and in this week of the present season to 21. In May there was one death from smallpox. This and two deaths in April have been the only fatalities from this disease reported in the city for many months.

Current Literature.

The Journal of the American Medical Association. May 25, 1907.

1. Reed, C. A. L. *Medical Legislators of Two Republics.*
2. *Hallberg, C. S. N. *The External Preparations of the United States Pharmacopeia.*
3. Hektoen, L. *Iso-agglutination of Human Corpuscles with Respect to Demonstration of Opsonic Index and to Transfusion of Blood.*
4. *Bulkley, L. D. *Danger Signals from the Skin.*
5. *Babcock, W. W. *Transbrachial Anastomosis.*
6. Edmunds, C. W. *The Standardization of Cardiac Remedies.*
7. Shoemaker, J. V. *Endemic Typhoid Fever from Infected Milk.*
8. *Hastings, T. W. *The Estimation of Hemoglobin Content of Blood with Modern Instruments.*
9. Cohen, M. *Report of a Case of Amaurotic Family Idiocy.*
10. *Jackson, C. *Thymic Tracheostenosis, Tracheoscopy, Thymectomy, Cure.*

2. Hallberg calls attention to the principles adhered to in the revised pharmacopeia, which should govern the choice of vehicles in preparing ointments. Vehicles belong to three classes: (1) non-penetrative substances, simply protective, such as vaseline, or petrolatum, (2) semi-penetrative substances, such as lard and olive oil, used in emollient or astringent preparations, and (3) penetrative or absorptive substances, such as lanolin, to be used in ointments applied to produce constitutional effects.

4. Bulkley protests against the common tendency to regard diseases with their chief manifestations in the skin as diseases of the skin only, without constitutional significance. Contrary to this belief are the facts that the function of the skin is important to the health of the body, and that in the exanthemata, and also in other conditions, the cutaneous eruption is but an incident in a general morbid process. In syphilis the eruption is the most positive diagnostic sign, but when this has disappeared it is wrong to suppose, as many patients and some physicians assume, that the disease has been overcome. Eczema often proves to be a first sign of nervous or other disorder. Acne also is often the result of faulty hygiene; it is extremely often associated with some disorder of the sexual apparatus. Urticaria, pruritus, boils and carbuncles, purpuric eruptions, erythema nodosum and the pigmentation of Addison's disease, all illustrate the importance, in dealing with the diseases of the skin, of an appreciation of their intimate connection with general constitutional conditions.

5. Babcock reports the case of a four-year-old boy with paralysis and wasting of the right arm and shoulder, the only motor power remaining being a slight extension of the wrist and pronation of the hand. Sensation was not impaired. After reviewing the various possible operations for relief and finding most of them impracticable, it was resolved to attempt an anastomosis with the brachial plexus of the opposite side. The patient being under ether, the right brachial plexus was exposed from a point just above the clavicle to the region where the nerve trunks emerge from between the scalenus anticus and medius muscles. The sixth cervical nerve seemed specially wasted and atrophic. It was divided in half close to its point of emergence and by delicate dissection half of the nerve trunk was isolated from above downward. This separation was carried into the adjacent anastomosing nerve trunks, and in this way two nerve cords of fair size were separated down to a point slightly above the clavicle. The left brachial plexus was then exposed, the prolongation of the sixth cervical nerve was divided nearly in half close to the clavicle, and a bundle of nerve fibers about two inches in length was isolated by splitting the nerve trunk from below upward. A small transverse incision was then made above the suprasternal notch, and canals were bluntly tunneled through between the anterior muscles of the neck and trachea, connecting the lateral with the median incisions; the free ends of the separated nerve bundles were gently brought through into the median incision and united, end-to-end, by fine chromicized catgut, thus forming a nervous bridge between the two brachial plexuses, having a central attachment on the left and a peripheral one on the right side. The union was reinforced by forming a partial fascial sheath about the point of nerve union, and all three wounds were carefully closed in layers without drains. Following the operation there was some tenderness along the nerve trunks of the right arm, which gradually subsided. No disability or nerve disturbance was seen at any time in the left arm. In three weeks there were signs of returning power in the right hand. In February, 1907, three and a half months after the operation, the improvement was far beyond expectations. The nutrition of the arm was good and it had increased in circumference. Extension, previously limited to the wrist, was possible in all the fingers, the child could partially flex the wrist and all the fingers and thumb, and adduction and abduction of all the digits had been gained. Pronation of the hand remained, and there was some power of supination. The shoulder drop had disappeared and the shoulder could be elevated and carried forward or backward at will; there was excellent power of rotation, especially inward rotation. Marked development of the scapular and pectoral muscles and of the trapezius had occurred, but the paralysis and atrophy of the deltoid and upper arm muscles persisted. The child could support its body against the extended arm, and used the hand constantly to grasp things and to aid the other hand. While the splitting of the nerve trunks probably helped by relieving tension and possibly by favoring new adjustments of the fibers, Babcock is inclined to consider the formation of new nerve paths from the left into the right brachial plexus the chief factor in the restoration of function in this case. This preliminary report is, therefore, offered to prove the technical practicability of transbrachial anastomosis, and to suggest the desirability of a more extended trial of the method in certain cases of brachial palsy not amenable to treatment by milder measures.

8. Hastings discusses the various instruments used to

estimate the hemoglobin-content of blood and their relative merits. The Fleischl-Miescher instrument, he concludes, is the most reliable. Sahli's instrument is preferable in theory and the most reliable when the solution with which it is filled is properly standardized, but in many instruments obtained at retail the solution is not correct. Dare's instrument, of which, however, only four examples were studied, gave excellent results except in cyanotic or plethoric patients. The Tallquist scale is condemned as worthless for quantitative results.

10. Jackson reports a case of thymic asthma in which he was able to see, through the tracheoscope, that the trachea was compressed from before backward so as to interfere with respiration. This is the first time that this phenomenon has been directly observed; many writers have denied the possibility of its occurrence, although no other explanation has been found for cases of sudden death in children with symptoms of respiratory obstruction in which at autopsy nothing abnormal has been found except a large thymus. In Jackson's case the enlarged thymus was demonstrable by the radiograph. Following the withdrawal of the tracheoscope from the tracheotomy opening the child was entirely unable to breathe, and for four weeks until operation was possible he breathed only through a long tracheal canula which passed down nearly to the bifurcation. The thymus was finally removed at operation by a transverse incision above the sternum, through which the finger was passed down into the mediastinum, the child being etherized through the long tracheal canula, without which the operation probably could not have been performed. This canula was removed on the eighth day. There was never the slightest stridor after the thymectomy; three months later the boy was in good health and well nourished. [F. W. P.]

June 1, 1907.

1. Senn, N. *The Final Triumph of Scientific Medicine.*
2. Wyman, W. *The March of Sanitation.*
3. *Edebohls, G. M. *Exploration and Decapsulation of the Other Kidney before Completing a Nephrectomy.*
4. *Voorhees, I. W. *Erythromelalgia.*
5. Kelly, H. A. *Bimanual Vibrotory Palpation.*
6. *Mayo, W. J. *Radical Cure of Umbilical Hernia.*
7. Herzog, M. *Three Cases of Extensive Multiple Keloids in Chinamen, following the Habitual Hypodermic Use of Morphin.*
8. Hatcher, R. A. *Isopral and Hydrated Chloral.*
9. *Burr, C. W. *Paranoia, Its Varieties and Medicolegal Importance.*
10. Deaderick, W. H. *The Pathogenesis of Hemoglobinuric Fever.*

3. Edebohls urges that in all cases before a kidney is excised the other kidney should be explored through a lumbar incision and decapsulated. The reasons for this are (1) the necessity of determining with all possible care the existence of one sound kidney, and (2) the increased capacity for functional activity of the kidney which he believes to result from decapsulation. In 460 patients Edebohls has found 3 who had only one kidney.

4. Voorhees treats at some length of the theories of erythromelalgia and describes what is known of its symptoms and treatment. He is inclined from his investigation of the subject to agree with Lewis and Benda, that it is not a distinct disease entity, but is a symptom-complex that may have either a central or a peripheral origin, and, with Eulenberg, would put it in the same class with Raynaud's disease, as simply different phases of the same condition, the one being dependent on undue dilatation of the terminal arterioles and the other on an undue contraction of the same. They have been observed in the same patient by different observers, and there is not the slightest doubt, Voorhees says, that they exist together as symptoms of some marked pathologic state, and notably in that disease of the blood vessels known as arteriosclerosis. Treatment has generally been ineffective, and he considers that in intractable or specially distressing cases, even recourse to surgery would be advisable.

6. Mayo describes his overlapping from above down method of operation for the relief of umbilical hernia, by which he finds the largest protrusions can be satisfactorily reduced and the hernial opening closed without tension. The tendinous aponeurotic structures involved are among the strongest in the body, and when overlapping is accomplished the resistance is nearly perfect. The sutures merely maintain the structures in apposition, while the intra-abdominal tension itself prevents displacements. The operation is simple. Two transverse elliptical incisions are made, cleanly exposing the neck of the sac and the aponeurotic structures for several inches above and below it. The neck of the hernial protrusion is cleared as high as the aponeurotic structures extend, the sac is then opened and any contained intestine returned into the abdomen. The contained omentum, if any, is ligated in sections on a level with the abdominal orifice and the stumps returned into the abdomen. The sac, with all adherent omentum, including the skin, is cut away without further manipulation. A stout curved needle threaded with strong celluloiden linen is passed from without in through the aponeurotic structures and peritoneum from two to three inches above the margin of the opening. A large tablespoon to guard the needle as it enters the peritoneal cavity is a valuable aid. The needle and thread are drawn down and out of the hernial opening. A firm mattress stitch is then caught in the upper edge of the lower flap about one fourth of an inch from the margin, the needle is then carried back through the hernial opening into the peritoneal cavity and made to emerge one third of an inch lateral to the point of original entrance. On each side of this is introduced a similar mattress suture of strong chromicized catgut. These three sutures are drawn tight, pulling the entire thickness of the aponeurotic and peritoneal structures behind the upper flap. The margin of the upper flap is now retracted to expose the suture line, and what gaps exist are closed with catgut sutures. The upper flap is now sutured to the surface of the aponeurosis below by continuous chromicized catgut suture and the skin and superficial fat closed. The patients are kept in bed for from twelve to twenty days. It is thirteen years since this operation was first performed, and of the 88 patients operated on between 1894 and 1905, 75 were traced. One had a partial relapse described by her physician as a boa-shaped stretching at the site of the former operation, but giving no inconvenience. Another patient supposed to have suffered a relapse was operated on and a second opening found to exist above and lateral to the umbilical opening which was found closed. The operation is illustrated.

9. Paranoia, according to Burr, is one of the degenerative insanities; he has never met with a true paranoiac with a reliable family history who did not show some ancestral defect, and he never knew a boy or girl of biologically good family history to develop the disease. Its essential symptoms are intense egotism, delusions of persecution and of grandeur which are always systematized and always reasoned about, absence or perversion of the moral sense, and an apparently strong but really weak intelligence. Minor symptoms are hallucinations, falsifications of memory and sexual perversions. A negative symptom of importance is the absence of signs of physical disease of either the central nervous system or of the abdominal or thoracic viscera. Anatomic abnormalities, the so-called stigmata of degeneracy, according to Burr, are not more frequent than in the general population, though individual patients sometimes show many marked signs. Although in the majority of cases the patient is not recognized as actually insane till some time between the twenty-fifth and thirty-fifth years, the onset is really a slow one. There is a prodromal period of years and the abnormal beginnings are apt to appear at puberty or during adolescence, in change of character and disposition, etc., and finally, usually in the twenties or early thirties, marked signs of insanity appear as delusions of suspicion and of importance, largely determined in their nature by education and environment. Those of persecution usually come first and those of grandeur are used to explain the persecution. Whatever the delusion may be, it is reasoned about, and the reasoning, though faulty, superficially may appear logical. Almost always there is some slight truth used as a basis of the delusion and the plausible patient may sometimes impose on kind-hearted persons so as to lead them astray. The delusions are permanent, lasting for years till the mental feebleness becomes marked. From the start there is mental weakness, but not a true dementia till very late. There is a steady deterioration of the moral sense that may lead eventually

to criminal acts. Burr distinguishes between the paranoiac and the mattoid; the latter he defines as the imbecile dreamer of great dreams without power of accomplishment. The recognition of paranoia is not always easy because many cases are not typical, and some are merely aborted and fragmentary. There is a wide borderland and many inhabit it. Some men of genius present evidences of partial paranoia, some of them have been distinctly delusional. There is, unfortunately, also what is called secondary paranoia, though in these cases there is a stronger element of dementia, and hallucinations play a more important part. Some instances of the so-called paranoid type of dementia precox, Burr thinks, may be and probably are, very rapid cases of true but atypical paranoia. In conclusion he speaks of the medicolegal importance of the disorder, and says that the physician's duty in court cases is simply to discover the mental condition of the patient; the questions of responsibility, competency, etc., are for the judge and jury to decide. [F. W. P.]

Medical Record.

May 25, 1907.

1. *Schadle, J. E. *The Antrum of Highmore as an Etiological Factor in the Production of Hay Fever (so-called).*
2. *Turck, F. B. *A Clinical View of Ulcer of the Stomach.*
3. *McWilliams, C. A. *A Method of Reducing Old Colles's Fractures; Stiffness Following Apparent Contusions of the Elbow.*
4. Brooks, H. *A Study of Blood Pressure in Compressed-Air Workers.*
5. Wright, H. W. *Popular Education in Matters Medical.*
6. Vale, F. P. *Inaccuracy of Dare's Hemo-alkalinometer.*
7. *Reid, J. J. *The Use of Pilocarpine for the Relief of Pruritus, Especially in Regard to Pruritus Vulvæ.*

1. Schadle advances the theory that catarrhal sinusitis of the antrum of Highmore is an important etiological factor in the causation of hay fever and some of the commoner forms of catarrhal disease of the nasal tract. The author deals with investigations of a considerable number of cases of the disease accompanied by the catarrhal form of disease of the antrum. The affection does not occur in persons in whom the *ostium maxillare* is of the normal very small size, but in those in whom disease, malformation or injury has made the antrum opening of sufficient size to admit germs to the interior of the cavity. Under normal conditions the opening is for purposes of ventilation only, and the cavity is sterile, the opening being securely protected by the tissues and hard to reach. The nervous supply is very abundant and communicates with that of all parts of the nasal cavities. The peculiar exciting causes of hay fever, dust, pollen, etc., enter the antral cavity and there produce irritation. Hay fever is a neurosis and occurs in persons in whom there is an idiosyncrasy against certain elements. But it is not a nervous disease alone, independent of local irritations. The author has treated ninety-one cases of hay fever and rose cold of varying degrees, by washing out and medicating the antrum, and has obtained the best of results in nearly all cases treated. Only one was unbenefited. Most of them were entirely cured in from one to two weeks, and remained so.

2. Turck records a series of experiments on animals by which he determined that gastric ulcer is not a local but a general condition, and is induced by alterations in the pabulum of the intestinal flora, which lower the resistance of the gastric or intestinal mucous membrane, rendered peculiarly vulnerable by malnutrition, defective metabolism, and other elements. Diagnosis is never easy. Prognosis is better than formerly, provided diagnosis is early enough to hope for correction of the bad general condition. Treatment demands rest, somtimes in bed until the pressing symptoms of pain, anorexia and flatulence are removed. First rest the stomach by abstinence from food for twenty-four hours, and then feed with food that will be most easily digested and will furnish as little as possible of material for bacterial action. Milk is one of the best. Meat macerated and then well boiled is another. Milk must be coagulated with rennet. Peristalsis may be excited by mineral waters containing carbonic acid, or injections into the rectum of alternate hot and cold water.

3. McWilliams considers the possibility of improving the position of the fragments in cases of Colles's fractures which have gone for some time unrecognized, and have become consolidated in bad position. In some cases disability is slight and it is better to let things alone. In others it seems necessary to do something to improve matters. The author uses for refracturing the bones a large engineer's monkey wrench with the blades well padded. This is used to immobilize the upper fragment, resting against the projecting edge of the lower fragment. Thus a fracture in the line of the original injury may be produced with the expenditure of very little force. There is no strain on the structures of the wrist, and the injury to the tendons is very slight. Traumata at the elbow joint, which are treated for sprains, sometimes develop stiffness later, on account of the formation of new bone within the joint, as a result of a fragment of periosteum getting into the joint and producing bone, which is so placed as to be between the ends of the bones. Usually forced persistent passive motions will crowd away the fragment of bone to the side of the joint so that it does not interfere with motion.

7. Reid says that the value of pilocarpine in the treatment of pruritus vulvæ and other forms of this affection has not received the recognition it deserves. The pilocarpine is to be used for this purpose in doses of from one-eighth to one-quarter grain. [F. W. P.]

June 1, 1907.

1. *Cleaves, M. A. *The Physiological Action of Pancreatic Enzymes, with Special Reference to Hematology, Urinology and Clinical Pathology.*
2. Gould, G. M. *Eyestrain and Other Diseases Due to Crossing, Crowding and Damming of the Retinal Vessels.*
3. *Talbot, E. S. *Acid Intoxication or Acidosis; a Factor in Disease.*
4. Fanoni, A. *A Case of Intestinal Obstruction Due to Persistence and Anomaly of the Urachus.*
5. Bangs, L. B. *A Comment on the X-Ray as Applied to Prostatic Enlargement.*

1. Cleaves's article is a discussion of the use of pancreatic enzymes in the treatment of malignant tumors. The writer believes that the treatment is of value and should be used in every case as an adjunct to surgical treatment. She cites 5 cases in which the treatment was used, which, though suggestive in some instances, are not conclusive from possibility of errors in diagnosis. The method of administration and dosage of trypsin and of amylopsin are given. Contrary to the opinion of Graves, the writer believes that more marked action can be produced by trypsin in the circulation than by trypsin injected into the tumor mass. The febrile reaction, the so-called tryptoglycogenic reaction with eosinophilia, the local reaction of the tissues and the constitutional and circulatory changes which follow the injection of trypsin are described in detail.

3. Talbot in investigating the cause of erosion of the teeth has collected tests of the total acidity of the urine of a large number of patients. He believes that excessive acidity of the urine is a cause of interstitial gingivitis and an indication of faulty metabolism. [F. W. P.]

New York Medical Journal.

May 25, 1907.

1. *Knopf, S. A. *Aerotherapy in Cold Weather.*
2. Ogilvy, C. *The Results of Excision of the Hip in Tuberculosis of the Joint.*
3. Talmey, M. *Corneal Burn by Direct Flame.*
4. *Pollitzer, S. *Serum Therapy and Serum Diagnosis in Syphilis.*
5. Van Slyke, L. L. *Some Points on the Chemistry of Milk.*
6. Gilbride, J. J. *Remarks on Congenital Stenosis of the Pylorus.*
7. Shelmerdine, E. K. *Cream and Whole Milk Calculation.*
8. Bierhoff, F. *Report of a Case of Melanuria.*

1. Knopf's article is a careful description, full of valuable detail, of the ways in which outdoor life day and night can be made possible in cold weather. Statistics show that

tuberculous patients in sanatoria do better in winter than in summer, and where proper facilities are provided nearly all prefer to sleep out of doors even in the coldest weather. Through the day the patients are given the rest cure in reclining chairs, rest alternating with short walks, drives or mild exercise in suitable cases. Respiratory exercises are strongly advocated. But perhaps the most important feature of aërotherapy is the sleeping out of doors. A number of forms of verandas, shades and lean-tos for sleeping quarters of tuberculous patients are described and shown in photographs. Knopf's own invention, the window-tent, is described very minutely. The arrangement of beds and bedding and the patient's dress at night are also shown. Warm dressing-rooms should be provided, and at all times clothing and bedding, helped out by hot water bottles and heaters, sufficient to prevent all discomfort from cold. The outdoor treatment should be begun gradually, with short periods in the fresh air at first. There need be no fear of " catching cold " in the process. In obviously hopeless cases, however, outdoor treatment should not be attempted against the patient's wishes, and in any case if the patient gets chilled or is kept awake by the cold, the treatment should be relaxed and resumed later by more gradual stages.

4. Pollitzer summarizes the work of various bacteriological investigators, notably Wassermann, Neisser and Bruck, in obtaining a method of serum diagnosis for syphilis. The principle upon which this is based is that of detecting " anchoring of the complement " in mixtures of suspectedly syphilitic serum, inactivated by heat, with normal blood as complement and extracts of syphilitic lesions taken as antigens. An explanation of the theory of the interaction of complement, immune body and antigen is concisely given in the article, and to it those unfamiliar with it are referred, since the subject is too complicated to be described in full in this abstract. For present purposes it will suffice to say that the complement of normal blood ceased to be active when mixed with the serum of monkeys inoculated with syphilis and extracts of syphilitic tissues. That this was the result of the presence of syphilis in the monkeys whose serum was used was proved by variously modified controls. This reaction is therefore regarded as specific for syphilis, showing when positive that both syphilitic antigens and syphilitic immune bodies are present. The method and findings of Wassermann and his associates have been corroborated by Schültze. Some work has been done in testing cases of general paresis and tabes by this method. As yet the procedure is hardly established, but promises much.

[F. W. P.]

June 1, 1907.

1. *Ewing, J. *The Morphological Diagnosis of Pathogenic Protozoa.*
2. *Brewer, G. E. *The Pathology, Diagnosis and Treatment of Acute Unilateral Septic Infarcts of the Kidney.*
3. Fridenberg, P. *Pyocyaneus Ulcer of the Cornea.*
4. *Cabot, H. *Diagnosis of Tumors of the Bladder.*
5. Cornell, W. S. *Eyestrain in School Children.*
6. Wainwright, J. M. *The Scranton Typhoid Epidemic.*
7. Lane, C. B. *Modern Methods of Improving the Milk Supply of Cities.*
8. Walburn, L. E. *A New Saccharimeter.*

1. Ewing calls attention to the fact that in spite of the plainness with which all protozoa now known are visible, there is great difficulty of identification and explanation of cellular degenerative products which may resemble them. The existence of these cell degenerations is so confusing that before any supposed parasite of disease can be accepted, not only morphological but also collateral evidence must be shown to be in accord with the characteristics of the disease. In variola, in scarlet fever and in measles certain bodies are found, some of which have been supposed to be parasites and causes of disease, but since they cannot be positively identified as protozoa and since collateral evidence is not in favor of a parasitic origin for these diseases, these bodies cannot be accepted as pathogenic parasites. In rabies the Negri bodies are specific of the diagnosis of the disease, and their occurrrence in the disease is not notably inconsistent with the possibility that they may be parasites and the cause of the disease, but even these are doubtful. Many bodies have been described in cancer, but the collateral evidence is almost conclusive against the protozoan origin of malignant neoplasms.

2. Brewer reports cases of a condition described by him in a previous paper,— acute unilateral septic infarct of the kidney. The unilateral occurrence of the disease is probably due to diminished resistance in one kidney from trauma, calculi or other conditions of disease. The infection is probably from bacteria in the blood current which would under ordinary conditions pass out through the kidney without producing lesions. The disorder begins acutely with high temperature and sometimes chill, with more or less pain and tenderness in the region of the affected kidney. The presence of albumin, blood and pus in the urine may be obscured by abundant secretion from the other kidney. The one pathognomonic sign is marked unilateral costovertebral tenderness. In treatment, severe cases require nephrectomy, milder cases decapsulation, and the mildest type expectant treatment. Of 13 severe cases 5 treated by nephrotomy and drainage all died, and 8 treated by nephrectomy all recovered.

4. Cabot urges early resort to modern methods of examination of the bladder in all cases in which there is cause to suspect tumor. If this were done it would be possible to prevent too extensive growth, infection and compression of ureters. A transient, painless hematuria should not be allowed to pass undiagnosticated; impediment to micturition, pain, frequency and pyuria may also be present, but all of these symptoms are met in other diseases as well. Many symptoms and signs supposed to be of diagnostic importance are unreliable and often directly misleading. Our main dependence should be upon rectal or vaginal examination, and upon cystoscopy; these methods will almost inevitably lead to a correct diagnosis. [F. W. P.

The Practitioner.

May, 1907.

1. Gibson, G. A. *Further Observations on Heart-Block.*
2. Carless, A. *Some Fractures about the Elbow Joint.*
3. *Yeo, I. B. *On the Use of Opium in Acute and Chronic Diseases.*
4. Stockman, R. *The Indication for the Use of Opium in Acute Disease.*
5. Dixon, W. E. *Chronic Morphinism with Special Reference to Treatment.*
6. *Neild, N. *Hypertrophy of the Pylorus in Adults and Its Treatment by Opium.*
7. Sandifer, H. S. *On the Indications for the Use of Opium in Acute Disease.*
8. Bonsfield, A. *Opium in Acute Diseases.*
9. Armour, D. *A Review of Recent Neurological Surgery.*
10. Perkins, J. J. *Review of the Diseases of the Respiratory Tract.*
11. Mummery, P. L. *The Causes of Pruritus Ani.*
12. Hicks, H. T. *Uterine Curettage.*
13. Sikes, A. W. *On Some Affections of the Gastro-Intestinal Tract in Gouty Subjects.*

3. Yeo speaks in general on the various indications for and against the use of opium and its derivatives. He believes that the hypodermic syringe with morphine is far too frequently used and crude opium not enough. He disapproves of the use of any form of opium in cardiac disease, inflammatory or valvular, and especially in myocarditis.

6. Neild writes on the subject of the motor-neurotic form of pyloric hypertrophy. He advises against surgical treatment, but speaks enthusiastically of good results with opium. Without this drug medical treatment can do little for the condition. [J. B. H.]

Münchener Medizinische Wochenschrift, No. 17.

April 23, 1907.

1. *Esser. *The Etiology of Rachitis.*
2. Brand, E. *The Practical Significance of Reducing Substances in Milk.*
3. *Liefmann, H. *The Apparent Aërobic Growth of Anaërobic Bacteria.*
4. Fabricius, J. *The Operative Treatment of Femoral Hernia.*

5. *Freund, R. *The X-ray Treatment of Exophthalmic Goiter.*
6. *Reiche, F. *A Case of Membranous Laryngitis Due to the Bacillus Fusiformis.*
7. *Gregor, A. *A Case of Drug Eruption with Violent Constitutional Symptoms.*
8. Lange, F. *Artificial Ligaments of Silk.*
9. Ottolenghi, D. *Blood Plates Considered as Producers of Alexins.*
10. Schwab. *Further Remarks on Testing the Coagulability of the Blood.*
11. Peipers, F. *The Climate of Tenerife and its Indications.*

1. Esser believes that overfeeding constitutes the chief cause of rachitis. His reasons for this are the following:

(1) The blood picture in overfed infants who are not subjects of rachitis is similar to that of rachitis, both conditions showing blood findings that indicate irritation of the bone-marrow.

(2) A history of overfeeding is always to be obtained in rachitis, whether the infants are breast or bottle-fed.

(3) Numerous domestic animals, and wild animals in a state of confinement, show changes in the bone identical with rachitis; and overfeeding is certainly present here.

(4) The author's experiments on overfed animals, with careful control, showed bony changes analagous to those of rachitis, hyperemia of the marrow, increase of the zone of cartilage-proliferation, irregular endochondral ossification and increased formation of osteoid tissue.

(5) The occurrence of rachitis may be prevented, even in the children of rachitic parents, by the use of a proper diet. Esser's theory of the etiology of rachitis is that overfeeding stimulates in some unknown way the bone marrow, and that in infants predisposed through heredity, recent diseases, etc., the bone marrow gives out and the changes characteristic of rachitis take place.

3. Tarrozzi and others have shown that sterile pieces of various organs, or their extracts, if added to liquid media, will enable anaërobic bacteria to grow in such media although air is not excluded. Liefmann shows conclusively that such growth is possible because reducing substances that are present in the organs take up the oxygen; the growth is therefore strictly anaërobic after all.

5. Freund has obtained relief of the symptoms, and sometimes apparent cure in 5 cases of exophthalmic goiter by the use of the x-ray. A reduction in size of the goiter with increase of body weight took place in all cases.

6. Report of a case of Plaut-Vincent angina confined to the larynx, the first in the literature with this localization. Interesting points are the presence of fusiform bacilli *without* spirilli, and the development of paralyses of accommodation and of the lower extremities. Diphtheria as the cause was carefully excluded.

7. After the administration of 2 doses of 2 gm. each of chloral in Gregor's case, there was seen a rash consisting of macules, papules, petechiæ and blebs; also conjunctivitis, bronchitis, edema of the eyelids, fever and stupor.

[W. T.]

Deutsche Medizinische Wochenschrift, No. 19.

May 9, 1907.

1. Joseph, M. *The General Treatment of Skin Diseases.*
2. *Ziegler, C., and Jochmann, G. *Acute Myelogenous Leukemia.*
3. Horner, A. *Blood Pressure by Means of Pal's Sphygmoscope.*
4. *Karewski, F. *A Liver Abscess following Influenza.*
5. Offergeld. *Dissecting Metritis of Puerperal Origin.*
6. Paderstein. *Migraine Attacks and Periodic Paralyses of the Motor Oculi.*
7. Harnack, E. *The Question of Skin Electricity.*

2 The authors give the complete history, blood findings and anatomical examination of a case of acute leukemia in Strumpell's clinic in Breslau. This occurred in a young man, fifteen years old, previously healthy; and was especially interesting in that it came on fourteen days after a general staphylococcus infection, culminating in a hemorrhagic pericarditis. Suddenly, during the course of the sepsis, the blood became filled with myeloid cells, the total white cells in two days reaching 240,000 of which 60% to 70% were myelocytes. From the blood picture the clinical diagnosis of acute myelogenous leukemia was made and was confirmed ten days later by autopsy. Microscopical investigation of organs and bone marrow showed marked myeloid changes. The lymphatic apparatus of the lymph glands and intestinal tract were free from myeloid infiltrations. The authors consider that this case increases the probability of a relationship between acute and chronic leukemias and bacterial infections. Such a relation need not be a specific one, but may only create such changes in the blood-forming organs that a leukemic process may later develop.

4. Karewski reports a case of abscess of the liver, occurring fourteen days after an influenza, the pus from which showed numerous cocci without especial characteristics. There were no objective signs of liver trouble observed before this, and after operation and drainage of the abscess, the patient made a complete recovery, and has remained well for two years. There seemed to be no other etiological cause for the abscess than the influenza.

[L. G. M.]

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Miscellany.

THE MASSACHUSETTS MEDICAL SOCIETY.

MEETING OF THE COUNCIL.

The Council met in Mechanic Building, Boston, on Tuesday, June 11, 1907, at 5 p.m.

The meeting was called to order by the president, Dr. George W. Gay. One hundred and twenty-two councillors were present.

The Secretary announced that 170 Fellows had been admitted during the past year, and that 37 deaths had been recorded.

The Treasurer's report showed receipts with the balance from the previous year, amounting to $28,111.11, and expenditures amounting to $15,076.66, leaving a balance on hand of $13,034.45.

It was voted, on recommendation of the Committee on Membership and Finance, that $4,500.00 of the surplus in the treasury be distributed among the district societies.

The Committee on Publications reported that Dr. Frederick Forchheimer, of Cincinnati, had accepted the appointment of Shattuck lecturer in 1908.

The Committee on State and National Legislation reported that during the past year they have appeared either in person or by representative before the Committee of Public Health, advocating the passage of the following bills: For labeling Patent and Proprietary Drugs and Foods; To Prohibit the Evasion of Vaccination Laws; To Regulate the Sale of Poisons; for Appointment of Medical Inspectors through the State; for Proper Sanitation of Factories; for the Transfer of Certain Powers from the District Police to the State Board of Health; and for further Provision for the Care of Patients with Advanced Tuberculosis. They have opposed the bill to create a State board of osteopathic examination and registration. The Auxiliary Legislative Committee has proved of great service in reaching certain members of the legislature.

On motion of Dr. Cabot, it was voted that the sum of $300.00 be appropriated for the use of the Committee on Tuberculosis.

A letter from Dr. Marcy, soliciting an appropriation for a memorial to Dr. N. S. Davis as the founder of the American Medical Association, was responded to by voting $300.00 for the object.

On motion of Dr. Gilbert it was voted that the matter of medical expert testimony reform, referred to the Council by the Norfolk District Medical Society, be referred to the Committee on State and National Legislation, to take such action as they consider best.

In accordance with the request of the Committee on Medical Legislation of the American Medical Association, that a delegate be appointed from the Society, it was voted that Dr. S. D. Presbrey be the appointee.

Dr. Harvey, chairman of the Committee On Revision of the By-Laws, presented a code revised to meet suggestions made at the last meeting of the Council, and requested further suggestions if any changes were desired. A slight change was suggested in By-Law 12, which, approved by the Council, was accepted. On the request of an opinion as to the ratio of Councillors to membership in the district societies, it was voted that it be 1 to 20, as embodied in the report, be recommended.

On this point the secretary stated as a result of the request of an expression of opinion from the district societies, that of the 18 district societies, 10 had replied. Of these, 1 desired the ratio to be 1 to 15; 1, 1 to 16; and 8, 1 to 20.

It was voted that the Council commends the new draft of By-Laws submitted by the Committee on By-Laws, and orders the same to be reported at the next annual meeting of the Society for adoption.

The following were elected officers of the society for the ensuing year:

George W. Gay, Newton, President; Francis J. Canedy, Shelburne Falls, Vice-President; Francis W. Goss, Roxbury, Secretary; Edward M. Buckingham, Boston, Treasurer; Edwin H. Brigham, Brookline, Librarian.

Thomas F. Harrington, of Boston, was chosen Orator for the annual meeting of the society in 1908.

The following standing committees were appointed:

STANDING COMMITTEES.

Of arrangements: G. S. C. Badger, Lincoln Davis, L. W. Gilbert, C. C. Simmons, G. H. Francis, A. N. Broughton.

On publications: O. F. Wadsworth, G. B. Shattuck, H. L. Burrell.

On membership and finance: F. W. Goss, Walter Ela, C. M. Green, A. Coolidge, Jr., H. A. Wood.

To procure scientific papers: B. P. Croft, R. C. Larrabee, M. D. Clarke, Charles Harrington, R. B. Greenough.

On ethics and discipline: C. G. Carleton, J. F. A. Adams, Leonard Wheeler, J. A. Gage, J. W. Bartol.

On medical diplomas: H. E. Marion, O. F. Rogers, H. W. Newhall.

On medical education: H. C. Ernst, H. D. Arnold, C. H. Williams.

On state and national legislation: G. W. Gay, S. D. Presbrey, G. G. Sears, D. D. Gilbert, C. H. Cook.

MEETING OF THE SOCIETY.

The society met in Mechanic Building at 9 A.M. Wednesday, June 12, for its one hundred twenty-sixth anniversary.

The President, Dr. G. W. Gay, in the chair.

The important matters of business transacted were as follows:

The Committee on Revision of the By-Laws presented the new draft commended by the Council, and moved that it, together with the rules of the society and the Code of Ethics, be adopted.

After the defeat of a motion that no district society shall be required to elect a less number of Councillors than chosen for the year 1907, the motion of the committee was adopted. On motion of Dr. Harvey it was voted that all By-Laws heretofore in force be repealed.

Dr. Harvey stated that several of the schools included in the list of those recognized by the Council are inferior institutions, affording defective instruction to medical students.

He moved and it was voted,—

That the Committee on Medical Diplomas be instructed to revise the list of medical colleges recognized for the purpose set forth in By-Law 1, and report to the next stated meeting of the Council.

Dr. Cabot offered the following which was adopted:

Resolved, that The Massachusetts Medical Society, having observed, with the highest satisfaction, the great interest which the Governor of this Commonwealth has taken in matters pertaining to Public Health, to which he called the especial attention of the legislature in his last inaugural address, and with reference to which he has urged, both publicly and privately, the passage of laws to provide for the medical inspection of minors engaged in industrial pursuits, as well as for the suppression of tuberculosis; and this society having also perceived the readiness and enthusiasm with which the present legislature has carried out these suggestions, as shown by the enactment of legislation for the establishment of health districts and the appointment of medical inspectors throughout the state; for the compulsory notification and registration of tuberculosis and for the erection of three sanatoria for the treatment of tuberculosis, — desires to convey to his Excellency Governor Guild, and to the members of the legislature, its appreciation of their efforts in behalf of the health and welfare of the state, and hereby extends to them a vote of heartfelt thanks.

Resolved, that a copy of these resolutions be transmitted to the Governor of this Commonwealth, to the President of the Senate and to the Speaker of the House of Representatives, and that they be spread upon the records of this society.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 8, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,434	436	Quincy	9	1
Chicago	574	138	Waltham	6	2
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	—	—
Baltimore	155	38	Brookline	4	—
Cleveland	—	—	North Adams	8	1
Buffalo	—	—	Chicopee	3	2
Pittsburg	—	—	Northampton	8	2
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	—	—
Providence	74	26	Hyde Park	0	—
Boston	197	47	Melrose	7	0
Worcester	38	11	Newburyport	—	—
Fall River	31	12	Woburn	3	—
Cambridge	29	3	Marlboro	3	2
Lowell	33	6	Westfield	3	1
Lynn	29	3	Peabody	—	—
New Bedford	24	4	Revere	2	1
Springfield	26	2	Attleboro	—	—
Lawrence	27	7	Clinton	2	0
Somerville	16	4	Adams	6	1
Holyoke	23	7	Gardner	—	—
Brockton	10	1	Milford	—	—
Malden	10	1	Watertown	4	0
Chelsea	6	1	Plymouth	—	—
Salem	15	2	Weymouth	2	0
Newton	10	1	Framingham	6	1
Haverhill	20	5	Southbridge	1	—
Fitchburg	11	3	Wakefield	—	—
Everett	4	2	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JUNE 15, 1907.

J. M. PAGE, surgeon. Granted leave for three months, when discharged from treatment at Naval Hospital, Mare Island, Cal.

J. H. MCGUIGAN, pharmacist. Unexpired portion of sick leave revoked. Ordered to Naval Hospital, New York, N. Y., for treatment and observation.

D. DICKINSON, medical director. Ordered to additional duty as a member of the Naval Retiring Board, Washington, D. C.

W. J. ZALESKY, passed assistant surgeon. Commissioned Passed Assistant Surgeon from April 12, 1907.

H. L. KELLEY, assistant surgeon. Appointed Assistant Surgeon June 6, 1907.

C. T. HIBBETT, medical inspector. Detached from the Naval Recruiting Station, St. Louis, Mo., June 15, and ordered to the Bureau of Medicine and Surgery, Navy Department, for temporary duty.

A. R. ALFRED, surgeon. Detached from course instruction, Naval Medical School, Washington, June 15, and ordered to Naval Rendezvous, Pittsburg, Pa.

J. C. PRYOR, surgeon. Detached from Naval Medical School Hospital, Washington, D. C., June 13, and ordered to Naval Hospital, Yokohama, sailing from San Francisco, Cal., via steamer "Siberia," about July 25.

H. E. ODELL, surgeon. Detached from duty at Naval Hospital, Washington, D. C., June 20, and ordered to Naval Hospital, Mare Island, Cal.

J. M. MOORE, surgeon. Detached from the Naval Rendezvous, Minneapolis, Minn., and ordered to Naval Rendezvous, Chattanooga, Tenn.

W. W. VERNER, passed assistant surgeon. Detached from Naval Rendezvous, Pittsburg, Pa., June 15, and ordered to Naval Rendezvous, St. Louis, Mo.

F. M. BOGAN, passed assistant surgeon. Detached from Instruction at Naval Medical School, Washington, D. C., June 15, and ordered to Naval Rendezvous, Minneapolis, Minn.

R. W. PLUMMER, passed assistant surgeon. Detached from Instruction, at Naval Medical School, Washington, D. C., ordered to "Constellation" and to additional duty at Naval Training Station, Newport, R. I.

A. MCK. JONES, acting assistant surgeon. Detached from Naval Rendezvous, Chattanooga, Tenn., and ordered to Washington, D. C., July 1, for examination for assistant surgeon, then to wait orders.

T. N. K. PHILLIPS, pharmacist, when discharged from treatment at Naval Medical School Hospital, Washington, D. C., ordered to Naval Hospital, Yokohama, sailing from San Francisco, Cal., via steamer "Korea," about July 9.

C. MCLARTY, pharmacist. Detached from Naval Hospital, Yokohama, and ordered to duty at Naval Hospital, Mare Island, Cal.

F. L. PLEADWELL, surgeon. Detached from duty at Naval Hospital, Yokohama, ordered home to wait orders.

J. H. PAYNE, Jr., passed assistant surgeon. Detached from course instruction Naval Medical School, Washington, D. C., ordered to Naval Rendezvous, Providence, R. I.

W. G. STEADMAN, acting assistant surgeon. Detached from Naval Rendezvous, Providence, R. I., ordered to Washington, D. C., July 1, for examination for appointment as assistant surgeon and then wait orders.

RECENT DEATHS.

DR. LAMAR SEELEY, a member of the house staff of St. Luke's Hospital, New York, died suddenly, from cardiac disease, on June 14, at the age of twenty-six years. He was a native of Portland, Ore., and a graduate of Williams College. He was graduated in medicine at Johns Hopkins University in June, 1906.

DR. SAMUEL SPENCER WALLIAN, of New York, died on June 12, after a brief illness. He was born in Brookfield, Ohio, in 1835, and was a veteran of the Civil War, in one of the last battles of which he was severely wounded. He later took up the study of medicine, and was graduated from the medical department of the University of the City of New York in 1883. Dr. Wallian early became interested in the medical use of oxygen, and for a number of years he had been engaged in manufacturing the gas and supplying it to the profession.

BOOKS AND PAMPHLETS RECEIVED.

Mental and Moral Heredity in Royalty. A Statistical Study in History and Psychology. By Frederick Adams Woods, M.D. Illustrated. New York: Henry Holt & Co. 1907.

Surgical Diagnosis. By Daniel N. Eisendrath, A.B., M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

A Text-Book of Embryology. For Students of Medicine. By John Clement Heisler, M.D. Third edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

A Text-Book of Materia Medica for Nurses, Including Therapeutics and Toxicology. By George P. Paul, M.D. Philadelphia and London: W. B. Saunders Co. 1907.

American Pocket Medical Dictionary. Edited by W. A. Newman Dorland, A.M., M.D. Third edition, revised and enlarged. Philadelphia and London: W. B. Saunders Co. 1907.

Atlas and Epitome of Diseases of Children. By Dr. R. Hecker and Dr. J. Trumpp. Authorized translation from the German. Edited by Isaac A. Abt, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Modern Methods of Diagnosis in Urinary Surgery. By Edward Deanesley, M.D., B. Sc. Lond., F.R.C.S. London: H. K. Lewis. 1907.

The Principles and Practice of Dermatology. Designed for Students and Practitioners. By William Allen Pusey, A.M., M.D. Illustrated. New York and London: D. Appleton & Co. 1907.

Précis de Technique Orthopédique. Par P. Redard. Illustrated. Paris: F. R. de Rudeval. 1907.

A Combination of the English and French Obstetric Locks, for the Prevention of Dangerous Compression of the Fetal Head by Forceps. By A. Ernest Gallant, M.D. Reprint.

Modern Medicine. Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., assisted by Thomas McCrae, M.D. Vol. I. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

The Efficient Life. By Luther H. Gulick, M.D. New York: Doubleday, Page & Co. 1907.

The Practical Medicine Series. Under the general editorial charge of Gustavus P. Head, M.D. Vols. I, II and III. Illustrated. Chicago: The Year Book Publishers. 1907.

University of California Publications. Pathology. On Fermentation. By Alonzo Englebert Taylor. Berkeley. 1907.

Original Articles.

TRANSMISSIBILITY AND CURABILITY OF CANCER.*

BY WILLIAM SEAMAN BAINBRIDGE, A.M., SC.D., M.D., NEW YORK,
Honorary President of the First International Congress on Cancer, Heidelberg; Surgeon, New York Skin and Cancer Hospital, Etc.

"Is cancer contagious?" The question has passed from laboratory to home and highway, and is anxiously repeated on all sides. Boards of health, charity organization societies, and schools of philanthropy are flooding the country with literature concerning the contagiousness or infectiousness of certain diseases, and as a result the public has become thoroughly alive to the existence of our "myriad millions" of unseen foes. No new theory relative to disease can be propounded or research work reported without the probability of distorted or exaggerated versions thereof being flaunted in the public press of the civilized world, to make upon the minds of the credulous masses impressions for good or ill, as the case may be. Reputable physicians, actuated by motives of one kind or another, not infrequently give expression through the medium of the medical press to conclusions drawn from premises that have not been and often cannot be verified, and thus "confusion worse confounded" arises in the public mind concerning matters medical.

No one can gainsay the importance to mankind of the formulation of hypotheses concerning disease and the painstaking verification thereof by experimental and other methods. Surely such work should be reported and discussed from all points of view; but it is most unfortunate that such discussion cannot be carried on behind closed doors, — as was done, for example, at the First International Congress on Cancer held at Heidelberg last year, — until the scientific workers have something definite and conclusive to say to the world at large. The public has a right to know the results of all scientific research, particularly as it pertains to health and disease, and more particularly when the public's money defrays the expense thereof. But should they be overwhelmed with theories formulated in the laboratory, and frightened by specters that ofttimes exist only in the microscope, or rather in the mind of the microscopist?

The laity have a way of settling these questions for themselves, and not infrequently the public at large reach conclusions and have settled convictions on medical subjects before the medical profession has really given them serious thought.

In this way it has come to pass that the "cancer problem" in some of its aspects is being settled by the laity for themselves; and it is being settled, unfortunately, in a manner that bodes ill for the cancer victim. At the present moment there is a special feeling of unrest, almost of terror in many instances, among those afflicted with cancer. Particularly is this true of persons associated in one capacity or another with these unfortunates. This has markedly increased within the last few months, at least in my own experience, which, I take it, is not unlike that of others who come in contact with cancer cases from day to day. It is a condition which confronts us, as clinicians, on all sides, and we should face it fairly and squarely, in justice to all concerned.

In very many instances, which I might cite, and which are doubtless duplicated in the experience of others, I am plied with the question, "Is cancer contagious?" About a year ago I sent a graduate nurse to take care of a cancer patient; she went without demurring. Recently I called her for a similar case, and when told that the patient had cancer she absolutely refused to go, acknowledging that she had become afraid of cancer on account of its "danger," and declaring that she would never nurse another cancer patient.

A woman upon whom I operated last November for advanced recurrent carcinoma of the breast, and again in January for the removal of metastatic nodules, recently died. About two years ago, in the same home, her sister died of multiple sarcomata. When some tenants in the house (which is a large apartment house occupied only by the well-to-do) became aware of the nature of the second patient's malady they became alarmed, demanded that the woman leave, and even threatened during her last days to have her evicted.

Still another illustration of this growing fear of "catching" cancer came to my notice recently. I was called to see a patient afflicted with cancer who had been admitted to a small hospital in the Borough of Kings. Upon arrival I learned that the nurses, with the exception of the head nurse, had struck in a body, positively refusing to remain in the hospital if they were expected to care for this patient. Impressed by this incident, I asked the head nurse of one of the large metropolitan hospitals what, in her experience, is the feeling of nurses with reference to the care of cancer patients. Her reply was, "We are nearly all afraid of it."

A woman of intelligence called upon me recently in evident distress because her husband, believing cancer to be contagious, had become thoroughly alarmed and worried, upon learning that her mother, whom she had recently nursed in her last illness, had died of cancer. This wife came with the oft-repeated question, "Do you believe cancer is catching?"

Only a few days ago an acquaintance told me of a woman friend of hers who had been troubled for some time with intestinal symptoms. The friend had three aunts who had died of "internal cancer," and my informant said, "It is useless for the doctors to conceal the diagnosis, for of course with this cancer in the family she has the disease."

Not only has the watchword, "cancer is catching," gone forth among the more intelligent and well-to-do, but it has penetrated the ignorance and poverty of the tenements, and we find the poor, hard-working mother of the East Side groping in the darkness of despair with a new specter haunting her, — the fear of "giving" her own loathsome disease to her husband or children.

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* Read in part before the Richmond County Medical Society, Staten Island, May 1, 1907; in full before the Rochester Academy of Medicine, Rochester, N. Y., May 15, 1907, and in part before the Medical Association of the Greater City of New York, May 20, 1907.

A short time ago a mother, in broken English, said to me, "You say grandma has cancer of the stomach?" "Yes," I replied, "and she has only a few days to live." Then she said, "I am burning all the rags and everything. If we keep her here will we give it to the children?" As she pointed to herself I knew the thought of giving the dread disease not only to the little ones about her, but to the unborn babe, was weighing heavily upon the mother's heart.

I might multiply many times examples of this growing fear of the contagiousness of cancer, but the above will suffice to show that it is no chimera, but something very real in the minds of many.

This wave of unrest and fear will gather momentum as time goes on, unless checked by a counterwave of common sense, and the lot of the poor cancer sufferer will be even more pitiable, if possible, than it is at present.

Let us, with unbiased minds, look for a moment at the evidence (or some of the evidence, for it is impossible in a paper of this length to do more than touch upon the more salient parts of the subject) from which this "nameless fear," this "cancer ghost," perhaps, has been conjured into such distressing reality in the public mind.

Three factors seem to play an important rôle, viz., (1) heredity, (2) congenital transmission, (3) infectiousness or contagiousness.

Heredity. — Bashford is of the opinion that heredity and inherited susceptibility are proper subjects for experimental inquiry, "which," he says, "will enable us to avoid the fallacies which are almost inherent in statistics based on the occurrence of cancer in man."

Delafield and Prudden ("Handbook of Pathological Anatomy and Histology") say: "While the influence of heredity is difficult to estimate, there are a few well-authenticated instances of the remarkable prevalence of malignant tumors in families within a few generations. The general facts, however, are not so striking. The statistics of Williams showed that in two hundred and thirty-five cases of carcinoma of the uterus or breast, about 9% gave a history of carcinoma in the father or mother, while in nearly 20% there was evidence of carcinoma in the family. In the estimates of other observers, the hereditary influence seemed evident in about one third or one fourth of the cases. It is, however, instructive in this connection to note that in a study of Snow, of seventy-eight healthy persons, there was evidence of carcinoma in the family of about one fifth of the cases. It is clear, therefore," they continue, "that while such statistics are suggestive and on the whole indicate that an hereditary predisposition to the development of tumors may exist, this does not in any way account for the immediate incitement of the growth of tumors, and is, indeed, as Menétrier has urged, but one of many examples of hereditary predisposition which is observed in many forms of disease, such as infectious, cerebral apoplexy, etc."

McFarland ("Textbook of Pathology") is of the opinion that "Heredity has considerable influence, certain families being particularly liable to mammary, uterine or gastric carcinoma, from which other entire families are free. It is only the predisposition that is hereditary, there being no evidence that the cause of the tumor passes from parent to offspring."

Roger Williams, who has done a great deal of statistical work on cancer with reference to inheritance, in 1892 reported 136 cases of carcinoma of the breast with a history of heredity in 29.2%. He reports 48 cases in 33 families. More than one relation was affected in eight cases; there was a history of carcinoma in the families of both father and mother in four cases; in 6% he found a multiple history in successive generations, and a direct inheritance in 8%. Among other cases cited Williams refers to the fact that the father, brother and two sisters of Napoleon all died of cancer of the stomach, to which disease Napoleon himself finally succumbed. Broca records sixteen deaths from cancer in a family of twenty-seven members. In the "Second Report of the Cancer Research Laboratory of Middlesex Hospital," Hillier and Tritsch, discussing "Heredity in Cancer," quote the following as "either actually in favor of recognizing a hereditary causal factor or at least not opposed to it": Paget, Velpeau, Virchow, Baker, Roger Williams, Esmarch, Billroth, Tillmann, Dietrich, and others.

Among those quoted in the same report, Moore, Harrison, Cripps, Snow and Brand were not inclined to attach much if any importance to heredity as a causal factor in the production of cancer. "Brand reasons that the occurrence of cancer in several members of a family, whose parents have succumbed to it, cannot be accepted as evidence of heredity, but it can and ought to be accepted as evidence of infection from an obvious source." Snow attributes the disease not to inheritance, but to chance or infection.

In this connection may be mentioned the statement made by Chantemesse and Podwyssotsky: "When the microbic nature of cancer becomes recognized, all the clinical history of that malady, its mode of propagation, etc., will correspond perfectly with its parasitic etiology. Heredity of the neoplasm will become then inheritance of a predisposition to allow of the implantation of the parasite."

Statistics might be multiplied *ad infinitum* to convince the doubting that heredity plays an important part in the etiology of cancer, but since most of these might apply with equal force to the side of infection, it would be profitless to quote more. It will be seen, however, from what has been given, that if the subject ever affords any conclusive evidence on either side it will be only after much further investigation than has yet been recorded.

Congenital transmission. — This subject is even more obscure than is that of heredity, and also furnishes a field for careful observation and study. Accurate records of such study would doubtless help to clarify the present situation. On this subject Roger Williams says: "I have been greatly impressed with the large proportion of the neoplasms of early life that obviously arise in conjunction with embryonic developmental aberrations. I have found that the proportion of cases in which a history of heredity is recorded is considerably smaller than are the corresponding neoplasms of adult life; consequently I cannot corroborate Hutchinson's dictum that 'malignant disease in young persons is generally inherited.' The newly born infants of mothers, themselves the subject of malignant disease, are hardly ever thus affected."

Numerous cases have been reported of malignant neoplasms of supposed congenital origin, some of which are too vague in their details to be of much worth as evidence of the possibility of congenital transmission, while others seem to be of more value from a statistical point of view.

Dr. A. Jacobi, in 1869, reported the first of a very small number of cases on record of congenital sarcoma of the tongue. A swelling was first noticed a few hours after birth. It was the size of a hazelnut, on the left side of the tongue, one-half inch back from the tip. The tumor was removed by galvano-cautery and microscopic diagnosis of sarcoma made.

Nélaton observed a fibroplastic tumor in a child three days old.

The case reported by Williamson (London and Edinburgh *Monthly Journal of Medicine*, 1841) has been extensively quoted. This was supposedly a congenital cancer of the stomach. The child was apparently healthy at birth, but in a few days began to vomit and become emaciated. This continued until death, which occurred at the end of five weeks. Autopsy showed the pylorus to be hard and indurated, with the orifice almost closed. The author designates the condition as "scirrhus of the pyloric extremity of the stomach." This was probably a simple hypertrophy rather than a cancer.

Widerhofer, Chiari, Cullingworth, Kuhn, Billroth, Dawson and others report cases of so-called congenital cancer.

Contagiousness or infectiousness. — Belief in the contagiousness or infectiousness of cancer seems to rest chiefly upon four things, viz., (1) the theory of the contagiousness or infectiousness of malignant tumors in mice, based upon the supposed parasitic origin of the disease; (2) the transmissibility of the Jensen mouse-tumor; (3) inoculation experiments; (4) the reports of cases in human beings of coexistent or coincident cancer, supposedly the result of accidental infection.

Apropos of the *first* category we are reminded of the words of the eccentric professor in the University of Prague, Ferdinand Hueppe, who said: "According to the *theatrum diabolorum*, the view prevailed in the Middle Ages that 'every sin is under the control of and operated by a particular devil'; at present each disease in similar fashion has its own devil in the form of a specific bacillus. Beelzebub, the god of invisible evil flies, is peculiarly the protecting patron of the 'specific' bacteriologist."

Of this category, too, Beard, of Edinburgh, says: "Neither in Edinburgh, nor in London, nor in Copenhagen, has the Jensen mouse-tumor been found to be contagious at all! It is only in places where a new cancer-parasite is in keen request and in urgent demand that Jensen's mouse-tumor acquires contagious properties. These are in direct proportion to the researcher's faith in cancer-parasites!"

In this connection, also, Bashford and Murray (*Lancet*, March 23, 1907) say, "We have observed the effects of inoculating 60,000 mice with carcinomata. The animals have been kept under painstaking observation. The development of tumors that could be referred to infection or contagion has been observed in *not one single instance*." Ehrlich's experience agrees with that of Bashford and his co-workers. Again, they say, "The housing of mice suffering naturally from cancer with normal animals has yielded no evidence of infection or epidemics, although our observations have now been extended over a longer period than any previous investigations, and much longer than a mouse lives." (The life-span of the mouse is about three years.)

"The positive statements," they continue, "made in regard to infection when small animals suffering from cancer are housed with normal animals can be referred with confidence to (1) fallacious observations; (2) erroneous deductions . . .; (3) unwarranted assertions by those without personal experience." "The very positive statements about infection in the case of mice are at present devoid of all scientific value."

While the majority of laboratory workers in the various centers seem to agree with the views just outlined, Gaylord, Park, Clowes, Lyon and a number of others are promulgating the idea of the infectiousness of cancer, basing their views largely upon the belief in the parasitic origin of the disease. The careful and painstaking work done by these men is too familiar to all to need review for the purposes of this discussion.

J. George Adami, Professor of Pathology, McGill University, sums up the main arguments for the parasitic origin and infectious nature of malignant growths in part as follows:

1. Increase in frequency of malignant tumors.
2. The incidence of the disease is frequently found to be peculiarly local — certain districts and houses.
3. The lesions produced by the growth of malignant tumors within the organism are comparable with those induced by certain known infective agencies.
4. The more carefully material from malignant tumors is examined, the larger is the proportion of cases in which certain intracellular and extracellular bodies are to be recognized.
5. While the cases on record of apparent direct infection from one individual to another are so rare as to be explained by the law of chance and as being but the coincidental occurrence of the same disease in two associated individuals, and while the experimental inoculation of fresh cancerous material from one individual to the other (whether

these be of the same or different species) has almost uniformly failed, nevertheless, in rare cases this would have appeared to have succeeded. "Two factors," he says, "are necessary for successful experimental inoculation, — the virulence of the parasite and the susceptibility of the tissues. To this lack of susceptibility is to be attributed the frequent failure of experimental inoculation."

It may be seen at a glance how some of these arguments in favor of the infectious origin of cancer may be used with equal reason, apparently, by those who do not accept this view of the question, and how some of the statements are contradicted by competent observers. For example, concerning the increase in cancer, Bashford (*Lancet*, Sept. 15, 1906) says that an investigation into the statistics of cancer incidence with the Registrar-General showed that there was no increase of cancer and no evidence of endemicity in cancer. The observation of the intra- and extra-cellular bodies is claimed by some to be due to errors in staining, and that with the same methods the same bodies are to be found in normal tissue. However that may be, Gaylord, in the report of the Gratwick Pathological Laboratory for 1900, says: "We are prepared to state (from examinations of organs from cadavers who have died from cancer) that all organs, including the blood, taken from all cases dying of cancer, including sarcoma and epithelioma, contain large numbers of the organisms" (parasites).

Again, susceptibility of the tissues argues equally well for those who believe in hereditary predisposition to cancer.

From the above cursory glance at this phase of the question it may be easily seen that etiology is in a maze of doubt and uncertainty, and that there is little, if anything, sufficiently well established to be given over to the medically uneducated, to be warped and distorted according to the individual's susceptibility and credulity.

Of the *second* category mentioned, Bashford says: "The experimental propagation of a malignant new growth means nothing more or less than the continued proliferation of the cells of a tumor of one animal in another animal. . . . The process is as remote from being of an infective nature as that responsible for the natural formation of metastases in organs remote from the preliminary site in sporadic cases, with which it is strictly comparable." Jensen himself holds that tumors developing after transplantation of tissue in mice are direct genealogical descendants of the cells introduced.

Concerning this particular matter another note is sounded by Roger Williams and others who are of like opinion. He holds that the Jensen mouse-tumor differs *in toto* from cancer or any form of human malignant tumor. The differences are summed up by Williams in substance as follows:

(1) The Jensen mouse-tumor is highly contagious; thus, when infected animals are introduced into cages with healthy animals the latter take the malady, as if by local contagion, sometimes in such numbers as to constitute veritable epidemics. Nothing like this occurs with human beings. (We have already seen how radically this differs from the views of Bashford and his co-workers. It coincides, however, with the observations of Gaylord and others.)

(2) "Jensen's tumor" is readily transmissible by implantation to other mice, the proportion of successful experiments often being as high as 30%. No such property is ever manifested by human cancer.

(3) "Jensen's tumor" in over 20% (Clowes) undergoes spontaneous cure, and the cured animals are then immune to further contagion. With human malignant tumors no such spontaneous curability has ever been scientifically demonstrated, although sometimes alleged. (This calls to mind the work of Gaylord and his colaborers in immunity.)

(4) "Jensen's tumor" is circumscribed and easily enucleable, the tissues of the host forming no part of it; moreover, the latter do not acquire cancerous properties, nor do they become interpenetrated by injurious processes of the neoplasm.

(5) "Jensen's tumor" causes no cachexia. (In this Bashford agrees.)

(6) According to Apolant and Ehrlich, "Jensen's tumor" in the course of experimental transmission often changes its type — from epithelial to sarcomatous, etc., — and Morau found, under similar circumstances, that its physiological type also changed, with corresponding alteration in its power of inoculability.

The *third* category, inoculation experiments, gives little unanimity of result. Early in the last century Alibert, Biett and others made attempts to inoculate themselves and other persons with cancer, but were uniformly unsuccessful. Experiments with the inoculation of human cancer into animals have been made by Lagenbeck, Lang, Mayet, Bose and Vedel, and many others, with doubtful success in the majority of instances, and failure in many. Gaylord inoculated guinea-pigs with peritoneal fluid from a human abdominal tumor, and found in the lung of one of the animals what he pronounced adenocarcinoma. A dog inoculated by him with peritoneal fluid from a similar case was killed after ninety days, when numerous nodules were found in the liver. These he considered to be new formations derived from the liver epithelium. There seems to be no proof of the reproduction of the original type of cancer. Many experiments have also been made with the inoculation of animals with cancer preparations from other animals of the same or different species, successful results being reported in many instances. This subject, however, is no exception to the rule of insufficient evidence.

Bearing in mind the conflicting opinions hereinbefore given among men who, by virtue of their splendid facilities for experimentation, should be best able to form conclusions, let us turn for a moment to the *fourth* reason given in many quarters for the belief in the infectiousness of cancer, viz., reported cases of coincidental or coexistent cancer in human beings. The opponents of the theory brush these aside with age-incidence, coincidence, environment, etc., which seem to them adequate to account for the individual cases of this class. And it is interesting to note that the cases considered, on the one hand, to be instances of cancer contagion or infection, are, on the other, considered excellent examples of hereditary cancer, or predisposition to cancer development.

Cases of "transference" or "transplantation" from one locality to another in the same individual are reported by Bergmann, Newman, Shattuck and others, but these are relatively very rare, particularly in the light of the fact that the surfaces of the body contiguous to the cancer are bathed more or less in the discharges from the malignant area, and would seem, therefore, to be particularly liable (unless it be believed that the individual has become self-immunized, as it were) to infection thereby.

More frequent are the instances of cancer coexistent or coincidental in persons closely associated. And here, it would seem, a number of factors other than infection must be considered, such as age-incidence, environment, heredity, etc.

Handley reports the case of a husband who developed cancer of the breast within a year of his wife's death from cancer of the uterus. Lyon mentions four cases, in two of which the husband and wife lived together and died, in the same house, two and five years apart, and two in which husband and wife lived together but died in different houses, three and eight years apart. In one instance there was a family history of cancer for each, in two instances for one only, and in the remaining instance no history of cancer in the immediate family was obtainable. In none of these was there cancer of the genitals. A case in my own practice was that of a woman, fifty-one years of age, with cancer of the body of the uterus, whose husband, two months older, has cancer of the bladder.

I may mention in this connection an interesting case reported by Childe. Two sisters were found to be suffering simultaneously with cancer of the lower bowel. Inquiry elicited the fact that they lived in close companionship for many years, occupying the same bedroom all the time, and for the most part the same bed. Following up the histories of these sisters the fact was revealed that a year later a third sister, who had lived apart from the other two, visiting them only occasionally, was the subject of cancer in the same region. Had not the third sister developed cancer the cases of the other two would have been beautiful examples of infection. Childe considers the probability of the third sister "catching" the disease from the others as extremely doubtful, and that the three cases taken together rather support the theory of heredity.

Roger Williams considers the cases of co-existence of cancer in husband and wife so few as to furnish no evidence of contagion. He further states that the children of cancerous mothers have never been known to have acquired the disease, even when the placenta, uterus or other parts of the genital tract have been the seat of the malady. He concludes, from his own observations, that cancer is essentially non-contagious.

The only two cases of alleged infection among surgeons which have come to my notice are reported by Guermonprez, he himself being the victim in one instance, developing a papilloma of the finger (previously injured) which resisted the cautery for nineteen months. The nodule developed subsequent to an operation upon a patient with epithelioma of the face. The other case which he reports is that of a surgeon who examined a woman with cancer of the uterus while he had an acne pustule on the examining finger. He subsequently developed cancer of the finger. These cases carry little weight, first, because they are so inadequately reported, and, second, because so very rare in view of the thousands of surgeons, of "cancer experts," of nurses and hospital attendants, as well as friends and relatives of cancer victims, who for years have come in contact with cases of cancer, cancer of all kinds and in all stages of development without becoming infected. The one case, which was exploited in the press a few months ago, of the daughter or niece of one of the above-mentioned "experts," who became a nurse in his "cancer hospital" and subsequently contracted cancer, may or may not be a significant case, but circumstantial evidence, I should say, is overwhelmingly against its being of any value as evidence.

Another coincidence which is, perhaps, not *mal à propos* in this connection, was recently brought to my notice by a woman physician who happens to be a great lover of animals. During her medical schooldays, in another city, a pet mouse (a common gray house-mouse), which was kept in a cage made expressly for it, developed a "sore" extending from the last nipple around to the vertebral column. Upon death by euthanasia of the little animal, autopsy revealed the fact that the "sore" was cancer. Shortly after the death of the mouse a fan-tailed goldfish, which was kept in an aquarium in the same apartment, developed an ulcer in relatively the same position as that occupied by the cancer in the mouse. Autopsy in this case also showed the malignant nature of the growth. During this time the owner of the mouse and fish came in almost daily contact with a woman on the same floor who was a victim of a distressing cancer of the uterus, for which she underwent operation about this time, subsequently dying in her apartment. There was no question of the malignancy in the woman's case, and the animal autopsies and microscopic examinations were performed by a pathologist of acknowledged ability. An interesting feature of the instance cited is that the woman had passed the menopause, the mouse gave birth to a premature offspring shortly after she became a captive, probably being within the pale of age-incidence, and the goldfish, in the words of the pathologist, was "full of eggs," so that she, too, doubtless came under the category of age-incidence in the female.

Finally, in this connection, I wish to call attention to five cases reported in the *New York State Journal of Medicine*, April, 1906, by Dr. Samuel Lloyd, of New York. These cases are cited not because they are of any clinical or statistical value as given, but rather because they, and the theorizing which they seem to suggest, are striking illustrations of the kind of published matter which has helped to render the "cancer problem" such a complex question. The cases are quoted *verbatim* below:

"Man, an engineer, had a cancer of the tongue from which he died. The night engineer working in the same place came to me about one year later with cancer of the anterior pillar of the fauces. They had used the same drinking cup for several years.

"Man died in Bellevue Hospital of cancer of the stomach. Within two years the wife was operated upon by me for a cancer of the breast.

"I also operated upon a case of cancer of the stomach in a man whose father had died of cancer a few months previously.

"Woman died of cancer of the breast. Two years later I operated upon the sister, who had nursed her, for cancer of the stomach. There were no previous cases of cancer in the family.

"Physician's wife operated upon for cancer of the stomach. The doctor himself, within a month or six weeks after his wife's death, developed a cancer of the lower jaw and died the first of the present year."

In the article referred to, Lloyd quotes from Orth, who believes "every cancer must be designated as an epithelioma," and goes on to say that if this be true, why look further for the cause of cancer. He (Lloyd) reasons that if we shed our normal epithelial cells, so do we our abnormal ones, and the latter, "like the desquamation scales of scarlet fever, are blown hither and thither until they find a resting place in some crack or crevice of the body, to become a veritable cancer graft." Lloyd continues thus: "If these views are correct, then the obvious conclusion is that in order to control the spread of cancer it becomes essential to do something to prevent the dissemination of whatever element communicates the disease. It is probably impossible to completely segregate the victims of this disease. But the public should be educated to consider it as contagious." I wish to lay especial emphasis upon the last sentence quoted, viz., that the public should be educated to consider cancer contagious. In this day of the precautionary handling of all matters pertaining to health it is surely within the bounds of conservatism to insist upon the greatest care in the management of cancer cases, just as is the custom, for example, with tuberculosis, but to advocate the teaching of the contagiousness of cancer to the already over-burdened public, with nothing really proven to substantiate such teaching, seems to us not only unscientific, but decidedly atavistic. Such teaching, emanating from the medical profession, to whom the world must look for enlightenment and help in matters pertaining to public health, would be far-reaching and perhaps brutalizing in its effect, suggesting to our minds the habits, transmitted from lower animals to lower man, of destroying the imperfect and unfit of the species. It would tend to place the cancer victim in the same category with the leper of old — and the leper of to-day — who hears on all sides the cry, "Unclean, unclean!" The fear and anxiety thus inculcated in the minds of the predisposed (granting there be such a thing as inherited predisposition to cancer), and the added mental strain imposed upon the cancer victim himself, would, it seems to us, more than counterbalance the good effect of the precautionary habits which such teaching would stimulate in the public at large.

Still another and perhaps more distressing element of fear and doubt is being given temporary impetus through published articles concerning the question of the curability of cancer. The laity have long been more or less skeptical on this point, and it is not uncommon to hear it said, "Oh, well, if it is not cancer, it will do no harm; and if it is cancer, it can't be cured; so what is the use of an operation." And thus believing, they are added in time to the category of "inoperable," or, at best, "advanced" cases of cancer, with metastases a practical certainty even in the event of radical surgical procedure. Childe has aptly said, "The alarm that exists to-day is begotten of ignorance, is a counsel of despair and deadly delay." If the public is to be enlightened with reference to this momentous cancer problem, let it not be through the promulgation of too positive assertions of the infectiousness of the malady, nor yet by the "explosive exploitation" of every new remedy which comes into notice.

Far be it from me to decry the application of the scientific test to every method of treatment which seems to merit consideration; let each one be tried by those competent to do so, but while this process of elimination is going on, the importance of *early* operation should be borne in upon the intelligence of the public as the only *demonstrated* means of cure in the vast majority of cases. The sweeping assertions, however, of men like Robert Bell, of London, who claims that *no case* was ever cured by surgical means, can nullify in the minds of the public the experience of years of conscientious work on the part of others, for we all know how prone the laity are to magnify failures and lose sight of successes. In the *Medical Record* of Feb. 16, 1907, Bell says, "It must be obvious to every observer how miserably surgery has failed to give relief in cancer"; and further he refers again to surgery, "which," he says "every one knows has seldom given permanent relief, and usually succeeds only in aggravating the suffering and shortening the life of the patient." In the *Dietetic and Hygienic Gazette*, March, 1907, the same author, referring to a recent article by Senn, boldly challenges "Dr. Senn or any other surgeon to point to a *single case of cancer* which has been operated upon in which recurrence has not taken place at the very seat of operation, and usually, in the first instance, in tissue which was non-existent prior to the operation, viz., the cicatrix."

A review of the statistics of recurrence based upon the three-year limit gives abundant proof of the fallacy of such radical statements as those above quoted, and proof is not lacking even when the limit is run up to ten, fifteen or even more years. In my own experience, which is not of very long duration, I can recall, without reference to my records, numerous cases in which patients operated upon for cancer, which was demonstrated both clinically and pathologically, have lived three years and more without recurrence, and in perfect health. A striking case in point is that of a man, forty-nine years of age, who was operated upon by me for carcinoma of the tongue and glands of the neck. At the first operation, March 11, 1903, many cancerous glands were removed from the region of the tonsil on the left side to the dome of the pleura, and on the right side from the tonsil to the division of the carotid artery. At the second operation, March 28, 1903, the tongue was removed *in toto*. The wounds in each case healed by primary union, the patient was discharged in excellent condition, weighing ten pounds more than when he was admitted to the hospital. Despite the fact that he has several times been reported in the press as dead, he is alive to-day, perfectly well and strong, weighing forty pounds more than when operated upon. He eats, drinks, talks, sings, smokes, — and, as he says himself, does "anything anybody else can do." He is safely beyond the three-year limit, and present indications point to his living out his allotted span free from the dreadful condition from which, I am convinced, nothing but radical surgery could have saved him.

Another case, a woman of fifty years of age, fifteen years ago had one breast removed for carcinoma, and four years ago the other breast was amputated for the same condition. Last year she had a complete hysterectomy for multiple, non-malignant fibroids, but otherwise has been perfectly well and able to do her work.

A nurse while in India developed cancer of the breast, came to this country and subsequently consulted me. I advised immediate operation, and during my absence from the city she went to Philadelphia at my urgent request and was operated upon by Keen. She returned two years later to India, and at the end of three and a half years more died of dysentery. It was her expressed wish that a full autopsy be made to determine whether there was any malignancy present; this was done, and the report was that there was absolutely none.

A man, operated upon four and a half years ago for sarcoma of the axilla and forearm is to-day perfectly well, with no sign of recurrence.

A woman developed cancer of the breast during an attack of double pneumonia and pleurisy. While attending her during this illness I was able to watch the development of a tumor in the breast. When she had sufficiently recuperated from the pneumonia and pleurisy, she was operated upon, April 19, 1902, a complete Halsted operation being performed. She is now perfectly well.

Another case which was brought to my notice some time ago was that of a woman, over sixty years of age, who was operated upon twenty-four years ago by Byford, of Chicago, for cancer of the uterus, a complete hysterectomy being done at that time. The diagnosis was subsequently verified microscopically. She is now well and strong.

In a paper read at the recent meeting of the American Surgical Association at Washington, on the subject of "End Results Following Operations for Carcinoma of the Breast," Halsted expressed the opinion that all statistics should exclude the totally inadequate operations. Following this rule, he said that of 89 cases of cancer of the breast operated upon at Johns Hopkins Hospital, 43% were free from recurrence at the end of three years. Of 110 cases with axillary involvement, 25% remained cured; of 101 cases with cervical gland involvement, only 7% had remained cured.

The cases above mentioned might be multiplied many times. They are doubtless duplicated in the experience of every surgeon who operates for cancer and who takes the trouble to follow up his cases. The literature abounds with statistics culled from the experience of the world's greatest surgeons which prove the fallacy of the statement that cancer cannot be cured by means of surgery. As Childe has said, "*It is the positive cases which are cured that prove cancer curable. The negative cases in which it returns prove nothing with regard to its curability.*"

Thus a brief view of some of the more recent literature of the subject of cancer reveals to the open mind the chaotic state of our knowledge concerning the causative factors involved in the production of malignant disease. Much valuable experimental work has been done along different lines in the various research laboratories, and doubtless the future will see the mists of uncertainty cleared away; in the meantime, clinicians should supplement the work of the laboratories by keeping careful records of all cases and by following up the after-history as far as possible. We have seen of how little statistical or scientific value are many of the cases reported, and there comes to mind the plan, said to be adopted by the British government, of offering a money prize to all hospital physicians within the British empire who give accurate reports of cancer cases, and of fining physicians in the employ of the government who fail to do so.

In the light of our present knowledge, what may we, with due conservatism, say to our patients and to their friends in answer to their eager questioning concerning this important subject? The following points, I believe, may be safely adduced from the mass of conflicting evidence, and, until such time as the "cancer problem" shall be solved, will lead no one into danger:

(1) That the hereditary and congenital acquirement of cancer are subjects which require much more study before any definite conclusions can be formulated concerning them.

(2) That in the light of our present knowledge they hold no special element of alarm.

(3) That the contagiousness or infectiousness of cancer is far from proved.

(4) That evidence to support the theory of contagion or infection is so incomplete and inconclusive that the public need not concern itself with it.

(5) That the public need merely be instructed to apply the same precautionary measures as should be brought to bear in the care of any ulcer or open wound.

(6) That the danger of the accidental acquirement of cancer is far less than from typhoid fever, syphilis or tuberculosis.

(7) That in the care of cancer cases there is much more danger to the attendant of septic infection, of blood poisoning from pus organisms, than from any possible acquirement of cancer.

(8) That the communication of cancer from man to man is so rare, if it really occurs at all, that it can practically be disregarded.

(9) That in cancer, as in all other disease, attention to diet, exercise and proper hygienic surroundings is of the utmost importance.

(10) That cancer is local in its beginning.

(11) That, when accessible, it may, in its incipiency, be removed by radical operation so perfectly that the chances are overwhelmingly in favor of its non-recurrence.

(12) That once it has advanced beyond the stage of cure, in many cases suffering may be palliated and life prolonged by surgical means.

(13) That while other methods of treatment may, in some cases, offer hope for the cancer victim, the evidence is conclusive that surgery, for operable cases, affords the surest means of cure.

ACUTE EPIPHYSEAL AND PERIOSTEAL INFECTIONS IN INFANTS AND CHILDREN.*

BY J. S. STONE, M.D., BOSTON.

Among infants and children many bone and joint lesions are seen which differ materially from those which occur in adults. The character of all lesions involving the bones of infants and children depends largely on the anatomy of the epiphyses and to a less extent of the periosteum. This is true whether the trouble is traumatic, infectious, or, for lack of a better term, constitutional. The epiphyseal lines are a very frequent seat of infection, are a source of mechanical weakness, and are the seat of numerous constitutional lesions. The strong periosteum is a source of mechanical strength and influences the spread of infectious processes.

Epiphyseal separations are generally regarded as very similar to fractures. In babies and very young children there must be innumerable injuries to the epiphyses which pass unrecognized. The lesions cannot be demonstrated. In relatively severe injuries to the epiphyses localized tenderness with perhaps some swelling and with disturbance of function are the only signs which can be detected. The lesser injuries are mentioned here merely because they create points of diminished resistance to infection.

The very free vascular supply of the epiphyseal lines by terminal arteries increases, purely as a matter of chance, the liability of infection reaching these points through the blood.

The underlying cause of the infections may often be traced directly to some preceding disease which not only impairs the general health but also brings the infecting organisms into the circulation. Thus in young children it is common to see epiphyseal lesions after pneumonia or after measles. In very young babies the unhealed umbilicus seems a not infrequent source of infection. The opportunity for infection through the tonsils and lymphoid tissue of the naso-pharynx is generally recognized.

Thus preceding disease which allows the entrance of the organisms into the circulation leads to infection of a vascular area, the resistance of which has been impaired by slight trauma.

A few cases are reported in detail because they illustrate clearly certain varieties and complications of epiphyseal infection. They are selected as typical from among the many which have been treated at the Infants' Hospital and in the General Surgical Service of the children's hospitals in the past few years.

E. R., a girl of ten months, of Russian parentage, was sent to the Children's Hospital on Nov. 16, 1903, by Dr. Schwartz, of Lawrence. In his note he stated that the child had been under his observation for two months for trouble with the hip which had existed for some time before he was consulted, and that as there was a tuberculous family history he suspected hip disease. At that time the examination showed some infiltration about the joint with but little limitation of motion. Two weeks later the child came back much worse and was at once admitted to the Infants' Hospital on Dec. 2, 1903. The child was then in poor general condition, pale and flabby. The temperature was 38.7°; the pulse 125; the respiration 40. There was great swelling of the upper part of the left thigh, the mass merging with a tumor which extended through the deeper part of the left iliac fossa into the left lumbar region and which, by rectal examination, could be felt filling the left side of the pelvis. The tumor was most prominent in the upper inner and upper outer part of the thigh as well as in Scarpa's triangle. There was deep fluctuation throughout the tumor and an expansile impulse could be felt when the child cried. The leg and foot were edematous. The femoral, inguinal and iliac lymph nodes were considerably enlarged. The superficial veins were dilated not only in the thigh but upward to the left axilla where the lymph nodes were also enlarged. The thigh was held flexed rather by the tension of the tumor than by any spasm of the muscles. The lack of muscular spasm and the absolute freedom of motion within the limits fixed by the mechanical limitations of the tumor led to the mistaken belief that the hip-joint was not involved. The loss of flesh and the weakness suggested sarcoma. The deep fluctuation did not bar it out in the minds of several who saw the child. The hardness of the mass as felt in the pelvis, the small size of the mass in the iliac and lumbar regions and the expansile impulse in the upper part of the thigh were striking features of the condition.

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* Read by invitation before the Boston Obstetrical Society, March 26, 1907.

An incision was made on the outer side of the thigh. The operation showed an enormous abscess. The epiphyseal head of the femur lay absolutely free in the cavity. The joint capsule lay almost free, as a dirty, sloughing mass, and was pulled away. The acetabulum was entirely empty. The abscess entirely surrounded it. The cavity extended inward to the pubic spine, upward into the pelvis, through the obturator foramen. Outward the cavity extended both in front of and behind the femur. It was washed out with salt solution and a drainage tube was inserted. The discharge, very free at first, gradually diminished. A wick was substituted for the tube after four weeks, and a week later was omitted. Five weeks after the operation she was discharged. The wound had healed. A very little thickening remained within the pelvis at the seat of the abscess. Close about the trochanter there was a little thickening. The thigh could be flexed 30° beyond a right angle. Full extension was possible but was accompanied by outward rotation. Inward rotation was limited, outward rotation was nearly normal. Adduction was impossible. Abduction was possible to 45°.

Ten months later the child, then twenty months old, was fat, of good color, beginning to walk about with the aid of chairs. The wound had healed absolutely. A trifling thickening remained about the trochanter. The motions in the hip were absolutely free in every way except that abduction was limited about one half. The trochanter was about half an inch above Nélaton's line; on rotation it moved through a smaller arc than normal; there was a little up and down play with traction on the leg. The shortening was a half an inch. The leg was moved vigorously. The child limped no more than she was compelled to do by the slight shortening. The radiograph showed absolutely no trouble in the shaft of the bone. The rounding and development of the end of the neck to form a new head was plainly shown. The ultimate result will, I think, be very satisfactory, and is, I think, indicated by the present condition. There will always be some shortening. The head is lost and the space which it occupied cannot be replaced. The acetabulum is practically normal. Functional use is insuring proper development of the shaft of the femur. Growth appears to be normal in the neck of the femur. The capsule is gone but the scar tissue about the old abscess cavity, together with the muscles, will probably prevent any tendency to displacement of the rounded end of the neck out from the normal acetabulum.

In this case the disease seems without question to have begun and to have spread as an acute infection in the epiphyseal line in the head of the femur. As the whole epiphyseal head became detached the suppurative process necessarily entered the joint, but the affection of the joint was purely incidental to the destruction of the epiphysis. The wide extension of the suppuration into the surrounding tissues was purely accidental. It had no connection with the source or form of the infection and had no bearing whatever on the prognosis, except that, of course, the larger the abscess the greater the immediate risk of septic absorption. On the ultimate prognosis the extent of the abscess has no bearing whatever. The future usefulness of the joint depends entirely on the extent of the bony loss. The acetabular surface of the joint was affected in no way.

This case is a fair example of an acute infection in the epiphyseal line leading to absolute destruction of the epiphysis. The epiphyseal head of the bone was not itself inflamed. It was discharged as a sequestrum, necrotic because absolutely cut off from all blood supply.

Another case is interesting in comparison. H. G., a girl, had when six weeks old an acute abscess in the right knee-joint. The joint was drained by an incision on each side. Careful exploration at the time failed to reveal any evidence of bone involvement. In a few weeks the incisions had closed. The mobility of the knee was unimpaired. As a possible factor in causing the infection it may be stated that a slight umbilical discharge persisted for nearly two months after the cord had separated.

In this case, what evidence is there that the infection began in the epiphyseal line? The operation was performed in 1895. The girl is now twelve years old. Three years ago she began to be a little lame. Under rest the irritation about the knee subsided very promptly. Since that time a bow leg has developed and steadily increased. This has been associated with an impairment of growth in the femur of the affected side. The impairment of growth was not noticed until the girl entered upon the period of rapid development preceding puberty. Accurate measurements extending over a period of over three years show that during periods of more rapid growth the bow leg increased and the difference in the length of the femora became more marked. During periods of slow growth the difference in the lengths of the femora and the degree of deformity remained stationary. The radiograph explains perfectly all the facts. Above the inner condyle the epiphyseal line is irregular and scar-like, and is further from the joint than normal and than the epiphyseal line above the external condyle. (Fig. 1.)

At the time of the original trouble at the age of six weeks the infection destroyed a certain limited growing area in the epiphyseal line. The effect of this destruction did not lead to noticeable deformity for nine years. Then at that age of rapid development the inability of one condyle to grow downward as rapidly as the other led to the necessity for a corrective osteotomy which was done six months ago.

This case is the exact counterpart of another.

A. G., a girl, came to the Infants' Hospital six years ago when about one year old. At that time her right knee was tremendously swollen, red, hot, with fluctuation in and with a sinus discharging pus from the joint. There was some thickening about the lower end of the femur. The leg was put at rest. The sinus apparently drained the wound efficiently. She had at that time a permanent flexion of about 25°. The sinus healed. The swelling subsided. The child used the leg without any trouble at all until she strained her knee walking in the snow three years ago. At that time she was five years old. (Fig. 2.)

The photograph shows the knee straight. When the knee is straight it will be noticed that she has a slight bow-leg, while when the knee is bent there is a slight knock-knee. The tracings of the radiographs which show marked irregularity of the epiphyseal line explain perfectly the nature of this deformity. The trouble the child had in the knee when a year old interfered with the growth in the inner part of the epiphyseal line. (Figs. 3 and 4.)

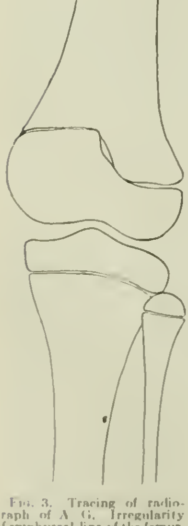


FIG. 3. Tracing of radiograph of A. G. Irregularity of epiphyseal line of the femur, the result of infection in infancy.

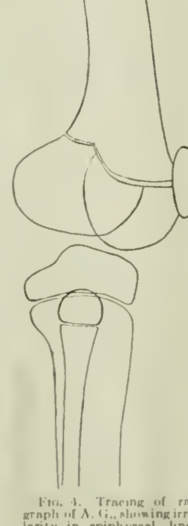


FIG. 4. Tracing of radiograph of A. G., showing irregularity in epiphyseal line of femur.

In each of these cases the infection began in the epiphyseal line but involved only a small portion of it. The knee-joint was involved because the pus escaped into it from the epiphyseal line. In neither case was any damage done by the disease to the knee-joint itself. In neither case was there any extension of the suppuration into the extra articular tissues, nor upward into the shaft of the femur.

As further illustrating the fact that such infections begin in the epiphyseal line the case of A. C., a boy of ten months, is of interest. Without previous illness he was taken sick suddenly in January, 1905. He had high fever. After two days tenderness was noticed in the right shoulder which was followed by swelling. At the end of ten days a large abscess was opened which filled the shoulder joint and extended into the surrounding tissues. By good luck the incision through the deltoid to drain the abscess lay directly over a small cavity in the epiphyseal line of the head of the humerus. The hole just admitted the blunt end of an ordinary probe. The abscess was drained. In a month the wound had closed. There was then, and is to-day at the end of two years, perfect motion in the shoulder. Even if in this instance one side of the epiphyseal head does not grow normally the mechanical structure of the joint is such that no functional impairment will occur.

In this case the infection began in the epiphyseal line. It extended out into the joint and then further into the tissues about the joint, but not into the shaft of the humerus.

In another class of cases, milder and, fortunately, more common, the initial symptoms are practically identical with those in the group already mentioned. The course of the disease does not, however, in certain cases seem quite so severe. At the time of operation the abscess is found to extend down to the periosteum, practically always at the epiphyseal line near to but not entering the joint. The abscesses heal in a few days or at most a few weeks after they have been thoroughly drained.

The particular case of this group which I report is of rather unusual character because the abscess was chiefly under the scapula and closely simulated a sarcoma. Most of these I have seen have occurred about the shoulder, hip, or knee, and have frequently followed pneumonia.

J. M., a boy of two years, of East Cambridge, entered the Children's Hospital on July 17, 1904. He had never been strong. Four months previously he had measles. Since then his appetite had been poor. For a month he had been very pale. Two months before admission the child cried one day when he was picked up under the arms, but nothing further was noticed. Sixteen days before entrance he had a slight fall from a chair. Immediately afterward he did not complain, but for a fortnight he had complained of pain in the right shoulder which was noticed to be swollen three days before admission.

The child was pale and thin and very irritable. There were signs of very mild rickets. There was a slight general enlargement of the lymph nodes. The heart, lungs and abdomen presented nothing abnormal. A tumor about the size of an orange, tender but not fluctuating, lay under the right scapula. It projected forward into the axilla and pushed the scapula upward and backward. There was no redness or edema over the mass. The temperature ranged from 99° to 103°, averaging about 100°. The pulse was about 120; the respiration 40. There was leucocytosis of 24,000.

The tumor increased in size, grew more tender, and deep fluctuation appeared at a point just inside the angle of the scapula and at the posterior border of the axilla. The radiograph showed no destruction of the bone but a large mass in addition to it. Sarcoma, which the condition strongly suggested, was practically ruled out in diagnosis. Five days after entrance the child was etherized and two incisions were made into the mass, one close to the angle of the scapula, the other in the posterior axillary line. Pus was found lying under the muscles and under the scapula. About four ounces escaped. The cavity extended well forward into the axilla and upward around but not into the shoulder joint. No bone lesion was found from which the abscess might have started although it reached the periosteum about the coracoid process. The cavity was washed out with salt solution and a drainage tube was passed through both incisions between the scapula and ribs.

The temperature dropped to normal in two days. The discharge ceased in about twelve days. The wound closed rapidly and had healed in about four weeks. No swelling, tenderness or limitation of motion remained.

The point of special interest with regard to this group of cases is the exact point of the original focus of infection. At operation it is rarely possible to determine the location of the original focus accurately. It seems probable that it is usually either the epiphyseal line close to the periosteum or the periosteum near to the epiphyseal line.

The reasons for this belief are the following:

1. This point seems usually to be the centre of the abscess.

2. The condition is brought on by the same factors which bring on true epiphysitis, — slight trauma combined with the presence of the infecting organism.

3. The early symptoms are identical with those of acute epiphysitis.

4. These abscesses occur most frequently at the age at which epiphyseal injuries are most common.

5. The location of these abscesses, their course, their symptoms, and whole clinical history differs absolutely from those of abscesses originating in lymph nodes and also from those originating among the muscles and fasciæ.

On the other hand I have never found one of these extra-articular abscesses showing any erosion of the bones, though very frequently the periosteum is a trifle frayed and ragged close to the epiphyseal line as though it might have been perforated at this point. A case has already been mentioned in which an intra-articular abscess was proved to have originated thus.

There is thus probably in all these varieties of cases an infection beginning in or close to the epiphyseal line. Suppuration occurs. The pus spreads along the anatomical lines of least resistance. These depend on

1. The exact spot in the epiphyseal line at which infection occurs, which presumably is determined by the exact nature of some trivial trauma inflicted.

2. The exact anatomy of the epiphysis.

If the original focus of infection is at the periphery of the epiphyseal line the pus is very likely to get a vent into the surrounding tissues before any extensive damage is done to the epiphyseal line itself. On the other hand, if the infection occurs at the centre of the epiphyseal line the chance of a complete separation and consequent necrosis of the whole epiphysis is much greater. Apparently the suppuration spreads along the epiphyseal line until it gets a vent into the surrounding tissues. Thus it may extend on one side into a joint or on the other side into tissues outside the joint. This depends entirely on the anatomy of the region involved. Again, if the suppuration extends out at the edge of the epiphyseal line it may encounter periosteum which is uninjured and closely adherent to the bone, or it may encounter periosteum which through trauma has been partially separated from the bone. Possibly the ligaments about the joint may so re-enforce and thicken the periosteum as to make it easier for pus to dissect up the periosteum from the bone than to perforate the periosteum, although this is unlikely unless the separation of the periosteum has been begun by trauma.

These cases of dissecting periostitis occur usually in somewhat older children than do the cases with abscesses in or about the joints. While some apparently start at the epiphyseal line, in other cases the infection seems to be primary under the periosteum. The periosteal infections occur usually in the tibia or radius or ulna. They are especially common about the ankle and wrist, somewhat less common about the lower end of the femur. It seems reasonable to suppose, under these circumstances, that direct injury of exposed parts plays a most important part in the causation of these lesions.

A special case is that of G. W., a girl of twelve, who rode on the electric cars to Lowell on a Sunday last summer carrying a baby in her arms. She got rather tired but thought nothing special of it. Next day she felt poorly and lay around the house. On that Monday evening, about nine o'clock, she was seized with a sudden violent pain in the wrist which gradually extended up the forearm. She was unable to sleep at all after the onset of the pain, which was exquisite. She was seen in the Children's Hospital within forty-four hours of the onset of the pain. At that time the whole forearm was tremendously swollen, hot and red. No fluctuation could be made out. The edema was extreme. The radiograph taken at that time showed absolutely nothing abnormal in the bone itself. In only a small spot was slight elevation of the periosteum seen after the operation. She was operated upon at once. The periosteum was found stripped off of the ulna for its entire length, although not everywhere for its entire circumference. An incision was made which slit the periosteum and overlying skin through the entire length of the bone. The pus had not perforated the periosteum and there was no evidence of disease in the medullary bone. The bone itself was a little rough near the lower epiphyseal line. It was not touched. The wound was left open for drainage. In a little over a fortnight the necrotic lower end of the ulna began to be pushed out from the wound. At the end of five weeks the entire necrotic shaft of the bone was removed leaving the new formed periosteal shell to form a new ulna. In twelve weeks healing was complete. (Figs. 5, 6 and 8.)

In this case the ulna became necrotic, not as a result of inflammation of the marrow but as a result of the interference with nutrition incident to the stripping off of the periosteum and the consequent destruction of the nutrient vessels. There was a necrosis but not an osteomyelitis.

The cases reported illustrate the following varieties of lesions originating in the epiphyseal line:

1. Acute epiphysitis resulting in the sequestration of the epiphysis and incidental involvement of the joint.
2. Acute epiphysitis with perforation into the joint resulting in an acute articular abscess.
3. Acute epiphysitis with perforation outside the joint into the extra-articular tissues. An extra-articular juxta-epiphyseal abscess.
4. Acute epiphysitis with extension beneath the periosteum, — a dissecting periostitis.

A dissecting periostitis is found occasionally away from the epiphyseal line and without evident lesion in the bone even on careful search.

Other epiphyseal lesions occur. Discussion of them is purposely omitted.

In the diagnosis of these infectious processes occurring in the epiphyseal lines and under the periosteum one must rely largely upon the clinical history and examination. It is impossible to differentiate absolutely the varieties of the more acute infections in bone except as one may draw inferences, doubtful, to be sure, but still of value from the history of the onset and course of the disease and from the age of the patient.

During infancy the wide area of cartilage and the vulnerability of the epiphyseal line give ample opportunity for suppuration to spread outward rather than to enter the shaft. As age advances and as the cartilage at the epiphyseal line becomes thinner and as the epiphyseal line itself becomes less well defined, the likelihood of sepsis spreading into the medullary cavity increases. Thus the infections involving no other part of the bone than the epiphyseal line are particularly to be expected in the youngest patients, and cannot possibly occur in adults. True osteomyelitis is more common in older children and any infection beginning at the epiphyseal line in adults must of necessity be a true osteomyelitis.

In older children dissecting periostitis is relatively common. The pain, and especially the tenderness and swelling in such cases, is usually more widely diffused than in an acute osteomyelitis.

The value and the limitation of radiographs should be clearly understood. In those taken early in the course of acute infections beginning in the epiphyseal line in infants and young children there is no reason to expect any change in the bone shadow.

In such cases the disease involves the cartilage which shows at best but vaguely even in the clearest radiographs. The most that might be looked for is an irregularity of the end of the diaphysis or a broadening or clouding between epiphysis and diaphysis. Neither of these points can be determined accurately or even approximately without wide experience.

Early in the course of infections under the periosteum the radiograph will show no change in the bone unless the slightest roughening of the outer part of the cortex. In due time the new forming periosteal bone may be seen separated very slightly from the underlying cortex.

Any thickening of the soft parts seen in the radiograph shows nothing more than what may and should be felt by the hand.

The negative value of a good radiograph, however, as showing the absence of any advanced lesion within the diaphysis, is often of the utmost importance and should never be disregarded.

A word should be said in regard to the mistakes in diagnosis which are most likely to be made. Infantile scorbutus especially may lead the surgeon into error. The hemorrhages in the epiphyseal line or under the periosteum produce extreme pain and exquisite tenderness. The symptoms simulate so closely those of pus in the same location that the possibility of the error should be kept constantly in mind. The relatively mild fever, the relatively slow onset, the presence of other signs of scurvy, are sufficient usually to make the diagnosis reasonably certain, provided scurvy is considered. The mistake thus is usually one of forgetfulness.

Congenital syphilis may often during infancy cause well-defined swelling and tenderness at the epiphyseal lines. Among older children, of course, the periosteal syphilitic lesions are very common. There is, however, little probability of such syphilitic lesions being confused with acute epiphyseal or periosteal infections. These manifestations of syphilis in more virulent cases may simulate the symptoms of a relatively mild scurvy.

Nature gives the key to the treatment of these cases. Attention may well be called again to the lack of damage done in children to joints which are filled with pus, provided free drainage is established. Secondary involvement of a joint in a suppurative process is usually of only incidental importance.

The point upon which the utmost stress should be laid is this: in children, especially young children, the acute bone lesion is usually at the onset an epiphysitis or a periostitis and not an osteomyelitis. The bone marrow is usually not involved. The pus ceases to spread in bone or cartilage when once it has any other direction in which it may spread. It ceases to dissect up periosteum when it can go freely in any other direction.

Necrosis must follow inevitably upon an acute dissecting periostitis, owing to disturbed nutrition combined with the sepsis. True osteomyelitis may also follow, especially in the more chronic cases. The one indication for treatment is, therefore, to drain and to drain freely. The abscesses near the bone should be thoroughly explored to see whether any pus escapes from the bone. If it does the opening in the bone from which the pus comes should be enlarged sufficiently to give absolutely free drainage. But under no other circumstances should the bone be disturbed. Unless there is positive evidence that the pus comes from inside the bone when the pus has been found outside the bone one should no more drill through the cortex than one should explore the general peritoneal cavity after a localized abscess has been drained. I do not mean to give the impression that in cases of true osteomyelitis the bone should not be opened. Under such circumstances it must be opened. But in cases where the pus has been found outside and where there is doubt about pus within the bone it is safer not to touch the bone. To emphasize the risks involved I will mention two cases.

B. Y., a boy of two years, was suddenly seized with pain in the right lower leg, which was followed by increasing swelling. The skin was hard and tense, there was slight fluctuation at the inner side of the ankle. The temperature was 103°. There was a leucocytosis of 25,900.

An incision was made over the tibia just above the ankle with a free discharge of pus from beneath the periosteum. Two days later drill holes were made through the original incision into the tibia. No pus was found inside the bone. Two days later there followed a pneumonia at the right apex. Following that there was purulent discharge from both ears; later still abscesses appeared above the right clavicle, in the left axilla and in the left thigh; later still abscesses appeared above the scapula and on the right ankle and foot; then an abscess in the left groin appeared; four months later an abscess appeared near the hip. In time most of the abscesses healed up. The trouble about the hip persisted. A sequestrum was removed from the shaft of the right tibia. After a long time the child died of amyloid disease.

A boy of twelve was taken sick suddenly with a pain about the left ankle, accompanied by high fever, increasing swelling and tenderness.

At operation, a few days after the onset of the attack, pus was found under the periosteum at the lower end of the tibia. Although there was no evidence that pus came out from the interior of the bone a drill hole was made into the medullary cavity. No osteomyelitis was found. Two days later a similar process began in the right shoulder.

In these cases drill holes were made through an abscess cavity into the medullary cavity. In each case in addition to the inflammation in the bone marrow infections followed in remote parts of the body.

In a certain number of cases it is true that no matter what treatment is adopted more than one epiphysis is affected. Occasionally cases of multiple epiphyseal infections are seen. In other instances first one and then another bone may be involved.

It is quite common to observe, during the convalescence from acute epiphyseal or periosteal lesions, what seem to be abortive infections of a similar sort in other bones. Sudden pain near a joint accompanied by marked localized tenderness, slight edema, and associated with fever and other constitutional symptoms, may diminish within a few days and soon disappear completely under rest.

The lesions following the opening of the medullary cavity in the last two cases may, of course, have been merely coincidences. They are, however, certainly suggestive.

Exploratory drill holes into bone are to be condemned when the abscess is found outside the bone. If there is evidence of a true osteomyelitis more thorough drainage is demanded than that secured by drill holes. Either more or less is demanded. If there is an extensive osteomyelitis the drill holes are insufficient. If the trouble is outside the bone the drill holes are harmful.

The only rule for early treatment which can be laid down is to follow the pus to its farthest limits whether into the bone or not, and when this has been done the parts beyond should under no circumstances be invaded. The ultimate treatment must depend upon varying conditions to be met as they arise.

For the radiographs of those patients treated at the Infants' Hospital I am indebted to Dr. Dodd, of the Massachusetts General Hospital. For the others I am indebted to Dr. A. W. George, of the Children's Hospital.

At the conclusion of Dr. Stone's paper, Dr. Rotch spoke as follows:

Dr. Stone's paper is very suggestive, and illustrates our modern ideas in regard to the etiology of disease and its portals of entrance.

It is probably true that just as a lesion in the mucous membrane of the mouth or gastro-enteric tract renders the individual vulnerable to pathogenic organisms which otherwise would be unable to gain an entrance and to produce their specific diseased results, so a traumatic injury to the zone of proliferation may make the individual joints vulnerable at that point, and thus produce different lesions representing different specific infections.

In regard to the value of the x-ray in demonstrating lesions of the joints, it is very probable that the lesions are oftener demonstrable on the plate without being recognized by those who examine the plates. This may be because our eye is not yet sufficiently trained in this kind of work to detect such lesions, and this is why so many clinical workers, who have had the sense of touch educated and developed through many years of practice, feel that their manual examination is more valuable than what they learn by the eye in attempting to read the plates.

This, of course, will be obviated in the future, when the sense of sight has been educated as much as the sense of touch has. When this has taken place there is not much doubt that the eye will prove to be superior to the hand.

Again, we are at present very much handicapped in a diagnosis by means of the ray by the fact that while we have learned to feel what is normal in examining a patient, we have not yet learned to recognize the normal living anatomy at different stages of development. Thus what would be normal in a joint of a young infant would be abnormal in that of an older child. Our study must be, therefore, to thoroughly educate our eyes in regard to normal living anatomy at all stages of development, and we shall then be in a position to make a much more exact diagnosis with the aid of the Röntgen ray. Until this is done, we are working comparatively in the dark, for we believe that both medical and surgical diagnoses in the future are to be wonderfully aided by means of the ray.

Another point which we should consider is this: it is not only wise, but almost necessary, until we are absolutely sure that we know the normal anatomy at different stages thoroughly, that we should, when examining a joint or shaft, have in our picture a corresponding joint or shaft of the same individual. Until our eye is better educated and our knowledge much greater, it is only in this way, by comparison with the other side, that we shall know whether such joint or shaft is diseased. Witness the slight degree of atrophy in the cortex of the bone which we might well read to be normal unless we had a bone on the opposite side to compare with it. This comparison in the use of the x-ray is just as important as we have for so many years found in the percussion of the lungs: comparing the resonance of the healthy side with that of the supposed diseased side.

Of course, in the very early stages of epiphysitis we cannot at present make a diagnosis by the ray, since such changes have not advanced far enough for the eye to detect them, but surely in these very cases touch would not detect, and in my experience on thoracic cases, the x-ray has many times shown what had antedated my clinical examination.

It is important to remember in all cases that owing to the anatomical peculiarity of the insertion of the joint capsule in different bones, the hip and shoulder joints are more likely to contain pus, in cases of suppurative separation of the epiphyses, than are the wrist and knee.

THE French Congress of Practitioners declared its approval of the plan to charge double rates for professional calls made on Sunday. — *Jour. Am. Med. Asso.*

AN OUTBREAK OF DIPHTHERIA DUE TO INFECTED MILK.

BY CHARLES HARRINGTON, M.D.,
Professor of Hygiene, Harvard Medical School; Secretary of the State Board of Health of Massachusetts.

ON April 13, after a period of comparative freedom from diphtheria, there were reported to the Board of Health of the town of Milton eleven cases of that disease. This sudden explosion caused, very naturally, a feeling of grave apprehension on the part of the local health authorities, who made immediate application to the State Board of Health for assistance in determining its origin. On the following day, another case was reported. Investigation showed that all of the cases reported on April 13, and single cases reported on April 12 and 14, had this in common: that the families of the victims were supplied, without exception, by the same dealer in milk, whose route lies partly in Milton and partly in Dorchester. Inquiry at the office of the Board of Health of the city of Boston developed the fact that on April 12, there were reported from Dorchester six cases; on April 13, nineteen cases, and on April 14, eleven cases of the disease, all in families supplied by this same dealer, whom we will designate as "A." Inquiry into the sources of his supply developed the fact that it was derived from six producers, as follows:

J. H., Randolph: 10 cans, some of which were bought of other producers; all delivered to "A." No diphtheria on the premises of J. H., or on those of the others who contributed to his supply.

R. B. N., Randolph: 4 cans, all sold to "A." No diphtheria.

E. T. T., Randolph: 3 cans, some sold at retail and the rest to "A." No diphtheria on his premises or among his customers.

O. H., Milton: 7 cans, all sold to "A." No diphtheria.

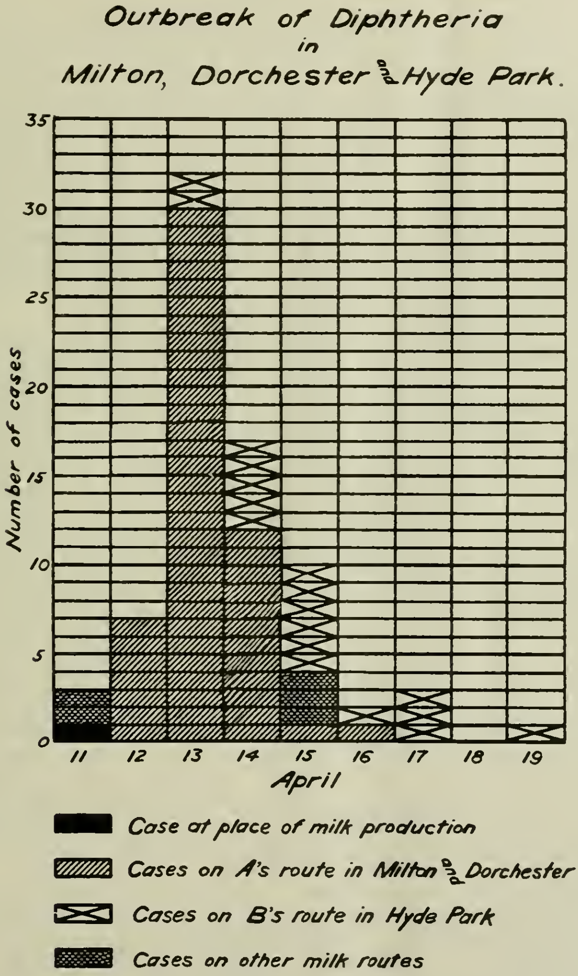
J. M. B., Milton: 4 or 5 quarts, all sold to "A." No diphtheria.

C. F. J., Milton: 27 cans, 17 sold to "A" and 10 to a dealer in Hyde Park, whom we will designate as "B."

Inquiry as to the existence of diphtheria on the premises of C. F. J. revealed the fact that his grandchild was seized with the disease on April 11; that the cooler in which the milk was mixed was washed in the house; and that this office was performed by the person who had the care of the sick child.

It appeared probable that herein lay the solution of the problem, but the absence of any reported outbreak in Hyde Park offered an obvious complication, since more than one third of C. F. J.'s output was delivered to families in that town by dealer "B." On April 14, however, four cases; on April 15, five cases; on April 16, one case; on April 17, three cases, and on April 19, one case, or fourteen in all, were reported to the Board of Health of Hyde Park, all of which and two that had been reported on April 13, without exciting comment, proved to be in families supplied by "B."

Prompt action on the part of the local authorities of Milton in excluding from sale the milk of C. F. J. brought the outbreak to an immediate close. The incidence of the cases is shown by the accompanying diagram. It will be noted that in the three places concerned there occurred, between April 11 and 19, five cases among families not supplied by "A" or "B," namely, two on April 11 and three on April 15. One of the former was reported in Dorchester, the other in Milton; and the three cases reported on April 15 were all in the same household with, and secondary to, the latter.



There were, then, between April 12 and 19, inclusive, in the three places mentioned, 72 cases of the disease, all but three of which occurred in families supplied by two dealers, who obtained their milk from a man in whose household a child was seized on April 11, and the three cases not connected with this supply were secondary to another case reported on the same day. The fact that the outbreak in Hyde Park occurred later than that in Dorchester and Milton may perhaps be due to the fact that dealer "B" called for his share of C. F. J.'s milk in the evening and sold it on the following day, while dealer "A" came for his in the morning and disposed of it at once.

It is of further interest that C. F. J. himself came down with the disease after the outbreak had nearly subsided, and that dealer "A's" son, who drank milk from C. F. J., was one of the earliest victims. The partner of dealer "B" was seized on April 18 and at about the same time also another member of his household.

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COLD AIR IN INCURABLE CONSUMPTION.

BY HERBERT C. CLAPP, M.D., BOSTON,

Visiting Physician to the Massachusetts State Sanatarium for Incipient Consumptives at Rutland.

Not long ago the trustees of the Boston Consumptives' Hospital invited a few physicians to come to one of their meetings prepared to make suggestions as to the planning and construction of their proposed hospital buildings at Mattapan. They announced that they intended to receive cases of the disease in all stages which were not acceptable at the State Sanatorium at Rutland.

In the presentation of views which followed, one or two of the invited guests expressed the opinion that, as regards exposure to fresh air during the different seasons of the year, all cases of consumption should be treated *exactly alike*,—the far-advanced as well as the incipient, and all the grades between.

As I could not entirely agree with this doctrine, I tried to express my dissent, but fear that on the spur of the moment I did not say exactly what I meant. I now desire to put into writing the opinions which I can in this way express more clearly than in hasty extemporaneous speech.

Having seen in many hundreds of curable cases of pulmonary tuberculosis in New England the really wonderful effects of constant exposure to large amounts of fresh air, especially in the winter time, no one could be more enthusiastic than I in recommending for such cases this treatment in all its thoroughness.

Unfortunately, however, if the disease has passed beyond a certain stage, this method, either alone or combined with any other therapeutic measures whatsoever, completely fails in inducing recovery in the vast majority of cases, although in them a temporary improvement may sometimes follow.

It is, of course, impossible for the best physician always to state with absolute infallibility just exactly what patients are incurable; but practically every fair-minded man of experience will admit that there are a great many cases which come to the physician which he can decide to be thus incurable with every prospect of having time prove his decision to be correct in all but exceedingly few instances.

Now, admitting this, shall we give to such consumptives as these as much cold air as we would give to incipients? I should say that sometimes we should and sometimes we should not. Of course, I presuppose that nowadays everybody would advocate what is generally called "good ventilation" even in the worst of these cases, the windows being open more or less and the room being heated; but this is not the modern fresh air treatment.

For our present purpose we can divide incurable cases into four classes: First, those who really enjoy the cold air; second, those who dread it and really suffer from it; third, those who dread it and suffer from it but think they ought to submit themselves to it; and fourth, those who are indifferent.

As to the *first* class, those who have been properly trained in sanatoria or in private practice as a rule gradually learn to love the fresh air so much that they cannot get along without it and are not happy unless they have it. By all means let them continue to have it.

In the *second* class are generally those who first come to us in the incurable stage and who have not hitherto had the fresh air treatment. Many of them, perhaps from improper habits of thought and living, dread the cold air and suffer severely if compelled to endure it, and beg to be allowed to be comfortably warm. Repeated trials in actual life prove that they never do get used to the cold. They should not be compelled to endure it against their wills.

The *third* class of incurables comprises much the same kind of people except that they have more will power and perhaps more endurance. They are not willing to admit their incurability. They know from the common talk that fresh air is a powerful factor in the cure of consumption; and with the heroism characteristic of old martyrs they make a stern resolve to submit themselves to it at whatever cost of comfort. In like manner, to increase their chances of getting to heaven, some of the old enthusiasts of a former generation, deeply imbued with the religous ideas of their times, and especially apprehending the beauty of self-sacrifice, voluntarily walked with pebbles in their shoes or inflicted on themselves some other unnecessary tortures. They were willing to inconvenience themselves for the object to be gained. If they had lived in these times, perhaps some of us might have tried to persuade them that such self-abnegation as that, and such useless sufferings did not materially increase their chances. So with these hopeless consumptives, it is pitiful to see them voluntarily incurring discomfort without receiving any adequate return. To be sure, some of them might breathe a little easier for it, but in most cases their sufferings certainly outweigh any benefits received.

The *fourth* class, the indifferent, we should try to persuade to have abundance of air, if not disagreeable, and sometimes we may succeed and sometimes not. In all cases, however, we should respect their freedom of choice.

In fact, in my opinion, the last point is the keynote to the whole situation with all four classes. If we have good reason to think that they cannot get well, let us be really kind to them by allowing them to choose (perhaps after trying both methods) whether they shall be continuously exposed to the cold fresh air of winter or not.

In order to give them this choice, hospital buildings designed for such incurables should be more substantial in character than the cheap shacks often used for cases which belong to the possibly curable class, and should be capable of being well heated.

At this same meeting it was also argued that if any discrimination were made as to exposing patients to fresh air, those who received the least would thereby consider themselves as notified that they were incurable and would be correspondingly unhappy, and that this was a further reason that all should be treated alike.

Now I believe that the old-fashioned *spes phthisica* has not yet been abolished, but rather intensified, since the days of the marvelous increase in the percentage of recoveries from tuberculosis; and I doubt if a large number of patients would seriously take this implied notification as meant for themselves. When a clergyman points out the sins of his congregation, each one complacently thinks his neighbor is meant and not he. The incurable consumptive can foresee the fatal ending of the other man's case much easier than that of his own. He himself is going to get well after a while.

But, on the other hand, even if our willingness to allow him to be warm and comfortable does suggest to him an unfavorable prognosis, is this really undesirable?

On account of religious or financial or other reasons a great many people consider it their duty to tell those who are near and dear to them if they are not likely to live, in order that they may make proper preparation. Not infrequently even then they refuse to believe it. From a moral standpoint some people think it actually wrong to deceive advanced consumptives, when we think they have little or no chance of recovery; and it is very doubtful if at such times a lie either by word or implication materially increases their chances. So that, it seems to me, this argument is not prohibitive of our giving such patients their perfect freedom of choice as to exposure to the cold air of our New England winters. If others of large experience think differently, I should like to know it.

Medical Progress.

PROGRESS IN PEDIATRICS.

BY THOMAS MORGAN ROTCH, M.D., BOSTON,
AND
JOHN LOVETT MORSE, A.M., M.D., BOSTON.

STENOSIS OF THE PYLORUS IN INFANCY.

This condition is attracting so much attention at present that it seemed worth while to take up the literature of the subject, a subject which most of the readers of the Journal are undoubtedly already somewhat familiar with. Dr. C. L. Scudder published a carefully described case in this journal April 27, 1905. Drs. Townsend and Scudder detailed another case, with operation and recovery Dec. 14, 1905. Dr. Scudder contributed to the Journal another and more important article Feb. 22, 1906. In the meantime Drs. Scudder and Quinby contributed a fuller statement to the *Journal of the American Medical Association* May 27, 1905, which contained an analysis of 115 cases, and brought the subject very well up to date. They state in this paper that they "very much doubt the permanence of the cure in cases treated medically," and that "to withhold operative treatment after the diagnosis of pyloric obstruction has been made, leaves the case practically hopeless, according to the evidence available." They quote Monnier as thinking that the mortality without operation is about 80%, and say that they "are persuaded that if the truth were known, the medical mortality would be above this figure." They quote 60 operations, with 32 recoveries and 28 deaths, giving a general mortality of 46.6%. These operations were performed by 28 different men in the seven years after 1898. They state that "no apologies are needed to the critics of surgery for the comparatively large mortality of 46.6%. Had not these particular cases been operated on, they all probably would have died. Many were almost moribund when placed under surgical care. Medicinal treatment has yet to demonstrate its power to cure this affection. Surgery, on the other hand, has proved its ability under adverse circumstances to cure more than half the cases intrusted to it."

A moderately careful review of the available literature shows that a considerable number of cases have been operated on recently, and that a number of others have been reported as cured by medical treatment. As in the past, the cases have been reported by the Germans, English and Americans, although the French are now beginning to recognize the disease. Some mistakes may have been made in analyzing the English cases, as some of them have been reported in several different places.

Thirty-one cases have been operated on by 22 different operators, with a mortality of 15, or 47%; no improvement over that in past years, although better figures might have been expected because of the better knowledge of the disease and the greater experience of the operators. The 15 fatal cases (Barling, Carpenter [3], Carpenter and Mummery, Cautley, Fischer and Sturmdorff, Morse and Murphy, Nicoll, Ramsey, Robertson, Rogers, Sutherland, Thompson, Walls and Andrews) were operated upon by twelve men, the time of the operation after the onset of the symptoms being two and a half, three, three, three, four, four, five, five, ten and twenty-two weeks in the cases in which it was noted. Death occurred in eight cases in thirty hours or less; one died in five days of bronchopneumonia, one suddenly in five days without apparent cause, another in two weeks from peritonitis caused by a hernia of the bowel, and still another after two weeks from gradual failure. Gastro-enterostomy was done in nine cases, a Loreta operation in two, and a pyloroplasty in another.

The 16 cases (Capps and Bavan, Cautley, Keefe, Kimball and Hartly, Nicoll [5], Rogers and Howland, Sarvonat, Scudder, Townsend and

Scudder, Walls and Andrews, Rotch and Murphy) which recovered were operated on by ten different men, the interval between the onset of the symptoms and the operation in the 6 cases in which this is given being two, three, three and one half, four, six and nine weeks, respectively. A gastro-enterostomy was done in eight cases, a Loreta operation in one and a pyloroplasty in another. The patients were well two and one half, two and one half, three, three and one half, four, five, five, six, twelve and eighteen months after the operation. In one, however, the digestion was still feeble after six months. The youngest patient successfully operated on was that of Scudder at two weeks. It must be recognized that these cases operated upon represent the more severe types. Also that cases of pyloric stenosis if left until they are *in extremis* before operation will almost invariably die; witness the case of Morse and Murphy, where the infant was acknowledged to be practically moribund when operated on. In contrast are the later cases reported by Rotch and Murphy, where two successive cases which when operated on showed a true hypertrophic stenosis, recovered. None of these cases, however, were by any means moribund, but were losing so rapidly in weight that it was evident that they would die unless relieved by operation. It is, in fact, highly probable that most of the fatal operative cases were too much reduced to obtain a favorable result with operation, and that more attention should be paid to cases operated on early.

On the other hand, it is especially necessary to recognize that the differential diagnosis between severe cases of difficult feeding and spasmodic partial stenosis is exceedingly difficult, and to our minds not to be accepted unless those who have treated them medically have used breast milk, or are known to be thoroughly posted in the modern American methods of substitute feeding. We therefore look upon the comparatively large list of German and French cases with some distrust, and do not by any means take such statistics as final.

Morse and Scudder, as spoken of in Scudder's paper, take the ground that the usual custom of giving very small amounts of food at frequent intervals after the operation results in the nutrition not being properly kept up. They therefore advise giving the usual amount of food for the age at the usual intervals, since there is no risk of the wound in the stomach giving way, at any rate during the first week, and because the nutrition can be kept up much better in this way and the prognosis thereby materially improved.

Rotch and Murphy, on the contrary, hold that this view is open to question. In their opinion it is not alone a question of the strength of the suture line, but, primarily, one of maintaining the general strength and not upsetting the digestion. According to them it has been proven definitely, they think, that on the small amounts of food — as shown by two of their cases — the strength may be maintained, and that probably on these small amounts there is not so great a chance of upsetting the digestion. One would not ask an atrophied muscle to assume full function at once, therefore why ask the gastro-intestinal tract to do so? In fact it is probable that there is always a slight paralysis of the gastric muscles for some time after operation, a condition which Rotch and Murphy found to call for the most careful regulation of the food by giving small amounts of food and feeding as one would a difficult case of indigestion for some time. The larger and normal amounts of food at once caused a recurrence of the vomiting in their cases during the first forty-eight hours after the operation.

The condition of the pylorus found in the operative cases did not differ from that which has been described in the past. The condition of the stomach wall and the presence or absence of dilatation of the stomach was not noted in most cases. The wall was thickened, however, more often than it was not and the stomach was seldom dilated. Dilatation of the stomach was noted clinically before operation in eight cases and the absence of dilatation was noted twice. Visible peristalsis was noted in sixteen cases. No mention of it is made in the others. A tumor was noted in eleven; no tumor was found in six.

Autopsies were performed on six cases which were not operated upon. Among these should be noted the case of Audry and Sarvonat, the first French case reported. The condition of the pylorus in these cases was the usual one. Thickening of the stomach wall was noted in two and a normal condition in two. No dilatation of the stomach was found in two cases, there being no data in the others.

Much has been written during this period regarding spasm of the pylorus. Wernstedt studied pathologically the stomachs of several hundred normal children and sixteen with stenosis of the pylorus. All of these sixteen were less than eight months old and all belonged to Hirschsprung's type. There was hypertrophy of the muscles of the whole stomach in all. This, he believes, proves that they are spastic in origin. Hence he claims that the term " congenital " is unsuitable, and that the term " pyloric spasm " or " spastic pyloric contracture in infancy " should be used. He found that the relations between the longitudinal and circular fibers of the pylorus were the same as in the normal stomach. Otherwise his observations on the pylorus agree with those of other observers. On the other hand, Wernstedt's observations concerning the hypertrophy of the muscles of the whole stomach have not been universally substantiated by other observers. Even if an hypertrophy were found, it might be explained, as suggested by Murphy, as secondary to the obstruction, just the same as the intestinal wall may hypertrophy above an obstruction.

Heubner claims to have seen 49 cases of spasm of the pylorus amount ten thousand illnesses of all sorts in childhood, giving a frequency of about .5%. Eliminating cases which might be criticised, he has 41, 20 of which were seen but once in consultation. Two of these are known to have died and 6 others to have recovered. The other 21 cases were in his own practice and were carefully followed. Only 2 of these died, giving a mortality of 9.5%. Both of these infants belonged to the same family which had already lost another infant from what was probably the same disease. The vomiting began at birth in 5, in the first month in the vast majority, and in the first two months in all, which he thinks is early enough to warrant the assumption that the disease is congenital. He believes, however, that too much attention is paid to the vomiting, and that the vomiting does not coincide with the beginning of the disease. Eleven of 33 cases were nursed by their mother and 14 had wet nurses; only 3 were entirely artificially fed. The vomiting was usually in large amounts and forcible, and in three fifths of the cases the condition had become urgent in a few weeks. Hyperchloridia was not found in the few cases which were studied chemically. He believes, moreover, that if it is present it is not the origin of the disease, but merely an irritative phenomenon of secretion in the same way that spasm is of motion. There was visible peristalsis in all of his cases. No note is made, however, as to the presence or absence of tumor. The general condition was always poor. He gives the histories of a number of cases in detail in order to prove that his cases were as severe as those of others. He has seen only one case of this condition at autopsy, but says that neither this case nor the descriptions and pictures which he has seen has been able to convince him that Hirschsprung's stenosis of the pylorus is an organic disease, a new growth or a malformation. He states that Wernstedt was able to demonstrate a continuous series of changes from the anatomical conditions found in the strongly contracted pyloric part of the normal stomach to the most intense cartilaginous tumor presented by the stomach of the infant dead with the symptoms of uncontrollable vomiting. He states that there is nothing unusual or abnormal about the condition, which is merely an exaggeration of the normal. The only pathological anomaly is muscular hypertrophy, which is present not only in the pyloric region, but also in the rest of the stomach. [The notes just given as to the thickness of the stomach wall in the operated and autopsied cases are interesting in this connection.] He quotes Ibrahim as showing that the stomach is not dilated, but smaller than normal. [The notes just given on this point in the operated and autopsied cases are also of interest.] He maintains that the primary condition is not stenosis of the pylorus, but spasm of the stomach muscles, and that the visible peristalsis is mainly primary and only in part due to obstruction at the pylorus. He believes that as the visible peristalsis is not a sign of obstruction at the pylorus, but of muscular spasm, that it is present before vomiting begins, and that as vomiting is often present at birth, the disease may have been present in fetal life. Further arguments in favor of the congenital origin of gastrospasmus are found in the family disposition to the disease and in the nervous heredity so frequently present. He states that since he considers congenital gastrospasmus to be a primary spastic condition, in which the difficult passage through the pylorus is more spastic than mechanical in origin, his treatment is based on this belief, and that as he has seen all of his cases, with the exception of those in one family, recover under dietetic treatment, he can never make up his mind to recommend operative interference. Naturally he does not place the greatest importance upon diminishing the vomiting directly, but upon removing the muscular spasm, which is the cause of the vomiting. He thinks that washing out the stomach and the giving of small amounts of nourishment frequently are likely to increase the irritative condition. He believes that the first principle of treatment is forbearance, and that the stomach must be allowed to rest as much as possible. He therefore abstains from stomach washing and feeds the children at the longest possible intervals. He then lets them drink and vomit as much as they wish, believing that what remains in the stomach will be more easily carried through after the pylorus has been rested for a long time. He believes that breast milk is the best food, but that recovery will take place under various kinds of food. He recommends warm poultices very highly, and gives a high injection of water at body temperature daily. He gives anti-spasmodic drugs, such as opium and atropine, by rectum rather than by mouth.

The turn for the better in the nineteen cases whose course he was able to follow came in the comparatively short time of from seven to fourteen days or a little longer. Improvement was slow and interrupted by frequent relapses in seven. There was a sudden turn for the better, followed by a long and tedious relapse, in three, while nine remained perfectly well. Four later showed various nervous disturbances, and in two sensitiveness of the stomach persisted for years. Another suffered from periodic vomiting.

It seems to us that Heubner's statements, as just quoted, are not convincing. For cases of true hypertrophic stenosis the improvement was remarkably rapid. Certainly, on any basis of treatment, in forty-nine observed cases the observer should have seen more than one post-mortem specimen. Also, it is hard to reconcile his opinion that the condition is one of spasm of all the stomach muscles when we consider the immediate relief these cases get after operation.

Whatever opinions may be held, however, as to the correctness of Heubner's view as to the nature of stenosis of the pylorus in infancy, there has certainly been reported within the last two years a very interesting series of cases. A tumor was felt in the region of the pylorus in a number, and in nearly all of them there was visible peristalsis. These cases seem worthy of detailed mention. All had the typical symptoms of vomiting and emaciation and most of them were constipated. Morse recognized his case to be one of spasm — not an actual hypertrophy — and it is probable that some of the others were cases of simple spasm. Special note will be made only of the size of the stomach and the presence or absence of visible peristalsis and tumor. They are arranged roughly according to the treatment employed.

Reinach: Visible peristalsis: not tumor. Breast feeding, condensed buttermilk, gradual resumption of milk feeding. Lavage. Symptoms gone after four and one-half months.

Marx: Visible peristalsis; no tumor. HCl—. Breast, small amounts often. Lavage. Poultices. Rapid recovery after two and one-half months. Well at seven months.

Marx: Slight dilatation; visible peristalsis; no tumor. HCl+. Breast, small amounts often. Karlsbad water at each feeding. Lavage. Poulticing. Improvement in one month. Well in two months.

Murdock: Visible peristalsis; no note as to tumor. Lavage. Doing well after seven months.

Kerley: "All classical signs." Small quantities of breast-milk. Daily lavage. Recovery.

Morse: Stomach not dilated; visible peristalsis; no tumor. Vomitus acid. Breast-milk at usual intervals for age + lime water. Recovery in seven months. Well at two and one-half years.

Harper and Harper: Visible peristalsis; tumor. Best results from small amounts of peptonized milk at very frequent intervals together with injections of normal salt solution, one half pint, twice daily. Recovery at eight months. Well at one year.

Griffith: Dilatation of stomach; visible peristalsis; no tumor. Careful feeding and lavage. Well in four months.

Blaxland; Visible peristalsis; tumor. Acidity increased. Humanized milk, small amounts often. Lavage. Recovery at eight and one-half months. Well one month later.

Sutherland: Visible peristalsis; no tumor. Daily lavage. Breast milk at short intervals in small amounts. Marked improvement in three weeks. Peristalsis ceased in two months. Well two months later.

Sutherland: Dilatation of stomach; visible peristalsis; tumor. Daily lavage. Small amounts at short intervals. Improvement at once. Well in three months.

Berkholz: Two cases reported in great detail. Very small amounts of food. Infants were able to gain on 65 C per kilo. Minimal amount of food an important factor in treatment.

Hutchinson: Stated at Toronto meeting of British Medical Society that in the last two years he had seen eight well-marked cases with all the classical symptoms recover entirely under medical treatment. In one some dilatation of the stomach remained.

(To be continued.)

Reports of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Seventh Triennial Session, Washington, D. C., May 7 and 8, 1907.

First Day.

The Congress was opened at 4 P.M. by the President, Dr. Reginald H. Fitz, Boston, Mass.

EVOLUTION OF THE IDEA OF EXPERIMENT IN MEDICINE.

Dr. Wm. Osler, Oxford, England, read this paper. He said, that man can interrogate as well as observe nature was a lesson slowly learned in this evolution. Of the two methods by which he could do this, the mathematical and the experimental, both had been equally fruitful; by the one he had gauged the starry heights and harnessed the cosmic forces to his will; by the other he had solved many of the problems of life and lightened many of the burdens of humanity. He traced the beginnings of experimental science from its foundation with the Sumerian race. These old Greeks had anticipations of nearly every modern discovery and there were details of one fundamental experiment, that of the discovery by Pythagoras, of the dependence of the pitch of sound on the length of the vibrating chord. The Greeks, however, did not add to their genius for brilliant generalization and careful observation the capacity to carry out experiments, and neither Plato nor Aristotle understood the value of experiment as an instrument of the progress of knowledge. Hippocrates had appreciated the fact more than any of his contemporaries, but even to him facts obtained by observation were the beginning and end of the art. The great masters of the Alexandrine school were the first and great anatomists, and they had an extraordinary quality of zeal for experimentation which, according to Celsus, led to the vivisection of criminals. Among the Empirics arose the science of toxicology and the study of poisons and their antidotes, and not only animals but criminals were used to test the effects of poisons and the idea of protection by gradually increasing doses of the poison, and the use of the blood of animals rendered immune were understood. Galen was not a greater observer than Hippocrates, but he stood out in our history as the first physician who had a clear conception of medicine as a science. In brilliant experiments upon the heart and arteries he had almost demonstrated the circulation of the blood, and in his work on the nervous system he had anticipated the discovery of Bell and Marshall Hall and laid the foundations for our knowledge of the physiology of the brain and spinal cord. In none of the writings of the Arabian school was there to be found any solid contribution to anatomy or physiology. Gradually, however, the paralytic-like torpor passed away and independent spirits like Paracelsus defied all traditions and threw the doctrines of Galen and Avicenna to the winds. Throughout the sixteenth century, however, there had been very little experimental work in medicine. Then came the instruments of precision in medicines with the construction of the thermometer by Sanctorius and the pulsilogium of Galileo. Contemporaneously with Sanctorius, Harvey had demonstrated the circulation of the blood, but neither Sanctorius nor Harvey had had the immediate influence upon their contemporaries which the stimulating character of their work justified. In the latter half of the eighteenth century experimental science received its greatest impetus through the work of Spallanzani who demonstrated the chemical nature of the digestive process and John Hunter who was able to raise pathology into a science. In the beginning of the last century the art of observation had found its fullest development in the hands of the French school, by which the diagnosis of disease was put upon a sound basis, and in the forties, Virchow revealed for the first time the true seats of disease. The last half of the century could be called the era of of experimental medicine and the great results had been along three lines, — the discovery of the functions of organs, the discovery of the causes of disease and the discovery of new methods of treatment. A single generation had witnessed a complete readjustment of our outlook on physiology, pathology and practice, and this had all come from a recognition that experiment is the very basis of science. Only a beginning had been made, however, and there was not a department in practical medicine in which there were not innumerable problems awaiting solution, and what was needed was clinicians who could keep in close touch with physiology, pathology and chemistry and who were prepared to transfer to the wards through proper channels the knowledge of the laboratory.

NEUROLOGICAL AND PSYCHIATRIC DIAGNOSIS.

Dr. Lewellys F. Barker, Baltimore, Md., said that no hard and fast line could be drawn between laboratory and clinical diagnosis; the clinic was the mother of the medical laboratory. The anatomical laboratory dated back three hundred years, but the physiological, pathological and chemical laboratories were creations of the nineteenth century. The establishment of psychopathic laboratories now promises to be of great significance in the advancement of psychiatric diagnosis. The diagnoses of nervous and mental diseases had made but slow progress until very recent times. The relation of symptoms to lesions in neurology were more difficult to determine because of the difficulties in opening the brain and getting at the seat of the trouble. It was much easier to study alterations in the liver or kidneys than to investigate the lesions of the central nervous system, and yet, as has been said, a pin prick in such a part might cause more damage to the general system than the passage of a crowbar through another. Slow but sure progress, however, has been made by the study of autopsies. Helmholz's invention of the ophthalmoscope has done much to advance the science of neurology and every neurologist now makes use of it. The tendency of modern psychology was to become more and more objective and in this way only was it possible to obtain scientific results. The certainty with which a diagnosis in dementia paralytica could now be made was one of the great advances in psychiatry. Dr. Barker thought that a great impetus would be given to this work if psychiatric clinics could be established in connection with every hospital and medical school in this country, and he expressed the hope that that would soon be done.

ON CHEMICAL AND BIOLOGICAL DIAGNOSIS.

Dr. Alfred Stengel, Philadelphia, had been led to the conclusion that the work of the laboratory man, whether in chemistry or biology, must be constantly checked by the equally important work of the clinician, just as the work of the clinician requires the check of the laboratory worker. His results might be far more erroneous than those of the clinician but they might be able to advance the science in a way that would never be possible by mere clinical observation. The introduction of chemistry into medicine had begun with the discovery of oxygen, when the possibility of estimating the oxidation going on in the living body was shown. It had been thought then that this would throw a great deal of light upon diseased processes, but so far as diagnosis was concerned the most important thing we had learned was that in diseases where oxidation is supposed to be reduced, a reduced oxidation doesn't really exist, as in anemia. It had been thought that the amount of oxidation might be obtained by the studies of urea in elimination, but the estimates of urea, without taking into consideration the question of absorption and the intake of food, were absolutely worthless. So far as the total nitrogen is concerned the same thing could be said. As to the production of uric acid and its estimation, fanciful theories of uric acid diathesis had been abandoned. As to the carbohydrate metabolism the presence of sugar in the urine was shown to be an abnormal condition and when combined with certain clinical symptoms constituted the disease of diabetes. The most important principle that physiological chemists discovered, perhaps, was that the defence of the body against chemical poisons is due to a pairing with other substances in the body, as of one of the acids with an alkali; that urea and bile salts combined with other substances for their elimination. This theory of pairing had led to the discovery of the only genuine auto-intoxication of which we had any accurate knowledge, that of acid intoxication which occurs in a variety of conditions. In diseases of the stomach a great deal had been expected from investigations of the gastric juice, but the quantitative estimates of the stomach contents had not proven as valuable as studies of the motility of that organ. Conrad's method for diagnosis of typhoid the writer considered an improvement over the Widal reaction. As to tuberculin he thought the views of Dr. Trudeau deserved more general acceptance, namely, that if carefully used small amounts of tuberculin were safe and the diagnosis is greatly facilitated by its use. With regard to the opsonic index there could hardly be a positive expression of opinion as yet and certainly the difficulty of making the examinations rendered the test of doubtful value to practitioners.

PHYSICAL DIAGNOSIS.

Dr. Richard C. Cabot, Boston, hoped that this congress and the year 1907 would mark an end of the false and harmful distinction between the laboratory and clinical methods of diagnosis, for the distinction could not be defined and did not in fact exist, although we attempted sometimes (and most disastrously) to approximate to it. There should be no diagnoses made merely in the laboratory and none merely at the bedside. The degree of exactness in any technical procedure depended wholly on the end to be secured. We might have too much exactness as well as too little. But we could not have too much clearness in the expression of our results. Modern physical diagnosis showed (among others) two dominant tendencies: (*a*) to seek for and prize the most direct methods of examination; (*b*) to lay stress upon the present functional capacity of an organ rather than upon the present appearance of anatomical lesions. The writer believed that the oldest methods — inspection and palpation — are still the best. Among recent additions to our technical resources three could be mentioned as likely to stand the test of time. These were: (*a*) x-ray examination; (*b*) blood pressure measurements; (*c*) palpation of the abdomen beneath the surface of the warm bath. In the examination of sputa we had progressed from the complex to the simple. Reduced to its essentials sputum work to-day meant a good look at the sputum in bulk, the judicious use of one's nose and the search for tubercle bacilli. Curschman's spirals, Charcot Leyden crystals, fibrous casts, influenza bacilli, yielded no clews for diagnosis, prognosis or treatment.

THE BORDER LAND OF MEDICINE AND SURGERY.

President's Address. **Dr. Reginald H. Fitz**, Boston, delivered this address. (See Journal, May 23, p. 655.)

Second Day.

Subject considered:

The Comparative Value of the Medical and Surgical Treatment of the Immediate and Remote Results of Ulcer of the Stomach.

INDICATIONS FOR, METHODS OF, AND THE RESULTS TO BE EXPECTED IN THE MEDICINAL TREATMENT OF ULCER OF THE STOMACH.

Dr. John H. Musser, Philadelphia, opened the discussion of this subject and after reviewing voluminous statistics, concluded that gastric ulcer is a medical disease. Gastric ulcer with complications and sequelæ is sometimes a surgical disease. That if perforation occurs it becomes a surgical affection at once. If hemorrhage occurs acutely it is rarely a surgical affection; if repeated and chronic, it is surgical. If the ulcer is productive of perversion of secretory function alone, it remains a medical affection. Inasmuch as hyperchlorhydria is in part a neurosis, the secretory function can be balanced chiefly by medical, dietetic and hygienic measures. Even if pyloric spasm attends the hypersecretion and hyperacidity, it does not necessarily take the case beyond medical care. It is wrong to submit such a class of cases to operation, unless motor disturbances come to the foreground. If the symptoms and physical signs of retention from obstruction, dilatation, hour-glass contraction, or adhesions supervene and persist, the case is a surgical one. If the symptoms of gastric ulcer become continuous in spite of medical treatment and incapacitate or threaten life, if hemorrhage recurs and secondary anemia arises, it is a surgical disease. Such cases are always attended by organic sequelæ. The extraordinary frequency of chronic gastric ulcer with sequelæ requiring operation at the present day is due to neglect of the treatment of an ulcer in its incipiency. Statistics show that most cases are operated on between the thirtieth and fortieth years and have an ulcer history of five to ten years' duration. The evidence is not sufficient to show that gastric ulcer is a forerunner of gastric cancer. After the surgical procedures of necessity are carried out, the case must be treated medically. Medical treatment must be continued over a period of four months at least; hygienic and dietetic over a period of years; the best permanent relief and the most complete restoration to health occur in those cases which recover after perforation of the gastric ulcer; an operation which, if possible, could approach this accident in an anatomical result would be the best.

Dr. Charles G. Stockton, Buffalo, N. Y., said that Dr. Musser had assembled the evidence that recent experience had made possible in the medical treatment of peptic ulcer and pointed out what advance had been made; to decide, in view of all these facts, the most judicious course to pursue, without attempting to press overmuch the importance of any particular method of treatment, was a task. Did we permit ourselves to champion some method with the zeal that success in a comparatively small group of cases sometimes suggests, we would undoubtedly fail. It was very important at this period not to array against each other the comparative advantages of medical and surgical practices. Rather there should be made the deliberate effort so to view the matter that we might concur in deciding more the place of each in the treatment of this disease. We should attempt to exclude certain cases that closely resemble in symptomatology peptic ulcer, but in which, despite the occurrence of pain, tenderness, spasm, vomiting and hemorrhage, no ulcer actually exists. He denied that it was always true, as had been asserted in some quarters, that these cases do in fact suffer from undiscovered ulcer or fissure, because oozing of blood might be seen through the turgid, deeply congested mucosa, that showed no lesion even under the magnifying glass, and because superficial erosions or fissures in an otherwise healthy stomach are rapidly cured by nature and are practically without symptoms. Those ulcerated processes dependent upon special infections, like syphilis, tuberculosis and pyemia, should be excluded from the consideration. There remained two distinct divisions of peptic ulcer; first, the more frequent type, the acute, which occurs in younger patients and appears often in chlorotic young women; and, second, the type more commonly developing in older patients, those past middle life. The prevention of gastric ulcer could be summarized thus: maintain a calm nervous system in a well conditioned body; the medical treatment; to make a positive diagnosis, begin treatment early, and carry out with painstaking attention the details for a long time, general rest, in some cases discreet feeding, in others periodical starvation, depending for support upon frequent small enemata of normal salt solution. For the control of hemorrhage, in addition to rest, local treatment through the stomach tube, using ice water, adrenalin solution and gelatin water. In irritating hyperacidity one should use local general sedatives and antacids. To relieve hypertension and spasm of the stomach, in addition to suitable drugs, the external applications of Von Leube. Treatment should be continued long after apparent cure and the stool studied for occult blood. The indications for surgery were for the relief of results of gastric ulcer rather than for the cure of the disease itself.

THE CONTRIBUTION OF SURGERY TO A BETTER UNDERSTANDING OF GASTRIC AND DUODENAL ULCER.

Dr. Wm. J. Mayo, Rochester, Minn., divided ulcers of the stomach or duodenum into two classes, — indurated ulcer involves all of the coats of the stomach or intestine and its existence may be demonstrated from the exterior of the organ. All the notable contributions of surgery to our knowledge of ulcer concerned this group. Surgical investigation had shown, first, that ulcer of the duodenum in the upper inch and a half is as common as ulcer in the whole of the stomach. Second, that the majority of ulcers called pyloric have their origin in the duodenum. Third, that the male sex is more frequently afflicted with ulcer of the stomach and duodenum (62 males to 38 females) by reason of the fact that 77% of duodenal ulcers are in the male, true gastric ulcer being about even in the two sexes, 52 males to 48 females. Fourth, that cancer frequently has its origin in ulcers. In 54% of 69 cases of cancer of the stomach submitted to resection by Dr. Chas. H. Mayo and the writer in 1905–6, cancer could be demonstrated to have had its origin in ulcer. Non-indurated mucous ulcer, also described as clinical or medical ulcer, gives no evidence from the exterior of the stomach or duodenum of its existence, and unless the interior be successfully explored, the diagnosis remains in doubt. Nearly all the failures in the surgery of ulcers concerned this group. The existence of acute non-indurated mucous ulcer was shown by operations for acute perforations, hemorrhage and post-mortem investigations of deaths from these causes. Chronic non-indurated mucous ulcer was certainly very rare. The large majority of cases so diagnosed were in reality non-surgical conditions, such as pyloric spasm, atonic dilatation, gastroptosis and the gastric neuroses. If a diagnosticated chronic non-indurated mucous ulcer (clinical ulcer) cannot be demonstrated at the operating table, it probably does not exist and operation should not be done on an improved hypothesis unless complications, such as hemorrhage, perforation or obstruction, coexist.

Dr. John C. Munro, Boston, had made an analysis of 150 cases. Of these 87 showed gross ulcer of the stomach or duodenum; 16 belonged to the class of so-called medical ulcer, where no gross ulcer could be found at operation; 25 showed well marked adhesions, without evidence of ulcer; 15 were the so-called neuroses and 9 classed as ptosis, spasm of the pylorus, etc. As to the question of immediate gastro-enterostomy in perforation he believed the anastomosis shortened convalescence and tended to obviate the necessity of secondary operations. The simpler the technic and the nearer we followed anatomical lines the better the result. The different methods of operation were gone over in detail. Excision of the ulcer area, which is also the cancer area, he considered the ideal operation after middle life. The decision upon the type of operation depended upon the individual case and the experience of the operator. The simplicity and cleanliness of the clamp and suture operation spoke highly in its favor and he thought was to be preferred to any other. When relief is obtained in these cases it excels that in almost any other class of diseases, besides relieving the chances of engrafted malignancy.

Dr. A. Jacobi, New York, in discussing the subject, said that ulcers of the stomach, both acute and chronic, are frequent at every age. There were those whose experience permitted them to say that from 2% to 5% of the population suffer from it. Brinton collected 226 cases, of whom two were under ten years of age; 18, from 10 to 20; 43, from 20 to 30; 38, from 30 to 40; 38, from 50 to 60; and 32, from 60 to 70. Similar results had been obtained by Cruveilhier and by Rokitansky. A late case had been published by Immerwohl, the patient being four years old, with a chronic ulcer and nephritis, dying of uremia. Ulcer of the stomach, in its most dangerous form, was not infrequent in the infant. Between the seventh and thirteenth year was not at all rare. Most ulcers were found on the posterior wall near or in the small curvature; the next locality of predilection being the neighborhood of the pylorus, while some were found in the cardia or in the fundus, in the anterior wall and the large curvature. The size might be no larger than the head of a pin, detected with difficulty at autopsy, while they might be the size of a hand. As to the occurrence of hemorrhage his own observation, extending over a period of fifty-four years of private and hospital practice, coincided with that of Leube, that it occurred in less than 1%. His experience as to perforations also coincided with that of Leube that they occurred in about 1% to 2%. As to the mortality reports the vast differences ranging from 2.4% to 50% proved for the thousandth time that statistics may be the most deceptive and most irrational method of dealing with any clinical question. The experience of the general practitioner in a large practice among the poor or among the rich, among men or among women, the general physician with a family practice only or an office practice pre-eminently, the consultant who is called in to see bad cases only, the stomach specialist, the surgeon in general practice, the hospital physician in whose wards bad cases only take refuge, the hospital surgeon who never sees anything but hemorrhages and perforations, give a variety of observers and a variety of cases. Exclusive hospital physicians and surgeons have little experience with the average ulcer of the stomach; theirs being only an experience with bad or fatal cases. Their statistics referred to hemorrhages and perforations, not to chronic ulcer of the stomach. The main symptoms of gastric ulcer were given as pain, hyperacidity and sometimes hemorrhage. The presence of ulcer required constant alkalinization of the stomach, the administration of an alkali at long intervals being insufficient. He gave an alkali before every meal and at intervals of two hours for months and preferred those which contained no carbonic acid, which inflated the stomach. The best was magnesia, magnesium oxide, three to four grams a day. Bismuth subcarbonate, not subnitrate on account of its gritty condition, might be safely added. The speaker felt positive from what he knew of the frequency of gastric ulcer in general practice and of the long time it takes negligent or indigent patients to nurse their illness up into the stage of hemorrhage or perforation that it was often cured and prevented from the necessity of getting into the medical or surgical hospital ward. Conservative surgeons admitted that 75% of gastric ulcers were cured by internal treatment. After the operator had performed his duty the case became again that of the practitioner and there might be an organ of doubtful utility, for the creation of a funnel was not the restoration of a normal stomach.

Dr. E. G. Janeway, New York, believed that the medical men and the surgeons were now pretty well agreed on this subject; certainly they were in entire accord as to perforation; where there was perforation operation was indicated and indicated at once if the best results were to be expected. The same was true of stenoses and obstruction of the pylorus with cicatrices. He did not feel that lavage was advisable in these cases and referred to two instances where death had been produced by its employment. He had the same objection to the use of subnitrate of bismuth that Dr. Jacobi had mentioned; it could be seen under the microscope to consist of crystalline flakes with sharp edges, and why it had remained so long a favorite remedy he could not understand; he had had one case in which the sharp flakes were found in the passages. He preferred the subcarbonate or subgallate. He did not advocate the use of subnitrate of silver in these cases as there was no certainty of touching the ulcer with it. He advocated Trousseau's method of requiring the treatment to extend over a period of two years. The patient should be put on his guard and told that he has a chronic disease for which the treatment must be kept up for a long time.

At the conclusion of the meeting the secretary, Dr. Wm. H. Carmalt, was presented with a silver loving cup by the presidents of the congress and presidents of its constituent associations, in appreciation of his faithful and untiring efforts for the success of the organization.

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Book Reviews.

A Textbook of Elementary Analytical Chemistry, Qualitative and Volumetric. By John H. Long, M.S., Sc.D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Third edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1906.

Several important changes have been made in this third edition. A chapter has been added on generalities, on reactions in solution, and the qualitative processes have been somewhat simplified. Under the head of volumetric analysis several paragraphs have been added on the use of indicators, and a few new processes are described, notably, methods for the titration of formaldehyde and borates.

The work is a valuable one for the student of analytical chemistry.

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Dr. Jean Charcot has presented to the Salpêtrière in Paris the entire library of his father, which is considered one of the foremost collections of neurological literature in the world. Dr. Charcot has also presented to the same institution the furniture of his father's study.

THE BOSTON

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THE HOUSING PROBLEM IN WASHINGTON.

The casual visitor to the national Capital must always be impressed with the striking contrasts between wealth and poverty, even in the best quarters of the city. This one expects in a city of very rapid growth, such, for example, as New York, but it occasions more surprise in a city of moderate size, and particularly in one which is the center of the political life of the country. An explanation of this condition of affairs in Washington is no doubt to be found in the large negro population, which at the time of the Civil War poured into the District of Columbia to the estimated number of between thirty and forty thousand. These negroes were naturally destitute, shiftless and, in great measure, incapable of caring for themselves. The result was the erection of innumerable hovels, many of them within the city limits, from materials obtained from various sources and often, at that time, from abandoned army camps and hospitals. The natural result of this over-crowding of an ignorant population in unsanitary dwellings was a greatly increased mortality. During the smallpox epidemic of 1871–2 but one case occurred in two hundred and twenty-five whites, whereas the proportion was one in thirty-eight among the negro population. In 1875 the general death-rate was twice as great among the colored as among the white population, a proportion which practically remains to-day, although the death-rate of both white and colored has been very materially reduced.

We have before us an extremely interesting account, by Dr. George M. Kober, of "The History and Development of the Housing Movement in the City of Washington, D. C.," recently published by the Washington Sanitary Improvement Company. The fact that disease is propagated by the unsanitary conditions which necessarily accompany overcrowding is perfectly well recognized, and has been for many years. In 1872 the Washington Board of Health called attention to the fact that houses unfit for occupation were in existence in the city, and a specific ordinance was issued which rendered possible the condemnation of such houses by officers of the Board of Health. As a result of this very salutary movement, many houses were reported as unfit for human habitation, some of which were condemned. For example, in 1875, 699 houses were reported as unfit and 198 condemned. In the following year 424 reported and 371 condemned. In the report of the Board of Health for 1877 the following statement is made:

"No meaner cabins for temporary or permanent shelter can be found than some in which our wretched poor are born and exist and die here at the capital of the United States. And, strange as it may seem, none so mean that they have not an owner mean enough to charge rent for them. Down in the alleys, below grade, with combination of roof of tar, felt, shingles, rags, tin, gravel, boards, and holes; floors damp and broken; walls begrimed by smoke and age; so domiciled are families with all the dignity of tenants having rent to pay."

Unfortunately, in 1880, the good work of house condemnation was stopped, due presumably to political complications, and it required ten years to excite public opinion again to the point of definite action. As Dr. Kober well says:

"This battle against the slums does not concern a few well-meaning citizens alone; it is a question of vital importance to the health, not only of every permanent resident, but to the Chief Magistrate, his cabinet, the foreign ministers, thousands of public officials, the members of the Senate and House of Representatives, and all citizens having business with Congress, besides the countless numbers of visitors who annually pay homage to the city of Washington."

Between 1880 and 1892 practically nothing was done, but in the latter year certain restrictions upon the character of dwellings was made, and in 1894 an organization of public-spirited citizens, known as the Civic Center, vigorously took up the matter. Investigations of alleys and slums, with particular reference to sanitary and sociological conditions, followed, with shocking revelations as to the state of affairs in many parts of the city, and often within a few blocks of the most aristocratic quarters. It was found, as is to be expected, that the wretched hovels and alleys harbored all sorts of vice, immortality and disease-producing conditions. The result has been a strong expression of public opinion, in which the President of the United States has shared, that conditions be improved throughout the city, and the outcome of ten years' work has been the widening of streets, the building of model houses from a sanitary standpoint, for which the rent is small, and in the introduction of various means by which the tenants may be stimulated to take a certain pride in the condition of their dwellings. In the language of General Sternberg, President of the Building Committee, one object of the company which has been formed " is to build sanitary houses for a deserving class of the population which cannot afford to pay the rentals of from ten to sixteen dollars per month which the better class of wage-earners pay for flats of the Washington Sanitary Improvement Company." In other words, it is proposed to build dwellings suited to the means of various classes in the population, which shall not be a discredit to the city and a source of positive danger to its inhabitants.

We commend to all those interested in the broader questions of prophylactic medicine this admirable pamphlet by Dr. Kober. Although what he says applies particularly to the city of Washington, it also has a wide bearing on practically all of our American cities. The success under natural difficulties of the work in Washington should stimulate other communities, even though the conditions may not be so bad, to eradicate centers of crime and disease which are everywhere to be found where people of the poorer class collect in large numbers.

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THE ATTITUDE OF TEXAS TOWARD TUBERCULOSIS.

It is reported, presumably on good authority, that within a short time persons suffering from advanced tuberculosis are to be debarred from entrance to the State of Texas. The state health officer, it is announced, will issue a proclamation and institute a quarantine against persons afflicted with tuberculosis, placing the disease in essentially the same category as yellow fever and smallpox.

A despatch from Washington regarding the Texas situation indicates that Federal officials are considerably agitated; that tuberculosis in their opinion is not a quarantinable disease under maritime or interstate immigration laws although aliens may be debarred from the country when suffering from tuberculosis, under the action of the new immigration law. It is furthermore urged that such a quarantine as Texas proposes will be difficult to establish and sustain on the guaranteed right of every citizen of the United States to pass freely from one state to another. Could such a quarantine be maintained, it is evident that the cost would be large and the possibilities of injustice numerous.

We have on previous occasions taken the opportunity to express disapproval of such attempted exclusion of tuberculous persons from certain states or regions. To any student of the tuberculosis problem it has become apparent that the disease is not communicable in the ordinary sense, as understood by the laity, and that overalarm regarding the spread of the disease is wholly deleterious to the public *morale*, and ultimately a detriment to the cause. Such attempted quarantines in other states in the West have failed, both on account of the protest of intelligent and broad-minded persons in and out of the medical profession and the natural difficulty of enforcing a quarantine against a disease which does not forthwith disclose its character. The excellent progress which is being made toward eradicating tuberculosis is certainly not to be furthered by any such drastic legislation as Texas apparently proposes.

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THE BOSTON MILK FUND.

An appeal has been sent out by the trustees of the milk fund to the citizens of Boston and vicinity in behalf of sick babies during the summer months. The object of this charity is to provide proper milk for babies during the heated term when infant mortality is at its height. The work has been in progress for a number of years and has amply justified its existence through the undoubted saving of many lives. The babies who are recipients of the charity are kept under the care of physicians in charge of different dispensaries and it does not extend to private patients. Naturally the success of such a charity depends upon the amount of contributions provided for its support. During the last seven years upwards of $27,000 have been received in subscriptions and nearly $4,000 from parents grateful for the benefit which their children have received. It is the hope of the management that the fund will grow to such an extent that it may ultimately be continued throughout the year for the benefit of the most needy and delicate infants, although naturally the hot months will continue to make the chief demands upon it.

This charity is certainly an extremely worthy one, which should appeal to all who realize the extreme suffering of small children during the hot months in the crowded quarters of a great city. For a number of years a plan of this sort has been in active operation in New York, and other cities and towns in increasing numbers have adopted it. We note, for example, in this issue the fact that the city of Cambridge has again put in operation a plan begun last year for distributing milk at cost price.

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MEDICAL NOTES.

Institute of Pathology on Blackwell's Island, New York. — It is announced that Mrs. Russell Sage has endowed an institute of pathology to be carried on in connection with the City Hospital and City Home on Blackwell's Island, in the amount of $300,000.

American Orthopedic Association. — At the meeting of the American Orthopedic Association held in Washington on May 7, 8 and 9, the following officers were elected for the ensuing year: President, Dr. Henry Ling Taylor, of New York; Vice-Presidents, Dr. Ansel G. Cook, of Hartford, and Dr. A. R. Shands, of Washington; Treasurer, Dr. Gwilym G. Davis, of Philadelphia; Secretary, Dr. Robert B. Osgood, of Boston; Executive Committee, Dr. Henry Ling Taylor, of New York; Dr. John Ridlon, of Chicago; Dr. Wisner R. Townsend, of New York; Dr. Joel E. Goldthwait, of Boston; Dr. Robert B. Osgood, of Boston.

The meeting was very largely attended, there being over forty members and over forty visitors present.

National Conference of Charities and Correction. — Among the number of interesting papers read at the National Conference of Charities and Correction, held at Minneapolis last week, Dr. George S. Adams, Superintendent of the Westboro, Mass., Insane Hospital, spoke on the subject, "Voluntary Patients in an Insane Hospital," and pointed out the gratifying fact that the number of such voluntary cases was increasing. Dr. Owen Copp, of the Massachusetts State Board of Insanity, urged a better classification of the insane for purposes of treatment by means of proper location of institutions, rational grouping of cases and by distinctions between the hospital, the asylum and the colony.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, June 26, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 30, scarlatina 29, typhoid fever 8, measles 103, tuberculosis 43, smallpox 0.

The death-rate of the reported deaths for the week ending June 26, 1907, was 19.48.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 22, 1907, was 204, against 158 the corresponding week of last year, showing an increase of 46 deaths and making the death-rate for the week 17.67. Of this number 127 were males and 77 were females; 202 were white and 2 colored; 131 were born in the United States, 71 in foreign countries and 2 unknown; 35 were of American parentage, 141 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 39 cases and 2 deaths; scarlatina, 38 cases and 3 deaths; typhoid fever, 7 cases and 0 deaths; measles, 99 cases and 3 deaths; tuberculosis, 44 cases and 23 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 26, whooping cough 0, heart disease 19, bronchitis 4 and marasmus 2. There were 17 deaths from violent causes. The number of children who died under one year was 40; the number under five years, 64. The number of persons who died over sixty years of age was 42. The deaths in public institutions were 63.

There were 6 cases and 11 deaths reported from cerebrospinal meningitis during the week.

A Loving Cup for Dr. Nathan P. Thayer. — Dr. Nathan P. Thayer, whose resignation as resident physician at the Long Island Hospital, Boston, takes effect July 1, has been given a loving cup by the house officers of the institution out of respect for the excellent service he has rendered and as a mark of regret at his resignation.

Harvard Dental Alumni Association. — A meeting of the Harvard Dental Alumni Association was held in Boston, June 24, with an attendance of about one hundred and fifty, many coming from a distance. Clinics and demonstrations were held at the Dental School during the morning, and in the evening the thirty-sixth annual dinner was held at Young's Hotel, the guest of honor being President G. Stanley Hall, of Clark University. Dr. Harvey W. Hardy was elected president for the ensuing year.

Harvard Medical Alumni Association.— The annual meeting of the Harvard Medical Alumni Association was held on Tuesday, June 25, at the Harvard Medical School, with the President, Dr. Alfred Worcester, in the chair. In spite of the heat nearly a hundred members were present and listened with much interest to a valuable paper upon "Medical Teaching at Harvard and the Opportunity it offers the Young Graduate for Medical Training," by Henry A. Christian, M.D.

The committee in charge of the Alumni Fund reported that $2,500 had been turned over to the school, of which sum $1,500 was for use next year and $1,000 was to be added to the Permanent Medical Alumni Fund. Last year $1,200 was given the school together with $2,400 destined to be the nucleus of the Permanent Alumni Fund, which was the product of an earlier subscription and had been held by the Association for some years.

The following gentlemen were elected as Councilors for the ensuing four years: Drs. J. F. A. Adams, J. Collins Warren, E. G. Cutler.

Milk for Infants. — Cambridge, Mass., has just opened stations for the distribution of modified milk to infants at cost. Last summer this work was carried on under the auspices of the Cambridge School for Nurses and proved so beneficent that it was decided to continue the plan this summer and to begin the distribution somewhat earlier. The milk after being modified at the School for Nurses is distributed to the different stations and sold at one to two cents a bottle to those who are in need.

NEW YORK.

Milk Depots. — The Nathan Strauss Pasteuring milk depots began their fifteenth summer season on June 17 with the opening of eleven booths in the public parks and on the recreation piers, making in all seventeen milk stations. Of these, six are maintained throughout the year in the tenement districts. The laboratory where the milk is received and Pasteurized is in charge of Dr. A. R. Green. The milk for infants is dispensed at the various stations in nursing bottles, either in full strength or in modifications adapted to different ages and conditions in the children supplied, and physicians are in attendance at the booths to advise mothers as to the feeding and other care of their babies. This charity has now been maintained for fourteen years by Mr. Strauss, who, in addition to selling the milk at a loss, distributes gratis many thousand bottles each year to the poor.

Seaside Hospital of St. John's Guild. — The Seaside Hospital of St. John's Guild, at New Dorp, Staten Island, has for the first time been kept open all winter, and on June 19 the summer work of the guild was inaugurated with an excursion to New Dorp on the Floating Hospital, *Helen C. Juillard*. To this were invited a large number of the patrons and friends of St. John's Guild, who inspected the admirable appointments of both the floating and seaside hospitals.

Pasteurized Milk in Jersey City. — Mayor Fagan, of Jersey City, announces that he has made arrangements for the establishment of stations in various parts of the city for the dispensing of Pasteurized milk, similar to the Nathan Strauss depots in New York. The first of these will be opened at the City Hall, and is expected to be in operation by July 1. As in New York, those who cannot afford to pay the low rate charged for the milk will be supplied free.

Clubs for Employees at Bellevue Hospital. — Dr. John Brannan, president of the board of trustees of Bellevue and Allied Hospitals, has had organized at Bellevue two clubs for the male and female employees of the hospital. Both the male and female nurses have long had their own associations in the well-equipped homes connected with the institution, but the other employees have hitherto had to seek their recreation outside. Too often this was done by the men in drinking saloons, and the plan now adopted has already resulted in a gratifying improvement in discipline among them. For these clubs comfortable quarters have been provided, with pianos and an ample supply of newspapers and magazines, and no membership fee is charged.

New Catskill Water System. — On June 20, Mayor McClellan turned the first spadeful of earth on the new Catskill water system of the city of New York. The place selected for this was in the valley of Indian Brook, about three miles back of Cold Spring, on the east bank of the Hudson River, and the simple ceremonies in connection with the inauguration of this great work, the estimated cost of which is $162,000,000, were held in the presence of the board of water commissioners and a number of other city officials and invited guests, who made the trip to Cold Spring on the steamboat *Albany*. It is at Cold Spring, where the Hudson entering the gate of the Highlands becomes reduced to the width of 2,800 feet, that the aqueduct conveying the water from the Esopus, Catskill and Schoharie watersheds, stored in the enormous Ashokan reservoir, is to pass, in a tunnel about a thousand feet below the surface, under the bed of the river. In the course of his remarks on this occasion the mayor stated that it had been necessary to do three things before a new water system, urgently needed in the near future, could be actually undertaken: first, to provide an additional borrowing capacity to meet the expenses of the work; second, to enact legislation to make the powers of the local authorities certain; and, third and most important, to arouse public opinion so that the two first obstacles should be removed. He concluded with these earnest words: "As the years merge into the decades and the decades into the centuries, when time has thrown its kindly veil over the bickerings and the differences and the quarrels which seem so much to us and are, after all, so futile and so petty, when friend and enemy, traducer and traduced, have passed away, when our very names shall have been forgotten, when this great work, conceived in honesty, begun in honesty, and, God willing, completed in honesty, shall be administering to the health and happiness of millions yet to come, — then God grant that those who shall see it may say: 'It does not matter how they were called who did this thing, or who they were, or what they were; it is enough that they did their duty.'"

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Current Literature.

Annals of Surgery.

May, 1907.

1. *Keen, W. W. *Severe Burn of Top of Head at Seven Months of Age, followed by Necrosis of Entire Osseous Cap of Cranium.*
2. Martin, F. *The Surgical Treatment of Trifacial Neuralgia.*
3. *Rugh, J. T. *Hemophilic Knee-Joint Operation; Recovery under the Use of Thyroid Extract.*
4. *Harte, R. H. *Stab Wounds of the Heart.*
5. Gordon, G. S. *Hernia of the Stomach through the Diaphragm into the Thorax.*
6. McConnell, G. *Carcinoma of the Cardiac End of the Stomach.*
7. *Brewer, G. E. *A Critical Review of a Recent Series of Operations upon the Stomach.*
8. *Martin, W. *The Lesions Associated with Gunshot Wounds of the Stomach.*
9. *Berg, A. A. *Duodenal Fistula; Its Treatment by Gastrojejunostomy and Pyloric Occlusion.*
10. Solzer, M. *Iliocecal Intussusception due to Myoadenoma of the Ileum.*
11. Davis, B. B. *The Surgical Treatment of Splanchnoptosis.*

1. Keen reports the case of a boy fourteen years old, who at the age of seven months sustained a very severe burn of the top of the head. Six months later the whole calvarium sloughed off, including a large portion of both frontal bones, the whole of both parietal bones, and a part of the squamous portion of the right temporal bone. The resulting scar remained alternately healed and open. Soon after the accident the boy had convulsions, which later became distinct epileptic attacks, and these have increased both in severity and frequency since. Until about eleven years old the boy was at school and showed an excellent memory. At this period, however, the epileptic attacks became more frequent, and he became stupid. Keen did a complete subcutaneous linear craniotomy so as to separate the entire top of the skull from the lower portion in the hope of thus relieving the pressure from scar contracture. The epileptic attacks became somewhat lessened in frequency and the boy less dull, though during the two years following operation the improvement had not been as great as had been hoped for.

3. An interesting case of hemophilic knee-joint is reported by Rugh, occurring in a waiter of twenty-two years, whose family history was negative so far as bleeding was concerned. Before the involvement of the knee there had been two hemorrhages, each of about three weeks' duration, which followed biting of the tongue. Following a fall, the knee-joint began to cause pain. This would recur on any slight provocation, such as a slight twist or forced flexion. For ten years this condition continued intermittently till the function of the joint had become so impaired that he had to give up work. On opening the joint the synovia was found of a chocolate brown color. The hypertrophied portions were excised and the joint drained. There was no excessive hemorrhage during the operation, but two days later on removal of the drainage, bleeding set in, filling the joint and most difficult to control. Gelatin and adrenalin by mouth failed to stop the constant ooze. Ten days after operation, following the administration of 5-gr. doses of thyroid extract three times a day, the condition gradually improved and in a week the bleeding had entirely ceased. Prompt recovery followed.

4. Harte reports a case of stab wound of the heart in which a wound in the left auricle one-half inch in length was successfully sutured. The left pleural cavity had been opened, however, and death occurred about three weeks later. Autopsy showed a badly drained empyema with collapsed lung. There were extensive pericardial adhesions with no evidence whatever of the stab wound. The endocardium and valves were healthy. In operating on these cases Harte advises the simple suprapleural method, taking extreme care not to enter the pleural cavity. Fine chromicized catgut on fine curved needles should be used, and the pericardium closed without drainage. Should the pleural cavity be found open, immediate provision for its drainage should be made if possible.

7. Brewer considers the indications for treatment in benign lesions of the stomach to be: (1) Intelligent medical treatment in all primary cases of simple round ulcer. If unrelieved after six weeks of such treatment operation should be advised. (2) Operation in all cases of indurated chronic ulcer and in all cases of recurrent symptoms after a primary cure. (3) Operation in all cases of pyloric stenosis excepting those due to gummatous infiltration. Seventeen cases are reported in which operation revealed a definite anatomical lesion in 12. Of these cases, 11 made an immediate recovery, while 1 died on the sixth day after operation, from pneumonia. The remaining 5 cases showed no anatomical lesion at operation. One was a case of locomotor ataxia with gastric crises, 1 a case of hysterical pseudo-tetany, while the remaining 3 were examples of gastric neuroses. Though in 2 of these cases considerable improvement in symptoms followed the operation, there was no reason to ascribe this to the operative procedure. Therefore operative intervention should be limited to cases in which the evidence of a definite anatomical lesion is wellnigh conclusive.

8. Following a careful analysis of twenty-five cases of

gunshot wounds of the stomach, Martin concludes as follows: 1. Perforations of the stomach alone should show a low mortality. 2. Uncomplicated gunshot wounds of the stomach are very uncommon. 3. The associated injuries are usually of graver significance than the gastric injury and should therefore be considered in speaking of the mortality of wounds of this character. 4. The mortality of such wounds has been much reduced, being now about 25%.

9. Berg advises closure of the pylorus in addition to gastrojejunostomy in all instances of duodenal fistula. This is best done by a band of tape held by silk ligatures. [W. C. Q.]

SURGERY, GYNECOLOGY AND OBSTETRICS.

MAY, 1907.

1. **Barrett, C. W.** *Endothelioma of the Ovary, with Report of a Case of Hemangio-Endothelioma Perivascularis.*
2. ***Cullen, B.** *A Series of Liver Cases in which it was Necessary to Remove a Segment of the Liver or to Suture Torn Areas.*
3. **Dührssen.** *Treatment of Extensive Cystocele and Uterine Prolapse.*
4. **Kapsammer, G.** *Newer Methods in the Diagnosis of Kidney Diseases.*
5. **Meyer, A. W.** *The Lymphatic Glands in Pregnancy.*
6. ***Egdahl, A.** *Symptomatology and Diagnosis of Acute Pancreatitis.*
7. ***Holden, G. R.** *Dysmenorrhea as a Symptom of Abnormal Pelvic Conditions.*
8. ***Newell, F. S.** *Valvular Disease of the Heart Complicating Pregnancy and Labor.*
9. **Marshall, V. F., and Quick, E.** *Stricture of the Urethra in Male Children.*
10. **Hinchey, F.** *Perineal Lacerations.*
11. **Seelig, M. G.** *Cervical Fistula following Suppuration in a Patent Thyroglossal Duct.*
12. ***Sandberg, J.** *Bier Method of Anesthesia.*
13. **Bird, F. D.** *Syphilis as a Cause of Stomach Disease.*

2. Cullen reports a series of five cases in which it was necessary to remove a segment of the liver or to suture torn areas. His experience has been that with the liver-needle devised by Kousnietzoff, or with the modified needle of Cullen himself, all technical difficulties arising from hemorrhage are overcome. Instead of piercing the vessels, this needle, being quite blunt, pushes them aside. A Hagedorn needle used eye-end first can be used for this purpose with satisfactory results.

6. Basing his report on 107 cases of acute pancreatitis collected from the literature, to which he adds one new case, Egdahl finds the average symptoms of this disease to be the following: 1. A past history of cholecystitis or gastro-intestinal disorder, often of alcoholic origin. 2. Occasionally a past history of typhoid fever, gastric ulcer, or epigastric injury shortly before the attack and giving rise to it. 3. An onset characterized by sudden abdominal pain of extreme severity, greatest in the majority of cases in the epigastrium. 4. Almost immediate nausea and vomiting and early evidence of collapse. 5. A normal or only slightly elevated temperature. 6. Early distention of the abdomen, but no palpable tumor until one or two days after the onset. 7. Icterus, pruritus, cyanosis and hiccough may appear. 8. Glycosuria or lipuria, fat, undigested nuclei and muscle fibers in the stools offer important evidence of pancreatic involvement.

7. Holden has analyzed one thousand consecutive cases at the clinic of Kelly in Baltimore. His conclusions are as follows: 1. Dysmenorrhea is present in 47% of all gynecological hospital patients. 2. In about 23% of the entire number it is due to abnormal conditions of the pelvic organs. 3. In 22% of the entire number it is present in conjunction with such conditions, but is not caused by them. 4. The most frequent causes of dysmenorrhea are (*a*) retrodisplacements of the uterus (41%), (*b*) pelvic inflammation (37%), (*c*) myomata (11%).

8. Newell is of the opinion that any organic heart lesion, even if perfectly compensated under normal conditions of life, should arouse apprehension and call for constant watchfulness if pregnancy supervenes. Pregnancy occurring when the heart lesion is imperfectly compensated is sufficient indication for immediate emptying of the uterus; for a heart which is not able to care for its ordinary work has no chance of supporting the added burden of pregnancy. When a previously well-compensated heart fails under the extra work thrown on it by pregnancy, an attempt may be made to restore compensation by rest and appropriate treatment, but, unless these measures are promptly successful, the heart must be relieved by the removal of the extra burden.

12. Sandberg reports five cases of respiratory paralysis, with death in three instances following spinal anesthesia with stovain. [W. C. Q.]

THE LANCET.

MAY 25, 1907.

1. ***Osler, W.** *Abdominal Tumours Associated with Disease of the Testicle.*
2. ***Parsons, J. H.** *Lesions of the Trigeminal Nerve.*
3. ***Rigby, H. M., and Howard, R. J.** *Torsion of the Testis.*
4. **Hold, P. T.** *On Hypopharyngoscopy.*
5. **Lees, D. B., and Cope, V. Z.** *Two Cases of Pulmonary Regurgitation.*
6. **Bonnet, St. P.** *Acute and Chronic Appendicular Pain.*
7. **Garrett, J. H.** *Sanitary Authorities and Sanitary Officers.*

1. Osler speaks on abdominal tumors associated with or following disease of the testicle. There may be two varieties, either a tumor resulting from an undescended testicle free in the abdomen, usually sarcomatous, or else secondary to disease of the testicle in the glands which drain that organ. The latter tumors are high up in the abdomen, as these glands lie about on the level of the renal artery. The inguinal glands are not usually involved unless the scrotum is attacked. He gives the details of five interesting cases.

2. Parsons describes two sets of eye disturbances resulting from lesions of the trigeminal nerve: (1) herpetic and allied conditions of the cornea, and (2) neuroparalytic keratitis. The first is supposed to be due to changes in the Gasserian ganglion. It is allied to herpes zoster, but does not follow the nerve supply so closely as in that condition. The second condition is apt to follow extirpation of the Gasserian ganglion.

3. Rigby and Howard base their paper on nine cases of torsion of the testis. It may occur at any age, most often on the right, and often in the undescended or incompletely descended testicle. The cause is a congenital abnormality, a voluminous condition of the tunica vaginalis. The exciting cause is not known. Symptoms are pain in the groin, vomiting and sometimes fever and difficulty in micturition. If undescended, there is an exquisitely sensitive swelling above Poupart's ligament, otherwise the swelling involves the entire scrotum. It is difficult to distinguish the condition from strangulated hernia. The result is usually atrophy of the testicle, with sometimes gangrene and sloughing. No fatal case has been reported with or without operation. The treatment is to remove the twisted testis if undescended, and if fully descended, to untwist it and stitch it in position. [J. B. H.]

JUNE 1, 1907.

1. **Knaggs, R. L.** *Puncture Fractures of the Base of the Skull.*
2. **Stevens, B. C.** *Surgical After-treatment.*
3. **McCay, D.** *Physiological and Pathological Observations on Wright's Method of Testing the Blood and Urine, with Special Reference to the Concentration of the Serum and Urine and the Excretory Quotient of Natives of Bengal.*
4. **MacGillivray, C. W.** *A Case of Multilocular Ovarian Cyst Successfully Removed from an Infant Aged Eleven Months.*
5. **Lake, R.** *A Further Note on Rinné's Test.*
6. **Milward, F. V.** *Congenital Piles. Notes on three Cases in which a Pile-like Condition was Noticed from Birth.*
7. **Arnold, E. G. E.** *A Case of Tubal Pregnancy Associated with Ovarian Cyst.*
8. **Morton, E. R.** *On the Value of High-Frequency Spark as a Local Application.*

British Medical Journal.

May 25, 1907.

1. *Blacker, G. F. *Heart Disease in Relation to Pregnancy and Labor.*
2. *Campbell, M. *The Effects of Diet on the Development and Structure of the Uterus.*
3. Pratt, E. *Case of Sudden Death at the Climacteric.*
4. Godson, T. E. *Note on the Use of the Blunt Hook.*
5. Stark, J. N. *A Case of Extra-Uterine Pregnancy in which Unusually Early Rupture of the Gravid Tube Occurred.*
6. Walker, E. W. A. *On the Micro-organism Isolated from Acute Rheumatism and its Relation to Other Members of the Streptococcus Group.*
7. Odgers, N. B. *A Case of Retropharyngeal Fibroma.*
8. Barwell, H. *Epithelioma of the Larynx in a Young Man.*

1. Blacker does not consider it proved that the heart undergoes hypertrophy during pregnancy. In some cases there is more or less hypertrophy, in others it is dilatation, and more often no change occurs, except in position. The blood pressure rises during the second half of pregnancy, as there is undoubtedly more work put on the heart and blood vessels. In valvular disease of the heart the dangers from this overwork are increased, although death from cardiac failure during labor is very uncommon; cardiac failure immediately or shortly after labor is not so rare. The general tendency is to greatly overestimate the dangers of valvular disease complicating pregnancy. Books give the mortality as high as 40% or 50%. It is probably far less than this. If the heart is well compensated, the danger is very slight indeed. As regards marrying, the writer believes that with a well-compensated lesion there is no reason against it.

2. Campbell concludes from his observations on the effect of diet on the development of the uterus that a nonphysiological diet, *i. e.*, exclusively meat or rice, etc., causes a deterioration in the mucous membrane of the uterus; those animals fed on ox-flesh diet alone showed a most marked interference with the normal development of the uterus, associated with sterility. [J. B. H.]

June 1, 1907.

1. *Owen, E. *Remarks on Hernia, Particularly in Children.*
2. *Mummory, P. L. *An Operation for the Removal of the Entire Rectum and Neighboring Lymphatic Area for Carcinoma.*
3. *Rolleston, H. D., and Higgs, F. W. *Squamous-celled Carcinoma of the Stomach and Oesophagus Imitating Tuberculous Ulceration of the Intestine.*
4. Ramsey, R. *Two Cases of Multiple Intestinal Obstruction.*
5. Leipert, R. T. *Two New Genera of Hematodes Occasionally Parasitic in Man.*
6. Macleod, J. M. H. *The X-ray Treatment of Ringworm of the Scalp; Singular Coincidence of Measles with the Defluvium of the Hair.*
7. *Wilkinson, W. C. *A Plea for the Use of Tuberculin within and without Sanitarium.*

1. Owen, in speaking of hernia in children, believes that much can be done by postural treatment and diet before resorting to the knife. He advises keeping the child in an inverted position as much as possible, with the feet high in the air, and to sleep in a marked Trendelenburg posture. This he says does not harm or annoy the infant in any way. Intra-abdominal pressure must be relieved so that there be no straining at stool; for this careful attention to the diet and bowels is necessary. If after a careful trial of non-surgical treatment the hernia still comes down, a radical operation should be done. If the testicle is undescended on the side of the hernia, a not infrequent complication, he advises removing the testicle rather than trying to anchor it in the scrotum.

2. Mummory gives the details of his operation for complete removal of the rectum, with numerous illustrations. He does a preliminary colostomy in every case. The preparation of the patient and the after-treatment are of almost equal importance to the operation. He claims that by this operation the entire rectum and growth with the lymphatics are removed; that aseptic operating is possible; that the normal opening of the bowel is restored in almost all cases; that it permits of the removal of more extensive growths than either the perineal or Kraske method, and there is no mutilation of the pelvis such as is a necessary accompaniment of the latter operation.

3. Rolleston and Higgs describe a case of squamous-cell carcinomatous ulcer of the stomach associated with repeated intestinal hemorrhages, but without hematemesis, which, in conjunction with the discovery of acid-fast bacilli in the material thought at the time to be sputum, gave rise to the diagnosis of tubercular ulceration of the intestine.

7. Wilkinson makes a strong appeal for the use of tuberculin in diagnosis and in treatment. The early diagnosis is the key to successful treatment; the signs of early tuberculosis may be the same as those of healed tuberculosis; a properly given tuberculin test alone will tell the difference. If a patient reacts to such a test he is tuberculous and should be treated as such; if not, no matter what his signs, it is not tuberculosis that is causing the trouble. This test can be of tremendous importance in keeping out of the sanatoria those cases, non-tuberculous, with signs in the lungs resembling tuberculosis. In treatment, he thinks it of great value. The sanatorium treatment alone, without tuberculin, cannot arrest more than 30% of early cases; with tuberculin it can do far more good. He firmly agrees with Koch, Moeller and others that tuberculosis of the first stage can be cured by tuberculin alone, and that it should be used in conjunction with every other form of treatment. The paper is a most interesting one. [J. B. H.]

Münchener Medizinische Wochenschrift, No. 18.

April 30, 1907.

1. *Schade, H. *The Mode of Action of the Priessnitz Compress.*
2. *Bittorf, A. *Further Researches on the Blood Pressure and Cardiac Hypertrophy in Atheroma of the Aorta.*
3. Hoesslin, H. *The Excretion of Agglutinins in the Urine of Patients with Typhoid Fever.*
4. *Gerken, A. T. *A Comparative Study of the Diazo and Widal Reactions and Bacteriemia in Typhoid Fever.*
5. *Stern, A. *The Examination of the Heart in the Trendelenburg Position.*
6. Jones, L. *The Nature of the Epithelial Proliferation following Injections of Olive Oil colored with Scharlach R.*
7. *Koppis, M. *A Case of Cancer of the Lung with Marked Eosinophilia.*
8. Kroph, V. *Dermoid Cyst with Intestinal Adhesion Due to the Pressure of a Tooth.*
9. Hochne, O. *A Simplification of Bylicki's Pelvimeter.*
10. Kiliani. *On Digitoxin and Digalen.*
11. Posternak, S. *Remarks on Marchot's New Method of Administering Phosphorus to Children.*

1. Schade attempts to explain the action of hot and cold (" Priessnitz ") compresses on the basis of differences in the osmotic pressure. The latter has been shown to be much greater in the center of an inflammatory process (*i. e.*, furuncle) than at the periphery, where it is normal. In the region of edema between the two the pressure is intermediate. The compress produces active hyperemia and thereby lowers the osmotic pressure in the intermediate zone, and thus favors the removal of toxic products and a return to the normal osmotic pressure. By this means the pain also is relieved, for it is largely due to increased pressure.

2. Bittorf finds constantly in atheroma of the aorta an increased systolic blood pressure. He attempts to exclude cases of chronic nephritis, but the very high pressure present in 25% of his material suggests that he may not always have been successful in this regard. The absence of autopsies prevents his work from being conclusive, and the question must be regarded as still *sub judice*.

4. The fact that in typhoid fever the presence of bacteriemia and the diazo reaction go hand in hand is con-

firmed by Gerken. The diazo reaction is only to be found at those periods when the bacilli can be cultivated from the blood; later, when the Widal reaction becomes pronounced and the bacilli gradually disappear from the blood, the diazo likewise diminishes, and is usually absent towards the close of the fastigium. Cases treated with salol, calomel or tannagin gave no diazo at any time. The cause for the relation between bacteriemia and diazo reaction remains to be discovered.

5. The examination of the heart with the pelvis elevated possesses, according to Stern, the following advantages: (1) the percussion of the right border becomes easier; (2) doubtful systolic murmurs at the apex become more evident, or disappear; (3) the presystolic murmur in mitral regurgitation complicated with stenosis is more readily detected.

7. Koppis reports a case of eosinophilia (40%) occurring in carcinoma of the lung. At autopsy the necrotic portions of the tumor showed large numbers of eosinophiles as did also the bone marrow; the other organs contained no excess of these cells. The case, therefore, offers further evidence that the bone-marrow is the chief seat of the formation of eosinophiles. [W. T.]

Berliner Klinische Wochenschrift, No. 14.

April 8, 1907.

1. *Baginsky, A. *Pseudo-epidemie Cerebrospinal Meningitis.*
2. Burkner, K. *The Use of Alypin in Diseases of the Ear.*
3. Marcus. *Investigations on the Effect of Drinking Distilled Water in Chronic Nephritis.*
4. Dmitrenko, L. F. *The Clinical Significance of the Digitalis Allorhythmia.* (Continued article.)
5. Sternberg, W. *A Gustometer for Clinical Purposes.*
6. Bodenstein, J. *A New Salicylate Preparation.*
7. *Stern, M. *The Demonstration of Spirochetes in Smears by the Silver Method.*

1. Under this title Baginsky describes five cases resembling clinically epidemic cerebrospinal meningitis, but not due to the meningococcus. Various bacteria were cultivated: staphylo- and strepto-cocci, micrococcus flavus, micrococcus crassus.

7. Stern describes a method by which the demonstration of the spirocheta pallida in smears, hitherto impossible, can be accomplished. The smear is placed several hours in the incubator at 37° C., and then in a glass vessel with flat walls containing a 10% solution of silver nitrate. Here the preparation is exposed to diffuse daylight for several hours until it assumes a brown color with metallic luster. Washing with water completes the operation. The spirochetes are stained black. [W. T.]

April 15, 1907.

1. Fellner, B., and Rudinger, C. *Functional Examination of the Heart.* (Continued article.)
2. *Michaelis, L., and Lewin, C. *A Transplantable Rat Carcinoma.*
3. *Bernhardt, M. *The Occurrence and Significance of Medullated Nerve Fibers in the Retina.*
4. Dührssen, A. *A Method of Laparotomy which Prevents the Formation of Hernia.*
5. Benda, C. *The Levaditi Stain for Spirochetes.* (Continued article.)
6. *Dmitrenko, L. F. *The Clinical Significance of Digitalis Allorhythmia.* (Concluded.)

2. Michaelis and Lewin have found a carcinoma of the mamma in the white rat which resembles human cancer more closely than the mouse tumors which form the usual subject for such investigations. Not only did recurrences take place after excision, both in the original tumor and in transplantations, but numerous metastases occurred in the internal organs. Attempts to immunize rats against the tumor were unsuccessful, but a natural immunity was not uncommon.

3. Bernhardt comes to the conclusion that medullated nerve fibers in the retina are usually accompanied by signs of the neuropathic constitution. They are never found in the new-born, but the disposition to medullation is probably congenital.

6. Dmitrenko discusses, on the basis of an instructive case, the disturbances of the heart's rhythm due to digitalis. Of these the most important is that form in which there is each time a pause after a definite number of beats, so that the pulsus bigeminus, trigeminus, etc., arise. The cause probably lies not in an alteration of the vagus mechanism, but in some change in the cardiac muscle; the pause is probably due to an extra systole too feeble to be felt or heard. It is an indication for the immediate withdrawal of the drug, for otherwise death is likely to occur. It does not, however, contra-indicate a return to digitalis after the condition is over. Another form of irregularity due to digitalis consists in the occasional interposition of extra systoles. This is of little consequence and does not necessitate breaking off the treatment. [W. T.]

Beiträge zur Klinische Chirurgie.

Band 54, Heft 1.

April, 1907.

1. *Goldmann, E. E., and Kilian, G. *The Use of the X-rays in the Disease of the Accessory Nasal Sinuses.*
2. *Monnier, E. *A Clinical Study of Thyraidectomy Based on a Study of 670 Cases.*
3. *Hofmann, M. *The Pathological Changes Occurring in Strangulation of the Intestine; Especially those Occurring at the Points of Constriction.*
4. Fischer, K. *Congenital Goitre Treated by Operation.*
5. *Hesse, E. *The Treatment of Gangrenous Herniæ.*
6. Meissner. *Rupture of the Bile Passages by Blunt Violence.*
7. Zumsteeg. *Outward Subastragaloid Dislocation of the Foot.*
8. *Blauel. *The Etiology of Lateral Ventral Hernia.*

1. Goldmann and Kilian report thirty cases in which an x-ray examination of the nasal sinuses was of marked benefit in diagnosis and treatment. Their examinations were made in an antero-posterior direction. They conclude that an x-ray photograph, especially in the sagittal diameter of the skull, is of especial importance in this class of cases. It is of equal value with other methods of examination already in use, and should invariably supplement them. The article is accompanied by sixteen excellent reproductions of the x-ray plates.

2. Monnier has analyzed 670 cases of thyroidectomy at the clinic of Krönlein. Of these, 213 were men, 457 women, the majority being between twenty and thirty years of age. Difficulty in breathing was the almost constant complaint which led to operation. In 25% of the cases there were found cardiac changes, a fact of especial interest, since no cases of exophthalmic goiter are included in this series. These changes were most often dilatation or hypertrophy, palpitation and shortness of breath on exertion. Five cases died of acute suffocation in spite of operation for its relief; 9 other cases also died, making a total mortality of 1.6%. Of this series 125 cases were examined later; 105 showed complete relief of the dyspnea; 17 had difficulty only on unusual exertion, while in 3 there had been no improvement.

3. Hofmann reports in great detail the results of his histological examination of twenty-six specimens of strangulated small intestine. Among other points he emphasizes the fact that at the point of stricture the mucosa may be so injured by ischemia and vessel thrombosis that a stricture of the gut can easily occur after its being replaced within the abdominal cavity. This can occur even though the serosa remain intact and signs of peritonitis are absent. The article is well illustrated with photomicrographs.

5. Hesse, basing his opinion on 156 cases of gangrenous strangulated herniæ in Brau's clinic, finds that primary intestinal resection gave better results than any other method of treatment, the mortality following this method of treatment being but 47.5%, while it was 100% after either restitution of the suspicious gut to the abdomen or the formation of an artificial anus.

8. Blauel considers the muscular atrophy resulting in a hernia of the lateral portions of the abdominal wall to be in many cases due to a previous anterior polyomelitis. He reports such a case occurring in a child one year old with a previous history of fever and convulsions at the age of four months. A paralysis of the left leg was also present.

RECORD OF MORTALITY

For the Week ending Saturday, June 15, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,343	428	Quincy	14	0
Chicago	571	178	Waltham	4	—
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	1	—
Baltimore	191	45	Brookline	—	—
Cleveland	—	—	North Adams	3	1
Buffalo	—	—	Chicopee	12	7
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	6	2
Providence	59	15	Hyde Park	2	0
Boston	210	55	Melrose	—	—
Worcester	42	9	Newburyport	—	—
Fall River	36	13	Woburn	2	—
Cambridge	21	4	Marlboro	3	1
Lowell	32	6	Westfield	4	—
Lynn	19	1	Peabody	—	—
New Bedford	18	9	Revere	3	2
Springfield	25	6	Attleboro	3	0
Lawrence	21	6	Clinton	3	0
Somerville	19	2	Adams	4	1
Holyoke	17	4	Gardner	—	—
Brockton	14	2	Milford	—	—
Malden	14	3	Watertown	3	0
Chelsea	12	2	Plymouth	—	—
Salem	17	4	Weymouth	0	—
Newton	8	1	Framingham	3	1
Haverhill	12	7	Southbridge	2	1
Fitchburg	5	1	Wakefield	—	—
Everett	11	2	Webster	—	—
Taunton	15	5			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JUNE 22, 1907.

R. W. Plummer, passed assistant surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., June 15, and ordered to the Naval Recruiting Station, Chicago, Ill.

N. T. McLean, assistant surgeon. Detached from the Naval Recruiting Station, Chicago, Ill., and ordered to the "Constellation" and to additional duty at the Naval Training Station, Newport, R. I.

C. J. Holeman and **B. F. Haines**, acting assistant surgeons. Appointed acting assistant surgeons from June 12, 1907.

H. G. Beyer, medical inspector. Detached from duty on board the "West Virginia" as fleet surgeon of the Pacific Fleet, and appointed a delegate to represent the Medical Corps of the Navy at congresses to be held at Stockholm, Sweden; Amsterdam, Holland, and Berlin, Germany, and ordered to proceed thence to Washington, D. C., and report to the Surgeon-General of the Navy.

H. A. Dunn, passed assistant surgeon. Detached from the "Princeton" when placed out of commission, and ordered to the "Nebraska."

C. St. J. Butler, passed assistant surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., and ordered to duty at that school.

H. L. Kelley, assistant surgeon. Ordered to the Naval Hospital, Navy Yard, Washington, D. C.

A. B. Clifford, assistant surgeon. Detached from the Naval Station, Canacao, P. I., and ordered home to await orders.

A. W. Lee, assistant surgeon. Detached from the Naval Medical School, Washington, D. C., and ordered to the Naval Hospital, Canacao, P. I., sailing from San Francisco, Cal., about July 25, via steamer "Siberia."

G. P. Bradley, medical director, having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service from June 15, 1907, under the provisions of Section 1453, Revised Statutes.

C. T. Hibbett, medical inspector. Detached from special duty in the Bureau of Medicine and Surgery, Navy Department, and ordered to command the Naval Hospital, New Fort, Lyon, Colorado.

T. A. Berryhill, surgeon. Detached from command of the Naval Hospital, New Fort Lyon, Colorado, and ordered to the "Nebraska" when commissioned.

C. J. Holeman, acting assistant surgeon. Ordered to duty at the Naval Hospital, Philadelphia, Pa.

APPOINTMENT.

Dr. George W. Holmes has been appointed resident physician at the Long Island Hospital, Boston.

RECENT DEATH.

Dr. Thomas Hill, a retired physician of Brooklyn, N. Y., died on June 19, after a brief illness. He was born in Milltown, Malbay, County Clare, Ireland, on March 13, 1845, and was a graduate of Niagara University. For a number of years he served as a surgeon in the United States Army, and he was a member of the Army and Navy Union.

BOOKS AND PAMPHLETS RECEIVED.

Morris's Human Anatomy. A Complete Systematic Treatise by English and American Authors. Edited by Henry Morris, M.A. and M.B. Lond., F.A.C.S. Eng., and J. Playfair McMurrich, A.M., Ph.D. Fourth edition, revised and enlarged. Illustrated. In five parts. Parts I and II. Philadelphia: P. Blakiston's Son & Co. 1907.

Chemical Pathology, being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M.D. Philadelphia and London: W. B. Saunders Co. 1907.

Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D. Fifth edition, thoroughly revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Diagnostics of the Diseases of Children. By Le Grand Kerr, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

A Manual of Personal Hygiene. Proper Living upon a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, A.M., M.D. Third edition, revised and enlarged. Philadelphia and London: W. B. Saunders Co. 1907.

A Manual of the Diagnosis and Treatment of the Diseases of the Eye. By Edward Jackson, A.M., M.D. Second edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Le Sweating System et la Loi sur la Protection de la Santé Publique. Communication Faite au Congrès de l'Association des Ingénieurs, Architects et Hygiénistes municipaux, Lyon, 1907. Par le Dr. Lucien-Graux, Paris. 1907.

Nephritis. A Manual of the Disease commonly called Nephritis or Bright's Disease and of Allied Disorders of the Kidneys. By Seelye W. Little, M.D. New York: The Grafton Press. 1907.

Poisons: Their Effects and Detection. By Alexander Wynter Blyth, M.R.C.S., F.I.C., F.C.S., and Meredith Wynter Blyth, B.A. (Cantab.), B.Sc. (Lond.), F.I.C., F.C.S. Fourth edition, thoroughly revised, enlarged and rewritten. Illustrations. London: Charles Griffin & Co., Ltd. New York: D. Van Nostrand Co. 1906.

Lateral Curvature of the Spine and Round Shoulders. By Robert W. Lovett, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Postoperative Treatment. An Epitome of the General Management of Postoperative Care and Treatment of Surgical Cases as Practised by Prominent American and European Surgeons. Together with Suggestions Concerning the Technic of Certain Operations with a View to Securing Better Postoperative Results. By Nathan Clark Morse, A.B., M.D. Second edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Pneumonia. Pneumonia with Special Reference to the Use of Fresh Air and a Saline Solution, and the Abuse of Alcohol, Opium, and Other Drugs in its Treatment. By Stephen Smith Burt, A.M., M.D. Reprint.

The Physiological Effect of the Waters of the Hot Springs of Arkansas. By E. H. Martin, M.D. Reprint.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Editors: Joseph D. Bryant, M.D., LL.D., Albert H. Buck, M.D. Complete in eight volumes. Illustrated. Vol. III. New York: William Wood & Co. 1907.

Report of the Commissioner of Education for the Year ending June 30, 1905. Vol. I. Washington. 1907.

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Original Articles.

RETROVERSION AND ITS TREATMENT: AN ANALYSIS OF FIVE HUNDRED CONSECUTIVE CASES AT THE FREE HOSPITAL FOR WOMEN.*

BY W. P. GRAVES, M.D.,

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Although retroversion of the uterus, next to plastic surgery of the vagina, is the most common condition which gynecologists have to treat, and one about which more has been written and for which more operations have been devised than any other, there are still many points of disagreement among surgeons, especially with regard to causation and treatment. It was with the hope of gaining information on these disputed issues that I have been led to investigate the subject by a study of cases operated on in recent years at the Free Hospital for Women. The method which I have pursued was to tabulate from the history of five hundred consecutive cases preceding June 1, 1906, such facts as would give information on the symptomatology, causation, nature of the operation and after-results. A letter was then written to each patient asking an answer to a series of questions covering symptomatic results of the operations, later pregnancies and present conditions, with the request also to report in person at the out-patient department.

CAUSATION.

It is of great importance that the surgeon should have an intelligent knowledge of the causation of retrodisplacements, on account of the necessity of applying the proper operation to the individual case. This subject is one of a very wide difference of opinion, and one which is frequently a matter of contention.

In order to discuss intelligently the causation of retrodisplacements, it is necessary to consider briefly the question of the supports of the uterus. The extremely complicated set of supporting structures with which nature has endowed the uterus in order to meet the extraordinary changes in size and position which it is its function to undergo, may, to all practical purposes, be reduced to comparatively simple terms. An idea of what constitutes the support of the uterus can best be appreciated during the performance of a complete hysterectomy, which consists merely of a systematic severing of the supporting attachments of the uterus.

During such an operation one becomes impressed with the fact that the uterus is supported around its middle by a diaphragm of tissue which has its ultimate support from the walls of the bony pelvis, and which has in it certain fibromuscular thickenings which are termed ligaments. There are, first, the lumbo-ovarian ligaments, which act to limit mildly the lateral antero-posterior mobility of the uterus. That they are real ligaments and have some true function is shown by the severe malposition of the uterus which they may cause when they are abnormally developed. It is, however, during embryonal life that they possess their chief function, for at that time they are the most important supporting attachments of the pelvic organs.

Next come the round ligaments, which are strong elastic structures that help to preserve the forward position of the uterus. They exert a gentle but firm and effective force to keep the uterus in its forward position resting on the bladder, their elastic nature allowing for the antero-posterior play caused by the constant change in the size of the bladder. The round ligaments have little or no office in maintaining the uterus at its physiological level in the pelvis. The broad ligaments serve to limit the lateral mobility of the uterus, and support it to a considerable extent through numerous smooth muscle fibers and elastic tissue, most highly developed along the course of the uterine vessels. We then come to the three structures of the pelvic diaphragm which are most important for sustaining the uterus in its physiological plane, namely, the uterovesical and uterosacral ligaments, and the fibromuscular vault of the vagina. The uterovesical and uterosacral thickenings of the pelvic diaphragm act as a swing to support the uterus antero-posteriorly between the sacrum and pubes. They are tough, rather inelastic bands, and are often of great strength, as is shown by the difficulty which one occasionally encounters in cutting them in operations on nulliparous women. In cutting through the vault of the vagina one encounters the last and most important tissue which maintains the uterus in its normal position, and one which is the last to give way when all other supporting structures are gone. It must be remembered that the uterus and vagina actually constitute one organ, the muscular connection between the two being very strong and of great importance. Regarding, then, the vagina as a constituent part of the uterine system, it follows that whatever supports the vagina also supports the uterus, and in my estimation the powerful attachment of the vagina to the rami of the pubes is the most important of all the supporting structures of the pelvic floor. The gradual weakening of the round ligaments may result in a partial retroversion; the gradual weakening of the uterosacral ligaments will result in retroversion and partial prolapse; and the gradual weakening of the uterovesical ligaments will result in cystocele and partial prolapse; *but when the vaginal attachment to the pubes* gives way, everything falls and procidentia results.

With this brief summary of the chief supports of the uterus, it is natural to conceive that the most obvious cause for weakening these supports, with the resulting malposition, would be the condition of pregnancy and childbirth, where all the pelvic tissues are profoundly stretched and distorted from their usual position. It is readily apparent that the heavy subinvoluted uterus, during the period of convalescence, with the patient lying on her back, would have a strong tendency to overcome the damaged elasticity of the ligaments and thus result in permanent displacement. This factor as a causation of retroversion is so obvious and so universally accepted that in making my statistics I have tabulated as a result of childbirth all cases of nonadherent retroversion in women who have borne children. This class of cases of retroversion amounts to 51% and agrees with the generally accepted view that pregnancy and childbirth constitute the most common causes of retroversion.[1]

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* Read before the Boston Obstetrical Society, April 23, 1907.

The second most common cause for retroversion found in my series is pelvic inflammation with the formation of adhesions. These adhesions originate from an infection through the tubes, as is well known, and form most commonly on the posterior surface of the pelvic organs, and have a marked tendency to draw the uterus backward into the posterior cul-de-sac. Not only is the uterus drawn backward by adhesions immediately on its posterior surface, but it is also dragged in the same direction by the adhesions which draw the tubes and ovaries deep into the posterior lateral pockets of the true pelvis. Such a retroversion may take place without the essential weakening of the supporting structures of the uterus, it being less common to find the uterus in the last degree of retroversion, a point which, as may later be seen, would have some bearing on the choice of operative treatment.

Retroversion of this kind constitutes 20% of my series of cases. The causes of pelvic inflammation which bring about this adherent condition of the uterus in a posterior position are, in the great majority of cases, gonorrhea and sepsis following miscarriage.

The third most common cause shown by my statistics is what I should term developmental. The term "congenital retroversion" is one which has long been in use, but is one which is inexact and does not take into account the period of time at which these malpositions take place. The uterus, as I have observed it in a number of dissections of full-term children dead at childbirth, is an unimportant and extremely undeveloped organ. It lies high in the pelvis, and in the cases that I have seen has been pressed and flattened against the sacrum by the pressure of the small intestines, so that conditions of retroversion, anteflexion and retrocession, which are ordinarily called congenital, cannot, at this period of life, be considered as existing. The uterus grows slowly during the early life of a child, it being extremely rare that it makes known its existence by either physiological or pathological processes. At the age of puberty, however, ensues a process of extraordinarily rapid development, and it is then that it assumes approximately the size and type of that of mature womanhood, or else, retarded in its development, either intrinsically or in association with other organs, suffers the malpositions or distortions which are ordinarily designated as congenital. Such malpositions are most commonly represented by permanent anteflexion, retroversion and retroflexion, and anteflexion combined with retroversion.

The diagnosis of a developmental retrodisplacement is, as a rule, not difficult to make, and this could be done with a reasonable degree of accuracy both by direct examination and by a study of the history and operative findings in the hospital cases that I have investigated. A large number of cases which I have classified as developmental showed unmistakable stigmata of developmental defects; for example, abnormally short posterior vaginal wall, short uterosacral ligaments, together with anteflexion and infantile character of the cervix and fundus, short lumbo-ovarian ligaments, bicornate form of the uterus, hypoplasia of one side of the uterus and congenital absence of one ovary, defective growth of the round ligaments and other interesting conditions, which leave no doubt whatever of the real cause of the retroversion. In other cases, where an Alexander's operation had been done, and the condition of the pelvis not recorded, the retroversion was classified as developmental where symptoms of severe dysmenorrhea or sacral backache had existed since the institution of menstruation. The majority of these cases were young women, usually under twenty-five, or young married women who were sterile.

No case was included in this class where there were evidences of adhesions, a point which calls to mind the prevalent belief that the uterus which has been retroverted for a considerable length of time becomes adherent. The falsity of this theory is, of course, apparent when it is considered that there is no more reason for the uterus to become adherent while lying in contact with the peritoneal surface covering the upper portion of the rectum than while in contact with the peritoneal surface covering the upper portion of the bladder. It may be added that in none of the cases to which a developmental origin could be assigned in my series, even where the patient had menstruated for twelve or fifteen years, were there any adhesions.

It is undoubtedly true that some cases of retroversion occur during the period when the uterus is developing, as a result of habitual constipation, or of keeping the bladder distended, a frequent habit among young girls. Such uteri might present no evidence of developmental defect other than a weakening of the ligaments.

I regard the consideration of this developmental type of cases as of very great importance, for it is probably true that many of the so-called acute retroversions which are regarded as so common, belong to this class.

Cases of developmental retroversion constitute 16% in my classification.

The fourth most common cause of retroversion, and occupying 8% in this series, is the displacement due to pressure of pelvic tumors; for example, ovarian cysts, uterine fibroids, extra-uterine pregnancy and broad ligament tumors. The pressure of these tumors exerts very little effect on the essential supports of the uterus, and it is not infrequent to see the uterus immediately assume its normal former position after removal of tumors, even of long standing. This was seen in one case where I recently removed a large pedunculated fibroid with a twisted pedicle which was growing over the frontal portion of the fundus. The uterus was retroverted backward and to the right, and firmly held there by the tumor above it, which measured six inches in diameter. The size of the tumor proves that the uterus must have been in this position for a considerable number of months at the very least. After the removal of the tumor the uterus immediately assumed a perfectly normal position. In another case where I found an enormous mass of organizing blood clot, the result of an extra-uterine pregnancy, which had existed in the abdomen for five weeks, the uterus, though held in a position of retroversion during all this period, immediately assumed its normal position after removal of the mass in the pelvis.

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[1] A certain element of error in the classification is unavoidable. For example, a woman with retroversion following childbirth, or one with developmental retroversion, may later suffer from adhesive pelvic peritonitis. In such cases a mistake might be made in assigning the cause for the retroversion. Doubtful cases of this kind did not occur with sufficient frequency to affect materially the final classification.

There is left 4% of cases for which I have been unable to make a satisfactory classification. In a few of them the histories were incomplete. Most of them were unmarried or sterile women between the ages of thirty and forty, who had non-adherent retroversion, but whose symptoms dated back for only a few years. In none of them was there any history of an accident or fall, or an acute onset. In my own opinion they would undoubtedly either fall into the class of developmental retroversion where symptoms were absent, a condition which I have not infrequently noted in young women, or be included among those individuals whom Tuffier has aptly described as possessing a physiological inferiority of tissues. Here the retroversion must be considered as a gradual process similar to floating kidneys or other visceral ptosis.

SYMPTOMATOLOGY.

The symptom complex of a typical case of retroversion is so characteristic that it is very frequently possible to make a correct diagnosis from the history alone. A woman who suffers from a constant sacral backache, ovarian pain, dysmenorrhea or profuse menstruation, and who is nervous and constipated, and suffers from frequent headaches, presents the typical history of a patient with a retroverted uterus. No one of these symptoms, however, is pathognomonic of the condition, the most nearly constant being sacral backache, which occurred in 76% of all the cases. This symptom is usually the most prominent and is the one which, as a rule, brings the patient to consult her physician.

The second most common symptom is ovarian pain on one or both sides, more frequently on the left side and occurring in 62% of the cases. Ovarian pain is probably due to a disturbance in the circulation of the ovary caused by the malposition of the uterus and a certain amount of prolapse of the ovaries, which usually takes place. Microscopically these ovaries are apt to show cystic degeneration of the follicles or subinvolution of corpora lutea. The ovary is usually edematous and is larger and heavier than normal.

Some disturbance of menstruation, though occurring in only 56% of the cases, may, nevertheless, be regarded as one of the cardinal symptoms of retroversion, together with backache and ovarian pain. This symptom also is due to a disturbance in the circulation of the uterus, and must be referred rather to a mechanical obstruction than to a faulty control of the nervous system. In developmental cases the menstrual irregularity is much more constant and usually takes the form of a dysmenorrhea, while in cases caused by childbirth the complaint more often is of too frequent and profuse menstruation, a condition which is the result of a gland hypertrophy of the endometrium.

It is a question whether constipation should be regarded as a cardinal symptom or as a referred symptom due to a general constitutional deterioration resulting from the retroversion. I am inclined to regard many cases of constipation directly due to the influence on the rectum caused by the pressure of a retroflexed fundus. Constipation appeared as a pronounced symptom in 51% of all the histories. Whether this percentage is larger than would appear in the histories of 500 women taken at random who were not suffering from any pelvic trouble I am unable to say, but the fact that 48% of these cases were either cured or greatly relieved by the operation is at least suggestive that many cases of constipation are directly due to the uterine displacement.

Seventy-one per cent gave nervousness as one of the principal symptoms, while a considerable number complained of frequent or constant headaches, usually locating the pain in the back of the head and neck. Many of them complained of headache only at the menstrual periods, and in view of the fact that a considerable portion of those suffering from headaches reported great relief or cure after operation, one should not neglect the consideration of retroversion in diagnosing the cause of headaches among women.

Viewing symptomatology from a general standpoint it may be said that women suffering from retroversion caused by childbirth are far more apt to have the symptom complex, backache being the most prominent, than are those with retroversion from other causes. The most characteristic symptom in inflammatory cases is ovarian pain, while the most characteristic symptom in developmental cases is dysmenorrhea. It is not uncommon to find young women with developmental retroversion having no symptoms whatever.

TREATMENT.

A discussion of the treatment of retroversion involves first the question whether it shall be operative or palliative, and, secondly, if operative, a correct choice of the great number of operations which have been devised for the relief of retroversion. The treatment of the cases in my series having been operative, the question as to its feasibility can be answered by an inquiry into the anatomical and symptomatic results of the operations. Information on this point was obtained by a letter sent to each patient requesting a statement regarding her cure, relief or non-relief from the operation in general, and from the particular symptoms of backache, ovarian pain, menstrual disturbances, constipation and headache. In considering the statistics which I gathered from these letters, it must be borne in mind that only a small per cent of the operations were uncomplicated by other operations performed at the same time, as, for example, laceration of the cervix and perineum, repair or removal of the tubes and ovaries, removal of tumors, the repair of hernias, etc., so that the answer as to whether the patient was cured by her operation does not in all instances imply an answer as to whether she was cured or relieved of the condition of retroversion. Inasmuch, however, as the cardinal symptom of sacral backache occurs in the great majority of cases, the answer to the question of relief or non-relief of that symptom will give approximate information concerning relief or non-relief from the condition of retroversion.

Two hundred and sixty-three patients answered the circular letter in a satisfactory manner. Of this number 86% stated that they were either completely cured or much relieved by the operation. Considering the numerous additional operations, many of them serious ones, which complicated the operation for retroversion, this percentage must be regarded a satisfactory one, and compares favorably with those published from other hospitals. It is interesting to note that those who were entirely cured or much relieved of the symptom of backache amounted to 85%, in comparison with 86% of those cured or much relieved by the operation. This would tend to show that in the great majority of these cases, though complicated as many of them were, the retroversion was the chief cause for suffering on the part of the patient. It is also interesting to note in this connection that the anatomical recurrences of retroversion after the operation, which, as will be seen, I have approximated at 15%, corresponds closely to the percentage of patients who stated that they received slight or no relief from the operation.

Seventy per cent of those having ovarian pain, and 70% of those suffering from some disturbance of menstruation, were either cured or relieved. Forty-eight per cent were cured or relieved of constipation.

With these figures in view and in consideration of the fact that the great majority of retroversion cases are complicated by other surgical diseases any argument as to the comparative merits of treatment by pessaries or tampons is practically out of the question excepting in a few selected cases.

In the days when pessaries were the only available treatment for retroversion of all kinds, Dr. F. H. Davenport was able to accomplish satisfactory results in 31%. Although this shows that such treatment is inapplicable in the majority of cases, it nevertheless proves that pessaries should be still kept as one of the resources of the surgeon, and not be absolutely disregarded.

One must in this connection take into account the danger to life involved in the operative treatment of retroversion. The mortality in this series of cases amounts to 2, one case dying six hours after operation, from heart embolism as shown by autopsy, the other case dying from the unusual condition of general peritonitis caused by the staphylococcus albus. This last case was complicated by the removal of a very adherent appendix. In considering this excellent mortality record it must also be borne in mind that many of the operations were complicated by serious and dangerous pelvic conditions.

DISCUSSION OF OPERATIONS.

Having established then the fact that in the great majority of cases operative treatment is advisable, it remains to choose intelligently the best method of surgical procedure. It is said that as many as 52 different operations have been devised for the treatment of retroversion and this large number of operations is frequently presented as a proof of the unsatisfactory results of operative measures.

In order to gain information of value with regard to the merits of the operations employed at the Free Hospital for Women I have tabulated the number of times each operation was performed and have computed a comparative set of percentages which each operation bears to the anatomical failures. I have found, all told, 60 recurrences of retroversion after operation. This constitutes 12% of the entire series. The number has been made up both from a large number of patients whom I have personally examined from eight months to several years after operation and from entries in the hospital records made by other members of the staff. Although the Free Hospital offers very unusual opportunities for following post-operative cases, there are some cases which have never been seen after leaving the hospital, and a certain number of recurrences have undoubtedly been overlooked. With this in view I have estimated that the recurrences have probably amounted to at least 15% of the entire number.

Though numerous methods have been employed by different operators, in my series I have tabulated the results only of those operations which have been frequent enough to furnish statistics of value, and this list includes Alexander's operation, ventro-suspension, ventro-fixation, and internal shortening of the round ligaments. Alexander's operation was performed 191 times with a known recurrence of 13%. Ventro-suspension and ventro-fixation were performed 267 times with a known recurrence of 9%. Internal shortening of the round ligaments was performed 35 times with a known recurrence of 31%.

Using these figures as an assistance, I shall now attempt to discuss the comparative merits of these operations with a view both to the anatomical derangements which they are capable of repairing and also to their symptomatic results.

Alexander's operation. — This operation was originally devised during the days of constant sepsis to avoid the necessity of opening the abdominal cavity, and was in those days, of course, a most ingenious method of avoiding danger to life and served as a great benefit to suffering womankind. Considering now that in the light of our present surgical technic the original danger, to obviate which the Alexander's operation was devised, has been so far removed as to be of little weight, the question arises, "Is the operation a sufficiently satisfactory one?" Thirteen percentage of recurrences, even though it represented the true maximum, is much too high for a surgeon to view with equanimity. This high percentage of recurrences, as I have been able to prove by my personal examinations and by the history of after results, is largely attributable to the factor which constitutes the real defect in the operation, namely, the presence of pelvic adhesions, which were not diagnosed at the preliminary examination. In many such cases, where the adhesions are not particularly dense or where there is an unusual amount of yielding tissue, to which the uterus and adnexa are attached, it is possible to draw the uterus up to a position of comparative normality for a short period of time, but the continual dragging on the back of the uterus eventually overcomes the tension of the recently shortened ligaments and the uterus reverts to its former position often before the patient leaves the hospital. Other objectionable features of the operation are hernias and sepsis. Hernias occur as a result of an unskillful performance of the operation and are sufficiently frequent to make it inadvisable for any inexperienced operator to attempt it. Sepsis in the wounds is shown by the hospital records to be of frequent occurrence and the danger of this complication has not been entirely removed, even in most recent cases performed with every precaution of asepsis.

Mechanically speaking, reduced to simple terms, the uterus by this operation is practically suspended to the abdominal wall from its two weakest points. The ligaments themselves are frequently weak and ineffective, even at their uterine attachments, as is often seen in developmental cases, while the inability of even the most experienced surgeon sometimes to find the round ligament in the inguinal canal is a not unfamiliar spectacle. Notwithstanding all these objectionable features, it must be admitted in the cases that I have examined where Alexander's operation has been successfully done the anatomical and symptomatic results have been excellent, so that in selected cases given an easily replaceable uterus and a surgeon with good technical skill the operation may be regarded as a most desirable one.

Ventrosuspension and ventrofixation. — It is necessary to consider these two operations in conjunction in this series of operations on account of the indefinite manner in which the two terms have been used. Ventrofixation in the hospital records has been used where the supporting stitch has included the *aponeurosis covering the rectus muscle*, while ventrosuspension is used where the stitch includes the peritoneum alone or the peritoneum and part of the muscle. Strictly speaking, ventrosuspension should be used exclusively when the supporting suture passes only through the peritoneum, including no other structures of the abdominal wall. As a matter of fact, in the majority of so-called ventrosuspensions performed in this series the suture was actually passed through the rectus muscle and peritoneum, and really constitutes more nearly a ventrofixation than a ventrosuspension. As it has been impossible to differentiate exactly between these two procedures, I am compelled to consider suspension and fixation under one category. There were 267 of these operations with a known recurrence of 9%. Notwithstanding the confusion existing between the two terms suspension and fixation, valuable information could be gained from a study of the recurrences as to the most efficient method of fastening the uterus to the abdominal wall. Two thirds of the recurrences in this class of cases are attributable to the method of passing the suture only through the peritoneum, and as this method has been comparatively little used, the recurrences where the suture had passed through the muscle or through the fascia would be reduced approximately to less than 5%, not an ideal, but nevertheless a fairly satisfactory, result.

As a matter of fact there is probably little anatomical difference between a skillfully done ventral fixation and a successful ventral suspension. In each there is an adhesion formed between the fundus of the uterus and the anterior abdominal wall of sufficient strength to hold the uterus forward and maintain it at its physiological level in the pelvis. The stitch itself counts for very little after the adhesion has been formed. The reason that a ventral suspension performed by merely passing a ligature through the peritoneum gives uncertain results, is because the peritoneum may be pulled into a long string without the formation of an adhesion sufficient to hold the uterus to the abdominal wall. However, in many cases such an adhesion does form and the operation remains successful. In passing a suture so as to include the muscle or fascia the formation of an efficient adhesion is much more nearly insured. The danger attending a ventral fixation is of the formation of too dense an adhesion, so as either to immobilize the uterus or to cause dystocia in future pregnancies. The surgeon in attaching the uterus to the anterior abdominal wall should bear in mind possibilities of too weak or too strong an adhesion, and the result of the operation, therefore, depends largely on his technical skill. Where the uterus has been effectively attached to the abdominal wall, symptomatic results and results in pregnancy in the present series of cases have been excellent.

Intra-abdominal shortening of the round ligaments. — This operation was performed thirty-five times and there is a known recurrence of 31% — an extermely bad showing. Various methods were used, the most common one being that devised by Wylie. There has been also a considerable number of these cases which have been examined by me before discharge from the hospital, where the uterus was sufficiently held in a forward position, so that it could not be called a recurrence, but where, nevertheless, there existed a certain amount of sagging in the pelvis, with corresponding symptoms. Fortunately only comparatively few of these operations have been done, the results from them being either symptomatically or anatomically in the great majority of cases bad.

The following case illustrates well the experience with intra-abdominal shortening of the round ligaments, as well as that of ventral fixation.

Mrs. T., age thirty-two, two children, one miscarriage. Operated on Oct. 31, 1899. Removal of dermoid cyst. Wylie's intra-abdominal shortening of the round ligaments. At the time of discharge the uterus was reported as in the first degree of retroversion.

June 5, 1900, the uterus having become entirely retroverted, a second operation of shortening of the round ligaments was performed. The uterus, however, continued to sag, and on Jan. 22, 1901, ventral fixation was performed.

Sept, 14, 1902, the patient had a normal labor.

April 24, 1903, the uterus was in good position.

Having thus reviewed the surgical experience of the hospital in these retroversion cases, it is in order to inquire what lessons may be learned from them. Bearing in mind the fact that the uterus is essentially supported around its middle by a thick diaphragm attached ultimately to the bony walls of the true pelvis, it is obvious that in the great majority of cases there exists some defect in this main central support. It can, in fact, be shown in most cases that besides the backward displacement of the uterus, there is some sagging of the main supports. This is almost universally true in cases due to childbirth, in chronic cases of physiological inferiority, and in a number of developmental cases. It is less frequent in cases due to adhesions, and sometimes entirely absent in cases due to the pressure of tumors. It will therefore be seen that treatment in order to meet the great majority of retroversion cases must overcome this sagging of the diaphragmatic support. In order to solve this mechanical problem it is conceivable that it may be done in three different ways: first, by supporting the diaphragm from below, as is done to a certain extent by the use of pessaries; secondly, by a complicated operation which would restore each essential structure of the diaphragmatic support to its proper function, and, thirdly, by suspending the uterus from above. The first method, namely, that of using a pessary is entirely inefficient, excepting in a few cases, and can be usually disregarded. The second method of operating on the individual structures of the pelvic diaphragm has been attempted with some success, notably by Bouvé, who dissects out and restores the uterosacral and uterovesical ligaments. Even as complicated an operation as this meets only part of the requirements, and it is inconceivable that in many cases the uterus could be fully and permanently restored to its physiological level in the pelvis.

The reduplication of weakened and stretched-out ligaments is mechanically not an operation to be relied upon, as has been shown by experience in shortening the round ligaments internally, and the reason of this is that the ultimate attachments of these ligaments remain exactly as they did before the operation. These attachments have at one time proved inefficient, and it is reasonable to suppose that when the same forces again work against them the future result may be similar.

There remains then only the method of suspending the uterus from above. The only available point of permanent support is the anterior abdominal wall, and though it seems to be distorting natural anatomical relations to fix the uterus in this manner, nevertheless it has been shown by repeated experience that the abdominal wall is an admirable support to the pelvic organs. The elasticity, strength and plasticity of the abdominal wall make possible the performance of operations by which pelvic organs can be attached to it, even under great tension, without corresponding pain, bladder trouble, or symptoms of any kind, as has been shown by the repeated successful results in the operation of vaginapexy. A uterus firmly attached to the strong and elastic abdominal wall depends no longer on the diaphragmatic support of its center and lower third, and symptoms previously existing by deficiency in this support may be completely relieved. Any operation, therefore, like the internal shortening of the round ligaments which tends merely to restore the uterus to its anterior position, but which does not relieve the diaphragmatic support at all, cannot be expected to attain symptomatic results comparable with some method of attaching the uterus to the abdominal wall.

Having established this premise in our mechanical reasoning, it remains to choose the best method of suspending the uterus from above, and it is a well-known fact that the symptomatic and anatomical results attained by an effective ventrosuspension or fixation are excellent. The objections to this method, however, are, first, the long ribbon of tissue after a ventral suspension causing danger of strangulation of the bowel, and, secondly, evil results obtained in a subsequent pregnancy. The answer to the first objection would be never to perform a ventrosuspension by passing the ligature *only* through the peritoneum, for not only does the retroversion following such a procedure frequently recur, as we have seen in my cases, but it is usually only after such operations that the long peritoneal band of tissue is formed. The second objection, namely, the danger of dystocia in future pregnancies, is a valid one and one which by no means should be disregarded.

Of the cases, ventrofixation and ventrosuspension, which answered my inquiry as to future pregnancies, 27 reported one or more conceptions, 4 of them being pregnant at the time of reporting. Six of them had miscarried, 1 of these miscarriages being known to have been induced. One reported pain in the lower abdomen during the nine months. One who was pregnant reported pain in the site of the wound. All others reported no trouble, 2 of them saying that they had had less trouble than at previous childbirths. Two had had twins. It will thus be seen that of the 26 cases of ventrofixation, the only difficulties noted were, 6 miscarriages and 2 cases with pain in the lower abdomen during pregnancy, the conception being successful in one of them. This certainly is not a bad record, especially as the percentage of miscarriages corresponds nearly to the accepted percentage of pregnancies in general, namely, 20%. There were in all 48 cases who reported conception after an operation for retroversion. Twenty-six, as we have seen, were after cases where the uterus was attached to the abdominal wall, 22 followed Alexander's operation or internal shortening of the round ligaments. None of these cases had trouble at childbirth. The case which suffered most during pregnancy was one which followed an Alexander's. This case was one whom I examined when she was about four months pregnant. She was suffering intense pain in the two inguinal regions, and though I did not see her again until after the birth of her child, which was successful, she reported that she had spent three months in a hospital suffering greatly from this same pain.

It must be admitted, however, that cases of rupture of the uterus and Cesarean section following fixation have occurred, and the surgeon should bear in mind always that he is taking this remote risk in performing the operation on a woman in the child-bearing period.

It will thus be seen from the foregoing that outside of the intra-abdominal shortening operations the surgical treatment of retroversion has by the methods which have been employed been fairly satisfactory, and with the exception of a mortality of $\frac{1}{5}$ of 1% there have been no untoward results. During the past year for ordinary cases, where it has been thought advisable to open the abdomen and where adhesions have not been too extensive, or where the pelvic diaphragm has not been too greatly relaxed, the operation usually designated as Mayo's internal Alexander has been very generally adopted at the Free Hospital. The results from this operation give excellent promise. It possesses all the advantages of Alexander's operation and most of the advantages of fixation, without the defects of either.

The operation, as is well known, is a modification of Gilliam's operation and consists in drawing the round ligaments up through the internal rings and joining them at the middle line of the abdomen above the rectus muscles and below the fascia, thus avoiding the undesirable weakening of the fascial covering which exists in Gilliam's operation.

The technic of Mayo's operation should be carefully observed and is briefly as follows: A median incision is made, the round ligament of the right side is then grasped by a pair of curved clamps at the junction of the middle and outer third. The assistant holding this clamp draws the ligament toward the median line, pulling the peritoneum at the point where the round ligament enters the abdominal wall into the form of a funnel. A pair of curved clamps with narrow blades is then inserted between the fascia and rectus muscle of the right side and pushed directly to the internal ring and down into the funnel of peritoneum, formed by the traction of the round ligament. It is then pushed along the course of the round ligament still underneath the peritoneum and made to grasp the ligament at the point where the other clamp holds it. The ligament is then drawn up through the internal ring and out to the median line under the fascia, the clamp at no time entering the peritoneal cavity. This procedure is then carried out on the left side and after the peritoneal wound is closed in the median line the two ligaments are drawn together over the rectus muscles and united by several interrupted sutures. The operation is a simple one to perform. It has been done many times at The Free Hospital for Women and the results so far have been universally excellent.

To summarize, then, my conclusions, with regard to treatment, I would make the following statement:

In a case where the uterus can be easily replaced and will remain in position and there is no necessity of inspecting the abdominal cavity, Alexander's operation may be recommended. Where it is desirable to open the abdomen and where there are no excessive adhesions and no marked relaxation of the diaphragmatic support, Mayo's internal Alexander is the operation of choice. In cases of many adhesions and marked retroflexion, or with much sagging of the diaphragmatic support, the uterus should be attached to the abdominal wall in a manner so that it will stay, the exact method of attachment being a matter of choice by the individual surgeon, the question of future childbirths never being disregarded. Attachment of the uterus to the abdominal wall by a suture merely through the peritoneum is an inefficient method of ventral suspension. Intra-abdominal shortening of the round ligaments is an inefficient treatment for retroversion.

Prolapse and procidentia. — The subject of prolapse and procidentia is so closely related to that of retroversion that it is necessary to mention it in a discussion of this subject. In these cases, as has been pointed out, the pelvic diaphragm has partially or completely lost its integrity as an element of support. It has been shown that the only efficient substitute for this support is, primarily, firm suspension from above, and that the only available point of suspension is the anterior abdominal wall. In cases of extreme procidentia the operation of vaginapexy, devised by Dr. William H. Baker, the operation of colpo-orrhaphy devised by Dr. Polk and similar ones by Dr. Crile and others, where the vagina itself is fixed to the anterior abdominal wall, have entirely revolutionized the eventual success attending operations on these conditions. This subject is, however, so important as to require special study and is mentioned here chiefly to emphasize the use to which the anterior abdominal wall may be put in supporting the pelvic organs.

NEURALGIA OF THE SUPERIOR MAXILLARY NERVE.

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A PERIPHERAL OPERATION TO REACH THE DENTAL BRANCHES.

Neuralgia of the trifacial nerve is of common occurrence, but only in the very chronic and severe cases are all the branches involved. For a period, at least, the pain is referred to one of the divisions and, perhaps most commonly, to the superior maxillary nerve. In a small majority of the cases a definite cause may be found, such as some general disease, — malaria, diabetes mellitus, etc., or there may be a definite local lesion, — scar tissue, exostoses pressing on nerves in bony canals, some dental inflammation, an undescended tooth, etc. Occasionally, the exciting cause may be some lesion in a region supplied by branches of the fifth nerve. A definite neuritis may exist. On the other hand, in the great majority of these cases the cause is not evident and on subsequent examination of the excised nerve nothing pathological is found.

This paper will consider only the second or superior maxillary division of the fifth nerve for the purpose of suggesting a method of intercepting the nerve supply of the teeth of the upper jaw when these branches are involved and it is desired to resort to one of the so-called peripheral operations.

Anatomy. — The second division leaves the skull by the foramen rotundum to reach the spheno-maxillary fossa. Here are given off several branches, viz., the temporo-malar passing into the orbital fossa to be distributed eventually to the malar and temporal regions, the branches to Meckel's ganglion and the posterior dental nerves. The latter go forward to reach the posterior aspect (zygomatic surface) of the superior maxilla. There are two or three trunks which give off filaments to the gums and adjacent portion of the cheek and then enter the substance of the maxilla, passing through bony grooves and, eventually, through canals to reach the roots of the molar teeth; terminal branches pass forward to help form a plexus with branches of the middle and anterior dental nerves.

The main trunk of the superior maxillary nerve passes through the sphenoidal fissure into the orbit and thence through a bony canal on the floor of the orbit to make its exit at the infra-orbital foramen. Dental branches are given off in this canal. If there are any middle dental branches they pass outward and downward in the wall of the maxilla to reach the bicuspid teeth; if absent, these teeth are supplied from the plexus formed by the anterior and posterior dental nerves. Just before the main nerve emerges from the infra-orbital foramen it gives off the anterior dental nerve which enters a minute canal and passes through the substance of the maxilla to be distributed to the canine and incisor teeth and backward to complete the dental plexus. There may be two minute ganglia on this plexus.

After emerging from the infra-orbital foramen the main trunk terminates in its final branches of distribution, — the labial, nasal and palpebral nerves.

The main trunk of this nerve is readily accessible for a considerable distance into the orbit and, although the anterior dental nerve be cut off, the posterior dental nerves remain intact and through the dental plexus there would still be communication with all the teeth. The desire to intercept all the dental nerves without resorting to the more serious and disfiguring operation of reaching the nerve in the spheno-maxillary fossa was the occasion of devising the method described below.

Treatment. — Drug treatment for neuralgia which persists for any considerable period is discouraging. Acute attacks of neuralgia are not uncommon, and these tend to disappear permanently upon the removal of some obvious cause, such as exposure to cold, errors in diet, etc. The cases due to specific organisms disappear under special treatment. But the chronic recurring attacks yield only temporarily to drugs until finally nothing medicinal seems to afford relief. The benefit from electricity is doubtful and rarely lasting, while massage generally does harm. Occasionally some definite local cause is discovered, such as a lesion in the nose, pressure on a nerve trunk, or disease of the teeth, and the removal of such cause is followed by permanent relief.

In the majority of cases, however, no cause can be found, and eventually no drug treatment gives relief. The suffering is so intense that the patient consents willingly to surgical intervention and some sort of an operation is the ultimate outcome.

There are two general types of operation, the peripheral and the central. The former has to do with excision of some portion of the main trunk or its branches distal to the foramen rotundum; the latter is an intracranial operation whereby the nerve trunk and a part or the whole of the gasserian ganglion are removed.

There are several methods of approaching the nerve at the infra-orbital foramen so as to remove more or less of the main trunk, even as far back as the spheno-maxillary fissure. All these methods destroy the anterior dental nerve, for this is given off just before the main trunk leaves this foramen, but none of these superficial operations destroy the middle and posterior dental nerves. If the pain were limited to the facial distribution these methods would be satisfactory, but if it were referred only to the teeth relief would not follow.

The superior maxillary nerve can be reached in the spheno-maxillary fossa by going in laterally through the temporal fossa. Thus all the dental branches can be intercepted. This is an extensive operation and is followed by a large scar and muscle atrophy. Its performance calls for considerable skill. Furthermore, it is wiser to have recourse to the simpler methods first, for temporary and sometimes permanent relief may follow.

The intracranial operation consists in the removal of the whole or part of the gasserian ganglion, together with one or more of the primary divisions of the trifacial nerve. It is an operation of last resort and properly so at present, because it is difficult to perform, there is a considerable mortality, and, although immediate and permanent relief from pain follows if carried out properly, unfortunate sequelæ occasionally result. The intracranial operation does not concern us here.

The following method has been devised for relief when the dental branches are the seat of pain. First, the teeth should be examined by a competent dentist, and if found to be sound they should not be extracted. A horizontal or somewhat oblique incision about one inch long should be made over the exit of the nerve from the infra-orbital foramen and carried down to the bone. The nerve should be exposed at the foramen and with care the vessels may be spared injury, for a time at least, so as to avoid obscuring the field by hemorrhage. Free the cutaneous branches for a distance and carefully isolate the main trunk. With a small chisel remove the bridge of bone which completes the foramen above and also chisel away a considerable portion of bone below the foramen without injuring the nerve. Elevate the periosteum from the facial surface of the maxilla downward and outward towards its malar process and then continue under it so as to reach the zygomatic surface. Previous to this the antrum has been opened in front. With rongeur forceps a channel should be made in the facial wall of the maxilla extending downward and outward to a point just under the malar process, and thence as far as possible on the zygomatic surface. By means of suitable retractors and properly curved rongeur forceps this procedure offers no difficulties. This channel should be from three-eighths to one-half inch wide. Thereby all dental branches are intercepted. The bony support of the alveolus is not materially weakened, the teeth are not injured, nor is any harm done the antrum. Finally the main nerve trunk should be carefully isolated to the spheno-maxillary fissure where it is severed and then as much as possible of the cutaneous distribution teased out. All hemorrhage will have ceased on completion of the operation so that the incision should be closed with a subcuticular suture. The usual edema of the cheek will follow and last about seven days.

All of this operation can be carried out by means of an incision inside the mouth which exposes the canine fossa. The technic is a little more difficult in this method, but an external scar is avoided. This plan was used in Case II for the purpose of reaching the dental nerves. There had been a previous operation in this case and the facial distribution with a portion of the main trunk had been excised, but the neuralgia persisted in these nerves.

The only claim made for this operation is that cases of neuralgia of the superior maxillary nerve, in which pain is referred to the teeth as well as to the face, can be relieved by a superficial route. The ultimate chance of recurrence may not be altered, but if freedom depends upon the amount of nerve excised the outlook is favorable. If further intervention is called for only the intracranial operation will avail much.

Case I. A woman, fifty years of age. For two years she suffered from neuralgia of the superior maxillary nerve. Not only were all the facial branches affected but also the branches to all the teeth on one side. She was opposed to any operation and tried innumerable drugs and other measures without any lasting relief until finally the pain became so severe and persistent that she submitted willingly to operation. Most careful examination by specialists failed to show any cause in this case. The first and third divisions had never been affected, and for various reasons I did not care to approach the nerve in the spheno-maxillary fossa. I was doubtful how best to relieve the pain referred to the teeth and finally decided to remove portions of the facial and zygomatic surfaces of the maxilla. The operation was performed in the manner described above. No complications followed; relief was immediate and there has been no recurrence in a period of ten months. The scar on the face is scarcely perceptible.

Case II. A man, forty-five years old. This patient had been operated on elsewhere for neuralgia of the superior maxillary nerve. Both the facial and dental branches were affected. He states that following this operation the pain left the face but always persisted in the region of the teeth and gums although several teeth had been extracted. The operation performed was excision of the main trunk for a distance in the orbit together with the cutaneous branches. Only a small scar was evident.

I decided that I would intercept the dental branches by incision through the mouth in the manner described. Accordingly, a horizontal incision about one inch long was made across the canine fossa at the highest part of the vestibule of the mouth. The infra-orbital foramen was sought and found not to contain any nerve tissue. After freeing the periosteum the bony wall of the maxilla was removed well on to the zygomatic surface. The incision was left open and it closed of itself in about four days without complication. Complete relief followed and patient has not been seen since his discharge from the hospital.

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The Medical College of Ohio graduated one Egyptian student this year, and two students from that country last year. The Cincinnati College of Pharmacy graduated this year two Egyptians, and there are at present four residents of that country at the Medical College of Ohio.—*Jour. Am. Med. Asso.*

"ORGANISM X," PROBABLY OF THE CORYNEBACTERIUM GROUP: ITS DIFFERENTIATION FROM B. DIPHTHERIÆ AND ALLIED ORGANISMS. ITS PATHOGENICITY IN MAN, ESPECIALLY IN BRONCHOPNEUMONIA, AND ITS RELATION TO GENERAL PARALYSIS OF THE INSANE.

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ARTICLE NO. 1 — INTRODUCTORY.

As this work has already consumed a long time,[1] but as still more work seems necessary before recording a final opinion, I take this occasion, omitting here its systematic study, to present briefly such data as bear more particularly upon the differentiation of this organism, besides indicating in a general way such topics as I wish to consider subsequently. I shall omit a consideration of the literature in this introductory article and shall, for the present, call the bacillus of this paper " Organism X " for convenience.

SOURCE OF DATA ON ORGANISM X.

The bacteriological data here presented comprise: (*a*) One clinical case of pulmonary infection with organism X; (*b*) a bacteriological and pathological study of 150 insane patients coming to autopsy; (*c*) a bacteriological study of 2,310 throat cultures on blood serum from 1,000 insane (these during a mild diphtheria epidemic); (*d*) comparative study on 6 sugars of acid production and coagulation in blood-serum-water-litmus-sugar media of Bacillus diphtheriæ, organism X and bacillus Hoffmanni by means of 175 observations; (*e*) comparative study on 7 sugars of acid production in broth of B. diphtheriæ, organism X, B. xerosis, B. Hoffmanni and Ruediger's bacillus, by means of 517 titrations with controls; and (*f*) a study of cultural and morphological characteristics based upon a stock of 199 pure cultures of the " diphtheroid " group, which includes:

Cultures	of	Organism X,	146
,,	,,	B. diphtheriæ from Danvers epidemic,	17
,,	,,	B. pseudo-diphth. (B. Hoffmanni),	4
,,	,,	B. xerosis,	3
,,	,,	B. coryzæ segmentosus,	1
,,	,,	Ruediger's organism (from Dr. Hamilton),	4
,,	,,	a media-staining pseudo-diphth. bacillus,	1
Other forms not identified, largely falling into one or other of these groups,			23
Total stock of diphtheria and diphtheroid organisms,			199

The organism I call here " Organism X " I regard as a distinct bacteriological entity; what I record deals with but one species; in short, I have temporarily designated the bacillus Organism X to avoid confusion in terms, and because as yet I have been unable to find an adequately described and unquestionably differentiated and named species which seems identical with Organism X, but eventually I shall doubtless be able to place the organism. Descriptions, etc., on Organism X are based on cultures of the bacillus, which have been studied with care with regard to morphology, cultural peculiarities, biochemical reactions and animal inoculation, and over an extended period of time. This has been absolutely necessary, because Organism X may so closely resemble in a single point (morphology or other feature) B. diphtheriæ, B. xerosis, B. Hoffmanni or B. coryzæ segmentosus as to be indistinguishable from each in a given respect.

SOURCE OF CULTURES OF ORGANISM X.

Organism X has been found and obtained in pure culture on blood serum:

From	the	throat,	62	times
,,	,,	lung,	48	,,
,,	,,	pleural cavity (empyema),	6	,,
,,	,,	larynx,	4	,,
,,	,,	ear[2] (suppurative),	4	,,
,,	,,	esophagus,	3	,,
,,	,,	heart's blood,	3	,,
,,	,,	eye,	2	,,
,,	,,	stomach,	2	,,
,,	,,	spleen,	2	,,
,,	,,	liver,	1	time
,,	,,	kidney,	1	,,
,,	,,	brain,	1	,,
,,	,,	sputum,[2]	1	,,
,,		tonsil pus,	1	,,
,,		cancer pus,	1	,,
,,		tuberculous glands of the neck,[3]	1	,,
,,		tuberculous abscess,[3]	1	,,
,,		contused and lacerated wound,[3]	1	,,
,,		osteomyelitis,[3]	1	,,

It may be said that the lung has proved the most productive region for this organism, especially as regards purity of culture; in several cases I have obtained pure cultures directly from the lung, and again many times the first culture from the lung showed a predominance of colonies of Organism X, but with those of the common organisms as well. For the internal organs and heart's blood the same may be said, — the initial cultures have sometimes shown a pure growth of Organism X, sometimes a mixed growth.

Then I have a few cases showing great growth of the bacillus in the lung and either pure or mixed growth of the same in the internal organs or heart's blood; and always, with one exception, when appearing in the throat, it was found in the lung where examination was made.

For these reasons I regard the lung as the important seat of action. But I am satisfied the normal lung at autopsy is not a likely source for cultures. Lungs showing marked bronchopneumonia, often somewhat peculiar in the gross, both early and late, with associated gangrene, have in all cases yielded the most positive results, and in such the internal organs or heart's blood were sometimes found to yield cultures, not infrequently pure, of this organism. Suppurations have yielded good growths of the organism also.

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[1] My first pure culture of this organism I isolated while on service at the Danvers Insane Hospital in March, 1904; many subsequent cultures and other forms of " material " were obtained there also, and I want to thank the Superintendent, Dr. Charles W. Page, the Trustees, and my fellow physicians of the staff of the Danvers Insane Hospital for their interest and co-operation in this work, and particularly am I indebted to Dr. A. M. Barrett, pathologist to the hospital at that time.

Of others who have assisted me I desire especially to thank Dr. Theobald Smith for his aid and advice, and Burt R. Rickards, director of the Boston Board of Health Laboratory, for his many favors.

[2] During certain studies of diphtheria-like organisms in sputum which are in progress under Mr. B. R. Richards, he has stated to me that among others he has isolated organisms from the sources indicated which respond to many of the tests and are probably identical with " Organism X."

[3] The above four cultures are the only ones appearing above not isolated by me; they were sent to me through the kindness of Dr. D. H. Bergey, of the University of Pennsylvania, under the name of " Bacterium Pseudo-diphtheriticum." They have been proved by me to be identical with Organism X; therefore I interpolate them here. See table.

It has been found associated in the same case, the same site and culture with many common pathogenic and saprophytic bacteria; also with B. diphtheriæ; one such case is that from which culture No. 1 (B. diphtheriæ) and No. 2 ("Organism X") were isolated by me from a throat in 1904.

I have found Organism X at autopsy both in the general paralytic and in those presenting no definite symptoms of general paralysis.

MORPHOLOGY ON BLOOD SERUM OF ORGANISM.[4]

Very variable as to size and type. Commonly a small bacillus, rarely showing suggestion of rudimentary branches like B. diphtheriæ. Organism X, in culture, does not usually reach the average size of B. diphtheriæ. Small types are sometimes much smaller than B. Hoffmanni and often coccoid. Large types as large as medium-sized B. diphtheriæ. Shape: straight rods, slightly curved rods, conical like B. Hoffmanni, or coccoid. Involution types common, smaller than similar B. diphtheriæ types, but may be ten or twenty times the volume of their fellows, often "pear," "club" or huge "coccoid" in form. Arrangement either strictly palisade or in open "V" or "jackstraw," the latter less marked than with B. diphtheriæ. Relative dimensions like typical but diminutive diphtheria bacilli or often more thick and short. Granulation variable; this runs by strains very persistently, some strains mostly of small bipolar bacilli, others practically free of granules. A conspicuous type has well-defined large (relatively) bipolar and body granules, or with a single body or polar granule; body often very pale, in marked contrast with granule or granules. Barred or closely granular and even streptococcoid types are not rare.

STAINING.

Young individuals stain well with common stains. Old forms paler than corresponding B. diphtheriæ types. Here again certain strain peculiarity exists. Stains by Gram usually. Some strains are very pale with Gram, however. Involution types retain Gram better; they may be the only individuals in a "field" which unquestionably are Gram-stained when a counter stain is used. Granular types stain like B. diphtheriæ by Neisser's method; granules are usually smaller, however.

Non-capsulated; sometimes a non-staining interval between the sides of adjacent bodies in closely packed "fields" is seen.

No spores have been seen.

Motion: Non-motile, sometimes exhibits active Brownian oscillation, however.

The organism is an aërobe.

No gas production observed on glucose or saccharose broth in fermentation tube.

GROWTH.

Blood serum: More moist, more creamy and rapid in growth than B. diphtheriæ. Under good conditions of growth on blood serum most strains show, after a few days, a decided pale salmon pink tint; when old, often faint buff. Rarely, under bad conditions of growth, a yellow or a buff. The salmon pink is sometimes pronounced and is common in vigorous cultures. Media not usually stained until growth is very old.

On potato the faint salmon pink or salmon buff is readily seen.

Agar: More rapid than B. diphtheriæ and more moist, usually gray, sometimes dirty gray, and sometimes very faintly salmon tinted.

Gelatin not liquefied. Growth slow; very fine, disseminated, spherical, in depths. Surface growth dry, yellowish, elevated.

Broth: Grows well in plain or sugar broth. Marked turbidity with or without pellicle or marginal ring growth; usually the latter is present.

In glucose broth, produces marked acid formation as intense as is the case with B. diphtheriæ.

PATHOGENESIS.

Commonly non-pathogenic in the usual sense of the term to guinea-pigs, rabbits and white rats in ordinary doses. I have seen, however, decided local purulent infiltrations follow subcutaneous inoculations of the organism in guinea-pigs, in two cases followed by death. From such, "Organism X" has been recovered apparently in pure culture from the local lesion and a neighboring lymph node. I speak guardedly on this subject, as it requires further investigation.

DIFFERENTIATION OF ORGANISM X.

As the bacillus closely resembles B. xerosis, B. diphtheriæ, B. Hoffmanni and B. coryzæ segmentosus, its differentiation is somewhat difficult. In 1904 I differentiated the organism in question from B. diphtheriæ by means of serum-water-sugar-media of Hiss. I found the same characteristics to be shown much better by direct titration of sugar broths, a method recommended to me by Dr. Theobald Smith. Therefore I offer in tabular form my results with this method on the differentiation of Organism X from B. diphtheriæ, B. xerosis, B. Hoffmanni and the organism of Ruediger.

The sugar broth used for acid production in the table below contained .95% of sugar in a bouillon made up with Liebig's meat extract. One half cubic centimeter of a 20% solution of each of the following sugars — dextrose, saccharose, lactose, maltose, dextrin, mannite and inulin — was placed in sterile test tubes and sterilized by steaming sixteen minutes. To this 10 cc. of a filtered sterile sugar-free broth (rendered so by a growth of "bird colon" bacillus at 37.5° C. for eighteen hours) was added to every tube already containing

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[4] Morphology in tissues here omitted, to be treated in subsequent article.

FERMENTATION TABLE SHOWING ACID PRODUCTION IN 84 HOURS AT 37.5° C. ON VARIOUS .95% SUGAR BROTHS OF "ORGANISM X," BACILLUS DIPHTHERIÆ, BACCILLUS XEROSIS, BACILLUS PSEUDO-DIPHTHERIÆ (HOFFMANN'S BACILLUS), RUEDIGER'S BACILLUS, AND OTHERS.

Figures indicate acidity in % "normal" acid or alkali of the several inoculated suger broths under appropriate columns. Initial reaction of media .6% +. Sign + means acid; sign — means alkaline.

	Private Culture Number	Source	.95% Glucose Broth	.95% Saccharose Broth	.95% Lactose Broth	.95% Maltose Broth	.95% Dextrin Broth	.95% Mannite Broth	.95% Inulin Broth
Organism X.	2	Throat	4.8 +	4.4 +	.4 +	3.30+	.85+	.3 +	.35+
	3	Kidney	4.3 +	4.75+	.4 +	3.30+	.8 +	.4 +	.5 +
	5	Lung	4.0 +	4.70+	.25+	3.45+	.75+	.2 +	.25+
	6	Liver	4.05+	4.8 +	.7 +	3.4 +	1.0 +	.00+	.6 +
	9	Sputum	4.7 +	4.8 +	.45+	3.0 +	.6 +	.45+	.45+
	13	Lung	4.7 +	4.8 +	.25+	3.4 +	.5 +	.1 +	.25+
	37	Throat	4.7 +	4.8 +	.35+	3.4 +	.6 +	.2 +	.5 +
	38	Throat	4.65+	4.50+	.15—	3.5 +	.7 +	.2 +	.05+
	48	Lung	4.80+	4.5 +	.2 +	2.8 +	.6 +	.35+	.05—
	50	Throat	5.0 +	4.95+	.3 +	3.05+	.8 +	.2 +	.1 +
	70	Lung	4.25+	4.7 +	.15+	3.35+	.7 +	.00+	.25+
	72	Lung	4.2 +	4.7 +	.1—	3.1 +	.6 +	.4 +	.2 +
	81	Lung	3.2 +	4.85+	.3 +	3.5 +	.8 +	.5 +	.6 +
	86	Lung	4.20+	4.7 +	.4 +	3.4 +	.85+	.2 +	.45+
	97	Lung	5.0 +	4.8 +	.2 +	3.75+	.6 +	.3 +	.1 +
	99	Lung	3.2 +	4.40+	.6 +	3.4 +	.85+	.35+	.65+
	124	Heart's Bl.	4.7 +	4.30+	.12+	3.25+	.65+	.1 +	.25+
	135.47	Lung	4.65+	5.00+	‡	3.00+	1.5 +	.25+	.15+
	135.68	Brain	4.7 +	4.85+	.1 +	3.35+	.05—	.1—	.05+
	A 1025 Pl.	Empyema	4.65+	4.75+	‡	3.4 +	.65+	.4 +	.25+
	A 1037 R.L	Lung	4.8 +	4.75+	.0 +	3.45+	.65+	.15+	.2 +
	A 1041 R. Pl.	Empyema	4.45+	4.75+	.75+	‡	‡	.1 +	.05—
	A 1044 R. eye	Eye	5.05+	5.40+	‡	3.2 +	.7 +	.6 +	.45+
	"Bergey 6"	Note W	4.65+	4.6 +	.3 +	3.6 +	.95+	.8 +	.35+
	"Bergey 7"	Note X	4 15+	4.7 +	.7 +	3.3 +	.7 +	.8 +	.4 +
	"Bergey 34"	Note Y	4.15+	4.1 +	.2—	3.2 +	.55+	.2—	Broken
	"Bergey 68"	Note Z	5.25+	4.35+	.25+	3.10+	.75+	.15—	.55+
B. Diphtheriæ	1	Throat	4.9 +	.9 +	.8 +	4.35+	2.15+	.75+	.85+
	18	Lung	4.25+	.0 +	.65+	4.7 +	3.1 +	.5 +	.9 +
	22	Throat	5.00+	.65+	.7 +	4.75+	3.4 +	.7 +	.85+
	66	Throat	4.65+	.75+	1.2 +	4.8 +	1.9 +	.85+	.65+
	95	Throat	5.70+	§	.6 +	5.0 +	2.15+	.8 +	.65+
	96	Throat	¶ .60+	.9 +	¶.6 +	¶.6 +	¶.6 +	¶.6 +	‡
	108	Eye	4.25+	.5 +	.8 +	5.05+	2.9 +	.5 +	.8 +
	111	Throat	3.00+	.45+	1.3 +	3.4 +	2.0 +	1.3 +	.85+
B. Xerosis.	2131	Eye	3.4 +	.25+	.05+	2.9 +	.5 +	.00+	.1 +
	"Bergey 7"		3.4 +	.1 +	.0 +	2.8 +	.55+	.1 +	.1 +
	B. Hoff- 61	Throat	.25+	.1—	.1—	.4 +	.25+	.00+	.00+
	manni 133	Throat	.1—	.05—	.4—	.45+	.1 +	.00+	.15—
	B. Hoff- 131	Throat	.6 +	.55+	.15+	.9 +	.6 +	.1 +	.3 +
	manni (?) 27	Throat	.6 +	.45+	.4 +	1.00+	.4 +	.3 +	.4 +
(?)	4	Throat	4.1 +	.5 +	.6 +	2.85+	1.1 +	.3 +	.4 +
	"Ruediger 4"		.0 +	.2 +	.2 +	.2 +	.1—	.55+	.2—
	"Reddington"	Eye	¶6 +	.5 +	.7 +	1.05+	¶6 +	.7 +	¶6 +
(?)	"Q.L.N."	Nose	4.65+	4.85+	.95+	3.45+	2.55+	2.4 +	.85+
	Controls †	I+S	.6 +	.5 +	.6 +	....	....	....	....
		NI+S	....	....	....	.6 +	....	....	....
	Not inoculated	NI+NS	.6 +	....	....	1.05+	.85+	....	.6 +
			....	....	....	1.00+	.6 +	....	.6 +
			....	....	....	.9 +	....	....	.6 +
		NI+B	....	....	....	.75+	....	....	....

† = Sterile controls, not inoculated, titrated with and without previous incubation and steaming, are indicated thus:

†I+S Incubated 84 hours and steamed 16 minutes before titration.

†NI+S Not incubated but steamed 16 minutes before titration.

†NI+NS Not incubated and not steamed before titration.

†NI+B Not incubated but boiled three minutes before titration.

NOTE W "Tuberculous glands of neck."

" X "Tuberculous abscess."

NOTE Y "Contused and lacerated wound."

" Z "Osteomyelitis."

‡ Contaminated.

§ Contaminated. Earlier titration figures of culture No. 95 ran very close on saccharose to those produced by No. 108 on the same sugar.

¶ = No growths, broth absolutely clear. (Such are useful as controls, as conditions of growth, titration, etc., have been exactly the same as for inoculated cultures.)

sterile sugar solution. The tubed media were at once steamed in an "Arnold" for sixteen minutes, and after remaining for a period of fourteen hours at about 22° C., they received a final steaming for sixteen minutes. They were planted within two days, and all tubes were subjected to the same conditions of growth.

After eighty-four hours at 37.5° C. the cultures were steamed in an Arnold for sixteen minutes in convenient lots and rapidly titrated without agitation after the usual method in volumetric work, except that the above steaming was substituted for boiling. Indicator, Phenolphthalein. Initial reaction of all media .6 +.

Four of the cultures of B. diphtheriæ appearing in the table were obtained from patients of the institution during a mild epidemic of diphtheria there. Diphtheria bacillus culture No. 108 was obtained in nearly pure culture from the eye of a patient exhibiting marked local clinical signs of xerosis conjunctivæ, while previously and subsequently the eye yielded abundant cultures of true B. xerosis; No. 2131 is one of these.

FERMENTATION TABLE SHOWING ACID PRODUCTION IN EIGHTY-FOUR HOURS AT 37.5° C. ON VARIOUS .95% SUGAR BROTHS, OF "ORGANISM X," BACILLUS DIPHTHERIÆ, BACILLUS XEROSIS, BACILLUS PSEUDO-DIPHTHERIÆ (HOFFMANN'S BACILLUS), RUEDIGER'S BACILLUS AND OTHERS.

The table needs no explanation; bacillus Hoffmanni I use as synonymous with the term "pseudo-diphtheria bacillus." Of the B. xerosis cultures, 2131 has been referred to. It is well, however, to state that it always gave the dry, granular, clinging and friable surface growth on solid media which is so typical of B. xerosis; the same characteristic was shown even in the water of condensation and liquid media. Culture "Bergey No. 7," which was also typical in all respects, was obtained through the courtesy of Dr. Bergey. Of the cultures of B. Hoffmanni, two, Nos. 131 and 27, were not absolutely typical but probably they are correctly placed. "Ruediger 4" is one of Dr. Ruediger's organisms sent me by Dr. A. Hamilton.

Analysis of the table shows marked differences in the groups included. Organism X ferments glucose and saccharose rapidly and to the same degree, each reaching in eighty-four hours an acidity of from 4. + to 5. +. On maltose inoculated with Organism X the medium rises to 3. or 4. acid; little effect on the other sugars is produced by "Organism X."

B. diphtheriæ produces in eighty-four hours from 4. to 5. acid on glucose and maltose broth, also rises to 2. or 3. acid on dextrine broth, but shows no ability to ferment the other sugars to practical degree.

B. xerosis rises in this time to about 3.4 acid on glucose and about 3. + on maltose, but fails to produce acid on the other sugars, including saccharose.

B. Hoffmanni and Ruediger's bacillus fail to ferment even glucose.

"Organism X" is then clearly differentiated from B. diphtheriæ by its ability to ferment saccharose with just as much ease as it ferments glucose, while B. diphtheriæ, B. xerosis, B. Hoffmanni and the bacillus of Ruediger are incapable of attacking saccharose to any marked degree. I therefore regard the differentiation of Organism X from these organisms as demonstrated.

Another organism closely resembling in morphology, etc., "Organism X" is B. coryzæ segmentosus. This organism (culture "Reddington") failed to grow satisfactorily in the plantings for the table already presented, but can still, I believe, be distinguished without uncertainty from "Organism X." "Organism X" is a hardy organism growing much better and faster than B. coryzæ segmentosus, which grows slowly with much smaller, less conspicuous colonies, which die out readily if not watched. B. coryzæ segmentosus is said to produce acid on saccharose, to less degree, however, than Organism X, and it should not, I think, be mistaken for the latter.

CONCLUSION.

"Organism X" resembles closely certain members of the corynebacterium group. Having failed thus far to more satisfactorily identify this organism, I offer, omitting here lesser peculiarities, for the organism temporarily designated "Organism X," the following major differential characteristics: (1) "Organism X" ferments rapidly and to like degree both glucose and saccharose broth (.95% sugar broth as prepared by me, rises from .6+ to 4.+ to 5.+ in either sugar in eighty-four hours at 37.5° C.). (2) Commonly under good conditions of growth on coagulated blood serum of about .5+, if not subjected to conditions inimical to pigment formation in general, "Organism X" produces a pigment of a faint salmon pink color which does not stain the media until after weeks or months. This appears in two to four days under favorable conditions. In very old cultures the pink is replaced by buff. Very rarely yellow is produced, but only after the salmon pink has been seen in previous generations for months, and then under unfavorable conditions. The tendency of transplants from such cultures, if started under good conditions, is to regain the power of producing a faint salmon-colored pigment.

The above characteristics differentiate "Organism X" from B. diphtheriæ, B. xerosis, B. pseudodiphtheriæ (B. Hoffmanni), B. coryzæ segmentosus and from Ruediger's bacillus.

"Organism X" has been found by me a number of times at autopsy as well as during life, both in pure culture and mixed, in various pathological lesions and also when not associated with local disease. It has been found conspicuously in the bronchopneumonic lung in the insane, both in general paralytics and in non-general paralytics. It has been found in the internal organs and heart's blood at autopsy, but in such it has occurred in great numbers in the bronchopneumonic lung and associated empyema of the same case, when the latter complication existed. It has been found during life in pure culture in sputum from a patient who showed such clinical signs as are consistent with the common post-mortem findings of other cases; when such clinical signs of purulent bronchitis and bronchopneumonia ceased, the common flora of the mouth could alone be seen in cultures, and "Organism X" appeared to be absent in the little mucus that could be raised from the upper air passages by coughing and gagging. I have found it in suppurating conditions elsewhere than in the respiration system.

Therefore I regard Organism X as a factor in disease, especially as at this time so much is heard of the rôle of " diphtheroids " in this and that condition. It is my desire to present later some evidence bearing on the rôle of Organism X in man, particularly its significance in bronchopneumonia and its occurrence in the general paralytic. Likewise, after considering the literature of diphtheria-like organisms, etc., I hope to offer some statistics on the " diphtheroids " in the throats of the insane.

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PAINLESS LABOR. REPORT OF A CASE DUE TO A DESTRUCTIVE LESION OF THE SPINAL CORD.*

BY E. W. TAYLOR, M.D., BOSTON.

Cases of painless labor, due to lesions of the central nervous system, are sufficiently unusual to warrant report. Such cases occur but seldom either in the experience of obstetricians or pathologists, and, therefore, may be regarded as of theoretical rather than practical interest. As a matter of fact, gross destructive lesions of the spinal cord during pregnancy serve as a physiological experiment, the significance of which should not be overlooked.

The case which has suggested the presentation of this subject before this society has already been reported at length in its various clinical and pathological details.[1] In this report the course and termination of pregnancy were alluded to as incidents in the process which was more particularly under consideration. I shall, therefore, not attempt to give the history of the case again in detail, except so far as it relates to the matters now under consideration.

The patient was a woman of twenty-four whom I first saw toward the end of her first pregnancy. She was at that time suffering from a beginning paralysis of the legs, together with sensory and sphincteric disorder, which within a few days developed into a complete motor and sensory paraplegia extending to a point about midway between the umbilicus and the pubes. The evidence from the clinical signs was conclusive that there was a complete transverse destructive lesion of the spinal cord involving the entire lumbar region. Under these conditions of complete motor and sensory paralysis of the lower extremities the baby was born.

Dr. J. C. Hubbard was in charge of the patient at this time, and up to Jan. 13 had noticed nothing exceptional in the course of the pregnancy. The severe character of the underlying lesion of the central nervous system overshadowed the obstetrical condition. On Jan. 13 a routine examination by Dr. Hubbard showed definite uterine contractions as felt through the abdominal wall. No vaginal examination was made. The patient was conscious of these contractions, but made absolutely no complaint of pain and evidently experienced none. The fetal membranes had ruptured during the night. Dr. Hubbard expressed the opinion that labor was probably beginning, but did not feel that the situation was sufficiently urgent to demand his remaining with the patient. When he returned, about three hours later, the head was on the perineum, labor having been accomplished up to this point absolutely without pain and practically without the consciousness of the patient. The uterine contractions had evidently been adequate up to this time, though probably somewhat lacking in force. The abdominal muscles, so far as ascertained, took no part in the process. There was no evidence that further progress would be made and delivery of a healthy, ordinary sized girl baby was effected without difficulty through the application of forceps. The perineum was torn and was at once sewed up without the slightest evidence of pain. There was no post-partum hemorrhage; the uterus contracted in perfectly normal fashion and without further incident. The entire labor had, therefore, been accomplished absolutely without pain, and the birth of the baby was merely an incident in the day, of small significance in comparison with the pain and distress caused by the underlying disease. There was some slight complaint when the placenta was expressed by the hand on the abdomen. The convalescence from labor was entirely uneventful, even the perineal wound healing without complication in spite of the complete anesthesia of the part and the urinary incontinence. The baby was not nursed. Dr. Hubbard has called my attention to the following points of special interest in the labor: first, its painless character; second, the absence of any distinctive use of the auxiliary muscles during the second stage; and third, the satisfactorily firm contractions of the uterus after delivery.

The patient died March 25, the paralysis of the legs remaining complete and the entire illness associated with much pain unexplained during life. The autopsy showed a completely destructive, sarcomatous tumor of the whole lumbar and sacral region of the cord, thence extending upward on its dorsal surface into the cervical region. The details of pathological findings are given at length in the paper to which I have already referred.

I wish now merely to call attention to the points which are of particular interest from an obstetrical standpoint, and especially to consider the following matters: first, the conditions under which painless labor may occur; second, the relation of the accessory abdominal muscles to the pains of labor; third, the general innervation of the uterus.

I. Olshausen[2] has pointed out that painless labor may occur in placenta previa with succulent soft parts, and also calls attention to the fact that under very rare conditions a labor may be wholly painless in normal persons. In this connection a recent paper by Wolff is of importance. Wolff[3] reports the case of a primipara of twenty-eight, who had no pain whatever in spite of normal contractions of the uterus, and likewise made no use of the accessory abdominal muscles in the efforts to expel the fetus. The patient was rather exhausted during the labor, but had no clouding of the mind. The pulse and temperature remained normal, and no sign whatever was found of disordered sensibility or of any other nervous derangement. There was no indication of hysteria. As the labor progressed there was no pain, but it was finally necessary to complete the birth artificially, because of weakening contractions. During this operation an anesthetic was used. Delivery was followed by some hemorrhage from the atonic uterus, but convalescence progressed normally. The labor had continued over a period of two days and the statement is made that only at the beginning were very slight pains felt. Subsequent examination of the nervous system again showed no abnormality whatsoever. The patient remembered all the events of the labor. At the beginning of the labor a small dose of morphine and chloral was given, but it was regarded as wholly insufficient to lead to a deadening of the pain to the extent observed. Wolff also refers to seven other similar cases, both primiparous and multiparous, presenting varied clinical pictures.

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* Read before the Obstetrical Society of Boston, April 23, 1907.

[1] Bost. Med. and Surg. Jour., 1907, clvi, 161.

[2] Olshausen: Zeitschr. für Geburtsh. und Gynäk., 1897, xxxvi, 369.

[3] Bruno Wolff: Ueber Schmerzlose Geburtswehen. Arch. für Gynäk., 1906, lxxxvii, 402.

Such cases are, however, extraordinarily rare, especially in primiparous women. It is no doubt a sufficiently common experience that in multiparæ labor is unassociated with long-continued or severe pain. Birth in these cases is no doubt often effected by relatively few uterine contractions, but such contractions, few as they may be, are in the vast majority of cases accompanied by distinct and unmistakable labor pains. The question which chiefly interests us now is not the ease of birth in any given instance, but its painless character, when the conditions for pain are present.

The disorders of the nervous system in which painless labor occurs are essentially those in which the sensory conduction is interfered with. It is possible, for example, that a labor may be painless as a result of hysteria, in which, together with sensory disorders, a paralysis of the legs may be present simulating a structural lesion. The usual non-involvement of the sphincters in hysteria is a valuable differential point. Leaving aside various cerebral disorders, associated with disturbances or loss of consciousness, the more frequent causes of painless labor are to be found in destructive lesions of the spinal cord, involving the lumbar region or lying anywhere in the cord above. Such lesions are usually of the character of myelitis, using that term in its broad sense. Instances, for example, have been described through compression by means of tuberculosis or other external agencies. Cases of painless labor associated with tabes dorsalis are naturally explained by the involvement of the sensory tracts, but are of less interest from the physiological standpoint, inasmuch as the motor mechanism remains undisturbed. In spite of the fact that there are a number of conditions in which painless labor may occur, the cases are still extremely few in which adequate reports have been made. In 1904 Windscheid [4] collected the cases associated with myelitis and reported one of his own, which was briefly as follows: A woman, forty-three years, the mother of fifteen children, was nine months pregnant with the sixteenth. Following a fall on the buttocks there was gradual loss of power in the legs, accompanied by sensory disorders and urinary incontinence. When examined she was emaciated and completely paraplegic, except for some movement of the two great toes. There was paresis of the abdominal muscles and anesthesia up to the level of the umbilicus. Reflexes, both deep and superficial, were increased. Sepsis developed and the birth took place four days after without pain, or use of the accessory abdominal muscles, with great ease, and without knowledge of the labor on the part of the mother. She died of sepsis three days after the birth of the child. This case is evidently not a particularly striking one, first, on account of the great number of children she had had; secondly, on account of the supervening sepsis, with presumable rise of temperature and possible dulling of consciousness; and thirdly, because of the evident extreme illness of the patient during the period of labor. The clinical diagnosis of dorsal myelitis in this case was substantiated by the autopsy.

In this paper Windscheid refers briefly to cases reported by Boshan, Benicke, Nasse, Brachet, Renz, Wachenhusen, Schnitzer, and refers also to a dissertation of Kasbaum, in which the general subject is discussed. All of these cases were due to a destructive lesion of the cord, either by inflammatory or tuberculous processes.

So far as my study of the references has gone, I find no mention of a painless labor being produced by an invasion and consequent destruction of the cord through a tumor other than tuberculous. In our case it is evident that the labor was without pain, because of the destruction of the lumbar cord, through which unquestionably must be conveyed the fibers which transmit sensation of uterine contractions to the brain. The lesion found post-mortem, therefore, adequately and completely explains the painlessness of the labor.

II. The physiological significance of the pain associated with labor has always been, and remains, a matter of much interest. It is said that labor is the only physiological process in which pain is a normal accompaniment. It is, therefore, reasonable to suppose that pain has a certain definite significance in the process of birth. It is, however, evident that under certain circumstances, either of idiosyncrasy or of destructive lesion of the cord, birth may take place entirely without pain, and it therefore follows that pain cannot be regarded as essential to the process. Zweifel has advanced the theory that the object of the pains is to force the mother, through active inspiration, to supply her blood with oxygen in order that the child may not be asphyxiated when the supply of oxygen is of necessity cut off during uterine contractions. This theory evidently cannot apply to all cases, inasmuch as it has not been shown that painless labor is fatal to the child. It is certainly not to be regarded, therefore, as a wholly adequate explanation, although it may be in a measure true. In an important paper, written in 1900, Kreis[5] reported six cases of medullary narcosis, in which labor was performed absolutely without pain and without interference with the uterine contractions. The interesting fact was, however, observed that the accessory abdominal muscles did not spontaneously contract during the progress of labor. It was also observed that a request on the part of the physician to use the abdominal muscles could easily be complied with by the patient with the usual effect. In other words, involuntary or reflex contractions of the abdominal muscles were not aroused when no pain was felt, but could be voluntarily stimulated by an act of the will. From this it follows, apparently, that pain and the action of the abdominal muscles are closely allied and that under ordinary circumstances pain is necessary to bring about the proper action of these muscles in the expulsive effort. Müller also reports thirty-two cases of adrenalin cocaine spinal anesthesia from the Greifswald clinic. In only one of these were the abdominal muscles used involuntarily, corresponding with the view set forth by Kreis. Wolff also in the paper to which we have already alluded assents to the correctness of the foregoing observation, but goes a step further on the positive side and asserts that pain is a necessary stimulus to regular contractions of the abdominal muscles, a fact first proved by the study of painless labor, whether artificially produced by spinal anesthesia or due to various pathological lesions. According to this view, therefore, the physiological significance of pain is to provide a regulatory mechanism for the action of the abdominal muscles. There is evidence to show that pains in the lower animals have a function similar to that in man. In the case which Dr. Hubbard and I have had an opportunity to observe, the labor progressed, as I have before stated, without pain. There was also no noticeable action of the abdominal muscles, although they could not have been paralyzed by the existing lesion during the progress of labor, which bears out the hypothesis to which I have just referred. In general, therefore, from this point of view, the pain of labor is to be regarded as of physiological importance in regulating the action of the accessory abdominal muscles in the act of birth. Pain is certainly not essential to effective contractions of the uterus.

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[4] F. Windscheid: Ueber Entbindung bei Myelitis. Arch. für Gynäk., 1904, lxxii, 360.

III. The final question of the relation of the uterine nerve supply to the spinal cord, brain and sympathetic systems is also a matter of much interest. Budge, quoted by v. Hösslin,[6] regards the chief centers for the uterus as lying in the cerebellum, oblongata and one at the height of the fourth lumbar vertebra through which uterine movements are aroused. Similar movements may be aroused by the stimulation of the genito-spinal center at the height of the fifth lumbar segment. In general, with various divergencies in detail, observers have found centers in the cord, oblongata and in various sympathetic plexuses. Experiments have, however, shown more and more definitely the practical independence of the uterus from its central connections. Resection of the dorso-lumbar cord (Goltz) has not interfered with the birth of normal pups. Destruction of the lumbar cord itself has also not prevented normal birth. Further experiments have demonstrated that uterine contractions will take place when the uterus is separated from spinal or sympathetic tracts. Kurdinowski, for example, showed that a wholly separated rabbit uterus is capable of contracting in normal fashion. Still more extraordinary is a case[7] recently reported by Schmorl, which was briefly as follows: A woman, thirty-three years old, while pregnant, developed a rapidly growing myoma of the uterus, for which operation was attempted. It was, however, found that the myoma could not be successfully removed on account of excessive hemorrhage, and a complete hysterectomy was done. After removal of the uterus, on examination, it was observed that the internal os was slightly patent. In half an hour thereafter the size of the os increased to the size of a five-mark piece, and at the end of two hours a fetus, estimated at about the third month, was born. During this period of "labor," slow contractions of the uterine muscle were observed. After the birth of this fetus, the birth of a second began, but the uterine contractions were not sufficient for its expulsion. This remarkable case is a further striking proof that uterine contractions are possible after complete separation from the central nervous mechanism. It is also of interest in connection with certain cases reported of births after death.

The general conclusion is, therefore, necessitated that the uterus of mammals, even after the cutting off of the cord and ganglia lying in the hypogastric plexus, is capable of rhythmical contraction, but it appears that such contractions are somewhat less forcible than when the entire nervous system is intact. The brain is to be regarded simply as a regulatory mechanism. Armand Routh (quoted by v. Hösslin) has summarized our existing knowledge of the entire matter, in general, as follows:

1. Birth is partly automatic and partly reflex.
2. Direct connection with the brain is not essential for co-ordination of uterine action, although the brain appears to have influence on the pains in so far as it contributes to their regularity.
3. Direct connection between the uterus and lumbar enlargement, through the agency of sympathetic ganglia between the first and third lumbar vertebræ is apparently necessary for the regular contraction and retraction of the uterus as seen under normal conditions.
4. The uterus is apparently capable of expelling its contents provided the genital canal is re-

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[5] Kreis: Ueber Medullarnarkose bei Gebärenden. Arch. für Gynak., 1900, xxiv, 724.

[6] v. Hösslin: Die Schwangerschaftslähmungen der Mütter. Arch. für Psychiat. und Nervenkrankh., 1904, xxxviii, 730. An exhaustive discussion of various nerve lesions which may occur during pregnancy .

[7] Schmorl: Centralbl. für Gynäk., 1906, xxx, 917.

laxed when totally cut off from the spinal cord, but its contractions are more likely to be irregular and incomplete.

The observation of the case reported briefly in this paper serves to substantiate many of the points to which allusion has been made, and demonstrates from the standpoint of a unique pathological lesion that uterine contractions may occur without pain; that the fetus may be carried far on its way, if not wholly expelled, by a uterus separated from its central connections and without the aid of the abdominal muscles; and that its final contraction after the expulsion of the placenta may be complete and satisfactory, precluding the likelihood of post-partum hemorrhage.

Clinical Department.

"A CASE OF CHRONIC OTITIS MEDIA, HEMORRHAGE INTO THE EXTERNAL AUDITORY CANAL, PERFORATION OF THE WALL OF PHARYNX, WITH FATAL HEMORRHAGE FROM THE JUGULAR VEIN.*

BY FREDERICK L. JACK, M.D., BOSTON,
AND
FREDERICK H. VERHOEFF, M.D., BOSTON.

J. O., two and one-half years old, was first seen at the Massachusetts Charitable Eye and Ear Infirmary on Jan. 8, 1907, when the following history was obtained. The patient had never had any of the diseases of childhood, or any ear trouble prior to the present attack. For two weeks she had been fretful and evidently in pain. A discharge of pus from the right ear had been noticed for several days, and a swelling postaural for nearly a week. Considerable coagulated blood was found in the right meatus. Over the mastoid tip, extending about one inch below and one and one-half inches posteriorly, was a large fluctuating swelling about the size of a tangerine, tender on pressure. About two hours following admission to the ward the child was taken with severe hemorrhage from the mouth and nose. When the House Surgeon arrived the child was not breathing and was exsanguinated. Clots were found in the mouth and nares, with signs of vomitus on clothing. Adrenalin was given subcutaneously and normal salt solution, together with artificial respiration, but without avail.

Autopsy by Dr. Verhoeff, nineteen hours after death, head only. Body that of a fairly nourished female child. Slight rigor mortis. Lividity of dependent parts. Both nostrils and right external auditory canal are filled with clotted blood. Below and slightly behind the meatus there is a swelling about the size of an olive, over which the skin shows ecchymosis. Meninges and brain are normal, no evidences of tuberculosis. The venous sinuses are free, including the right lateral sinus and bulb. The whole temporal bone, with a large amount of the soft tissues beneath it, including a portion of the wall of the pharynx, removed and hardened forty-eight hours in 10% formalin. A stream of water can be forced through the carotid canal without any of it finding its way into the tympanum. The soft tissues beneath the bone, which contain the carotid artery and jugular vein, are infiltrated with blood from a large hemorrhagic extravasation. This is in communication with the pharynx a short distance below the mouth of the Eustachian tube. It also extends outward to the angle of the jaw, undermines the subcutaneous tissue, forms the swelling already mentioned and communicates with the lumen of the external auditory canal at the bony margin of the latter. The tympanic membrane is now intact, but is retracted and united to the promontory, evidently as the result of an old perforation. The tympanic cavity and Eustachian tube contain a large amount of exudate, but are free from blood. The ossicles are *in situ.* Attached to the wall of the tympanum are several small polyps. The attic and mastoid cells are filled with exudate, but the bony tissue is apparently not necrotic. The lining of the carotid artery, in its nearest vicinity to the tympanum and Eustachian tube, is smooth and intact.

Histological examination (Decalcification in 5% nitric acid, embedding in celloidin): The wall of the external auditory canal shows a marked inflammatory reaction and is giving off an exudation of pus cells. The tympanum shows the appearance characteristic of chronic suppurative otitis media. The submucosa is markedly infiltrated with chronic inflammatory cells, and the free exudate consists chiefly of serum and pus cells. The lining epithelium is comparatively normal. The polyps are found to consist of edematous connective tissue only slightly infiltrated with inflammatory cells. The air spaces leading out from the tympanic cavity are filled with seropurulent exudate. The medullary spaces of the surrounding bone show an infiltration with chronic inflammatory cells, among which plasma cells largely predominate, and occasional foci of pus cells. The internal ear is normal. The carotid artery itself is normal, but its sheath shows a marked chronic inflammatory reaction which extends as far as the first bend in the bony canal, but which is most marked at the entrance of the latter. The sheath of the artery for a short distance is also infiltrated with blood which has forced its way from the large hemorrhage beneath the temporal bone. The soft tissues in which this hemorrhage has taken place are involved in a formation of granulation tissue in which occur large areas of pus cells. The wall of the jugular vein, which passes through this abscess, is completely necrotic, lined with purulent thrombi and in places perforated. Higher up, where the vein is in relation with the bone, its wall is normal. Sections of the abscess beneath the temporal bone, stained by the Gram method, show numerous streptococci occurring in short chains and pairs. No other bacteria are to be seen.

Diagnosis. — Chronic suppurative otitis media, abscess beneath temporal bone, due to streptococcus pyogenes. Perforation of internal jugular vein. Infected hematoma. Hemorrhage into external auditory canal. Perforation of the wall of the pharnyx, with fatal hemorrhage from internal jugular vein.

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Under the title of the Hippocratean College of Medicine, a night school for the study of medicine has been opened in St. Louis.— *Medical Record.*

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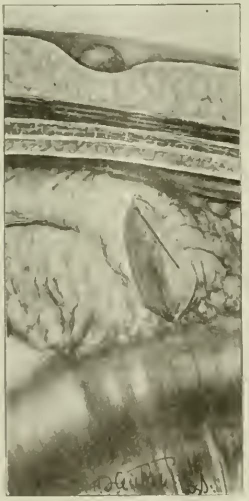
* Read before the American Otological Society, Washington, D. C., May 8, 1907.

A STRANGE REASON FOR PERSISTENT ABDOMINAL PAIN. INTESTINAL ADHESIONS CAUSED BY A PIN WHICH HAD PENETRATED THE UMBILICUS WITHOUT THE KNOWLEDGE OF THE PATIENT.

BY FARRAR COBB, M.D., BOSTON,
Assistant Visiting Surgeon to the Massachusetts General Hospital.

It is recognized that intestinal adhesions, with or without abscess formation, may be caused by the migration from the stomach or intestines of sharp foreign bodies, such as pins, needles or fish bones, which have been swallowed. Occasionally such cases have been reported. The case detailed here is probably unique because of the location and method of entrance of the pin and the entire ignorance of the patient in regard in it. Because of the very unusual condition found at operation, it is thought worth while to report it.



M. H., single, nineteen years old, entered the West Surgical Service of the Massachusetts General Hospital on Oct. 8, 1902. Dr. Beach, the senior surgeon of the service, very kindly turned the case over to me. For two weeks she had been under observation in the Out-Patient Department and was recommended to the wards for operation because of a suspected abdominal neoplasm or tubercular peritonitis. The family history was unimportant. She had always been in good health until the onset of the present trouble about three months ago. Catamenia began at sixteen years, at first profuse, but in the last two years scanty and accompanied for one day by much pelvic pain, requiring her to go to bed. There had been considerable irregularity, but none for several months. Three months before entrance, without known cause, she began to be easily tired and to have constant pain in the abdomen, most severe in the region of the umbilicus and in the left hypochondrium; it was sometimes sharp and darting and ran into the pelvis and up to the region of the left breast. This pain had been slowly increasing in severity, but the patient had done her usual housework until two weeks ago, when it became so intense that she could not stand. From the beginning her appetite had been poor and there had been some nausea, but no vomiting. She had slept poorly and had had more or less headache. She noticed that she was compelled to pass urine frequently, as often as once an hour during the day and more than twice during the night, and that for a few weeks before entrance the act of urination had been painful. The bowels had moved daily and the movements were dark in color; she had noticed no blood. She thought she had lost weight, but did not know how much. She was very anxious to be relieved from pain, which prevented her from earning her living as housemaid.

Examination showed a well-developed and nourished young woman. Nothing abnormal in the chest. Urine normal. Leucocyte count, 18,000. Hymen present. Uterus small, anteflexed, movable. Left kidney palpable. Palpation of the abdomen developed tenderness at the umbilicus, most marked on the patient's left and running into the left hypochondrium, with slight muscle spasm. Nothing abnormal in the appearance of the umbilicus was noted. The patient was kept in bed under observation for four days, during which time the evening temperature was 100° F. daily. Pulse and respiration were normal. During this time she complained constantly of pain in the region of the umbilicus, with nausea, but nothing abnormal was found upon examination except the tenderness mentioned above. Operation was determined upon because of the pain, which was manifestly severe at times. No certain diagnosis of the cause for the pain seemed possible.

The case was operated upon by me on Oct. 13. The anesthesia was nitrous oxide gas followed by ether. Bimanual examination after the patient was under ether revealed nothing abnormal in the pelvis save marked anteflexion of the uterus. After dilating and curetting the uterus, to correct to a certain degree the anteflexion, the patient was placed in the Trendelenberg position and the abdomen opened in the median line for the purpose of exploration. Upon opening the peritoneum the following conditions were found: The urachus was much larger than usual, fully the size of a pencil. The bladder seemed normal in size, but apparently was held partially out of the pelvic cavity by the large urachus. For the space of one to one and one-half inches above and below the umbilicus the omentum was firmly adherent to the anterior parietes and to the small intestine; the omental adhesions surrounded the urachus and bound it and the small intestine firmly against the abdominal wall in the umbilical region. Palpation of the omental adhesions detected a hard mass the size of a large English walnut buried in the adhesions just under the umbilicus and in the center of this a sharp object like a pin or a needle was felt. The omental adhesions were tied off with catgut. After separating the intestine with some difficulty the urachus, which was found to be patent, was tied off and excised. The sharp object was discovered to be a common pin which had penetrated the abdominal cavity by transfixing the umbilicus. For the sake of showing the pin *in situ*, as well as adopting the best method of removal of the infiltrated area (see illustration), the umbilicus, with a moderate amount of neighboring tissue, was excised, after which the abdominal excision was closed in layers. Examination of the excised tissues showed that the pin had entered at the umbilicus and had become buried in omental adhesions, but no point of entrance on the external skin could be found. The urachus in the inflammatory mass excised was practically obliterated. In all probability the urachus had been patent up to the skin covering the umbilicus previous to the reaction caused by the pin.

The patient made an uneventful recovery and was seen by me three years after the operation, when she reported herself as in good health, with no abdominal pain and regular catamenia. She occasionally was bothered by frequency of micturition, but not nearly so much as before the operation.

In the illustration is shown in a semi-diagrammatic way the condition found at operation. The patient at all times denied all knowledge of how the pin gained entrance into her abdominal cavity, but on close questioning after the operation she remembered that she had fallen down a flight of stairs shortly before the onset of the abdominal pain. The fall was a bad one and she suffered from painful bruises. It is possible that at this time a pin in her clothing may have been forced through the tissues of the umbilicus, which were thinner than normal by reason of the patent urachus, and the pain of her other injuries prevented her noticing the minor wound. It is interesting to note the frequency of micturition associated with the abdominal pain. This may have been caused by a certain amount of shortening and contraction of the patent urachus due to its involvement in the mass of adhesions; on the other hand, it may have been a purely reflex nervous manifestation.

Medical Progress.

PROGRESS IN PEDIATRICS.

BY THOMAS MORGAN ROTCH, M.D., BOSTON,
AND
JOHN LOVETT MORSE, A.M., M.D., BOSTON.

STENOSIS OF THE PYLORUS IN INFANCY.

(Concluded from Vol. clvi, No. 26, p. 854.)

It is evident from these cases that the majority of authors disagree with *Heubner* as to the best method of feeding these cases. They almost all agree that it is better to give small amounts often rather than large amounts at longer intervals. They also almost unanimously favor lavage. Most of them believe that breast milk is the best food in this condition, although some believe in giving it diluted. Some give alkalies, believing that the condition is due to hyperacidity. Marx used them in one of his cases in which the acidity was high with good results, but did not use them in another in which the acidity was low. The Germans, led by Ibrahim, use poultices to the abdomen and feel that they are of considerable value. [The writers are somewhat skeptical as to the efficacy of poultices in these cases.]

Very few opinions have been expressed as to what happens when recovery occurs since Ibrahim summed up the subject in his paper. Marx, however, believes that recovery takes place largely as the result of compensatory hypertrophy of the other muscles of the stomach.

Several cases have been treated by small doses of opium before feeding, with apparently good results. These cases are as follows:—

Neild: Visible peristalsis; tumor. No improvement on bismuth and soda with breast feeding. One-sixtieth minim of tincture of opium twenty minutes a.c. Much improvement in a week. Opium stopped in five weeks. Recurrence of vomiting. Opium resumed and vomiting relieved. Dose gradually diminished. Recovery complete and lasting.

Visible peristalsis; tumor. Same diet. One-eightieth minim tincture of opium twenty minutes a.c. No improvement in a week. Then one-fortieth minim given. Marked improvement in a week. Continued to do well.

Third case doing well under same treatment also referred to.

Rob: Visible peristalsis; no tumor. No benefit from changes of food and lavage. One-eightieth minim tincture of opium twenty minutes a.c. Improvement in one week which continued. Well five months later.

Sutherland, however, gave up to seven minims daily of the liquor opii sedativus for some time without any effect on the peristalsis.

In speaking of the medical treatment of pyloric stenosis Sutherland remarks that the pylorus has two functions, — one of contraction and one of relaxation. The latter has been pretty generally overlooked. The fact that the muscular fibers are hypertrophied is no reason for assuming that only the power of contraction is retained. In fact, the hypertrophied pylorus has been seen to relax during an operation. The variation in the severity of the symptoms shows that even in marked cases it relaxes at times. The difficulty is that it does not do so enough to allow sufficient nourishment to pass through. The aim of medical treatment must be, therefore, to restore the function of relaxation of the pylorus, which has been in abeyance to the more powerful action of the constrictor muscular fibers. All sources of irritation in the stomach which may maintain pyloric spasm must be removed. It must be kept free from irritating food. Small amounts must be given at a time, in order to secure complete digestion. Lavage must be used daily for a long time, best at a time when, under normal conditions, the stomach is empty. Breast milk is the best food. Fats, in artificial foods, are likely to cause trouble. Finally, he expresses "the hope and belief that as our knowledge and experience of the medical treatment advance there will be fewer and fewer cases in which surgical intervention is called for."

Very little work has been done in most cases as to the chemistry of the gastric digestion, and what little work has been done has given varying results. It is safe to say that nothing of importance has been learned in this line.

A whole session of the Section on the Diseases of Children at the Toronto meeting of the British Medical Association, last summer, was devoted to this subject, and several valuable papers were presented, notably those by Cautley and Stiles. Many valuable points were also brought out in the discussion of these papers.

Cautley distinguishes between functional pyloric spasm and congenital hypertrophic stenosis. He says that there is a group of cases in infancy which shows a combination of symptoms which are extremely liable to give rise to an erroneous diagnosis of congenital hypertrophic stenosis and to which the name of pyloric spasm may be given. He admits that there is no absolute proof that there is spasm of the pylorus in these cases, but says that he can put forward no other plausible explanation. The main feature of this condition is severe and continued vomiting. The food is usually brought up at once, but sometimes a considerable quantity is kept down and then violently ejected. Constipation may be present. Some of his cases had visible peristalsis and dilatation of the stomach. He makes no mention, however, of tumor. He thinks that these cases prove that spasm of the pylorus is not the cause of the marked hypertrophy of the pylorus seen in congenital hypertrophic stenosis.

He has had sixteen cases of congenital hypertrophic stenosis and bases his conclusions on these cases. He believes that it is congenital in origin and that it is rarely compatible with long life. He attaches great importance to visible peristalsis and states that it may be visible only after feeding and that it is best elicited by giving a fair sized meal, by flicking the stomach wall with the finger or by applying a cold object. Dilatation depends on the duration and degree of obstruction. The absence of dilatation is not a contra-indication in early cases at a time when operative treatment gives the best results. The diagnosis is certain if the pylorus is felt. It is greatly to the detriment of the child, however, if the physician waits until he can definitely feel a tumor before he ventures to make a diagnosis.

He divides the cases into typical and mild. In the typical cases there is characteristic vomiting, constipation, wasting, visible peristalsis, dilatation of the stomach and tumor. In the mild cases the vomiting varies with the diet. If the stomach is washed out daily and a diluted food given, vomiting may be entirely absent for a week or more at a time and the infant may gain in weight. These are the cases which may get well without surgical aid. It is probable, however, that the hypertrophic stenosis of adults is due to the persistence of the infantile condition. Some may recover; others suffer from chronic gastric trouble; most die from progressive wasting. He says that although the amount of muscle may vary a little in the normal pylorus and in those who apparently suffer from spasm, it remains very small and in section roughly triangular. There are no intermediate stages between the conditions found in these and those found in hypertrophic stenosis. He believes "that Nature in her extreme anxiety to provide a sufficient pyloric sphincter has overexerted herself and produced too great a quantity of muscular tissue. There is a true hyperplasia, a simple redundancy of fetal growth." He brings forward various arguments against spasm as the cause of the hypertrophy.

In speaking of the diagnosis between spasm of the pylorus and hypertrophic stenosis, he says that in the former the vomiting is different in character, peristalsis is slight or absent, the stomach is rarely dilated, pronounced constipation is unusual, there may be diarrhea and there is no tumor. It is rare for two or more feeds to be retained and then vomited. In case of doubt the effects of medical treatment are of value. There is greater danger of pyloric spasm being diagnosed erroneously as pyloric hypertrophy than of the opposite mistake being made.

The outlook is extremely bad if treatment is purely medical even when the obstruction is incomplete. He believes in early operation and that the prognosis depends mainly upon the general condition of the infant. He believes that pyloroplasty is the best operation.

Stiles quotes Professor Cunningham at considerable length with regard to the musculature of the pyloric canal. Cunningham found great thickening of both muscular layers in the specimens which he examined. Stiles believes, therefore, that from the purely anatomical point of view the only difference between the normal pylorus and the stenosed pylorus, as met with in infants, is that in the latter the muscular coat is greatly thickened. He believes that it is a distinct pathological entity, but admits that both in the child and in the adult there is clinical evidence to support the view that cases of pure spasmodic stenosis of the pylorus do occur, and believes that the majority of the cases of infantile pyloric stenosis that have recovered without operation belong to this category. A considerable number of cases presenting the symptoms of pyloric stenosis have recovered without the aid of surgical treatment. It rests with the physician to settle whether these recoveries are cases of spasm without hypertrophy or a combination of spasm and hypertrophy, the former predominating. It is of great importance to follow up the life history of such infants as are supposed to have been cured of pyloric stenosis without operation. If they again suffer from gastric symptoms pointing to pyloric stenosis surgical treatment will take the same place in pyloric stenosis of the infant that it has taken in that in the adult.

He divides the cases of pyloric stenosis into two distinct groups, namely, the purely spasmodic without any hypertrophy, and the true congenital hypertrophic in which a varying amount of spasm or tonic contraction is superadded. The first group may be expected to get well under dietetic and medical treatment, while the latter group must assuredly die unless surgical treatment is resorted to. He does not think that the kind of operation is of much importance, the main point being to operate early. He believes that there is an intermediate group in which the hypertrophy, although present, is less marked. It is these cases which have probably led to the confusion and difference of opinion which exists among physicians regarding the pathology and treatment of infantile pyloric stenosis. He advises a diagnostic incision in all cases in which the diagnosis is doubtful and in which medical treatment is not bringing about an improvement. If the case is one of spasm without hypertrophy the physician and surgeon should together decide as to the advisability of divulsion. If the infant is young and feeble and the hypertrophy not marked he prefers divulsion. If the general condition is satisfactory and there is marked hypertrophy, the choice lies between pyloroplasty and gastro-enterostomy.

The following summary in an editorial in the *British Journal of Children's Diseases* sums up the subject very well: "The summary of the writings and observations of the past year indicates that the disease is much more common than is generally supposed; that operative treatment in wasted infants is not often successful; that cases with apparently all the symptoms of the affection do get well without operation; that great care is essential in diagnosis before accepting a diagnosis of pyloric hypertropy necessitating operation from pyloric spasm, which is curable by simpler measures." In summing up our evidence it should be said that diagnosis in any case not operated on or autopsied is open to question.

It is evident that much has yet to be learned concerning these conditions and the diagnosis between them. It is especially important to know what happens eventually to those cases which are supposed to have stenosis and recover under medical treatment. An autopsy on one of these cases dead of some other disease after a lapse of months or years will teach us a great deal. So would an autopsy under similar conditions on a case cured by operation.

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Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Report of the Twenty-second Annual Meeting Held at Washington, D. C., May 7, 8 and 9, 1907.

First Day, Tuesday, May 7.

ADDRESS OF THE PRESIDENT.

Dr. F. P. Kinnicutt, New York, referred to the deaths of Dr. Jas. Stewart, of Montreal, and Drs. I. E. Atkinson and Thos. Lattimer, of Baltimore. He then gave an outline of the work to be done at the present session, saying: "The successive meetings of the Association of American Physicians have proved the wisdom of its founders. In the twenty-two years since its birth much of the best work of the laboratories and clinics of the United States and Canada has been yearly presented for the consideration, discussion and instruction of its members. Embracing, as it does, in its membership, the pure scientist in medicine, and the clinician in every field of its practice, this body has been an admirable example of the science and art of medicine walking hand in hand, the one or the other leading for the moment, but always with the willingness and desire to have its steps corrected if per chance straying from the path of truth. Such a union has given the Association its great strength. Only by such union is secure progress in medicine attainable."

THE CONNECTIONS OF THE OCCIPITAL LOBES AND THE PRESENT STATUS OF THE CEREBRAL VISUAL FUNCTIONS.

Dr. Adolph Meyer, New York, presented this paper under the following subdivisions: 1. Isolation of the geniculo-calcarine tract (2 cases). 2. Subdivision of sagittal marrows and their course. Marking of the calcarine area. 3. Degeneration of the occipital efferent path and the geniculo-calcarine tract, following degeneration of the calcarine cortex. 4. Marchi-degenerations from a small wound of the post-parietal cortex, involving the optic radiations: (1) afferent character of the external sagittal marrow; (2) efferent character of the internal sagittal marrow (contributing to the lateral part of the crus); (3) subcortical (external sagittal) fibers towards the motor area; (4) no fibers to the frontal lobe. Anatomical data for clinical co-relations.

Dr. L. F. Barker, Baltimore, said we should be grateful for this contribution to our knowledge of the association fibers which connect the primary visual centers with the adjacent and more distant centers. These studies were of the very greatest importance for diagnosis in neurology and psychology. It was only by control of clinical observations, by pathological anatomy, that we could hope for better ideas of localization and association.

CERTAIN FEATURES OF THE "NERVOUS BREAKDOWN," WITH SPECIAL REFERENCE TO TREATMENT.

Dr. James J. Putnam, Boston, in this paper studied the acute "nervous breakdown" as really typifying processes which are characteristic of more chronic neurasthenic conditions, but as affording especially good chances for observation, because the whole illness runs its course, so to speak, under the physician's eye. The most striking example of this acute breakdown was perhaps the so-called traumatic neurosis, characterized by its period of predisposition, followed by periods of nervous shock, of apparent absence of symptoms, of gradually increasing illness, of an apparently stationary stage, of convalescence and recovery. Similar processes were of frequent occurrence as a result of nontraumatic shock, of strains during school and college life and many analogous influences, while diminutive periods of like type were frequently met with as intercurrent events in the course of chronic illnesses. The controlling influence in the causation of these states, and the controlling means of treatment, was the mental state of the patient. The essayist said that two classes of persons seemed to escape from these strains. First, those who have been prepared against such exigencies. Football players seldom suffer from such breakdowns; the same may be said of the soldier. A second kind of immunity was that possessed by persons who are broad on social lines and philosophical on ethical lines. They were guarded against a great variety of accidents. A large number of our troubles were social troubles, and this broad preparation which enables us to look upon social failure in a philosophical way gave immunity from strain. The treatment might be classed broadly as consisting of forms of re-education. The splendid method of Dr. Weir Mitchell, and the more specific method of re-education explained and worked out by Janey and others, were to be made use of; we should make patients more efficient, more philosophical and more ethical. We might not talk philosophy and ethics to patients in a technical way, yet if physicians were more trained in these departments of learning they would succeed better with this class of cases.

Dr. John Mitchell, Philadelphia, asked about the more definite treatment of the early stages of acute nervous breakdown; very few neurologists, he said, see patients in this state.

Dr. Adolph Meyer, New York, said that if we abstractly state that physicians should teach their patients philosophy and ethics, many physicians might take a rather strong misconception of the whole matter. The ethics that would be teachable and that would ultimately prevail would be the ethics and philosophy worked out of the common sense of our every-day experience.

Dr. Charles Dana, New York, said nervous breakdown led to the development of mild types of psychoses. If the patients were put under ordinary common-sense environment they would get well in three, six or twelve months, or two years. The majority of these so-called neurasthenias were not nervous breakdowns but psychoses, and if put under proper conditions would get well, while if the strain were kept up the psychoses would become chronic.

Dr. A. Jacobi, New York, examined these cases from an additional point of view; those that he had seen had almost all suffered from changes about the heart of a myocardial character. There was an active physical change, and by attending to the physical condition of the heart we could render great service to the patient.

Dr. Putnam, in closing, said the treatment of the acute stage presented the greatest difficulty. In several traumatic cases he had found that absolute rest and encouragement had a very considerable effect. He agreed with Dr. Meyer that the whole thing should be put on the simplest and most matter-of-fact basis and believed, with Dr. Dana, that in these cases there was a psychosis. He believed that it was not a pure psychosis, but there were the physical signs. It must react upon the heart and all the viscera and even modified the galvanic conduction of the skin. He thought if philosophy is a science this was the place where it might be made effective.

THE CLINICAL STUDY OF ASPHASIA.

Dr. Charles L. Dana, of New York, presented the results of the analysis of a series of cases of aphasia, clinically studied, aiming to secure a grouping of the aphasias as they are seen at the bedside, with a description, so that such groups might be recognized by the physician and taught to the student. The author discussed the views of Prof. Pierre Marie and said the old classification of aphasias have broken down in practice, and he offered an anatomical classification which he regarded as more practical, representing the type of aphasia upon certain charts devised by himself.

Dr. M. A. Starr, of New York, thought that while the classification was not wholly a new one, it certainly had a great deal of positive merit. He was glad to have Dr. Dana put himself on record as recognizing these various types distinctly. Dr. Dana has brought forward evidence that establishes our older theories and controverts the very radical assertion of Marie, which his own experience did not support.

Dr. J. C. Putnam, of Boston: These anatomical distinctions are very important, and I think this classification is very practical.

Dr. Dana, closing: I believe that Marie has not proved that the frontal lobe of Broca's convolution has not a knowledge function.

THE PRESENCE OF INFLAMMATORY MASSES IN THE ABDOMEN SIMULATING MALIGNANT GROWTHS.

Dr. E. G. Janeway, New York. The paper considered the existence of masses which either by palpation and ordinary examination, or by these and laparotomy, were considered malignant, but disappeared later. Two of these occured in connection with ulcer of the stomach, the others in different places in the abdomen.

Dr. Wm. Osler, Oxford, England: We are indebted to Dr. Janeway for bringing this group of cases before us. They form an interesting anatomical group, which may be divided into: (1) Those associated with the gall bladder; (2) those associated with the stomach; (3) a large group of appendicular cases; and (4) cases associated with trouble in the sigmoid. I had my attention called particularly to the group of cases in which there has been a tumor mass connected with the sigmoid flexure, low in the left iliac fossa. This may be either the thickened glandulæ epiploacæ which have deceived even the elect, in cases where there has been diarrhea, dysenteric symptoms, blood, progressive emaciation and, on deep pressure, a definite nodular mass to be felt. In two cases operation showed the thickened masses, which we had supposed to be tumors, were, in reality, only the indurated glandulæ epiploacæ. In another group of cases in this region there is a thickening due to the perforation by a foreign body, usually a small spicule of some sort, or pericolic inflammation in that region. Such a condition existed in our distinguished surgical colleague, who was operated upon so happily last year and who had made up his mind that he had a carcinoma. It was only a thickened mass connected with the colon, probably largely pericolic in character.

We should, in these cases, urge early operation. While there are certain instances in which the surgeon disappoints us, yet, on the other hand, there are a great many cases in which the operation is very satisfactory and sometimes the tumor disappears apparently as the result of the opening of the abdomen.

THE ETIOLOGY OF ACUTE PANCREATITIS.

Drs. H. U. Williams and F. C. Bush, Buffalo: Some recent cases of acute pancreatitis had been collected with the idea that the more recent cases had been studied more carefully than those reported previously and the pathological anatomy would probably be more accurate. In the series collected gallstone occurred in only about 40% of the cases. In the cases where gallstones occur not a sufficient number occurred in the bile passages or in the diverticulum of Vater to make the authors think that the theory suggested by Opie that the association of gallstones with acute pancreatitis would explain all such cases. The authors suggested this mechanism: that the passage of stones left the opening of the diverticulum patent, so that under the pressure of the intestinal contractions the contents of the duodenum could go backward into the bile duct and pancreatic duct. They found some evidence to support this in their experiments on animals. They were not able to determine what particular constituents of the contents of the duodenum produced pancreatitis. Previous experiments and various investigators had shown that a great variety of substances injected into the pancreatic duct are capable of producing pancreatitis. By this injection of duodenal contents the authors were able to produce pancreatitis in some of the animals injected. They introduced an artifical gallstone into the common bile duct and forced it through the diverticulum by means of a probe from behind. They were then able to cause the contents of the duodenum to regurgitate under pressure in some cases and some of these cases were followed by pancreatitis, but more particularly by fat necrosis.

Dr. Eugene L. Opie, New York: It seems to me by no means improbable that the mechanism that Dr. Williams has described might occur, that is, that a gallstone lodged in the lower end of the pancreatic bile duct might allow the penetration of duodenal contents into the pancreas, thus causing hemorrhagic pancreatitis since it is well known that a great variety of irritants so introduced produce the lesion. In the cases which I have examined in which especially large gallstones have occupied the diverticulum of Vater, the condition has been associated with chronic pancreatitis rather than acute pancreatitis. Apparently, the obstruction of the duct allows the penetration of the bacteria, though not of the duodenal contents, in sufficient quantities to produce the lesion. I am rather surprised to find that the proportion of gallstone cases in association with acute hemorrhagic pancreatitis is so small in Dr. Williams's cases. It may be due to the fact, as he suggests, that the bile passages are often neglected in the examination. Dr. Flexner has recently shown that bile salts are most efficient in causing acute pancreatic lesion and fat necrosis. He has found that the most extensive fat necrosis, and that most closely resembling the human lesion, occurs after the injection of bile salts into the pancreatic duct.

THE CALCIUM, MAGNESIUM, PHOSPHORUS AND NITROGEN BALANCES IN A CASE OF SO-CALLED PHOSPHATIC DIABETES.

Drs. L. F. Barker and C. Voegtlin, Baltimore: This paper included the results of a metabolic study in a case of so-called phosphatic diabetes. A woman, who for years had suffered from dry skin, cracking of the heels and nervousness, and who had had constantly urine of high specific gravity and acidity, was placed upon Folin standard diet and the calcium, magnesium, nitrogen and phosphorous balances studied. The metabolism was abnormal; the urine on standard diet presenting high organic acidity, not due to uric acid, phosphates or lactic acid.

Dr. Wm. Osler, Oxford: The chief point of interest in connection with this case is that any one of you would have said at once it was a case of diabetes: a Jewess, stout, with high specific gravity in the urine, frequent furunculosis, splitting of the fingers and heels. Repeated examinations by competent chemists, however, failed to discover any trace of sugar. She was under Van Noorden's care two or three times. She consulted me many times. I always regarded it as a case of prediabetes, expecting that at the next examination sugar would surely be found. I am exceedingly thankful that Dr. Barker had made this investigation as it is likely to turn out to be an entirely new type of disordered metabolism.

Dr. Alonzo E. Taylor, Berkeley, Cal.: I am able to adduce a personal experiment. About two years ago I placed myself upon an ash free alcohol free diet. I was abstracting from my body each day so many grams of bases, which must have come from my muscular tissues and nerve tissues. The symptoms were at first only those of lassitude. About the sixth day I noticed a great deal of itching; then the entire muscular system became excessively sore to the touch. I lost entirely the power of sleep. At this time acidosis in the form of diacetic acid appeared. The irritability was profound. I realized that I was near the danger point and returned to normal diet. Within two or three hours of the ingestion of common salt there was a return to equilibrium of the nervous system.

Dr. Barker, closing: There is not any doubt that salts are just as important for our food as proteids, fats and carbohydrates. What Dr. Taylor has said is of the greatest importance. Such cases give us an interesting outlook for the future. It seems possible that for the neuroses, and possibly for the psychoses, we may be coming to the real organic basis.

THE RELATIONS BETWEEN DIABETES AND PREGNANCY.

Dr. Augustus Eshner, Philadelphia, said diabetes was uncommon during pregnancy in proportion as it is uncommon during the child-bearing period. Exceptionally, it had recurred during successive pregnancies. Pregnancy rarely occurred in diabetics, partly because diabetes in women is most common after the menopause, partly because of the debilitated general state of the diabetic patient and partly because of the functional derangement and the structural alteration of the generative organs. Complication of the one condition with the other usually increased the gravity of both. Often the fetus died *in utero*, or premature labor set in, the fetus dying at birth or shortly afterward. The liquor amnii had been found increased and in some instances to contain sugar. The mother sometimes died of the disease shortly after labor. In Dr. Eshner's case of diabetes the sugar disappeared from the urine with the inception of pregnancy, remaining absent until after the birth of a macerated fetus at term and reappearing shortly afterward.

EXPERIMENTAL FIBRINOUS PLEURISY.

Dr. Eugene L. Opie, New York, read this paper, in which he concludes that sero-fibrinous pleurisy is produced by a sterile inflammatory irritant such as turpentine injected into the pleural cavity of the dog. Accumulation of fluid reaches a maximum at the end of three days and fluid has completely disappeared at the end of six days. Resolution of fibrin begins (first stage) while fluid is present and is completed (second stage) after the disappearance of the growth. In the first stage the fibrin of the exudate digests itself in the presence of weak alkali, but in the second stage it has completely lost this power and digests itself only in the presence of weak acid. It is possible that carbon dioxide in the body, acting as an acid, promotes resolution of the exudate by the enzyme. By aspiration of fluid and by other means the characters of the exudate might be modified.

ON CERTAIN ACOUSTIC LIMITATIONS OF THE STETHOSCOPE AND THEIR CLINICAL IMPORTANCE.

Dr. Lewis A. Connor, New York, narrated eight cases of aortic insufficiency, in which the murmur was distinctly heard with the naked ear, but which could be heard by no one by means of the stethoscope. In some cases of pneumonia and pleurisy, with effusion, where no bronchial breathing could be heard with the stethoscope, a high pitched blowing sound could be heard with the naked ear. This occurred sometimes twenty-four hours before it could be heard with the stethoscope. The common features of these sounds were: (1) high pitch; (2) faintness; and (3) a blowing quality. The various theories for explaining this difference were discussed. The sounds which are best heard by the ear were the ones which were of the most importance, whereas those heard with the stethoscope were for the most part well heard by the ear. It was unfortunate that in most of our medical schools students were taught to auscultate only with the stethoscope.

Dr. S. S. Cohen, Philadelphia, said: As a teacher of medicine, I want to say that Dr. Connor has touched upon an important subject. I find that the sole advantage of the stethoscope to me is in localizing a sound which I previously discovered with the unaided ear.

Dr. E. G. Janeway, New York, found cases which agreed with those of Dr. Connor; certain deep-seated pneumonias gave sounds to the unaided ear that were not obtained with the stethoscope. The same was true of some of the signs of heart disease.

Dr. A. Jacobi, New York, remarked that it made a difference what sized area is covered. The ear covered a larger area and would discover things that no stethoscope would show.

Dr. F. P. Kinnicutt, New York, said his personal experience in teaching had been quite in accord with the views expressed by Dr. Connor.

Dr. Connor, closing, did not feel certain that he had found all the limitations of the stethoscope, but thought the matter worthy of very careful study.

Second Day, Wednesday, May 8.

SOME POINTS REGARDING TUBERCULOSIS IN INFANCY.

Dr. L. Emmett Holt, New York, spoke of the frequency of pulmonary tuberculosis in infants, the importance of house infection and methods of obtaining sputum for examination. He reported 36 consecutive cases of tuberculous meningitis in children in which the bacilli were found in the fluid obtained by lumbar puncture. In the meningitis cases bacilli were frequently found in the sputum when pulmonary signs and symptoms were absent. He referred to the use of tuberculin in diagnosis.

Dr. Peabody asked if any serious symptoms followed removal of the cerebrospinal fluid.

Dr. Kober, Washington, asked whether the feces had been studied for the presence of tubercle bacilli.

Dr. Cabot, Boston, said that among 100 children of tuberculous parents, studied at the Massachusetts General Hospital, Boston, tuberculosis had been found in 26.

Dr. Holt, in conclusion, said that no symptoms had been produced by removal of 1 to 3 oz. of cerebrospinal fluid. He had made no study of tubercle bacilli in the feces.

A STUDY OF NORMAL LIVING ANATOMY IN THE FIRST TWELVE YEARS OF LIFE.

Dr. Thomas Morgan Rotch, Boston, read this paper, in which he said that the value of the Rœntgen ray in the diagnosis of disease conditions had been much lessened by the difficulty in reading the plates. This depended, in part, on unfamiliarity with the normal. He had consequently made a study of normal Rœntgen ray anatomy at different ages of infancy and childhood and exhibited a series of illustrative pictures.

THE LIFE SAVING VALUE OF DIURESIS.

Dr. S. J. Meltzer, New York, gave the result of a series of experiments on the subject contained in this title.

THE HEMORRHAGIC DIATHESIS IN BRIGHT'S DISEASE.

Dr. David Riesman, Philadelphia, reported two cases of uncontrollable bleeding in Bright's disease. The hemorrhagic diathesis occurring in Bright's disease might take the form of spontaneous bleeding from the mucous membranes — nose, mouth, uterus, intestines — or there might be bleeding into the skin, a true purpura. He said the condition was met with in all forms of chronic nephritis, perhaps more often where there was an associated arteriosclerosis. He considered the cause to be toxemia and in some cases altered state of the vessel walls.

A CASE OF SECONDARY CARCINOMA WITH RECURRENCES IN UNUSUAL SITES.

Dr. George L. Peabody, New York, reported this case. Patient was a woman, forty-three years old. Four years after removal of carcinomatous right breast she developed severe pains in lower extremities, back and shoulders, which did not yield to treatment. No swellings appeared. Urine increased in amount, occasionally showed casts and albumin. Sleeplessness and mild delirium followed. Lumbar puncture gave normal fluid. Just before death there appeared weakness of the muscles of the right eyelid, right side of face, right palate, with partial deafness of right ear. There was pain in lumbosacral region on attempting to sit upright and on pressure. Urine and feces involuntary. Death occurred from edema of lungs. Autopsy showed metastatic carcinoma of thyroid, one suprarenal, kidneys, one lung, wall of an old cyst of cerebellum, pia of pons, and medulla, perineal lymph sheaths of one trunk, nerve of cauda equina and of trunk nerve itself and of pial covering of cord. In the lung several large vessels were filled with new growth, suggesting an explanation for carcinomatous metastases.

Dr. Solis Cohen, Philadelphia, referred to a case of metastatic carcinoma, in which the most prominent clinical symptom was dyspnea. There were no local signs in the chest; no effusion. Autopsy revealed an involvement of the bulb by carcinoma.

EXPERIMENTAL OBSERVATIONS UPON THE ACTION OF INTESTINAL ANTISEPTICS.

Dr. J. Dutton Steele, Philadelphia, said there is no satisfactory method for determining the amount and character of bacterial activity in the intestines. Aromatic bodies in the urine form an inaccurate index. Counts of living bacteria in feces are misleading unless obtained from a fistula in the lower ileum, because many bacteria die in the large intestine. The most satisfactory method and the one used by the author was that of estimation by weight of bacteria in the feces (Strasburger). Attempts had been made to determine the effect of diet on the putrefactive and fermentative groups of bacteria, with no satisfactory results. The author's experiments related to the influence of drugs on intestinal bacteria; the drugs employed were bismuth salicylate and Beta naphthol. Charts were shown, giving the results of experiments. In normal individuals bismuth salicylate caused a diminution in amount by weight of bacteria in the stools in every instance; the decrease was from ½ to ¼ the normal. There was a return to normal on the second or third day after the drug administration. Similar but less marked results were obtained with Beta naphthol, with the exception of one case; in this there was a mild grade of intestinal inflammation and amount of bacteria was increased. This corresponded with the results of others. The increase might be due to a loss of self-protecting power in irritative conditions of the intestine. The author concludes that ability to affect bacteria in the intestinal tract is dependent upon the condition of the tract; that diet and proper evacuations are important; that irritative drugs tend to increase amount of bacteria.

Dr. L. A. Connor, New York, asked in discussion whether the diminution affected special varieties more than others, and whether it might not be the harmless forms which were killed off.

Dr. Steele replied that such qualitative estimations had not yet been made.

(To be continued.)

Book Reviews.

Physical Chemistry in the Service of Medicine. By Dr. Wolfgang Pauli, Privatdocent in Internal Medicine at the University of Vienna. Authorized translation by Dr. Martin H. Fischer, Professor of Pathology at the Oakland College of Medicine. Seven addresses. First edition. New York & London: John Wiley and Sons. 1907.

This small book consists of a series of seven lectures, given by the author, upon physical chemistry as applied to biological chemistry. It is for the most part theoretical and technical, and valuable only to those conducting research along the line of biological chemistry.

Along the Labrador Coast. By Charles Wendell Townsend, M.D., Author of "The Birds of Essex County." With Illustrations from Photographs and a Map. 289 pages. Boston: Dana Estes & Company, Publishers. 1907.

It is so seldom members of the medical profession venture successfully into the fields of literature that "Along the Labrador Coast" merits more than passing notice. The book is a description of the short trip of the author and Dr. Glover M. Allen to the coast of Labrador last summer to study the birds of that region. Notes made at the time form the basis of the work. The story is told in an easy, colloquial style that holds the interest and yet does not teem with wearisome details. To the lover of outdoor life and to the student of ornithology this book cannot fail to be of interest. The general reader is given a vivid picture of life in Labrador; with the aid of the well-written descriptions of scenery and the very satisfactory illustrations he catches the enthusiasm of the author and feels the call of the wild.

What mistakes there may be are due to errors of observation. One knows the author has seen and done the things he describes, and is not, like some of the nature writers, romancing from the vantage ground of a comfortable city home.

The book is most attractively gotten up: bound in gray linen with a picture on the front cover of a sunset in gold over black mountains. In the foreground is an eskimo in his kyack, also in black, and a white iceberg. The yellow-tinted paper adds to the effectiveness of the numerous illustrations, reproductions from photographs by the author and Drs. W. P. Bolles and E. A. Crockett, other medical visitors to these northern coasts.

A useful feature is the complete index compiled by the author. It contains, besides the chief topics, the common names of the birds and their scientific names as well.

There is need of popular books of just this kind, written by scientific men, and we hope to see further volumes from the same pen.

Saunders' Pocket Medical Formulary, with an Appendix. By William M. Powell, M.D. Eighth edition, thoroughly revised, enlarged and adapted to the eighth revision (1905), of the U. S. Pharmacopœia. Philadelphia and London: W. B. Saunders Company. 1906.

This useful little formulary has reached its eighth revision and been brought into accord with the last edition of the United States Pharmacopœia. We have on previous occasions spoken with favor of this formulary and see no reason whatever to change our estimate. It contains much information compressed into small and convenient form.

A Guide to Diseases of the Nose and Throat and Their Treatment. By Charles A. Parker, F.R.C.S. Edin., Surgeon to the Throat Hospital, Golden Square, London, W. With 255 illustrations. New York: Longmans, Green & Co. London: Edward Arnold.

This is a textbook of 600 pages, in many respects similar to several which have appeared in the last few years. It is founded upon a systematic course of lectures to students and aims at a practical rather than an academic discussion of the various subjects. The operations which have become popular within the last few years, such as the submucous resection, Killian's frontal sinus operation, upper bronchoscopy and enucleation of the tonsils are included, but not recommended with the enthusiasm which the younger members of the profession might expect. The treatment of the numerous conditions which cannot be surgically attacked may be said to be profuse, strenuous and hopeful. It is better that a textbook should teach a student how to abort an inflammation or suppuration than that it should encourage therapeutic nihilism. The etiology of different diseases is well given, better than in most of our similar works. As the etiology of many of these diseases is much in dispute it is unavoidable that no advanced reader will always agree with the author's point of view. The same is true of different methods of operating, but as a whole the book will be found judicial, safe and well written.

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RUSSELL SAGE INSTITUTE OF PATHOLOGY.

Mrs. Russell Sage has given the sum of $300,000 to found what will be known as the Russell Sage Institute of Pathology, as an adjunct to the City Hospital and the City Home (almshouse), on Blackwell's Island, New York. Mrs. Sage's wishes in regard to the matter were made known in a letter from Robert W. De Forest, her counsel, in which he said: " This institute is to be organized according to the plans and under the direction of Drs. E. G. and T. C. Janeway, with whom are to be associated, as ex-officio members, the Commissioner of Public Charities of the City of New York and the President of the Medical Board of the City Hospital and, as individual members, Dr. D. Bryson Delavan, Dr. Simon Flexner (of the Rockefeller Institute), and Prof. Graham Lusk. The effective work of the institute will depend upon the maintenance and continuance of the helpful relations between the Department of Public Charities and those who are now performing the duties of pathologists to these hospitals. The income of the institute from this source will be based upon the continuance of such co-operation to the satisfaction of the gentlemen named as trustees. Mrs. Sage hopes that as the result of this endowment the research and educational work of these hospitals will be largely increased, to the good of the general public and particularly in dealing with the diseases to which old age is liable."

At a meeting of the Medical Board of the City Hospital, held on June 24, resolutions were adopted, in which the Board thanked Mrs. Sage for her munificent gift and expressed its appreciation of the honor conferred upon the hospital, "realizing that this has been the first occasion upon which a municipal hospital in this city has been so generously provided for by a private individual, for the purpose of fostering medical education and research. It is the hope of the Medical Board," the resolutions go on to say, " that this gift of Mrs. Sage may establish a precedent for others, which may lead to like endowments in other municipal institutions."

The plan for the proposed institution was submitted to Mrs. Sage for her consideration, through Mr. De Forest, in April last, by Dr. Theodore C. Janeway, son of Dr. Edward G. Janeway, who is a visiting physician to the City Hospital. In the communication, which met with so generous a response, Dr. Janeway quoted a recent address of Dr. Welch, of Johns Hopkins University, in which he directed attention to the fact that medical science in the last fifty years had been able to increase the expectation of life for every individual by twelve years, but that this expectation held good only before the age of forty; after which our expectation of life was no greater than that of our forefathers. This, he said, was because the prevention of disease thus far had been through the study and knowledge of infectious diseases which are especially fatal to the young. The preventive medicine of the future must study the causes of the organic changes of later life and, learning these, discover upon what depended the accomplishment of their prevention.

Dr. Janeway explained the purpose of the institute, which it was hoped would be established, as twofold: First, research into the problems of disease and more especially the diseases of advanced life; and, second, the improvement of the city's poorest sick and aged in two of its largest institutions. " These two purposes," he went on to say, " are not distinct, but are closely related, and of the two, I believe the second to be the more important, though to be attained only through the accomplishment of the first. New buildings in prospect, especially a building for the housing of the medical staff, will so much further improve conditions as to make the service of the City Hospital a much more attractive one to young physicians. Four years ago the City Hospital had a pathological laboratory, but no pathologist; some one from the city or some member of the attending staff making the autopsies, and the vast material of the institution being wholly lost to science. The facilities for the application of careful laboratory methods for the diagnosis of the patient's ailments were also very poor.

"At that time the present pathologist, Dr. Oertel, was appointed by Mr. Folks, who was then

Commissioner of Public Charities. For four years he has given his time unreservedly to the building up at the City Hospital of a modern pathological department, modeled after the best German institutes. One year ago he was made pathologist also of the City Home and has since then had charge of the pathological work of both institutions. During this time his constant presence, his teaching of the staff and his example of thorough and self-sacrificing scientific work have immensely raised the character of all the work done throughout the institution and have, more than anything else, contributed to improve the care of the patients in all departments of the hospital. He has also trained men in pathology who have left him for other positions. During all this time he has served the city absolutely without salary, and his assistants, as well, have not received a cent for their services. On such a basis further development is impossible, for men cannot work indefinitely for nothing. There are two alternatives, — first, the attempt to have the city put the pathologist and his assistants upon salaries; second, the endowment of an institute by private beneficence."

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ENDOWMENT OF RESEARCH IN MUNICIPAL INSTITUTIONS.

In the foregoing statement of the endowment by Mrs. Russell Sage of a pathological laboratory in connection with the almshouse hospitals of New York, attention is directed to several matters which are worthy of more extended comment.

In the first place, this is the first time in this country, so far as our knowledge goes, in which a large sum of money has been given for the purpose of stimulating investigation in institutions under the immediate control of a city government. It is proverbial that it is difficult to obtain funds for institutions other than those which are governed by private or semi-private interests. The reason for this is, of course, obvious, inasmuch as the changing policies of our rapidly changing city governments might well lead to embarrassment and even to a misappropriation of such funds. In the instance before us this has evidently been guarded against and the co-operation of the city government and charity organizations have been secured to the common end of applying this large sum of money to a definite and highly useful purpose.

In the second place, it is apparent to those who have had any experience in great city institutions that in these hospitals is contained a vast amount of material for study which has in the past too often been neglected and ignored. The possibility which this bequest offers of studying particularly the diseases of advancing life is one which is sure to bring results ultimately of the greatest possible value to the progress of medical science and to the alleviation of suffering. As one walks through the wards of a hospital for chronic diseases, one is impressed with the vast number of conditions which our present knowledge permits us merely to alleviate; one is also struck with the possibilities which these same conditions present, grouped in great numbers, of getting somewhat nearer to the sources and the causes of the distressing and destructive diseases of the latter period of life. The enthusiasm of the past two decades has been largely expended in the study of bacterial diseases with results which every one recognizes and appreciates. There has been no limit set to the possibilities of research along this line, but evidence is accumulating that the attention of many investigators is about to be directed to the still more subtle problems underlying body metabolism and the significance of chronic disease. It is not for a moment to be expected that results in this great field will come quickly, but for this very reason it is time that the medical world should bestir itself toward framing the problems to be solved and toward tabulating the enormous material awaiting study.

It is, therefore, with peculiar gratification that we make note of this unique bequest of Mrs. Sage. The example which it has set should be followed in every large city where its hospitals for chronic disease are crowded with patients, well cared for, no doubt, but on the whole regarded as a hopeless class for whom death can be looked upon only with satisfaction. One of the great steps in progress in the immediate future is, inquestionably, destined to be the utilization of these repositories of chronic disease for the solution of many of the most fundamental problems of medicine. Every effort made toward the improvement of our almshouse hospitals is a step in this direction. New York is evidently destined to lead in this movement, but it will not prove difficult for other cities to follow its example in greater or less degree in developing from every standpoint their municipal hospitals devoted to the care of persons suffering from chronic disease. As we have frequently had occasion to say, Boston has for upwards of ten years been developing its almshouse hospital on Long Island, with gratifying results. The value of the hospital has long since been amply demonstrated.

BOSTON FLOATING HOSPITAL.

The Boston Floating Hospital has this week begun its season's work under much more favorable conditions than in previous years. Unquestionably this hospital, like those of similar sort in other cities, has completely proved its usefulness as a means of alleviating the diseases of infancy during the summer months. As we have before had occasion to note, a new boat which was in use a part of last year is to be used this summer with improved equipment. For example, this year a refrigerating plant has been put in and the boat will also be propelled by its own engine. The staff of the hospital has been somewhat altered over last year and insures an admirable service.

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MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 3, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 32, scarlatina 33, typhoid fever 9, measles 65, tuberculosis 51, smallpox 0.

The death-rate of the reported deaths for the week ending July 3, 1907, was 16.94.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, June 29, 1907, was 214, against 173 the corresponding week of last year, showing an increase of 41 deaths and making the death-rate for the week 18.53. Of this number 119 were males and 95 were females; 208 were white and 6 colored; 128 were born in the United States, 78 in foreign countries and 8 unknown; 40 were of American parentage, 150 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 34 cases and 2 deaths; scarlatina, 28 cases and 2 deaths; typhoid fever, 11 cases and 1 death; measles, 79 cases and 6 deaths; tuberculosis, 43 cases and 25 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 18, whooping cough 2, heart disease 24, bronchitis 5 and marasmus 1. There were 18 deaths from violent causes. The number of children who died under one year was 43; the number under five years, 66. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 79.

There were 3 cases and 4 deaths reported from cerebrospinal meningitis during the week.

Dr. Henry P. Walcott Honored. — Dr. Henry Pickering Walcott, Chairman of the Massachusetts State Board of Health, and Member of the Corporation of Harvard University, received the honorary degree of Doctor of Laws from Yale University at its recent commencement.

Appointment of Cambridge Milk Inspector. — Dr. Ernest H. Sparrow has been appointed by Mayor Wardwell milk inspector of Cambridge, Mass. Dr. Sparrow succeeds Dr. Norris in this office. He is a recent graduate of the Harvard Medical School and has served as house officer at the Cambridge Hospital.

Dr. H. W. Mitchell, Superintendent of the Eastern Maine Insane Hospital.— Dr. H. W. Mitchell has been appointed superintendent of the Eastern Maine Insane Hospital at Bangor. Dr. Mitchell has for some years been first assistant physician at the Danvers (Mass.) Insane Hospital and has there shown himself a man of exceptional ability and executive capacity.

NEW YORK.

A Centenarian. — It is reported that Mrs. Rosa Harrison died in Trenton, N. J., last week at the age of one hundred and four years. She was a Russian by birth and claimed to have had a distinct recollection of Napoleon's invasion of that country.

Opening of Sanitarium for Hebrew Children. — The Sanitarium for Hebrew Children at Rockaway Park, on the Long Island coast, was opened for the season on June 19. Some two hundred infants and young children were taken on a sail to the institution, and a few of the more serious cases were put in the hospital wards for treatment.

Anti-Smoke League. — The Anti-Smoke League, of which Charles T. Barney is president, which has been carrying on an active campaign against the large manufacturing and other concerns which pollute the atmosphere of the city, recently established a plant of its own for experimental purposes. The results attained there have been pronounced most satisfactory both by Dr. Walter Bensel, Sanitary Superintendent of the Health Department for Manhattan, and, from the economic side, by J. P. Sparrow, Chief Engineer of the New York Edison Company. By using the new smoke-consuming apparatus and cinder appliances it is found that coal burns with 15% greater efficiency than by the ordinary method of burning it, which creates a nuisance.

A Black List. — At a meeting of the Medical Society of Mercer County, N. J., in which the city of Trenton is located, held on June 22, a resolution was adopted, establishing a "black list," to be kept by the secretary, to which every member of the society is pledged to contribute the names of all persons who avoid paying for professional services.

Honorary Master of Arts for Dr. E. B. Cragin. — Among those who received the honorary degree of Master of Arts at the recent commencement of Yale University was Dr. Edwin Bradford Cragin, Professor of Obstetrics in the College of Physicians and Surgeons, New York.

Health of School Children. — Dr. W. H. Maxwell, superintendent of the public schools, has sent out a circular to all the school principals under his jurisdiction, requesting them to report early in July on a series of questions relating to various phases of the health of the children in their schools. They are asked especially to report on cases of physical defects, and among others specified are malnutrition, chorea, hypertrophied tonsils and defective vision, hearing, speech and mentality. They are also asked to state how valuable they consider the work of the school nurses.

Quiet Zones. — The Board of Aldermen has passed an ordinance establishing "quiet zones" for hospitals in the city, to be indicated by signs at the street corners in the vicinity of these institutions. Under its provisions teamsters and motormen must conduct their vehicles through street blocks within these zones slowly and quietly and motormen may not ring their gongs except in case of danger. Children must not play in the streets, peddlers are forbidden to hawk their wares and no noise which might disturb patients must be made. The Health Commissioner first advised the placing of signs in the vicinity of the hospitals, and the ordinance was introduced and carried to a successful issue through the efforts of the newly organized Society for the Suppression of Unnecessary Noise. The superintendents of fourteen hospitals signed a petition for the passage of the measure and it also received the cordial support of the police department.

Deaths in Three Months. — The quarterly condensed report of the Bureau of Records of the Health Department shows that the number of deaths in the city during the quarter ending March 31, 1907, was 21,182, representing an annual death-rate of 20.06 per thousand of the population, as against an average of 19,539 deaths for the corresponding quarters of the preceding five years and a death-rate of 20.30 per thousand. There was thus a decrease of .24 of a point in the death-rate. If the number of deaths from the principal causes and at certain age-groups are compared with those of the preceding quinquennial averages, corrected to correspond with the increase in population, the following decreases and increases are found: Decreases, — malarial fevers, 11; smallpox, 29; measles, 194; scarlet fever, 93; diphtheria, 113; tuberculous diseases other than pulmonary, 52; meningitis, 117 (of which 76 were epidemic cerebrospinal meningitis); apoplexy, 90; acute bronchitis, 266; bronchopneumonia, 292; Bright's disease and acute nephritis, 165; old age, 74; suicides, 39; deaths under five years of age, 697; deaths at all ages, 259. Increases, — typhoid fever, 9; whooping-cough, 12; influenza, 143; pulmonary tuberculosis, 102; cancer, 88; organic diseases of the heart, 389; chronic bronchitis, 18; lobar pneumonia, 315; diarrheal diseases under five years of age, 109; accidents, 139; homicides, 32; deaths between 5 and 65 years of age, 145; deaths at 65 years and over, 298. The increase in the deaths from pulmonary tuberculosis, notwithstanding the progressively increased activity in the warfare against that disease, is not very re-asssuring; but, on the other hand, it is gratifying to note the diminished mortality from Bright's disease and among children under five years of age.

Instruction to Mothers in Care of Infants. — John D. Rockefeller has provided the funds for the establishment and maintenance of a corps of twenty trained nurses, whose duty it shall be to give instructions to mothers in the proper care of their infants. The proposed system is to be carried out under the auspices of the New York Association for Improving the Condition of the Poor and with the co-operation of the city Health Department and Board of Education. The corps of nurses is to be divided into two sections of ten each. One of these will organize classes for practical instruction to mothers in the district between Thirty-ninth Street and Eighty-ninth Street and Fifth Avenue and the East River, in which the Rockefeller Institute is situated. This territory comprises fifty blocks in all, and one nurse will be assigned to work in each five blocks. The ten nurses of the other section are to be stationed at the recreation piers and at the "Junior Sea Breeze," a plot of nearly six acres on the East River, belonging to the Rockefeller Institute, where the Association for Improving the Condition of the Poor maintains a playground and hospital camp for sick babies during the summer. The work of all the nurses will be under the direction of Mrs. Helen Ingram, superintendent of the relief work of the Association. The Health Department has agreed to assign a physician to each of the city's recreation piers during the summer months, to act in conjunction with the nurses in educating mothers how to treat their babies when they show signs of illness. The Board of Education is to provide a kindergarten teacher for each pier, whose duty it will be to take care of and amuse the older children, thus allowing the mothers to give more attention to their infants. The daily work of the ten nurses assigned to the territory of fifty blocks will be to visit the families in the district, see every mother of every child under two years of age and give such advice and instruction as may be required. Where a sick baby is found without medical attendance, a physician will be furnished promptly and the nurse will make as many calls as necessary to help the mother in the care of the child. This house-to-house visitation will thus be supplementary to that of the summer corps of physicians of the Health Department in the limited section of the city mentioned. The ten other nurses will visit the tenement houses in the vicinity of the recreation piers and explain to mothers the benefits of fresh air and urge them to go with their children to the piers as much as possible. In connection with the Caroline Rest, a convalescent home for mothers and new-born infants at Hartsdale, Westchester County, the Association for Improving the Condition of the Poor now has a staff of visiting nurses for maternity cases in the tenement houses, in which the women have no monthly nurses of their own.

Current Literature.

The Journal of the American Medical Association.

June 8, 1907.

1. *Bryant, J. D. *The American Medical Association. Its Aims and Interests.*
2. Herrick, J. B. *The Relation of the Clinical Laboratory to the Practitioner of Medicine.*
3. Wathen, W. H. *Acute Suppurative Peritonitis.*
4. Dixon, S. G. *Law the Foundation of State Medicine.*
5. *Ballenger, E. G. *Diagnosis of Diseases of the Prostate.*
6. *Beer, E. *The Diagnosis of Pyelonephritis Based on the Abnormal Retention and the Delayed Excretion of Methylene Blue.*
7. *Simon, C. E. *Meningococcus Septicemia.*

1. In his President's address before the American Medical Association, June 4, 1907, Bryant discussed the aims and interests of the Association, enumerating them as stated in its constitution, and giving particular attention to such as are of special importance at the present time. The uniting of the profession into one compact organization is progressing rapidly and its advantages if wisely directed are noted. The opportunity and duty of every physician to contribute his share to the healthy growth and wise diffusion of medical knowledge, and especially the opportunities of the country practitioner in observing the different effects of environment on urban and rural patients are mentioned. The subject of medical education and its present deficiencies and needs and more particularly the inadequacy of its endowment as compared with education for the other learned professions is remarked, and it is hoped that substantial improvement can be secured through the convincing influences that can be brought to bear on the public mind. "The promoting of friendly intercourse among American physicians" is regarded by Bryant as the most important announcement in the opening declaration of the aims of the Association, and one that tends most to counteract any possible evil from selfish interpretations of the "material interests of the profession." He knows of no agent so well calculated to contribute to the fostering of the growth and the diffusing of medical knowledge as *The Journal of the American Medical Association*, hence the importance that the tone and wisdom of its utterance be always in accord with the sense of justice of the majority of the profession. How the wellbeing and unity of the medical profession is associated with the welfare of the community in general in the war against disease is noticed and the establishment of a national department of health is favored by Dr. Bryant. The question of reciprocity in medical practice requirements is touched on, and the suggestion made that the examinations should duly consider the experience of the applicant rather than insist too exclusively on modern requirements. As regards medical education, the suggestion, at least, is offered that it may be possible to attempt to realize too strenuous ideals, and that it may be better for the great majority of our medical institutions to "broaden the basis of instruction in established professional knowledge and usefulness rather than risk indulgence in any form of whimsical expediency or of questionable propriety in educational requirements." The pure drug question in the light of recent developments is discussed, as well as the proprietary and patent medicine revelations, and the work of the Council on Pharmacy and Chemistry of the American Medical Association is highly commended. It is also suggested that a careful scientific consideration of the mineral springs of the country would be similarly useful. In closing, the civic duties of the medical profession are alluded to, and warning given against the dangers of a growth of a spirit of paternalism, which is a frequent by-product of organized power.

5. Ballenger's article aims to combat the general lack of definite knowledge of the diseases of the prostate. These diseases he enumerates and classifies. Most attention is devoted to chronic prostatitis, in which the largest number of diagnostic errors are made. The reason for this is that most physicians rely upon palpation alone and do not realize that chronic inflammation may exist without enlargement or other palpable abnormality. In such cases the diagnosis may be made by examination of prostatic secretion as obtained by massage, pure or diluted with urine. In this secretion two elements if present are diagnostic; pus and proteid substances, albumin, globulin or albumose, detected by the appearance of a white ring on addition of saturated $MgSo_4$ (9 parts) and HNO_3 (1 part). Pus or proteid in fluid passed after prostatic massage, but absent from that passed before massage renders the diagnosis of prostatitis positive.

6. In a preliminary communication, Beer publishes the histories of two cases which seem to point to a new diagnostic sign of the involvement in suppuration of the kidney parenchyma. In the first case the patient discharged methylene blue stained pus in the urine at intervals up to two and three-fourths years after the last administration of the drug. The second patient had pyelonephritis (verified by nephrotomy) and had recurrent discharges of methylene blue stained pus over a month after the last administration of the drug. He produced a pyelonephritis in a dog and then for several days administered methylene blue. The kidney was removed two weeks later and, after treatment with oxidizing agents, showed multiple bluish gray pus foci throughout its substance. He summarizes

his conclusions derived from the facts so far as follows: (1) There is no differential diagnostic sign between simple pyelitis and pyelonephritis. (2) Pyuria from the upper urinary tract may be due to either of these conditions. (3) By use of the above described methylene blue test it would seem that a differential diagnosis may be made. (4) Methylene blue is deposited in the parenchymatous abscesses and may be stored in these for years. (5) A late discharge of methylene blue, bound to the pus, is indicative of the rupture of such parenchymatous abscesses into the pelvis of the kidney and is consequently diagnostic of pyelonephritis.

7. Simon reports a case of meningococcus septicemia in which meningococci were demonstrated in smears of blood obtained from the ear. Eight cases are on record where meningococci have been obtained by blood-culture. [F. W. P.]

Medical Record.
June 8, 1907.

1. Bryant, J. D. *The American Medical Association, Its Aims and Interests.*
2. Bryant, W. S. *The Eustachian Tube, Its Anatomy and Its Movements.*
3. Heiser, V. G. *Leprosy in the Philippine Islands and the Present Methods of Combating the Disease.*
4. *Einhorn, M. *A New Blood Test.*
5. Crothers, T. D. *Some Effects of Spirit and Drug Taking on the Upper Air Passages.*

4. Einhorn describes a new modification of the benzidin test for blood in the stomach contents, feces and urine. It consists of testing with paper sensitized by the use of benzidin. The paper is immersed in the solution to be examined and a few drops of peroxide of hydrogen are added, when a blue color is formed if blood is present. The blue or green color appears in a few seconds and we should not wait more than a minute for the reaction to appear, as after that the color may appear from the presence of other substances than blood. HCl may cause the reaction after two or three minutes. The benzidin test can be recommended as a preliminary test: a strong reaction or no reaction at all gives a reliable test. [F. W. P.]

New York Medical Journal.
June 8, 1907.

1. * Taylor, R. W. *Deformities of the Penis Due to Syphilis, Gonorrhea and Other Causes.*
2. *Keppler, K. R. *Weak Foot and Its Treatment.*
3. Carling, J. *Open-Air Treatment of Tuberculous Bone and Joint Disease.*
4. Vaughan, G. T. *Some Rare Forms of Hernia.*
5. Royster, L. T. *The Illegimately Pregnant Woman from a Sociological Standpoint.*
6. Gordon, A. *Amyotrophic Lateral Sclerosis with Bulbar Onset.*
7. Alger, E. M. *A Case of Eyestrain Mistaken for Appendicitis and Cholelithiasis.*
8. Beers, N. T. *Impetigo Contagiosa.*

1. Taylor discusses at length a large number of types of deformity of the penis, including the indurating edema of syphilis, most commonly accompanying the hard chancre, deformities from tertiary syphilitic lesions and changes of the type of elephantiasis. The etiology of this last condition is probably complex; gonorrheal urethritis probably plays a part and secondary infections may be a factor. Some cases follow trauma or operations for the removal of inguinal glands. The clinical appearances and the microscopic pathology of the abnormalities described are shown by illustrations.

2. Keppler calls attention to the lack of care too commonly shown in the treatment of weak foot. Of this disorder three common types are described: the painful weak foot without deformity, the deforming weak foot without spasm and the spastic deforming weak foot. The treatment must be long continued, six to ten months being the average time demanded. The first essential in prophylaxis as well as in treatment is to obtain proper shoes. Next, to correct the disorder already present, the general tone of the foot structure is to be improved by active exercises, which are described, by manual manipulation, and by the use of mechanical apparatus, especially valuable in advanced types combined with spasm. During this treatment what gain is made is to be retained by supports, best by the Whitman plate fitted to plaster casts and corrected at stated intervals as improvement occurs. The worst cases may require operation by open incision, but before resorting to this, it is well to try correction by manipulation under an anesthetic, followed by retention in a plaster of Paris dressing for four to six weeks, followed in turn by treatment with exercises and plates as in ordinary cases. [F. W. P.]

The Lancet.
June 8, 1907.

1. *Gowers, W. R. *Vagal and Vaso-vagal Attacks.*
2. Welsh, D. A. *The Nature of Infectivity in Relation to Tumour Growth.*
3. Sloan, S. *Some Physiological Effects of High-Frequency Currents in Disease.*
4. Murphy, S. F. *Variations in the Age Incidence of Mortality from Certain Diseases.*
5. Holt, M. P. *Ligature of the Renal Vessels by the Transperitoneal Method for the Cure of Persistent Urinary Renal Fistula, with Notes of One Successful Case.*
6. Gates, E. A. *Two Cases of Infection by the Paratyphoid B. Bacillus.*
7. Sale, J. C. *A Case of Recurrent Pneumothorax.*
8. Buchanan, R. M. *On the Differentiation of the Meningococcus from Other Gram-Negative Diplococci in the Nasopharynx of Cerebrospinal Contacts.*

1. Gowers gives the term "vaso-vagal attacks" to certain prolonged seizures, the symptoms of which consist chiefly in the disturbance of some of the functions of the pneumogastric, for the most part sensory and subjective. There may be slight mental change and disturbance of the vaso-motor center, causing constriction of the vessels and coldness of the extremities and occasionally some sensory impairment and slight tetanoid spasm. Attacks are usually one-half hour or more in length. The onset is sudden and the ending gradual. These cases are generally confused with forms of hysteria. The characteristic vagal symptoms are chiefly sensations referred to the stomach, heart or respiratory system. There is seldom any real loss of consciousness, but merely a slowing of the mental processes. He gives details of 11 cases. The treatment consists of general measures to strengthen the constitution. [J. B. H.]

British Medical Journal.
June 8, 1907.

1. *Murray, H. M. *Acute Pneumonia in Children.*
2. Bardswell, N., and Adams, B. *Remarks on Complete Vocal Rest During the Sanatorium Treatment of Laryngeal Tuberculosis.*
3. Gunn, R. M. *The Value of Ophthalmic Symptoms in General Diagnosis and Prognosis.*
4. *Phillips, S. *Acute Colitis and Ulcerative Colitis.*
5. Dow, A. *A Case of Tuberculous Meningitis in a Boy Treated with Tuberculin; Recovery; Recurrence and Death.*

1. Murray urges a more careful study of the respiration rate in pneumonia in children; he thinks a record of this is of far more importance than that of the pulse or temperature. He differs with other authorities who attempt to classify pneumonias of childhood into distinct groups, and believes that this is not only a waste of time but an actual impossibility, as the different types vary so very greatly. He believes in estimating the individual value of each sign and symptom on prognosis and treatment, rather than placing the case in some hypothetical group by means of these signs and symptoms and then dealing with the prognosis and treatment of that group as a whole. He analyzes 54 consecutive cases under his care.

4. Phillips presents 12 cases of acute or subacute colitis in detail, with a careful consideration of symptoms, complications and sequelae, among which he mentions a marked tendency to embolism in distant organs, usually after the acute stage has subsided. Anemia of a very intense and lasting nature is apt to follow. No specific

organism has as yet been discovered. He considers it a grave and dangerous disease, with the prognosis always in doubt. In treatment he strongly recommends mercury in small doses, combined with opium if it produces purgation. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 20.

May 16, 1907.

1. Seifert, O. *Treatment of Acute Catarrh of the Upper Air-Passages.*
2. *Hirsch, C., and Spalteholz, W. *The Coronary Arteries and the Heart Muscle.*
3. Heller, O., and Tomarkin, E. *Practicability of the Method of Absorption of the Complement for the Detection of the Specific Substances of Rabies and Vaccinia.*
4. Gutmann, A. *Relation of Diseases of the External Eye to those of the Nose.*
5. Herzog, H. *Tracheal Diphtheria.*
6. Lewandowsky, F. *A Case of Skin Disease Resembling Impetigo, caused by Demodex Follicularis Canis.*
7. Hübener. *A Case of Infection with Bacillus Pyocyaneus.*
8. *Morelli, G. *A Case of Primary Cancer of the Lungs.*

2. Hirsch, avoiding pneumothorax by modern operative methods, was able to ligate the descending branch of the left coronary artery in 8 dogs and 2 monkeys, without affecting the heart beat, except some transitory arrythmia at the moment of ligating the artery. These animals lived in apparently normal condition and without any signs or symptoms referable to the heart. After 2, 3 and 4 weeks they were killed and the hearts examined anatomically. In all the experiments with dogs a small myomalaceous infarct was found at some distance from the point of ligature toward the apex. In no case did the infarct correspond to the entire area supplied by the ligated artery. Spalteholz, through a special injection method, which he has used successfully in tracing the circulation of the small arteries in the muscles and skin, was able to prove that the coronary arteries are not terminal arteries in the sense of Cohnheim, but that they anastomose freely with each other, in a network near the heart surface and also with the vasa vasorum, in an arrangement very similar to that he has described as occurring in embryonic smooth muscle tissue. Where the myocardium is thick, branches from the superficial net work descend and anastomose freely under the endocardium. Each papillary muscle contains numerous arteries which anastomose with one another. The coronary arteries in the dog are arranged in a similar manner to those of man. One dog died of hemorrhage from the wound and was found to have a red infarct corresponding to the whole region supplied by the artery, showing that the weakened heart muscle had not the strength necessary to establish the collateral circulation. This would seem to indicate the need of employing quick-acting heart stimulants in cases of angina pectoris with a low blood-pressure in order to limit the area of possible infarct by increasing the collateral circulation. The experiments on monkeys were not so striking anatomically, owing to slight differences in the anastomosing of the arteries. The article is accompanied by some very excellent illustrations.

8. Morelli reports, with pathological examination, a case of primary cancer of the lungs, interesting in that it occurred in a young man of 28 years, without metastases and developed bilaterally. Microscopical examination made it most probable that it originated in the epithelium of the bronchial glands. [L. G. M.]

Münchener Medizinische Wochenschrift, No. 19.

May 7, 1907.

1. *Deutschmann, R. *A New Serum for Infectious Diseases.*
2. *Ritter, C. *The Pathogenesis of Frost-bite and its Treatment by Artificial Hyperemia.*
3. Cramer. *The Effects of Nicotin, Coffee and Tea on Digestion.* (Continued article.)
4. *Brentano. *The Surgical Treatment of Ileus Due to Gall-stones.*
5. *Bruns, H. *Remarks on Anguillula Intestinalis.*
6. Roith, O. *Does the Spinal Injection of Stovain Affect the Intestinal Peristalsis?*
7. *Waelsch, L. *A Case of Atoxyl Poisoning.*
8. Arndt, G. *A Glove for Electric Massage.*

1. Repeated injections of yeast render animals less susceptible to microbic infections. Deutschmann has found the serum of such animals to possess marked curative properties for various infectious diseases of man. This action is presumably due to protective substances. In pneumonia an evident effect was manifest in one half of 21 cases, the temperature fell rapidly and convalescence set in. The serum is also very useful in infections of the eye, for which it was originally intended. The pneumonia charts which illustrate the article show a striking fall of temperature soon after the injection, but the number of observations is too small to prove the value of the serum.

2. The hyperemia occurring after the application of cold to the skin is due, according to Ritter, not to the cold itself, but to the damage to the tissues. It is a sign of the need of the tissues for more blood and is, therefore, to be encouraged, not combated. That it is not merely the result of dilatation of the arterioles is shown by the fact that local anemia caused by adrenalin is not followed by hyperemia. The attraction of the necrotic tissues for blood is apparently a biological phenomenon and not merely reflex, for hyperemia occurs after freezing, when all the nerves to the part have been cut. Active and passive hyperemia are not opposed to one another, but serve the same purpose, the former, to be sure, more effectively. Thus active hyperemia is the rule after freezing, but venous congestion is seen when there is a lack of arterial blood. Ritter's therapeutic researches have shown that in chronic frost-bite the production of arterial hyperemia by means of hot air is a sovereign remedy, leading to cure in a short time. It should be employed at high temperatures for ½ to 1 hour daily, the patient being carefully watched on account of the danger of fainting. For acute frost-bite, passive congestion by the elastic bandage is to be preferred. It causes rapid relief of the pain and itching, healing of the ulcers and prompt demarcation of gangrenous areas. The bandage should be applied for 6 to 12 hours daily, taking care that the part should show *increased* heat and a bright red color. In anemic persons a previous application of hot air enables one to obtain the proper congestion with the bandage. The judicious use of hyperemia is thus, according to Ritter, the best method of treating both acute and chronic frost-bite.

4. Brentano relates a case of ileus in which a very large gallstone was removed from the ileum by operation; a second equally large stone came down from the gallbladder ten days later and caused fatal peritonitis by stretching the stitches at the site of the previous enterotomy. A round facet on the proximal part of the first stone indicated that a second remained behind. Brentano recommends that in intestinal obstruction due to gallstones the intestine be palpated for further stones and that, if facets are present, the gall bladder be opened also.

5. Bruns reports 3 cases of anguillula infection in man and gives a thorough description of the parasite. Its place in pathology is still a matter of dispute, its practical importance is slight on account of its rarity, in temperate climates at least.

7. Atoxyl, or met-arsenious acid-anilid, was introduced into the treatment of skin diseases as a non-toxic arsenic compound. Waelsch's case of poisoning after the administration of 2.6 gm. atoxyl in 27 injections, and several other cases from the literature, show that it is not so harmless as has been claimed. The symptoms consisted of a mixture of arsenic and anilin poisoning, consisting of malaise, pains, fever, headache, conjunctivitis, cough and strangury. The patient recovered. [W. T.]

Berliner Klinische Wochenschrift, No. 16.

April 22, 1907.

1. Goldscheider. *The Conception of Adaptability (Zweckmassigkeit) in the Theory of Disease.*
2. Sachs, H., and Yutaka, Teruuchi. *The Inactivation of the Complement by the Withdrawal of Salt.* (Continued article.)
3. Joseph, J. *On Rhinoplasty.*

4. Blumenthal, M. *A Case of Congenital Malformation of the Fibula.*
5. *Zuelzer, G. *Experimental Researches on Diabetes.*
6. *Fellner, B., and Rudinger, C. *The Examination of the Heart's Function.* (Concluded.)
7. *Benda, C. *The Levaditi Method for Staining the Spirocheta Pallida.* (Concluded.)

5. This is an interesting study by Zuelzer on the nature of the glycosuria produced by the injection of adrenal extract. He passed defibrinated normal dog's blood through the livers of dogs, and found that in the case of normal livers the increase of sugar in the blood after the passage was about 12%; that with livers after the injection of adrenal extract was 50% to 113%; that with livers of dogs with extirpated pancreas was 66%. The hypothesis was formed that normally the adrenal secretion is neutralized by pancreatic secretion and that in pancreatic diabetes it is the lack of this neutralization which allows the adrenal secretion to act on the economy in full force and to produce glycosuria. Further experiments lent a certain support to this view, for by simultaneous injection of pancreatic extract he was able in every instance to prevent the adrenal glycosuria. Moreover, Zuelzer succeeded in 2 dogs in preventing the glycosuria following extirpation of the pancreas by ligating the suparenal veins; the dogs lived 36 hours after operation. His results certainly suggest the possibility of some relation between the adrenals and the pancreas in pancreatic diabetes.

6. Fellner and Rudinger report the results of tests of the cardiac function in 70 cases by Katzenstein's method. This consists in the comparison of the blood pressure before and during compression of both femoral arteries. They confirm in the main Katzenstein's statements and recommend the method for use in conjunction with the usual methods of examination. They found that the normal heart responds to compression by a rise in pressure of 5–10 mm; with the sufficient hypertrophic heart the increase is greater, up to 20 mm. A stationary pressure or a fall in pressure is a sure sign of cardiac weakness, which may be assumed also in the case of hypertrophic hearts if the rise is only slight, say 5 mm. In chlorosis, anemia and tuberculosis, diseases in which cardiac weakness has been assumed but not proven, they found a notable decrease in pressure during compression. Contrary to Katzenstein, they were unable to find any constant relation of the pulse rate to compression. [This new method of estimating objectively the function of the heart deserves further trial. It is not adapted to very sick cardiac patients, in whom the sudden increase of peripheral resistance may prove disastrous. W. T.]

7. Benda offers convincing proof that the "silver spirochete" is really a spirochete and not, as Schulze and Saling claim, merely connective tissue, nerve, or elastic fibers. He demonstrates that the central "giant-cell-like" area in the miliary gumma of congenital syphilis consists of a mass of spirochetes, thus offering important anatomical evidence of the etiological rôle of the spirocheta pallida.

Miscellany.

CHRISTIAN SCIENCE AND THE LAW.

Clarence W. Byrne, the Christian Scientist, who was arrested some time ago, at the instigation of Coroner Acritelli, for permitting his daughter, a child of six years, to die of bronchopneumonia, on May 4, without medical attendance, was found guilty, on June 28, 1906, in the Court of Special Sessions, of violating that section of the Penal Code which makes it a misdemeanor for a parent or guardian to fail to provide medical attendance for a minor. The penalty for this offense is imprisonment for a year, a fine of $500, or both of these; but sentence was postponed until July 12, on motion of counsel for the defense, in order to allow briefs for a new trial to be filed. This case is one of special interest, from the fact that on the day when it first came up for trial, July 11, Justice Denel, before whom it was to be tried, decided to dismiss it, on the alleged ground that "the law under which this defendant was arrested had been nullified and superseded by a more recent one, giving Christian Scientist healers the right to practice healing." At the request of the prosecuting attorney, however, the judge consented to postpone the trial until the following day, in order that the points of law involved in this ruling might be investigated. On the next day it was successfully argued by the prosecution that even if the contention thus made were now valid, it did not apply to the case of Byrne, from the fact that his child died nine days before the new legislation on medical practice went into effect. In the bill recently passed by the legislature, which was commonly known as the medical unification bill, but the correct title of which was "An act to regulate the practice of medicine," it is provided that "no person shall practice medicine unless registered and legally authorized to do so"; but a paragraph in the new law, it appears, is devoted to certain exceptions and in this it is stated that "the law shall not be construed to affect the practice of the religious tenets of any church." As to whether this section of the law applies to Eddyite healing, and, if so, how far it affects the force of previously existing statutes, such as the one under which Byrne was convicted, has not yet been settled by any decision in the courts.

Correspondence.

DAVIS MEMORIAL FUND.

Boston, June 26, 1907.

Mr. Editor: At the last annual meeting of the Massachusetts Medical Society the Councilors voted to appropriate three hundred dollars towards the Davis Memorial Fund, provided not less than two hundred dollars was raised by private subscription. A considerable portion of this amount has already been subscribed, and through you permit me to invite additions to this fund in such sums as the members of the Massachusetts Medical Society feel disposed to contribute. All subscriptions sent to me will be duly acknowledged.

The character of the Memorial will be determined by the officers of the American Medical Association.

The committee desire that this memorial to Dr. Davis shall be shared in by the profession in general, since to Dr. Davis we are indebted for the founding of the American Medical Association and its present exponent, the journal of the association, now the leading medical journal of the world. To him also in large degree is due the organization of some of the state societies and the development of medical education to its present high standard in America. Although justly celebrated as a practitioner of medicine, a teacher, a writer of textbooks and the founder of two great medical schools, he is pre-eminent above all others as the great organizer of the medical profession in America. To such a memorial the medical men of this country are gladly furnishing their contributions. Massachusetts honors herself in honoring this great pioneer in the development and the carrying to a high standard the medical profession in the West.

Truly yours,
Henry O. Marcy, M.D.,
Chairman of the Committee.

180 Commonwealth Ave., Boston.

RECORD OF MORTALITY

For the Week ending Saturday, June 22, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,426	447	Quincy	5	2
Chicago	—	—	Waltham	10	1
Philadelphia	—	—	Pittsfield	11	—
St. Louis	—	—	Gloucester	5	—
Baltimore	173	52	Brookline	10	1
Cleveland	—	—	North Adams	10	2
Buffalo	—	—	Chicopee	4	2
Pittsburg	—	—	Northampton	14	2
Cincinnati	—	—	Medford	5	1
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	1
Providence	63	17	Hyde Park	1	—
Boston	204	64	Melrose	4	—
Worcester	50	12	Newburyport	—	—
Fall River	35	19	Woburn	6	1
Cambridge	22	5	Marlboro	3	1
Lowell	37	9	Westfield	5	—
Lynn	21	3	Peabody	—	—
New Bedford	17	6	Revere	—	—
Springfield	22	9	Attleboro	—	—
Lawrence	23	4	Clinton	4	2
Somerville	15	2	Adams	3	1
Holyoke	19	4	Gardner	—	—
Brockton	10	2	Milford	—	—
Malden	11	3	Watertown	3	0
Chelsea	13	3	Plymouth	—	—
Salem	8	1	Weymouth	2	—
Newton	8	1	Framingham	3	1
Haverhill	6	1	Southbridge	2	—
Fitchburg	—	—	Wakefield	—	—
Everett	3	1	Webster	—	—
Taunton	18	2			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JUNE 29, 1907.

E. H. Marsteller, surgeon. Unexpired portion of sick leave revoked, and ordered to the Naval Recruiting Station, Baltimore, Md., July 1.

G. M. Mayers, passed assistant surgeon. Detached from the "Marietta" and ordered to the "Ohio."

I. S. K. Reeves, passed assistant surgeon. Detached from the "Franklin" and ordered to the "Marietta."

J. T. Kennedy, passed assistant surgeon. Detached from course of instruction at the Naval Medical School, Washington, D. C., and ordered to Danville, Va., for duty with recruiting party No. 3.

R. C. Holcomb, passed assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to the Naval Hospital, Norfolk, Va.

H. L. Brown, assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to the Naval Recruiting Station, Oklahoma, Okla.

R. G. Heiner, assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to duty with Marine Detachment at Camp Harrington, Williamsburg, Va.

F. E. Porter, assistant surgeon. Detached from the "Rhode Island," and ordered to the "Franklin."

B. F. Haines, acting assistant surgeon. Ordered to Naval Hospital, Philadelphia, Pa.

D. H. Casto, acting assistant surgeon. Detached from the Naval Recruiting Station, Baltimore, Md., and ordered to Washington, D. C., July 1, for examination for appointment as an Assistant Surgeon in the Navy, and then to report to the Surgeon-General of the Navy for further orders.

J. T. Miller, acting assistant surgeon. Detached from course of instruction at the Naval Medical School, and ordered to the "Rhode Island."

M. Donelson, acting assistant surgeon. Detached from duty with Naval Recruiting Party No. 3, and ordered to Washington, D. C., July 1, for examination for appointment as an Assistant Surgeon in the Navy, and then to report to the Surgeon-General of the Navy for further orders.

G. P. Bradley, medical director, retired. Detached from the Navy Yard, Portsmouth, N. H., and ordered home.

E. Z. Derr, medical director. Detached from the Navy Yard, Boston, and ordered to the Navy Yard, Portsmouth, and to additional duty in command of the Naval Hospital at that place.

J. M. Edgar, surgeon. Detached from the "Wabash," and ordered to the Navy Yard, Boston, Mass.

K. Ohnesorg, passed assistant surgeon. Detached from the Navy Yard, Boston, and ordered to the "Wabash."

J. C. Byrnes, medical inspector. Detached from the Naval Academy and ordered to duty as fleet surgeon, first division, Pacific fleet, on board the "West Virginia," sailing from San Francisco, Cal., about July 25.

J. D. Milligan, pharmacist. Detached from the "Fish Hawk," and when discharged from treatment at the Naval Hospital, Norfolk, ordered home, and granted sick leave for six weeks.

APPOINTMENTS.

Dr. John T. Bowen has been appointed Edward Wigglesworth Professor of Dermatology at the Harvard Medical School.

Dr. Maurice H. Richardson has been appointed Moseley Professor of Surgery at the Harvard Medical School.

Dr. Charles M. Green has been appointed Professor of Obstetrics at the Harvard Medical School.

Dr. Clarence John Blake has been appointed Walter Augustus Lecompte Professor of Otology at the Harvard Medical School.

Dr. Otto K. O. Folin has been appointed Associate Professor of Biological Chemistry at the Harvard Medical School.

Dr. George B. Magrath has been appointed Instructor in Legal Medicine at the Harvard Medical School.

RESIGNATION.

Ezra Ripley Thayer, lecturer on the Relation of the Medical Profession to the Law and the Courts, has resigned from this lectureship at the Harvard Medical School.

RECENT DEATHS.

Dr. Willard Parker, of New York, son of the late Willard Parker, the eminent surgeon, died on June 24, from cardiac disease, resulting from rheumatic trouble. He was graduated from Columbia College in 1866, and from the College of Physicians and Surgeons in 1870. He did not care for surgery, and the surgical practice of his father was succeeded to by his brother-in-law, Dr. Daniel M. Stimson, who married Miss Edith Parker.

Dr. William M. Nelson, a physician well known throughout Central and Northern New York, and for over thirty years a practitioner at Taberg, Oneida County, N. Y., died at his home on June 26. He was sixty-seven years of age, and was graduated from Jefferson Medical College, Philadelphia, in 1869.

Dr. Israel Hart, of Pennington, Mercer County, N. Y., died on June 23, at the age of seventy-nine years. He was graduated from the medical department of the University of Pennsylvania in 1853, and during the Civil War served as Surgeon of the Thirty-eighth Regiment, New Jersey Volunteers. He had previously practiced at Pennington, and returned there at the close of the war. He is succeeded in practice by a son, Dr. Edgar Hart.

BOOKS AND PAMPHLETS RECEIVED.

Practical Gynecology. A Comprehensive Text-book for Students and Physicians. By E. E. Montgomery, M.D., LL.D. Third revised edition. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

La Question de Régime dans les Stations Hydrominérales Françaises. Par le Dr. Mazeran. Paris. 1907.

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Address.

THE SEGREGATION OF CONSUMPTIVES.

The Annual Discourse Delivered before The Massachusetts Medical Society, June 12, 1907.

BY J. F. ALLEYNE ADAMS, M.D., PITTSFIELD, MASS.

Mr. President and Fellows of the Massachusetts Medical Society:

The physician's path, though a good one to follow, is neither smooth nor easy. His life is a warfare, from the diploma to the grave — a warfare demanding the constant use of all his powers, but whose visible rewards are not commensurate with his expenditure of force. He strives not for himself, but for others, and others enjoy the fruits of his victories. But this fact does not deter men from entering our profession. Rather does it tend to draw into it those who wish to lead fruitful lives, and it gives to the medical vocation a satisfaction which is beyond all material returns. The physician is not a soldier of fortune, seeking only gold and glory, but a crusader enlisted in the army of God, and fighting for the rescue of suffering humanity. This is the crowning glory of the doctor's life, and it is this unselfishness which ennobles his profession, and gives him a great and peculiar influence — an influence which is generally recognized by the community and which brings him great opportunities for usefulness.

Thus it comes about that a medical practitioner is, to a greater or less extent, a missionary. He is always finding and doing some work, unpaid or underpaid, for his fellowmen, because his training and his position render such work possible and natural. In freely serving the poor, in their homes or in hospitals, his opportunities for good are not exhausted. In all philanthropic measures he is to be relied upon as a helper, and in those directly pertaining to the public health, he is naturally a leader. He has unequaled facilities for disseminating knowledge, for awakening interest and for guiding benevolence. The evidences of this influence are to be seen on every hand. Have you not all exerted it? and have not your laborious lives been brightened and sweetened by your success?

If the influence of the physician in his individual capacity is so great, how much greater must be that of the profession as a whole! When this acts as a unit great things can be accomplished, and our medical societies render such action possible. This organized force has done good work in the past: it has persistently opposed error with truth, ignorance with knowledge, charlatanry with science; it has given to the world the benefit of those marvelous discoveries of the past century which have prevented untold suffering and rescued millions from death; and it stands ever ready to champion every good cause whose object is to save human lives and make them better worth living.

It is therefore the thing to be expected that we, Fellows of The Massachusetts Medical Society, on this our anniversary, should ask ourselves and each other, "What is the cause which this year most urgently demands our help?" I think you will agree with me that the one paramount problem which to-day confronts us is the suppression of tuberculosis, and that this is the cause which now calls most loudly for our united and hearty support.

The knowledge that it is possible to exterminate this scourge of our race has deeply stirred the minds of men — and flooded the world with the light of a new hope. A mighty war is now in progress — a war which is uniting under a common banner people of every race, color, language, nationality, class, party and creed. Already have notable victories been won, but we are still in the early stages of the campaign, and it will require years of valiant and united onslaught to rob tuberculosis of its terrors. Meantime, the people look to us for leadership; and it is incumbent upon us to consider, year by year, what battalions are to be organized, what engines of war constructed and what tribute levied upon the community for the successful conduct of the campaign.

As a contribution to the discussion of this subject, I will ask you to consider with me that one of its branches which seems to me of the highest importance, namely, the prevention of consumption by the separation of the sick from the well.

Since pulmonary tuberculosis is known to be actively infectious, through a specific germ, it is perfectly evident that the isolation of all infected persons would, in a few years, stamp it out. It is the leprosy of our time; and, as leprosy is kept under control by the segregation of lepers, so may consumption be eradicated by the segregation of consumptives.

Let us suppose all the power in our country to be centered in a despot of unlimited power and wealth, and also filled with a burning desire to confer great blessings upon his subjects. Such an one might say, "Consumption is the greatest enemy of my people. I will destroy it, and that quickly." Could he do it? He could; and how? He would order the formation of many great camps, or enclosures, where all consumptives would be forcibly colonized. These would be placed not far from the cities and towns, but far enough to find pure air and sunshine. There would be tents, cabins or shacks for the incipient cases, and hospitals for the advanced. There would be ample space and much freedom within the camp, but no passing the bounds. Here many early cases and some of the advanced ones would be restored to health and be permitted to return to their homes, while those who must die would have their illness brightened by good care and every possible alleviation. By this removal of consumptives, infection would cease, and since the patients would no longer leave the disease as a legacy to their families, new cases would grow fewer and fewer. The change in ten years would be marvelous, and if our supposed despot should live to the good old age he would deserve, he would see his camps nearly deserted and consumption dwindling to an insignificant place in the mortality tables. At the end of his beneficent reign, his grateful people would erect a monument inscribed with these glorious words, "To the Conqueror of Consumption."

The day of despots has now gone by, but the power which they wielded still remains, vested in the people, and the people are able to accomplish this same result. When once they are educated up to the idea, when they fully understand that the thing can be done and that the doing of it will save multitudes of lives and remove one of the chief causes of suffering, poverty and sorrow, will there not be a great popular uprising, when the people themselves will demand the enforcement of this act of depotism, which will separate the infected from the uninfected, to the end that the plague may be stayed? They will be a little longer about it than our despot would have been, — measures too arbitrary and violent might engender sedition and wreck the treasury, — and they will try to bring about the desired result without too much restraint of personal liberty and without danger of financial disaster, but in good time this thing will be done. It is safe to prophesy that the days of tuberculosis are numbered and that future generations looking back upon our time will say, "There were giants in those days, for they destroyed that arch-enemy, consumption."

Through the untiring efforts of a great number of medical men, and some very earnest laymen, the people are being taught the value of local associations, of medical inspection, of visiting nurses, of anti-spitting regulations, of disinfection of houses, of registration of cases, of out-door life, of dispensaries and of sanatoria for incipient cases. But the most urgent need of all, the hospital for advanced cases, is not yet sufficiently recognized. It is not a philanthropic interest in the patients themselves which is the chief reason for building these hospitals, though this would be reason enough; but there is a far more weighty one,— the prevention of infection, whereby alone the endemic may be arrested. The public need be shown the necessity for such hospitals, and state, city and town governments should be brought to realize that the appropriation of public funds for this purpose is a patriotic duty on grounds not only of humanity, but of self-preservation. The vast expense, however, will be an almost insuperable obstacle to the sufficient carrying out of the plan. But it is a war measure and we must learn to consider it as such. "Millions for defense" are not begrudged against human enemies, and why should they be against the far more hostile and bloodthirsty bacilli? But, for the relief of the overburdened tax-payers, we need also to enlist the interest of private philanthropy. Persons of wealth should be shown that in no way can they use their means to help their brother-men more wisely and efficiently than by building and maintaining these hospitals for consumptives. This needs to become the great popular charity.

The state of Massachusetts, which built at Rutland the first state sanatorium for incipient cases, is wisely undertaking to provide also for advanced cases. A "Commission to investigate measures for the relief of consumptives" was appointed a year ago, and presented its report last March. So admirably was this report prepared, so wise were its suggestions and so convincing were its arguments, that already has the legislature passed bills carrying into effect nearly all of its recommendations. These bills provide, first, for the immediate construction of three infirmaries for tubercular patients, of 150 beds each; second, for the appointment of state inspectors of health; third, for compulsory registration of cases; and fourth, for giving greater effect to the anti-spitting law. Surely this is a remarkable result. A commission which has brought the enactment, in a single session, of so many beneficent laws is entitled to our gratitude and admiration. Three of its six members are Fellows of The Massachusetts Medical Society, and it is fitting that their names should be mentioned and remembered. They are Dr. H. P. Walcott, Chairman of the Commission and Chairman of the State Board of Health, Dr. A. S. MacKnight of Fall River, and Dr. C. S. Millett of Brockton, Secretary of the Commission. Their lay associates are Messrs. Brackett, Adams and Porter.

To this roll of honor should be added the name of Senator Frank M. Chace, of Fall River, who had charge of the "Three Sanatoria" bill; of Ex-Representative Googins, of Cambridge, who for four years, from 1901 to 1904, tried to secure the passage of a similar bill, and of Senator Frank G. Wheatley, M.D., another Fellow of our Society, who had charge of the bill providing for State Inspectors of Health.

There are many others who have been active in securing this beneficent legislation, but I will here add but one other name, that of Governor Curtis Guild, Jr., who, in his last inaugural, recommended measures for the relief of consumptives, and who has done all in his power to advance it.

This commission undertook a census of consumptives in Massachusetts and obtained from physicans reports of 7,779 cases, of which about one third are classed as incipient. But, as the Secretary of the Commission stated to a committee of the legislature, the actual number of cases is probably double these figures, which seems extremely likely, when we consider that there are 5,000 deaths annually. It is quite safe to place the number of consumptives in the state at 15,000, of whom 5,000 or less are incipient, and 10,000 or more advanced. Let us inquire how nearly the three new infirmaries will come to accommodating this number.

We have already in the various institutions of the state about 400 beds for incipient cases and 500 for advanced — making 900 in all. The 450 beds in the three new infirmaries will make 1,350. Each bed will be sufficient for two or perhaps three patients a year. If we say three patients a year, the 1,350 beds will provide for 4,000, leaving 11,000, or nearly three quarters, unprovided for.

The building of these infirmaries, therefore, is not going to be enough to stamp out the disease, but it is a long step in the right direction; it will afford much relief and will be an object lesson to demonstrate their value and the necessity for increasing their number in the future.

It will not take long to show the value of this separation of advanced cases. When we remove them from their homes and from public places, the number of incipient cases will begin to fall off. Every person with advanced tuberculosis is likely to infect at least one other person, so that under present conditions there is no possibility of the disease dying out.

The long continuance of the disease renders impossible such house quarantine as is enforced in the case of smallpox, scarlet fever, measles and diphtheria. However careful may be the patient and his family, there is always danger that, through some relaxation of the rules, germs may be conveyed to another person. Such accidents may happen through forgetfulness, weariness, excitement, intemperance or delirium. In the last stages of the disease the patient often expectorates at random all over the bed, the floor and even the walls, thus endangering the wife or daughter who is in attendance, other members of the family who pass through the room, and children who may be creeping upon the floor. Such cases ought not to die at home. They should be moved to a hospital, where they can have more comforts, and not be sowing the seeds of disease among those whom they love best. This separation will be resisted at first on sentimental grounds, but the arguments for it are so strong that resistance will lessen with time. Especially will this be the case if these hospitals are not placed at such a distance as to forbid frequent visits from members of the family. These visits, which can be made without danger, will relieve homesickness and make the separation less complete and depressing than it would be if the patient had to be removed far from home.

The sanatoria for incipient cases are doing a great work restoring to health a considerable number of persons who would otherwise die. At Rutland, during the eight years since the sanatorium was opened, the number of cases discharged "arrested or apparently cured" has been 1,487, or over 41% of all cases treated. This is a handsome showing; it justifies the outlay for the sanatorium, and is full of encouragement for the future; but, compared with the number of consumptives in the state, the figures are not large. It has been the policy of the sanatorium to restrict it to incipient cases, and such are never refused, but hitherto there have not been enough such applicants to fill the beds, and rather than to let the beds remain empty, a sufficient number of moderately advanced cases to fill them have been received. At present the number of incipient applications has increased to such an extent that few advanced cases can be received, and the question every day arises, What can these people do? The doors of Rutland are closed against them, and properly so, for these incipient cases have the prior claim; but their need is great, and there is, as yet, no place for them to go.

The number of rejected applicants last year was about a thousand, and if we add to these nearly 400 more who, after a few weeks or months, were found not to respond to the treatment and were discharged, these alone are sufficient to fill the three new hospitals which are now proposed. This proves the urgent necessity for their speedy construction.

In Massachusetts the provision for incipient cases at present consists of the State Sanatorium at Rutland, with 350 beds; and two private sanatoria — that of Dr. Bowditch at Sharon, and that of Dr. Millet at East Bridgewater, each with about 20 beds.

For advanced cases, about 250 beds, or half of all those in the state, are in Boston institutions, namely, the Channing Home, House of the Good Samaritan, the Cullis Consumptives' Home, the Free Home for Consumptives, St. Monica's Home for Colored Women and Children, the Boston Almshouse and Hospital, Carney Hospital.

Outside of Boston, the principal provision is at the Tewksbury State Hospital, which has 140 beds for consumptives, besides a camp of 36 beds. The other institutions, where advanced cases are received, are: the Holy Ghost Hospital for Incurables, Cambridge; Lowell City Hospital, Fall River City Hospital, several private hospitals in Rutland and Miss Sullivan's private hospital, Pittsfield.

A Sanatorium for Consumptive Prisoners is also just completed at Rutland, and the Danvers Insane Asylum has separate cottages.

To this list may be added the Mattapan Day Sanatorium, maintained during the warm months by the Boston Association for the Relief and Control of Tuberculosis, and the Day Sanatorium of the Lowell General Hospital. A certain number of consumptives are also to be found in insane hospitals, almshouses and prisons. The general hospitals, as a rule, receive such only in exceptional cases.

Boston is soon to have a large addition to its facilities in the Consumptives' Hospital now about to be built at Mattapan. In establishing this hospital this city has set an example which every other city will do wisely to follow.

Besides what is being accomplished by the sanatoria and hospitals, much good work is being done by dispensaries and clinics. Among these are to be specially mentioned the tuberculosis clinic of the Boston Dispensary, conducted by Dr. Otis; the Out-Patient Departments of the Massachusetts General Hospital, Boston City Hospital and Carney Hospital, the Berkeley Infirmary and Trinity Dispensary. The tuberculosis classes have also proved extremely useful, and are well worth study and imitation. These are "for the home treatment by sanatorium methods of incipient and moderately advanced cases." Such are the Emmanuel Church Tuberculosis Class, conduced by Dr. Joseph H. Pratt; Arlington Street Church Tuberculosis Class, by Dr. N. K. Wood; Suburban Tuberculosis Classes, by Dr. John

B. Hawes, and the Cambridge Tuberculosis Classes.

The Boston Association for the Relief and Control of Tuberculosis, and similar organizations in Cambridge, Worcester, Springfield and Brockton, have also become important factors in this great and many-sided enterprise.

By these various means tuberculous patients are treated in their homes, are instructed in the methods of cure and prevention, receive the care of physicians and visiting nurses, some receive aid, and some are enabled to go on with their usual occupations.

All of this work is of great and far-reaching importance, but would be made infinitely easier and more effective if the hospital accommodations were sufficient for those cases in which the home conditions are unfavorable. That these conditions are unfavorable in a large proportion of cases we all know, and we also know how utterly inadequate are our 500 beds to the needs of the 10,000 advanced cases in the state.

In other states the lack of provision for advanced cases is as great as in our own, and in most cases greater. For incipient cases provision is becoming abundant. The sanatorium method, which was orginated by Brehmer in Germany in 1859, and which was first put into operation in this country by Trudeau at Saranac Lake in 1885, has been attended with such wonderful results that these institutions have rapidly multiplied. They are now to be found in nearly all of the northern states, New York standing at the head of the list, and the majority being private institutions. But the example of Massachusetts in building a state sanatorium has been followed, and there are now fourteen state sanatoria, completed or building, besides three others which receive state appropriations. The United States government has established sanatoria: at Fort Bayard, N. M., for the army; at Fort Stanton, N. M., for the Public Health and Marine-Hospital Service, and at Fort Lyon, Col., for the navy. These old military posts, no longer needed for fighting the Indians, are now attaining a higher usefulness in the war against consumption.

These various sanatoria, whether private, state or national, are almost wholly devoted to incipient cases. For advanced cases the provision thus far is mostly limited to large cities, and is made by the municipalities or by charitable and religious societies. Provision is also made in some states for the care of tuberculous insane and prisoners. The segregation of consumptives in the United States, however, is still in its infancy, and is very far from attaining that general and systematic character which alone can have any radical effect in suppressing the disease.

In Europe the conditions are much the same as here. The tuberculosis campaign on that side of the ocean is being pressed with extraordinary vigor. But it is the sanatoria for incipient cases which, at present, are receiving the most attention. Germany, the fatherland of Brehmer and Koch, leads the world in this respect, having over 100 sanatoria with 10,000 beds. Dr. Locke's recent article in the Boston Medical and Surgical Journal gives a most interesting account of the "Crusade against Tuberculosis in Germany," and explains the part taken in it by the Workingmen's Insurance, the German Red Cross and the German Central Committee for the establishment of sanatoria for diseases of the lungs. But of all this great number of sanatoria, there are very few for advanced cases. The latest report I can find describes only 8, mostly small, but including one large one at Grosshansdorf, with 200 beds, built by the Workingmen's Insurance fund. In several German cities separate wards for advanced consumptives are provided in general hospitals, and much is also being done for this class through dispensaries and polyclinics, but the need of increased provision for these cases is deeply felt. As von Leube says, almost all of the existing German sanatoria are open only to a small minority of the cases, namely, the early incipient, whom he estimates at about 30,000; while for the advanced cases, of whom there are supposed to be 1,000,000, very scanty accommodations are provided.

In England, and elsewhere in Europe, the situation is much the same as in Germany. The care of early cases by sanatorium treatment is now chiefly engrossing the attention of the civilized world, while the advanced cases, far greater in number, and far more likely to spread the infection, remain in their homes, where they are receiving, it is true, an increasing amount of care through dispensaries and visiting nurses. This sort of care, however, cannot prevent the transmission of the disease to their families. The danger may be lessened, but in the home it is, in the great majority of cases, practically impossible to avert it.

The next step in the campaign will be to undertake the prevention of consumption by separating the sick from the well. For this, two things are chiefly necessary: first, to provide ample hospital accommodation for advanced cases; and second, to establish some systematic supervision over those who, for any reason, cannot be removed from their homes.

Fortunately, in Massachusetts, both of these wants are in a fair way to be supplied through the new laws but just enacted, one providing for three new sanatoria, and one for state inspectors of health. The commission recommended that these sanatoria should be inexpensively constructed, at a cost of about $500 a bed; and the appropriation is based upon this modest estimate, which is much less than the usual outlay for such institutions, most of them, including that at Rutland, having cost something more than $1,000 a bed. One of the newest in England, the King Edward VII Sanatorium at Midhurst, cost $1,000,000 for 100 beds, or $10,000 a bed, and is no doubt the most expensive of its kind. Since the construction of such sanatoria on a large scale now seems inevitable, a minimum of cost is a highly important desideratum, and if it can be demonstrated that a sanatorium embodying all the essentials, and not of too inflammable materials, can be built for $500 a bed, the segregation problem will be materially simplified.

As we have seen, these three new sanatoria are likely to be filled up promptly with the overflowings of Rutland, — that is, with moderately advanced cases; but the great majority of consumptives will still be left, many of them unfit to be moved beyond the limits of their own town or city. For these, local hospitals are an urgent necessity, and no question can be more important than how to convince the public of their necessity and how to bring about their construction. The plan of construction is of minor importance. There will have to be an administration building, sufficient for future as well as present needs, about which may be grouped cheaply-constructed wards, cottages or shacks, which can be increased in number as needed. These should, if possible, stand in a plot of ground several acres in extent, and, while pure air and sunshine are essentials, the location should be near enough to a center of population to insure water-supply, drainage and fire protection as well as to permit frequent communication between the patients and their homes. In small towns a farmhouse may be utilized, while in larger towns and cities special buildings will be constructed or special wards added to existing hospitals, as at Fall River and Lowell.

As regards the size of these hospitals, a good rule might be to provide one bed for each thousand of the population, with the expectation of increasing in the future. At this rate it is evident that, in the smaller towns, only cottage hospitals would be required. A city of 100,000 population would have a hospital of 100 beds, costing, at $500 a bed, $50,000, and the annual cost of maintenance would be about the same as the cost of construction, or $50,000 a year. In cities and manufacturing towns, which have the largest ratio of consumptives, the hospitals will need to be larger in proportion to the population than in the rural towns.

It is to be confidently expected that philanthropic citizens, when they become convinced of the importance of this measure, will help to lighten the strain upon the public purse by donating land and buildings and contributing to a fund for their maintenance.

If all of these institutions are called sanatoria, it may be easier to induce patients to go to them than if they are called hospitals, though the word "hospital" has a far more cheerful sound in these days than it had a few decades ago.

What, then, can we, members of The Massachusetts Medical Society, do the coming year to help on the campaign against tuberculosis?

We have been considering two propositions: first, that we are a united body of missionaries who esteem it a duty and a privilege to aid any good cause whose object is to rescue the human race from the tyranny of disease; and, second, that we have arrived at an important crisis in the world's history, when a great discovery has shown us the possibility of annihilating tuberculosis. The truth of both of these propositions is so obvious that the only possible conclusion is that we must all, individually and collectively, launch ourselves into this campaign and determine that each year shall become memorable through the achievement of some notable victory.

Encouraged and stimulated by the brilliant successes of the past year, we can now look forward with new confidence and see more clearly where our duty lies.

The *prevention* of tuberculosis rises at the present time into special prominence, and it has been my endeavor to show that the ideal way to accomplish this is through the segregation of the sick. The new state sanatoria will greatly facilitate this separation, and it will be incumbent upon us to induce our patients to go to them, and to convince them that this is best for themselves and necessary for the protection of their families.

We can also agitate for the erection of additional local hospitals for advanced cases, and do what we can to interest people of wealth and liberality in this method of helping their neighbors. If this sort of missionary work is done only by a few of us, the results will be insignificant; but if we all take hold and do it together, enthusiastically and aggressively, a general and widespread interest will be awakened and we will have something to show for it a year hence.

But let me not be understood as urging activity in this one direction to the neglect of others. The problem is a complex one, and the campaign in many other directions is well under way. It is necessary to continue the attack with increased activity along the whole line. Here are some of the ways in which we can render efficient help:

We need to show our approval of the recent acts of the legislature by doing all we can to make them effective. To this end we must carefully comply with the law requiring notification of cases of tuberculosis to the board of health.

We can, whenever occasion offers, explain the importance of the anti-spitting law.

We can cordially co-operate with the state inspectors of health, who are to be appointed, and give them our support in the work they are to undertake, which is expected to result in a systematic organization of the war against consumption.

Moreover, we can lend our aid to the associations for the relief and control of tuberculosis; we can urge the appointment of visiting nurses, the establishment of day camps and dispensaries; we can take pains to see that the disinfection of houses after the removal or death of consumptives is thoroughly performed, and we can bring to the notice of manufacturers the admirable work which is being done in the factories of Providence, of Oxford and of Brockton.

Again, we can accomplish something in our district societies, by means of the committees on tuberculosis, which were appointed year before last, through the active initiative of Dr. A. T. Cabot, then president of the State Society, and now president of the State Committee on Tuberculosis. One way in which the work of these committees can be facilitated is by providing them with funds for carrying on a campaign of education.

Having done all these things in the capacity of medical missionaries, there is one other thing which, as medical practitioners, we must not leave undone. We must seek out the incipient cases and send them to Rutland or some other sanatorium while they are yet in the curable stage. We can do this by being always on the watch for danger-signals, by making a careful physical examination in all cases of suspicious cough, of emaciation, of slight rise of temperature, of unexplained debility; by making early examinations of sputum; by not delaying to tell our patients of their condition and by carefully explaining to them how much better are the results of sanatorium treatment in an early than in a later stage. We must preach the gospel of outdoor life, and must insist that any of our patients who cannot go to a sanatorium shall have the open-air treatment at home.

And even this is not all. We need to keep constantly before the minds of the people that consumption can also be combated by improving the stock, by bettering the conditions of the working-people, by seeing that they are not deprived of light and air in their homes and the places where they work, and by preventing poverty, vice and intemperance. If those influences can be overcome which tend to sap the vitality of the race, infection will be less frequent, even though exposure continues.

Thus the problem of tuberculosis is found to involve the whole science of social economics, and to demand for its solution the combined efforts of all those who are striving in any way to improve the conditions of the human race. This is a holy war, and in it let us, Fellows of The Massachusetts Medical Society, do our full share of the fighting. Let us inscribe on our banners "Consumption not only can be cured, but it can be and shall be *prevented*."

Original Articles.

ACIDOSIS.*

BY ELLIOTT P. JOSLIN, M.D.,
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Thirty years ago this spring in Strasburg, Walter[1] published an account of a series of experiments on acid intoxication, which were more conclusive than those of previous writers. He discovered a marked degree of uniformity in the symptoms after the administration of hydrochloric acid to rabbits. If the quantity of acid inserted into the rabbit's stomach exceeded 0.9 gm. per kilogram in one day, death could be predicted within a few hours. The phenomena were ushered in by increased frequency of respiration. Each respiratory movement was deeper, more labored and accompanied with forcible heaving of the body walls. The animal lost the power of moving freely about and remained quiet in the position assumed. Having reached this stage one quarter of an hour intervened until death. The dyspneic character of the respiration now diminished, the blood pressure, which had been raised, fell and the heart's action grew scarcely perceptible, yet respiration invariably ended before the heart ceased to beat.

The administration of acid to dogs failed to produce similar symptoms, although double the quantity of acid was fed. Walter was so fortunate as to detect the reason for this immunity and to show that it lay in the capacity of the dogs to protect themselves by the formation of ammonia and the neutralization and excretion of 75% of the acid administered as an ammonium salt. This difference between the action of acid in dogs and rabbits has been shown by Winterberg[2] and others to be only relative, since rabbits can also protect themselves to a limited degree by the formation of ammonia, and on a proteid diet are less susceptible to acid poisoning,[3] while, on the other hand, dogs succumb with similar symptoms if the acid is injected into the veins. There is, in fact, general agreement from Walter's[4] time until now that symptoms of excitement with dyspnea, coma and death follow the intravenous injection of acid in rabbits, dogs and sheep.[5]

Much evidence has accumulated to prove that the cause of death is acidosis. The intravenous injection of an alkali simultaneously with even double or treble the ordinary lethal dose of acid prevents the occurrence of symptoms, and the introduction of an alkali, when death is imminent from acid poisoning, brings recovery.[6] It is, therefore, improbable that structural changes in the tissues have taken place, and indeed none such have been found.

The symptoms above recounted are not specific for any one acid, – hydrochloric, phosphoric, acid sodium phosphate and lactic acid.[7] They are distinct from symptoms attributable to poisoning with salts. They may resemble those of sodium nitrite and other drugs,[8] but the presence of such drugs in experimental acid poisoning has not been demonstrated.

The formation of ammonia is the response of an animal to the injection of an acid. So far as I know, all agree that ammonia is a measure of acid metabolism, whether the acid is introduced into the body or formed within it.

Hallervorden[9] was able to show that the production of ammonia grew less when alkalies were injected. Ammonia is a "factor of safety" in our metabolism, and it is interesting to note that its neutralizing power is five times that of the common extraneous alkali – sodium bicarbonate.

Confirmation of acid poisoning is further found in the diminished power of the blood of these animals to neutralize acids. This can be estimated by the amount of carbonic acid present, because carbonic acid is displaced from its loose combination by any of the acids considered. Walter[10] showed in his fatal cases of acid poisoning in rabbits that the carbonic acid was lowered 90%, and Spiro[11] obtained fully as much reduction in dogs when he injected acid sodium phosphate intravenously. The direct titration of the blood after acid poisoning was undertaken by Spiro, who recorded a fall in alkalinity, from 169 mgm. NaOH to 73 mgm. NaOH per 100 cc. in dogs and a fall of 85 mgm. NaOH per 100 cc. in rabbits. Szili,[12] one of the latest investigators, obtained similar results. He also obtained a fall of 95% in the hydroxylion concentration of rabbits and dogs. The language of physical chemistry, however, often leads to confusion, because this apparently great change in concentration represents in 1,000 gm. of blood merely a fall in alkalinity from 51 ten millionths to 1.7 ten millionths grams. Unfortunately, the methods employed for the determination of the alkalinity of the blood are far from satisfactory and new developments may be awaited from the methods of Rzentkowski.[13] He has recently shown that the chief part of the blood's basicity is concerned with the albuminous portion of the red blood corpuscles. One gram of albumin of the red blood corpuscles corresponds to 4 gm. of albumin of the plasma in acid combining power.

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Does man show an analogous condition to the acid intoxication of animals? Unconsciousness for a longer or shorter interval usually precedes death, even apart from those diseases in which there are obvious structural changes in the brain. A longer period of unconsciousness, coma, has long been known, but Kussmaul[14] called attention in 1874 to a distinct type of coma met with in diabetes. This was characterized by dyspnea — air-hunger — which preceded actual coma. The thorax expanded excellently in all directions, complete inspiration was followed by complete expiration. Congestion of the veins in the neck as well as cyanosis were absent. The contrast between the universal weakness and the strength of the respiratory movements was one of the most striking peculiarities of the picture. The pulse was often of extremely high tension at the onset of coma, but gradually wore out as it advanced. The impression left upon the observer invariably suggested some form of poisoning. Air-hunger, in the absence of cyanosis and of local and general convulsions served as a distinguishing feature.

Coma in diabetes is by no means an exceptional occurrence. The frequency with which it is met was recorded by Marsh,[15] in 1854 and that same year v. Dusch[16] differentiated it from uremic coma. Among 732 fatal cases of diabetes observed by various writers, death occurred as a result of coma in 53%. The type of coma in diabetes, which is most distinctive, occurs in what Naunyn[17] calls "pure diabetes," that form of the disease which runs its course free from complications in life and gross pathological changes after death. This occurs most frequently in the young. Any study of coma in diabetes loses its significance, unless this peculiar group is considered alone. Arterial changes are so universal in diabetes that coma of a cerebral or renal type is of most frequent occurrence. Such forms of coma have no connection with that under discussion, even though the urine may show a moderate acidosis.

Any comparison between Walter's coma of acid intoxication in animals with the dyspneic type of coma in man must not be carried too far. The cause in animals is of sudden onset, and occurs during health, but in man it is of gradual onset, increases in intensity and takes place in an individual debilitated with a long-standing disease. The main symptoms of restlessness, dyspnea and coma are common to each, and I am inclined to believe that the premonitory rise of blood pressure in rabbits will be found to have its counterpart in man.

Hallervorden's observations upon the excessive amount of ammonia in the urines of diabetics suggested to Stadelmann[18] that dyspneic coma presented an etiological as well as a clinical analogy to the coma of acid intoxication. Men, as well as dogs, increase the ammonia output after the administration of an acid, and in men, just as in dogs, the total amount of ammonia falls when alkalies are given. Until proof is afforded to the contrary, we are forced to explain an increased excretion of ammonia by the presence of acids somewhere in the body demanding neutralization. The experiments of Schittenhelm[19] would indicate that a relative increase of ammonia also had the same significance.

The excretion of ammonia in severe diabetics may increase from the normal quantity of about 1 gm. up to even 12 gm., and the cases are numerous in which 5 gm. are formed daily. The relative per cent of nitrogen in the form of ammonia to the total nitrogen rises much higher than was formerly supposed, not uncommonly reaching 25%, and in one of my recent cases was 41.2%, which is greater than in any case I have found reported. The patient is still vigorous. The total quantity of ammonia falls after the administration of alkalies, but as in animals, this goes on gradually. In rare instances the urine may be alkaline[20] and yet the ammonia may remain both actually and by per cent high. An alkaline urine, however, is no proof that the requirements of the body for alkalies are satisfied, but rather that the body is unable to utilize extraneous alkali in those tissues where the acid is formed. The total ammonia naturally falls in coma, if there is a diminished flow of urine. I have observed the ammonia fall from 38.8% a few weeks before coma to about 20% during coma, and Herter[21] has made similar observations. It is not strange that this does not take place in the death agony, and shows, as Müller suggested, that the ammonia represents the animal's power of compensation.

It is easy to measure how much acid is required to produce coma in a dog, but not so simple to determine from the blood and urine of man the quantity which has caused the same symptoms. Stadelmann attempted this task and found by estimating the acids and bases that although the urine was acid, bases were in excess, thus indicating the presence of an organic acid. He recognized the importance of this discovery and introduced the alkaline treatment of dyspneic coma. Kulz[22] and Minkowski[23] independently discovered that the unknown acid was B-oxybutyric acid, although other organic acids, apart from di-acetic acid and its derivative acetone, were present in negligible quantities, just as they are in the urines of healthy people. The difficulty of estimating B-oxybutyric acid quantitatively and the ease with which its alleged derivatives, acetone and di-acetic acid, can be determined, diverted attention from B-oxybutyric acid as the chief cause of acidosis. Folin's[24] recently published method for the quantitative determination of acetone distinct from di-acetic acid only emphasizes this point. He shows that acetone can seldom constitute over 10% of the total acidosis. Acetone and di-acetic acid do not even vary relatively with the sum of the total acids.

The actual and accurate demonstration of B-oxybutyric acid as the chief alkali robber in dyspneic coma was made by Magnus Levy[25] in 1899. He was able to obtain by direct extraction from the urine of a child in dyspneic coma 4.5 gm. B-oxybutyric acid per kilo body weight, and from a similar though older child, during the day of temporary relief following coma, I obtained 3.5 gm. per kilo, or 180 gm. calculated as B-oxybutric acid from the excess of bases in the urine. Fully taking into account the difference in molecular weight of hydrochloric and B-oxybutyric acids, these quantities exceed the amount necessary to produce artificial coma in animals. Such large quantities of acid are only obtained from the urine during the day following coma. It is not the quantity of acid excreted, however, that does the harm, but rather that which is retained in the tissues. This may reach approximately 100 gm. during coma, according to Magnus Levy, and calculation shows that the lowering of the alkalinity of the blood corresponds with such quantities of acid. On the other hand, the body is provided with only sufficient alkali to neutralize some 80 gm. of B-oxybutyric acid apart from its capability of forming ammonia.

It is interesting to note that those clinical disturbances, indigestion, febrile affections, overexertion, which are apt to be followed in diabetes by coma, are all accompanied by acidosis.

Dyspneic coma is frequently encountered with smaller quantities of acid than those mentioned, and there are good reasons therefor. Acids are not excreted except as salts. Spiro showed this experimentally in rabbits and demonstrated a parallelism between the urine curve and the diminished alkalinity of the blood. When coma appeared the excretion of urine ceased, to recommence when soda was injected. It is only fair to state that in dogs an exact counterpart does not exist. It is a fact of clinical observation that such large quantities of B-oxybutyric acid as above mentioned are never obtained in long standing cases of diabetes, unless alkalies are given. Similarly large quantities of B-oxybutyric acid will not be excreted unless the quantity of urine is sufficiently great to hold it in solution. The per cent of B-oxybutyric acid in the urine did not rise above 1.5, even in my exceptional case, where the total excretion of acid reached 180 gm. in 24 hours. Outside of coma, Magnus Levy has never found it to exceed 0.6%. Larger quantities have often been reported in the literature, but they were not estimated by Magnus Levy's accurate methods. Since an abundance of alkalies and an abundance of urine are required for the elimination of large amounts of acid, it is not strange that debilitated diabetic patients excrete comparatively little acid in coma. It is equally obvious why injections of neutral salt solution and heart stimulants occasionally rescue a patient.

The dyspneic coma of diabetes cannot be cured by the injection of alkalies alone. The body must be in sufficiently good condition to rid itself of the acid, and even this is not all. Permanent recovery cannot take place without a continuous supply of alkali to meet the continuous formation of acid. The alkalies further must be offered the body in such a form that they can be utilized, not in the blood alone but in these tissues where the acid is produced. Temporary recovery from dyspneic coma is a most common incident. Because it is so common, but withal so temporary, many of us have felt it cruel to the patient to bring it about, and I have not forgotten the statement of the boy, whom I twice brought out of coma by injection of alkalies into the veins of both arms, that he was glad he had no other arm. The return to consciousness after the injection of an alkali is as striking a demonstration in man as the relief which follows a similar injection in an acid poisoned animal.

The reaction of the blood in diabetes confirms the view of an acid poisoning. Minkowski[26] found a diminution of the carbonic acid content of the blood of 40% in a non-comatose diabetic and of 90% three weeks later, when the same patient was in coma. Krauss,[27] Tambrey and Spriggs[28] record similar instances. Direct titration of the blood showed a lowering of the alkalinity in the hands of Krauss, Magnus Levy and Benedict.[29] It is to be regretted that Rzentkowski had no diabetic patient at his disposal. The experiments of Szili (*loc. cit.*) on the determination of the hydroxyl and acid ions of the blood showed a marked diminution of the alkalinity in the acid intoxication of animals, but Benedict (*loc. cit.*) failed to observe a similar change in diabetic patients. It is certainly open to grave question whether one could expect by his method in long standing cases of acidosis a result similar to an acidosis of animals running its complete course in an hour.

It is just half a century ago that Petters[30] held that acetone had causal connection with coma, but the experiments of Albertoni, Pissenti and Kussmaul so effectually disproved this possibility that the question was not again opened until in 1905 Grünberger[31] discovered its presence in the cerebrospinal fluid of a diabetic patient in coma. Until further experiments and clinical observations upon this point are carried out, it is improper to entirely disregard it, but it seems improbable that the presence of acetone in the cerebrospinal fluid of diabetics is of especial significance. A specific action has also been ascribed to B-oxybutyric acid, quite apart from the influence it exerts as an acid. So far experiments have not been published which support this view, though Von Noorden[32] refers to such by Herter, in the fourth edition of his book. Von Noorden ascribes a certain part of the specific diabetic intoxication to the specific poisonous effect of B-oxybutyric acid, and he even considers the neutral salt of B-oxybutyric acid poisonous. I cannot reconcile this with his other statement that he knows many diabetic patients who have excreted 50 to 60 gm. acetone bodies daily for six years, nor do I find it consistent with the opinion expressed later on in the same volume, pp. 327 and 328, that he has had better results in the treatment of coma, presumably its preventive treatment, since he has used, at the recommendation of Naunyn and his school, very large doses of alkalies in place of the smaller doses which he previously employed, or, again, where he states that following the preference of Naunyn he has turned from salt and levulose infusions to an infusion of an alkali. Herter's observations and his opinion as communicated to this Association in 1900 also are strong evidence against any specific action.

The overwhelming amount of B-oxybutyric acid excreted by diabetics without discomfort makes it appear trivial to attempt the explanation of grave symptoms in many diseases by the coincident presence of a few grams of acid, or decigrams of acetone. Most of the observations on acidosis, other than in diabetes, have been based on qualitative tests alone, and even when these tests have been of a qualitative nature, they have almost without exception disregarded entirely the chief acid, B-oxybutyric acid. No instance has come to my observation of an excretion of more than 10 gm. of total acid in 24 hours. If the physiological chemists would only give us a short, accurate method for the determination of B-oxybutyric acid, we should hear much less of the harmful effects of acetonuria.

The treatment of acidosis in diabetes is too often symptomatic, despite Herter's warning given here in 1900. Etiological treatment is generally forgotten. As repeatedly emphasized by Naunyn, acidosis varies inversely with the capacity of the individual to utilize carbohydrates. A gain in the power of oxidizing a few grams of sugar avails far more than alkalies in overcoming acid intoxication. It is because the treatment of diabetes has been directed of late years toward improving this tolerance that the treatment of acidosis has also improved. Aside from general measures leading to this end, search has been directed for some form of carbohydrate which would be capable of oxidation in the diabetic body, and thus would promote the secondary oxidation of B-oxybutyric acid. For this reason lactose and levulose were tried, and recently Poulssen[33] has suggested the employment of the alga. The most hopeful outlook, however, is presented by Baumgarten's[34] discovery that the radicals into which the carbohydrate molecule is first split are capable of oxidation in the body. It is not unlikely that one of these radicals — gluconic, sucric, mucic, glycuronic and other acids — may eventually be available for the secondary oxidation of B-oxybutyric acid. Schwarz[35] indeed obtained favorable results with gluconic acid some years ago, but its expense so far has prevented its general use. Empirically such a body has been sought by Von Noorden in oatmeal.

The work of Eppinger[36] and Langstein[37] suggests that the use of amino acids may be better symptomatically than the employment of the simple alkalies. Eppinger (*loc. cit.*) prevented the appearance of coma in rabbits after the injection of acids by the simultaneous injection of the amino acids, and its protection apparently was not wholly due to the ammonia therein contained. On the other hand, the work of Embden,[38] Baer and Blum[39] warns us to proceed slowly with the employment of the lower fatty acids. The researches of Satta[40] and Borchardt[41] upon the acid-forming and acid-destroying components of fat and albumin must be further developed.

It is held up as a reproach against the alkaline treatment by Von Noorden that coma is not less frequent than before the days of alkaline therapy. It must be borne in mind that the possibility of death in diabetes from other causes, such as tuberculosis and sepsis, has greatly decreased during the last fifteen years. I think few will question the opinion that the duration of life of diabetics is greater than twenty-five years ago; as a result the disease uncomplicated reaches a greater degree of intensity before it claims its victim. Of this intensity acidosis is the expression.

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SOME REMARKS ON NEPHROLITHIASIS.*

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WITHOUT question stone is one of the most important surgical diseases of the kidney. The subject is so vast and the literature so voluminous that it is obviously impossible to more than mention many of the important features of the condition and to speak but briefly of some of the others. Of the etiology and physical properties of calculi I shall say little, since the discussion would carry us deeply into the problems of chemistry and metabolic changes, but I will endeavor to spend most of our time upon the symptoms and diagnosis of the condition.

There is a very short distance between the formation of gravel and the formation of stone in the kidney. When the soluble substances in the urine become precipitated and are washed out by the urinary stream, we have the condition of gravel. When, by means of mucus or some other organic material this precipitate becomes agglutinated, we have a small calculus, or at least, the nucleus for one, which grows as fresh crystalline deposits are made upon it. This calculus either passes down the ureter with more or less colic to become a bladder stone or be passed per urethra. Otherwise, it remains in the kidney, pelvis, calyces or substance, to grow and give rise to a variety of symptoms of a greater or less severity, but always sooner or later leading to destructive changes in the kidney tissue.

Morris divides calculi into primary and secondary. The former are met with when there is no infection present. Those formed from an acid urine being one or more of the following: uric acid, urates, calcic oxalate, cystine, xanthin and, rarely, indigo, those formed in an alkaline urine being of calcium carbonate and acid or basic phosphate of calcium.

Secondary calculi occur when there is change of reaction due to bacterial infection as in ammoniacal fermentation. They consist of the phosphates of ammonia and of magnesia.

In many cases a primary calculus becomes the nucleus for a secondary deposit because of the septic infection resulting from the irritation of the primary calculus. In point of size and number, calculi vary within a wide range, from very small stones which can readily pass through the ureter to those of enormous size, and in number from one to one or two hundred. In the calyces they may be slightly movable, in the pelvis they are, if of moderate size, much more freely so, and may fall into the ureter, blocking it. In either case they may take the shape of these cavities, sometimes filling them entirely and becoming firmly adherent which was the condition found in the present specimen. Those in the kidney substance are very prone to give rise to abscess formation with perinephritic rupture. According to Legueu and Albaran, bilateral stone occurs in nearly 50 % of the cases. Calculi may be met with at any age, but most commonly between twenty and forty. According to Morris the male sex is most often affected. Heredity seems to play a distinct part, particularly in the case of uric acid stones.

Briefly, the pathology of renal calculus may be divided into the aseptic and the septic changes due to their presence, which is the classification of the best authorities.

The aseptic changes.— There is, first of all, an irritation due to the passage through the kidney of a large amount of uric acid or calcic oxalate, etc., — in the precalculus stage; this irritation often becomes a catarrhal pyelonephritis which is soon followed by interstitial changes as well. The further change in the kidney may be brought about in two ways. There may be an atrophy of the kidney due to this calculus nephritis, or there may be destruction of the secretory tissue as a result of pressure from hydronephrosis, this latter occurring when the stone is of long duration and of sufficient size to entirely or partially occlude the ureter. There may also be an hypertrophy and induration of the perirenal fat, in some cases the kidney being replaced by fat tissue.

These aseptic lesions just mentioned, the nephritis, the retention of urine in the pelvis and the trauma of the stone, readily pave the way for septic infection which takes place through the blood or lymph stream or ascends the ureter from below. The colon bacilli is often the offending organism, the resulting lesion being pyelonephritis, pyonephrosis, nephritic and perinephritic abscess which may result through rupture in loin, groin, intestinal or thoracic fistulæ. Perinephritis often results in firm adhesions between the kidney and the surrounding tissue, making operation difficult. When pyonephrosisis is present the kidney is generally of good size and may consist of a number of different cavities, more or less shut off from one another, containing pus, purulent urine and calculi. When there is more or less destruction of the kidney on one side the process is a slow one and the other kidney generally becomes hypertrophied; it may, however, become the seat of a nephritis and the subsequent changes with resulting stone, like its fellow. Another remote result may be the sudden blocking of the ureter by stone; this may occur in both kidneys simultaneously or, as is most usual, in each successively. This is a grave condition and if not relieved will lead to ulceration and perforation of the ureter with the resulting infiltration and abscess and sinus formation, or death from calculus anuria.

The typical picture of renal colic, as formally described, with its pain, passage of stone, etc., is well known to all and needs no comment. It is also well known, however, that the typical picture is often absent and that renal stones present a great variety of symptoms, simulating other conditions.

Before going into the method of diagnosis, it might be well to consider the various clinical courses taken by renal stone.

1. They may present the typical renal and ureteral colic and be easily diagnosed, but in some cases renal colic closely simulates appendicitis,

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gallstones and other acute intra-abdominal conditions, and must be differentiated from them.

2. They may remain innocuous and unsuspected for years, giving no symptoms or slight ones which have been misinterpreted or long forgotten. The case I shall speak of is a marked example of this. These cases are, of course, always liable to sudden activity; although in a number of cases, stones have been found post-mortem that were unsuspected during life.

3. In some cases the symptoms may be referred entirely to other organs, as the bladder, the testicle, the uterus and ovary, —nothing being felt in the kidney itself. Frequent and painful micturition has often led to the diagnosis of cystitis and local treatment of the bladder with, of course, no relief. This is also true of other kidney lesions, as tuberculosis and neoplasm, both of which may, however, be complicated by stone. One should always have in mind the kidney as a causative factor of frequent micturition. Symptoms may also be erroneously ascribed to malposition of the uterus and diseases of the ovary. The cystoscope and x-ray have done much to clear up such cases.

The majority of cases, however, exhibit at some time certain typical symptoms, and careful attention to the history and painstaking examination of the patient will lead to a correct diagnosis. Among them are more or less frequent attacks of colic, due to the transient impinging of the stone in the pelvic end of the ureter with the pain in the loin or radiating to the testicle. Pain either in the kidney or referred to some other place is a frequent accompaniment of stone. It may be of all degrees of severity from an ache or feeling of lameness to pain of severe cutting or lancinating type. The referred or reflex pains have in part been mentioned and are described as the reno-renal reflex, pain in the other kidney, the reno-vesical, reno-testicular, etc. The pain is sometimes referred to the upper part of the thighs, the inside of the leg and the sole of the foot. The pain being largely mechanical and due to the actual bruising of the kidney by the stone is generally brought on or made worse by exercise or exertion and is relieved by rest.

Bleeding in stone generally takes place at some time or other in all cases. It is variable in quantity and as in the case of pain is generally increased by exercise and diminished by rest. This helps distinguish it from the bleeding of neoplasm. It is very apt to be associated with an attack of pain, the urine being dark or smoky for a few days following. The hemorrhage is rarely profuse, often microscopic. The bleeding of stone should be differentiated from the numerous other causes of hematuria.

Pus is present in the urine in many cases of calculus. Like the blood, it is due to the irritation of the stone; like it, also, it varies in amount according to the amount of inflammatory or destructive change there may be in the kidney. This may be all the way from a few microscopic leucocytes to the large amounts seen in pyonephrosis. A small or moderate amount of pus is rarely noted by the patient as the urine does not become offensive until pyonephrosis with decomposition is present, when the urine becomes very foul. He generally seeks advice because of the pain, colic or bleeding.

The diagnosis of renal stone not so many years ago was a matter of considerable difficulty and uncertainty, — most of the operations being for the drainage or removal of badly diseased kidneys. At present we are much better equipped and the diagnosis should be made early in most all cases.

The methods to be employed are as follows:

First, a careful family and personal history, particularly as regards pain or disturbances of micturition.

Second, palpation of the abdomen. There is often tenderness and muscular spasm over the affected kidney. Tumor is present in hydro- or pyo-nephrosis of any extent. Palpation will also help to eliminate any other intra-abdominal process.

Third, careful routine chemical examination of the urine and examination of the centrifuged sediment for epithelia cells, casts, blood, crystals, tubercle bacilli and the ova of parasites.

Fourth, cystoscopic examination. This is a most important proceeding in the diagnosis, particularly when there is doubt as to which side is affected; and in those cases before referred to with marked bladder symptoms, cystitis, bladder stone, or tumor may thus be eliminated. If the case is bleeding sufficiently at the time, the diseased side may be determined, also the presence of another active kidney. Much valuable information may be obtained from observation of the ureteric orifices, the presence of edema or inflammatory changes about one or the other of them or alteration in their size or shape denoting an existing or pre-existing inflammatory condition of the kidney. Pus in small amounts coming from the ureter is difficult to be sure of and the ureter catheter had better be employed. When present in any amount, however, as in pyonephrosis, it is readily recognized. Ureter catheterization, or segregation, the former much the more accurate, should be employed to ascertain the condition of the other kidney and obtain the separate urine for examination. A slightly bleeding kidney may thus be recognized. The ureters may also be explored for patency. With the wax tip bougie and the phonophore I have had no experience; good results, however, are reported in the use of both by those familiar with them.

Fifth, radiography. In spite of the fact that many unfortunate and embarrassing mistakes have been made in the past in the interpretation of plates, such as plebоliths, glands, night shirt buttons, etc., the technique is constantly improving and a good x-ray by an experienced operator is of the greatest help to the surgeon. A good plate should show the transverse processes of the vertebræ and the structure of the last two ribs; such a plate will show clearly ureteral and renal stones, and, according to expert radiographers, is also of negative value. The plates should show both kidneys and the entire course of both ureters.

According to Leonard nearly 50% of all calculi occur in the ureters. Bevan has mentioned two cases where the symptoms, *i.e.*, pain and tenderness, were on one side, the x-ray showing the stone in the opposite ureter where it was found and removed. The case I shall mention is of interest in this connection. He also points out that in cases where the x-ray is negative it may be impossible to differentiate clinically tuberculosis, hypernephroma, tumor, etc., from stone. A doubtful shadow in the ureter may be verified by passing a ureter catheter with a wire stylet, then having another x-ray and noting the relation of the wire to the shadow as has been done by Brown, Lewis and others.

Sixth. Cryoscopy. Ascertaining the freezing point of the blood is of importance in determining the amount of renal efficiency, — a lowered freezing point showing a lowered efficiency. The normal is ·56° C.

By the employment of some or of all of these methods a differential diagnosis from the various other conditions within and without the kidney can generally be made. These conditions have been briefly alluded to already and time will not allow me to take up the differential diagnosis any more in detail. They include tuberculosis, cancer, cystic kidney, tumor, abscess, floating kidney, etc. However, at times the x-ray will be negative or unsatisfactory, ureteral catheterization cannot be employed and the patient will present an array of symptoms that cannot be definitely interpreted. In such cases the condition can be diagnosed by exploratory operation only.

The treatment of stone may be divided into the expectant and the surgical. The former, according to Bevan, should be limited to the following conditions: (1) When the attacks are infrequent and mild and by x-ray the stones are of a size to be readily passed; but such cases should be kept under close observation; (2) where age or disease in other organs renders the removal of a stone more dangerous than its presence, and (3)where a stone is arrested in the lower end of the ureter when there is hope of assisting its passage by injection of oil or liquid vaseline into the ureter.

Without question surgical removal should be the treatment of most all cases of stone. When the diagnosis has been made early, operation should be most strongly urged as it is at this time that the most brilliant results are obtained with the greatest safety.

Nephrolithotomy is one of the most satisfactory of surgical operations when performed before the kidney substance has been injured or destroyed. When suppurative changes have taken place the indications for surgical interference are none the less imperative, and the course to be followed by the surgeon must be determined by the existing conditions in each case. Time will not permit a discussion of these conditions; suffice it to say that one of the following procedures is open to him: (1) He may cut down upon the kidney to explore it or evacuate any neighboring collection of pus. (2) He may drain the kidney either by opening the pelvis or by splitting the cortex. (3) He may remove the kidney at once or leave it for a subsequent operation.

In bad cases the latter is generally the operation of choice, being done when the patient is relieved of his sepsis, and is often necessary for the cure of chronic fistulæ. The treatment of calculus anuria is immediate single or double nephrotomy, as the case may be.

It is wise if possible to explore the ureter at the time of operation by passing a bougie down through it.

The mortality of nephrolithotomy in uninfected kidneys is about 3%. When septic processes have intervened it is said to be 10%,— a strong argument for early diagnosis and treatment.

In closing I shall refer briefly to a case which illustrates some of the points heretofore mentioned.

The case occurred on the service of Dr. C. L. Scudder, at the Massachusetts General Hospital, who operated and who has kindly allowed me to present it. I had the opportunity to see the patient several times in the Out-Patient Department and with Dr. Davis who made the cystoscopic examinations.

He is forty-one years old and gives the following history. No venereal diseases. He had suffered from attacks of pain in the left loin going down into the left testicle. The first attack occurred when he was sixteen and was constant and severe. He passed a very little blood at times and some gravel after the pain; once a stone the size of a pea. Four years ago he had a severe attack and thinks the stone passed into the bladder at that time. For the last three years he has had bladder pain and symptoms of vesical calculus. All of his previous symptoms were referred to the left side. Multiple vesical stones were readily detected with the searcher and he was recommended for operation for vesical calculi, with question of renal as well. He was cystoscoped later and two good-sized stones seen. An x-ray showed these very well and also a large shadow in the right kidney; nothing in left. His condition was not of the best, so it was decided to remove the bladder stones first and study the condition of the kidneys. The ureter could not be seen with any degree of accuracy at the first cystoscopic examination. A suprapubic cystotomy was done on February 18. He improved very much after this and a second cystoscopic examination was made. This showed apparently nothing, but pus coming from the right kidney and a normal efflux from the left. The left side was catheterized later and some pus was found coming from it as well. On March 7 the right kidney was explored and a large branched calculus was found and extracted with considerable difficulty, as it was intensely adherent. The patient did well. Some urine escaped for a time through the loin, showing that there was active renal tissue left, although at the operation the kidney did not look promising. The patient's condition would not have warranted a nephrectomy at the time.

The interesting points in this case are: (1) That a stone of this size could remain in a kidney so long a time without giving any hint of its presence, or without destroying the kidney entirely. (2) The absolute diagnosis by the x-ray and the confirmatory evidence of the cystoscope, I think without doubt, that the bladder stone came from the left kidney which at present, as far as can be told, is the seat of a slight pyelitis only.

NOCTURNAL PARALYSIS.*

BY ISADOR H. CORIAT, M.D.,
Second Assistant Physician for Diseases of the Nervous System, Boston City Hospital.

The condition that I am about to report, at least in its complete type as here presented, is rather rare. In its slighter and more transitory form, however, it is fairly common in normal individuals. Wier Mitchell,[1] in 1885, first gave particular attention to this disorder, which he named night palsy or nocturnal hemiplegia. In his cases, however, the disorder assumed the type of a mere loss of sensation or a distinct loss of power in one limb or one half of the body, which was more or less protracted after awakening. The palsy always occurred between the half-sleeping and the half-waking state. The only cases reported in the literature in which the paralysis was generalized instead of local are those of Féré.[2] According to him, the disorder only occurs in subjects of neuropathic constitution and is closely related to the exhaustion paralyses. He interprets the condition as the result of a deficiency of physiological excitation affecting the motor and sensory functions. In connection with his cases he found some hysterical stigmata, such as color disorders and a contraction of the field of vision.

Féré reports two cases in considerable detail, and on account of their close resemblance to our observation a brief abstract of each will be given. The first case had marked heredity, suffered from chorea in childhood and finally experienced a severe emotional shock in the death of her husband. This was followed by depression, headache, nocturnal fancies and finally the peculiar condition of night palsy appeared. Towards six in the morning she would awaken, incapable of making any movement, the limbs felt numb, a portion of the limbs seemed wanting and the hands and feet felt as if attached directly to the trunk, analogous to the amputation neuroses. There was total inability to move until some one entered the room. The return of movement in the limbs was accompanied by painful sensations of numbness and prickling, and three hours usually elapsed before a complete restoration of motor power took place. In the second case the patient suffered from ophthalmic migraine for years and, as in the first observation, the general night palsy followed family bereavements. At first there was a generally increasing exhaustion and, finally, on awakening between the hours of four and six in the morning, the patient would find herself unable to move any of her limbs. At first this condition persisted for a few minutes only, then it gradually became prolonged to an hour, during which period there was a loss of consciousness of the entire body. After each attack the gradual return of power was accompanied by the same painful paresthesias as in the first case. Both patients recovered under general hygienic and tonic treatment. My observation follows:

Mrs. B. B., aged thirty-one, first came to the Neurological Clinic of the Boston City Hospital on Dec. 28, 1906, in the service of Dr. Morton Prince. The family history was negative and there was nothing of special interest in the personal history excepting a somnambulistic episode at the age of thirteen, in which she went to the kitchen, filled a teakettle with water and then suddenly awoke with no memory for her actions. In 1903, shortly after the death of her second child, the patient awoke one night from a sound sleep with a sinking sensation and a feeling of inability to move her limbs. This paralysis she described as being complete, with an inability to move any muscle, even the eyelids. After remaining in this condition for a few minutes she became fully awake and conscious, with a cessation of all the symptoms except a feeling of exhaustion, which continued throughout the morning. She had a similar attack the following night and on successive nights for a month, each attack being accompanied by cardiac palpitation, but unassociated with any particular sense of fear. These attacks became less frequent and after a short time completely disappeared. About a year ago, however, without any known cause, the attacks re-appeared and have occurred every night since, with an especially severe attack every Monday night, for which the patient can offer no explanation. During all this period her general health has remained fair. At present she will awaken in the early morning with a choking sensation and a feeling of suffocation, with palpitation of the heart and complete inability to move the body. The hands are usually clasped and the arms extended above the body. During the attacks she is fully conscious, knows what is going on about her, but is unable to open her eyes or to move her limbs even by the strongest exercise of the will. There is no amnesia or haziness of memory after each attack. The dreams are of an indifferent character. She will cry out for aid to move her arms or limbs, but until such aid is given she is unable to make any muscular movement whatever. The attacks usually last from two to five minutes before aid is given. She has no idea of their duration if she were unaided. The physical examination is negative, except a floating right kidney and a complaint of an occasional occipital headache. There are no hysterical stigmata.

Psycho-analytic methods yield the following interesting data concerning the attacks: They began about three months after the death of her second child, who died on a Monday afternoon under distressing circumstances. This acted as a strong emotional shock. Although the child had been ill for three weeks with pneumonia, yet his sudden death was unexpected. On this particular Monday afternoon the patient was alone and was holding the child in her lap. He suddenly reached the arms above the head, showed a general tremor, then became rigid and immediately expired. It will be noticed that the position assumed by the patient in her nocturnal paralytic attacks exactly resembled that taken by her child at the time of his sudden death and, furthermore, the worse attacks always occurred on Monday, the day of the week on which the child died. The coincidence is too pertinent and marked to be called accidental, and it seems, therefore, that we are probably dealing with a recurrent mental state originating in a sudden and distressing emotional shock.

The treatment consisted of waking suggestions applied by means of a fictitious magnet (tuning fork) and directed toward a complete cessation of the attacks. This was given three times a week, and during the first month only seven attacks of palsy took place, whereas previous to treatment they had occurred every night. These attacks, too, were much lighter; she was able to come out of each voluntarily and to move the paralyzed limbs. As there have been no attacks since, a period of several months, it can be safely assumed that the patient has entirely recovered.

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* From the Neurological Clinic of the Boston City Hospital.

[1] Wier Mitchell: Nervous Diseases, 1885.

[2] Ch. Féré: A contribution to the pathology of night; nocturnal paralysis, Brain, xii, pp. 308-325, 1890.

Féré's explanation of the condition is vague and unsatisfactory. Dr. Prince has suggested that the state is analogous to the temporary general palsy that is sometimes observed in patients during and after being awakened from a deep hypnosis.

With entire restoration of the personal consciousness a general paralysis may persist, as in a case which he informs me he has now under observation. In this case the palsy persists some fifteen or twenty minutes, is difficult to dispel and is associated with a general anesthesia. In one of my cases this post-hypnotic palsy persisted for fifteen seconds and the condition in every particular resembled that described in our observation. From recent researches on the various states of dissociated consciousness the interpretation is a very pertinent one. It seems to arise on a neuropathic soil and to follow a strong emotional shock. This is seen in Féré's cases and in our observation. Manacéine[3] has observed a cataleptic condition in different muscular groups in the half-waking or hypnagogic state, the limbs remaining in the strained position in which they are placed for a long time. She considers this half-waking condition as a natural hypnotic state. From the clinical history of our case the disorder can be interpreted as not only closely related to this post-hypnotic palsy, but also as a hypnagogic motor repetition of a previous strong emotional episode. In other words, we are dealing with a recurrent mental state whose chief manifestation is in the motor mechanism. We know how easily sense deceptions can arise in this dissociated hypnagogic condition, and in our case the dissociated complex assumed the picture of general but temporary nocturnal palsy without any concomitant hysterical symptoms. The condition, however, may occur as a momentary sensation in normal individuals, and only when it becomes prolonged and oft repeated can it be considered as having assumed a pathological aspect. The fact of complete recovery by psychotherapeutic methods speaks for the purely functional nature of the disorder.

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Medical College of the University of Manila. — The new medical college of the University of Manila, which will be opened early in September, will pay special attention to tropical diseases. The Philippine government has appropriated $62,500 for the expenses of the first year of the institution. — *Science*.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

Repord of the Twenty-second Annual Meeting Held at Washington, D. C., May 7, 8 and 9, 1907.

(Continued from No. 1, p. 25.)

OBSERVATIONS REGARDING THE HYGIENE OF MEDICAL CASES, PARTICULARLY IN HOSPITAL WARDS.

Dr. D. L. Edsall, Philadelphia, reviewed a number of groups of ward infections, part already recorded, part not published, and offered recommendations regarding points in ward hgyiene. He referred particularly to superinduced gastro-intestinal symptoms in typhoid fever patients and to high percentage of typhoid infections among nurses. Statistics showed that in three well-conducted hospitals the percentage of typhoid infections among nurses is 8 to 9 times as high as in the surrounding population. In one especially well conducted hospital typhoid infection among the patients in the wards is 2½ times as frequent as in the remainder of the city. Milk experiments had shown that marked abdominal symptoms may be produced by bad milk, due to infectious organisms present. The author had noticed on four distinct occasions foul, offensive diarrhea in several patients simultaneously. These he considered are due to secondary intestinal infections. A study of 2,600–2,700 consecutive cases of typhoid fever in the Episcopal Hospital, Philadelphia, treated in twenty-seven months, showed a very definite grouping of cases of hemorrhage and perforation. These groups occasionally coincided with the outbreaks of diarrhea. Based upon these data the author recommends more rigid technique in methods of prevention in hospitals. Milk should be pasteurized, unless well certified. There should be a special diet nurse. Sterile applications should be used in handling the mouths of typhoid patients and should not be passed from one patient to another. Bedpans and urinals should be sterilized, as well as their contents. Instructions to nurses should be more stringent.

Dr. Victor Vaughan, Ann Arbor, mentioned the studies in typhoid during the Spanish War. Shakespeare, in a study of 4,000 carefully, observed cases, found 60% due to contact infection, and concluded that the fly was less active as a carrier of infection than had been previously held.

Dr. Kober, Washington, explained the large number of infections among nurses as due in part to the fact that persons between the ages of twenty and twenty-five were most susceptible to typhoid. The importance of milk as a carrier of typhoid infection was suggested by the relative number of epidemics in England and America as compared with the Continent; 90% of typhoid epidemics reported are in England or America, where raw milk is used. On the Continent, where raw milk is rarely used, only 10% of the epidemics occurs. In Washington 50% of typhoid is attributed to milk infection.

Dr. Park, New York, referred to mild epidemics of diphtheria in Children's Hospital, New York, due to carelessness of nurses. He mentioned a typhoid epidemic due to an infected ice-box. He had observed diarrheas produced by special types of milk.

Dr. E. G. Janeway, New York, emphasized the importance of better care of nurses. Nurses were overworked. They should be allowed more rest. He had seen outbreaks of erysipelas checked by thorough cleansing of the ward. Recently in New York a cook with typhoid infection without symptoms infected several families — 11 persons in one family, 5 in a second and 2 in a third.

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[3] Marie de Manacéine: Sleep, p. 212, 1897.

Dr. Abbott, Philadelphia, mentioned an experience in Philadelphia during the winter of 1906–7. One of the men on hospital staff acquired diphtheria; he was isolated until cultures were several times negative. After one week's vacation he returned with a slight coryza. All the patients with whom he came in contact became infected; large numbers of organisms were found in his throat.

Dr. Northrup, New York, said that the watchword must be "eternal vigilance." He referred to the infection of two room-mates with typhoid. They drank distilled water, drank no milk, ate no lettuce nor other uncooked vegetable. The glass jar in which the distilled water was kept gave abundant growth of typhoid organisms.

Dr. Solis Cohen, Philadelphia, referred to the experience of the Presbyterian Hospital; there had been gradually an isolation, in separate wards, of cases of erysipelas, typhoid, pneumonia, owing to the numerous infections when any two varieties of cases were kept in the same ward; patients with transmissible diseases should be in separate wards for these diseases.

Dr. Edsall, in conclusion, agreed that separation should be as complete as facilities allowed. He had not intended to minimize contact infection. Eternal vigilance was most important. Too much responsibility should not be given to the nurse, for accurate investigation would often detect irregularities.

ANTITOXIN AND POST-DIPHTHERITIC PARALYSIS.

Dr. N. J. Rosenau and Dr. J. F. Anderson, Washington: Dr. Rosenau read this paper. All the experiments reported were on guinea pigs. The results, however, might be directly applied to man, as diphtheria and post-diphtheritic paralysis in man and in the guinea pig run an almost identical course. Guinea pigs were treated with a toxin-antitoxin mixture of such strength as to cause no death from toxemia, but paralysis in the second and third weeks and death from paralysis on the twenty-third or twenty-fourth day. To all guinea pigs the same dose of toxin-antitoxin was given. The effects of subsequent administration of antitoxin was tested with the following results: All controls died on the twenty-third or twenty-fourth day. Two hundred and fifty antitoxin units given 24 hours after the primary injection prevented death; 250 antitoxin units given 48 hours after the primary injection did not prevent death; 1,000 antoxin units given 48 hours after primary injection prevented death. Repeated small doses, beginning 24 hours after primary injection, resulted in recovery; repeated small doses, beginning 48 hours after primary injection, resulted in two recoveries, one death; repeated doses, beginning on fourth day — recovery in 1 — modified the course, but did not prevent death in the remainder. The authors conclude that unless seen early patients must be given very large doses, if post-diphtheritic paralyses are to be prevented; that after the development of the paralyses antitoxin treatment seems useless.

EFFECTS OF EGG-WHITE AND ITS SPLIT PRODUCTS UPON ANIMALS. A STUDY OF SUSCEPTIBILITY AND IMMUNITY.

Dr. Victor C. Vaughan and May Wheeler, Ann Arbor. Dr. Vaughan read this paper. For several years he had studied the products obtained by splitting up various proteid molecules. Proteids used had been bacterial, vegetable and animal. All might be split into poisonous and non-poisonous parts. Injections of the non-poisonous parts of B. coli and B. typhosus proteids induced immunity to the respective organisms. About two years ago egg-white was split into poisonous and non-poisonous parts. Drs. Rosenau and Anderson had found that one injection of blood serum produced practically no symptoms in animals, but that if this was followed by second dose serious symptoms, even death, might follow. Such experiments led the authors to try the effect of injections of the non-poisonous part of egg-white on animals. They found that the injection of non-poisonous portion of egg-white sensitizes the animal to the poisonous portion, as well as to the whole egg-white. It does not sensitize the animal to the non-poisonous part. This may be given in successive and increasing doses without producing untoward symptoms. By precipitation of an aqueous solution of the non-poisonous portion with absolute alcohol, two products are obtained which, injected separately, did not sensitize the animal; if they are injected together, however, sensitization takes place. The symptoms produced in sensitized animals by injection of the toxin portion are peritoneal irritation, partial paralysis, clonic convulsions and death. Guinea pigs sensitized require unusual amounts to end fatally. The following explanation is proposed: the body seeks to protect itself from foreign substances. When egg-white or its non-poisonous portion is injected, the body elaborates a new protecting substance in the form of a specific enzyme, capable of splitting this one proteid. To the first dose reaction is slow, the proteid is slowly split up and toxic symptoms are not produced. In the interim, a large amount of this enzyme is formed and stored as zymogen in body cells. On the second injection a large amount of this zymogen is liberated at once, the egg-white is very rapidly split up into poisonous products which are so quickly absorbed that grave symptoms of poisoning are produced. It is probable that this phenomenon is similar to that which occurs when animals are sensitized with the non-poisonous portions of the typhoid or colon bacillus and later inoculated with the living organism.

A REVIEW OF THE EXPERIMENTAL BASIS OF THE OPSONIC PHENOMENON.

Dr. Eugene L. Opie, New York, gave a short review of the development of the opsonic phenomenon. Metchnikoff, twenty-five years ago, had observed that avirulent anthrax organisms were more actively taken up by the phagocytes than the virulent ones. He interpreted this observation as an education of the phagocytes. Wright and Douglas, from test-tube experiments, found that Metchnikoff had underestimated the serum, that in the absence of blood serum phagocytosis was very slight or absent. They found that this applied to many, possibly all, bacteria, namely, that the normal blood serum so modifies bacteria that they are really ingested by phagocytes. The author had found that saprophytic organisms require opsonins to fit them for phagocytic ingestion. Marchand had further found that bacteria of high virulence are but little subject to phagocytosis and that because opsonins fail to activate. Denys and Le Clef, twelve years ago, found that the serum from rabbits' highly immunized streptococci possessed to a high degree the power to promote phagocytosis. Independently Wright and Douglas found the same, and further, that this increased phagocytosis was due to increased opsonic power of the blood serum. They found on inoculation a negative followed by a positive phase in opsonic power. They considered that low opsonic power probably precedes injection and observed that the fluid of the local lesion had lowered opsonic power, that opsonins are specific. The author had found that the fluid from the peritoneal cavity of an animal dead of infection with staphylococcus aureus had no power to opsonify staphylococcus aureus. He had found, further, that in fluid brought out by turpentine application, there was a loss of opsonic power as the fluid changed from serous to purulent and concluded that presence or absence of opsonic power is an inaccurate measure of the grade of infection. The opsonic power of normal blood was subject to such variation that the estimation of opsonic index was inaccurate.

THE OPSONINS IN TUBERCULOSIS.

Dr. E. R. Baldwin, Saranac Lake, reviewed his work on opsonins in tuberculosis. In early experiments he found that serum from hairs immunized to tubercle bacilli possessed high agglutinative, but low opsonic, power. Results were unreliable, due to clumping of organisms. He found that tubercle bacilli treated with serum of high opsonic power show greater virulence, more rapid spreading, when inoculated into animals (apparent enhancement of virulence). He offered the explanation that the phagocytes became overladen with the sensitized but still living bacteria, and after wandering from some distance from the point of inoculation break down; the bacteria set free start new foci. In summarizing his results with the technique of the opsonic test he concluded that he, at least, had been unable to obtain accurate enough results to use for diagnostic purposes or as a control to inoculations.

THE OPSONIC INDEX IN CERTAIN ACUTE INFECTIOUS DISEASES.

Dr. Ludwig Hektoen, Chicago: Dr. Herrick read this paper. In pneumonia the opsonic index was usually low during the course of the disease, rising after the crisis. Charts were exhibited indicating the variations in opsonic index during the course of scarlet fever. Individual normal variations have been found to be very small — .9 to .11. In nearly all cases of scarlet fever the index to streptococcus was below normal, rising above normal as recovery starts in and remaining about normal during convalescence. Complications were accompanied by depressions in streptococco-opsonic index. These results indicated that the streptococcus is present from the start in scarlet fever. Cases of scarlet fever were now being treated with streptococcus vaccines. In erysipelas, the opsonic index, low during the height, rises as the temperature falls. In diphtheria, antitoxin does not influence the opsonic index. The author suggested that injections of dead bacteria might help in promoting disappearance of organisms in the throat. In acute scarlatinal otitis media suppurativa, pseudo-diphtheria bacillus had been found as the predominating organism. The opsonic index toward this organism was low during height of disease, rising as discharge lessened. In typhoid and paratyphoid infections, opsonic index was low during the height of fever and during relapses, rising during convalescence. The author concludes that the opsonic index is of importance as a diagnostic and prognostic sign.

A SUMMARY OF THE STUDIES ON OPSONINS CARRIED OUT AT THE ROCKEFELLER INSTITUTE.

Dr. V. H. Schroher, New York: Dr. E. L. Opie read this paper. The studies were concerned chiefly with the opsonic index in erysipelas and with the treatment of erysipelas by injections of killed streptococci. Preliminary tests to determine normal variations and accuracy of method showed variations between .5 and 1.7. Composite charts of results were shown. In erysipelas individual variations were great and often corresponded little with the clinical course. Sometimes the index was high when lesions were extending. In general, the index was low at the start, rose for the first three days and then fell. The increase corresponded with the progress of the disease, the fall with its decline. Therapeutically, vaccines prepared from streptococci isolated from wound infections and cases of erysipelas were administered in fifty cases. No definite conclusions could be drawn from the results. In a comparison with two other series of cases treated in the same hospital, but in different years, with antistreptococcic serum and local measures respectively, the duration of cases treated by vaccines equalled that of cases treated with antistreptococcic serum, but in both it was two days shorter than in cases treated locally. Conclusion reached was that from individual cases very little indication may be obtained as to progress of disease through the opsonic index.

A SUMMARY OF WORK ON OPSONINS AT THE JOHNS HOPKINS HOSPITAL.

Drs. L. F. Barker and R. I. Cole, Baltimore: Dr. Cole read this paper. Attempts were made to produce high grades of opsonic power. Rabbits treated intraperitoneally, intravenously and subcutaneously with killed streptococci showed indices very little higher than controls. There was one exception. Dr. Klien obtained a very high index in rabbits treated with typhoid bacilli. Serum of those rabbits diluted 1-1000 possessed opsonic power equal to that of normal serum. The bactericidal power was augmented to the same degree. The relation between bactericidal and opsonic substances had not been determined. Like Simon and others, they found opsonins non-specific. Vaccines were employed in fifteen cases of gonorrheal arthritis and several cases of glandular and joint tuberculosis. It was the impression of the authors that the cases did somewhat better than those treated otherwise, although they advised caution in laying too much emphasis on the results in so small a series of cases. They conclude that as a guide to the administration of vaccines, the opsonic index is subject to too great variations to be relied upon.

A SUMMARY OF THE STUDIES ON OPSONINS CARRIED OUT UNDER THE AUSPICES OF THE COMMISSION FOR THE INVESTIGATION OF RESPIRATORY DISEASES OF THE NEW YORK BOARD OF HEALTH.

Dr. Hermann M. Briggs, Dr. Wm. H. Park and **Dr. Nathaniel B. Potter**: Dr. Park presented the chief results of this work. They consider the opsonic index an approximate and not a real index of opsonins in the blood. They found it impossible to reduce the limits of error as low as .8 to 1.2, as proposed by Wright. They find opsonins specific. After inoculations the negative and positive phases were not constant. As a test of vaccine treatment the opsonic index was of little value, giving often less accurate indications than did clinical symptoms. Charts to illustrate this point were presented. The conclusion was that no new era has been introduced in medicine, but that some good may be hoped for from vaccines.

Dr. Potter gave the results of his experience with opsonins. He found wide normal variations in the index of serum toward tubercle bacilli and staphylococci. Several cases of acne had been treated by staphylococcus injections, but without definite results. Two cases were reported: One of otitis media, in which streptococcic vaccines were of no benefit; the second a case of abscess, from which a streptococcus and a bacillus were obtained. The patient developed a septicemia with an index of .73. Vaccination with the streptococcus obtained from the patient with otitis media were followed, after the second injection, by a virtual crisis. He predicted a promising future for the use of vaccines.

Dr. North, New York, reported the results of simultaneous estimations in ten different laboratories in various parts of the country. The purpose was to test the accuracy of the method. Serum was drawn in New York on Monday morning, sent to the various laboratories, so that all estimations might be made on Tuesday afternoon. The organisms used were staphylococci and tubercle bacilli. The patients whose serum was used were normal patients and patients with staphylococcus and tubercle bacillus infections. The average number of bacteria per leucocyte in 100 leucocytes was estimated. The results from the various laboratories were shown on a series of charts. Variations were between 40% and 200%.

Dr. T. M. Rotch, Boston, showed charts representing the effects of lumbar puncture and antitoxin injections upon the opsonic index. In cases treated by vaccines he had apparently found benefit.

Dr. L. F. Barker, Baltimore, said that opsonins had suffered from over-exploitation at the beginning. Tuberculin had a similar career, soon fell into desuetude and is now coming back. Vaccine therapy should not be coupled with opsonic technique. One of the most important results has been the transference of immunity problems from the laboratory to the patient.

Dr. Ross, of England, who has been a co-worker with Dr. Wright for two years, spoke enthusiastically in favor of the opsonic theory and the opsonic technique. He called attention to the difficulty of mastering the details of the technique, suggesting that it would take time for workers in this country to be sure of their results. It had been certainly demonstrated that the opsonic power is low in disease and rises with cure; that a negative phase occurs with untoward symptoms. This has been very clearly shown, *e. g.*, in cases of tuberculous cystitis. After two years of unceasing toil, the speaker has reduced the error to 10%. Under vaccines he had seen the cure of tuberculous dermatitis, adenitis, cystitis, iritis and empyema, furunculosis, sloughing abdominal wounds, and with cure, an increase in opsonic power. He pinned his faith to vaccine therapy and the opsonic theory.

Dr. Webb, of England, who had been a co-worker with Dr. Wright for one year, expressed himself as fully in accord with Dr. Ross.

Dr. Opie regarded the discovery of Dr. Wright as the introduction of a new era in the study of phagocytosis, since it showed the necessity of the serum for phagocytosis.

Dr. Park considered that vaccines have made acne curable, mentioning two cases which had resisted treatment, but recovered under vaccines.

Dr. Potter said there was promise of good results from vaccine therapy, and referred to the experience of Dr. Trudeau with tuberculin.

Dr. North believed that at present, for American laboratories at least, estimation of opsonic indices is subject to too great possibilities of error to be trustworthy, inasmuch as the average variation in ten laboratories was 50%.

Third Day, Thursday, May 9.

ON THE PATHOLOGICAL ANATOMY OF LYMPHOSARCOMA.

Dr. W. G. MacCallum, Baltimore: The present classification of Hodgkin's disease, lymphosarcoma, round-celled sarcoma, leukemia, chloroma, myeloma, was unsatisfactory. Through ignorance of etiology it was based on mode of growth, histological picture and blood picture. Sternberg's was the best recent classification. A study of a series of cases of lymphosarcoma showed a fairly definite histological picture, such as had been described by Kundrat and others. This, together with the mode of origin, distribution and extension, and with examination of the blood, made it possible to arrive at a definite diagnosis of the condition. Specimens were passed about showing types of lesions, the mode of distribution; specimens of two recent cases involving the lungs were exhibited. The question as to whether lymphosarcoma is tumor or inflammation must be left open for the present.

Dr. Christian, Boston, in discussion, held that the differentiation of the conditions under discussion was not on a sufficient basis.

Dr. Whartin, from the study of 30 cases, concluded that there were many border-line cases.

Dr. Wright held the same view. A recent case at the Massachusetts General Hospital, which was histologically Hodgkin's disease, was clinically a mediastinal tumor.

Dr. MacCallum replied that he had never seen a case which was histologically Hodgkin's disease, without the typical distribution of Hodgkin's.

CHYLOUS ASCITES AND CHYLOUS PLEURISY IN A CASE OF LYMPHOCYTOMA INVOLVING THE THORACIC DUCT.

Dr. George Dock, Ann Arbor, reported a case which showed clinically one large and several small tumor masses in the abdomen, chylous exudate in peritoneal and pleural cavities, moderate enlargement of superficial lymphatic glands and increase of lymphocytes in the blood. At autopsy the diagnosis was made of lymphocytoma. A tumor of the mesentery involved the thoracic duct, which was 4–8 cm. in diameter, without lumen. There were sarcomatous growths in lungs, liver and kidneys.

Dr. MacCallum, of Baltimore, in discussion, referred to a case which resembled lymphosarcoma, with lymphatic leukemic changes in the blood; a second case similar to Dr. Dock's of lymphatic leukemia, with enlarged glands, which involved the thoracic duct; a third case, in which blood showed for years 90% of lymphocytes, enormous swellings of glands, with autopsy diagnosis of lymphosarcoma.

Dr. Warthin, Ann Arbor, mentioned 4 cases of lymphosarcoma, which became leukemia. Of 37 cases of Hodgkin's which he had studied, some were of large-celled type, others of type resembling lymphosarcoma. He considered them all to be overgrowths of parent cells of leucocytes, "leukoplastomata."

A DIAGNOSTIC SIGNIFICANCE OF THE IODINE REACTION OF THE LEUCOCYTES.

Dr. Irving P. Lyon, Chicago (read by title).

MULTIPLE MYELOMA: THE HISTOLOGICAL COMPARISON OF SIX CASES.

Dr. Henry A. Christian, Boston, had studied six cases of multiple myeloma, with a view to determining their relation to one another and to a possible ancestral type of cell in the bone marrow. He showed on the screen photographs illustrating his paper. The cells of myelomata had been supposed by different observers to come from premyelocytes, myelocytes, lymphocytes, plasma cells or erythroblasts. All agree that they originate in the bone marrow. The study of the six cases showed tumors characterized by similar high degree of cellularity and by cells of only minor variations. The nature of this cell type had not been determined. It much resembles the plasma cell, but presents certain differences. There was no evidence of erythroblastic origin.

THE HISTOLOGICAL LESIONS IN EXPERIMENTAL GLANDERS. FROM THE LABORATORIES OF PATHOLOGY AND BACTERIOLOGY, McGILL UNIVERSITY.

Dr. C. W. Duval, Montreal, reported the results of histological study of experimentally produced glanders. He showed lantern slides to illustrate the characteristic lesions. Histological changes were found to fall into three classes, — exudative, proliferative, degenerative. They varied directly with the virulence of the organism. Slides were shown to illustrate fibrin thrombi in the spleen; chronic proliferative changes in the adrenal, with necrosis, surrounded by epithelial cells; focal necrosis in the liver; tubercles in the lungs; giant cells and proliferative changes in tunica vaginalis of guinea pigs; myocardium of rabbits with focal collections of lymphoid and plasma cells; giant cells in endothelium of blood and lymph spaces; tubercles in spleen; degenerative changes in inner zone of media caused by killed bacteria.

Dr. MacCallum, Baltimore, referred to a case of experimental glanders in man accidentally produced. In this case there was a caseous pneumonia, from which pure cultures of the organism were recovered. In places there was complete necrosis.

THE ANTAGONISTIC ACTION OF ALCOHOL AND CARBOLIC ACID.

Dr. A. E. Taylor, Berkeley, Cal.: Alcohol was commonly considered as antagonistic to the action of carbolic acid. The following method of testing the matter was employed. A yeast tolerant to alcohol in concentration of nearly 15% was selected. This was placed in a standard solution of sugar; to this was added carbolic acid and alcohol in varying strengths. The carbonic acid evolved was measured as an index of the activity of the yeast, and it was found that the alcohol exerted no direct antagonistic action toward the antiseptic action of the carbolic acid. The author considers that alcohol acts merely as a solvent to carbolic acid and not as an antagonist.

Dr. Sollman, Cleveland, had observed that in experimental application of carbolic acid to the skin, followed by alcohol, the alcohol had apparently only a solvent action. In the stomach alcohol promoted absorption, though probably entirely apart from its action upon the carbolic acid.

DEMONSTRATION OF LARGE PHAGOCYTIC CELLS FROM THE CIRCULATING BLOOD.

Dr. H. A. Christian, for Dr. F. Van Nuys, Boston, passed about photographs of some large phagocytic cells found in the blood in a case of aortic insufficiency, chronic bronchitis, with indefinite tumor symptoms. There was no autopsy. Great variations in the blood count.

Dr. Cabot, of Boston, referred to a case of aortic regurgitation, no tumor, no autopsy; leucocyte count high — 200,000 per cmm., from the ear, while count from the finger was only 10,000. He found that great variations in the count were due to clumping of leucocytes.

UNCLASSIFIED FEVERS.

Dr. James Tyson, Philadelphia, passed about charts and histories of a number of cases which were difficult to classify. They did not correspond with the typical picture of typhoid fever, influenza, malarial fever or other fever due to discoverable causes. He suggested that the Association might well take up the study of such cases in order to find if possible a proper classification.

A CONTRIBUTION TO THE STUDY OF LONG-CONTINUED FEVERS.

Dr. H. C. Moffitt, San Francisco, reported a case of long-continued fever and discussed the differential diagnosis. The patient was a woman over forty-seven; lues thirteen years before; cough every winter for ten years; appendix operation eight years before; attacks of abdominal pain suggesting cholelithiasis. Examination showed: old process at apices; pupils irregular, slow reaction to light; heart dilated, systolic murmur; no glands; spleen never palpated; abdomen distended, no tenderness; no pigmentation. Possibilities in diagnosis were: syphilis of liver, abscess of liver, lymphosarcoma, typhoid, malignant endocarditis, hepatic fever, pyelitis, tuberculosis. Treatment with mercury and iodides, later arsenic and x-ray, were unavailing and death occurred. Autopsy diagnosis was lymphosarcoma of one retroperitoneal gland, near right kidney, multiple nodules in liver.

Dr. Cabot, Boston, in discussion, said that in the Massachusetts General Hospital, over 90% of all fevers of more than two weeks' duration were typhoid, sepsis or tuberculosis.

Dr. Stengel, Philadelphia, mentioned a case of long-continued fever, with a mass in the abdomen found at operation to be tuberculous retroperitoneal glands. Arteriosclerosis might also be a cause of long-continued fever.

Dr. S. W. Mitchell, Philadelphia, suggested that long-continued fever might be due to a disturbed heat regulatory mechanism; there might be a subnormal temperature following attacks of lumbago.

Dr. George Dock, Ann Arbor, reported a case of long-continued fever which eventually proved to be a case of syphilis.

Dr. Wm. Thayer, Baltimore, referred to two cases of lymphosarcoma involving the liver, and to the case of a trained nurse who had sweats, high fever, jaundice and enlarged liver, which proved to be one of carcinoma of the liver.

Dr. R. H. Fitz, Boston, spoke of a case not yet diagnosed, with enormously enlarged spleen, fluid in abdominal cavity, induration of liver, no increased leucocytosis. Professor Mueller considered it one of chronic tuberculosis with possibility of Banti's disease.

FURTHER STUDIES ON THE SPIRILLA OF RELAPSING FEVER.

Dr. F. G. Novy, Ann Arbor: Since the paper delivered at last meeting, showing the existence of two and possibly three distinct types of relapsing fever, several foreign workers had confirmed the specific differences between Spirillum Obermeieri and Spirillum Duttoni. The type of relapsing fever which occurs in India is probably equally distinct. It does not react to the serum produced by the previously studied types. Cultivation in vitro had not yet been successful. Cultivation had been accomplished, however, by filling collodion sacs with blood, inoculating, and placing in peritoneal cavity of the rat. No growth obtained when capsules were placed in peritoneal cavity of rabbits. After 70 successive passages through rats, attempts at growth in vitro failed.

ON THE MEASUREMENT OF FUNCTIONAL HEART POWER.

Dr. Richard C. Cabot, Boston: Methods ordinarily employed for examinations for the heart — auscultation, percussion, radiography, study of pulse and blood pressure — tell but little as to the amount of power possessed by the heart. It was important to measure the strength of the heart muscle early in both organic and functional diseases. Many attempts had been made to accomplish this. Chapiro and others had studied the difference in rate between lying and standing; after a study of 100 cases they found that this difference was diminished only in pronounced cases. More recently other methods have been tried. Of these the author had had personal experience with the following: Graupner's method, Herz's method and Levy's method. He had studied a number of cases with Graupner's method and obtained results which were promising. He showed charts and blood pressure during the tests. In cases of definite advanced disease of the heart the blood pressure curve was modified, the rise either much delayed or absent. Similar curves were obtained in cases of phthisis and arteriosclerosis, in which the usual methods would have justified the note, "heart normal."

OBSERVATIONS UPON CERTAIN REFLEXES, LOWERING BLOOD PRESSURE, WHICH ARISE FROM STIMULATION OF THE INFLAMED PLEURA.

Drs. Jos. A. Capps and D. D. Lewis, Chicago: Dr. Capps read this paper. Experiments were undertaken to explain the untoward effects of intrathoracic operations — faintness, dizziness, low blood pressure, syncopy, collapse, intermittent pulse, even death — with negative autopsy findings. It was found that in healthy dogs irritation of the pleura by mechanical, thermal, chemical and electrical stimuli caused very little change in blood pressure. In dogs, however, in which an artificial pleurisy had been set up by turpentine injection, marked reflex changes were produced with blood pressure by irritation of the inflamed pleura. The changes were due to combined vagal and vasomotor action. They were checked by cutting the vagi, by administration of atropin, and lessened by adrenalin.

CLINICAL AND PATHOLOGICAL STUDIES OF ARTERIOSCLEROSIS.

Drs. W. S. Thayer and M. Fabyan, Baltimore: Dr. Thayer read this paper, which consisted of a clinical and pathological study of the radial arteries in 40 cases, with a consideration of the distribution of arteriosclerotic changes. In comparing clinical with histological findings it appeared that many radial arteries which were definitely palpable were histologically normal. Photographs illustrating the findings were passed about.

CEREBRAL TYPES OF ARTERIOSCLEROSIS.

Dr. Albert Stengel, Philadelphia, spoke of types of cerebral manifestations of arteriosclerosis. Convulsive attacks, sometimes followed by coma, had been observed, simulating closely uremia, but with negative urinary findings. A case was referred to of a broken-down old man with loss of compensation, with very atheromatous arteries, history of two previous attacks of uremic convulsions. Patient was in coma. Following cardiac and general stimulation recovered from coma; later relapse and died, without autopsy. Albumin was never found in his urine.

FURTHER STUDIES ON EXPERIMENTAL ARTERIOSCLEROSIS.

Drs. I. Adler and O. Hensel, New York: Dr. Adler, who read this paper, reported the results of experimental and statistical studies of arteriosclerosis in rabbits. Previous experiments had seemed to show that as a result of injections of nicotine into rabbits arteriosclerotic changes are brought about identical with those of man. In the present series a much larger number of observations were made, 90 rabbits being experimented upon, 52 of which received injections of nicotine; of these only 9 showed signs of arteriosclerosis. Rabbits treated with barium chloride and with lead fail to develop arteriosclerosis. The authors conclude that arteriosclerotic changes occur spontaneously in rabbits not experimented upon, probably as a result of disease or senility; that the injections may possibly serve to augment an existing or bring out a latent condition; that there is no evidence that the substances injected ever cause of themselves arteriosclerosis.

DISCUSSION OF ARTERIOSCLEROSIS.

Dr. Jacobi, New York, said there is a great variation in the location of arteriosclerotic changes. He laid much emphasis on sudden change of temperament as an early sign of cerebral arteriosclerosis.

Dr. Weaver reported two cases, both men over seventy, one dead, one living, who had convulsions simulating uremia but with no albumin or casts in the urine.

Dr. Sailer, Philadelphia, mentioned three patients who had uremic convulsions with negative urine who improved under mercury.

Dr. W. S. Thayer, Baltimore, said that in most cases in which there was thickening of the radials there was also similar change in the aorta. He emphasized the fact that the regressive changes in the radials are accompanied by calcification — that they occur principally in the media; whereas changes in the aorta take place mainly in the intima.

TYPHOID AORTITIS.

Dr. A. S. Warthin, Ann Arbor, said the early lesions of typhoid endo-aortitis had been little studied. He had studied two cases in which lesions in the aorta were well marked, and lantern slides were shown illustrating the lesions found. The author considered the lesion a forerunner of arteriosclerosis and emphasized the fact that it is primary in the intima.

THE MODE OF CLOSURE OF THE DUCTUS ARTERIOSIS AND ITS BEARING UPON THOMA'S THEORY OF ARTERIOSCLEROSIS. FROM THE LABORATORIES OF PATHOLOGY AND BACTERIOLOGY, MCGILL UNIVERSITY.

Dr. Oscar Klotz, Montreal. (Read by title.)

MOTOR INSUFFICIENCY DUE TO PERIGASTRIC AND DUODENAL ADHESIONS.

Dr. Frank Billings, Chicago, said perigastric adhesions occur mainly with diseased gall bladder, surgical operations and gastric ulcer. Symptoms were those referable to the underlying cause and those primarily due to adhesions. Of the latter were depression after eating, abnormal amount of gas in the stomach. Examination showed diminished motility of stomach. In treatment it was important to keep in mind the patient, especially if neurotic. One man who had undergone 15 operations for adhesions recovered completely when treated for his nervous condition.

Dr. Musser, Philadelphia, in discussion, reported a case of typhoid fever with cholecystitis; on subsidence of temperature vomiting occurred; adhesions were found involving duodenum and gall bladder.

GASTRIC DISTURBANCES ASSOCIATED WITH THE PRESENCE OF AN EXCESS OF ACID.

Dr. Jos. Sailer, Philadelphia, reviewed the usual methods of determining total quantity of hydrochloric acid and spoke of the method proposed by Sahli, of passing flour and butter into the stomach and estimating amount by percentage of fat in the fluid recovered. His own studies with the method of using dilute ferrous sulphate showed the limit of error to be 50%. He summarized 715 cases, giving the results of stomach analyses.

ON THE LENHARTZ TREATMENT OF GASTRIC ULCER AND HYPERCHLORHYDRIA.

Dr. S. W. Lambert, New York, spoke of the practical objections to the old method of treating these conditions, principally depletion of the patient. The Lenhartz treatment consisted in frequent small meals of easily digested food in gradually increasing amounts. Eight cases were reported with recovery in all but one. The writer found that this mode of treatment cured more rapidly than former methods and without depletion of strength.

Dr. Jacobi, New York, reported good results from two-hourly feedings; he used calcine magnesia combined with alkalies seven minutes before meals to diminish the acidity.

THE EFFECTS OF NAUHEIM BATHS ON BLOOD PRESSURE.

Dr. P. K. Brown, San Francisco: Dr. Brown's studies show that blood pressure is raised by the Nauheim bath at temperature of 94° to 98°. This rise seemed dependent upon the presence of calcium chloride. There were exceptions; blood pressure was not raised in exophthalmic goiter, pericarditis with effusion, paroxysmal tachycardia, and marked valvular disease. It was especially valuable in chronic valvular disease, and in chronic and acute poisonings.

Third Day, Thursday, May 9.

Joint Session with the American Physiological Association.

ACIDOSIS.

Dr. E. P. Joslin, spoke for the physicians, reviewing the development of the theory of acidosis. He spoke of the importance of ammonia increased in the urine in acidosis. The important acid eliminated is B-oxybutyric, "the great alkali robber" (Magnus Levy), which has reached 180 gm. in twenty-four hours. He referred to the studies on the blood, its reaction and its CO. 2 content. He discussed the cause of symptoms in diabetes and other conditions, taking issue with von Noorden, who holds diabetic coma due to the acid. He considered the treatment as hopeful. Important in treatment was the ingestion of a few grams of sugar, of more avail, the author thought, than much alkali.

Dr. Otto Folin, for the physiologists, presented a critical review from a biochemical standpoint, of the more important concepts in the theory of acidosis. He spoke of the development of knowledge concerning the relation between acetone, B-oxybutyric acid, and aceto-acetic acid. He referred to the recent work showing that fatty acids are the chief source of this group of substances; also that in the splitting of fatty acids the break occurs at the third carbon atom — the so-called B-oxidation theory. A chart was shown illustrating this theory. He referred to the alkali in treatment of acidosis and to the difficulty of explaining its action.

Dr. Wendel, New Haven, spoke of the importance of the study of alkali loss and retention in diabetes and in other conditions. He referred to the work of Thayer and Hazen on calcium metabolism. He suggested that the ammonia production might be increased, giving rise to undue production of acid.

Dr. L. F. Barker, Baltimore, said that fatty acids are among the products of proteids; hence proteids may give rise to acetone bodies. He spoke of the remarkable adaptability of the body, which seems capable of using intermediary products of digestion for neutralizing excess of ammonia. He suggested that disturbance in specific oxidases might account for inability to break down B-oxybutyric acid. He mentioned Mueller's use of phenolphthaleine internally to indicate at once the point of alkalinity of the urine.

Dr. Thayer, of Baltimore, reported a case of acid intoxication with diacetic acid in the urine, in a child, following operation, which improved under sodium bicarbonate.

Dr. Taylor, Berkeley, Cal., spoke of the discrepancy between symptoms and amount of acidosis. In non-diabetic conditions most pronounced symptoms occur with small amount of acetone bodies in the urine. In diabetes symptoms of acid intoxication might be absent for months with large amounts of these bodies present. This suggested that other acids than those known may cause the symptoms.

Dr. Folin, in concluding, admitted that other acids than the ones mentioned might cause symptoms. He took issue with the idea of derangement of ferment action in general, as too indefinite at present. He considered it an open question whether the acids are produced to neutralize the alkali or vice versa.

Dr. Josslin said, in conclusion, that coma might ensue if the diet were suddenly made carbohydrate free. Recent work had shown that the treatment of coma must be the same as formerly — administration of proteid and fat, no carbohydrates. He agreed with Dr. Taylor in the distinction between forms of acidosis.

Book Reviews.

Der Diabetes Melitus. By **Dr. B. Naunyn**, formerly Professor in Strassburg University. Second edition. Vienna: Alfred Hölde.

Professor Naunyn has made us all his debtors by supplementing his original monograph upon diabetes mellitus with a new edition. Like its predecessor, this volume holds its place as the foremost on the subject. This is not strange, for it is from the Strassburg school that so many investigators along this line have derived their inspiration. Although the book remains of the same size, the enormous amount of recent literature has been most painstakingly and critically reviewed, and thus replaces those portions of the work which, on account of their original character, were detailed at length in the first edition.

During the eight years that have elapsed since this appeared the doctrine of acidosis has found general acceptance, and the source of B. oxybutyric acid from the members of the fatty acid series with an even number of carbon atoms seems probable. Levulosuria, pentosuria, suprarenal and submaxillary glycosurias, the new views which have arisen concerning the pancreas on account of the part played by the islands of Langerhans, and the etiological importance of the various albumins, are subjects which all receive careful discussion.

The section on treatment has been enlarged, and convincing proof afforded of the desirability of the most careful attention to diet. Indeed, one must read Naunyn's book to catch the true spirit of the modern treatment of diabetes mellitus. The style is clear, terse and fresh from beginning to end.

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A MEDICAL MEETING IN TURKEY.

During the last week of this month a medical meeting will take place in Aintab, Turkey, which is the first ever held in that country. This meeting is another evidence of the progress of practical Christianity, since it has been planned by the American Board of Foreign Missions, in which is represented the only modern medical service of that country.

The need of such a meeting as this is likely to be is not to be questioned. It has long been a well-known fact that the Oriental is slow in adopting modern methods and that the loss of human life resulting from ignorance has been and still is appalling. It is, therefore, significant that the attempt is to be made in systematic fashion to spread the gospel of modern medicine in this somewhat benighted country. Delegates to the convention will naturally be in great part those who are working throughout the country as missionary physicians. A prominent Turkish physician, Dr. Altoonian, of Aleppo, is, however, expected to be present. Other delegates are expected from Van and Constantinople, separated by a distance of about eight hundred miles. Among these will be two Germans.

In matters of surgery the native profession in Turkey is peculiarly ignorant. The methods still adopted are both crude and cruel, and are often provocative of disease rather than curative. The native doctors will be welcome at the public sessions of the meeting, which are designed to give instruction, through illustrations and by other means, in matters relating to bacteriology and pathology. The general topics of the meetings, however, will cover a wide field, as, for example, cholera, typhus, pneumonia and malaria; the need of native trained nurses; cataract and its operations; x-ray work; scope of medical missions in promoting municipal sanitation and personal hygiene; hospital buildings and their plans. During the morning there will be clinics, operations and a demonstration of laboratory methods, and a certain time will also be given for recreation.

There can be no doubt that such a meeting will serve as an admirable object lesson to the native physicians who may be in attendance. It is equally evident that through these native physicians the practice of the country must ultimately be conducted. The few outsiders who may be there in the capacity of medical missionaries, or in other capacities, can do much by way of example and precept, but comparatively little by actual work. The campaign there as elsewhere must primarily be one of education. This, no doubt, will be a slow and difficult process, but it is evidently the only one, if the native population throughout the country is ultimately to be reached by modern medical methods. Such a meeting as the one to which we allude, and to which reference is made by Miss Frances J. Dyer, in the July number of the *Dietetic and Hygiene Gazette,* cannot fail materially to further the cause.

ACCIDENTS OF JULY FOURTH.

In spite of the somewhat determined agitation against the careless use of explosives on the Fourth of July and the innumerable warnings, both from the professional and lay press, against the dangers especially associated with certain types of noise-producers, comparatively little progress apparently has been made in reducing the number of deaths and accidents. In Boston during the period from six o'clock on July 3 to midnight on July 4, fewer accidents were reported at the large hospitals than during the same period in 1906. Thirty-four were treated at the City Hospital this year, as contrasted with 42 last; 46 at the Relief Station, as contrasted with 51, and only 18 at the Massachusetts General Hospital, as against 40 in 1906. This showing is certainly gratifying and possibly bears some relation to the fact that only 150 arrests were made this year as compared with 383 last, for violations of the city ordinance in relation to the discharging of firearms and fire-crackers and the blowing of horns.

The compiled reports, however, tabulated by the Chicago *Tribune,* do not give the year throughout the country so good a record. At 3 A.M., the second day after the Fourth, the *Tribune* had recorded 59 deaths and 3,807 injuries, a death-rate which was equalled, but not passed, in 1900 and 1905. The list of injuries is the longest as yet tabulated. Pittsburg apparently leads cities in the United States in the number of killed and injured, with New York second on the list. Up to 10 o'clock on July 5, fifteen violent deaths had been reported in the former city. As usual most of the casualties were due to carelessness in handling powerful explosives. There seems to be some slight improvement in the popular attitude toward the toy pistol. Figures compiled the day after the Fourth showed only 205 victims as against 304 last year. The results of injuries by toy pistols cannot, of course, be immediately known. It is altogether probable, however, that the protest against this form of enjoyment in the hands of the young has borne fruit and that the number of fatalities from tetanus will be smaller than heretofore. We should certainly have decidedly more encouraging figures in the coming years.

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MEDICAL NOTES.

Herter Lectures.— According to the *Journal of the American Medical Association*, the next annual course of lectures on the foundation established by Dr. and Mrs. C. A. Herter will be delivered about the end of April, 1908, by Edward A. Schaefer, LL.D., ScD., F.R.S., professor of physiology in the University of Edinburgh, Scotland.

The Rockefeller Institute for Medical Research. — The Rockefeller Institute for Medical Research has adopted the following series of titles for its staff: Member, Associate Member, Associate, Assistant, Fellow and Scholar of the Rockefeller Institute, and has made the following list of appointments:

Simon Flexner, Member of the Institute and Director of the Laboratories (pathology); S. J. Meltzer, Member of the Institute (physiology and pharmacology); E. L. Opie, Member of the Institute (pathology); P. A. Levene, Member of the Institute (biological chemistry); Hideyo Noguchi, Assistant of the Institute (pathology); John Auer, Assistant of the Institute (physiology); Alexis Carrel, Assistant of the Institute (experimental surgery); J. W. Jobling, Assistant of the Institute (pathology); Nellie E. Goldthwaite, Assistant of the Institute (chemistry); C. M. A. Stine, Fellow of the Institute (biological chemistry); Donald Van Slyke, Fellow of the Institute (biological chemistry); Martha Wollstein, Fellow of the Institute (pathology); Maud L. Menten, Fellow of the Institute (pathology); Mabel P. Fitzgerald, Fellow of the Institute (bacteriology); Don R. Joseph, Fellow of the Institute (physiology); Benjamin T. Terry, Fellow of the Institute (protozoölogy); Bertha I. Barker, Scholar of the Institute (pathology); Thomas W. Clarke, Fellow of the Institute (pathology).

Grants to aid special researches have been made to the following: Robert M. Brown, New York; C. H. Bunting, Charlottesville, Va.; Katherine Collins, New York; Cyrus W. Field, New York; N. B. Foster, New York; Joel E. Goldthwait, Boston; Holmes C. Jackson, Albany; Arthur I. Kendall, New York; Waldemar Koch, Chicago; W. G. MacCallum, Baltimore; Wilfred H. Manwaring, Bloomington, Ind.; J. W. D. Maury, New York; F. G. Novy, Ann Arbor; W. Ophüls, San Francisco; Richard M. Pearce, Albany; H. T. Ricketts, Chicago; Hermann W. Schulte, New York; Charles E. Simon, Baltimore; Aldred S. Warthin, Ann Arbor; Francis C. Wood, New York.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 10, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 48, scarlatina 28, typhoid fever 12, measles 53, tuberculosis 38, smallpox 0.

The death-rate of the reported deaths for the week ending July 10, 1907, was 14.97.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 6, 1907, was 160, against 168 the corresponding week of last year, showing a decrease of 8 deaths and making the death-rate for the week 13.69. Of this number 90 were males and 70 were females; 158 were white and 2 colored; 94 were born in the United States, 61 in foreign countries and 5 unknown; 31 were of American parentage, 112 of foreign parentage and 17 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 53 cases and 3 deaths; scarlatina, 25 cases and 3 deaths; typhoid fever, 8 cases and 3 deaths; measles, 61 cases and 3 deaths; tuberculosis, 43 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 9, whooping cough 0, heart disease 21, bronchitis 3 and marasmus 1. There were 13 deaths from violent causes. The number of children who died under one year was 31; the number under five years, 43. The number of persons who died over sixty years of age was 43. The deaths in public institutions were 65.

There was 1 case and 1 death reported from cerebrospinal meningitis during the week.

A Centenarian. — Michael Maloney died in Monson, Mass., July 2, at the reputed age of one hundred and two. He was a successful farmer in the town of Brimfield for forty years.

Experts for the Examination of Mrs. Mary Baker G. Eddy. — Judge Edgar Aldrich, of the Federal Circuit Court, has been appointed by Judge Chamberlain, of Concord, N. H., to take evidence as to Mrs. Eddy's competency to care for her property interests. Judge Aldrich has stipulated that in this task he have expert aid. Drs. G. F. Jelly, of Boston, and G. Alder Blumer, of Providence, R. I., were appointed to serve with him. Since this announcement was made, it has been stated that Dr. Blumer has declined to serve, because of absence from the country during the summer months, and that Dr. Jelly has accepted.

A New Danger from Arsenate of Lead. — It is reported that many cattle have died in Essex and Middlesex counties in Massachusetts, where arsenate of lead has been used in the attempt to destroy gypsy and brown-tail moths. The theory is that the arsenate of lead sprayed over the foliage and on the grass is a source of poison to the cattle who may be browsing. Naturally, precautions are taken to avoid this contingency, but the fact that certain cases have occurred should necessitate still greater care in the future. The possibility of the poison finding its way into vegetables designed for human consumption is a remote contingency, but one which should be borne in mind.

NEW YORK.

Summer Home for Sick Babies. — The summer home for sick babies connected with the Rockefeller Institute was opened for the season on July 1. The old Schermerhorn mansion, on the banks of the East River, which was included in the tract of land purchased for the Institute, has been fitted up for the reception of sixty patients, and infants from all over the city are admitted. Drs. Morden and Van Ingen are the attending physicians, and Dr. Linsly R. Williams is consulting physician. While the administration of the home is under the auspices of the New York Association for Improving the Condition of the Poor, all the expenses of maintenance are paid by Mr. Rockefeller.

Injuries by Firearms. — Despite the warnings of Police Commissioner Bingham against the illegal and indiscriminate use of guns and revolvers in the observation of Independence Day, and despite a large number of arrests for breach of the law, there were five persons killed, and the police reports show at least 126 injured in the boroughs of Manhattan and the Bronx from this cause. It is to be noted that a large proportion of those arrested for violation of the firearms ordinances were foreigners. Up to midnight on July 4, 367 casualties in all, due to pistols and fireworks of various kinds, were reported from the hospitals and by the police. Every hospital in the city which receives accident cases had its full share of them and the ambulance service was over-worked.

Report of Health Department. — The weekly reports of the Health Department show that during the month of June the mortality in the city represented an annual death-rate of 16.65, as against 17.49 in May and 16.00 in June of last year. Among the diseases in which there was a diminished fatality were the following: the weekly average of deaths from whooping cough decreased from 9 in May to 7.5 in June; the weekly average from cerebrospinal meningitis, from 22.25 to 14.25; from pulmonary tuberculosis, from 184 to 165.25; from acute bronchitis, from 19.75 to 13.75; from pneumonia, from 115.5 to 86.75; from organic heart diseases, from 145 to 141.25; from Bright's disease and acute nephritis, from 115 to 101; and from cirrhosis of the liver, from 21.25 to 16. Among the diseases which showed an augmented mortality were the following: the weekly average of deaths from measles increased from 18.75 to 29.25; from scarlet fever, from 21.25 to 26; from diphtheria and croup, from 34.5 to 38; from cancer, from 57.5 to 64.5; and from apoplexy, congestion and soften- of the brain, from 47.5 to 48.75. The special feature of the statistics of the month is the remarkably low mortality, for the season, from diarrheal diseases. The number of deaths from these was just about the same as in May, while in the last week of the month of June, when a somewhat notable increase is always anticipated, the deaths were considerably fewer than in any of the other weeks. In the week ending June 29, there were only 38 deaths (as against 166 in the corresponding week last year), while the average for the other weeks of the month was 61. During this week there was not a single death from diarrheal disease in the whole Borough of the Bronx, a most unusual circumstance.

Obituary.

RICHARD HENRY DERBY, M.D.

Dr. Richard H. Derby died at Litchfield, Conn., July 4, 1907. He was sixty-three years of age, having been born in Boston, March 12, 1844. His father was Elias Hasket Derby, of Boston, and his mother was Heloise Lloyd Strong, of New York. He was descended from good stock on both sides. His Derby forefathers, the well-known family of that name in Salem, Mass., were among the most prominent shipping merchants of their time in this country. During the Revolution they played a patriotic part, helping their struggling country with money, men and ships. One of them carried in his own vessel, the *Quero*, the first news of the Battle of Lexington to England; one of them owned the ship, *Columbia*, whose captain discovered and named the great Oregon River.

Dr. Derby graduated at Harvard College in 1864 and from the Harvard Medical School in 1867. He served the usual term as house surgeon at the Massachusetts General Hospital and then went to Europe to continue his professional studies. He there devoted himself especially to diseases of the eye. On his return home in 1870, he settled in New York and entered upon practice as an oculist. He was an active and very influential member of the staff of the New York Eye and Ear Infirmary and for some years had been the Senior or Executive Surgeon. He was a member of the New York State Charities Aid Association, of the New York Academy of Medicine, of the American Ophthalmological Society, and a trustee of the New York Institution for the Blind. At one time he was much interested in matters connected with quarantine, with the Health Department of the city of New York, and in the condition of tenement houses. He was a vestryman of Trinity Church in New York, which is a large owner of tenement house property, and was always interested in church affairs. For some years past Dr. Derby had been a member of the Advisory Board of the Health Department and in these several capacities had done much to combat the increasing spread of trachoma. He was for many years a member of the Century Club.

In summer he had been devoted to yachting and had cruised the coast many times from Long Island Sound to the British provinces. He was also fond of fishing and of botany and had given much attention to the trees and shrubs and wild flowers on the coast of Maine, especially as found at Islesboro, where of late years he made his summer home. His was a wholesome, helpful, useful life. He made and kept many friends in all classes of society and all walks of life.

Dr. Derby was married, in New York in 1877, to Sarah Coleman Alden, who died in Algeciras, Spain, last March. He leaves three sons, and a daughter who is the wife of Dr. P. A. Tucker, Professor of Chemistry at Columbia College. The oldest son, having the same name, follows his father's profession in New York.

Current Literature.

The Journal of the American Medical Association. June 15, 1907.

1. Savage, G. C. *The Duality of Man.*
2. Campbell, R. E. *Venous Angioma of Skin Showing Beginning Malignancy.*
3. Jack, E. E. *Cataract Extraction.*
4. Weeks, J. E. *The Incision for the Extroction of Cataract and the Iridectomy.*
5. Fox, L. W. *The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber and First Toilet of the Wound.*
6. *Bowditch, V. Y., and Griffin, W. A. *Subsequent Histories of 160 "Arrested Cases" of Tuberculosis Treated at the Sharon Sanatorium, 1891–1906.*
7. *Soper, G. A. *The Work of a Chronic Typhoid Germ Distributor.*
8. Hoelscher, J. *The Medicine and Surgery of Three Gastro-intestinal Cases.*
9. *Brown, P. K. *Remote Effects of Tonsillar Infection.*

6. Bowditch and Griffin briefly summarize the results, so far as they have been traced, of cases discharged from the Sharon Sanatorium as "arrested" in the fifteen years ending with January 1, 1906. Of these 83% are known to be living and well, 3% were doing well when last heard from but have been lost sight of, and 13% have relapsed and died. Of the last 81 of these cases 95% have remained apparently well. The diagnosis in all cases was proved either by the finding of bacilli in the sputa, by the tuberculin test, or by the presence of marked signs in the chest which, combined with the history, made the diagnosis undoubted. These results are published as evidence of what can be accomplished in sanatoria, since these 160 cases occurred in a total of only 327 cases treated. Attention is called also to the educational value of such institutions, and of the dispensaries for the guidance of home treatment. In conclusion, however, it is stated with emphasis that the influence of climate is a factor, the importance of which must not be disregarded.

7. Soper describes a family epidemic of typhoid fever in which after investigating without result the commoner sources of infection, attention was directed toward the previous history of various members of the household. It was found that a new cook had come to the house about three weeks before the disease broke out and had left three weeks after the appearance of the disease. This woman was traced, and on investigation it was found that in the past ten years she had lived with eight families, and that in seven of these typhoid fever had occurred following her arrival. No history of illness could be obtained in her case, but on the strength of the occurrence of these epidemics the New York Board of Health sent her against her will to the Detention Hospital. Her blood was found to give a positive Widal reaction, and bacteriological examination of the fœces showed typhoid bacilli to be present in great numbers.

9. The pathologic conditions that appear as the late results of tonsillar diseases are discussed by Brown, who first remarks that the importance of this source of infection for heart disease has been pretty thoroughly exploited and that he has himself reported in a previous paper some typical cases and reviewed the literature. Since then he has observed recurrent endocarditis, chorea and muscular rheumatism occurring in certain of his old patients, and he considers that continued slight fever in children is probably a common result of tonsillar disease in San Francisco. A rather peculiar complication of pericarditis, pneumonia and lung abscess is reported. Nephritis after tonsillitis without rheumatism is, he thinks, a commoner complication than is generally supposed and has occurred four times in his cases. One of these, complicated by acute mania, is reported, as also one of fatal staphylococcic septicemia and one diagnosed as leukemia occurring in connection with, and presumably as the result of, tonsillar disease. The evidence, he thinks, clinical and experimental, tends to show that more and more connection is being established between the tonsillar cervical route and lung tuberculosis. Brown concludes with the statement: "In the study of portals of entry of disease into the human body, the pharyngeal and especially the faucial tonsils

have an importance not well enough recognized or understood, but increasingly appreciated in the light of each new clinical or experimental study." [F.W. P.]

Medical Record.

June 15, 1907.

1. Stern, H. *Auto-intoxication in its Medico-Legal Aspects.*
2. Booth, J. A. *Some Observations on the Treatment of Graves' Disease.*
3. Porter, W. H. *Indicanuria, Its Etiology and Practical Significance.*
4. Denslow, L. N. *Locomotor Ataxia; a New Theory as to Its Cause.*
5. Lederer, E. J. *The Milk Supply of Vienna.*
6. *Robinson, W. J. *Pilocarpin as an Adjuvant in the Treatment of Syphilis.*

6. Robinson advocates the use of pilocarpin as an adjuvant to mercury in cases in which the system has become saturated with mercury, and it has ceased to have the desired effect. The glands continue hard, swollen and tender, and stomatitis is marked. Gastro-intestinal, hepatic, renal and skin activity have been neglected. The pilocarpin causes the elimination of mercury that was stored up in the salivary glands and acting as a toxic body. In the bowels and kidneys the elimination has been too great for the organs and the pilocarpin causes the skin to act and carries the mercury to the seat of the skin lesions. The author recommends its use in doses of two to eight milligrams two or three times a day, without other drugs. It is of much value in secondary manifestations, and is a most remarkable glandular eliminant. In some cases supersaturation with mercury produces intolerance of the drug and the use of pilocarpin for a short time will enable us to resume mercury with excellent effect.

New York Medical Journal.

June 15, 1907.

1. *Deaver, J. B. *Traumatism as Etiological Factor in Appendicitis.*
2. Friedman, G. A. *Obstructive Jaundice in Chronic Pancreatitis with an Illustrative Case.*
3. Ashburn, P. M., and Craig, C. F. *A Study of Tropical Diseases as They Occur in the Philippine Islands.*
4. Braddock, C. S. *Some Notes on Bubonic Plague as Seen in Siam.*
5. Bergey, D. H. *The Relation of Insects to the Dissemination of Disease.*
6. Tousey, S. *The X-Ray, Ultraviolet Ray and High Frequency Currents in Diagnosis and Therapy.*
7. Blaketel, H. S. *The Medical Man Afloat.*
8. Sabel, S. O., and Slatterlee, G. R. *Acute Lymphatic Leukemia Clinically Suggesting a Myelogenous Origin.*

1. Deaver does not consider it likely that trauma is ever the exciting cause of appendicitis in a previously normal appendix. He does believe, however, that in an appendix containing a latent abscess, or adherent to the peritoneum over the ilio-psoas muscle from previous inflammation, trauma may cause the lighting up of an acute process. There are 130 cases in the literature where this is supposed to have occurred. The mortality is high in such cases, largely because of the difficulty of diagnosis. [F. W. P.]

Deutsche Medizinische Wochenschrift, No. 21.

May 23, 1907.

1. *Erb, W., Jr. *Septic Diseases and Acute Leukemia.*
2. Lewandowsky, M. *Sensory Irritation in Diseases of the Brain, Especially Chilly Feelings.*
3. Hasebroek, K. *Gymnastics in Arteriosclerosis.*
4. Salter, O. *The Traumatic Origin and Operative Treatment of Paralysis of the Serratus Magnus.*
5. Ullmann. *A Cotton-Wool Plug in the Pus from Appendicitis.*
6. Büttner, K. *Myoma in Pregnancy.*
7. Gutmann, A. *External Eye Diseases and their Relation to Conditions in the Nose.* (Continued.)

1. Erb reports a case of acute lymphomatosis with a leukemic blood picture occurring in connection with a streptococcus sepsis. The autopsy showed an exquisite lymphomatous metaplasia of all the blood-forming organs. Streptococci were found in the blood and various glands just before death, their point of entrance being apparently necrotic tonsils. The blood picture was 2,250,000 reds, 26,700 whites, 45% hemoglobin. The white cells were made up of 91% of lymphocytes, the majority of which were large with faintly staining nuclei. The patient, a young man of twenty-eight, previously well, was sick only a little over one month, septic symptoms, fever and chills being first noticed. Erb does not agree with Türk that, in these cases, the sepsis is the primary infection, but thinks that until experimental proof is offered to show that a lymphomatosis can develop on the tissue changes produced by a previous septic infection, we must consider the leukemia as primary and the sepsis as a terminal infection. An interesting finding in this case was, that in a hemorrhagic area in a testicle, the nature of which, whether septic or a leukemic infiltration, could not be determined, the lymphoid cells in the interstitial tissue were phagocytic; it would seem that in acute leukemia the lymphoid cells acquired the faculty of phagocytosis, which is certainly not a function of normal lymphocytes. [L. G. M.]

Münchener Medizinische Wochenschrift, No. 20.

May 14, 1907.

1. *v. Jaksch R. *Manganese Poisoning.*
2. Treupel, G. *The Present Status of Percussion of the Heart.* (Continued article.)
3. *Grassmann, K. *The Effect of Nicotin on the Circulatory System.*
4. *Eichelberg, F. *The Treatment of Delirium Tremens.*
5. *Shibayama, G. *The Pathogenicity of the Mouse Typhoid Bacillus for Man.*
6. *Uffenheimer, A. *The Defences of the Body against Invasion by Bacteria through the Intestinal Wall.*
7. *Schoenborn, S. *Acute Cerebral Polyneuritis with Involvement of the Auditory Nerves.*
8. v. Burk. *A Case of Lysol Poisoning.*
9. *Cloetta, M. *Digitoxin and Digalen.*
10. *Crämer. *The Effect of Nicotin, Coffee and Tea on the Digestion.* (Concluded.)

1. Report of four cases of chronic poisoning with manganese, occurring in the manufacture of permanganate of potash. The poisonous agent is supposed to be manganous oxide. The symptoms consist of paraplegia with peculiar spastic paretic gait, psychic changes and sometimes alimentary glycosuria. The course was tedious with slow improvement under general measures.

3. Grassmann reveiws the subject of the effect of nicotin on the heart and vessels. Most common is a cardiac neurosis, the "tobacco-heart." Nicotin injected into animals is capable of producing similar lesions of the arteries to those of adrenalin, and there is little doubt that the long continued excessive use of tobacco can produce arteriosclerosis in man. The best clinical proof of this is the fact that intermittent claudication, a disease in which arteriosclerosis plays an important part, is rare in non-smokers, while two thirds of Erb's cases used tobacco to excess. Experimentally, nicotin is known to cause contraction of the peripheral arteries and rise of blood pressure, and this if long continued would favor the production of sclerosis. Very important is the fact that tobacco may cause attacks identical in appearance with true angina pectoris, and this without the intervention of arteriosclerosis. The prognosis of such seizures, provided the use of tobacco be discontinued, is much better than in ordinary cases of angina.

4. Eichelberg gives mortality statistics of 1,574 cases of delirium tremens from the Hamburg-Eppendorf hospital. Excluding those with pneumonia, the death-rate was 2.4%. This very low mortality is attributed chiefly to the early use of cardiac stimulants in appropriate cases; indeed, Eichelberg advises now the use of digitalis from the beginning in all cases, a method by which Ganser in a large series has obtained a death-rate of .9%.

5. The bacilli of paratyphoid fever, of meat poisoning and of mouse typhoid are apparently identical. It has been claimed, however, that the last named is not pathogenic for man. Shibayama of Tokio brings evidence that this is not the case. In Japan pure cultures of mouse typhoid bacilli, mixed with meal, are extensively used to exterminate mice, being given out by the government for that purpose. Shibayama reports four epidemics due to the accidental contamination of food with such mouse poison. An acute gastro-enteritis resulted like that of meat poisoning, and death occurred in several instances. The bacilli of mouse typhoid were recovered both from the food and from the stools of the victims.

6. Previous researches by Uffenheimer had shown that the intestinal tract of the newborn guinea pig differs from the other laboratory animals, in that it will not allow the passage through either of bacteria (the tubercle bacillus excepted) or of albumin. Further investigations by this author showed that this protection against bacteria was due to the much greater bactericidal power of the blood serum. This is due to an abundance of alexin or complement. In order to show that the protection against invasion was dependent on the presence of alexin, he experimented with adult rabbits whose alexin had been removed by a special method (anchoring of the alexin by injection of red corpuscles of the goat). Animals treated in this way and then receiving injections of bacteria by enema, showed after a few hours bacteria in all the viscera, whereas the organs of the control animals were sterile.

7. Report of a case of acute neuritis affecting the facial, both auditory, and the abducens nerves; recovery. The involvement of the cerebral nerves in neuritis is rare, in spite of the frequency of the peripheral form.

9. Polemic against Kiliani.

10. Digestion experiments by Crämer, carried out in test-tubes, showed that the addition of black coffee, tea, nicotin or extract from tobacco smoke to digestive mixtures seriously interfered with the action of pepsin. The patent nicotin-free cigars had, if anything, a more deleterious effect than ordinary cigars. The amounts added were calculated to correspond to a moderate use of the above drugs. An experiment on a very moderate smoker, showed that a single heavy cigar with each meal was enough to cause motor insufficiency of the stomach and a spastic condition of the intestine. Crämer's clinical statistics showed that the abuse of tea, coffee and tobacco was very frequently met with in various affections of the gastro-intestinal tract, especially in hyperacidity, impaired gastric motility, and spastic constipation. The abuse of alcohol was less frequent and apparently of less importance in the etiology of these affections.

[W. T.]

Berliner Klinische Wochenschrift, No. 17.
April 29, 1907.

1. Kausch, W. *The Surgery of Cancer of the Stomach.* (Continued article.)
2. *Bloch, A. *A Quick Method to Demonstrate Tubercle Bacilli in the Urine by Means of Animal Inoculation.*
3. Gerlach, V. *Does Cocoa Influence the Absorption of Nitrogen and Fat?*
4. Boerma, N. *A New Forceps.*
5. *Caro. *A Case of Malignant Graves' Disease, Complicated with Pseudoleukemia.*
6. Sachs, H., and Teruuchi, Y. *The Inactivation of the Complement by the Withdrawal of Salt.* (Continued.)

2. Bloch has devised a method by means of which tubercle bacilli in urinary sediments may be demonstrated by inoculation in the short time of nine days, instead of thirty to sixty days, the usual time of an inoculation experiment. The washed sediment is injected subcutaneously in the thigh of a guinea pig, and the corresponding glands in the groin are at the same time crushed with the fingers. After nine days, if tubercle bacilli were present in the sediment, they may be found in large numbers in the excised inguinal glands.

5. In Caro's case an acute Graves' disease ended fatally soon after excision of $\frac{7}{10}$ of the goiter, with hyperpyrexia and collapse. The urine shortly before death showed marked toxicity, the excised thyroid contained a very large proportion of iodine. There were present considerable enlargement of the liver and spleen, and of the cervical glands, with 60% of lymphocytes in the blood; these features are interpreted as a pseudoleukemic state induced by the acute intoxication with thyroid secretion.

[W. T.]

Deutsche Zeitschrift für Chirurgie, Band 87, Heft 4-6. April, 1907.

15. *Storp. *The Feasibility of Extensive Resections of the Small Intestine.*
16. *Nyrop, E. *Studies of the Results of Gastric Operations Performed on Cases with Benign Lesions Causing Stenosis.*
17. Lorenz, H. *A New Operation for Bilateral Hare-Lip.*
18. *Joseph, E. *A Study on Inflammation.*
19. *Federmann. *Acute, Perforating Gastric Ulcer.*
20. Heusner. *Disinfection by Means of Iodine-Benzine Mixture.*
21. Draud, M. *Anomalies of the Urachus.*
22. *Martina, A. *Chronic Interstitial Pancreatitis.*
23. Jäckh, A. *Retrograde Incarceration of the Intestine.*
24. Bohne, A. *Two Cases of Injury of the Thoracic Duct.*
25. Mekus, F. *Two Cases of Renal Tumor Occurring in Children.*
26. Tavel. *The Technique of Operation for Retrobulbar Tumors.*
27. v. Arx, M. *Retrorectal Epigastric Hernia.*

15. Storp reports a case of a man twenty-one years of age from whom 510 cm. of small intestine were removed during the extraction of a spindle-celled sarcoma of the mesentery. An immediate end-to-end suture was done, following which the patient made an uninterrupted recovery. On several occasions tannigen or opium was necessary to correct a tendency to diarrhea. In four weeks the patient had gained four kilos in weight and digested ordinary diet without difficulty. The bowels moved normally once or twice a day. About two months later, however, pain and a tumor mass were again present, the condition being such that further operation was impossible. Twenty-two cases from the literature are tabulated, all illustrating the point that very long pieces of small gut may be removed without much disturbance of digestive functions. The longest resection reported is that of Nigrisoli, in which 520 cm. were removed, following which the patient gained 5.1 kilos in twenty-three days.

16. Nyrop reports fifty-four cases of gastro-enterostomy with an operative mortality of 3.7%. He then discusses in detail the causes which make a gastro-enterostomy unsuccessful, quoting freely from the literature, and giving in each instance the best recognized method of avoiding such causes. They are to be divided as follows:

A. Post-operative causes:
  1. Peptic ulcer of the jejunum.
  2. Spontaneous gastropexy.
  3. Secondary narrowing of the anastomosis.
  4. Chronic volvulus of the coils of small intestine.
  5. Diarrhea.
  6. Entrance of bile or pancreatic secretion into the stomach.
  7. Peritonitis.
  8. Hemorrhage from the wound.

B. Pre-operative causes:
  1. Poor general condition of the patient.
  2. Too great atony and dilatation of the stomach.

Nyrop insists that these last two factors are practically always the cause of the so-called "vicious circle," and that the technique of making the anastomosis is not responsible for its occurrence.

18. According to Joseph, who writes from the clinic of Professor Bier, the process of inflammation depends on two factors: (1) A harmful agent (bacteria, toxins, etc.), and (2) a blood capable of destroying this agent. If either of these factors changes, inflammatory phenomena disappear. If the infectious material is removed there is no longer inflammation; if the patient becomes pyemic, his blood, having lost the power of destroying these bodies (bacteriolysis, etc.), even a large amount of infectious material will not call forth inflammation. These same rules apply to stasis hyperemia. On the arm of a pyemic person, or when the infecting agent has been removed, the bandage causes only a purely static edema, a change in the blood content such as is seen when the normal limb is constricted. There is absent that peculiar reaction of the blood, due to capillary hyperemia, which Lexer calls an "erysipelatous redness," and which is to be considered a gratifying phenomenon, since it means that the blood is capable of destroying infectious material. By experiments Joseph has shown that

this capillary hyperemia is capable of removing much infectious material from the general circulation. The result to be most desired after the application of a stasis bandage is, therefore, an intense redness reaching up to the point of constriction, and only partially disappearing during the intervals when the bandage is loosened and the extremity elevated.

19. Federmann reports sixteen cases of perforated gastric ulcer. Five were moribund and no operation was done. Of the remaining eleven four were cured by operation. Of the seven post-operative deaths, three died of secondary abscesses; four of spreading peritonitis. Emphasis is laid on the fact that many of these cases through faulty or slow diagnosis reached the surgeon so late that his efforts were of no avail.

22. Martina reports the case of a woman of thirty-three years who had suffered for four years with what she considered stomach trouble. The disease began as a sudden severe pain in the region of the stomach, a little to the left of the middle line, occurring in the eighth month of her first pregnancy. There was no vomiting. The pain ceased after the birth of the child and did not recur for a year. There was no trouble with appetite or digestion at this time. With the occurrence of the second pregnancy the pain returned, and following this time increased in severity, being of a heavy, boring character. It was much less severe during the time when the stomach was empty, increasing quickly after eating. Gradually the diet became reduced to about one half liter of boiled milk per day; the weight was 15 kilos below normal. She had twice been treated for gastric ulcer without benefit. At operation the pancreas was found enlarged, of unusually firm consistency and with a nodular surface. The peritoneum covering the body and tail of the organ was split for a distance of 10 cm. The abdomen was closed with drainage. Convalescence was uneventful and when seen $2\frac{3}{4}$ years afterwards the patient was in perfect health without any digestive disturbances. [W. C. Q.]

Miscellany.

A TEMPERANCE BUREAU.

A society has been formed in Boston, Mass., called the Scientific Temperance Federation, organized and incorporated by the laws of the state with power to hold real estate and receive donations and legacies. The purpose of this society is to collect and keep on file all books, papers, pamphlets, studies and data, concerning the physiological, chemical, psychological, social and economic relations of alcohol and narcotics and the allied evils which follow. Also to accumulate literature on insanity, crime, race degeneration and associated topics. This literature is to be filed, catalogued and placed where it can be made accessible to persons who wish to study it. The object is to form a great central bureau for the collection and dissemination of exact facts from the entire literature of the world, so that physicians, authors and writers may be able with little expense to go over the entire field of research on these topics. Its aim is also to enable every writer, specialist and original worker to have his conclusions put on file where they can be studied and examined and become of more practical service. A trained assistant will furnish abstracts and copies, and other data of all the literature on file and thus enable the student to determine what has been written. A membership fee will be charged, which will entitle one to abstracts, data and copies of future publication. Others not members will be charged research fees for copies and abstracts that may be called for. This society was organized in December, 1906, and already it has secured a very large collection of pamphlets and papers. This is an independent organization, with a distinct purpose of gathering facts on all sides of the question, and appeals to every student as a most practical agency for the dissemination of the exact facts. Hon. W. C. Lilley, of Pittsburg, Pa., is president, and T. D. Crothers, M.D., of Hartford, Conn., is chairman of the board of directors. Inquiries should be addressed to Miss C. F. Stoddard, 23 Trull St., Boston, Mass.

DR. WILLIAM K. OTIS.

At the Annual Meeting of the American Urological Association, the following resolutions were adopted upon the death of Dr. Otis:

Whereas, in the death of Dr. William K. Otis, the American Urological Association has lost one of its founders and former officers, and a member whose genial personality made him beloved of all, and whose scientific attainments had placed him in the front ranks of his profession, therefore be it

Resolved: That this Association expresses its profound regret at the loss of so esteemed and valued a member and friend; and be it furthermore

Resolved: That these resolutions be spread upon the minutes of the Association, that a copy thereof be transmitted to the family of the deceased and that a further copy thereof be furnished the medical press for publication.

Signed:
Frederic Bierhoff,
Orville Horwitz,
DeSantos Saxe.

Correspondence.

ARABIAN SCIENCE.

Roxbury, Mass., June 29, 1907.

Mr. Editor: I observe that Professor Osler, of Oxford, says, in a recent discourse, that the physicians of the Arabian school made no solid contributions to anatomy or physiology (Journal, June 27, 1907). This is undoubtedly true, yet they made valuable contributions to science. Geber, eighth century, discovered arsenious acid and corrosive sublimate. Albucasis, twelfth century, discovered alcohol and the art of distillation. Alhazan, of Cairo, eleventh century, wrote a valuable treatise on optics and described the properties of lenses. Rhazes, of Bagdad, tenth century, gave the first accurate description of smallpox; Avicenna, eleventh century, of malignant pustule; Avenzoar, of Seville, twelfth century, of the itch. We owe to the Arabians the methodic use of opium as a remedy, which, though used by Dioscorides and some of the Grecians to a certain extent, was apparently unknown to the Galenists. They also used mercury, which was first made known to the Europeans as a medicine by the Moors and Saracens, was adopted by Guy de Chauliac and Paracelsus and formed the chief ingredient of the prescription sold by Barbarossa, the corsair of Mitylene, to Francis I to cure his pocks. We cannot date a letter without the Arabic numerals, or compound a salt without an "alkali," a purely Arabic word. Altogether we owe a good deal to the Arabians, which we ought not wholly to forget.

Yours respectfully,
Edwd. T. Williams, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, June 29, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,364	468	Quincy	6	2
Chicago	—	—	Waltham	11	1
Philadelphia	—	—	Pittsfield	10	2
St. Louis	—	—	Gloucester	5	2
Baltimore	173	42	Brookline	6	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	—	Chicopee	7	5
Pittsburg	—	—	Northampton	4	1
Cincinnati	—	—	Medford	3	1
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	1
Providence	74	23	Hyde Park	4	1
Boston	214	66	Melrose	2	1
Worcester	37	9	Newburyport	—	—
Fall River	40	12	Woburn	5	1
Cambridge	12	1	Marlboro	5	1
Lowell	36	14	Westfield	—	—
Lynn	15	3	Peabody	—	—
New Bedford	26	11	Revere	5	3
Springfield	28	4	Attleboro	3	0
Lawrence	25	—	Clinton	2	1
Somerville	18	3	Adams	6	1
Holyoke	19	9	Gardner	—	—
Brockton	11	3	Milford	—	—
Malden	11	4	Watertown	3	2
Chelsea	12	3	Plymouth	—	—
Salem	12	2	Weymouth	4	0
Newton	6	—	Framingham	2	1
Haverhill	6	—	Southbridge	10	1
Fitchburg	—	—	Wakefield	—	—
Everett	5	2	Webster	—	—
Taunton	14	2			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JUNE 26, 1907.

Gassaway, James M., surgeon. Granted leave of absence for twelve days from June 21, 1907. June 21, 1907.

White, J. H., surgeon. Granted leave of absence for seven days from June 8, 1907.

Billings, W. C., passed assistant surgeon. Granted leave of absence for three days from June 27, 1907. June 25, 1907.

Stimson, A. M., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

Rucker, W. C., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

Ward, W. K., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

Trask, J. W., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

Robertson, H. McG., assistant surgeon. Directed to report to Chairman of Board of Examiners, Washington, D. C., July 18, 1907, to determine his fitness for promotion.

Stiles, Ch. W., Chief, Division Hygienic Laboratory. Directed to visit the States of North Carolina, South Carolina, Georgia, Alabama, Mississippi, for special temporary duty; upon completion of which to rejoin his station. June 22, 1907.

Gleason, C. M., acting assistant surgeon. Granted leave of absence for twelve days from June 18, 1907. June 20, 1907.

Knowles, Ralph, acting assistant surgeon. Granted leave of absence for seventeen days from July 7, 1907. June 21, 1907.

Rodman, J. C., acting assistant surgeon. Granted leave of absence for three days from June 16, 1907. June 21, 1907.

Rowles, J. A., acting assistant surgeon. Granted leave of absence for ten days from July 15, 1907. June 19, 1907.

Walker, R. T., acting assistant surgeon. Granted leave of absence for ten days from July 8, 1907. June 21, 1907.

Wetmore, W. O., acting assistant surgeon. Granted leave of absence for eight days, on account of sickness, from June 6, 1907. June 20, 1907.

Wilson, J. G., acting assistant surgeon. Granted leave of absence for seventeen days from July 21, 1907. June 19, 1907.

O'Gorman, T. V., pharmacist. Relieved from duty at Memphis, Tenn., and directed to proceed to Ellis Island, New York, reporting to the Chief Medical Officer for duty and assignment to quarters. June 25, 1907.

McBride, C. R., pharmacist. Relieved from duty at Cebu, P. I., and directed to return to the States, reporting arrival at New York. June 24, 1907.

Barnett, E. E., pharmacist. Directed to proceed to Evansville, Ind., and report to the Medical Officer in Command for duty and assignment to quarters. June 22, 1907.

Sherer, J. M., pharmacist. Directed to proceed to Memphis, Tenn., reporting to the Medical Officer in Command for duty and assignment to quarters. June 22, 1907.

APPOINTMENTS.

E. E. Barnett and **J. M. Sherer** appointed pharmacists of the third class, June 21, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 6, 1907.

A. C. H. Russel, surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, July 15, and granted sick leave for three months.

O. D. Norton, surgeon. Detached from the "Missouri" and ordered to the Marine Recruiting Station, New York, N. Y., and to additional duty in attendance upon officers and men of the Navy and Marine Corps in New York City not otherwise provided with medical attendance.

O. Diehl, surgeon. Ordered to the "Lancaster."

E. J. Grow, surgeon. Detached from the Marine Recruiting Station, New York, N. Y., and ordered to the Naval Hospital, Navy Yard, Washington, D. C.

R. Spear, surgeon. To the Navy Yard, League Island, Pa.

L. W. Spratling, surgeon. Detached from the Navy Yard, League Island, Pa., ordered to the "Missouri."

M. E. Rose, H. A. Garrison, J. T. Miller, G. B. Trible, O. V. Huffman, assistant surgeons. Appointed assistant surgeons from June 27, 1907.

C. W. O. Bunker, acting assistant surgeon. Appointed from June 29, 1907.

RESIGNATION.

Dr. Walter F. Parker, Professor of Ophthalmology in the University of Michigan, has resigned. His successor has not yet been selected.

RECENT DEATHS.

Dr. Albert W. Ford, of Brooklyn, N. Y., died from cerebral apoplexy on July 2. He was of Virginia parentage, but was born, in 1858, at Augusta, Me., where the family was temporarily located. He was graduated in arts from the University of Virginia and in medicine from the University of the City of New York, and had always practiced in Brooklyn. In 1886 he was appointed a police surgeon, a position which he retained up to the time of his death, and he was one of the most popular men connected with the Police Department. He was also for a number of years surgeon of the Sixty-ninth Regiment, New York National Guard.

Dr. John H. Otis, one of the most promising young physicians of Poughkeepsie, died from cardiac disease on June 30, at the age of thirty-six years. He was the son of Dr. John C. Otis, with whom he was engaged in practice. He was especially interested in pediatrics, and at the time of his death was Commissioner of Charities of the City of Poughkeepsie.

BOOKS AND PAMPHLETS RECEIVED.

A Text-Book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc. Twelfth edition, enlarged, thoroughly revised and largely re-written. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Modern Medicine, Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., assisted by Thomas McCrae, M.D. Vol. II. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Addresses.

THE SCIENCE AND ART OF MEDICINE IN SOME OF THEIR ASPECTS.*

BY FREDERICK C. SHATTUCK, M.D., BOSTON,
Jackson Professor of Clinical Medicine, Harvard Medical School.

Medicine is truly a science in that it rests upon the foundation of facts ascertained or ascertainable. It is true that the fact of to-day may not be a fact to-morrow. Were this, however, sufficient warrant for denying the term science to any branch of knowledge, whose withers would be unwrung? Whatever the discovery of radium may have brought, it has not brought peace of mind to the physicists and chemists. Medical science has grown marvelously of late in spite of the complexity of the subjects involved and of the inherent difficulties which they offer to direct investigation. The more we know, the more we find we don't know. Science thus changes, and every great advance in knowledge is liable to require new hypotheses and theories, which in turn prepare the way for the next advance. The medical knowledge of the public — or laity — is always that of the profession x years ago. We are ourselves responsible for the belief that pneumonia and pleurisy are due to exposure to cold; that uric acid is the cause of dire evils, including rheumatism.

The practice of medicine is the application of known facts and principles to disease. In preventive, the higher branch of medicine, this application is close. We acquire the power effectually to prevent malaria and yellow fever only when we learn how they are carried, though this knowledge has in no way helped us in the treatment of the individual cases. The same is true of typhoid fever. In the care or cure of diphtheria, on the other hand, science has enormously strengthened our hands, and we have confident reason to hope for similar aid in other infections. The surgeon's knife is in reality a confession of failure in so far as it is used for the relief of pathological surgery. Accident surgery can be abolished only by abolishing the activity, the life of man; but there seems no reason to despair of finding out how to prevent cancers and other new growths.

Those of us who are engaged in what is ordinarily termed the practice of medicine, that is, in dealing mainly with individual cases of disease, find that there is a gap between science and the concrete case. This gap is of varying width, here and there may be easily jumped, but must usually be bridged by the art of medicine. The practitioner of medicine soon learns that disease is one thing, the person diseased another. He finds, indeed, that in very many persons demanding his services there is no disease in the sense which this word has come to convey, no definite and appreciable change in structure. Dis-ease, discomfort there is, due to impaired or disordered function, behind which may be a more or less obviously faulty mode of life, a false attitude toward life, or a mental or moral maladjustment to surroundings. The practitioner learns that human nature is essentially the same everywhere and in all times; that it does not change as does the science with which he strives to cure or alleviate the ills of men. Osler tells us that in the last analysis man has but two paramount desires: to get and to beget. The desire to get, however, is of wide extension, and as civilization advances is becoming ever wider, ranging from necessary food and protection against weather to automobiles and flying machines. But while it is true that human nature in its main features is unchanging, it is also clearly true, and vital for the practitioner to realize, that no two individuals are precisely alike in bodily and mental make-up and in environment. Each person is a kaleidoscopic figure, never exactly reproduced. Bertillon, whose name is perhaps most widely known through the application of his system of measurements to the identification of criminals, has shown that there is no duplication of size and proportion combined of that simple part of man's structure, his bony framework. Take a sufficient number of accurate measurements and you can pick your man from a multitude. Each person again has his own combination of lines on the palmar surface of his finger-tips and hands. If there is such infinite variation in the simple, is it not reasonable to suppose it to exist in the complex, in internal organs and their balance, above all in the ganglionic nervous system which should ensure the harmonious working together of the various organs and other systems? As regards the brain, indeed, there can be no question, so open to observation are its workings and so great is its capacity for education.

It is thus clear that our work is not mathematical, nor is there any danger of its becoming a penny-in-the-slot business, certainly within a future which can be of other than speculative interest to any of us here present. Science has its pure devotees — biologists, physiologists, pathologists. The art of medicine also has its pure devotees, the quacks. I assume that very few of you here present aim at the former, none at the latter. And yet there are quacks within and on the outskirts of the profession, the worst ones, for they have known light and have deliberately chosen darkness. I have known highly trained men who have gone as far professionally wrong as a man can go, bartering their birthright for a mess of pottage.

Most of you, doubtless, look forward to being practitioners. For four years now you have devoted yourselves mainly to the science of medicine, to its fundamental facts and principles, and to the methods which we employ in trying to solve the riddles of disease. Much that you have learned you will have to unlearn. How brief is the life of a textbook on the practice of medicine! Many books which well served their day and were constantly in the hands of the progressive practitioner now gather dust on the shelves of libraries. Here and there one, Watson's

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*Address before the graduating class in medicine of the Medical Department of Yale University, June 24, 1907.

"Practice," for instance, has an occasional reader attracted by its style. We think we are too busy to read an old book, but when we do so, we find that the masters knew their art, though the young student of to-day knows more science. He who reads, marks, learns and inwardly digests the chapter on dyspepsia in Austin Flint's "Practice of Medicine," to take a random illustration, will be more successful in his treatment than the man who relies alone on the latest monographs on diseases of the stomach and guides his therapy overmuch by the stomach tube and chemistry.

You will now begin to apply your science, that is, combine science and art, with direct responsibility — that great teacher — all the time keeping abreast with the advance in science, entering the post-graduate school which claims you as long as life lasts.

The art of medicine is not easy to teach directly. Something of it you learn more or less unconsciously in watching your clinical teachers and their handling of cases, something negative perhaps as well as positive, something to avoid as well as to imitate. If difficult to teach there is much to learn, and it may be that thirty-odd years of practice and nearly thirty years trying to teach medical students give some warrant for offering you a few hints of possible use.

Success in the practice of medicine lies in a happy marriage between science and art. It is as sure as success in any other calling, though there are no great money prizes. He who gauges his success in life by the amount of money he makes had better resign medicine to those who seek happiness and a reasonable support in the exercise of their faculties in a calling which is ever growing, is of prime service to man and gives a chance for unlimited self-development. It means hard work, but you remember that Sir Andrew Clark defined work as the life of life.

The elements of success seem to me somewhat as follows:

1. Of course you must know your business, possess a reasonable knowledge of your profession as a science. This, with due diligence in its exercise, the law demands. The defendant in a malpractice suit is not expected to know all there is to be known on the subject. Indeed, that wise physician, Dr. James Jackson, said sixty years ago that there was at that time more known about medicine than the mind of any one man could grasp. What would he say to-day? The adjective reasonable is elastic, and must be well stretched from the legal limit to satisfy the demands of conscience and to attain real success.

2. Thoroughness. Form the habit of it from the start and deal with each case which comes to you as if it were the only case in the world. Never forget that mistakes come far more from not looking than from not knowing, from taking things for granted. Collect all your facts. For failure to do this there is no excuse. All can do it.

The evidence which leads to diagnosis and treatment is of two classes: the objective, which you gather for yourself through observation and physical examination; and the subjective, which you elicit by questioning the patient. Of the two, the former is by far the more valuable and can never be dispensed with. But we need the latter and must then often call in the aid of time before we can reach a definite conclusion. Sometimes patients get well without our really knowing what was the matter with them. Sometimes the autopsy fails to clear up the mystery. I wonder whether we are as keen observers as were our forbears who had no instruments of precision to rely on, who knew nothing of germs and their ways.

There are cases in which time is saved by making the physical examination before taking the history, though I am inclined to think this order safer for the experienced than for the younger practitioner. If there be very definite organic disease, it does not, as a rule, escape searching exploration. And yet we elders have all seen cases enough which we would pass as good risks for life insurance if we relied on the objective evidence alone. Perhaps angina pectoris affords as good an illustration as any. The heart, arteries and kidneys may seem perfectly sound, while the age of the patient and his symptoms reveal coronary change which may indeed soon prove fatal in spite of the best care, which under mismanagement is likely to prove very serious, but which so often is amenable to wise counsel persistently and faithfully followed out. The sequence and development of the symptoms, their mode of onset, may be essential to the determination of their exact pathological nature, the sudden or slow advent of paralysis, for instance. The seat of a lesion may be revealed by physical examination alone, while the nature of a lesion can only be determined by the history. Even when physical examination fully lays bare the disease, it may tell us little as to the subject of the disease, and our advice must be given to the individual, not to the average man.

In history taking there is a chance for the exercise of much art. The way in which a person tells his story in itself teaches you much about his case. The talk of some people, not always females, like the brook runs on forever, though, unlike it, gets nowhere. Others seem unable to give a direct answer to a direct question. Important facts may be forgotten, may be suppressed. Some are so foolish as to deliberately deceive, or attempt to deceive, their doctor. There are cases in which it is best to let the patient tell his story in his own way; others in which question and answer should be resorted to, either from the start or later. Just remember that people generally care little how you collect your facts. They want to help you to help them, and are ready to accept your methods, especially if tactfully applied.

It is interesting to recall that the prototype of Sherlock Holmes was Mr. Bell of Edinburgh, one of Conan Doyle's surgical teachers. The power of observation is capable of great training. Don't think thoroughness a waste of time. You will find that gradually you work quicker, though no less surely, lower centers learning how to do that which at first only the higher could perform.

3. Common sense may for our purpose be defined as the power to arrange all the facts with an eye to perspective, with a sense of " values " which puts into the foreground those facts which are essential, properly groups those which are secondary and rejects those which are irrelevant to the case in hand. It includes the power to see what is possible and practicable in any given case. The ideal is rarely attainable and we too often have to be contented with as close an approximation as may be possible. Perhaps common sense may be made to include the power of logical reasoning. Here there may be excuse for failure such as there is not for lack of thoroughness. Clear vision and an orderly mind are not given to all in the same degree, but I am sure that they are cultivable and the problem for each of us is to make the most of himself.

4. Character, though hard to define, is very real and a very important factor in successful practice. Character is elevated by the formation of high ideals and strengthened by the resolute pursuit of them, the surmounting of obstacles internal and external. Character seems to be sometimes latent and comes out only under a squeezing process which may prove to be of incalculable benefit although painful at the time. Character will invariably reveal itself. Do not be studied or self-conscious. Do not ask yourself, " What effect am I producing? " A man should be himself, eradicating and restraining his bad, cultivating his good qualities. Do your work the very best way you know how and the result is sure to follow. The character of the physician has much to do with the obedience of the patient and with putting him into the frame of mind which leads to co-operation.

5. Enthusiasm and a genuine love for his profession, apart from its emoluments, is a quality of great value to the physician. In no other calling is there greater justification for enthusiasm. It is our privilege to try to promote the well-being of man, and we cannot do our best and highest work unless we are ever mindful of the relation of mental and moral states to ills either arising in the body or outwardly manifested by it. A love for your work will support you in discouragements of all kinds which in greater or less measure must come to all of us in life. Drudgery cannot be escaped in any calling. It is part of life, but there is no drudgery in any way comparable to that endured by the man whose sole aim is to amuse himself.

I remember hearing one of my teachers in college days, who might then with profit to all concerned have availed himself of the Carnegie Pension Fund had it existed at the time, remarking in the course of a lecture, " Gentlemen, you may think what you will, but you will find that whatever you do in life it will come down to turning the crank." God help the man of medicine, and still more his patient, who believes or gets to believing this to be true.

6. Next may come sympathy. The power of putting yourself in another's place and of realizing how he feels under given circumstances. Try to catch his point of view. If you cannot do this, act on what you think would be your own in the same situation, remembering all the time that his and yours are not necessarily the same. One personal lesson on this point is so deeply stamped on my memory that I trust you will pardon its mention. I had been seeing daily in consultation a gentleman who had special reasons for wanting to get well. He seemed on the road to recovery, and, while returning to the station with his doctor, I suggested that it might be well to skip a day, that the moral effect of so doing might be good, the fact of omitting a visit strengthening our assertion that we thought him doing well. My colleague assented. About bedtime that night I got a telegram, " Mr. A. wishes you to come down as usual to-morrow." When the doctor met me the next day he reminded me of our conversation of the previous day and of my using the words " moral effect." He then went on to state that when he told Mr. A. that no consultation would be held the next day, the patient remarked, " I think he had better come — for the moral effect! "

A uniformly kind manner, especially if it be based on kindness of heart, counts for much. Abernethy's success did not depend on his brutality. I like to recall the saying of an old French physician with whom I was visiting at the Hotel Dieu at Lyons,— " *Le Médicin guérit rarement, il améliore souvent, il console toujours.*"

Cheerfulness in the physician is a good tonic to the patient. Our fears are for ourselves and for a judicious friend or member of the family, if haply such there be. Unreasonableness on the part of a sick person is not to be regarded as it might be were he well. Illness throws some of us off our balance; but the lessons in fine courage, constancy, unselfishness, which we may all learn from our patients, are far from infrequent. The juice of character flows under the press of adversity.

Remember that the doctor's visit should be the main incident of the day to the sick man and try to make it as near the same or expected hour as you can consistently with other duties.

Once again, do not confound the sick man and his disease. Laborious days and broken nights are compensated in part by the fact that no one gets so close to the real man as the doctor. The lawyer gets closer to his money, which some may value more than themselves. The clergyman may be liable to get closer to the would-be than to the real self, to the John's John rather than to the real John, as the wholly delightful " Autocrat of the Breakfast Table " puts it. The doctor sees plenty of evil, more weakness, but still more of good in human nature. While the head must rule the heart, the latter cannot go untouched.

7. Honesty of mind is not, it seems to me, quite the same thing as common sense. Its essential feature is the power of seeing things just as they are without being blinded by either prejudice or personal interest. In the higher

degrees it is given to few. It is to be sharply differentiated from honesty of act, though when the two honesties are combined, they are precious alike to the owner and his circle, be it large or small. The man with an honest mind may act dishonestly, with wide-open eyes doing that which he knows to be wrong. His vision is clear, but his character or standard is low. On the other hand, the man of dishonest mind may act honestly and be governed by only the highest and most unselfish motives. The muddle-headed good man can do great harm and may even bring goodness into disrepute.

We can perhaps as well here as anywhere touch on the devotee of pure art in medicine — the quack, who certainly scores his successes and thus becomes worthy of analysis.

Is not the essence of quackery the claiming to possess power or knowledge which the claimant knows he does not possess? Thus dishonesty is inherent and implied. The visionary, the fanatic, the ignorant man, has deceived himself before he deceives others. He is a crank rather than a quack. But he may be both, in that he may gradually have come from clear to troubled vision, to self-deceit, a thing against which we must every one of us be constantly on our guard, so largely does the *ego* enter into our composition. The quack generally knows his human nature and the salient fact in medicine that the tendency of most pathological processes is toward recovery. He is a past master in the use of suggestion, through which the mind influences the body, the vital element in much drug action and in all forms of irregular healing. He does not hesitate to promise results which we, handicapped by a knowledge of our ignorance and by conscience, often cannot do. We are expected to cure to a degree that he is not. It therefore often happens that it is our failures, his successses, which are spread abroad. Those who have resorted to him and have failed to get the promised relief are generally ashamed of their foolishness and keep quiet. Our failures, mistakes, or supposed mistakes, on the other hand, become the common property of the sewing circle, and may travel far by the most up-to-date means of communication. The way of the fashionable practitioner, whether he transgress or not, is not always easy.

The doctor is judged by a more or less incompetent tribunal, the proportion of people who know what constitutes evidence in a question of physical science being small. There are not as many " born doctors " as there used to be, and the seventh son of the seventh son makes less noise in the land, though his trumpet is still audible. Let us not be distressed by seeing the quack flourish near us, even if it be as the green bay tree. He, like the dog, has his day, usually a relatively short one. Neither should we let our minds be troubled by criticism, however undeserved, provided that we have the approval of our own consciences. Let us never forget that we receive far more credit which we do not deserve than we do discredit. Let us take the lean with the fat without grimace. We can recall the saying attributed to Mr. Lincoln about fooling all the people all the time. I say attributed, because an earnest searcher told me the other day that he had been unable to find the saying anywhere in Mr. Lincoln's writings or to find out when and where it was said.

With the above qualities kept constantly under cultivation, good health and good habits, you are bound to succeed sooner or later, more or less rapidly. Your lives of useful service will be happy and the ranks of those who beg their bread have very few recruits from the children of the righteous professional man.

The essential aims of undergraduate medical teaching seem to me only three: first, to teach the fundamental facts, the doing which must open before you more or less clearly the lines of future progress; second, the methods to be employed in the study and recognition of disease; third, thoroughness in work. Between the latter and the Yale spirit there is, I have reason to believe, a peculiarly close sympathy. Thoroughness is a close link between the science and the art of medicine, which latter may be summed up in the observance of the Golden Rule. Thoroughness, too, is a prophylactic against routine, the favorite child of sloth. Rules are made to break. They are our servants and should never be allowed to become our masters. We make rules to save thought, the hardest work there is. We must think whether and how far the rule applies to the given case, and let us not hesitate to break it for cause.

There are other points I would fain touch on, but I will be merciful.

A sermon, from which these remarks are not wholly devoid of resemblance, never used to be complete without a lastly and a finally. Under lastly a few words on a point of ethics as applied to the practice of medicine: Are we ever justified in deceiving or lying to our patient? My answer to that question is an unhesitating " yes," *but* — that little though significant word forces itself forward — only under conditions. Before stating my view of them let me ask anew the question of Pilate, " What is truth? " In matters medical we are dealing with x, y and z, and we must never forget that our opinion does not necessarily represent the truth. The truth as we see it may not be the truth itself. In telling the truth as the truth, we should be very sure that it is the truth, especially if in so doing we condemn the patient to an incurable and painful malady. There is generally a near friend or relative to whom we can speak frankly if we like, expressing our fears, from which we should not be too ready to take counsel. But, apart from our liability to error, it seems to me that every practitioner now and then meets a case in which neither silence nor skillful evasion avail, and in which telling the truth is sheer cruelty. The cases are not common in which a categorical lie is justified or necessary, but there are cases in which the question, " Have I a cancer? " should, in my opinion, be answered by a firm " No." There are, again, cases where the knowledge of a lues would break up a family and wreck the happiness of the innocent without doing them any good. There would be no difficulty in multiplying illustrations. Doubtless, ordinarily, the truth, which may be stated with brutal frankness or with delicate consideration, is best for all concerned, especially if it be served with the saving grace of " as I see it," or its equivalent.

Now for the condition or touchstone. Before swerving from or denying the truth we should ask ourselves the searching question, " For whose advantage is this denial? " If it is in any measure for our advantage, or seeming advantage, let us shame the devil. Only when in our deliberate judgment the interest of the patient and his family, and that alone, is thereby furthered is the truth to be denied.

Finally, allow me, my younger brothers in the profession, to wish you God-speed and the attainment of your hearts' desire.

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MEDICAL TEACHING AT HARVARD AND THE OPPORTUNITY IT OFFERS THE YOUNG GRADUATE FOR MEDICAL TRAINING.*

BY HENRY A. CHRISTIAN, M.D.,
Assistant Professor of the Theory and Practice of Physic, Harvard University, and Physician-in-Chief, Carney Hospital, Boston.

Mr. Chairman and members of the Alumni Association of the Harvard Medical School: It was with particular pleasure that I received your invitation to talk to you to-day of the teaching of medicine in Harvard and the opportunity for training it affords the recent graduate in medicine. Not being a graduate of the Harvard Medical School myself, perhaps I can discuss the teaching of medicine in Harvard from a slightly different view point from that of the man trained here. At least, the perspective of the man born and trained in Virginia and Maryland is apt to be different from that of the New Englander when each turns his gaze on the same things, and so I will not be supposed to see things just as you do. However, when we differ, I trust it will be on the friendly basis of mutual interest in the Medical School and that a consideration of these differences will emphasize what is best for that common interest.

Seven years ago I came to Boston with very different ideas of the Harvard Medical School from those I now hold. I expected to find the settled method which had grown hoary with years and the complacency of long precedent. Instead I found the restlessness of experiment in teaching methods. Six years ago the degree requirement for admission was inaugurated, and in the autumn of 1905 the fourth-year elective system was begun. These two changes alone are sufficient evidence of a desire to improve conditions, but in addition many minor changes have been made, so that the teaching in the school must have changed much since the days when most of you were students.

With the establishment of the fourth-year electives, a number of changes were made in both departments of medicine and it is of these that I desire in the first place to tell you. Through the courtesy of the trustees and superintendent of the Massachusetts General Hospital the Department of Theory and Practice has been able to offer to 28 members of each fourth-year class an elective, in which four men spend their entire time in the wards and laboratory of that hospital in intimate contact with the patients and machinery of a great hospital and under the constant supervision of one man whose hospital obligations are *nil* and whose teaching function is paramount. There each man sees the daily progress of disease in some forty patients. Each student obtains the history of assigned cases, makes physical examinations and watches the patients from day to day. Work in the wards is supplemented by laboratory investigation, such as is possible in a well-equipped clinical laboratory. All student observations are subjected to the control of instructor and house records. The ward visit of the visiting physician is followed by all four students and instructor, and in this way all patients on one service are observed. All postmortems are attended and in many instances have been done by the students themselves. The case seen on the medical side, if transferred to the surgical, is followed by the student in charge and, as a rule, all see the operation. Autopsy and operation serve to confirm or disprove for them diagnosis in a way far more instructive to the given student than is possible in any other way. It is the continued contact of student with patient that has been the most valuable feature of this course, and one of hardly less importance has been a sufficiency of time for careful observation and record, such as is impossible in the outpatient department. This elective will be supplemented next term by an additional month, increasing the number of Theory and Practice students at the Massachusetts General Hospital to 32, and the department will offer a second elective of similar character at the Carney Hospital to 16 men; four men every forenoon during two months.

A third elective was offered last year by Theory and Practice and will be continued this year, in which an opportunity is given a limited number of senior students during the first half year of carrying on clinical laboratory investigation. Last year two creditable pieces of work were published from this course.

The Department of Clinical Medicine conducts its work in a different way. It does not limit the number electing the course. The students are distributed in the out-patient medical clinics of the Massachusetts General and Boston City hospitals during the forenoon as regular student assistants to aid in running the clinics. There they see and treat ambulatory cases. Last year this work was greatly enhanced in value by the presence at each hospital of an assistant in clinical medicine, whose only duty was to supervise the students in their work. The regular management of the clinic devolved on the visiting physician on duty, assisted by the students, and the teaching was directed independently of the management of the clinic. The experience of the previous year had shown that it was not possible for one man satisfactorily both to teach and to run the out-patient clinic.

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* An address at the annual meeting of the Harvard Medical School Alumni Association, held in Boston June 25, 1907.

The afternoon is spent by these men in part in ward work at the Massachusetts General Hospital, under the direction of an instructor, and in part in preparing a thesis or attending certain laboratory demonstrations. A ward visit with Dr. Shattuck is included in the week's program. One of the best afternoon exercises comes on Fridays, at 4.15, when the histories of cases which have been autopsied during the week are read and discussed. After this the post-mortem findings are reported and specimens demonstrated. Lastly, any discrepancies in diagnosis are discussed and post-mortem findings harmonized as far as possible with ante-mortem observations.

Finally, last year a new feature was introduced in the medical department, a clinical laboratory course given under the supervision of the department of Theory and Practice, which replaces portions of instruction formerly given by several departments. This course occupies two hours a day of the second half of the second year, and includes systematic instruction and practice in various clinical laboratory procedures.

This hasty review of the present teaching of medicine at Harvard brings out two things, namely, that now several men are devoting almost the entire day to teaching and that satisfactory teaching is incompatible with a satisfactory handling of an out-patient clinic by the same individual. This is a marked contrast to the former system, under which no man doing clinical teaching in medicine gave more than an hour or so to teaching work and that in connection with the management of a clinic. With the change has come a new employment for the younger men, clinical medical teaching. Clinical medical teaching as a vocation is new to Harvard, perhaps not yet fully realized. Still it bids fair to become soon a reality. What, then, has it to offer to the young medical man? First, it affords moderate income. This has been rendered possible in good part by the activity of this Alumni Association, which has raised a fund to be used annually in inceasing salaries for such work and which fund you increase this year to $1,500 — the equivalent of a $37,500-endowment.

However, salary is a lesser attraction. The chief one is that such work brings to the teacher many of the clinical advantages of large hospitals without the responsibility of the routine, it brings contact with students of active mind, it compels study and familiarity with medical progress and it affords some opportunity and incentive for investigation. In short, it affords a valuable training in medicine. A number of these opportunities under the old system in Boston came to the men only after a number of years had elapsed since graduation and at a time when the activity of youth was passing into the settled calm of middle life; in other words, too late for them to give their maximal value in training.

Unfortunately, the hospital system in vogue in Boston, with its unstimulating system of promotion by seniority, makes impossible the greatest incentive for a young man's adoption of such a teaching position, — the incentive of the feeling that success in medical teaching and investigation will bring the coveted beds in a hospital and a higher place on the faculty. Success in his endeavors may bring them, but this is largely a matter of circumstance. Knowing what I do of the inner mechanism of Boston hospitals, I feel as yet unable to advise the young graduate seeking advice to follow the course, which I regard as certain to give him at the end of four or five years the broadest training and best grasp of medicine, and to assure him that attainment of these qualities will give him a hospital position. Rather am I forced to say, "Do certain routine which will train you a little, but bring a reward for faithfulness in an out-patient department, from which you will rise to the dignity of wards in due season — a long season, perhaps — even though you may learn but little more than you now know, and devote what time is left to your medical teaching and investigation. The latter will add breadth and force to your training, though it may not hasten your promotion." Gentlemen, we cannot expect to get the best men in teaching and research until the principle is established that he who does creditable work will be appointed to the out-patient department and promotion to the wards will come to that man young or old, who has best utilized his opportunities for work, whatever his seniority rank. This stimulus is needed by almost every man, and with it more hard work will be done.

Changes that must come soon in the staffs of Boston's large hospitals will give an opportunity for the hospitals to show whether adherence to the precedent of seniority promotion will continue or not. If seniority determines these promotions, I can but feel that medical progress in Boston has received a serious setback. So long as the medical school controls no hospital appointment in Boston, as is now the case, it should strive in every way possible for the principle of promotion to the best man, in order that for its teaching it may command the best local talent. Cessation of seniority promotion in Boston hospitals would, I believe, greatly aid in getting the best local men for our teaching.

I have not speculated as to the future development of the Harvard Medical School. Each can build for himself medical air castles. To maintain its relative position Harvard Medical School, however, must be active. Laboratory buildings we have in every way adequate. The crowning glory of a medical school — the hospital — we lack. I cannot refrain from saying that the Brigham Hospital will not be that crowning glory unless the appointments be controlled by the medical school, teaching be freely permitted and there be a single head to each service. A large number of patients across the street are no asset to the student, unless he can come in contact with them and have competent instructors. Too often do we boast of the many hospital patients in Boston as a valuable asset to the medical school, forgetting how few of these are really accessible to our students. Not more patients, but more contact with patients is the present great need of our students.

If the Brigham Hospital is manned as the present Boston hospitals and be free of university control, to my mind its nearness will be its only advantage, and it may well serve as a perpetual preventive of what we need, — a university hospital. An improvised dwelling house with few patients would be better for us than a magnificent hospital, uncontrolled by the medical school, for in the former, at least, the medical school can determine the policy and appoint the best man capable of doing medical investigation and teaching, and in this wise lay the beginnings of a university hospital, which in due season will grow to be an institution that is a fit companion of our present laboratory buildings. But I have digressed from my main topic.

Notwithstanding the fact that at present the medical school cannot appoint to hospital positions the men regarded as most capable of teaching and investigation, yet the advantages of the training offered the young medical man by such an employment of his time as is afforded by teaching in the departments of medicine, are great, and these positions, I wish to emphasize, are for the young men and should be held for only a few years. Continuance in them is desirable neither for the man nor for the school. The personal pleasure in such work in itself would well recompense the man during these few years and the training gained would at least be no bar to hospital promotion. So, in those years, while awaiting an appointment in the out-patient department, medical teaching offers many attractions. If followed by the brighter men, at least, we will have soon in America a class of men from which to draw clinical professors, when freer interchange between our schools becomes possible, and who in the meantime can redeem us from the just criticism that in America rarely does a man continue clinical investigation beyond the first decade of his medical life, and that our medical leaders represent but little that was not embodied in our medical leaders of half a century ago.

For these reasons and others, I trust that the recent changes made in the teaching of medicine at Harvard will result in attracting the younger men to the positions which give them teaching experience and opportunity for clinical investigation. All effort possible on your part directed to this end will be a great boon to the medical school and a factor in the uplift of the standard of American medicine.

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The Croonian lectures of the Royal College of Physicians, London, have been delivered by Dr. W. J. R. Simpson on "The Plague." — *Science.*

Original Articles.

THE MEDICAL AND SURGICAL ASPECTS OF PERFORATING TYPHOID ULCERS.*

BY RICHARD H. HARTE, M.D., PHILADELPHIA.

Since typhoid fever has become such a widespread disease, with its apparently unavoidable and fatal complication, namely, perforation, which has been estimated to amount to as many as 16,000 annually in the United States alone, it renders a discussion of the subject one of perennial interest, and, I think I may add, of considerable value. It is only by a discussion of the relative value of the various symptoms and modes of treatment at present known to us, that we can hope to save more of these cases from a fatal termination.

Although it may be somewhat of a presumption to call your attention to a subject which has already received such able treatment by many of the physicians and surgeons of Boston, yet I venture to present for your consideration some of the conclusions that I have myself reached, with the hope of carrying home with me, as the result of your kindly discussion and criticism, some ideas which will be of practical utility to my future patients.

I cannot but feel the importance, in the treatment of desperate cases of typhoid fever, of the surgeon and physician daily seeing the patient together, as it is impossible for a surgeon suddenly called in consultation, knowing nothing of the individual peculiarities of the patient, to positively diagnose perforation. Neither does it seem necessary that the surgeon should be called in consultation in every case, particularly before the physician feels that there is cause for alarm.

The physician is of the greatest help to the surgeon in deciding on the propriety of surgical intervention. An over-enthusiastic surgeon would many a time open a patient's abdomen were not the physician at hand to remind him that sudden pains in the course of typhoid fever are not unusual; that a leucocytosis of from 10,000 to 12,000 has occurred and the patient seemed none the worse; that the patient has vomited at times without appreciable cause; or, that in another instance, abdominal pain and fall of temperature was significant of intestinal hemorrhage and not of perforation. Of course, the surgeon must in the end assume the responsibility; he cannot and he should not regard himself merely as a machine in the hands of the physician. Therefore, to render himself competent to appreciate the changes produced in typhoid fever by perforation, he must familiarize himself with the normal aspects of the disease; he should be acquainted with the slow pulse, the disproportionate high fever; the distention of the abdomen, its normal resistance and susceptibility to pain; and he should pay particular attention to the facial expression of the patient. This facial expression and the change which occurs in it after perforation is so characteristic, though difficult of description, that to one who is familiar with the patient's daily aspect, it becomes a surprising help in diagnosis. Hence, I think it well for every surgeon in hospital practice to keep himself fairly familiar with all the very ill typhoid patients in the wards. I have endeavored to carry out this plan with my colleagues as far as possible at the Pennsylvania Hospital, with the most gratifying results.

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* Read at the meeting of the Surgical Section, Suffolk District Medical Society, in conjunction with Boston Medical Library, March 13, 1907.

In the paper under consideration I wish to express as far as possible the results of our experience as obtained from the study of 80 cases of perforation, which have been operated upon by my colleagues and myself since 1901 at the Pennsylvania Hospital. I find that our experiences and the results obtained from them have already been presented in a paper by Dr. Ashhurst and myself (published in the Transactions of the American Surgical Association), based on 362 operative cases.

I wish here to express my appreciation of the very careful and accurate work which my colleague, Dr. J. A. Scott,[1] has done at the Pennsylvania Hospital. His reports have proved of great value, and for the statistics herein set forth I have largely depended on his figures. I find that Dr. Scott's studies corroborate the deductions which I have already arrived at in my previous papers on this subject[2].

From January, 1903, to March 2, 1907, there have occurred in Philadelphia 34,725 cases of typhoid fever with 3,805 deaths. Considering that at least one third of these deaths are due to perforation, we have had 1,268 perforations to deal with in Philadelphia. Some of these cases should have recovered, and it remains for the attending physicians to determine how many are to be recognized and submitted early to surgical interference, with the hope that a fair percentage of recoveries may take place. The statistics thus far compiled give too low a mortality rate, I believe, as many fatal operative cases have never been reported.

There is no doubt that certain typhoid epidemics are more virulent than others, and the resulting ulcerations occurring in the bowel are deeper and greater in number, and where perforation has occurred and the patient has been operated upon in these serious cases, secondary perforation frequently occurs with a fatal result. In our series this has been experienced repeatedly.

In summing up our work at the Pennsylvania Hospital along this line, we have operated on 80 cases of typhoid perforation, of which 15 have recovered, giving a mortality of 81.25%.

Now permit me to take up, *seriatum*, the general subject of perforation.

Predisposing causes. The causes of perforation are numerous; among them may be mentioned race, sex, age, stage of the disease, severity of the attack, severity of the epidemic, intestinal parasites, etc.

It would appear that the negro is less disposed to perforation than the white. Out of 25 operations of my own, only one patient was colored, making 4%; and this seems to be the experience of other operators.

Males are more liable to suffer perforation than females.

As a rule typhoid fever is a disease of early life, and consequently most perforations occur between the ages of 15 and 30 years.

From a careful analysis of a large number of cases, the third week of the disease is the most usual time for perforation. It may, however, occur at any time during the height of the disease, or even before the patient feels particularly sick, as has been noted in a number of ambulatory cases.

There is no doubt, as before mentioned, that certain epidemics of typhoid fever are more virulent in character than others, the ulceration of the Peyer's patches in such instances being deeper and more extensive than in the milder cases, causing a greater tendency to perforation.

Virulent cocci or bacilli may cause a secondary infection resulting in extensive inflammation, necrosis and, later, perforation. Anything which sets up unusual peristaltic action in a previously diseased intestine — undue involuntary contraction of the abdominal muscles, straining at stool, urination, cough, sudden spasm or struggle incident to a cold bath, may be a factor in producing perforation. There is no doubt that irritating foods brought to patients by their friends should be classed as exciting causes. When perforation occurs during sleep, without any apparent exciting cause, it may rightfully be attributed to excessive necrosis.

Intestinal parasites have been mentioned as possible factors in perforation, but I do not consider them as such. I do believe, however, that they are a predisposing cause in appendicitis.

The *pathological lesion* in typhoid fever is confined largely to the last three feet of the ileum, although extensive involvement of the colon may be found, even down to the sigmoid. But it is in the last two feet of the ilium that perforations are most apt to be found, varying in number from one to six or more, and depending as to their size largely on the character and depth of the ulcers. Not infrequently at the time of the operation, when the intestine is exposed, one perforation may be found, while half a dozen ulcers can readily be detected through the peritoneum, both by the eye and by the sense of touch. These ulcers are favorable sites for future perforation. When the peritoneal coat does finally give way, the opening at first is very minute, even smaller than a pin head. It will usually be covered with a small mass of frothy mucus or liquid fecal matter. Around this area will also be found considerable masses of lymph, and in seeking for the point of perforation this lymph must be gently removed with gauze, after which the perforation will not infrequently be brought to light. Again, a large opening may exist, varying in size from the end of a pencil to the tip of the finger and permitting feces to escape. What will be noticed on the

[1] Univ. of Penn. Med. Bull., May and June, 1905. New York Med. Jour., Feb. 9, 1907.

[2] Ann. of Surg., Jan., 1904. Jour. Am. Med. Asso., Oct. 28, 1905.

operating table differs but little from what all have frequently seen in the laboratory. If cultures are made the typhoid bacillus will be found to be the infecting cause, with a low grade of peritonitis. If streptococci rather than staphylococci abound, the lymph is more abundant and the prognosis consequently more grave.

Time will not permit of a lengthy discussion of the many interesting points of this subject from a pathological standpoint, but the chief interest in doubtful cases is whether or not a perforation has taken place.

With our present knowledge of typhoid perforation there would appear to be little difficulty in making a positive *diagnosis*, but unfortunately typical cases are the exception. Not infrequently a case may present all the clinical evidences of perforation, submit to operation, and no signs of any peritoneal irritation be found. On the other hand, patients may die without any abdominal symptoms of importance and at autopsy a perforation may be found. Nevertheless, there are certain classical symptoms which must be borne in mind and which must be thoroughly analzyed in every suspected case, for otherwise errors will be made in diagnosis.

Pain is one of the most valuable symptoms in diagnosis, and the greatest attention should be paid to it. It varies in degree and in location and also in character, but it usually is more or less paroxysmal. Its severity may be so marked that the almost comatose patient may cry out with it, or, on the other hand, it may be very mild. It is usually of a stabbing character, situated most frequently in the lower right quadrant of the abdomen. It may be felt in the epigastrium and umbilical region, or in the bladder, and, in the male, at the end of the penis, or sometimes in the left iliac fossa. These facts should not be overlooked in patients who are apathetic, or are so far advanced in the toxemia of the disease that they do not appreciate pain. Thus it often happens that the first evidence of perforation is a distended abdomen with a movable dullness in the flank. I recall a case where the first sign of perforation was a violent attack of pain, causing the patient to scream out and draw up his legs in bed. This lasted but a short time, leaving only muscular rigidity upon which to base a diagnosis. On the other hand, it must be borne in mind that pain is a common thing during typhoid fever, due to the ingestion of improper food, flatulence, or a dozen different causes of irritation within the lumen of the gut. Therefore, it is imperative that this symptom be thoroughly guarded and carefully analyzed. In our experience at the Pennsylvania Hospital pain was a constant and reliable symptom in about 75% of the cases operated upon. The subject of pain is so important that I hastily run over a list of conditions which may be responsible for it. Among these may be mentioned hysteria, pleurisy, pneumonia, distended bladder, menstruation, appendicitis, peritonitis, cholecystitis, rupture of the gall bladder, liver abscess, phlebitis and thrombosis of the iliac vessels.

Manges[3] very aptly puts it when he says that the solution of some of the problems of the real significance of pain will be found when we know more about the exact relation of non-perforative peritonitis in typhoid fever.

There can be no question but that pain when present is a most valuable and important symptom and it would seem that it must always be present to more or less an extent after a perforation has taken place. But here the personal equation has always to be considered. What one patient will consider pain, another may express as only slight discomfort.

Sweating, either alone or accompanied by a fall of temperature, frequently accompanies the pain of perforation. The sweating may be profuse, involving the entire body, or only the head and neck. With it there is often a fall of temperature, and, in my experience, it is fairly consistent, varying from 2° to 4°. Where no fall of temperature occurs it may be due to the fact that the temperature had not been taken until the advent of peritonitis, which had restored it to the original range of fever. I consider it a good rule to have the temperature taken immediately and repeatedly after the occurrence of any abdominal pain, until all doubt is passed. A fall of temperature frequently accompanies intestinal hemorrhage during typhoid fever, but the hemorrhage is, as a rule, painless and usually evident in the stools in the course of an hour or so.

In considering the *temperature* it must be borne in mind that a sudden chill is a warning that must not be overlooked. In the last case I operated upon, a chill occurred some hours before a diagnosis of perforation was made. It does not often occur, but when present is significant of some sudden peritoneal irritation.

Rigidity of the abdominal muscles is one of the most valuable signs in the diagnosis of intestinal perforation, and I think its value is more generally appreciated by the surgeon than by the physician. This rigidity is *reflex* and hence is *involuntary*, depending for its production on the overflow of stimulus received in the lumbar cord from the inflamed peritoneum and is most noticeable in the right rectus and oblique muscles of the abdomen. Voluntary rigidity of the abdominal muscles is not uncommon in typhoid fever, as the patient tries in this way to protect his sore and swollen intestine from the useless pressure to which he is subjected at the hands of some physicians. I hope I may be pardoned if I say that I do not think all physicians realize what a surgeon means by abdominal rigidity. It is not elicited by trying to palpate the lumbar spine, but can be detected by the merest touch of the finger tips. The finger tips, however, must be as well trained in their work as is the skilled ear of the physician who frequently studies obscure heart lesions. It must be remembered that the sensorium in typhoid is so blunted that this symptom may not be so quickly recognized as in appendicitis.

Tenderness is not as valuable a sign as rigidity, since tenderness may exist where no perforation has occurred. It can be elicited to a more or less extent in almost every case of typhoid fever. However, when there is a definite spot of tenderness and it is accompanied by other significant symptoms, it must not be disregarded. In examining the abdomen for tenderness the rectum should never be overlooked, as a knuckle of the ileum may perforate and slip into the pelvis and thus for a time escape detection in a superficial examination of the abdomen. This was very noticeable in a case operated upon a short time ago by Dr. Stewart at the Pennsylvania Hospital. The case was suspicious, but nothing was positive until a rectal examination was made which revealed a spot of great tenderness, and when the abdomen was opened a perforated knuckle of gut covered with lymph was found lying alongside of the rectum and surrounded by exudate. The perforation was closed, the pelvis washed out and the patient recovered.

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[3] Mt. Sinai Hospital Report, 1905.

Vomiting is of so common occurrence in typhoid fever, without any apparent cause, that it cannot alone be considered as indicative of perforation, but when it occurs for the first time, and especially where it either precedes or follows pain, it should not be disregarded.

About the time of perforation a peculiar change takes place in the *facial expression*, which is most significant. It is difficult to describe, but once seen is never forgotten, being distinctly characteristic of the shock of perforation.

There is in the majority of cases an increase in the *pulse rate*. In typhoid fever the usual pulse rate is from 80 to 100 beats per minute, but after perforation it is apt to rise rapidly from 120 to 140 within ten or fifteen minutes following the onset of pain.

Distention of the abdomen is often present throughout the disease, and is not an important sign, although it becomes more pronounced after perforation. The important point to determine is whether the gas is within the bowel or free in the peritoneal cavity.

Dullness on percussion is a very fallacious sign, and palpation of the liver dullness, on which so much dependence was formerly placed, is even more elusive. Intestinal distention frequently precludes palpation of the hepatic dullness; even when air is free within the peritoneal cavity liver dullness may exist. Dullness in the flank is not always pathognomonic of fecal extravasation, as a freely movable colon with liquid feces within it may give rise to a similar condition.

It has been asserted by Crile and others that the blood *pressure* rises about the time of perforation and can be demonstrated by the use of the sphygmograph. I have not had any experience along these lines and am inclined to regard it as being of more interest to the laboratory observer than to the practical surgeon and physician.

The *examination of the blood* is now generally conceded to be of little value, or at least such has been our experience at the Pennsylvania Hospital. During typhoid fever the number of leucocytes is physiologically diminished and it would seem as though the patient's exhausted condition prevented a leucocytosis. A high leucocytosis may render positive the diagnosis of perforation, whereas a low count should be interpreted as showing that a perforation does not exist, since the patient in the latter case may be entirely overwhelmed by the typhoid toxins and no leucocytic action be possible. Kast and Gutig have shown that in typhoid fever complicated by secondary infections the leucocytes are much lower than when such infections occur alone. In the observations made by Longcope, at the Pennsylvania Hospital, on the bone marrow in cases of typhoid fever, it is shown that when the disease is complicated by a severe secondary infection, there appears to be an actual inhibition of the formation of the polymorphonuclear leucocytes in the bone marrow. A wave of leucocytosis is here described as reaching its maximum just after perforation and then subsiding.

I am firmly of the opinion that a careful blood picture should be drawn wherever possible, but that the results should never be considered, except where they confirm existing clinical signs.

From what has thus far been considered, it would appear that in a typical case of typhoid perforation but little difficulty would be experienced in making an accurate diagnosis. But this point should never be lost sight of, — that it is one thing to operate on a case of typhoid perforation, and a decidedly different thing to operate on a case of septic peritonitis, the result of typhoid perforation, which has existed for some time and which has been evinced by milder and more localized symptoms which have not been recognized and properly interpreted. Any person who has seen many cases of perforation will be struck with the difficulty of estimating the exact time of the accident. This is emphasized in the elaborate and comprehensive report by Drs. Shattuck, Warren and Cobb, published in 1900.

It has been asserted that difficulty is experienced in making a diagnosis where the question of *hemorrhage* is concerned, as to whether the hemorrhage was responsible for many of the symptoms that present themselves or not. As before mentioned, the collapse is likely to be the same in either case, yet hemorrhage is usually unaccompanied by pain or rigidity. The escape of blood from the bowel soon tells its own tale. As a rule perforation cases are seldom accompanied by hemorrhage, probably not more than 10%. In one of my own cases both hemorrhage and perforation existed, as was proven by laparotomy. The bleeding point was ligated and the perforation in the bowel closed, after the establishment of an artificial anus. In appendicitis also it may be impossible to make a positive diagnosis, especially if the appendix is perforated. In non-perforated cases of appendicitis the pain is not so severe, the temperature does not show such a sudden drop and the facial expression is not so characteristic. Peritonitis, due to pelvic or ovarian disease, can usually be eliminated after a careful vaginal examination. Gall-bladder affections are not uncommon during an attack of typhoid, owing to typhoid bacilli finding their way into the gall bladder, causing much disturbance and even rupture. This occurred in a case a short time ago at the Episcopal Hospital. Pain in the gall-bladder region, possibly jaundice, symptoms of shock, with rigidity, dullness and possibly a palpable mass, all aid in determining the character of the invasion. The perforation of gastric and duodenal ulcers during typhoid fever simulates very much the symptoms of an intestinal perforation in the ileum, and the local signs are our chief aid in making the diagnosis. Iliac thrombophlebitis, suppurating mesenteric glands, splenic infarcts, all may cause peritonitis during the course of typhoid, and are not so characteristic of perforation. Where pain exists the greatest care must be exercised in determining its origin.

I recall two cases, one where the pain, muscular rigidity, anxious expression, etc., pointed to perforation. The regular passage of a fair amount of urine and the inability to palpate the bladder led to a tentative diagnosis of perforation. After the introduction of the catheter, however, 188 oz. of urine were evacuated, and all symptoms immediately subsided. In the other case a diaphragmatic pleurisy caused a similar train of symptoms, which subsided on a thorough fixation of the side.

The *prognosis* in typhoid fever depends largely and almost entirely upon the promptness with which the condition has been recognized and the patient operated upon, provided that the area of ulceration in the bowel is not too extensive and the patient is not too toxemic, as the result of a prolonged illness.

Of nearly 600 cases which I analyzed 24.65% left the surgeon's hands well, there being a *mortality* of 75.35%. These figures, I am convinced, are too high, owing to the tendency to report only cases in which recovery has taken place. My own experience, based on 25 operative cases, gives a percentage of recoveries of 20%. Out of 39 operative cases, up to January, 1905, reported by Dr. Scott at the Pennsylvania Hospital, there were 12 recoveries, giving a *recovery* rate of 30+%. Since January, 1905, a heavy mortality has been experienced in all operative cases at the Pennsylvania Hospital, reducing the percentage of recoveries to 18.75%.

Vaughan,[4] of Washington, reports 10 cases of typhoid perforation operated upon by him, with a recovery rate of 40%.

I cannot help but feel that as time progresses the mortality rate in these cases will be diminished, as surgeons will segregate these cases, and only operate upon those where there is a possible chance for recovery.

The *operation* and *after-treatment* of intestinal perforation is probably so familiar to every one here, that it seems hardly necessary for me to discuss its technique to any great extent. Yet I feel convinced that there are some points which may be open to question. I am convinced of the importance of operating as soon as possible after a diagnosis has been made and this should not, under ordinary circumstances, consume more than ten to twenty minutes. I never wait for the so-called reaction to take place before opening the abdomen. The valuable time that is often lost after the first suspicious symptoms manifest themselves, in making the diagnosis, in obtaining the consent of the patient or his family to operation and in the transportation of the patient from the typhoid ward to the operating room, is all too great. I look forward in all large hospitals to the time when the management will *insist* that when the patient is admitted to the medical ward the physician in charge shall have the consent of the patient and his friends to operate immediately, should the urgency of the case demand it. In cases in which there is an element of uncertainty in the diagnosis, and where the symptoms do not ameliorate, I think that an exploratory examination should be made. Experience has curiously demonstrated that where no perforation exists an exploratory examination is usually followed by improvement, and there is hardly a reported instance where operation can be said to have hastened death. In my own experience in 27 cases, two were found to be non-perforative, and they really seemed improved by their sojourn in the surgical ward and went on to a hasty convalescence.

I always employ general *anesthesia*, ether preceded by ethyl chloride (if not contra-indicated), and if this is intelligently administered the patient in a few moments drops into a peaceful sleep without a struggle. The unconsciousness thus gained on the patient's part is much more valuable in the rapid completion of the operation than are any of the advantages, imaginary at best, which can be claimed for local anesthesia. It must be remembered that ether is a heart stimulant and doubtful cases not infrequently improve so much under its administration as to render an operation justifiable.

There are few surgeons to-day who advocate anything but the right-sided incision. Those who adhere to the median incision must have had a limited experience. Seventy-three per cent of the perforations are situated within 12 inches of the cecum and 94% are in the last two feet of the small intestine. In addition to this it is very difficult, when the abdomen is opened, to determine in which direction the presenting loops of bowel run, no matter how proficient one may be with Monks' method of intestinal localization, invaluable as it is for other intestinal investigations. If the cecum is first located it is easy to trace the ileum upwards until the perforation is found. This is materially aided by having your assistant examine one side of the intestine while you are watching the other side during its rapid removal from the abdominal cavity. In this way much time is saved and there is less likelihood of the perforation being overlooked. If in searching for a perforation it is noticed that when the color of the ileum begins to fade quickly from its dark, congested shade to the normal pink,

[4] Wash. Med. Ann., March, 1906.

you may be positive that you have run beyond the perforation limit, and doubtless have overlooked a small pin-point perforation, probably covered with a few flakes of lymph.

As soon as the perforation is found it should be sutured, thus preventing undue soiling of the peritoneum. In about one out of every 8 cases more than one perforation will be found. Hence diligent search should be made for all inflamed areas and every spot, even threatening perforation, should be *inverted*. The inversion of the perforation with Lambert sutures of silk is usually best done in the long axis of the bowel, as transverse sutures are more prone to tear out as the intestine resumes its normal convexity. However, under certain conditions a transverse suture may be most applicable, especially if the opening is large.

Excision of the ulcer is not only useless but harmful, as it is a waste of time and may cause hemorrhage. If the opening should be too large to preclude suturing an omental flap may be adjusted over it, or if the conditions do not readily admit of closure, an artificial anus should be established. Excision of the bowel with an end-to-end anastomosis is too severe and slow an operation, as proven by its failure in every reported case. In desperate cases, where an extensive area of the ileum is studded with large, deep ulcers, all of which are on the point of perforating and where inversion is out of the question, an artificial anus may be quickly established and the efferent loop of bowel washed out with salt solution, so as to remove all irritating substances from the surface of the ulcer, thus reducing the tendency to fresh perforation. My last case, upon which I operated about two weeks ago, was of this type.

The *toilet of the peritoneum* has been a subject much in dispute in cases of peritonitis from any cause. It depends, however, almost entirely upon the amount of soiling and extravasation that has taken place within the peritoneal cavity, as to what method shall be employed for the removal of all infectious material. If the operation has been early and little or no soiling or extravasation has taken place, all the cleansing can be accomplished by the judicious use of dry gauze.

But if, on the other hand, which is usually the case, the pelvis is partly filled with fluid, stained with fecal matter and pus, the coils of intestine smeared with escaping fecal matter, and all the area in the region of the perforation in a state of surgical filth, then I cannot see that there is any other alternative but thorough irrigation of the abdominal cavity with hot saline solution. In my opinion this is the most efficacious method of cleansing the abdominal cavity, and I am sure, if rightly done, offers the patient the best chance of recovery. I cannot see that infection is much diffused, or that the patient is much shocked by this procedure. It often occurs that the infectious material is widely diffused, but has not yet been absorbed. If adhesions have not been formed, and if the infective material can be removed quickly, absorption will be diminished, or effectually prevented. On the other hand, the time required and the traumatism frequently inflicted in the sponging process must condemn this method to the conscientious surgeon. The only other cause open is to leave fecal matter, and perhaps pus, free in the abdominal cavity, compelling the patient to take his chance to fight off the probability of infection, with no other help than that afforded by a drain.

To satisfactorily cleanse the abdomen by *irrigation* does not mean pouring a few pitcherfuls of solution into the abdomen and then mopping it out in an aimless manner. The surgeon should be provided with a large, hard rubber tube, having a lumen of ¾ of an inch, with multiple perforations, and with a rubber tube and a funnel attached to the other end. Through this funnel should be poured gallons of hot salt solution, at a temperature not less than 110° F. The tube should be inserted first down to the pelvis, then between the coils of intestine, while the surgeon separates them with his left hand while manipulating the tube with his right. During the irrigation the pulse will, as a rule, improve, partly due to the heat of the solution and the refilling of the vascular channels by absorption. To combat shock it has been suggested that adrenalin be added to the solution. I have used this, however, in only one case and with a negative result.

Drainage is best maintained by large rolls of gauze placed in those regions of the abdomen where fluid is wont to accumulate, namely, the pelvis, each loin and between the folds of intestine, along the sutured bowel. Intravenous injection of salt solution is of great aid, preventing shock and sustaining the patient during the first few hours following operation.

No little discussion has arisen as to what position patients should be placed in on their return to the ward. Some advise the extreme Fowler position, that is placing the patient in the Sims's sitting posture, in order to facilitate drainage towards the pelvis. There is no question that this is all right, in perforated gastric or duodenal ulcer, gall-bladder infections, etc., but it must be borne in mind that typhoid patients are usually exhausted by a long illness and are frequently so toxic and delirious that it is not only unwise, but almost impossible, to keep them in a sitting posture. I have seen it, to my mind, do decided harm to toxic patients, although the patient's condition after operation was fairly good. I am strongly of the opinion that the majority of cases after operation will do better in the horizontal position, and that drainage can be perfectly maintained without any undue tax on the strength of the patient.

As a rule no *food* should be given by the mouth until the third or fourth day. During this interval nourishment should be maintained by nutritive enemas, and when food is finally given, it should be of the blandest kind, for the surgeon must remember that the patient has typhoid fever as well as a sutured intestine.

Finally, I would say that I have no reason to change the conclusions at which I arrived some time ago, and which were published in my previous paper.[5]

1. Perforation of the bowel in typhoid fever is a much more common condition than is generally supposed, being responsible for about one death in every three cases.

2. The most common time of perforation is between the fourteenth and twenty-first days of the disease and occurs in all grades of severity, from the ambulatory to the hemorrhagic type, and does not seem to be any more common in the hemorrhagic than in the milder types of the disease.

3. The ileum is the most frequent site of perforation, in the majority of instances the perforation occurring within 12 to 18 inches of the ileocecal valve. The next most frequent sites of perforation are the appendix and the cecum.

4. Pain of some kind is present in 75% of all cases. In 50% of the cases the onset is sudden and severe and of increasing intensity, localizing itself to a special zone. In 20% of the cases the pain is of slow onset, not localized, with general distribution. In some cases no pain is complained of and the usual symptoms of perforation are absent.[6]

5. Tenderness and rigidity are present to a certain extent in all cases. The latter symptom I regard as a most valuable sign, and it is rarely wanting, except in patients with unusually large and pendulous abdomens.

6. When perforation is suspected the temperature should be taken every hour, as it is only in this way that definite conclusions can be drawn with regard to any marked variation in this symptom.

7. Distention is a late symptom of perforation, usually not making its appearance until some hours after the perforation has occurred. The obliteration of the liver dullness is not regarded as a reliable sign of perforation.

8. The study of the leucocytes is of little aid, although occasionally their increase may make you more positive of the diagnosis. The differential count is of no practical value.

9. Before a positive diagnosis is made, pain caused by a pleurisy, pneumonia, cholecystitis, acute gastro-intestinal indigestion, iliac thrombosis, appendicitis, peritonitis, the passage of a renal calculus, distended urinary bladder, or even a hemorrhagic exudate into the abdominal muscles, must be carefully considered. Any of these conditions may cause symptoms similar to those caused by intestinal perforation.

10. Nature may occasionally close one or more perforations, but the only rational procedure where perforation occurs is surgical intervention. No case is too desperate for an attempt, as it has not infrequently been noted that the mild cases succumb and the more desperate ones recover.

11. In cases of doubt, where the symptoms point to perforation, the safest procedure is to operate. As a rule, cases operated on and no perforation found seem rather to be benefited than otherwise by the operation.

12. When the diagnosis has been made, I know of no condition, except possibly that of hemorrhage, where speed in operating is so important a factor in securing success, as it is in intestinal perforation. Everything should be carefully prepared beforehand and all conditions considered, so that when the operation is once begun things should move with rapidity and without any interruption.

PERFORATING TYPHOID ULCERS.*

BY FREDERICK C. SHATTUCK, M.D., BOSTON,
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We are under obligations to Dr. Harte for his comprehensive and interesting paper. The closer association of work which he suggests between the physician and the surgeon would be of great value in other affections as well as in typhoid, and profitable to the patients as well as to the medical men. There are, however, practical difficulties in carrying it out. Each man has his own patients to look after, and when he has got through with those inside the hospital he usually has not too much time for those outside.

His other suggestion, that an understanding should be reached that every case of typhoid admitted to the hospital may be operated on without delay, if deemed necessary, seems to involve no serious difficulties, and should, it seems to me, be generally adopted.

It is interesting to learn that those patients operated upon without any perforation being found did so well. I find it hard to believe that their improvement was due to the operation, which was presumably done well on in the third week at about the time when the disease naturally abates. I am sure that Dr. Harte does not mean to recommend anesthesia and laparotomy as a routine remedial measure for typhoid fever.

Not knowing what Dr. Harte was going to say or exactly how he was going to treat the subject, I put down in writing what I have to say, especially from the point of view of the physician.

Perforation is the gravest complication of typhoid fever. Fortunately it is rare. Of 2,047 cases of typhoid treated in the Massachusetts General Hospital in the past ten years, it has been known to have occurred in 30, or in 1.4% of the cases. I have had no case of perforation, myself, since 1899.

It is most liable to occur in the third week, but may occur at any time after the middle of the second. It may occur in the first or second relapse, the primary attack or attacks having run a favorable course. There is no relation between the severity of the case and the liability to perforation.

The duties of the physician with regard to perforation in typhoid are four-fold: (1) He must know the symptoms suggestive of its occurrence; (2) he must be on the watch for them; (3) he must see that the nurse or attendant knows and is alive to them, in order that he be sent for at the earliest threatening moment; (4) he must not delay calling in a surgical colleague.

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[5] Jour. Am. Med. Asso., Oct. 28, 1905.

[6] Scott.

* Read at the meeting of the Surgical Section, Suffolk District Medical Society, in conjunction with Boston Medical Library, March 13, 1907.

Sudden abdominal pain, accompanied or soon followed by spasm, and later by tenderness, probably, but not necessarily, localized, coming on at or after the middle of the second week, are symptoms not to be lightly regarded. Vomiting may or may not occur. Rapidly increasing leucocytosis is highly confirmatory, but we must remember that operation has proved the existence of perforation and peritonitis without increase in the white count. Here, as in other diagnostic problems, it is the association of symptoms and signs — the whole picture — which counts rather than any one symptom or sign. Rapidly increasing distention in connection with the above indications suggests that peritonitis is general.

The milder the typhoid, the more free from distention the patient; the less toxic he is, the more classic are the symptoms likely to be, other things being equal. This is fortunate, inasmuch as the hope from operation is small in a patient exhausted by a severe acute infection of usually at least two weeks' duration, with an intestine more or less paretic, with the sensorium so benumbed that it recognizes only feebly, if at all, the supervention of perforation. While perforation cannot be recognized in a certain proportion of cases, I strongly incline to the opinion that the pronounced typhoidal state is distinctly less common now than thirty-odd years ago, in my undergraduate and interne days, thanks to more rational treatment and a vast improvement in nursing.

Moreover, the fact that the early recognition of perforation may through operation save life in itself leads to greater alertness on the part of the physician than was called for in the days when opium was practically the only weapon against this form of the *vis lethalis naturae*. Nowadays, only the minority of perforations go unsuspected or unrecognized in good hospitals or under good care in private. It is surely desirable that recognition should be early and that surgical consultation be held as soon as possible. The interest of the patient is thus better safeguarded. Were medicine and surgery less closely intertwined than they are, the duty of the physician might be said to be done after recognition and calling a consultation, but many a man must, perforce, be both physician and surgeon, and, where limitation of practice is possible, there are more surgeons who practice medicine than there are physicians who practice surgery.

General considerations and the experience of the past must be given due weight in conjunction with the special features of each case before the decision is reached, whether and when to operate. I have believed that in a patient in fairly good condition and with undoubted perforation operation cannot be done too early. There seems to be some division of opinion among surgeons whether it is not wiser to wait until the first shock of the perforation has passed. There appears to be warrant for this division in the Massachusetts Hospital cases for the past ten years. I note that in the six recoveries after operation, the apparent interval between the first indication of perforation and operation was twenty-three, twenty-four, twenty-three, twelve, eight and four hours.

In 8 of the fatal operated cases, the interval was twelve hours or less. In 2 cases it was less than two hours. One of these was mine, as favorable a case for operation as one could wish for. When I made my visit in the ward, the man, who had given me no anxiety, was asleep, and, looking at his chart, I passed him by. Before I left the hospital he was reported as having severe abdominal pain. I went back to him and in about an hour he was under the knife, but died.

In the other 6 fatal cases, the interval ranged from eighteen to thirty-six or more hours. In one of these, the first symptom of perforation occurred sixty hours before operation and general peritonitis had existed twenty-four hours before, yet the patient withstood the operation and died nine days later from a secondary perforation.

It would seem to me that better results in the future are to be looked for through prompt recognition of the condition, more accurate knowledge than we seem to have at present as to the time of election, with due consideration of the special features of each case, and realization of the fact that a patient with perforation in the course of an acute, though prolonged, infection tolerates anesthesia and intervention less well than one in full health with perforation of the stomach or appendix.

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MISTAKEN DIAGNOSIS IN CASES OF TYPHOID PERFORATION.*

BY C. L. SCUDDER, M.D., BOSTON,

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Considerable interest and importance attaches to the knowledge of those cases of typhoid fever, in which a mistaken diagnosis of intestinal perforation has been demonstrated by operation. These instances of mistaken diagnosis fall naturally into three groups: (1) Those in which no lesion is discoverable; (2) those in which the lesion found does not involve the peritoneum; (3) those in which the lesion is found within the abdomen, involving the peritoneum.

In the first group of "no lesions found" are the following: The case of Harringham & Bowlby,[1] in which there were symptoms of typhoid perforation on the twenty-eighth day of the disease; the two cases of the collection of Shattuck, Warren and Cobb,[2] cases 22 and 23 of the first report, and the three cases recorded by Scott,[3] of Philadelphia, in a recent paper.

To the second group belong cases of pneumonia (Scott [4] records three cases), of gastritis, of enterocolitis and of hemorrhage, of Zenker's degeneration of the abdominal muscles (beginning with hemorrhage into the muscle), one case of a distended urinary bladder.

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*Read at the meeting of the Surgical Section, Suffolk District Medical Society, in conjunction with Boston Medical Library, March 13, 1907.

The symptoms of intestinal perforation, sudden abdominal pain, tenderness and rigidity, together with distention, vomiting and rapid pulse, are also symptoms of a peritonitis. Certain causes of peritonitis will be mistaken for typhoid perforation.

To the third group of cases of mistaken diagnoses belong certain of the lesions causing peritonitis, viz., *cholecystitis* and perforation of the gall bladder. Erdmann's[5] paper has noted a personal case and three cases from literature, which, added to Keen's[6] paper, makes a total of 34 cases of perforation of the gall-bladder. Seven operations were done in these 34 cases; five complete operations, with one death. All of the unoperated cases died.

Killiani[7] recently reported a case with two perforations of the gut and a perforation of the gall bladder during the fourth week of the disease. The patient lived twenty-one days after operation and died of gangrene of the lungs and empyema.

Allyn, of Philadelphia, reported in 1901 a typhoid case which died three days after operation, in the third week of the disease. No lesion was found at operation. At autopsy, however, there was discovered an opening in the gall bladder communicating with a small opening in the hepatic flexure of the colon.

Willis reports a perforated gall bladder during typhoid fever, in which two weeks after a cholecystostomy the patient died of peritonitis. A cholecystectomy might have terminated differently.

Ovarian cyst infections are recorded during the active period of typhoid fever. One case by Sudeck[8] and two cases by Lewis, Harte and LeConte[9] appear recorded. Five infections of dermoid cysts of the ovary are recorded, which were operated upon from three to eight months subsequently to the typhoid fever. Such are the cases of Werth,[10] Pitha[11] and Wallgren.[12]

Rotation and strangulation of Meckel's diverticulum is reported by Sailer and Frazier[13] to have occurred in a young adult male, during the acute course of typhoid fever — operated upon as if for a perforation of the gut.

Case XXI, Shattuck, Warren and Cobb, series 1, and the case of Körte, of Berlin, are instances of a rupture of infected mesenteric glands during the course of acute typhoid fever. In each of these cases a pure culture of the typhoid bacillus was secured from the peritoneal cavity at the time of operation.

Femoral and iliac thrombosis in three of Scott's series cause confusion in diagnosis. Thayer[14] records two such instances in Baltimore.

Of very great interest are the cases mentioned by Finney,[15] in which perforation of the intestine during the course of typhoid occurred without demonstrable typhoid bacillus, and also of interest are those cases in which a fatal *peritonitis* may develop a discoverable perforation. The Munich autopsies record 2.2% of such cases. Gairdners'[16] Glasgow cases, five in number, are of this latter kind.

There is no doubt that an impending perforation exists in many cases — as illustrated in Case XXIV of the Shattuck, Warren, Cobb, 1st series; Case II, B. C. H. series; Scappacci, M. G. H. series, and Ayer, M. G. H., 2d series.

Murchison mentions as a cause of peritonitis during typhoid, softened splenic infarcts, abscesses in the bladder wall, abscess of the liver.

Mention is made in Scott's series of one case of a rectal ulcer and one case of pericolitis, mistaken for a typhoid perforation. Cases of appendicitis are occasionally operated upon for typhoid perforation.

I would especially call attention to a personal experience, in the following case:[17]

Adult female. Typhoid fever; end of the third week acute abdominal pain; rupture of an old pyosalpinx; rupture occasioned by an acute infection of the pyosalpinx by the typhoid bacillus. Diffuse peritonitis. Salpingectomy; the abdominal cavity irrigated and drained; the abdominal fluid contained a pure culture of the typhoid bacillus. Recovery.

A. C. S., thirty-eight years old, married. A patient of Dr. Stowe, of Medford Hillside. Massachusetts General Hospital No. 137,446.

She has always been well excepting for children's diseases.

About four weeks ago she was taken ill with malaise, cramps in the stomach and bowel and diarrhea. She went to bed May 15. She entered the hospital May 20. The abdomen was full, moderately distended, tympanitic, and the abdominal muscles were somewhat rigid. The spleen was not palpable. The temperature was 102.2° F. Pulse, 102. Respiration, 32. Hemoglobin, 80%, white blood count, 9,900. May 22 several rose spots were noted. Appearance, typhoidal. May 23, Widal reaction positive.

June 5, no distention, temperature nearly normal, very comfortable. June 8, at half past six in the morning, she had a severe abdominal pain. This pain was most intense in the lower part of the abdomen. The pain appeared just after a natural movement of the bowel. Immediately following this attack of pain the abdomen was held rather rigidly, and was moderately tender in the lower part. The pain was followed by a chill, and the temperature rose to 103.6° F. Slight shifting dullness was noted in the flanks. The rigidity of the abdominal muscles had increased. The white count rose from 9,000 to 18,000. An hour after the last chill the temperature rose to 104½°. At twelve o'clock, noon, the temperature was 105° and the pulse 130.

Vaginal examination discovered a fullness and increased resistance in the left cul-de-sac and a suggestion of bogginess. Operation at this time by a median incision below the umbilicus disclosed free, thick puriform fluid throughout the abdomen. There was no fecal odor to the fluid, nor was there any gas in the abdomen. The appendix was normal. The ileum was examined for several feet above the cecum and no perforation was found. The pelvis, where the pus was most abundant, was explored and a mass was found to the left of the uterus which proved to be a pyosalpinx, and corresponded to the tumor felt upon vaginal examination. The salpingitis was a chronic one. The wall of the sac was thick and edematous and had ruptured allowing the escape of the contents of the sac into the abdominal cavity. A salpingectomy was done leaving the left ovary. The abdominal cavity was flushed with salt solution. A gauze wick and rubber tubes were placed in the pelvis. Excepting for a rise in temperature upon the ninth of the month, about nine days after the operation, convalescence was uninterrupted. The rise of temperature was thought at the time to be indicative of a slight relapse of the typhoid infection. The wick to the pus cavity was entirely removed upon the morning of the fourteenth, and the gradual rise in the temperature from the fourteenth to the nineteenth would suggest that retained puriform material might have been the cause of the temperature.

Pathological report: A large pus tube which had ruptured in the course of typhoid fever. The walls of the tube were covered with exudation and upon microscopical examination showed a fibrous structure with a general round-cell infiltration. Diagnosis, chronic salpingitis.— W. F. Whitney, M.D

The bacteriological report, by Dr. Oscar Richardson, from the Clinico-Pathological Laboratory of the hospital, is as follows: The culture showed about fifty small to medium sized, round, grayish-white, glazed colonies of a bacillus like the typhoid bacillus. Sub-cultures showed the typical growths of the bacillus of typhoid fever. Widal reaction was immediately positive with blood from a known case of typhoid fever in dilution of 1-10. The bacillus is regarded as being the bacillus of typhoid fever.

A case of pyosalpinx is referred to by Wilson, according to Fitz, and one reported by Mabit[18] (1893). In neither of these latter two cases was a bacteriological examination made. These are the only cases of pyosalpinx complicating typhoid fever I can find recorded.

Doubtless some relapses in typhoid cases are due to recent infections of the gall bladder, to impending perforations of the gut or to infections of old pus sacs and ovarian cysts.

The surgeon, before operating upon a suspected typhoid perforation, should examine the pelvis of female patients and should consider, as possibly present, the lesions thus far recorded as complicating the diagnosis.

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PERFORATING TYPHOID ULCERS.*

BY FARRAR COBB, M.D., BOSTON,

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I have been very much interested in Dr. Harte's complete and thorough paper, and what I have to say can add little, if anything, to what he has said and can only serve to emphasize his conclusions. I have studied, however, the cases operated upon at the Massachusetts General Hospital in the last ten years, and the analysis of these cases may be of interest to Dr. Harte and the members present.

In the early part of the year 1900 a committee from the Boston Society for Medical Improvement, consisting of Dr. George B. Shattuck, Dr. John Collins Warren and myself, made a careful study of all the cases of perforation in typhoid between the years 1895 and 1900 at the Massachusetts General Hospital, the Boston City Hospital, the Children's Hospital and St. Elizabeth's Hospital. It was my privilege to read the report of this committee at a meeting of the society.

Since I was asked to take part in the discussion of Dr. Harte's paper, I have studied all the cases of perforation in typhoid at the Massachusetts General Hospital, both those operated upon and those not operated upon, between the years 1896 and 1906. My chief purpose in doing so was to see whether the new series of cases, the majority of which occurred in the years after the report of the Improvement Society was published, would give any new information as to diagnosis and treatment, or change in any way the conclusions made in this previous report.

Of the twenty cases operated upon at the Massachusetts General Hospital between 1896 and 1906, eight cases were included in the report of the Improvement Society; the other twelve are new cases. The important conclusions of the paper read in 1900 were as follows: certain typhoids are so sick that perforation and spreading peritoneal infection cannot be diagnosed until widespread and of fatal extent. A number of typhoids may have sudden perforation with free extravasation; in these the symptoms are fulminant, but at first in some cases may be localized to a certain extent; in these cases operation must be done at once, for general peritoneal infection can become past relief in from one to five hours. In the majority of mild typhoids, beginning peritoneal infection, whether from actual perforation or necrosis of the intestinal wall, is marked by less severe warning symptoms, localized abdominal pain, tenderness, muscle spasm, with or without leucocytosis; the severe symptoms following mean general peritonitis. These warning symptoms demand serious consideration and study, but in many cases are not rightly understood or not acted upon. Complaint of abdominal pain in a typhoid should also lead to a suspicion of beginning peritoneal infection. Frequent leucocyte counts are needed in every case, and an hourly count is recommended in the presence of abdominal pain. Pain associated with localized tenderness, muscle spasm and a rising white blood count points in most cases to an operation, in all cases to a surgical consultation.

In the light of my recent study I see no reason to change the conclusions of seven years ago, with the following exception: leucocytosis, if present, may give valuable corroborative evidence, but operation should be done where there is pain and localized tenderness and muscle spasm, whether or not there is leucocytosis. The presence of leucocytosis, especially the demonstration of a wave of leucocytosis, is a valuable aid; the absence is of no significance. The estimation of the percentage of polynuclear cells, as advocated by Gibson, may in future be of decided value. It certainly should be obtained in all cases.

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* Read at the meeting of the Surgical Section, Suffolk District Medical Society, in conjunction with Boston Medical Library, March 13, 1907.

ANALYSIS OF TWENTY CASES OF TYPHOID PERFORATION TREATED BY OPERATION AT THE MASSACHUSETTS GENERAL HOSPITAL FROM 1896 TO 1906.

In addition there were three cases operated on under a mistaken diagnosis. Two of the twenty cases were operated upon by myself. Six cases recovered, 30%. This percentage of recoveries is considerably larger than in the series reported in 1900. In that series, even if one case that died of hemorrhage on the fifth day after operation were called a recovery, the percentage of recoveries would be only 19%; without this case only three cases out of twenty-one recovered, or 14.3%. In the present series, if the case that lived eleven days and died of intestinal obstruction were called a recovery from typhoid perforation, there would be seven recoveries out of twenty operations, or 35%.

Sex and age. — All the cases were males and all white persons. Thirteen cases were under thirty years of age, three cases under twelve years. Only two cases were over forty years. There were two boys nine years old and one man sixty years old. The ages of the cases that recovered are as follows: two boys nine years old, two young adults nineteen years old, a man forty and one forty-five years old. That is to say, two thirds of the cases that survived operation were boys and very young adults.

Character of the disease. — Three of the cases were very sick typhoids, and in each it is fair to state that perforation or spreading peritoneal infection could not have been diagnosed until already fatal in extent. The other seventeen cases were mild typhoids; three of them were ambulatory cases.

Time of perforation. — The only important thing in regard to these figures is to substantiate the fact that most perforations occur in the third week, but that it is not too early to expect it in the second week or too late in the fifth week. One of the cases in the medical wards that was not operated upon occurred in a relapse. In six cases perforation took place at the last of the second week or the beginning of the third; in seven cases at the middle or end of the third week; in three cases at the first of the fifth week, and in four cases during the fourth week. These figures are necessarily approximate, because of the necessity of fixing the beginning of the typhoid in many cases by the history given by the patient on entering the hospital.

Kind of onset: symptoms of perforation. — One case was a very sick delirious typhoid, in which a diagnosis of perforation could not have been made and in which operation was done for advanced general peritonitis. One case was an advanced general peritonitis brought into the accident room twenty-four hours after the first symptoms,—abdominal pain and vomiting. Eight cases had sudden free perforation with severe fulminating symptoms without warning. These cases were operated upon from two to eight hours after the complaint of pain, an average of six hours. Two of these cases recovered, one of which was a case of my own. On the other hand, in ten cases, or the majority of the mild cases, definite warning or premonitory symptoms and signs, complaint of abdominal pain, localized tenderness and muscle spasm, with or without leucocytosis, were noted from eight to sixty hours before operation was done; on an average of over twenty-eight hours before operation was done symptoms and signs were noted, which undoubtedly meant beginning peritoneal infection. In fifteen cases the surgeon, when called, found general rigidity and tenderness, with or without rising pulse and temperature and leucocytosis, and operated because of these. In five cases operation was decided on because of localized tenderness and spasm. In one of these five cases tenderness and muscle spasm were on the left, in four cases on the right side.

Leucocytosis. — In seven cases no white blood count was made. An isolated count was made in eight other cases at or just preceding operation. One case had high leucocytosis, 24,000; this case recovered. One case had 16,000 and one had 14,000. All but two of these cases were cases of advanced general peritonitis. The most advanced cases had the lowest count, 2,200 and 4,300. It was stated in the paper of 1900 that a single leucocyte count might be of little value as a diagnostic aid. I am of the opinion at the present time that a single count soon after severe symptoms have set in may or may not be of any value, and I also firmly believe that a low leucocyte count in any case should have no influence in preventing or postponing operation; that operation should be decided upon because of the abdominal pain and tenderness and the feeling of the abdominal muscles to the palpating hand. I think that in certain cases frequent and early leucocyte counts soon after the first symptoms appear may show a rising wave of leucocytosis, which will strongly bear out the diagnosis of perforation made because of other physical signs and symptoms. Three operated cases and one unoperated case illustrate this wave of leucocytosis well. In one case four hourly counts showed a rise from 6,800 to 14,000. In another case three hourly counts, from 4,200 to 10,000. In the case which was not operated upon three leucocyte counts in seven hours showed a rise from 11,000 to 26,000. In no case was the relative proportion of polynuclear cells studied.

Intestinal hemorrhage. — In two cases the records note intestinal hemorrhage for at least two or three days before operation.

Temperature and pulse. — In the majority of cases the temperature was recorded as rising. In only five cases was there a drop in temperature at the onset of severe symptoms and in only two did the temperature fall to normal or below. In all the cases the pulse increased rapidly in rate. A chill was noted at the onset of severe symptoms in only two cases. Vomiting was recorded in eight cases.

Peritonitis. — Widespread general peritonitis was found at operation in all but seven cases. In these seven cases there was some turbid fluid and injection of the intestines localized to the neighborhood of the perforation. In thirteen cases there was no record of cultures taken. In the seven cases in which cultures were recorded the organism found was the colon bacillus. No attempt was made to isolate the bacillus typhosus by cover slip method.

Site and character of the perforation. — In nineteen cases the site of the perforation was in the ileum. In one case it was said to be high up in the jejunum. In one case the perforation was in the ileum four feet from the cecum; in most of the cases it was under twelve inches from the cecum. The size is given, varying from a pin-head to a quarter of an inch in diameter. In two cases necrotic gangrenous patches without gross perforation were the cause of the peritoneal infection. One of these cases died, the other recovered.

Anesthesia. — In one case cocaine was used, followed by ether. In three cases gas and ether were used. In sixteen cases ether alone was used.

Incision. — The cases were about equally divided between incision through the right rectus muscle and median incision.

Search for additional perforations. — Deliberate search for additional perforations was recorded as made in six cases. In only one case was a second perforation found. A second perforation was the cause of death in one of the cases, as found post-mortem. On one of the cases time was taken to invert six thin areas of intestinal wall after the actual perforation had been treated.

Method of closure of perforation. — In two cases a purse-string suture of silk was used. One of these cases recovered. In seventeen of the cases the perforation was closed with single or double rows of silk sutures. In one case which came to autopsy the question was raised whether the cause of death was not largely due to intestinal obstruction, because of excessive inversion of the intestinal wall by two rows of stitches. In one case it is interesting to note that no attempt was made to suture the perforation, but a Mixter glass tube was tied in. This was the case in which six thin areas of intestinal wall were inverted. This case resulted fatally.

Irrigation and drainage. — Only one case was sewed up tight; this case died. Drainage was used in nineteen cases. In the majority of instances cigarette drains were used, but in two or three cases rubber or glass tubes were used in addition. In four cases no irrigation was done; one of these cases recovered.

Analysis of results. — Six cases recovered, 30%. One case lived eleven days and died from intestinal obstruction, caused by fibrous adhesions. Four cases lived from three to eight days, dying eventually from general peritonitis. In one of these a second perforation was found post-mortem. Three cases died in from half an hour to ten hours, the cause of death being largely due to shock of operation. The remaining seven cases died within forty-eight hours of general peritonitis.

This study has emphasized the conclusion that in many cases the warning or earliest symptoms and signs of typhoid perforation, which mark the period when operation could be done with the greatest chance of saving life, are not recognized as sufficiently important by many physicians and surgeons. The most important thing that the discussion of this subject could bring about would be to make men realize that if operation is delayed until the signs and symptoms of severe general peritonitis are present, the result of the operation will usually be fatal, and to realize that in the majority of cases perforation or localized peritoneal infection through necrotic areas of the peritoneum is a somewhat gradual process and that there are definite typical, often localized, signs and symptoms, and when these appear operation should be done without delay; that complaint of abdominal pain by a mild typhoid almost always means a beginning infection.

THE SO-CALLED "OCHSNER MUSCLE" OF THE DUODENUM.

BY WALTER M. BOOTHBY, A.M., M.D., BOSTON,
From the Anatomical Department of the Harvard Medical School.

In 1905, before the American Surgical Association, Ochsner called attention to what he considered an hitherto undescribed sphincter of the duodenum, situated at from 2 to 4 cm. below the entrance of the common duct. Again, in July, 1907, through the *American Journal of Medical Sciences*, he published some further observations.

A careful study of his two articles led me to believe that there was still legitimate doubt as to the existence of any such sphincter muscles as he described, and for the purpose of definitely proving or disproving its existence, I undertook the following investigation:

(1) Through the courtesy of Professor Dwight, of the Harvard Medical School, I was given opportunity to examine intestines of the subjects of the first and fourth year classes of anatomy. I examined twenty-five in all. In none could I demonstrate macroscopically the existence of any sphincter muscle; by palpation thickenings of the wall could be demonstrated, but in every instance this thickening could be accounted for by the irregularities of the mucous membrane.

(2) Six duodena were carefully removed and hardened in 60% alcohol. The serous covering was carefully dissected off. By this method it was seen that the number of the muscle fibers, both longitudinal and circular, varied slightly in places, but no increase of fibers sufficient to be deserving of especial designation as a sphincter muscle was noted. Further, in the whole study of the thickness of the muscle wall, due allowance must be made for the degree of contraction or expansion of the longitudinal fibers at different points, causing variations in thickening of circular fibers at the time of death.

(3) For the purpose of more accurate estima-

tion of the thickness of the muscle layers, I had prepared for me, by Mr. Morris, the technician in the laboratory of surgical pathology at the Harvard Medical School, a series of microscopical sections of twelve duodena obtained, through the courtesy of Dr. F. B. Mallory, from the autopsies at the Boston City Hospital. The duodena were hardened in Zenker. Each duodenum was carefully and evenly cut along the middle of the greater curvature and divided into ten blocks, from which sections were made and stained with methylene blue and eosin. This gave a cross section of the circular and longitudinal section of the longitudinal muscular fibers throughout the whole extent of the duodenum from just above the pylorus to one inch below its termination.

In these sections no general uniform increase in number of the circular muscle fibers could be demonstrated such as would constitute a permanent sphincter muscle. As will be seen by referring to detailed measurements of two of these, which I give below, there is more or less irregularity in the thickness; this irregularity is slight as compared with the average thickness of the duodenum and insignificant in comparison with the true sphincter at the pylorus. I have made a few sections lower down in the intestinal tract, which show this same fractional variation. The second duodenum detailed below is of special interest. Dr. F. B. Lund was present at the autopsy. He remarked, while operating on the patient some four weeks before, that the duodenum was markedly distended and at the time spoke of the possibility of the "Ochsner muscle" causing a constriction; as will be seen the thickness though irregular forms no sphincter muscle.

Duodenum No. 1.

Boston City Hospital Autopsy Records, A-07.38.

				Units.*
Sect.	1.	Widest part of sphincter pylori,		= 24.0
		Beginning of duodenum, 1.9, 2.0, 2.1.	average	= 2.0
Sect.	2.	At different places: 2.1, 2.2, 3.0, 2.2,	"	= 2.4
Sect.	3.	At different places: 2.3, 3.0, 2.8, 2.5, 2.6, 2.3,	"	= 2.6
Sect.	4.	At different places: 2.5, 2.5, 2.5, 3.0, 3.2, 3.2,	"	= 2.8
Sect.	5.	At different places: 3.0, 3.2, 2.5 (evidently cut on slant),	"	= 3.2
Sect.	6.	At different places: 2.6, 2.8, 2.6, 3.2, 2.8,	"	= 2.8
Sect.	7.	At different places: 3.0, 2.9, 3.2, 2.5, 3.2, 2.3, 2.8,	"	= 2.8
Sect.	8.	At different places: 2.2, 2.8, 3.0, 2.8,	"	= 2.7
Sect.	9.	At different places: 2.8, 2.0, 2.4, 2.3, 3.0, 2.4, 2.4,	"	= 2.5
Sect.	10.	At different places: 2.0, 2.3, 2.2, 1.9, 2.6, 3.2, 3.2, 3.2, 3.0,	"	= 2.6

Duodenum No. 2.

Boston City Hospital Autopsy Records, A-07.38.

				Units.
Sect.	1.	Widest part of sphincter pylori,		= 35.0
		Beginning of duodenum: 5.5, 6.0, 5.8, 4.5,	average	= 5.4
Sect.	2.	At different places, 4.0, 5.0, 7.0, 7.0, 6.5, 7.0, 5.0, 4.2,	"	= 5.7
Sect.	3.	At different places: 3.5, 3.8,	"	= 3.8
Sect.	4.	At different places: 4.3, 4.1, 3.3,	"	= 3.8
Sect.	5.	At different places: 4.6, 4.2, 3.0, 3.2, 3.8, 5.0, 3.7, 4.2, 4.7,	"	= 4.0
Sect.	6.	At different places: 4.7, 4.2, 4.2, 4.0, 4.4, 5.0, 4.4, 4.0, 3.0 3.0, 3.2,	"	= 4.0
Sect.	7.	At different places: 3.0, 3.6, 3.0, 5.4, 5.0, 5.3, 5.2, 4.8, 5.0,	"	= 4.4
Sect.	8.	At different places: 5.3, 5.4, 6.0, 5.0, 5.5, 4.5, 4.5,	"	= 5.1
Sect.	9.	At different places: 5.7, 5.2, 6.0, 6.2, 5.0, 6.0, 6.3, 6.0, 6.5, 7.5,	"	= 5.9
Sect.	10.	At different places: 5.0, 3.6, 4.8, 3.6, 4.7, 4.8, 5.2, 5.5,	"	= 4.7

CONCLUSION.

The musculature of the duodenum (especially the circular layer) presents certain irregularities in its thickness; these irregularities are slight as compared with the average thickness of the muscle, and, compared to a true sphincter, the pylorus, are insignificant. In short, I found no grouping of circular fibers in the duodenum which could be considered an anatomical sphincter muscle, though undoubtedly there are moderate variations in the thickness.

Reports of Societies.

MAINE MEDICAL ASSOCIATION.

The fifty-fifth annual meeting of the Maine Medical Association was held in Lewiston, June 12 and 13. The meetings of the Association have been held annually in Portland for many years, with the exception of a meeting held in Bangor, about ten years ago, but the attendance was large and the sessions well conducted. The papers read, while fewer in number than has been customary, were of rather unusual merit and interest, with discussions that were free and at times bordered on sharpness.

The morning session of the first day was called to order by the president, Dr. C. E. Williams, of Auburn.

Prayer was offered by the Rev. I. C. Fostin, of Trinity Church, Lewiston.

The treasurer, Dr. A. S. Gilson, of Portland, read his report, which was referred to an auditing committee.

It was voted that the reading of the secretary's report be omitted.

Dr. Walter E. Tobie, of Portland, was appointed official reporter.

It was voted to receive and publish in the Transactions, the reports of visitors to the Medical School of Maine, visitors to the Maine Insane Hospital and visitors to the Eastern Maine Insane Hospital.

Dr. John A. Donovan, of Lewiston, presented a paper on

INGUINAL HERNIA,

which was read by Dr. John Sturgis, of Auburn. Dr. Donovan emphasized the following important facts: That hernia operations to-day are not as difficult as formerly, since the patient comes to operation earlier. That high ligation of the sac is an important step and that transplanting the cord adds relatively little to the value of the Bassini operation, except in obese individuals, with large herniæ.

Dr. Edwin F. Pierce, of Lewiston, read a paper on

VENTRAL HERNIA,

in which he reported three cases which he believed died of post-operative intestinal paresis. In these cases a vertical incision was employed upward from the umbilicus and Dr. Pierce believes that the cutting of the terminal filaments of the anterior divisions of the thoracic nerves caused paresis of the intestines through their connection with the sympathetic supply of the intestines. He stated further: "I believe that the superiority claimed for the transverse incision and the transverse suturing of the abdominal wall as practiced by the Mayos and some other surgeons in operating for ventral herniæ above the umbilicus, is due not so much to a lessening of suture tension and intra-abdominal pressure as to a lessening of nerve interference."

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* For measurement an ocular mcm. was used, therefore thickness could not be expressed in mm.

Dr. Stephen H. Weeks, of Portland, commended Dr. Pierce for reporting unfavorable cases. He favored the longitudinal incision, cutting out the indurated edges and closing in the manner giving the least tension. He expressed his belief that when death occurs it is usually the result of surgical sepsis.

Dr. John Sturgis, of Auburn, felt sure that death was not due to sepsis in the cases reported by Dr. Pierce.

Dr. Addison S. Thayer, of Portland, read the

REPORT OF THE COMMITTEE ON LAWS RELATIVE TO THE COMMITMENT OF THE INSANE

as follows:

Your Committee on Laws Relating to the Commitment of the Insane, appointed five years ago, to consider and to act upon changes recommended by your president, has reported progress from year to year, and now has the happiness to report a result.

The legislature of 1907 enacted into law the Commitment Bill, exactly as printed in the Transactions of this Association, except for the following single addition: "Nothing herein contained shall require a judge of probate to appoint a hearing for the purpose of this act in any town other than the shire town of the county or the town in which said person resides."

The bill now stands as Chapter 50 of the Public Laws of the State of Maine, passed by the seventy-third legislature. The new law enables the friends of an insane person to secure legal commitment, either through action by a municipal board, as heretofore, or through action by a judge of probate.

A full history of this statute — how it was suggested, considered, drafted, revised, introduced, debated, rejected, re-introduced, opposed, re-considered and finally adopted — would be a record of contention, unlikely to stimulate or encourage effort for the betterment of our laws. Your committee is impressed by the wisdom of a conservative hesitancy on the part of this Association in all matters which involve political activity.

Your committee requests that it be discharged.

Respectfully submitted,

Addison S. Thayer.
D. A. Robinson.
O. C. S. Davis.

Dr. S. J. Bassford, of Portland, read a paper on

INFANTILE PARALYSIS WITH SPECIAL REFERENCE TO TREATMENT IN THE EARLY STAGES BY STATIC ELECTRICITY.

Dr. Estes Nichols, director of the Maine State Sanatorium, at Hebron, read a paper on the

DIAGNOSIS, PROGNOSIS AND CONTROL OF PULMONARY TUBERCULOSIS.

Dr. Nichols said that a large number of persons who are regarded as being generally delicate, in reality suffer from tuberculosis in a latent form, needing only some acute infectious disease to light it up. Significant symptoms of early tuberculosis are slow convalescence from acute infectious disease, ill looks, loss of weight, tachycardia, slight elevation of temperature, slight but persistent cough, streaked hemoptysis, pleurisy, asthma and other symptoms and affections.

Dr. Nichols advocated as important prophylactic measures, the care of the sputum, disinfection of rooms and houses and the detection and weeding out of tuberculous cows. He believed the great dissemination of tuberculosis to be the advanced tuberculosis patient, and urged that physicians bring to the attention of municipal authorities the necessity of establishing hospitals for incurables and maintaining the district nursing plan.

Dr. S. H. Weeks spoke of the great need of more money to carry on the work of suppressing tuberculosis.

Dr. Walter E. Tobie, chairman of the Portland Board of Health, told how the board had urged the need of a segregation hospital before two city governments and had finally secured a $2,000 appropriation for general tuberculosis work. A municipal tuberculosis nurse had been engaged and the work of education begun, and although every physician in Portland had been politely requested to report their cases, in three months' time but twelve had been so reported, and four of these by medical members of the Health Board. This in a city of 55,000 inhabitants and in a state where a statute exists making compulsory the reporting of these cases. Dr. Tobie spoke of the tuberculin test as enforced by the Portland Board of Health, making compulsory the testing of all cows whose milk entered Portland.

First Day, Afternoon Session.

The session was called to order at 2.15 by the president, **Dr. E. C. Williams**.

Dr. Frederic H. Gerrish, of Portland, assumed the chair, while the president delivered his address.

Dr. Williams said in part: "The numerous hospitals springing up in all sections, notwithstanding their objectionable features, are of incalculable benefit in the general uplifting of the medical profession. Not alone is surgical skill being markedly increased, but medical and surgical diagnosis is being rapidly advanced. These hospitals are not only educating those officially connected with them; but, being easily reached, physicians and surgeons from outlying towns are bringing patients to them for diagnosis, in which they participate, and for treatment, which they observe, and whether they concur or differ, the mental stimulus is the same. . . . Each man who has an assured living practice, for his own sake and for the sake of his professional brethren, should fix his fees with regard to the value of the service rendered, rather than to attract patients by underbidding his associates. By adopting this simple rule the whole problem of compensation for professional services would be solved and all would be benefited."

Dr. Williams thought that contract practice might properly be relegated to the young physician struggling for a foothold, and for him only as a temporary expedient. He urged that the profession take a solid stand on the insurance question and favored the five-dollar fee for examination. He recommended that a committee be appointed to appear before the next legislature and endeavor to secure legislation to prevent the abuse of medical charity by hospitals.

The Association voted thanks to the president, and a committee was appointed to consider the recommendations made in his address, consisting of Drs. D. A. Robinson, of Bangor, Wm. Lewis Cousins, of Portland, and B. F. Sturgis, of Auburn.

Dr. Edw. M. Fuller reported as delegate to the American Medical Association.

A nominating committee was appointed, consisting of Drs. E. G. Abbott, of Portland; Owen Smith, Portland; H. H. Cleveland, Auburn; B. L. Bryant, Bangor; Eben Marston, Bath.

Dr. Miah B. Sullivan, of Dover, N. H., read a paper on

ACCIDENTS AND INJURIES AND SOME OF THE MEDICO-LEGAL QUESTIONS ATTENDING THEM.

Dr. Sullivan spoke of the liability to error with special reference to nervous affections and malingering. He said in part: "We are all liable to error in the diagnosis of these symptoms of nervous conditions, but more prone to error if we espouse the cause of the plaintiff or defendant too strongly, thus insidiously leading us astray. If called upon to make a medico-legal examination, it should be made as judiciously as though it was a private individual coming to consult us; and if, after careful examination and analysis, our opinion is not one that could be brought out successfully in court, to the advantage of the plaintiff or defendant, drop from the case if the truth is not desired rather than publicly swear to a statement that can be successfully torn to pieces by another and calling down upon the medical profession the ridicule of the attorney and even of the judge." There can be no doubt that opinions may differ broadly regarding the diagnosis and prognosis in the various forms of traumatic lesion to the nervous system, so there will always be grounds for honest differences in opinion. The legal profession is inclined to consider it a huge joke to hear these radical differences of opinion between medical men, yet hardly a day passes that legal opinions are not properly reversed by the highest courts in the land.

"While it must be difficult for the medical witnesses for plaintiff and defendant to agree on every point, yet it seems to me that a joint examination followed by a fair discussion of the case would leave us in much better standing before court and jury on being summoned to the witness stand, and leave out some of the unfavorable comments on medical witnesses." "A bill has recently been introduced in the Maine Legislature, I understand by the Eminent Chief Justice Emery, of this state, that covers the questions of medical evidence in an excellent manner and if it becomes the law of the state, it will be an object lesson to the law makers of other states and will be adopted undoubtedly by them."

Dr. G. H. Weeks thought that opposing medical counsel might meet and agree and thus present a better appearance in court.

Dr. Gordon said that he was surgeon for the Maine Central Railroad and saw many of these cases. The attending surgeon on an accident case should not cheat himself, but should hold a conscientious belief. He advised medical men not to let lawyers own them.

Dr. John Sturgis said that he had been connected with a case against the Maine Central Railroad, where he believed disease existed and that the corporation surgeon was entirely wrong. That was ten months ago and he now has the proof in an ankylosed joint. We should not let a corporation own us any more than we should let a lawyer.

Dr. Phipps, of Gorham, N. H., agreed with Dr. Weeks that opposing medical experts should meet and confer.

Dr. Addison S. Thayer, of Portland, felt that Chief Justice Emery's plan was a great advance over present methods and that in time something of the sort would be adopted. The idea is for a judge, after consulting both sides, to appoint a competent medical expert to determine the merits of the case. It simplifies matters, reduces expenses and prevents clouding the minds of the jury. It is better than the one and only test we now have for sanity.

Dr. Bigelow T. Sanborn said that the difficulty in Dr. Weeks's plan was that the legal counsel for or against would object to a conference of the medical counsel, and if they did so meet might dispense with their services.

Dr. T. L. Dickerson, of Houlton, said that the trouble with a conference of medical men was that the master mind was likely to prevail, and legal counsel would not take the chances of having their experts' minds swerved by that of the opposing expert.

Dr. Frederic H. Gerrish, of Portland, said that he was not mercenary, but that he objected to serving as a medical expert for a *per diem* fee many times less than his services would command elsewhere. We should not be robbed by the state. He cited an instance where a surgeon, perhaps the best in the state, had his fee cut down by a chief justice to twenty-five dollars a day.

Dr. A. J. Bradbury, of Oldtown, read a paper on

PNEUMONIA TREATMENT IN COUNTRY PRACTICE.

On motion of Dr. Walter E. Tobie the paragraph in the By-Laws, which stated that *Transactions* should not be sent to members in arrears, was changed, so that each member receives the *Transactions* as soon as published.

Dr. W. P. Giddings, of Gardiner, read a paper on

BODY AND MIND WITH INCIDENTAL REFERENCE TO THE LAW OF HEREDITY.

Dr. B. L. Bryant, of Bangor, read a paper on the

RATIONAL TREATMENT OF NERVOUS DISEASES.

Dr. Addison S. Thayer, of Portland, read a paper on

PSYCHO-THERAPY.

The three papers constituted a symposium on nervous diseases and were discussed in common.

Dr. Chas. B. Witherle said, as regards Psychotherapy, that we must first exclude organic disease and study each individual case. This kind of treatment requires more time than the busy practitioner can afford to give to it. He did not believe that psycho-therapy must necessarily presuppose sanity, but that it was useful in border-line cases and curable insanity.

Dr. M. M. Johnson, of Hartford, Conn., spoke of the value of psycho-therapy and said that it should not be allowed to drift into the hands of quacks. It must certainly fail in organic diseases.

Dr. E. E. Holt said that we should have case records kept of all scholars from the time of their entering school. Such records would be of great value to assist in our analysis of the human race.

Dr. John J. Gehring, of Bethel, said that he was pleased that general recognition had come, though tardily, to the branch of therapeutics advocated in this Association fifteen years ago by Dr. F. H. Gerrish. Dr. Gehring also said that he desired to add his practical testimony to the value of hypnotism as a therapeutic agent and believed it a useful agent for the physicians' employment. Suggestion is the factor that many cults employ and should be adopted by intelligent and scientific physicians.

Dr. Alfred Mitchell said that, while all physicians help invalids and lighten their existence by their mental influence, he had an inwrought prejudice against the occult, mysterious and unfathomable.

Dr. F. H. Gerrish said that hypnotism had been criticised and by implication, at least, branded as dishonest. He believed it fully as honest as the Dubois method, scientific and worthy of adoption.

Dr. Addison S. Thayer said that Dr. Gerrish had shown forcibly the power of hypnotism, but that it was not available for most practitioners. He did not consider it dishonest.

Dr. John H. Allen, of Portland, read a paper on

DIAGNOSIS AND EARLY TREATMENT OF MASTOIDITIS.

Dr. Allen emphasized the following points:

1. That mastoiditis is very largely a preventable disease.
2. That in order to abort it, it must be recognized and treated at an early stage.
3. That such treatment must often be instituted, if at all, by the general practitioner.

Dr. Allen advocated early incision of the tympanic membrane and dwelt upon the importance of conserving the hearing function.

Dr. D. A. Robinson, of Bangor, reported for the Committee on President's Address and advised that a Committee on the Abuse of Medical Charity and a Committee on Reorganization be appointed.

Dr. J. W. Berde, of Auburn, reported for the Committee on Resolutions on the Death of Dr. Alonzo Garcelon. Dr. Garcelon was a charter member of the Association and the last to pass away. He was also a charter member of the American Medical Association, and was a regular attendant at the meetings of both bodies up to the time of his death.

Drs. Wallace K. Oakes, of Auburn, and D. A. Robinson, of Bangor, both read papers on

EXTRA-UTERINE PREGNANCY.

The following officers and committees were elected and appointed: President, Dr. B. B. Foster, Portland; 1st Vice-President, Dr. Alfred D. Sawyer, Ft. Fairfield; 2d Vice-President, Dr. O. C. S. Davies, Augusta; Secretary, Dr. Walter E. Tobie, 3 Deering St., Portland; Treasurer, Dr. Arthur S. Gilson, 117 State St., Portland. Censors, Drs. B. L. Bryant, Bangor; J. D. Cochrane, Saco; G. A. Pudor, Portland; W. L. Haskell, Lewiston; H. L. Bartlett, Norway. Publication Committee, Drs. Walter E. Tobie (*ex-officio*), Portland; Stanley P. Warren, Portland; John H. Allen, Portland; Edwin J. Gehring, Portland; Chas. H. Hunt, Portland. Necrologist, Dr. H. F. Twitchell, Portland. Business Committee, Drs. D. A. Robinson, Bangor; B. L. Bryant, Bangor. Entertainment Committee, Drs. E. B. Sanger, Bangor; Chas. H. Burgess, Bangor. Committee on Hospital Abuse, Drs. B. L. Bryant, Bangor; A. H. Sturtevant, Augusta; H. H. Cleveland, Auburn; H. B. Palmer, Farmington; Hiram Hunt, Greenville; B. F. Bradbury, Norway.

The Board of Censors voted that the next annual meeting be held in Bangor, June 10 and 11, 1908.

Thursday evening the annual banquet was held and the annual oration delivered by Dr. Wm. T. Councilman, on the subject of

TUMORS.

Dr. Councilman's oration was illustrated by stereopticon pictures and was of intense interest.

The closing session was held in New Odd Fellows Hall, Auburn, Thursday evening, June 13, immediately following the annual banquet. Dr. D. A. Robinson, of Bangor, presented to the Association a proposed new Constitution and By-Laws to be voted on, at the next annual meeting. This is the same Constitution proposed by a Re-organization Committee in 1905 and voted down by the Association in 1906. For a number of years the American Medical Association has made efforts to have the Maine Medical Association adopt its plan of organization for state societies, and the proposed Constitution is modeled on lines approved by the national body. According to the present Constitution any change requires presentation at an annual meeting, publication in the *Transactions* and notification to each member before the next annual meeting, at which time a two-thirds vote will secure the desired change. Maine, Massachusetts and Virginia are the three states that have not adopted the American Medical Association plan, but have preferred to cling to their present Constitutions. The attitude of those who oppose the change in the Maine Medical Association is not one of hostility to the national body and, in fact, most of those who prominently urge that the present Constitution be retained are members of the American Medical Association. The outcome of the Bangor meeting will doubtless be watched with interest.

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RHODE ISLAND MEDICAL SOCIETY.

The ninety-sixth annual meeting of the Rhode Island Medical Society was held in Providence, June 13, 1907.

The president, Dr. C. F. Barker, of Newport, presided.

The House of Delegates elected the following officers for the ensuing year: President, Dr. C. V. Chapin; First Vice-President, Dr. Frank B. Fuller; Second Vice-President, Dr. Eugene Kingman; Secretary, Dr. S. A. Welch; Treasurer, Dr. George S. Matthews. Committee on Arrangements, Drs. P. Williams, W. B. Cutts, J. B. Ferguson. Committee on Publication, Drs. G. D. Hersey, C. M. Godding, G. T. Swarts. Committee on Library, Drs. H. G. Miller, G. D. Hersey, G. W. Porter, G. L. Collins, F. L. Day. Committee on Necrology, Drs. H. C. Putnam, E. B. Harvey, L. F. C. Garvin. Committee on Legislation, Drs. G. T. Swarts, W. F. Gleason, W. L. Munro, C. V. Chapin, S. A. Welch. Curator, Dr. W. J. McCaw. Auditor, Dr. Jay Perkins.

Announcement was also made of the appointments by the president, as follows: Committee on Building, Drs. H. G. Miller, J. W. Mitchell, R. F. Noyes, F. H. Peckham, F. T. Rogers; Medical Education (member for three years), Dr. J. M. Peters; Member of national legislation committee of the American Medical Association, Dr. G. T. Swarts; member of House of Delegates of the A. M. A., Dr. John Champlin.

The commitee on contract work, through Dr. George D. Hersey, chairman, presented the following resolution, which was passed:

Resolved, That contract practice requiring a physician to attend people not in destitute circumstances, for a sum much lower than the ordinary fee, is unbusinesslike, undignified, unfair to other practitioners and derogatory to the best interests of the medical profession.

The committee has previously recommended that active measures of reform be left to the district societies.

Dr. George W. Porter, having resigned active membership, was elected an honorary member.

Announcement was made by President Barker of the deaths since the quarterly meeting in March of three members of the society: Drs. W. Frank Morrison, C. T. Gardner and Valentine Mott Francis, and of the election to membership of Dr. Edward J. Logan and Dr. Margaret S. Hardman, of Providence, and Dr. Cora G. Yates, of Pawtucket.

The trustees of the Fiske fund reported that the prize of $520 for the best essay on "Diet in Typhoid Fever" had been awarded to Dr. John Benjamin Nichols, of Washington, D. C.

For 1908 a prize of $200 is offered for the best essay on "Has Surgical Treatment Lessened the Mortality of Appendicitis?"

For 1909 a prize of $200 is offered for the best essay on "The Mode of Infection and the Duration of the Infectious Period in Scarlet Fever."

The trustees of the Chase-Wiggin fund reported that no essay worthy of a prize had been received. For 1908 a prize of $75 is offered for the best popular essay on "Tea and Coffee and Their Injurious Effect."

Dr. I. B. Woodward was introduced as delegate from the Massachusetts Medical Society. Dr. Woodward presented the greeting and good wishes of his society.

He described the very successful meeting of the Massachusetts Society just held, where the keynote of the addresses was the growth of unity among the physicians and between the societies.

Dr. Woodward said that the credit of originating the custom of sending delegates to other societies belonged to the Rhode Island Medical Society, who in 1862 sent the first delegates to Massachusetts. These delegates were Dr. Joseph Moran and Dr. Sylvestus Clapp. They were promptly welcomed and delegates appointed to Rhode Island and the custom has continued to this day.

Dr. Frank B. Sprague reported

TWO CASES OF FOREIGN BODY IN THE RIGHT PRIMARY BRONCHUS.

The first was a ten-ounce tack in a boy a little over four years of age. A radiograph showed the tack and also a dark mass below. The operation consisted of etherization, tracheotomy, the use of Dr. Kelly's cystoscope and extraction with long uterine forceps. Through the cystoscope the tack could be seen in the bronchus. After removal there was a discharge of seromucus, which had accumulated below the tack. Before the operation the temperature was 104°, the respiration very rapid and the pulse hardly to be counted.

In the second case an eighteen months' baby had a piece of peanut in the right bronchus. There was great dyspnea and an alarming condition. The same general method was followed as in the first case, using ether, the cystoscope and a uterine tenaculum with a part of the end broken off to hook up the peanut. In both cases there was a prompt recovery.

Dr. John Champlin read a paper on

THE BUSINESS SIDE OF THE PHYSICIAN.

Dr. John W. Keefe read a paper on

THE VALUE OF CYSTOSCOPY AND URETERAL CATHETERIZATION AS AIDS IN SURGERY.

The annual address was given by Dr. **George C. Smith**, of Boston, on

THE PSYCHIC FACTOR IN DISEASE.

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Book Reviews.

The American Illustrated Medical Dictionary. By W. A. Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania. Third edition, revised and enlarged. Philadelphia and London: W. B. Saunders & Co. 1905.

The third edition of this excellent dictionary is similar in form and approximately the same in size as its predecessor. Naturally, with the rapid growth of medical science and its complicated terminology, the task of a lexicographer is not an easy one. Revision must be constant and painstaking. New words must continually be incorporated and obsolete ones discarded. For example, in this edition, appearing two years after the second, several hundred new terms have been defined. Many of the tables have also been amplified and improved. We have continually made practical use of this book and, although not so encyclopedic as some others, have found it eminently satisfactory.

A Text-Book on the Practice of Gynecology for Practitioners and Students. By William Easterly Ashton, M.D., LL.D., Fellow of the American Gynecological Society; Professor of Gynecology in the Medico-Chirurgical College and Gynecologist to the Medico-Chirurgical Hospital, Philadelphia, etc. With 1,057 line drawings illustrating the text by John V. Alteneder. Third edition. Philadelphia and London: W. B. Saunders Company, 1907.

This third edition of Dr. Ashton's text-book maintains the good features of the first two editions, which received favorable notice in these columns, and in addition the following revisions and additions are to be noted. The total number of pages has been increased by twenty; thirty-two illustrations have been redrawn, seventy-one have been removed and eighty-two added, making a total of eleven more illustrations in the present work. In Chapter II, the method of collecting curette scrapings has been slightly improved, and in Chapter III, the blood in relation to surgery, there are evidences of a careful revision. Chapter VIII, on constipation, has been enlarged by three pages and four drawings illustrating "Colonic Lavage." The author describes his method of irrigating the colon, consisting of placing the patient in the knee-forehead position and using a nozzle having a large flange to prevent introducing it too far into the rectum and to facilitate holding it in place during the injection. Dudley's operation for cystocele takes the place of a combination of operations previously advised. The so-called Hirst's operation for vaginismus, a plastic on the fourchette, is introduced in the chapter on diseases of the vagina. Round ligament ventro-suspension of the uterus for retroversion with nine figures illustrating it has been added to Chapter XVI and ventral suspension has been left out.

The portion devoted to inversion has been improved by describing the operation for incision of the posterior lip of the cervix to reduce chronic inversion. It is a question whether the operation for amputation of an inverted uterus found on pages 373 and 374 is an improvement. We are glad to note that this edition has a competent chapter on chorio-epithelioma with the differential diagnosis from cancer. In the chapter on operative complications, under the heading of injuries of the intestines, Moynihan's end-to-end and lateral anastomosis operations are described and figured in minute detail, the anastomosis by means of the O'Hara and Laplace forceps found in the second edition being omitted. A chapter on passive incontinence of urine with Dudley's operation for its relief has been added, also details as to the sterilization of the patient's mouth as part of the preparation for anesthesia.

THE BOSTON
Medical and Surgical Journal.

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THURSDAY, JULY 18, 1907

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HEALTH INSPECTION IN MASSACHUSETTS.

An important step has been taken by Massachusetts in passing a law which now becomes effective, providing systematic medical inspection throughout the state. This law, which has been persistently and vigorously furthered by his Excellency Governor Guild, should be far reaching in its effects. The situation regarding public health becomes more complicated year by year with the development of industries and the tendency toward over-crowding, both at places of daily work, and also in the regions where the poorer portions of the population live. This new law will unquestionably supplement those already in force and particularly in relation to industrial conditions. It will be remembered that the governor in his inaugural address urged a closer study of sanitary conditions of factories, and he, as well as the community at large, now has the satisfaction of seeing the plan as originally outlined put into practice.

The state has been divided into fifteen districts, and the names of those appointed to be inspectors in these various districts have recently been made public. These appointments we publish in another place. They have evidently been made with much care, and only after conference with the officers of the State Board of Health, under whose supervision they are to work. The inspectors are expected to co-operate with the local health boards, and in the matter of factory inspection they are to supersede the district police. The act requires the appointment to each of the health districts of "one practical and discreet person, learned in the science of medicine and hygiene." The salaries are fixed in relation to the territory, the number of the inhabitants, character of the industries, and the amount of time required for the proper discharge of the duties connected with the inspection. We quote paragraphs from the act, giving the duties with which the inspectors are charged:

> Every state inspector of health shall inform himself respecting the sanitary condition of his district and concerning all influences dangerous to the public health or threatening to affect the same; he shall gather all information possible concerning the prevalence of tuberculosis and other diseases dangerous to the public health within his district, shall disseminate knowledge as to the best methods of preventing the spread of such disease, and shall take such steps as, after consultation with the State Board of Health and the local state authorities, shall be deemed advisable for their eradication; he shall inform himself concerning the health of all minors employed in factories within his district, and, whenever he may deem it advisable or necessary, he shall call the ill health or physical unfitness of any minor to the attention of his or her parents or employers and of the State Board of Health.
>
> The state inspectors of health shall be under the general supervision of the State Board of Health and shall perform such duties other than those hereby imposed upon them as the said board from time to time shall determine. They shall keep a record of their proceedings and observations, shall annually make a report of the same to said board on or before the thirty-first day of October, shall from time to time furnish said board with such information as it may require touching circumstances affecting the public health in their respective districts, and shall, in every instance, where written suggestions are made by them to the local authorities, send copies of such suggestions to said board.

This comprehensive scheme will be watched with much interest by the medical profession, sanitarians and all who are interested in safeguarding the public health. That certain abuses exist is not to be questioned, nor is it to be doubted that ignorance lies at the basis of many of the unfortunate conditions underlying our industries. The inspectors have before them a difficult piece of work, but one which faithfully and tactfully performed will redound much to their credit, as well as to that of the entire State.

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DERMOID CYSTS OF THE ANTERIOR MEDIASTINUM.

Dermoid cysts of the anterior mediastinum are relatively rare, although Naudrot has been able to collect fifty instances which are published in his recent thesis. Although of congenital origin, these cysts clinically develop only at the time of puberty, and it would seem that at this period they undergo a perturbation similar to that which manifests itself in the genital apparatus and breasts of the female. They rapidly and suddenly increase in size, their evolution ceases to be latent and the symptoms make their appearance.

The personal case reported by Naudrot shows that a thymic origin may be admitted, but the question of the pathogenesis of these tumors is far from being made evident and it still remains obscure for the majority of cases. Nothing authorizes the affirmation of one pathogenic interpretation to the detriment of another, and the theories expressed are quite as numerous as they are of little precision. At the most, one may say that, in general, these tumors represent true dermoid cysts arising from an epithelial or embryonal inclusion of blastomeric origin.

The clinical evolution offers nothing of special note and is that of all neoplasms of the mediastinum in general. Usually the first symptom which appears is a sort of progressive dyspnea occurring upon exertion. This dyspnea is, in the first place, well borne by the patient, but, after a time, a gradual and increasing aggravation of the symptoms takes place. Thoracic and intercostal pains appear accompanied by paroxysmal cough. In some cases a hemoptysis precedes the attacks of coughing. The expectoration may perhaps be more characteristic when the cyst opens into a bronchus. In the first place the quantity of the matter expectorated increases and may amount to as much as a pint in twenty-four hours. At the time that rupture of the cyst takes place, a more or less profuse vomiting occurs and, if a microscopical examination of the mucous or muco-purulent liquid is made, epithelial cells will be found similar to those composing the horny layer of the skin, as well as drops of fat and cholesterin crystals.

When hair is present it is a pathognomonic sign, and this is not infrequent since, out of fifty-six cases, it has been met with nine times. When once the pocket of the cyst is opened, expectoration becomes more abundant and hemorrhages recur frequently, and the patient will slowly die from asphyxia or cachexia, or rapidly from a hemorrhage. The evolution of the affection takes from three to eight years, often interspersed with periods of remission of variable duration, followed by paroxysms frequently due to an intercurrent complication.

The diagnosis which is impossible in the beginning of the process presents, with the exception of a few infrequent cases where a characteristic expectoration at once settles the question, extreme difficulty. Nevertheless, by an attentive clinical examination, completed by a radioscopic examination, one is able at least to diagnosticate the presence of a benign tumor on account of the persistency of the good general condition of the patient and the slowness of the evolution, although an exact diagnosis of dermoid cyst of the mediastinum may be lacking.

When once the diagnosis is made, surgical interference is necessary, and the chances of a successful result may be placed at about 70 per cent.

The operation should consist in doing an extensive thoracotomy, followed by pleurotomy. If the growth is found limited and not very large, its ablation may be attempted, but when the condition of affairs is the reverse one should merely evacuate as completely as possible the dermoid cavities and treat the pocket in a manner similar to other cysts of the body which cannot be enucleated.

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RELIEF OF CONSUMPTIVES.

The report of the commission to investigate measures for the relief of consumptives in Massachusetts, the appointment of which was approved June 20, 1906, is now made public as Senate Document 330. The *personnel* of this commission, with Dr. Henry P. Walcott as chairman, and Dr. Charles F. Millet as secretary, is such as to insure results and conclusions of much significance. The work has been undertaken in most systematic fashion, the various counties being considered individually from a statistical standpoint and the allotment of cases at the Massachusetts State Sanatorium tabulated with relation to their respective cities and towns. The question of appropriate available sites for hospitals for tuberculosis, the cost of such hospitals, the advisability of the Commonwealth undertaking the care and treatment of these patients, together with sections on the nature, history, means of transference and prevention of the disease, are systematically and concisely considered. A practical portion of the report is a description of the shacks which may be used for outdoor care, details regarding diet and general hygiene and other means of helping consumptive persons in whatever stage of the disease they may be. Dr. J. H. Pratt's work in the formation of so-called tuberculosis classes is commented on most favorably and it is urged that the plan, as worked out by him, be widely imitated. The commission also hopes that much will be accomplished by the appointment of state medical inspectors, which is announced in this issue of the Journal. The appointment of such inspectors, the commission holds, is far more important in the warfare against disease than the building of hospitals. The suggestions given in this section of the report may well be read by the new appointees in relation with their dealing with the subject of tuberculosis, which naturally will form a large part of their work. As an appendix a directory of institutions for the treatment of tuberculosis in Boston and vicinity is given. From this list one gets a better idea, perhaps, than in any other way, of the widely extended interest which has been aroused in the ways and means of combating the disease. The pamphlet, in general, forms an admirable *résumé* of the present state of the whole tuberculosis problem in this state, and should serve as a source of the greatest encouragement to those who may look with doubt on the prospect of final extermination of the disease. Nothing could be more striking in this connection than a chart at the beginning of the report, giving in graphic form the deaths from consumption in the thirty years from 1875 to 1905.

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MEDICAL NOTES.

Purchase of the St. Louis Courier of Medicine. — The *Interstate Medical Journal*, published in St. Louis, announces the purchase of the St. Louis *Courier of Medicine*, a journal established in 1879, and during its existence commanding a large following throughout the West and South. This is the fourth medical journal purchased and absorbed by the *Interstate Medical Journal* during the past few years.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 17, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 32, scarlatina 39, typhoid fever 20, measles 46, tuberculosis 83, smallpox 0.

The death-rate of the reported deaths for the week ending July 17, 1907, was 14.72.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 13, 1907, was 184, against 174 the corresponding week of last year, showing an increase of 10 deaths and making the death-rate for the week 15.74. Of this number 98 were males and 86 were females; 178 were white and 6 colored; 126 were born in the United States, 49 in foreign countries and 9 unknown; 36 were of American parentage, 114 of foreign parentage and 34 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 36 cases and 5 deaths; scarlatina, 28 cases and 3 deaths; typhoid fever, 15 cases and 3 deaths; measles, 46 cases and 3 deaths; tuberculosis, 51 cases and 15 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 15, whooping cough 1, heart disease 12, bronchitis 0 and marasmus 4. There were 16 deaths from violent causes. The number of children who died under one year was 33; the number under five years, 58. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 67.

There were 6 cases and 2 deaths reported from cerebrospinal meningitis during the week.

Award of the Warren Triennial Prize. — The Warren prize has this year been awarded to Dr. Aldo Perroncito of the University of Pavia, Italy, for an essay entitled, "*La rigenerazione dei nervi.*"

State Board in Dentistry. — As the result of a recent examination held before the Massachusetts State Board of Registration in Dentistry, 41 out of 90 applicants passed successfully.

Investigation of Tuberculosis. — The General Assembly of Connecticut has, within a few days, authorized the governor to appoint a commission of nine to investigate tuberculosis in the state and to suggest means of preventing the spread of the disease.

Physiology in Secondary Schools. — Dr. Eugene A. Darling, of the Department of Physiology in Harvard College, last week gave a lecture before the students in the summer school on "The Teaching of Physiology in Secondary Schools." Dr. Darling urged that attention be given to the principles of physiology late in their course in secondary schools instead of at the beginning. He urged further that the course be made more comprehensive and detailed, including laboratory work.

NEW YORK.

Summer Schools of the Board of Education. — The usual summer schools of the board of education were opened for a term of six weeks on July 8. The registration was 11,440 in Manhattan and 8,170 in the Borough of Brooklyn. In connection with these vacation schools there are 63 playgrounds, and systematic instruction in gymnastic exercises is given in them. In addition, the board has opened several other playgrounds for the special use of mothers with infants and young children, and at these trained nurses are in attendance, to give instruction in the care and feeding of babies.

A New Commissioner of Street Cleaning. — The commissioner of street cleaning, Mr. Craven, having resigned, Mayor McClellan has appointed Dr. Walter Bensel, of the Health Department, to that responsible position. Dr. Bensel, who has for some years served very efficiently as sanitary superintendent, is unwilling to take the post permanently, as its duties would interfere too much with his other work, but has accepted the appointment for the period of three months.

Public Schools for Deaf Children. — The Board of Education has authorized the establishment of a permanent public school for deaf children, the first of its kind in New York, and it is to be opened in September in the school building in East Twenty-third Street, which has until now been occupied by the Stuyvesant High School and which can accommodate nearly two hundred pupils. In the report of the committee, which led to the inauguration of this new departure, it is stated that a day school for deaf children is entirely practicable, and it is advised that lip reading and oral speech should be taught exclusively. " A careful study of class instruction in different institutions, especially of the results found in the higher grades," the report says, " has convinced us that pupils taught exclusively by the lip method make better progress, have better trained minds and have greater confidence in themselves, than those taught in whole or in part by the manual method. As individual attention is absolutely necessary in the training of the deaf, it is advised that the classes should not consist of more than ten children, and it is further recommended that industrial work should form a prominent feature in the course of instruction.

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Obituaries.

SIR WILLIAM HENRY PERKIN.

In the death of Sir William Henry Perkin, which occurred July 14 in London, at the age of sixty-nine, the world loses one of its great discoverers. His early education was in London at the City of London School, said to have been the only school in the country at that time where scientific subjects were taught. While still under twenty, he acted as assistant to Dr. A. W. Hofmann of the Royal College of Chemistry, and read the results of his first research one year later. In 1856, he made the discovery which has rendered his name famous through his experiments with aniline purple or mauve. He thereafter devoted his time to the development of his new discovery, which was destined to prove far reaching in its consequences. He formed a partnership with his father and brother and the new dye was successfully manufactured in 1857 and supplied to various dealers. He later discovered several other coal tar coloring matters, and in various ways rendered practical service in the manufacture of dyestuffs. He retired from technical work in 1873. In 1856 he was elected a fellow of the Chemical Society and of the Royal Society in 1866. He became president of the Chemical Society in 1883, after holding the position of one of the honorary secretaries for many years. He was president of the Society of Chemical Industry in 1884 and in 1885, and in 1891 received the honorary degree of Doctor of Laws from St. Andrew's and from Johns Hopkins. It will be remembered that last year the fiftieth anniversary of the original discovery of aniline purple was widely celebrated, both in England and in this country, and he himself was given due honor as the man who had done more than any other toward placing chemistry on a commercial basis. In Boston, Sir William was received with much ceremony, President Pritchett of the Massachusetts Institute of Technology presiding at a dinner, which was attended by many distinguished men, and at which an elaborate punch bowl was presented him.

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SIR WILLIAM HENRY BROADBENT.

The death of Sir William Henry Broadbent, physician in ordinary to King Edward and the Prince of Wales, and long associated with the English royal family in a professional capacity, died in London, June 10. He was born in Yorkshire, England, in 1835, and after a preliminary education at Huddersfield College and Owens College, Manchester, graduated in medicine from the Royal School of Medicine in the same city. After further study on the Continent, he returned to England and established a large practice in London, in addition to giving much time to hospital work, medical societies and medical writing. He was at various times president of the Harveian Society of London, the Medical Society of London, and the Clinical and Neurological societies. He was twice censor of the Royal College of Physicians of London. In 1898, at the death of Sir Richard Quain, Dr. Broadbent was made physician extraordinary to Queen Victoria. In addition to his many other honors, he was a Knight Commander of the Victorian Order, a Commander of the Legion of Honor and a Fellow of the Royal

Society. He held the honorary degree of LL.D. from St. Andrew's and Edinburgh, and that of D.S. from Leeds. His medical interests were broad, but he was chiefly known for his writings on the circulation. He was one of the best representatives of the large cultivated and learned group of physicians which England has produced.

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HAMILTON OSGOOD, M.D.

DR. HAMILTON OSGOOD, who for many years was an active practitioner of medicine in Boston, died in Oxford, England, July 10, in his sixty-ninth year. He had for some time past been broken in health and his death, therefore, was not unexpected. During the latter years of his active practice Dr. Osgood had made a special study of hypnotism in the treatment of disease, and, in fact, was one of the first to enter with enthusiasm upon the practice of suggestive therapeutics when it first came into popular notice in this country. His enthusiasm in the application of such methods of treatment possibly at times carried him too far, particularly in his estimate of the efficiency of hypnotic methods. It should not, however, be forgotten that he was one of the first to see the practical bearings of psychotherapeutic methods, and however extreme he may have been in carrying out his ideas, the courage of his convictions never failed. Dr. Osgood was a man of much versatility, a wide traveler and reader, and a suggestive writer upon the topics in which he was particularly interested. He was at one time on the staff of the BOSTON MEDICAL AND SURGICAL JOURNAL. He leaves a widow and two daughters, one of whom lives in London. Memorial services were held, July 14, in Dublin, N. H.

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Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JUNE 22, 1907.

1. WILDER, W. H. *Immediate After-Treatment of Patients Operated on for Cataract.*
2. SCALES, J. W. *The Immediate After-Treatment of Cataract Operation.*
3. CALLAN, P. A. *Operations for Secondary Cataracts.*
4. *DAWES, S. L., and JACKSON, H. C. *The Physiologic Action, Elimination and Therapeutic Application of Sodium Cacodylate Used Hypodermatically.*
5. *MUEHLBERG, W., and KRAMER, S. P. *The Action of Toxic Doses of Ether and the Influence of Amyl Nitrite Thereon.*
6. LOEB, H. W. *The Anatomy of the Middle Turbinate with Special Reference to Its Topographic and Surgical Relations.*
7. GOODALE, J. L. *Pathology of the Middle Turbinate.*
8. GORDON, A. *The Localization of the Motor Area Based on Exact Faradization.*
9. *SELBY, C. D. *The Diagnosis of Perforation of the Bowel in Typhoid.*

4. Dawes and Jackson have studied the action of sodium cacodylate, both experimentally and clinically, and conclude, contrary to the results of Fraser, that the drug is not without therapeutic value. Sodium cacodylate is an organic salt containing arsenic, and has been used hypodermically since 1899 as a substitute for inorganic arsenic, but since 1903 has fallen into disuse since Fraser's article maintaining that the drug did not liberate arsenic in the system, and that it had no physiological action. Dawes and Jackson find that after the hypodermic use of the cacodylate, inorganic arsenic appears in the urine and feces as well as in the tissues. Large doses were fatal to rabbits. Clinically the drug was used in 45 cases including anemias, Hodgkin's disease, chorea and skin diseases. The results, although apparently good, are not conclusive.

5. Muehlberg and Kramer describe a number of experiments performed, and determine certain points in the physiological action of ether and chloroform upon animals. The results are of value as scientific data, the clinical bearings of which are not entirely clear. Certain findings, however, are of practical interest. Ether given intravenously was found to be more toxic than chloroform, 2 minims being fatal in medium-sized rabbits. Amyl nitrite was found to have a distinct effect in counteracting the toxic effects of ether; its use is therefore advised in patients under anesthesia. to be begun as soon as the pulse begins to weaken. No corresponding beneficial action was observed in chloroform poisoning. No evidence was obtained of cardiac stimulation by ether; the experiments, on the contrary, showed that cardiac depression followed the administration of ether. The beneficial action of subcutaneous injections of ether in cases of shock, etc., is probably due to vasomotor stimulation.

9. Selby's article is a good summary of the important symptoms and signs of intestinal perforation in typhoid fever, with a plea for more general and more prompt surgical treatment. The mortality without operation is practically 100%; with operation of the 400 cases in literature, 25% have been saved, and a higher percentage of recoveries should be possible. The symptoms and signs are mentioned in the following order: pain and tenderness; the facies of agony and apprehension; shock and sweating; temperature falling and pulse rising; blood pressure at first low but soon rising above the former level; leukocytosis appearing 1 to 6 hours after the perforation; *muscle spasm*, the most valuable physical sign; increased thoracic respiration; distention with gas in the peritoneal cavity; nausea and vomiting. The differential diagnosis must exclude: appendicitis; suppurating mesenteric glands; intestinal obstruction; intestinal hemorrhage; iliac thrombosis, cholecystitis, diaphragmatic pleurisy and pneumonia. The aim, however, should not be definite diagnosis, but the recognition of the necessity for surgical treatment, which includes several other of the conditions mentioned. Hemorrhage may cause more or less pain; the onset of symptoms, however, is less acute than in perforation, and the blood pressure is lowered. When in doubt, the decision should favor perforation. Iliac thrombosis may be recognized by tenderness in the groin. The diagnosis of perforation can best be made by the physician in regular attendance upon the case, since comparison of present condition with preceding condition is essential.

[F. W. P.]

MEDICAL RECORD.

JUNE 22, 1907.

1. *PETIT, R. *Sterilized Horse Serum in Surgery.*
2. LOOMIS, H. P. *Pyrexia in Tuberculosis. What It Tells Us and How It May Be Controlled.*
3. HEUBNER, O. *The Problem of Infant Feeding.*
4. RONGINSKY, A. J. *Some Aspects of Sterility and Its Treatment.*
5. MAHER, S. J. *What Are Acid Fasts?*
6. BUTLER, G. F. *Remarks on the Treatment of Disease and So-called "Authorities."*
7. GORDON, A. *Abnormal Response to an Irritation of the Motor Area of the Brain.*
8. TALMEY, B. S. *A Case of Multilocular Glandular Cystoma Complicating Pregnancy.*

1. Petit in experiments made by injection of isotonic solutions into the peritoneal cavity in animals found that there was an afflux of polynuclear white blood cells to the spot of injection, and the resistance of the animal to infection was increased. He applied this fact by using sterilized horse serum as an injection, since this is the substance that produces polynucleosis most easily and usefully. After its use it was found possible to inject

lethal doses of cultures of *Bacterium coli* and *Staphylococcus pyogenes* into the serous cavities with impunity. This afflux takes place not only in the peritoneum, but also into the serous cavities, mucous membranes, and in wounds of all regions. More than a hundred cases in human beings have now been treated by injection of sterilized horse serum. In abdominal surgery of a non-septic character it has been used as a prophylactic, by pouring the serum into the cavity that has been opened, and drainage by gauze saturated with the serum. In septic cases it has been used by packing the cavity with gauze saturated with the serum, and pouring the serum into the cavity through the drain. The character of the pus changed at once; instead of a serous fluid it became thick and creamy and contained many polynuclears. Suppuration diminished rapidly and granulation began. In gynecology it was used in puerperal infections, after curetting, by packing the uterus with gauze saturated with serum, and placing dried serum in a small tampon introduced into the uterus. In phlegmonous infections and in burns it has been used, and the results have been excellent, healing being rapid. Healing and cicatrization have been obtained at once rapid and excellent; and cure has been obtained in desperate diseases. The method is one which aids the tissues in repair by putting them in a good condition for defence.

New York Medical Journal.
June 22, 1907.

1. Stubbert, J. E. *Sanitation in Panama.*
2. Darlington, T. *President's Address before the American Climatological Association.*
3. Morrow, P. A. *Hygiene in Relation to the Heredity of Disease.*
4. *Arneill, J. R. *Surgical Aspects of Some Digestive Disorders from the Standpoint of the Internist.*
5. Vaughan, V. C., and Wheeler, M. *Experimental Immunity to Colon and Typhoid Bacilli.*
6. Talley, J. E. *A Case of Intermittent Claudication.*
7. Oliver, J. *A Further Contribution Concerning Menstruation.*
8. Wile, U. J. *Anemic Infraction of the Adrenal with Thrombosis of the Veins.*

4. Arneill calls attention to the frequency with which on the one hand, diseases which surgery might relieve are treated medically to the end, and on the other hand, cases without organic disease are subjected to unwise surgery and made worse. To remedy the evils it is all important to give all possible attention to diagnosis, and where all other methods are inconclusive to resort to the exploratory incision. But when this is done and no definite cause for symptoms is found, the surgeon should refrain from operations such as gastro-enterostomy, for which there is no necessity. Cases are cited of pyloric obstruction and of hemorrhage where the results of surgical treatment were brilliant, and of gastric atony, enteroptosis, etc., where after operation the condition of the patient was no better than before. A brief description is given of the methods of diagnosis in stomach disorders, but on account of their fallibility a more common resort to the exploratory laparotomy is urged. [F. W. P.]

The American Journal of the Medical Sciences.
June, 1907.

1. *Trudeau, E. L. *Tuberculin Immunization in the Treatment of Pulmonary Tuberculosis.*
2. *Anders, J. M. *Chronic Polycythemia and Cyanosis.*
3. *Barringer, T. B., and Roper, J. C. *The Prognosis of Chronic Spontaneous Glycosuria, and Its Relation to Alimentary Glycosuria.*
4. La Fetra, L. E. *Infantile Scurvy, Its Manifestations and Diagnosis.*
5. Nicoll, A. *The Treatment of Fracture and Dislocation of the Vertebræ.*
6. Corner, E. M. *The Most Frequent Hernia in Childhood and Its Significance.*
7. Spiller, W. G., and Camp, C. D. *The Clinical Resemblance of Cerebrospinal Syphilis to Disseminated Sclerosis.*
8. Orbison, T. J. *Recurrent Facial Palsy, with Reference to Certain Etiological Factors.*
9. *Coleman, W., and Buxton, B. H. *The Bacteriology of the Blood in Typhoid Fever.*
10. Loeb, L., and Fleisher, M. S. *The Influence of Iodine Preparations on the Vascular Lesions Produced by Adrenalin.*
11. La Roque, G. P. *So-Called Hysterical Affections of the Abdomen.*

1. Trudeau's article describes the work which has been done in the treatment of tuberculosis by means of tuberculin. In spite of the lack of clinical evidence that tuberculosis produces a spontaneous immunity, much experimental evidence has been accumulated to show that an artificial immunity can be produced. This immunity must be due to antitoxins, antibodies, agglutinins, bacteriolysins or opsonins, the relative importance of which is as yet unknown. The immunity is produced artificially by means of cultures or culture products of the tubercle bacillus, from Koch's old tuberculin to the newer preparations, containing dead or living tubercle bacilli, human or bovine. The regulation of the dosage is important if good is to result rather than harm. Too large doses produce obvious ill effects; too small doses may fail in efficiency. For the regulation of the dosage there is as yet no established criterion. Wright has advocated regulation by the guidance of the opsonic index, according to which the dosage is extremely small. Trudeau, on the other hand, does not regard the production of opsonins as the sole end to be aimed at, and advocates conducting the treatment by careful observation of the clinical symptoms of the case, with the object of producing a clinical immunity to the tuberculin. He begins with small doses. 1000 mgm. of B. F., or Koch's B. E., increased progressively with each dose. The injections are given at first twice a week, later at somewhat longer intervals. The treatment is continued, usually for 6 months to a year, until finally 1 cc. of the undiluted preparation causes no reaction. The injections are then discontinued, to be resumed three to six months later. Throughout the course symptoms of intolerance, consisting in febrile reactions, local reactions, either at the site of the injection or at the site of the disease, or constitutional disturbances, such as malaise, headache, anorexia, and loss of weight and strength, must be watched for. If these appear, the treatment is discontinued until they cease, and then continued with more gradually increasing doses. Trudeau's experience has been mainly with chronic cases, with temperature under 100°. Acute febrile cases, he believes, should be treated by the rest and open-air method only. The clinical value of the tuberculin treatment is difficult to determine. Trudeau gives no statistics but expresses "a strong clinical impression . . . which has gradually become a conviction," the value of which no one can deny, that tuberculin immunization favorably influences the course of chronic tuberculosis.

2. Anders discusses the condition known as chronic polycythemia, or increase in number of the red blood corpuscles with cyanosis and usually enlargement of the spleen. He reports 3 original cases and analyses 18 cases from the literature, and suggests the theory that the cause is to be found in a venous stasis resulting from defective tonus of the veins. The symptoms are variable, but headaches, vertigo and neurasthenic symptoms are prominent. In treatment, the nitrites have given benefit in some cases. Begg reports a case where quinine in large doses seemed to have a distinct beneficial effect.

3. Barringer and Roper report the results of investigations in 17 cases in whose urine five years or more ago sugar was found on examination for insurance, and who were shown by further study to have not diabetes, but transient spontaneous glycosuria. Of these cases 50% showed an alimentary glycosuria at the end of five years, and 8 of the 17 have developed diabetes or probable diabetes. The remaining 50% showed no return of the glycosuria after its original discovery. The authors conclude that there is a class of cases of spontaneous glycosuria where the condition is quite harmless, contrary to von Noorden's view that a transitory glycosuria is in most cases a sign of developing diabetes. They regard the test of alimentary glycosuria as a valuable aid in distinguishing these cases of good prognosis. Where a small quantity of sugar is found in a patient's urine without

history of over-indulgence in sweets they advise a restricted diet and frequent testing of the reaction to glucose in the next six months. If the reactions are negative and the sugar does not reappear they believe that continuance of the restricted diet is unnecessary.

9. Coleman and Buxton, since their adoption of the ox-bile method of blood-culture for typhoid bacilli, have studied 34 cases, of which 10 proved by clinical course to be conditions other than typhoid, and the remainder unquestionably were typhoid. Of the 24 cases of typhoid, the bacilli were demonstrated by blood culture in all. From this and from the fact that published results of 33 different investigators, in spite of methods now considered faulty, show positive findings in 1,197 out of 1,602 cases, and in all stages of the disease, it is thought probable that the bacilli are present in the blood of every case of typhoid fever and throughout its course. The authors do not, however, regard the disease as a septicemia, but consider that the bacillemia merely represents an overflow of bacilli from the lymphopoietic organs. The methods of preparing the media and of identifying the organisms are concisely but clearly described. The value of the test as a method of early diagnosis is shown by the fact that in 391 published cases the bacilli were found 94 times when the Widal reaction was negative. [F. W. P.]

Annals of Surgery.

June, 1907.

1. *Warren, J. C. *Plastic Resection of the Mammary Gland.*
2. *Mayo, W. J. *The Contribution of Surgery to a Better Understanding of Gastric and Duodenol Ulcer.*
3. *Munro, J. C. *End Results in Benign Lesions of the Stomach Surgically Treated.*
4. *Coffey, R. C. *Remote or Indirect Subperitoneal Drainage in the Extraperitoneal Closure of Persistent Fecal Fistulæ.*
5. Chandler, G., and Baldauf, L. K. *Lipoma of the Intestine in a Child with Symptoms of Intestinal Obstruction.*
6. Myer, M. W. *A Malignant Type of Pseudomyxoma Penetrating the Spleen and Colon.*
7. *McWilliams, C. A. *Primary Typhlitis without Appendicitis.*
8. *Bodine, J. A. *The Adequacy of Local Anesthesia in Inguinal Hernia Operations.*
9. McCosh, A. J. *Cysts of the Suprarenal Gland.*
10. *Jacobson, N. *Toxic Nephritis Dependent upon Surgical Conditions.*
11. Osgood, A. T. *The Diagnosis of Obscure Cases of Renal and Ureteral Calculus.*
12. *Keyes, E. L., Jr. *Tuberculosis of the Testicle.*
13. Keen, W. W. *Fracture of the Greater Tuberosity of the Humerus, with Dislocation into the Axilla. Fracture at the Anatomical Neck of the Humerus with Dislocation.*

1. By an incision along the outer and inferior borders of the gland, Warren is able to reflect the breast inward toward the sternum, and thus gain access to tumors or cysts lying within its substance. These he removes by a V-shaped incision, without entering the cyst cavity. The remaining segments of the gland are then explored by a series of radiating incisions. Buried catgut sutures are used to unite the remaining breast tissue. This method of approach leaves a scar which in no way interferes with the subsequent cosmetic appearance of the gland. It is so placed, however, that if evidence of malignancy be found it may easily be prolonged into the usual incision for amputation of the gland with dissection of the axilla. The article is admirably illustrated.

2. Mayo calls attention to the two varieties of gastric and duodenal ulcer: (1) the indurated or calloused ulcer, which can be seen and felt during operation on account of the cicatricial tissue, which gives the appearance and feel of a scar from the outside of the stomach wall; and (2) the non-indurated, mucous ulcer which does not betray its presence by thickening or other sign, and is usually located with much difficulty, even if the stomach and duodenum be opened and careful search be made. All the positive advances in surgical knowledge concern the first group. That ulcers of the second type exist in both acute and chronic form is not to be doubted, but at the present time Mayo does not consider that a diagnosis of mucous or other undemonstrated ulcer indicates a surgical operation, unless there exist complications, such as perforation, hemorrhage or obstruction. Indurated ulcer occurs fully as often in the duodenum as in the stomach. Seventy-seven per cent of the cases of duodenal ulcer occurred in men. In 54% of the cases of cancer of the stomach, there was conclusive evidence that the cancer had its origin in ulcer. The best means of identifying the pylorus is by the pyloric vein, which extends from the inferior margin of the pylorus on the gastric side, upward and across about three fourths of its extent. From the superior margin a similar vein extends downward, until it nearly or quite meets the one from below.

3. Munro reports the results of 150 cases of benign lesions of the stomach. Eighty-seven of these showed gross ulcers in the stomach, in the duodenum, or in both; 25 showed well marked adhesions without evidence of an active ulcer; 16 cases belonged to the class of so-called medical ulcer, without palpable lesion; 15 were cases of so-called neuroses, and 9 were classed variously as ptosis, spasm of the pylorus, etc. In the majority of cases of gross lesion the benefit from operation was immediate and permanent. The "medical ulcer" cases were only very slightly or not at all benefited by operation, so that Munro advises closing the abdomen when there is no gross ulcer, pyloric obstruction, or other crippling lesion to be found. The worst subjects for interference were those classed as neurotics, most of such cases being made worse by operation.

4. Coffey employs the following procedure in the closure of fecal fistulæ: (1) Dissect out the old scar down to the fat, and make an incision around the fistulous tract, including a small strip of skin, directing the point of the knife slightly away from the fistula, so that it first comes in contact with the fascia about half an inch away from the fistula, in order to avoid any possibility of opening the peritoneum. (2) Dissect up the fat from the fascia for as much as two inches from the incision; draw it back; clean off the fascia. (3) Make an incision through the fascia, beginning at the upper end of the wound, and coming toward the fistula. Dissect the fascia from the muscle for at least two inches in every direction. (4) Dissect the muscle from the peritoneum in the same manner, so that the peritoneum hangs loosely, with the fistula standing up in its center. (5) Trim off the little margin of skin which has been left with the edge of the fistula. (6) The edges of the fistula are turned in with linen sutures knotted on the inside. (7) If the wall of the fistula is hard and cicatricial, making it difficult to turn in, it is well to make an incision part way through this cicatricial tissue. (8) A second layer of sutures is placed above the turned-in fistula, and the wound thoroughly cleaned with salt solution. (9) Silkworm gut sutures are passed through skin, fat, fascia and muscle, about a half inch or more from the edge, and left untied, space being left at the upper end of the wound for drainage. (10) Suture the muscle loosely with catgut. (11) Suture the fascia with strong double catgut. (12) Suture the skin with horsehair. (13) Place the drains, either tubes or cigarette wicks, and tie the silkworm-gut sutures over gauze rolls. The lateral spaces between the fat, fascia and muscle serve as drainage channels to conduct any septic fluid around the line of suture to the drain at the upper end of the wound. The colored illustrations accompanying the article are of value in showing the various steps.

7. McWilliams concludes as follows: (1) Primary, acute and chronic typhlitis occurs independently of appendicitis, dysentery, tuberculosis, actinomycosis or cancer, and is idiopathic in origin, or depends on coprostasis. (2) Primary typhlitis, the appendix being normal, may lead to perforation, with the formation of perityphlitic abscess or general peritonitis. (3) The symptoms of primary typhlitis are usually identical with those of appendicitis, and the indications for operation are similar in the two conditions. (4) Primary typhlitis is rare in comparison with appendicitis. (5) The danger of a primary typhlitis consists in the liability to the rupture of an ulcer, and to the development of appendicitis. (6) Purgatives are contra-indicated in inflammations of the right iliac

fossa. (7) The treatment consists of laparotomy, removal of the appendix, closure of any perforation, or invagination of any suspected spot in the cecal wall, with removal of a piece for microscopical examination if it is thought necessary.

8. Bodine, basing his statement on over 400 operations for radical cure of inguinal hernia, advocates the use of local analgesia in all such cases. He uses a 1 to 500 warm cocain solution.

10. Jacobson states that the subject of nephritis dependent upon surgical conditions located remotely from the kidneys is one to which sufficient attention has not been given by the profession. He reports three cases. In the first there was present a bacterial or toxic nephritis dependent upon a septic condition (sloughing fibroids) and associated with other evidences of profound sepsis, especially endocarditis. The patient's condition was precarious, and yet after the expulsion of the fibroids and the subsidence of the sepsis of the uterus there was at once a prompt recovery from the secondary disturbance, both in the heart and kidneys. In the second case, one of intestinal obstruction from adhesions and bands, a toxic condition was created within the intestinal tract, and as a result of this toxemia a pure toxic nephritis. After relief of the intestinal obstruction, though the patient nearly died of uremic convulsions, the nephritis gradually improved and recovery ensued. In the third case there was present pancreatitis due to cholecystitis. The resulting toxic condition caused both nephritis and glycosuria, both of which were recovered from on draining the gall bladder. These cases illustrate a type in which the bacterial or toxic nephritis, instead of being a contra-indication to operation, becomes a most positive indication for operation, as by such a course only can it be removed.

12. Keyes's paper is based on the observation of 100 patients bearing 153 tubercular testicles. He finds that (1) testicular tuberculosis is clinically never an isolated lesion. It is only one feature of a general genital tuberculosis, for (2) sterility is frequent if not constant at the time the first testis is invaded; (3) there is evidence at this time of inflammation of the internal genitals; (4) relapse in the opposite testicle occurs within a few years, in eight or nine out of ten cases, and (5) such relapse is in no wise postponed by early removal of the diseased testis; (6) moreover, though suppuration seems often to result in permanent cure of the local process, and (7) though a chronic focus several years old is likely to suppurate, yet (8) in no case can one feel certain of a real cure unless the tubercular epididymitis has been removed; (9) the demoralizing effect of epididymectomy is not to be compared with that of castration, and (10) slight tuberculosis of the testis may be depended upon to heal spontaneously after removal of the epididymis; (11) hence epididymectomy is the radical operation of choice, unless there is hyperacute generalized epididymo-orchitis, or unless the testis is destroyed by suppuration; (12) this operation has a beneficial effect upon the general health and upon tuberculosis of the internal genitals; (13) it should, therefore, be performed early in the disease; (14) this in spite of the fact that tuberculosis of the testis is often but an insignificant part of a generalized progressive tuberculosis, or (15) is for many years the only active lesion of the disease; (16) if the patient is sterile, it would probably be wise to remove both epididymes, even though only one side is diseased. [W. C. Q.]

The Lancet.
June 15, 1907.

1. Wilson, T. *Pelvic Inflammations in the Female.*
2. *Ehrlich, P. *Experimental Researches on Specific Therapeutics.*
3. *Duckworth, D. *The Treatment of Cardiac Dilatation.*
4. *Mummery, J. P. L. *The Causes of Colitis with Special Reference to its Surgical Treatment.*
5. Pringle, S. *Sacrococcygeal Teratoid Tumor with Formation of Metatases in the Groin.*
6. Moullin, C. W. M. *Notes on a Case in which Glycosuria, Depending upon Cholecystitis and Cholangitis, Disappeared after Drainage of the Bile Ducts.*
7. MerIur, C. *Meditations on Gout* (written during an attack).

2. Ehrlich's first lecture is a dissertation on immunity, with especial reference to the relations existing between the distribution and action of antigens and antibodies. It is as clear as this somewhat complex subject can be made.

3. For cardiac dilatation with sudden broken compensation Duckworth advises venesection of 6 to 8 oz., or leeching; next, purgation for which he considers mercury by far the best agent, then digitalis. A dry diet is very important. Tapping should be resorted to if necessary.

4. Mummery advises the use of the sigmoidoscope in all obscure cases of colitis. He reports 36 cases, and takes up the various causes of this condition, both outside and inside the intestines. For treatment, he uses irrigation with a douche, the reservoir of which is never higher than 1 to 2 ft. above the anus. In acute conditions he advises using mild non-irritating solutions. In ulcerated cases large olive oil injections are of benefit. In cases in which no cause can be found in prolonged examination, and which do not yield to careful medical treatment, he advises operative measures and a thorough examination of the intestines. [J. B. H.]

British Medical Journal.
June 15, 1907.

1. Broadbent, W. H. *Remarks on Some Affections of Speech.*
2. *Mackenzie, H. *Clinical Remarks on a Case of Cerebrospinal Meningitis, or Spotted Fever, Treated by Lumbar Puncture and Vaccine Injections: with Recovery.*
3. Bland-Sutton, J. *A Lecture on Circumcision as a Rite and as a Surgical Operation.*
4. MacMunn, J. *On the Radical Cure of Urethral Stricture by Internal Urethrotomy.*
5. *Coombs, C. *Congenital Hypotonia* (*Congenital Amyopsia*).
6. Squire, J. E. *A Clinical Lecture on Opsonins in Relation to the Specific Treatment of Tuberculosis.*
7. Felkin, H. G. *A Contribution to the Value of Complete Vocal Rest as an Aid to Recovery from Laryngeal Tuberculosis and Allied Conditions during Sanatorium Treatment.*

2. Mackenzie considers lumbar puncture of the greatest value in all forms of meningitis and thinks that he has saved several lives by this process. In the case he reports, nearly 9 oz. of fluid were obtained by nine punctures. The vaccine used in his case was prepared from the organisms obtained from culture of the fluid. While convinced of the value of lumbar puncture he is unable to state how much good was done by the use of the vaccine.

5. "Congenital hypotonia," or "myatonia congenita," is a rare condition, consisting of excessive muscular laxness and weakness. Coombs's case was in an otherwise healthy girl of ten years. The condition was present from birth, yet could not be ascribed to any hereditary cause. Unlike most muscular dystrophies, it has not occurred in any other members of the patient's family. The muscles are weak in proportion as they are small and short; there are no sensory or trophic changes, no fibrillary tremor, and no reaction of degeneration. The small size of the muscles is due not to atrophy, but to a lack of development. All the muscles in the body are implicated. There seems to be a rounding of the articular surfaces as shown by x-ray, which accounts for some of the abnormal mobility. As in myasthenia gravis there is apt to be a persistence of the thymus. Oppenheim considers the prognosis favorable. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 22.
May 30, 1907.

1. *Uhlenhuth, Hoffmann and Roscher. *The Action of Atoxyl upon Syphilis.*
2. *Schmorl, G. *The Staining of Sections for the Spirochaeta Pallida by the Giemsa Method.*
3. Klose, H. *The Use of Papayon Combined with Antitoxin in the Treatment of Laryngeal Diphtheria.* (Continued article.)

4. Sudeck, P. *Muscle Atrophy.*
5. Cassirer and Bamberger. *A Case of Double Neuritis of the Crural Nerve with Pentosuria.*
6. Vogel, K. *The Application of the Murphy Button to the Large Intestine.*
7. Sellheim, H. *How to Learn the Technic of Symphysiotomy.*
8. Feilchenfeld, H. *Cure of a Chronic Inflammation of the Tear Sac by an Intercurrent Erysipelas.*
9. Gutmann, A. *External Eye Diseases and Their Relation to Disorders in the Nose.* (Concluded.)

1. These authors report a series of 11 cases of syphilis treated by atoxyl and conclude that it has an unmistakable good effect when used in sufficiently large doses; it is especially beneficial in the malignant forms. They injected intramuscularly 10 cases with a 10% solution and one with a 15% solution. The injections were of 0.2 to 0.6 gm. every two days at first, later every three days. It caused no local disturbances. It makes a very important addition to our means of combating syphilis in those cases which have an idiosyncrasy against the mercury and iodide treatment.

2. Schmorl has obtained good results in staining sections by the Giemsa method by selecting thin frozen sections previously fixed in 4% formalin, and staining after the Giemsa method, allowing the stain to be in contact with the section for one hour, then using a fresh solution of the stain and allowing it to stand for 12 or, better, 24 hours.

[L. G. M.]

Münchener Medizinische Wochenschrift, No. 21.
May 21, 1907.

1. *v. Herff, O. *The Prophylaxis of Puerperal Fever.*
2. *Zangemeister, W. *The Present Status of the Streptococcus, Especially in Relation to Obstetrics.*
3. Tomasczewski, E. *The Transmission of Experimental Syphilis of the Eye of the Rabbit from one Animal to Another.*
4. *Moro, E. *A Clinical Test for Alexin.*
5. Weisswange. *When to Operate on Myoma.*
6. *Lissmann, P. *New Investigations on the Dorsal Foot Reflex.*
7. *Littauer, A. *Doderlein's Gaudinin Method for Protecting the Skin during Operations.*
8. Wimmer, H. *A Case of Intestinal Calculus.*
9. *Szöllösy, L. *A Case of Neurotic Gangrene of the Skin and its Relation to Hypnosis.*
10. Krummacher. *Rare Complications of Pregnancy.*
11. Kaupe. *The Etiology of Pemphigus Neonatorum.*
12. Lengfellner, K. *A Steel Spring for Flat Foot Pads.*
13. *Treupel, G. *The Present Status of Percussion of the Heart.* (Concluded.)

1. During the last few years there has been a slight but distinct rise in Prussia in the mortality from puerperal fever. This, according to Herff, is to be laid at the door of the physician and not of the midwives. The causes are twofold, viz.: insufficient disinfection of the hands and too much operating. One of the chief reasons for carelessness in disinfecting the hands is the complexity of modern methods. This difficulty has been obviated in his clinic by the use of Ahlfeld's hot-water alcohol method. Out of 6,000 deliveries in his clinic the mortality from puerperal fever was only .08% and no cases were infected in the hospital. It is important to operate only on strict indications and to make as few pelvic examinations as possible.

2. Recent work on the streptococcus, and especially in its relation to immunity, make it probable that there is only one form of streptococcus and that the variations shown are merely the effects of environment. Zangemeister shows that the streptococci often found in the vaginal secretion of healthy women can be made pathogenic for animals, and that immune sera acquired in this way will protect against infection with other varieties of streptococci. There is, therefore, the possibility that puerperal fever may arise from infection with such organisms, but it has been clearly shown that the vast majority of infections are due to germs introduced from without.

4. Moro describes a method devised by him for the demonstration of alexin, requiring only a few drops of blood. For the details the reader is referred to the original article.

6. The dorsal foot reflex consists in the movement of the toes on tapping the outer part of the dorsum of the foot with a percussion hammer. Normally the toes (excepting the great toe) are extended, but in disease a plantar flexion may occur. Lissmann confirms the observations of the two describers of the reflex, Bechterew and Mendel, finding it positive (*i. e.*, plantar flexion) only in cases with positive Babinski's sign, and absent altogether in anterior poliomyelitis. He also found in infancy the reflex positive in all cases with positive Babinski. The significance of this sign is therefore identical with that of Babinski's, indicating (except in infants) disturbance of conduction in the pyramidal tract.

7. Döderlein has shown that the contamination of the operative field from the invasion of bacteria from the neighboring skin may be prevented in the following way: the skin is cleaned before operation with a formalin-benzin mixture, painted with iodine and then covered with a sterile solution of rubber in forman-benzin, which sticks to the skin and forms an impervious layer over it. Littauer reports excellent results from the use of this "gaudinin" in abdominal operations.

9. In a typical case of multiple neurotic gangrene of the skin Szöllösy produced a similar lesion on the back of the hand by suggestion, telling the patient, while she was under hypnosis, that it would appear the next day. The patient had no memory of what had occurred, but the sore appeared as predicted.

13. Treupel finds that three percussion methods give the most accurate projection of the heart's outline, viz.: (1) the Goldscheider very light percussion (Schwellenswert percussion); (2) the medium heavy percussion according to Moritz; (3) the Ebstein resistance percussion (Tast percussion). All of these gave results agreeing closely with those obtained with the orthodiagraph; the Goldscheider method was, however, the most accurate. He considers that all three have their places and are useful as checks on one another.

[W. T.]

Berliner Klinische Wochenschrift, No. 18.
May 6, 1907.

1. *Hildebrand, O. *Spasm of the Abdominal Muscles in Gun-shot Wounds of the Thorax.*
2. Gabritschewsky, G. *The Relation of Streptococcus Erythemas to Scarlatina.*
3. Koch, W. *On Osteoma.*
4. Minor, L. *The Frequency of Quinquaud's Sign in Alcoholism, Various Nervous Disorders and in Nondrinkers.* (Continued article.)
5. *Meyer, F., and Bergell, P. *Immunization against Typhoid Fever.*
6. Aronson, H. *Investigations on Typhoid Fever and Typhoid Serum.*
7. Kausch, W. *The Surgery of Cancer of the Stomach.* (Concluded.)
8. Magnus, Levy A. *Account of a Trip to Russia.*

1. In two cases of gun-shot wound of the thorax, the existence of tenderness and abdominal spasm led Hildebrand to open the abdomen, but he found no lesions there. A third case presented the same signs and the autopsy showed that the abdominal organs were intact. The cause of the pain and spasm proved to be irritation of the lower intercostal nerves by the bullet, the skin and muscles of the abdomen being supplied by the six lower intercostal nerves. The cases were all penetrating wounds in which the bullet entered near the heart and became lodged in the lower intercostal spaces behind. The practical lesson from these observations is that in the case of gun-shot wounds of the thorax abdominal pain and spasm do not necessarily mean injury to the abdominal viscera.

5. The chief defect of the various sera used against typhoid fever has been that the principal action has been bacteriolytic and not antitoxic, and the destruction of the bacilli has overwhelmed the organisms with the endotoxins which were set free. Meyer and Bergell have succeeded in obtaining an endotoxin from typhoid cultures, which kills laboratory animals in a short time. If smaller doses

are employed, the animals die after a few days, with diarrhea, prostration and finally convulsions; the post-mortem examination shows intestinal lesions like those of man, but no enlargement of the spleen. It is, therefore, probable that many of the symptoms of typhoid fever are purely toxic, while others are due to the bacteriemia. By inoculating horses the authors have obtained a serum which is distinctly antitoxic as well as bacteriolytic and exerting marked curative and prophylactic properties in animals. The serum is somewhat weak for use in man, but will probably be susceptible of improvement.

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Correspondence.

LETTER FROM CHINA.

Climate and Diseases in Shanghai and Canton. Medical Practice.

Manila, May, 1907.

Mr. Editor: Since my letter to you from Japan, I have spent more than two months in China, having landed in Shanghai just before Christmas and sailed from Hongkong in March. Excepting a few mild, sunny days, the winter climate of Shanghai is not a pleasant one. It thaws nearly every day, but the sun may not shine for weeks and a raw wind sweeps up the Yangtse from the sea, searches every corner of the city and penetrates to one's vital organs. Owing to the slight degree of elevation and the remarkable flatness of that part of China, the frequent February rains and the scant sunshine, there is mud and water everywhere. The houses, warmed only by open fires, are often cold. These conditions would seem at first sight to favor colds, bronchitis and pneumonia, but among the English residents who constitute the majority of foreigners in Shanghai colds and bronchitis are infrequent. This may be because the temperature changes in Shanghai are not very frequent or extreme; or it may be due in part to two other facts, namely: that owing to the coolness within and the moderate cold without, the interchange of air through window cracks is less rapid, and because the skin is never damp with perspiration, one is less sensitive to draughts. I was reminded of the remark of an experienced physician: "People do not take cold, they take hot."

The winter climate of Hongkong is somewhat like that of Shanghai but much milder. That of Peking is entirely different, as might be expected from its inland situation.

The sun shines there day after day, from a cloudless sky. The air is brisk, thaws are unusual and it rarely snows. The thirsty wind from the Mongolian desert absorbs every atom of moisture, leaving the surface soil too dry to freeze; hence the dust-storms which occasionally occur at this season. The dryness of the air affects the skin of the body and limbs making it harsh and causing pruritus. Just as in a New England winter when the northwest wind clears the sky, the dry air sparkles and the temperature is low, one feels that he must rush into the open and take violent exercise, so in Peking such weather is tremendously stimulating. But in Peking it lasts almost without intermission for months and the opportunities there for out-door sports are limited. Consequently, nervous tension is great. Insomnia is spoken of by the residents and is a common complaint of visitors. Nevertheless, and in spite of the unusual quantities of street dust, which get into the air passages, there is little infectious disease in Peking in the winter. Perhaps the bacteria of the street wither away and die, as did the seed which fell upon the rock. Last January, however, there was a widespread epidemic of whooping-cough among children and some cases were fatal.

The winter, until the middle of January, having been even drier than usual, and fearing that by frost getting deep into the ground crops would be delayed, the Emperor, not daunted by a cloudless sky, prayed for snow. When I arrived in Peking the sun was obscured, the clouds broke on the second day, and on the third came rain and sleet. Men said it was a bad omen, that "the earth had taken on a coat of mail." The Emperor prayed again; threatening clouds hung low for a week, then a little snow fell. But the high priests were not satisfied, and when I left Peking his Celestial Holiness was about to pray once more. Bad weather followed me to Hankow and it snowed on the Yangtse.

The ordinary run of hospital cases in Shanghai in the winter is of no special interest, but there are a few cases of Malta fever or liver abscess. Beri-beri is common there in summer among the Chinese, but is not seen at all in winter. In Hongkong it is found the year round and in summer hundreds of cases are treated in the hospitals. The Tung-wa Hospital in Hongkong is run and maintained by Chinese for their own people. There were thirty odd cases of beri-beri there in March. The resident, Dr. Jew Hawk, is a Chinese trained in the United States. He said that 40% of the beri-beri cases admitted to the hospital died (mild cases do not come in), and that of those who recover some have recurrences in a short time. He had not observed recurrence yearly at the same period. He considers the extreme dampness in the summer in Hongkong to be an important etiological factor. The winter climate there is by no means a dry one, but the cold weather seems to check the disease. The patients in the Yung-wa may be treated as they prefer, by Dr. Jew Hawk on modern lines, or by others who prescribe the time-honored remedies of China. If the neuritic pain of beriberi is severe they always get transferred where they will receive morphine. The beds which the Chinese prefer are low wooden tables covered with a thin mat of straw. A Chinese woman on entrance to a European hospital was laid upon a spring bed. When she turned over and felt the mattress give she clutched the sides of the bed in terror, fearing that she would fall, and thereafter slept upon the floor.

At the Government Civil Hospital, also in Hongkong, I saw several obscure cases of fever. One of them of short duration had an urticarial eruption on the skin and distoma eggs in the stools. A second patient, who had had slight fever and paresis of one arm for weeks, had taken iodide all the time with little improvement, and a third, a native of India, had a chronic wasting disease, with recurrent fever, jaundice and enlarged liver and spleen. The spleen was not nearly as large as is usual in kola-azar. Malignant disease seemed the most probable diagnosis. It was most interesting to see and discuss these cases with the resident, Dr. Koch.

Shortly before I left Boston, a friend said to me: "Why don't you start a firm of doctors, including physician, surgeon and specialists? I will pay you so much a year to keep me in good health, as they do in China." In Honolulu there is at least one firm of doctors, and in Shanghai and Hongkong all the English physicians belong to firms. There are usually four partners. Every man in turn goes home for one year in every four and has the opportunity to see what is being done there. His practice is taken up by the other members and the absentee receives his percentage of the profits at regular intervals. The fees in Shanghai are so much a year for each member of the family. The patient may choose any doctor in the firm as his physician and call in any of them for consultation, or when his physician is away. From the patient's point of view the system saves trouble, a doctor can be found at any time and, most important of all, it is a sort of insurance policy, because when there is much sickness in the family the doctor's bills do not increase. From the physician's standpoint it is a success because he gets an assured income, which he can estimate and it enables him to return home every few years without losing his patients. In Shanghai it is agreed that every man shall take complete charge of his patients. If an operation is required he shall do it and if special treatment is necessary he must give it. He may, of course, consult his colleagues. The system in Hongkong is different. The partners divide the classes of work as far as possible among each other and they charge fees for every visit, but profits are divided as at Shanghai. If a man wishes to join the firm he must first serve satisfactorily for two years gratis. Pure specialists are unknown in these cities and probably they will not appear there until the communities are larger than now. When they do come the firms in Shanghai will have to make some concessions. It is an interesting question whether or not such firms could be run smoothly in a city where there are nine or ten well-established specialties.

Very truly yours,
George C. Shattuck, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 6, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,325	485	Quincy	11	1
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	6	—
St. Louis	—	—	Gloucester	5	1
Baltimore	172	49	Brookline	6	—
Cleveland	—	—	North Adams	7	1
Buffalo	—	—	Chicopee	10	6
Pittsburg	—	—	Northampton	6	0
Cincinnati	—	—	Medford	4	—
Milwaukee	—	—	Beverly	3	2
Washington	—	—	Leominster	—	—
Providence	68	18	Hyde Park	3	1
Boston	160	43	Melrose	3	0
Worcester	36	4	Newburyport	—	—
Fall River	28	16	Woburn	3	—
Cambridge	19	5	Marlboro	—	—
Lowell	25	8	Westfield	3	2
Lynn	21	6	Peabody	—	—
New Bedford	20	12	Revere	2	—
Springfield	19	4	Attleboro	3	0
Lawrence	16	9	Clinton	8	5
Somerville	13	7	Adams	2	1
Holyoke	14	5	Gardner	—	—
Brockton	15	3	Milford	—	—
Malden	4	1	Watertown	2	1
Chelsea	11	2	Plymouth	—	—
Salem	11	1	Weymouth	3	0
Newton	6	3	Framingham	2	—
Haverhill	10	1	Southbridge	3	1
Fitchburg	7	—	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	11	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 13, 1907.

J. T. MILLER, assistant surgeon. To the "Rhode Island."

C. T. GRAYSON, assistant surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department.

P. M. RIXEY, medical director. Commissioned medical director from May 7, 1907.

R. C. HOLCOMB, surgeon. Commissioned surgeon from Dec. 17, 1905.

J. T. KENNEDY, surgeon. Commissioned surgeon from May 7, 1907.

F. M. MUNSON, passed assistant surgeon. Commissioned passed assistant surgeon from April 5, 1906.

R. G. HEINER, passed assistant surgeon. Commissioned passed assistant surgeon from Dec. 26, 1906.

H. L. BROWN, passed assistant surgeon. Commissioned passed assistant surgeon from April 12, 1907.

O. J. MINK, passed assistant surgeon. Commissioned passed assistant surgeon from June 7, 1907.

O. V. HUFFMAN, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass.

G. B. TRIBLE, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va., July 30.

H. A. GARRISON, assistant surgeon. Ordered to the Naval Hospital, Newport, R. I.

M. E. ROSE, assistant surgeon. Ordered to the Naval Hospital, New York, N. Y.

G. P. LUMSDEN, medical inspector. Detached from the Naval Recruiting Station, Indianapolis, and ordered to command the Naval Hospital, Pensacola, Fla.

F. S. NASH, surgeon. Detached from command of the Naval Hospital, Canacao, P. I. Home and wait orders.

L. W. BISHOP, passed assistant surgeon. Detached from the "Iowa" and granted leave for one month.

W. J. ZELESKY, passed assistant surgeon. Detached from duty with the third torpedo flotilla, on board the "Stringham," and ordered home to wait orders.

J. D. MANCHESTER, passed assistant surgeon. Detached from the Naval Hospital, Philadelphia; to the Naval Hospital, Pensacola.

M. C. BAKER, acting assistant surgeon. Detached from the "Franklin" and ordered to Midway Islands, sailing from San Francisco, Cal., about July 25.

D. H. CASTO, acting assistant surgeon. Ordered to the Naval Recruiting Station, Indianapolis, Ind.

M. DONELSON, acting assistant surgeon. Ordered to duty with the third torpedo flotilla, on board the "Stringham."

F. D. CHAPPELEAR, acting assistant surgeon. Detached from the Naval Hospital, Pensacola, and ordered home to wait orders.

G. L. WICKES, assistant surgeon. Detached from the "Wilmington" and ordered to the "Cincinnati."

F. E. SELLERS, assistant surgeon. Detached from the "Cincinnati" and ordered to the "Wilmington."

P. J. WALDNER, pharmacist. Appointed pharmacist from July 3, 1907.

APPOINTMENTS.

THE following physicians have been appointed state health inspectors: District 1, Charles G. Morse, Wareham. District 2, Adam G. MacKnight, Fall River. District 3, Wallace C. Keith, Brockton. District 4, Elliott Washburn, Taunton. District 5, Harry Linenthal, Boston. District 6, Albert P. Norris, Cambridge. District 7, William Voss, Beverly. District 8, William Hall Coon, Lawrence. District 9, Charles E. Simpson, Lowell. District 10, William W. Walcott, Natick. District 11, Melvin G. Overlock, Worcester. District 12, Lewis Fish, Fitchburg. District 13, Harvey T. Shores, Northampton. District 14, Richard S. Benner, Springfield. District 15, Lyman A. Jones, North Adams.

RECENT DEATH.

HAMILTON OSGOOD, M.D., M.M.S.S., of Boston, died in Oxford, England, July 10, 1907, aged sixty-nine years.

BOOKS AND PAMPHLETS RECEIVED.

The Technic of Operations upon the Intestines and Stomach. By Alfred H. Gould, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

A Text-Book of Obstetrics. By Barton Cooke Hirst, M.D. Fifth edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

Diet in Health and Disease. By Julius Friedenwald, M.D., and John Ruhräh, M.D. Second edition, thoroughly revised and enlarged. Philadelphia and London. W. B. Saunders Co. 1906.

Photoscopy (Skiascopy or Retinoscopy). By Mark D. Stevenson, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M.D., LL.D. Illustrated. Philadelphia and London. W. B. Saunders Co. 1907.

A Laboratory Manual of Invertebrate Zoölogy. By Gilman A. Drew, Ph.D. Philadelphia and London: W. B. Saunders Co. 1907.

Publications of the Massachusetts General Hospital, Boston. Selected Papers by the Staff. Vol. I, No. 3. June, 1907.

Thirtieth Annual Report of the Managers of the Adams Nervine Asylum. Boston. 1907.

Thirty-sixth Annual Report of the Trustees of the City Hospital of the City of Worcester for the Year Ending November 30, 1906.

Lea's Series of Pocket Text-Books. Materia Medica, Therapeutics, Pharmacology and Pharmacognosy, including Medical Pharmacy, Prescription Writing and Medical Latin. By William Schleif, Ph.G., M.D. Series edited by Bern B. Gallaudet, M.D. Third edition, revised and enlarged. Philadelphia and New York: Lea Brothers & Co. 1907.

A Text-Book on the Practice of Gynecology. For Practitioners and Students. By William Easterly Ashton, M.D., LL.D. Third edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Gynecology and Abdominal Surgery. Edited by Howard A. Kelly, M.D., F.R.C.S. (Hon. Edin.), and Charles P. Noble, M.D., Vol. I. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Abdominal Operations. By B. G. A. Moynihan, M.S. (London), F.R.C.S. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co. 1906.

Atlas and Text-Book of Human Anatomy. By Dr. Johannes Sobotta. Edited, with additions, by J. Playfair McMurrich, A.M., Ph.D. Illustrated. Vols. I and II. Philadelphia and London: W. B. Saunders Co. 1906.

A Treatise on Surgery. By George Ryerson Fowler, M.D. Illustrated. Vol. II. Philadelphia and London: W. B. Saunders Co. 1907.

Original Articles.

HYDROPHOBIA AND ITS PREVENTION.*

BY C. P. SYLVESTER, M.D., BOSTON.

In 1856 a committee appointed by the American Medical Association to investigate the subject of rabies presented a paper on “ Hydrophobia, Its Origin and Development,” which was read at the meeting in Detroit in May of that year, by Dr. Thomas Blatchford.[1] In it he reported 106 human deaths, the first seven cases having been furnished him through the kindness of Drs. J. B. S. Jackson and C. B. Homans, of Boston. The cases were not all the committee could find in this country, but were deemed enough to make out justification for legislation, and a copy of that report was sent to the governor of each state.

In the preface was this question: “ Shall human *or* canine life be protected by the ægis of the law? ” The silent evasion of this question since 1856, when Germany had already answered it and acted, although intended to protect the dog, has protected neither dog nor man. It has caused the death of at least several thousand persons in the United States, and naturally a great many more dogs.

We are believed by pet animal owners and others to be cold-hearted and brutal when we attempt to correct legislative deficiencies which allow the lives of scores of children to be sacrificed annually by the most horrible death known. The opponents of such legislation have been able to prevent the scientific enactment of laws principally through general ignorance as to the existence, origin, contagiousness and frequency of the disease.

That some members of the medical profession are loath to give up the traditions of our ancestors regarding the disease has been demonstrated to me by the comparison of their ideas now with those expressed seven years ago, when I first wrote on the subject of rabies. The layman must get his knowledge of sanitary science through the physician.

Rabies is an acute disease of all warm-blooded animals, caused by a specific germ and communicated by inoculation to man. The disease is prevalent everywhere, with the exception of a few places where it has never been imported. There are many references to it in early literature, its mysterious appearance and awful character inspiring the superstitious writers of that time.

It was accurately described in an ancient Hindu work, written by a physician named Susruta one thousand years B.C. Homer, in the ninth book of the Iliad, compares the fury of Hector to the rage of a mad dog, and Aristotle in 322 B.C. described it. To him is due the existing fallacy that it is fatal to every creature bitten but man.

Lucanus in his poem “ Pharsalia,” in about 60 A.D., wrote: “ The poison kills, the bite conveys it, death lurks in the teeth.”

The origin of the disease in man is practically always associated with dogs, yet it may be caused by bite of any animal. The bite of a cow has caused it. The Duke of Richmond, former Governor of Canada, contracted the disease from the bite of a captive fox. Very rarely does one person contract it from another, the germ being attenuated by its passage through man. Human saliva inoculated into a dog has developed the disease. The dog and also all carnivera are potent attenuators of the germ with lengthening of the period of incubation. All herbivera intensify the germ. The rabbit, being a marked intensifier, shortens, by the successive passage of the virus through several of them, the period of incubation from three weeks to six or seven days, which gives us the “ fixed virus ” of Pasteur used for the preparatson for his vaccine. With the intensification or attenuation of the virus goes respectively a greater or lesser distribution of the cause of the disease in the nervous system and a more marked or slighter rabies of the convulsive form, as will be explained later.

Rabies occurs during all the months of the year, but is perhaps a little more prevalent during April, May, June and July.

There is no doubt but that the apparent period of incubation can vary exceedingly. The period may be as short as one week or longer than one year. Most cases develop in from three to seven weeks. In 144 cases carefully observed by Renault, LeBlanc, Saint-Cyr and Peuch[2] the incubation period was 100 to 120 days in four cases; 80 to 90 days in seven cases; 70 to 75 days in five cases; 365 days in one case.

Fifty-seven per cent did not develop the disease until after thirty days. This apparent variable period of incubation, however, consists probably of an incubation period as constant as that of small-pox, but with a most variable pre-incubation period on account of the irregularity with which the germs are conveyed to their seat of development. The so-called incubation period in man may likewise vary as widely. The infectiveness of the disease in man depends even more upon the stage of the disease in which the rabic animal is than the situation of the wounds. The virus is quantitative rather than qualitative, and lacerated uncovered parts would naturally receive more saliva than where the clothes could absorb it, and the head and neck lacerations not only being unprotected by clothing, but being so much nearer the seat of development of the disease, give a higher mortality, with shorter period of incubation, than covered wounded parts more distant. The mortality, however, may vary from *nil* to 100% without regard to the situation of the wounds. I have seen the records of two rabic dogs where five persons in each case were bitten. All ten persons died of hydrophobia. What was the reason for this very exceptional mortality? Let us trace the mode and route of development of the rabies germ and see.

That the germ develops in nerve tissue there is no doubt, for there is no part of the nerve tissue that has not been found infective. But the nerve tissues are never found virulent until the end of the incubation period, and then the infectiveness increases markedly as the cerebrospinal axis is approached. In other words, the nidus of infection is not at the periphery as in tetanus, but in the cerebrospinal substance, and, therefore, it is probably not, as is tetanus, an ascending neuritis.

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*Read before the Boston Society for Medical Improvement, March 19, 1907, and before the clinical section of the Suffolk District Medical Society held in conjunction with the Boston Medical Library Meeting, May 1, 1907.

That it is a descending neuritis, after developing in the central nervous system, there is sufficient proof. How is the nidus of infection transferred to the brain?

Pasteur has shown that intravenous injection is more effectual than intracranial, which proves that the blood stream can convey it, and Nocard has shown that it is the solid rather than the liquid elements of dialyzed saliva which are infective. Whether it is the blood serum or the red corpuscles or the nerve fibers or all three which furnish the route from the periphery, I am unable to answer. No doubt in large quantities the blood serum conveys it. In the ordinary rabies of street infection experiments are at present, I think, tending toward investigations of the corpuscular route. That the organisms may escape after development in small numbers into blood and lymph channels to all parts of the body has been demonstrated by inoculation, although very rarely.

The clinical symptoms give us the key to the seat of development and later distribution, although the "Negri bodies," believed to be the cause of the disease, are not usually found most numerous at this seat. The chief symptom of extreme general hyperesthesia points to the sensory rather than to the motor roots, and the most intense hyperesthesia followed by paresis of the glosso-pharyngeal region would indicate greatest involvement of the nerve roots supplying that tract, namely, the glosso-pharyngeal, filaments of spinal accessory, pneumogastric, hypoglossal and gustatory branch of the fifth, all of which arise in the nuclei of the medulla and floor of the fourth ventricle.

Now comes the explanation of why the stage of the disease has even more to do with the infectiveness than position of the bites. The saliva only becomes infective after the micro-organisms have developed in the larger sensory and smaller motor roots and descended the nerve tracts to their terminations in mouth, pharynx and larynx.[3] The virus is, as before stated, quantitative rather than qualitative. As you know, the sympathetic nerves by their ganglia and fibers are most closely connected with the sensory; and in no part of the body are the sensory and ganglionic systems so intimately associated with each other as in the glosso-pharyngeal tract. Therefore, irritation of one irritates the other, and consequently in the earlier convulsive stage of the disease the salivary glands secrete a lesser amount of a thicker, not easily absorbed, saliva with no or very few germs. Later, when cerebrospinal centers are deluged and the germs are descending all three nerve tracts, paralysis comes on, the saliva becomes thin, copious and concentrated with virus, and never fails to infect. Fortunately for us the dog is then more apathetic than furious.

Hydrophobia is caused by inoculation with a specific microbe. To Negri[4] of the University of Pavia has been given, by many observers, the credit of discovering the probable cause of the disease. In 1903 he discovered bodies, present in the nervous system of animals, dead from rabies, which he believed to be protozoa. He described them as being rounded or oval in form, varying in size from 1 to 25 μ in diameter, staining distinctly with eosin and containing a central body surrounded by granules, these inner bodies being principally basophilic. They are more abundant and larger in the cells of Ammon's horn than elsewhere, but are often found in the Purkinje cells of the cerebellum, in the pyramidal cells of the cortex and in the cells of the pons, Gasserian ganglion, spinal ganglia and spinal cord.

Although there are many points in favor of the "Negri" bodies containing the cause of rabies, there are yet a few points to be cleared up; but if, as is quite generally conceded, their presence exists in no other disease, they are then a positive evidence of rabies and make it possible to diagnose the disease by the section method in a few hours and by the smear method in from one half to one hour from the time the animal arrives in the laboratory.

Frothingham's[5] method of rapid diagnosis by making impressions of the Ammon's horn upon a slide or cover glass gives excellent and rapid results. The method is as follows:

(1) "Dissect out the Ammon's horn and cutting with scissors at right angles to its length divide it into small disks as desired; (2) press a thoroughly cleaned slide upon a disk and remove it suddenly, or lifting the disk with forceps, press upon the slide. Four or more impressions may thus be made from one disk, depending upon its thickness. Four to eight impressions had better be made upon one slide, as some will naturally be better than others. Before the impressions have thoroughly dried, (3) place impression in methyl alcohol one-half minute or longer; (4) stain with Van Gieson's stain (heating gently) one-half a minute or longer; (5) wash in water, dry and examine."

Van Gieson's stain is made up as follows: Saturated alcoholic solution of fuchsin, three drops; aqueous solution of methylene blue, one drop; water 20 cc.

This saving of from two to four weeks over the biologic method is of vital importance in the treatment by the Pasteur vaccine.

ANATOMICAL CHANGES.

The anatomical changes of the disease are confined principally to the nervous system. The meninges are injected and edematous, and punctiform hemorrhages of brain and cord are found on section, due to degenerative changes of the walls of the veins and capillaries. The lower part of medulla oblongata shows these changes the most. The chromatin of the ganglion cells breaks up, and processes disappear somewhat similar to appearance met with in tetanus, and there is a proliferation of the endothelium of the capsule of the ganglion cells. Salivary glands, mucous membrane of larynx and trachea are hyperemic and seat of petechial hemorrhages, as is also the stomach, which may be covered with yellow viscid mucus and contain coffee-ground débris but no food. Dogs' stomachs may contain all sorts of foreign substances if the convulsive stage of the disease was present.

SYMPTOMS IN CANINES.

The disease in dogs manifests itself somewhat as follows: In usually from three to seven weeks after infection the animal becomes restless and irritable, rarely fawning and affectionate, with marked hyperesthesia, starting and crouching in fear at the least noise. He shows a tendency at this stage to tear and swallow foreign bodies and a disposition for darkness and seclusion. The increasing brain infection now begins to cause marked signs of aberration of senses with hallucinations. He imagines he is being annoyed and injured and snaps viciously at phantoms or real objects. The furious stage, in which the animal runs wild and mad, now develops, and depending on the amount of infection and attenuation of the germ, gives way after a certain time to the paralytic stage, and ending in death in from four to seven days from beginning of disease.

On the amount of infective material and its attenuation, rather than on the dog, depends the relative prevalence of the convulsive or paralytic symptoms. In about one-third of the cases in dogs the disease is all convulsive. In the other two-thirds the paralytic element steadily increases, and in about 5% it is all paralytic in form, or what is known as "dumb rabies" or "drop jaw." These drop-jaw cases usually begin the epidemic. The animal wouldn't and couldn't bite in this form, but his saliva coming in contact with an abrasion might lead to the most horrible death known to man.

It is excellent judgment to beware of any dog that is sick until he is well or until a veterinary surgeon knows he has not rabies; especially, if he is gloomy, irritable and restless, if he snaps and barks at nothing, if he returns home from a disappearance looking dirty, exhausted and sick, if he seems more fond of you than usual and insists on licking your hands and face. Last, but not least, if he seems to have a foreign body in his throat, don't unguardedly look for it any more than you would look down gun-barrels for recreation. The body may prove to be the beginning paralysis of rabies. In rabific dogs their thirst is greater than their fear and they drink water early in the disease.

SYMPTOMS IN MAN.

The disease in man is more horrible to witness than it is possible to relate. There are usually three stages more or less well defined,— those of irritation, spasm and paralysis.

In the first, or melancholic, the scar of the original infection may become painful, itching and congested. There is depression, irritability, hyperesthesia, mental anxiety and insomnia or frightful dreams. There is thirst and yet such intensely painful spasms of throat and chest on attempting to drink as to threaten suffocation and cause indescribable fear at the sight or sound of water.

In twelve to twenty-four hours the spasmodic stage is well developed, and the laryngeal symptoms are frightfully increased, with intense dyspnea and pitiable struggling and gasping. The patient froths at the mouth and expels unswallowed saliva in all directions, while his congested eyes and face and agonized expression show plainly the anguish of his sufferings. With the increasing hyperesthesia, the slightest impression on the senses, such as light, currents of air from moving bed covers or brushing away flies, or the odors of chloroform or ether used to control the symptoms, cause the paroxysms to return when the patient, in a fit of mania, may viciously attack anybody near.

The intervals between the paroxysms gradually shorten until exhaustion seems to modulate the stage into paralysis, unless death supervenes from apoplexy or asphyxia. During this apparent stage of exhaustion, which is due to the ever-increasing brain infection, the patient seems to be much easier, mind is clear and deglutition may be possible, but beginning analgesia, dropping of the jaw, salivation and rattling in the larynx steadily increase, and coma and death end all in from one to three days from beginning of symptoms. As with canine madness, the paroxysmal stage may be short or absent, as may also the paralytic stage, when it has been mistaken for tetanus, just as the so-called "spontaneous hydrophobia" was no doubt sometimes tetanus, as was suggested by Dr. James Mease[6] of Philadelphia in a prize essay on "Rabies" in 1793.

Not so long ago a coroner in Philadelphia refused to receive certificates signed hydrophobia and returned them "for correction." A diagnostician with such views should be excluded before hydrophobia is excluded in differentiating between the few functional and organic nervous diseases, such as hysteria, epilepsy, strychnine poisoning, tetanus, and acute ascending spinal paralysis for which it has been mistaken. The diagnosis will then be easy, except perhaps in early deaths, when autopsy might be the only positive proof.

Time and care will point out hysteria or what is known as lyssophobia.

PROGNOSIS.

There have been recoveries reported by good authorities in both dog and man without treatment, but recoveries in man are if authentic exceedingly rare. Those cases probably received the minimum amount of virus with the minimum attenuation possible to produce the disease, and possessed at the time not only a high opsonic index, but also a strong and willful nervous system. It has been variously estimated that hydrophobia develops in from 5% to 50% of all persons bitten by rabid animals and untreated by vaccine. Statistics would indicate 10% to 15% to be a fair estimate.

Unfortunately there is about as much ignorance and prejudice regarding the Pasteur vaccine treatment as there is regarding the disease itself, both within and without our profession. I heard recently one of our most eminent surgeons of this state in an address before a body of laymen give his personal opinion as against the use of it. The Pasteur preventive treatment is based on the theory of the production of an active immunity depending either on an antitoxin or on a germicidal state of the tissues, probably the latter. It has no effect, beneficial at least, if the symptoms of the disease have appeared.

The vaccine is prepared from the spinal cord of a rabbit killed by inoculation with "fixed virus." Parts of this cord are dried anywhere from three to fourteen days. That part dried three days contains practically all of the toxic potency. That part dried fourteen days loses all its toxic potency. One centimeter in length of cord dried fourteen days is rubbed into an emulsion with 5 cc. of sterile broth or salt solution, and 3 cc. of this fluid are used for first injection. Twenty of these injections now follow each other within a period of fifteen days, in which the spinal cord for each successive injection is usually subjected to a shorter drying period, so that on the fourteenth and fifteenth days a cord is used which has been dried only three days.

What is known as the "intensive treatment," in which twenty-four injections in fifteen days, with six more on the six next days, is used for those cases bitten about the head and neck, and for the cases not seen for several days after inoculation. Our intensive treatment is used in Berlin as their ordinary treatment, and in other cities there are minor differences. We get our vaccine for use in Massachusetts from the New York Board of Health, bottles of proper amount and strength coming each morning by mail at a cost of $25 for each course of treatment. The Boston City Hospital has procured it in this way for nine cases treated by them since last June.

What are the results of this treatment, which, since its origin by Pasteur, has been so actively opposed, some even claiming that the percentage of cases which developed rabies had been increased since its beginning? At least 10% of all persons bitten by rabid animals, before or without the use of Pasteur vaccine, developed the disease and died. Of all persons bitten by rabid animals, with subsequent Pasteur treatment, less than 1% have died. The mortality has never reached 1% in Paris since the institute was opened, while in the New York institute it has only twice exceeded 1%. Dr. Keirle,[7] Director of Pasteur Institute in Baltimore, writes me that he has treated 998 cases with one death.*

These statistics answer all questions as to its efficiency, and justify the honor paid recently to Pasteur when he was elected by the citizens as the most popular man in France.

"Typical serum," which will protect animals in doses equivalent to 1-25,000 of body weight is now prepared by inoculation of sheep with rabic material attenuated by digestion according to the Italian method. It may be dried and kept indefinitely, and should be used in hydrophobia instead of the Pasteur vaccine, if the symptoms of the disease have already appeared. Although harmless, its curative efficiency has not yet been satisfactorily tested on the disease in man. It has been used with favorable results on animals. Cauterization, after the inoculation by the rabid animal of much of the thin saliva, of the beginning paralytic stage would probably no more control the action of the germ than cauterizing a hypodermic of nitroglycerin would control the action of that drug. It is one of the things to be tried, however, and if used early might prevent the absorption of sufficient quantity of the thick viscid saliva of the convulsive stage necessary to cause the disease. Pure nitric acid has experimentally given the best results and should be used freely.

But that there are any cases of hydrophobia in this country is a reflection upon our ability in the department of sanitary science. It is within our power to absolutely exterminate rabies, and we can do it, or we can allow rabific dogs to viciously lacerate and kill by the most horrible death known, hundreds of children annually, for whom we are responsible, as well as thousands of dogs for whom we are also responsible. Ten thousand dogs alone died of this disease in France between 1900 and 1904; and I wish now to close this paper by calling your attention to the rational prophylactic treatment, by enactment and enforcement of laws, such as exist in Great Britain, Germany, Sweden, Norway, Switzerland and other places.

Australia shows perfect results of a law requiring all dogs imported to be quarantined for six months. No case of rabies has ever appeared on this island. Great Britain at home has achieved brilliant results after hundreds of subjects have died from the disease. From 1887 to 1898, inclusive, there were 147 deaths from hydrophobia in man, and 2,554 in dogs. During this period dog laws were sometimes in force and other times rescinded. Strict laws regarding muzzling and quarantine have since then been continually in force, and in 1900 no deaths from hydrophobia occurred, the first time in more than fifty years, while during 1900, 1901 and 1902 only twenty cases of rabies in dogs developed. Since the end of 1902 there have been no cases, and the disease, which between 1848 and 1898 caused the deaths of more than 1,000 persons, has been by the application of a few simple laws exterminated in Great Britain.

Germany saw the necessity and justice of dog regulation many years earlier, and wisely and promptly acted, thus ending the ruthless sacrifice of human life through misdirected sympathy. Between 1848 and 1853 Berlin averaged 35 cases of rabies annually. During the spring of 1853 a marked increase in the number of cases resulted, on July 20, in an order to muzzle all dogs. Four cases developed the next year, one in 1855, and none for the next seven years. According to Dr. Salmon,[8] in his year book, Department of Agriculture, 1900, no case had occurred in Berlin since 1883. The same report states that in Sweden previous to 1870 there were 8 or 10 deaths annually from hydrophobia. Laws were then enacted and enforced, and there have been no deaths since.

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* Dr. Keirle has since reported 1,000 cases treated, with two deaths, one of which may have been due to chronic Bright's disease, which was present before and during treatment.

Literature on the disease in the United States would not indicate that its seriousness or frequency has been properly appreciated by the medical profession. For the year ending May 31, 1890, there were found among incomplete records 143 deaths from hydrophobia in the United States. Twenty-one died here in Massachusetts and 16 in Georgia. Incomplete records of 73 cities between 1890 and 1899, including in some cases the first half of 1900, show 230 human deaths after eliminating doubtful ones.

In Massachusetts, between 1857 and 1880, I have found records of 54 deaths and during the last 20 years there have been at least 60 more with many exposed cases under observation and treatment at present. At least 100 persons have been bitten by rabid animals in Massachusetts during the past year. At a later date I shall be able to present to you more complete data on the prevalence of the disease in this country.

It is true that the layman would need a good deal more information on the subject to support legislation for the eradication of the disease, just as it has been necessary to educate them regarding the infectiousness and rational treatment of tuberculosis. It is a duty incumbent upon us to furnish them with such knowledge that they may assist us in obtaining proper laws for its eradication, and it is upon us, who have in the past secured the many sanitary laws for the public welfare, that the duty devolves of actively guiding into existence such national and state laws as the following: *

1. Control of the disease in the United States to be placed under the supervision of the Chief of the Bureau of Animal Industry at Washington, as are other epizoötic diseases, such as foot-and-mouth disease, according to the Act of Congress of May 29, 1884.
2. Full authority vested in the state cattle or other appointed commission to act as may be necessary for the eradication of the disease, in conjunction with the United States Bureau of Animal Industry at Washington, whenever rabies appears in the state.
3. All licensed dogs to wear collars and metal plate of special form, that they may be readily recognized.
4. Prompt capture of all dogs not properly tagged, with subsequent humane destruction, unless properly licensed within a short time.
5. Efficient muzzling of all dogs unrestrained in public places for a period of at least one year.
6. Dogs imported from countries other than those from which rabies is excluded to be quarantined for six months.

As Massachusetts is not isolated, and our dogs at the borders of the state are often infected by or infect dogs in contiguous states, interstate regulation under the supervision of the chief of the Bureau of Animal Industry at Washington seems to me to be the only efficient method of eradicating the disease in this and other states.

In Berlin its eradication was made effectual by conjoined action on the part of Prussia, and in Great Britain by like action of England, Scotland and Wales.

Dr. Peters [9] in his excellent address on "Rabies" before the Massachusetts Board of Health at a recent meeting quotes Dr. Cope, Chief Veterinary Officer of British Board of Agriculture, as saying: "It may truly be said that the board has never undertaken a duty which has rendered so great a service to the community of this country from the point of view of human health as the extinction of rabies in the dogs." Dr. Cope died recently. The protection he gave to man and dog against rabies can never die. Let us furnish our citizens that same protection. Let us answer now that question that was asked fifty years ago and promise those that trust us as their sanitary guardians that both human and canine life shall be protected by the ægis of the law.

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* Since this paper was read, these six suggestions for legislation were presented in the form of resolutions at the fifty-eighth session of the American Medical Association at Atlantic City, through the courtesy of Dr. Richard C. Cabot, delegate from Massachusetts. They were favorably acted upon by the House of Delegates and are now in the hands of the Legislative Committee, which will do what it can to carry out the declared wishes of the American Medical Association in national and state legislation.

THE UTERO-SACRAL LIGAMENTS.*

BY DANIEL H. CRAIG, M.D., BOSTON,
Surgeon to Out-Patients, Free Hospital for Women, etc.

In accepting your kind invitation, so graciously extended to me through Dr. Greenwood, to talk to you this evening, I was influenced to utilize this theme by two considerations: first, the decided importance of the subject itself; and second, by the surprising and very gratifying interest manifested when I demonstrated the technique of their shortening in a case of retroversion at the Free Hospital for Women last June, before members of the American Medical Association during its Boston session. I am, perhaps, still further influenced by the fact that all definite knowledge of these ligaments seems to be very strictly confined to the gynecologists, and by no means all of these latter appreciate them at their full significance. For example, to show the position not only of the general practitioner, but also of others, not a great while ago one of Boston's leading surgeons of the younger generation referred a patient to my Out-Patient Clinic at the Free Hospital for Women and I returned her with a diagnosis of chronic inflammatory thickening and shortening of the utero-sacral ligaments and advised, in connection with other operative treatment, their section. The patient was promptly returned to me, with the request to operate and a frank avowal that he knew nothing about operations on these ligaments.

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* Read by invitation before the Waltham Clinical Club.

Their anatomy is either misunderstood or not understood at all. I have found by repeated conversations that most physicians regard the utero-sacral ligaments as very vague, inconsequent, peritoneal folds, which they have never seen outside of text-books, and possibly the dissecting-room, and have never felt. The first portion of this postulate is entirely wrong. They are very definite, not peritoneal, and very efficient under proper circumstances. While Bovée has gone very elaborately into their complete and minute description for general purposes of usefulness, I prefer Deaver's description, which is as follows: "The utero-sacral ligaments are flat, muscular bands, which extend from the uterus at the level of the internal os, beneath the layers of the recto-uterine ligaments, to the sides of the sacrum, opposite the lower borders of the sacroiliac articulation. In the first part of their course they are in relation with the lateral walls of the pouch of Douglas, and finally run on either side of the rectum, near the junction of the sigmoid flexure and the upper portion of the rectum."

In this description he very properly emphasizes the distinction between the true muscular utero-sacral ligaments and the false peritoneal portion, which he describes as the above-mentioned recto-uterine ligaments in the following words: "The false posterior or recto-uterine ligaments are composed of peritoneum, are two single serous layers which pass backward from the posterior surface of the uterus and vagina to the upper portion of the rectum, where they are continuous with the peritoneal coat of the rectum. These folds of peritoneum form the lateral boundaries of the pouch of Douglas. External to each of these false ligaments are found the true, or muscular, utero-sacral ligaments, extra-peritoneal connective tissue and anastomosing branches of the uterine and hemorrhoidal vessels."

Deaver's language is too plain to leave any doubt as to the actual muscular structure of these ligaments and physiology has taught us that muscular tissue is not furnished anywhere throughout our bodies, without definite purpose and definite actions.

I believe that I am doing you no injustice when I express the belief that very few of you have ever considered the true utero-sacral ligaments as an entity apart from the very unimpressive peritoneal folds, which become visible from above when the uterus and rectum are widely separated. Realizing their muscular structure necessarily modifies our entire conception of their physiology.

Furthermore, the opinions of Testut, in France, and of Nagel, in Germany, fully confirm and even emphasize the correctness of Deaver's and Bovée's descriptions.

In the light of this anatomy and recent gynecologic surgery the physiology of these ligaments has become definitely known and indubitable. They certainly play an important rôle, not only in the support of the uterus, but also in the maintenance of its proper axis. As this latter point will come up later we will consider it at that time.

The pathology of these structures, considered individually, is changed from that of the peritoneum to that of muscular tissue, but since, as a matter of fact, the line should not, arbitrarily, be so strictly drawn between the true and the false as is done anatomically, we have a mixed pathology in practically all inflammatory lesions of these structures, and I shall endeavor to convince you later that at least one condition which has for years been considered pathological is in reality but a fine example of the physiology of the muscles comprising these ligaments.

The pathology should be divided into the congenital and the acquired. They are relatively frequently the subject of developmental arrest, and I am unable to say whether the arrest is prenatal or post-natal, — whether in a given case the original norm never obtained, or whether at birth the anatomy was normal but an arrest occurred at the pubital development of the other allied structures. The developmental lesion which is most commonly met and of the greatest practical importance is an improper insertion into the uterus, being attached to the uterus above or below the level of its normal attachment.

The acquired forms of pathology almost invariably originate in inflammatory processes reaching the ligaments by extension from contiguous structures, which structures may normally belong in contiguity with the ligaments, or which may have become adjacent to them only by antecedent pathological displacement, as for instance in the case of a prolapsed ovary or tube.

The principal gross manifestations of such inflammation are tumefaction and rigid muscular contraction, the tumefaction being due in part to edema and in part to the thickening consequent upon the muscular foreshortening.

To proceed from generalizations to more specific consideration of individual lesions, let us first consider contraction.

CONTRACTION OF THE UTERO-SACRAL LIGAMENTS.

(*a*) *Inflammatory contraction* is well understood and has been repeatedly described by various observers. It is due to an extension of contiguous inflammation usually from an inflamed ovary, which, through its tumefaction and consequent increased weight, has prolapsed and so come into close apposition with the ligament. And there is a very intimate relationship between a prolapsed ovary and the utero-sacral ligament of the same side. The most immutable attachment of the ovary is by its ligamentum proprium to the cornu of the uterus, and in the downward course of the prolapsing ovary this ligament must form the radius of the arc through which it descends, and the length of this ligament is such that, the uterus remaining in anything like a normal position, the ovary will impinge upon and often rest upon the outer aspect of the recto-uterine fold and its subjacent utero-sacral ligament. If then the ovary be inflamed, or later become inflamed, the recto-uterine fold becomes the seat of a localized peritonitis, in which commonly the subjacent connective tissue and the true ligament become involved. This localized peritonitis, of course, results in an adherent ovary. Should the uterus be more or less retroverted, the approximation of the fundus to the sacrum permits the ovary to fall deeper into the pelvis, and it thus reaches the cul-de-sac of Douglas and rests upon the median aspect of the recto-uterine fold instead of the outer aspect as above, but the advance of the process is in no way affected.

The same sequence of events is also possible in those forms of sacro-salpinx in which, through adhesive inflammation, a collection of fluid, either pus, blood or serum, becomes saculated in or near the fimbriated end of the tube. The proximal portion of the tube forms the radius of the arc in this instance. Moreover, digital differentiation of these two lesions, per vaginam, I have always found impossible, unless the other organ could be distinguished in another location. Of course the two very commonly co-exist.

In cases in which the inflammatory processes in tube or ovary are still active, the contraction of the utero-sacral ligaments can merely be considered as a complication and no special individualized treatment can be administered, and coincident treatment seems advisable only when it is felt that the inflammatory disorganization has reached such a degree that spontaneous resolution cannot take place on the removal of its cause.

A cause of contraction which, so far as I know, has never been mentioned by any one until I last month submitted a paper entitled, " Contraction and Shortening of the Utero-Sacral Ligaments. A Suggestion as to Etiology and Treatment," is what I like to term:

(*b*) *Defensive contraction.* — In this paper I explained at length the nature of this form of contraction to which I wish to refer briefly here. This form of contraction came to my attention in perfecting a treatment for chronic endotrachelitis and depends entirely upon a correct realization of the relatively strong muscular structure of these ligaments. By the contraction of their muscular fibers the cervix, and to a lesser extent the lower portion of the uterus, is strongly drawn backward and upward into the hollow of the sacrum and immobilized. I have many times observed this position of the uterus, commonly referred to in the text-books as retrocession, retroposition, in my observation of cases of endotrachelitis, and finally began to realize that the uterus returned to a normal position, owing to a relaxation of these ligaments very promptly after the cure of the endotrachelitis. In other words, the ligaments, although much shortened and thickened, rigid, readily palpable and very sensitive, were in reality never the seat of a true inflammation at all, but were merely contracted, following the natural law of immobilization in the defense of an inflamed cervix.

Relaxation. — This is a subject regarding the etiology and pathology of which I am able to learn practically nothing either by observation of the great number of cases seen or by reading. We all realize that it is an important factor in every case of retroversion and retroflexion and prolapse, but know practically nothing of its antecedents. I say in retroversion and retroflexion, because it is largely the degree of relaxation of these ligaments which determines the difference. When the ligaments are freely relaxed retroversion results, but when this relaxation is slight or absent, the fundus may be forced backward, but the cervix cannot move forward and so the uterus becomes flexed.

One fact regarding this relaxation is important, and that is that in cases of retroversion known to be of very long standing and of extreme degree I have never yet failed to find them sufficiently firm and of sufficient caliber to permit of their comparatively easy manipulation. This is a fact which I think many who have not had personal experience in their operative manipulation have failed to realize. Everyone seems to regard these ligaments as an operative bugaboo.

The diagnosis of lesions of these ligaments is usually very easy. The only difficulty is encountered in the purely inflammatory cases, in which the prolapsed tube or ovary and the recto-uterine fold as well as the utero-sacral ligaments are all inextricably coalesced into a tender mass behind and beside the cervix, but fortunately it is only in those exceptional cases in which the ligaments require coincident section while operating for the more serious and primary condition that such differentiation is necessary, and it can thus be made most advantageously after the obscuring adhesions have been broken up and the ligament so exposed as to be amenable to inspection, as well as direct palpation.

In those cases of inflammatory contraction, in which the original causative inflammation has resolved, leaving the chronic condition in the ligaments and in those in which the causative lesion does not mask the true condition of the ligaments, the diagnosis is relatively easy. The first thing which attracts attention is the retraction of the cervix far back into the hollow of the sacrum and to a variable extent upward. The first impression is as to the lessened accessibility of the cervix. Generally deep insertion of the examining finger with strong upward forcing of the perineum is required to reach to the full depth of the posterior vaginal fornix, while at the same time the uterus is being forced downward by the external hand over the hypogastrium. Having reached the apex of the posterior fornix, pressure made upward and forward with the tip of the finger, in such a way as to draw the cervix out from the sacrum, will be found to cause an altogether unusual degree of pain; while at the same time, if the tip of the finger is carried outward about one-half inch from the median line, a cord-like structure will be felt, which is very firm, very tender and in diameter may vary from one-eighth to one-half inch or even larger. Its antero-posterior linear feel as well as its characteristic resilience instantly distinguish it from prolapsed appendages, neoplasms or fecal masses in the rectum or sigmoid.

The pain spoken of above upon drawing the retrocessed uterus away from the sacrum deserved fuller mention. The finger-tip should be placed against the posterior aspect of the cervix so low down that in the manipulation no pressure can be made directly upon the suspected ligament, and by the flexion of the finger the cervix drawn sharply forward. If the ligament is diseased this traction causes intolerable pain and the patient will involuntarily exclaim and raise the entire hips off the examining table in her efforts to lessen the tension on the ligaments. On the other hand, such traction is either inoffensive or only mildly painful in adnexal lesions.

Furthermore, inasmuch as it is no more possible to distinguish the normal utero-sacral ligaments than it is the normal broad ligaments, the mere fact of being able to distinguish them on palpation is evidence of some pathological condition.

One further lesion is seldom recognized and is yet easy of diagnosis. This is the too high insertion of these ligaments with the resultant retroversion. The axis of rotation of the uterus in its antero-posterior versions is very nearly at the level of the internal os, but in reality a little above it at the point of insertion of the strong musculo-fibrous base of the broad ligament, which the Germans so wisely designate the "cardinal ligaments of the uterus." Normally the utero-sacral ligaments are inserted below this axial point, keeping the cervix behind the axial point and hence the fundus anterior to this point, or in what is commonly characteristized as normal anteversion. The contraction of the utero-sacral ligaments draws the cervix backward at the same time that the round ligaments draw the fundus forward after the fundus has been displaced backward; as, for example, by distention of the bladder. In those cases, therefore, in which, through arrest of development, faulty development or faulty growth, their attachment is above the axial point, they as inevitably produce retroversion by drawing the body instead of the cervix backward. Usually in such cases the anterior vaginal and vesical attachments with the utero-vesical folds are correspondingly low, still further tending to a forward position of the cervix, with the consequent retroversion of the fundus.

This combination of abnormalities is surprisingly easily recognized and equally surprisingly seldom recognized. This is the one class of movable retroversions which can never be cured by Alexander's operation alone, and which through improper attempts to do so has brought that operation into an undeserved disrepute, just as its improper employment in adherent or otherwise complicated cases of retroversion has.

The recognition of this form of retroversion depends upon the realization of an abnormally deep posterior vaginal fornix, with usually a very high attachment of the vagina to the uterus posteriorly, together with a very short anterior portio vaginalis reaching in some extreme cases almost to an entire absence of any anterior lip to the cervix, the vaginal wall seeming to start from the very border of the os externum. On replacing the uterus it is much easier to distinguish these characteristics, and unless there are or have been inflammatory complications resulting in adhesions, such replacement is easily effected bimanually, but the uterus will return promptly to its abnormal position. As would be expected, pessaries are not well tolerated. This form of retroversion is spoken of as "congenital retroversion."

The diagnosis of defensive as distinguished from inflammatory contraction depends upon the realization that it is only a symptom of some more serious condition, most commonly endotrachelitis, and especially upon the recognition of this original lesion, of which it is a symptom, and finally upon the exclusion of the inflammatory form of contraction through the lack of evidence of past or present contiguous inflammation.

The treatment may be palliative or operative, according to the individual case. In those cases in which an inflammatory contraction is consequential to a mild inflammatory condition in the appendages, which is itself amenable to non-operative measures, the complicating contraction will often, if not of too long duration, yield *pari passu* with the adnexal lesion. In such cases no special treatment need be instituted until the adnexal lesion has been cured, since the packings with or without medication, which best serve to cure the adnexal conditions, also relieve the ligaments. After-treatment is no longer needed by the original condition if, as often happens, a certain degree of contraction persists. I have seen most benefit from a dressing which I call an ichthyol T. A firm roll of non-absorbent cotton two inches long and one inch in diameter is thoroughly smeared with a mixture of ichthyol and glycerin and placed transversely behind the cervix in the posterior vaginal fornix and sustained in this position by a similar roll, about four inches long, which vertically fills the vagina down to the bulbo-cavernosus muscles. Threads are attached to each roll, so that they may be removed by the patient after about seventy-two hours.

The treatment of defensive contraction, since it is itself a symptom, resolves itself into the removal of the disease, of which it is a symptom. In the vast majority of cases, then, our problem is the cure of an endotrachelitis, and I have found no treatment so prompt and permanently efficacious as the little operation with the specially designed instruments which I described last year.

The operative treatment of contraction of the utero-sacral ligaments is confined to a very small number of cases of such long standing that all manner of palliative treatment must fail, as the ligaments have become so infiltrated by fibrous tissue that relaxation is a physical impossibility. It rarely occurs in such cases that operation should be undertaken for their relief alone. Usually grave and long-standing antecedent or complicating lesions demand operative intervention, in which case the simple cutting of the ligaments either from above, during a celiotomy, or from below in a vaginal section, is very simple. In those infrequent cases in which their section is indicated, a simple vaginal cutting through an ample transverse vaginal incision is very easy, without invading the peritoneal cavity at all. It must be borne in mind that in this class of cases the ligaments are much larger than normal and hence more obvious and more easily manipulated. The cervix should be kept well forward for two or three days following the section of the ligaments. The opening of the abdomen for the section of these ligaments is entirely unnecessary, and for this alone seems to me unjustifiable.

The above small class of cases represents the easiest possible operations upon the ligaments.

In relaxation of these ligaments I am skeptical of any form of palliative treatment accomplishing anything except in very recent cases. In such recent cases my method of palliative treatment is by means of a systematic packing of the vagina so as to sustain the replaced uterus in its normal axis and at the same time avoid all tension upon the ligaments. Thus pessaries I do not use in these cases for mechanical reasons. The pessary sustains the uterus in normal anteversion by so forcing upward and backward the vaginal wall that, through its attachment, the cervix is thus drawn backward and, of course, the fundus thrown forward. But in order to accomplish this the transverse bar of the pessary must push a roomy vagina so far upward that the utero-sacral ligaments are stretched over this bar and hence have no opportunity for resolution to their normal length and strength. On the other hand, with the packing installed as I have elsewhere described, the cervix is held properly back, and yet the posterior vaginal fornix is empty and the ligaments have all possible chance of recovery of their normal tone. To briefly repeat this method of packing, it is as follows: One of the wool segments of the " kite-tail " dressing is placed in each lateral fornix and one in front of the cervix, and then the vagina is systematically packed down to the level of the bulbo-cavernosus muscles, where the last layer is disposed as a transverse bridge, thus leaving the bladder and rectum free and the perineum free from the downward pressure of the dressing.

Massage, other than that passively performed by such a packing, has not proved satisfactory in my experience.

The operative shortening of these ligaments is intermediate in difficulty between their easy section and their difficult transplantation when faultily inserted. The difficulty lies in their softness and attenuated diameter, while these difficulties are compensated by the free mobility of the cervix. Here, as in shortening, it cannot be too emphatically stated that no justification exists for the opening of the abdomen for any operation involving these ligaments alone, while it is equally true that all these operations can be done from above when the abdomen is already open for other reasons.

In order to shorten these ligaments a free transverse incision is necessary at the cervicovaginal junction. Through this incision, after working upward through the loose connective tissue between the uterus and the rectum, the ligaments are very readily detected by the finger, especially if they are intermittently tightened by traction upon the cervix. They are then transfixed by a tenaculum and readily drawn into sight. Some operators advise resection of a piece of the requisite length and approximation of the distal segment to the uterus by suture. This I do not like, but prefer to transfix the ligament at the proper point to give the requisite shortening with a suture, and then with the same suture take up a firm hold on the cervix just below the normal insertion. Before tying the first suture, similarly place the second in the opposite ligament, thus saving the advantage of the free mobility of the cervix. Finally, tie both sutures. By this technique three things are accomplished. If the sutures fail of their purpose the patient is at least no worse off than originally, which may not be true if the ligaments were cut. The folded ligament forms adhesions and becomes stronger than originally, and lastly the attachment being slightly below the normal attachment gives them a little greater leverage in drawing the cervix backward.

In transplanting the faultily inserted ligaments the same technique is followed up to the point of inserting the sutures. It is very seldom that the ligaments are so short as to need cutting at their uterine insertion in order to get sufficient length to reach to the new attachment. I have never seen such a case. The ligaments being as freely as possible exposed, which is much less than in the preceding class of cases, because of the less mobility of the cervix, estimate the distance between the point of faulty insertion upon the back of the uterus and the lowest point to which they can be sutured and transfix them with the suture at this distance from their uterine ends. Pass the sutures deeply into the cervical tissues at the elected point for the new attachment, and finally tie after both sutures have been placed.

In addition to the above transplantation some form of plastic work is almost always necessary in these congenital retroversions, such as making a deep transverse incision and closing it vertically, thus shifting the cervico-uterine attachments upward. Shortening of the round ligaments by one technique or another is often a wise or necessary coincidental treatment.

In the close watching of these congenital retroversions after operating as above, some very interesting anatomical data have been observed. We have all heard of the strong influence exerted by the strong pelvic facia in determining the normal axis of the uterus. That is, the uterus has been spoken of as pushed down through these fasciæ at a certain angle, which their attachment tends to perpetuate. These cases illustrate that point beautifully. The cervix was originally "pushed down through" at a wrong angle. On examining these cases six weeks to two months after operation I have invariably found the fundus forward; but the cervix still showing a decided tendency to a forward position, in many cases almost a true anteflexion and without any treatment, in five or six months the cervix comes down to its normal relation to the body in every case.

THE CONTAMINATION OF THE AIR OF OUR CITIES WITH SULPHUR DIOXID, THE CAUSE OF RESPIRATORY DISEASE.

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The importance of sulphur dioxid as an impurity of the air of our cities and its injurious effects upon the organs of respiration is a subject that has not received the attention in works on hygiene which it demands. Most of the works on hygiene give us but a very meager information or none at all of sulphur dioxid as an impurity of the atmosphere. They chiefly mention and describe its antiseptic and disinfectant properties. The writer has been studying the noxious effects of sulphur dioxid as an impurity of the atmosphere for the past ten years and he had arrived at the conclusion that it is one of the most potent causal factors of asthma. Some of his observations were published elsewhere in 1902. It is only within the most recent years, especially through the investigations of Kionka,[1] that the importance of the toxic properties of sulphur dioxid in the form of sulphites has been made apparent and established.

The atmosphere, being a mixture of gases, gives, according to the most recent investigations, the following average composition in one hundred volumes:

Oxygen	20.60	volumes.
Nitrogen	76.90	"
Argon	1.00	"
Carbon dioxid	0.04	"
Aqueous vapor (about)	1.46	"
Ozone, hydrogen dioxid	traces.	
Nitrogen acids		
Marsh gas		
Sulphur dioxid (in towns and volcanic districts)		
Hydrogen sulphid		

Besides the three above-mentioned elements there are in the air hydrogen gas (according to Gautier 0.015%), neon, krypton, xenon, helium and coronium, which have only a scientific interest. According to Mendeléeff's "Periodic Law" a number of other elements are believed to exist in the atmosphere, but remain to be discovered by the chemist in the near future. Dust, being a normal constituent, is found in the air at all times.

PRESENCE OF SULPHUR DIOXID IN SMOKE AND FOG.

Since the air is the great receptacle for all gaseous emanations, other substances, in the vapor or solid form, may be discovered in it by chemical and microscopical means. Sulphurous anhydrid or sulphur dioxid, for instance, can often be traced in it, being derived from domestic, manufacturing or tellural sources. In the combustion of coal, which contains iron pyrites (FeS_2), and coal gas, which contains hydrogen sulphid and other gaseous sulphids, the sulphur is oxidized and converted into sulphur dioxid, which passes into the air in which it is rapidly diffused. The air of every large city, especially in the manufacturing districts, becomes polluted with free sulphur dioxid in variable proportions. To form even an approximate idea of the enormous quantity of waste matter poured into the air of a city like London, it is worth while mentioning the statement quoted by Egbert,[2] that "It has been calculated that for every ton of coal burnt in London something like three tons of carbon dioxid are produced," and as the city's coal consumption is over 30,000 tons per diem, we can see that its atmosphere must receive the enormous daily contamination of about 300 tons of soot and 90,000 tons of carbonic acid. From this calculation the writer has made another proportionate calculation from which he finds that at least 2,700 tons of sulphur dioxid are produced at the same time, helping to augment the further daily pollution of the atmosphere of that city.

Sulphur dioxid, after uniting with the oxygen and aqueous vapor of the air, is converted into sulphuric acid.

A portion of the sulphuric acid, says Thorpe,[3] is probably derived from the oxidation of the iron pyrites, which is generally present in coal to the amount of 3%, although some coals contain much larger quantities of this substance. The amount of sulphur which it contains has an important bearing on the value of the fuel in nearly all its applications. When coal is burnt the sulphur escapes as sulphur dioxid. This gas exerts a very detrimental action on vegetation, and by its proneness to pass into the state of sulphuric acid in the atmosphere it brings about the rapid deterioration of the stone-work on which it may be precipitated. It has been calculated that as much as 20 tons of oil of vitriol (sulphuric acid), produced by the combustion of coal, are annually brought down by the rain in a large city like Glasgow or Manchester.

Dr. R. Angus Smith[4] has shown that in large towns the amount of sulphates is largely increased, owing to the combustion of coal which contains iron pyrites. The nature of the substances present in the rain has also been investigated by this indefatigable worker in air analysis, who has shown that the examination of rain water affords a method of determining the impurities in air, and hence probably its comparative sanitary value. He has made a number of interesting analyses to show the general character of the rain (and therefore of the impurities of the atmosphere) in various parts of Great Britain. Thus the results of the average number of determinations gave for the rain of London 3.87 parts of sulphuric acid in a million (?), for Liverpool, 11.56 parts in a million, Manchester, 10.17 parts in a million, and Glasgow 15.13 parts in a million. He further states that the rain water in large towns is not infrequently acid, owing to the presence of sulphuric acid. When rain contains 40 parts per million of free acid, the vegetation of the district is rapidly affected. Thorpe says that the sulphur compounds in coal gas are a source of much annoyance. When burnt they give rise to acid products which rapidly corrode metal fittings, decorations, tapestry, painted woodwork, paper, gildings of books, etc.

VARIABLE PROPORTION OF SO_2, IN THE ATMOSPHERE OF CITIES.

The proportion of carbon dioxid is an index of the amount of sulphur dioxid in the atmosphere. When the amount of carbon dioxid is increased the proportion of sulphur dioxid is correspondingly augmented in the air of cities and manufacturing districts. Every ton of coal in burning yields its proportionate volume of carbon dioxid and sulphur dioxid, for every sample of coal contains a certain percentage of sulphur in the form of iron pyrites. The proportion of SO_2 in the atmosphere of cities is not constant throughout the year. There is more SO_2 in the air in winter than in summer. There is an excess during heavy fogs, attaining, at times, almost the CO_2 equivalent of the atmosphere. As the amount of carbon dioxid varies in the cities, so also does the quantity of sulphur dioxid vary. *Pari passu*, during the night the sulphur dioxid increases in exact ratio with the progressive increase of carbon dioxid. During the prevalence of thick fogs, the air being in a stagnant condition, the sulphur dioxid equivalent is correspondingly increased with the carbon dioxid content. As much as 8 or 9 volumes of carbon dioxid in 10,000 volumes of air having been noticed on a foggy day, we infer from this likewise a proportionate increase of sulphur dioxid, there being, however, no recent exact quantitative data of sulphur dioxid determinations in the atmosphere at hand.

Bloxam[5] says that when damp air is chilled the water is deposited from it in the form of fog unless the air be optically pure, when no condensation of water occurs. It would appear from this that the dust particles in the air form nuclei around which the aqueous vapor can precipitate, much as crystals form around a particle in a supersaturated solution. The aggravation of a fog by smoke may perhaps be partly due to such a cause. It has been shown that the dust particles are not alone in causing precipitation of aqueous vapor, many gases which are free from suspended particles having a similar effect. Sulphur dioxid is an example; this gas is always present in London air, being a product of the combustion of coal containing iron pyrites; it is more abundant in foggy weather, but whether it is a cause of the fog or is merely retained by it remains uncertain.

The writer, however, believes that sulphur dioxid, being a very heavy gas, with the specific gravity of 2.25, is alone capable of creating a fog, as is at once shown when it is brought in contact with the atmosphere, from which it absorbs aqueous vapor, causing dense, heavy fumes. The dust or carbon particles, coming in contact with this acid vapor, enhance its gravity materially. Fog usually collects in the lower portions of a city, especially in depressed localities known as " hollows," where it remains until dispersed by air currents. The reason for all this is explained by the physical properties of heavy gases. Fog also contains an excess of carbon dioxid, having a specific gravity of 1.524; it being consequently one-half heavier than atmospheric air. Fog also contains an excess of sulphur dioxid, having the specific gravity of 2.25; the latter gas is, therefore, two and a quarter times heavier than air.

DELETERIOUS EFFECTS OF SULPHUR DIOXID UPON THE RESPIRATORY ORGANS.

It is a well-recognized fact, says Harrington,[6] that during periods of heavy fogs in manufacturing centers, the morbidity and mortality from respiratory disease are increased very greatly, and that, as the atmosphere clears, a sharp decline follows. In London, for example, the usual death-rate from all causes has been known to be almost doubled during a fortnight of continued dense, smoky fog, and then return to its normal figure with the advent of clear weather, the increase being due particularly to bronchitis and other affections of the respiratory tract, attributed to the irritating influence of the finely divided particles of soot and acids which accompany them.

The active constituent of the pungent, irritating vapors composing the fog of our large cities is largely sulphur dioxid. Sulphur dioxid is a heavy suffocating gas with a disagreeable odor. When inhaled in the pure state it is poisonous; when diluted with air it produces coughing and severe irritation of the air passages.

The chief symptoms of poisoning with sulphurous acid, says Cushny,[7] are those of irritation of the mucous membranes. In poisoning from the inhalation of the anhydrid, on the other hand, the symptoms are chiefly from the respiratory tract. Even in five parts in 10,000 it acts as an irritant, causing sneezing, coughing and lachrymation, and in somewhat greater concentration it becomes entirely irrespirable; still smaller quantities in the air cause bronchial irritation and catarrh when inhaled for some time.

Sulphur dioxid according to Sollmann[8] who quotes it from Lehmann's work, is very toxic by local irritation, producing bronchitis and pneumonia. SO_2 produces extreme discomfort in proportions as small as .0001 % (0.1 % being fatal).

Not having Kionka's "Toxikologie" and Kobert's "Intoxikationen" at hand, Dr. Torald Sollmann was so kind and obliging as to place these works at the writer's disposal, from which he has made free translations.

According to Kionka,[9] 0.4 to 0.54% occasion in animals severe dyspnea; recovery, however, occurs if not too long continued. The proportion of 0.62% killed mice after six hours, 0.64% after two hours, and 0.8% even after 20 minutes. Rabbits appeared to be somewhat less susceptible to the action of sulphurous acid. They succumbed first after a proportion of 2.4 to 2.9% after four hours. The obduction shows that the pulmonary capillaries are seriously impaired, while the blood itself has undergone gross chemical changes in cases of fatal sulphurous acid poisoning in animals. When even minute quantities of the gas are inspired there is invariably difficulty of breathing (dyspnea), with cough and increased nasal secretion, etc. He says that SO_2 is a protoplasmic poison.

Kobert [10] says that the first experiments with the exact quantitative estimation of the inspired SO_2 were made by Ogata in 1884. Further experiments were made by K. B. Lehmann in 1893. When the proportion by volume is between 0.015 to 0.020 the sojourn in such an atmosphere becomes disagreeable and is with difficulty endurable to almost any one. When the proportion by volume is 0.03 to 1000 of the air it makes some persons decidedly ill after a few moments, especially parturient women, those suffering from stomach disease and susceptible persons, as an intense smarting comes on in the nose, with sneezing and coughing. The action of larger amounts was studied on animals. When the percentage of SO_2 by volume was 0.04 to the air, pronounced phenomena of poisoning showed themselves in mice, rabbits and guinea pigs. The proportion of 0.06% caused death in 6 hours and 0.08% was lethal in twenty minutes. The pathological manifestations were dyspnea, cyanosis and convulsions. Kobert mentions also the fact that the air of large factory towns contains always measurable quantities of SO_2. In winter the freshly fallen snow absorbs the sulphurous acid from the air and is slowly oxidized to sulphuric acid.

G. Wurtz has observed the constant presence of sulphur dioxid in the atmosphere of Paris, France (Compt. rend. 1885, 100, p. 1385).[11]

Dr. Sir Frederick Treves, lecturing before an assemblage for the abatement of the coal smoke nuisance, said on April 23 in London that he had seen the lungs of many persons who had lived in that city which were black from the surface to their innermost recesses. This not only made it more difficult to resist disease, but started disease. These conditions were entirely due to dirt and soot inhaled. Everybody knew the terrors of a London fog, he said. It would be merely a white mist but for the coal smoke, which gave it its filthy, choking constituents. The London fogs killed people by thousands. Experiments showed that during a bad fog six tons of soot were deposited to the square mile.

Speaking of the effects of gaseous impurities in water, Bergey[12] says that sulphur dioxid, when present in considerable quantities, produces disease of the bones in cattle.

Kionka has observed that in small, long-continued doses the sulphites affect seriously the lungs, circulation and kidneys and have been forbidden by the Imperial Board of Health of Germany. During the recent eruptions of Mt. Pelée (1902) and Mt. Vesuvius (1906) enormous volumes of gases, largely composed of sulphur dioxid, were poured into the atmosphere, which greatly increased the suffering of frightened humanity and was the cause of suffocation and death of many thousands of victims. Like many other poisonous substances, there are persons, when exposed to sulphurous vapors in their daily work, who establish a gradual tolerance to the gas and take no notice whatever of an atmosphere in which it is present to such an extent that persons not habituated to it cannot breathe it. To some persons very small amounts of it cause difficulty of breathing in the form of wheezing and cannot be tolerated any great length of time.

It is a well-established fact that some persons have an individual idiosyncrasy, on account of an abnormally hyperesthetic sensitive nasal and bronchial mucous membrane, to the inhalation of certain emanations which act as irritants, causing paroxysms of asthma. The inhalation of minute quantities of sulphur dioxid will promptly bring on an attack of asthma in certain susceptible persons. Its presence and cognizance are very important factors to those who are thus so easily affected.

Asthma is essentially a respiratory neurosis, being due to an abnormal irritability of the respiratory center, manifesting itself in a transient catarrhal congestion of the bronchioles (whose musculature is under the control of the accessorio-vagus, in which the constrictor fibers predominate), and which may be produced reflexly by irritation of the mucosa of the nose, larynx and bronchioles.

In these days of popularizing science, young students, working in chemical laboratories, should be earnestly admonished to be very careful in the handling of chlorine gas, bromine vapor and nitrous acid fumes, the inhalation of which being fraught with danger is liable to be the *fons et origo mali* — of a so-called *pars tetricus* — somewhere in the respiratory mucous membrane, giving rise, later on in life, by repeated insults, to a permanent alteration, expressed in the form of a *pars minoris resistentiæ*. Workers in bromine works are said to be peculiarly liable to asthma.

EXAMINATION OF THE AIR FOR SULPHUR DIOXID. DETECTION AND ESTIMATION OF THE GAS.

Recently (during the early mornings of January 31 and February 12), when the fogs were so bad in this city, it being virtually in a so-called "smoke-bank," the air being very irritable and exceedingly unpleasant and at the same time unfit to breathe, the writer exposed strips of moistened blue litmus paper to the atmosphere. In a comparatively short time these papers were colored decidedly red, showing the highly acid nature of the atmosphere. The outside window panes and roofs of buildings, when touched with moistened blue litmus paper, gave promptly a decided acid reaction. The outside window panes were sprinkled with distilled water which was again collected and filtered and treated with a few drops of bromine water and barium chloride solution, when a distinct precipitate of barium sulphate was obtained. In testing rain water with blue litmus paper the latter was instantly colored red. A sample of rain water was treated with barium chloride solution which gave a characteristic whitish precipitate of barium sulphate, proving conclusively the presence of free sulphuric acid.

The most delicate means at our command for the instant detection of very minute traces of free sulphur dioxid in the air is simply by the sense of smell.

It is stated in works on analytical chemistry that paper moistened with starch paste and iodic acid solution turns blue in air containing one part of sulphur dioxid in 3,000 parts of air. This test, however, after repeated trials, is not sensitive for very minute traces of SO_2, say 5 parts or less in 10,000 volumes of air. The writer has tried patiently a number of tests in the form of test papers, but he has not found one of them reliable for the detection of minute traces of the gas. Papers containing mercurous nitrate, potassium bichromate, potassium chromate (which turns coffee brown in color, and ultimately green), etc., respond only in dense fumes of the gas.

The amount of sulphur dioxid in the atmosphere may be determined volumetrically and gravimetrically.

Volumetrically, SO_2 may be estimated by shaking a given proportion of normal solution of potassium hydroxid in a measured vessel containing air, treating the solution with sulphuric acid (1:3), adding a little starch solution and then titrating with $\frac{N}{50}$ iodine solution until a blue color is produced. One cubic centimeter iodine solution is the equivalent of 0.00064 gr. of normal SO_2.

The proportion of SO_2 may also be estimated gravimetrically by precipitation as barium sulphate by the addition of barium chloride, bromine water having been previously added. "One milligram of barium sulphate is equivalent to 0.2748 milligram of SO_2." (Harrington.)

Briefly stated, the measured capacity of the air-contained vessel and the given amount of absorbing solution, with the observed barometric pressure and observed temperature, give the estimated volume of SO_2 in the air. It being customary to express results in parts per 10,000, the rate is determined by simple proportion. Specially constructed apparatus, like those used in the determination of CO_2 in air analysis, might be used for the estimation of free SO_2.

The United States Weather Bureau should take charge of the chemical examination of the atmosphere in every large city and make daily examinations (especially during the winter months) of the air by scientifically educated persons in order to attain its highest standard of efficiency. During dense fogs the air should be analized qualitatively and quantitatively in order to determine the presence of deleterious impurities, especially that of SO_2. The object of such work would be to trace the influence of the presence of abnormally increased impurities in the air and their effect upon public health. The various diseases of the air passages, including pharyngitis, bronchitis, pneumonia and asthma, are materially influenced by meteorological conditions.

LEGISLATION AND PREVENTION OF THE POLLUTION OF THE AIR.

Man disposes of his sewage and dejecta in a most peculiar manner by casting them into the streams and large bodies of water from which he derives his water supply. In a like manner he ignorantly pollutes with poisonous gases the very air he breathes!

It stands to reason that factories, manufacturing plants and other large industrial establishments modify seriously, by their excessive smoke, the atmosphere of cities by the addition of a deleterious gas like sulphur dioxid and they should, therefore, for hygienic reasons alone, be located at some distance from cities. The importance of smoke, says Harrington, both as a promoter of disease and on account of its corrosive and disfiguring action on buildings, and also on account of the obstruction of light, has led to much legislation and to the exercise of inventive genius for devising means for the prevention of its discharge in objectionable amounts into the atmosphere of cities.

In January, 1902, when we were suffering in this city from heavy fogs, contaminated with acid, suffocating gases, the city of St. Louis had the same trouble, where the responsibility of a city for maintaining a smoke nuisance was tested in court. Because the throat and lungs of a prominent singer were injured by smoke, the city of St. Louis and its chief smoke inspector were sued in a mandamus proceeding, asking that they be compelled to abate the smoke nuisance. Litigations on account of destruction of vegetation, especially of vegetables, garden-fruit and fruit-trees, have been often instituted against smelters and sulphuric acid works.

Instead of permitting colossal quantities of sulphur dioxid to go to waste by passing into the atmosphere, thereby occasioning serious atmospheric contamination and economic damage, means and ways should be devised to recover the enormous quantities of SO_2 thus lost. Industrial application should be made of SO_2 as in the case of carbon dioxid, CO_2. Sulphur dioxid could find many a useful technical application in the arts and industries.

Writers on hygiene and sanitation have paid but little attention to the subject of air vitiation by sulphur dioxid gas, consequently their information is very limited and it is no wonder, then, that one,[6] among the rest, has made the careless statement in his otherwise very excellent work on hygiene that its effects " are exerted more on the digestive (?) than on the respiratory function."

From the presentation of all these facts it will appear evident that the weight of evidence concerning the relation of this gas to public health indicates that its effects are really " serious if not lasting " on certain susceptible persons, and that its presence in atmospheric air is a positive menace to the hygienic welfare of beings.

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A CASE OF EXTENSIVE RESECTION OF THE STOMACH FOR CARCINOMA.*

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No accurate knowledge of the extent of malignant disease of the stomach and the chance of its complete removal can be obtained by any other than operative methods. The case reported below is primarily of interest because it presents a strong argument in favor of operation in all cases of gastric cancer, even those which are apparently hopeless. The emaciation, severe pain and persistent vomiting; associated with the exceptionally large, palpable, epigastric mass in this case discouraged the thought of anything but a palliative gastro-jejunostomy, yet on opening the abdomen it was found possible to do a radical operation and by resecting about two-thirds of the stomach to cleanly remove the diseased area, leaving a good margin of healthy tissue. The case is interesting also from a pathological and etiological point of view, inasmuch as it furnishes a striking illustration of the ingrafting of carcinoma upon a previous gastric ulcer. The co-existence of a benign and a malignant ulcer side by side is shown in Fig. 1.

It has been estimated that fully 50% of the cases of gastric carcinoma will give a history suggestive of previous ulcer of the stomach. A majority of the cases of cancer of the stomach show direct evidence of malignant disease developing on a previous ulcer. It is thought that in this case both ulcers were benign originally and that the cancerous degeneration set in not long before the time of operation. It is interesting, however, that it was not possible to obtain a history of long standing symptoms of indigestion. Undoubtedly much of the large mass felt in the epigastrium was due to chronic inflammatory thickening of the stomach wall; if the entire mass felt had been due to cancer there probably would have been no possibility of a complete removal of the disease, because of extensive glandular metastasis. The symptoms and signs, however, before operation were so markedly those of advanced gastric carcinoma that one was justified in the belief that the case was one of hopeless cancer, demanding only a palliative operation. It is fair to state that a case presenting such a typical picture of inoperable carcinoma under the care of some physicians would not have received the benefit of a surgical consultation.

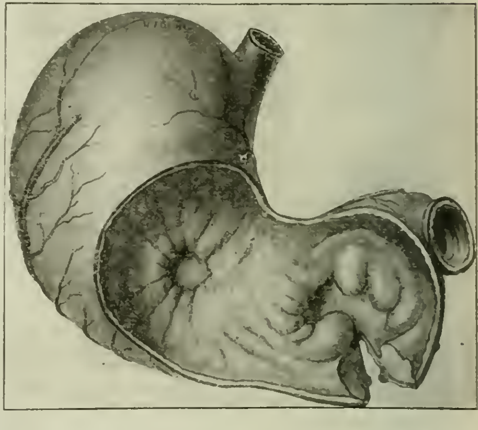

FIG. 1. The reconstructed stomach cut open from behind, showing the disease on the anterior wall.
Note the carcinomatous area near the pyloric end and the distinct benign ulcer toward the cardiac portion. Note also the marked thickening and infiltration of the anterior wall in general.

The fact that at the end of seventeen months after the operation the patient is alive and in apparently perfect health and engaged in hard manual labor justifies some hope of lasting cure. Such gratifying operative results ought to be reported, for only by so doing will practising physicians as a whole be convinced that it is their duty to send all cases of gastric carcinoma to the surgeon at the very first stages, even when the diagnosis is suspected only. As Mayo says: " In the history of medicine there is no recorded example of a case of cancer of the stomach cured by medical means. Of all diseases cancer of the stomach is most surgical, yet for some reason cases are sent to medical men, are entered in medical wards and subjected to treatment, which must result in 100% mortality.

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*This case was shown at the clinical meeting of the staff of the Massachusetts General Hospital on Jan. 11, 1907, and a brief report appeared in the BOSTON MEDICAL AND SURGICAL JOURNAL, Feb. 7, 1907.

The various steps in the technique of the operation as shown may be worthy of note.

REPORT OF CASE.

History. R. J. McD., fifty-two years old, white, married, teamster by occupation, entered the South Surgical Service of the Massachusetts General Hospital on Dec. 19, 1905. By the kindness of Dr. Beach, the chief of the service, the writer was given charge of the case and allowed to operate. Family history unimportant. He had always been in good health until seven months previous, when he first began to have indigestion and pain in the epigastrium, worse after eating. When first noticed the pain would come from an hour to an hour and a half after taking food. The severity and duration of the pain depended somewhat on the kind and amount of food taken. Later there was almost continual pain in the epigastric region, gradually increasing in severity and shooting up and down the right side and into the chest and back. He had steadily lost weight. He began to vomit about six weeks before entrance and continued to vomit three or four times a day, without any definite relation to eating. The vomitus for the most part was undigested food, but dark brown material was vomited occasionally. For two weeks before entrance he had been able to retain no food and had endured great pain.

Examination. — A pale and emaciated man; weight, 108 lbs. Heart and lungs normal; liver not enlarged. A large mass, slightly movable, dull on percussion, readily palpated in the epigastrium. The muscles in the epigastrium and the right hypochondrium were held somewhat rigidly. No fluid was made out in the abdominal cavity. No glands could be felt above the clavicles. By the stomach tube 50 cm. of thick brownish fluid mixed with mucus was obtained. An examination of this showed free hydrochloric acid, 0.18%; the total acidity was 0.365%; the guaiac test showed blood. The fasting stomach contained 30 cm. Inflation showed a small and contracted stomach. Examination of the urine showed nothing abnormal. Pain and vomiting continued after entering the hospital, but was not so frequent or severe as before.

Operation. — Twenty minutes before anesthesia an injection of $\frac{1}{6}$ gr. of morphine and 1-150 gr. of atropin was given. Ether was the anesthetic used. During much of the suturing of the stomach wall it was found possible to keep the patient only lightly under ether. An incision 4 in. long was made in the median line. Upon exploration it was found that a large portion of the anterior wall of the stomach was involved in an irregular, nodular mass, which extended from the middle line well toward the pylorus and was nearer to the greater than the lesser curvature, and in addition to this the major part of the anterior wall of the stomach seemed thickened and infiltrated with disease; the whole stomach seemed sowewhat contracted. The extent of the diseased area is shown in Fig. 1, and is also shown, as well as the portion of the stomach resected, diagrammatically in Fig. 2 The stomach was not fixed by adhesions, except that in the gastrocolic omentum near the median line there were several enlarged glands adherent to the omentum and transverse colon. On microscopic examination these glands were pronounced simply inflammatory.

The steps of the operation are suggested in the diagrammatic illustrations accompanying this paper. Because of the presence of the diseased glands the gastrocolic omentum was tied off in sections first, care being taken to avoid the mid-colic artery. The enlarged glands and omentum were dissected off with care. The left gastro-epiploic artery was tied far out on the patient's left. After ligating the gastric artery as high up as possible the lesser curvature of the stomach was freed and the superior pyloric artery tied. The stomach and pylorus could then be lifted well, so that hot gauze pads could be placed in the lesser omental cavity. Two straight narrow bladed clamps were then applied at about the juncture of the pylorus and the duodenum and two similar clamps on the left end of the stomach. The position of the clamps and their relation to the diseased area is shown in Fig. 2. After the abdominal cavity was carefully protected with gauze pads the duodenum was divided between the clamps and the pylorus and stomach with considerable omental fat and glands attached were lifted up. The stomach was then divided between the remaining

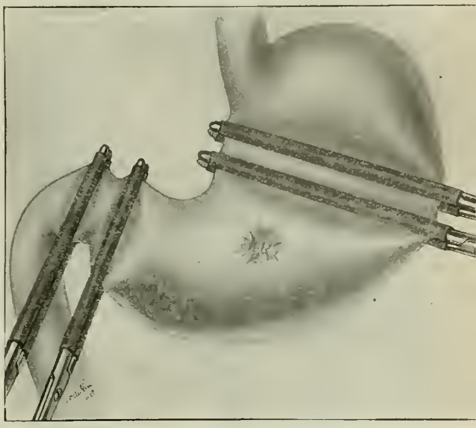

Fig. 2. Showing application of clamps and portion of stomach removed. The lines of division were between the clamps.

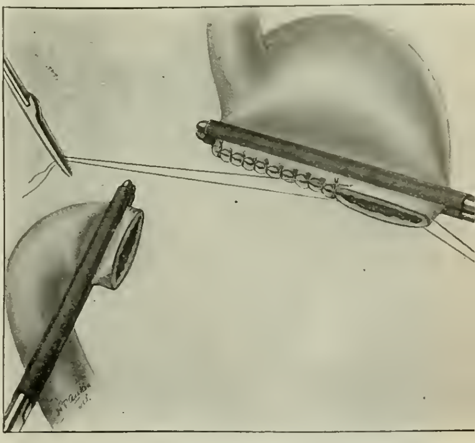

Fig. 3. Redundant portion of the stomach wound closed by continuous catgut suture through all the coats preliminary to the continuou
Cushing stitch to the peritoneum.

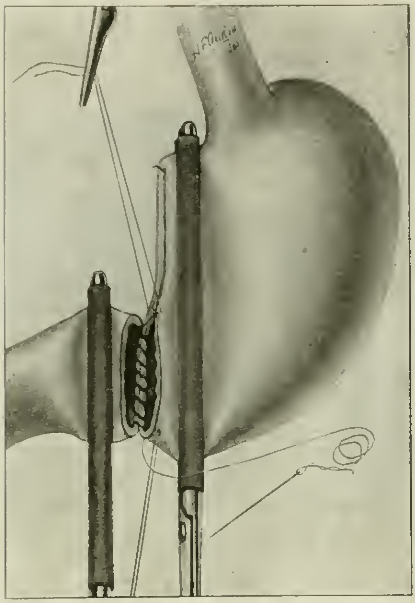

FIG. 4. The upper portion of the stomach wound has been finally closed by a continuous Cushing suture.
Note that approximation of the stomach and duodenum has been begun with the continuous through-and-through suture of catgut.

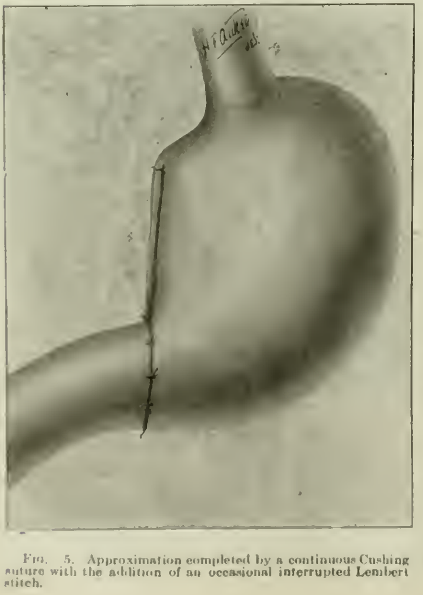

FIG. 5. Approximation completed by a continuous Cushing suture with the addition of an occasional interrupted Lembert stitch.

clamps. The cut edges of the stomach and duodenum were carefully wiped clean with sponges wet in salt solution. It was found that the stumps of the stomach and duodenum were sufficiently mobile, after freeing the duodenum as much as possible to allow approximation end to end, as shown in Figs. 3, 4 and 5. Accordingly, all idea of complete closure of the stump of the stomach and the duodenum followed by gastro-intestinal anastomosis was abandoned and the end-to-end suture method adopted, as shown. Only very rarely will the stomach be sufficiently movable to allow the use of this method without undue tension on the sutures. In the great majority of cases where such extensive resections are done it will be necessary to resort to gastro-intestinal anastomosis.

After the introduction of the guide stitches the upper or redundant portion of the stomach wound was closed by using first a continuous suture of chromicized catgut, followed by a continuous Cushing suture of Pagenstecher thread. Approximation of the duodenum to the lower portion of the stomach wound was made by a continuous suture of chromicized catgut through all the coats, followed by a continuous Cushing stitch of Pagenstecher thread. It was found necessary to use a few additional interrupted stitches of linen thread. After the removal of the pads the abdominal wound was closed in layers, without drainage, leaving a quart of hot salt solution in the peritoneal cavity.

At the end of the operation the patient's pulse rose to 120, but dropped to 70 on the third day, where it remained. The temperature did not rise above 99.2° F. after the operation and remained normal after the third day. In other words, there was no serious reaction from the operation.

After-treatment. — The after-treatment consisted of salt solution by rectum 6 oz. every four hours, together with nutrient enemata of white of egg, beef juice, peptonized milk and salt solution every eight hours. Within twenty-four hours hot water and albumen water in teaspoonful amounts were given by mouth and on the third day the patient was taking ½ oz. of water or albumen water every hour and retaining the enemata well. There was no vomiting.

The wound united by first intention and the stitches were removed on the eighth day. At this time he was taking full liquid diet freely. On the fourteenth day he sat up in bed and was up out of bed on the seventeenth day, when he was eating soft solids. Convalescence was uneventful and he was discharged one month from the day of the operation. He was then eating the regular hospital diet, with care as to amount. His weight on leaving the hospital was 118 lbs., or 10 lbs. over his weight on entrance.

Result.— This patient has been seen by me at intervals for the last sixteen months, and as was stated, he is apparently in perfect health. His present weight is 140 lbs. He eats anything and everything without any distress. He does not vomit and has no symptoms of indigestion. There is no evidence of a recurrence of the disease.

Pathological report.— The two ulcerated areas and extent of the disease are shown in Fig. 1. The large ulceration nearer the pylorus was 5.5 cm. in greatest diameter; its edges were raised and infiltrated. Microscopic examination of the indurated border showed masses of irregular tubular glands, with little fibrous or cellular tissue between them infiltrating the submucous layers of the stomach wall, — *adeno-carcinoma.* Close to this malignant ulceration was a circular depressed cicatrized area, evidently the seat of a former ulceration. Microscopic examination showed simply granulation tissue, without any evidence of new growth.

A DEPARTMENT OF SCHOOL HYGIENE.*

BY LUTHER HALSEY GULICK, M.D.,
Director of Physical Training, New York City Public Schools.

We are told by the Board of Health that over 30% of all children in the public schools have a degree of eye deformity sufficiently severe to interfere with their school work and progress from grade to grade. It is reported that in a certain school 62% of the pupils who have been there for two years or more have eye deformities. We are told that throughout the city those eye troubles increase so consistently from year to year that it is almost possible to place a certain grade by reporting upon the percentage of eye deformity found among its members.

We are told that a very considerable percentage of the children have enlarged tonsils and adenoids, and that upon the removal of these enlarged growths, pupils who have been backward very frequently develop new life and vigor, so as to enable them to recover their places in the ranks with those of their own age.

Graduates of the high schools are often denied admission to the training schools because of defective vision or hearing, physical deformity, or some other disability, which would render them as teachers undesirable risks for the city to assume.

These disabilities — many of them — can be removed, and practically all of them could have been prevented. In this fact there is presented to the Board of Education a new set of problems.

With the magnificent work of the charitable organizations of New York City, we of the Department of Education are not only most heartily in sympathy, but to them we are willing to acknowledge a deep debt of gratitude for saving to the city and to us large numbers of children — children that have been taken in the summer to the country or to the seashore, those in immediate need who have been provided for, and the like. But this work, splendid as it is, does not remove the cause of the difficulty.

The city school is, comparatively speaking, a new thing. With it new problems of lighting and seating have arisen, as well as new problems in administration. The construction of the school building involves architectural and engineering skill, and the Committee on Buildings of the Board of Education has in its employ one of the best-known American architects, whose business it is to pass upon all technical questions concerning the construction of buildings for the public school system. The size of the timbers that will support the roof of a given span, the strength of the structure in relation to its height — these are technical questions for the solution of which is demanded the skill of the technical expert.

So the Committee on Supplies, which must furnish everything for the schools from textbooks to coal, has at its head a competent business man. Under the direction of the Committee on Supplies and with the help of an able force, he attends to the purchasing and distributing of the needed materials. The purchase of coal and other commodities is not a question of psychology and pedagogy; it is a question of technical business knowledge. From whom and where to buy, in what quantities, how and when to deliver, what kinds of coal to use, what system of auditing and accounting to employ — these are technical business questions, and they must be met by a technical business expert — just as the Committee on Buildings needs for its problems an expert architect.

It is my belief that the group of problems centering about the health of school children demands technical treatment of a similar nature as that required for the departments whose duties I have just sketched. If the children's eyes are becoming defective because of lack of wisdom in the choice of type, the length of line, width of margins, the spacing between lines, it is of fundamental importance that something be done to procure the proper textbooks and thus remove the cause of the eye deformity. But for this, the advice of the technical expert is needed. It is not a matter of untrained common sense — any more than the question of the stress and strain in a building is a matter of untrained common sense. If the present modes of sitting in the New York public schools are responsible to any degree for the crooked backs that we sometimes see in children, we should know it and then change the habits of sitting. This again is a matter for the trained orthopedic surgeon. It is not a question either of psychology or pedagogy — at least not until after the diagnosis and treatment have been decided upon.

How much home study shall children of a particular age be allowed or required to do? This also is not a question of psychology or pedagogy, it is a technical question of medicine. What lessons shall children study at home? This is a question of pedagogy and school administration; but the number of hours for study, or the time when a child may do his best work — these are biological problems. They are problems that are capable of more or less exact determination.

Such facts as these lead us to the belief that there should be co-ordinated with the other activities of the Board of Education a department composed of men who are technical experts on the various questions of health in relation to school life.

There are, I believe, 63,000 children in "part time" classes in New York City. No doubt, this condition has been due to some extent because of large immigration and other causes of a similar nature; but our experience within the last year has satisfied us that a very great percentage of these classes exists because of difficulties which are removable, and it is evident that if these difficulties had been prevented or removed, these children would have been advanced normally and thus there would be at present no "part time" classes in New York City. Purely as a matter of economy, then, it would pay to take those steps which will insure that each child, as far as possible, is in condition to take advantage of the education that is provided for it so liberally and generously by this city. It is economy that the child should progress regularly in his school life, rather than remain behind year after year, blocking the lower grades of the school.

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*Read before a Conference of the Committee on the Physical Welfare of School Children, in the Kings County Medical Society Building, New York City, on June 14, 1907.

There can be no choice between health and education. Only that education is effective for use in life which is founded upon and which secures good health.

Clinical Department.

ACUTE INFLAMMATION OF TENDON SHEATHS SEQUENTIAL TO ACUTE TONSILLITIS.

BY EDWARD A. TRACY, M. D.,
Orthopedic Surgeon to Mt. Sinai Hospital, Boston.

Tonsillitis is known to immediately precede rheumatic fever frequently; indeed, some clinicians, Osler states, have gone so far as to say there is always a primary infective trouble in the lacunæ of the tonsils, to which the rheumatic fever is secondary, the latter arising from absorption of microbes or their products.[1]

Recent writers, among them John L. Morse, of Boston, have reported cases of acute nephritis sequential to acute tonsillitis. It may be that the tonsils are a port of entry for many diseases, such as rheumatism, influenza, acute nephritis and others less known. The following cases of acute inflammation of tendon sheaths were observed by me within a year, and are reported as of possible interest to the clinician interested in the sequences of acute tonsillitis. Acute tonsillitis is certainly a disease that merits careful attention and efficient treatment at the hands of the practician. The laity, in general, look upon tonsillitis as a simple trouble, not meriting a physician's care, unless the local symptoms are severe. This view is based on a lack of medical knowledge, and should be corrected. An analogous case of harmful ignorance on the part of the laity, that presents itself to mind, is their view-point of gonorrhea. Most patients with this disease are blissfully ignorant of its dangerous nature. We should teach them its possibilities — blindness, crippled joints, heart disease, sterility, peritonitis and even death. If this knowledge were general, surely it would be better for the laity — there would be less of the disease.

Report of cases of acute teno-synovitis sequential to acute tonsillitis:

Case I. G. R., aged twenty-eight years, sent for me to see him because of a foot trouble. No history of trauma. A week before he had suffered from acute tonsillitis, recovering from the sore throat without medical advice. He was in bed, had moderate fever, and complained of his left foot being sore in region of the ankle joint. The ankle was painful when motion was attempted, and there was marked swelling and tenderness locally over the common sheath of the peroneal tendons. The sheath was evidently inflamed and had fluid in it — it standing out from the surrounding normal tissues as if anatomically injected. After a week of treatment, salicylates and local elastic pressure, the teno-synovitis disappeared.

Case II. J. J. D., aged thirty-five years. Had acute tonsillitis of a week's duration, with only home treatment. A few days after subsidence of the throat trouble, he had an attack of acute trouble in both feet, in the lower Achillian regions. This lasted a little over a week. The tenderness was confined to the lower third of each tendon of Achilles, and the pain occurred when these tendons were put in motion. I saw him towards the close of the attack — advised painting over the affected parts with tincture of iodine (Churchill's formula) and absolute rest till soreness disappeared. Complete recovery after three days of treatment.

Medical Progress.

PROGRESS IN PHYSIOLOGICAL CHEMISTRY.

BY J. BERGEN OGDEN, M.D., NEW YORK.

DIGESTION.

Gastric Secretion. — An extensive series of experiments by Bernt Lormquist[1] was conducted on the dog with the following operations: (1) Pawlow's small stomach; (2) a duodenal fistula; (3) a resection of the pylorus. An anastomosis between the large stomach and the duodenal fistula was obtained by means of rubber and glass tubes; this was temporary and could be removed when desired. The results obtained from experiments on this animal show that secretion in the stomach is produced by psychic and certain chemical stimuli. The latter may act on the mucosa of the stomach or on the intestine. Fats inhibit gastric secretion. The inhibition does not arise from the stomach but from the intestine. After a gastro-enterostomy, liquid substances containing much fat inhibit the gastric secretion more easily than in a normal animal. No difference is observed with other foods. In a stomach cut off from the intestine, special substances have specific actions. Water, alcohol and the ultimate products of the digestion of proteins and meat extracts provoke copious secretion. Hydrochloric acid 0.1–0.5% and natural gastric juice do not promote the flow. Lactic and butyric acids 0.5% give a marked secretion. With sodium chloride and sodium carbonate the effect is dependent on the concentration. The least active is physiological saline. With greater and less concentrations of the salt, the amount of juice is greater. Weak sodium carbonate 0.25–0.5% acts like water. With greater concentrations there is an increase. The maximum secretion is at the end of the first hour. Saliva and bile act like water. Bile precipitates pepsin and inhibits gastric digestion. The action of alcohol is most pronounced during the first thirty minutes. At this time both secretion and absorption are at their height. No other juice than gastric juice is produced. When certain substances such as sodium chloride and acids are applied locally, a profuse secretion of mucus takes place which combines with the hydrochloric acid and thus diminishes the acidity. In the duodenum, neither water nor sodium chloride acts on the gastric secretion. Fluid fats are very strongly inhibitory; to a less degree soda solutions. Digestion in the organism takes place more rapidly than in vitro. This is partly due to the peristaltic movement of the stomach, which mixes the food with the ferment solution, and partly to the removal of the products of digestion by resorption, which does not take place in vitro.

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[1] Osler: Principles and Practice of Medicine, 1898.

[1] Skand. Arch. Physiol., xviii, pp. 191-262 (1906).

In "Gastric Contents" (tested by the Mett Tube Method) Sailer and Farr[2] have shown that there is an inhibition of proteolysis. The Schultz law holds only on dilution, and the diminution of the peptic activity observed with the undiluted contents is too great to be accounted for by the concentration of the enzyme. In 5 instances of the 23 examined the inhibition was overcome by a dilution of 1 to 4. In 2 cases the inhibition was complete, but digestive activity was manifested on dilution. Comparative experiments to determine the content of various substances affecting peptolysis were made in vitro with pepsin — HCl and natural gastric contents. Egg albumin, raw or coagulated, was without effect. Inhibition is absolute if the proteoses present amount to 5% by weight of the total; the effect is considerable at 2.5%, though not noticeable at 1%. Gelatin shows proteolysis at 2.5% and stops it when 10% is present. The inhibitory action of carbohydrates and fat is practically *nil.* With alcohol in a concentration of 32% there is no digestion; at 16% there is slight and below 8% no inhibition. With formaldehyde doubtful inhibition occurs in dilutions of 1 to 100 only. With higher dilutions there was no effect on the digestion. Benzoic acid (1%) and sodium benzoate (1%) are absolutely inhibitive, while in dilutions of 1 to 800 they noticeably retard digestion. Boric acid and sodium borate are without effect in any quantity. Salicylic acid is distinctly inhibitory even in small amounts. Sodium sulphite in concentrations of 1 to 1,600 slows and at 1 to 100 prevents proteolysis. Potassium nitrate inhibits at 1 to 400. The gastric antiseptic, resorcinol, is without influence in dilutions higher than 1 to 100; guaiacol carbonate is practically without effect, while creosote strongly inhibits proteolysis. The major portions of test meals were withdrawn, and the remainders diluted greatly in the stomach and immediately removed. On testing, there was a relatively greater digestive action by the gastric contents diluted in the stomach than by the correspondingly diluted (in vitro) first portion. By giving three cases of achylia gastrica and one of gastric carcinoma 200 to 500 cc. of $\frac{N}{20}$, HCl, considerable proteolytic activity was demonstrated in the contents removed fifteen minutes later.

Proteid and Carbohydrate Digestion in the Gastro-Intestinal Tract. — The investigations of London and Polowzowa[3] show that the stomach of a dog with a pyloric fistula empties itself within four to five hours. The maximum emptying takes place in the first two hours. Stomach digestion has about the same intensity during the entire digestion period. Proteid digestion in the stomach is more than twice as great as the carbohydrate digestion ($\frac{2}{3}$ to $\frac{1}{4}$). Even in the first hour of digestion proteids are split to peptones and carbohydrates to sugar. The quantity of substances passed out from the stomach as time goes on forms an ascending series of numbers while the quantity of substances digesting in the stomach forms a descending series. As a rule, carbohydrates of food are passed from the stomach more rapidly than the proteid, showing the power of selection on the part of the stomach. No absorption of proteid or carbohydrate takes place from the stomach. The quantity of gastric juice secreted is in a measure proportional to the food introduced. In the duodenum (studied by means of duodenal fistula) about $\frac{1}{2}$ to $\frac{3}{5}$ of the total digestion takes place. The activity of digestion is in a great measure directed toward the carbohydrate of the food ($\frac{1}{2}$ to $\frac{3}{5}$) while the proteid digestion is smaller. About $\frac{1}{6}$ of the absorption takes place in the duodenum in which twice as much carbohydrate as proteid is absorbed. The absorption intensity calculated upon one square centimeter per hour of duodenal mucous membrane is, for the dry substance, 19.36 mgm., for nitrogen 0.6 mgm., for nitrogenous substances 3.75 mgm., and for sugar 19.21 mgm. The intensity of absorption calculated for square centimeter per hour, for dry substances, is 54.44 mgm., for nitrogen 0.70 mgm., for nitrogenous substances 4.38 mgm., and for carbohydrate 51.57 mgm. The degree of digestion in the jejunum is about 10%, of which 16% is to be ascribed to proteid digestion and 4% to carbohydrate digestion. The degree of absorption in the jejunum amounts to about $\frac{1}{5}$ to $\frac{1}{3}$ of proteid and $\frac{1}{7}$ of carbohydrate. The dry substance dissolved in the fluids fed is absorbed in concentrations of 10%, proteid in concentrations of 1.7%, and sugar in concentrations of 4.6%. The absorption intensity of the jejunum calculated for dry substance is 10.18 mgm., for proteid 2.39 mgm., for carbohydrate 9.0 mgm., square centimeter per hour. The intensity of digestion per square centimeter per hour for dry substance is 3.54 mgm., for proteid 0.67 mgm. and for carbohydrate 3.41 mgm. About $\frac{1}{12}$ of the food is digested in the upper part of the ileum, and carbohydrate and proteid are digested about equally. Absorption takes place to the extent of about $\frac{1}{3}$, proteid and carbohydrate being absorbed equally. In the lower ileum only carbohydrate digestion takes place, the proteid digestion being completed in the upper ileum. In the upper ileum the proteids are absorbed in concentration of 1.3%, carbohydrates in concentrations of 4.0%. The intensity of absorption in the upper ileum per square centimeter per hour is, for dry substance, 9.0 mgm., for proteid 0.9 mgm. and for carbohydrate 8.4 mgm. The intensity of digestion is, for dry substance, 2.1 mgm., per square centimeter per hour, for proteids 0.31 mgm., for carbohydrates 1.9 mgm. The absorption in the lower ileum is about $\frac{1}{4}$, — for proteids $\frac{2}{7}$, for carbohydrates $\frac{1}{4}$. In the vicinity of the ileocecal valve, proteids are absorbed in the concentration of 3.0%, carbohydrate in concentration of 0.8%. The absorption intensity in the lower ileum for dry substance is 3.6 mgm., per square centimeter per hour, for proteids 0.57 mgm., for carbohydrates 3.26 mgm. The intensity of digestion in the lower ileum for proteids is practically *nil*, for carbohydrates it is 0.33 mgm., per square centimeter per hour.

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[2] Am. Jour. Med. Soc., cxxxiii, pp. 113-126.

[3] Zeitschr. Physiol. Chem., xlix, pp. 328-396.

Digestion of Fat. — From feeding experiment with dogs with stomach, pylorus, duodenum, jejunum and ileum fistulæ, Levitas[4] concludes that the digestion of fat consists of two chemical processes — cleavage of fat into fatty acids and glycerol, and the formation of fatty acid salts. Neither of these processes reaches its end point. At every point in the digestive tract there is practically equilibrium between neutral fat and fatty acids, or neutral fat, fatty acids and fatty acid salts. In the stomach fat undergoes only a very small chemical change so long as no fluid from the duodenum finds its way into the stomach. In the stomach there is no absorption. In the upper parts of the intestine the absorption of fat either as such or in the form of free fatty acid is first observed. Between lipolysis and fat absorption there exists a certain parallelism. The farther the saponification has gone the greater the absorption. Fat without admixture of other substances is well utilized by the organism, even to the extent of 96% (butter and beef fat). Lard is more poorly utilized, probably on account of its laxative action.

ACTIVATION OF TRYPTIC FERMENT.

Wohlgemuth's experiments[5] show that pancreatic juice collected from man through a fistula does not contain an active trypsin, only a proferment being present. This proferment may be activated by liver press juice, by glycocol, alanine, leucine, and slightly by tyrosine but not by glutamic or aspartic acids. Bile added to activated proferment causes an increased tryptic activity.

EREPSIN IN THE PANCREAS.

Contrary to Vernon's observations, Mays[6] finds that if trypsin destroys erepsin the action is not a very rapid one since the extracts of pancreas (cattle) on the eighth day still contained an active erepsin. Further experiments prove that extracts, one month or one year old, still possess active erepsin and also trypsin. Ammonium sulphate precipitates erepsin, for such precipitates when prepared from active ereptic pancreatic extracts are active upon peptone. The question as to whether the pancreas contains two enzymes, trypsin and erepsin, or whether one enzyme is responsible for both activities was not decided. An attempt was made to decide the question with the pancreas of the cat which is reported to contain no trypsin. This was not confirmed by Mays. Some glands and extracts possess strong ereptic power and weak tryptic action while others show the reverse, and in still others there appears to be a sort of parallelism between the two. Treatment of the glands or extracts with alcohol and ether appears to weaken both activities.

In working with fresh pancreatic juice of the dog, the same author[7] found that when the pancreatic juice of the dog is obtained from a temporary fistula it is very weakly proteolytic immediately. A pancreatic juice which would dissolve fibrin but not egg albumin (coagulated) described by Bayliss and Starling, could not be obtained by the author, for if the juice acted upon fibrin it also dissolved coagulated egg albumin slowly. Allowing the fresh juice to stand causes spontaneous formation of trypsin from the trypsinogen. It is suggested that there may be several precursers for trypsin, one which is activated by enterokinase; the others by other agents. The fresh pancreatic juice of the dog, whether activated, by intestinal extract or unactivated does not possess a very active ereptic power.

ABSORPTION OF TRYPSIN BY CASEIN.

As found by Hedin,[8] casein extracts trypsin which has been absorbed by charcoal, but it requires some time to accomplish it. The end of the extraction can be recognized by the fact that specimens filtered after different intervals of time contain the same amount of trypsin. The higher the temperature the greater the absorption, and the larger the amount of casein the greater the amount of trypsin extracted. The results support the view that protein combines with trypsin before they are broken up by the same.

Experimental work by the same author[9] indicates that the amount of trypsin neutralized by antitrypsin is independent of the dilution. The anti-body can be completely saturated by using a sufficient amount of trypsin; on the other hand, it was found impossible under the conditions employed to completely neutralize trypsin by an excess of anti-body. The amount of trypsin neutralized by a certain amount of anti-body is not constant, a small amount of anti-body neutralizing relatively more trypsin than a larger. The anti-body can be completely destroyed by 0.1% to 0.2% of acetic acid at 37° C. for about eight hours. When trypsin has been neutralized by the anti-body, it has been found impossible by the means tried to render it active again.

LIPASE.

Lipase of Intestinal Juice. — From dogs with a Thiry-Vella fistula, Boldyneff[10] has been able to obtain intestinal juice which possessed lipolytic action. This lipase is not so active as that of pancreatic juice and acts much better with emulsions of fat than upon non-emulsified fat. With milk the action is very energetic. Bile, which favors pancreatic fat cleavage, has no beneficial effect upon that of intestinal lipase. Addition of antiseptics does not markedly reduce the activity. The intestinal juice increases the fat-splitting power of pancreatic juice, and this is probably to be ascribed to intestinal lipase. After boiling the intestinal juice this action ceases. The intestinal juice obtained from the lower portions of the small intestine has no lipolytic activity.

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[4] Zeitschr. Physiol. Chem., xlix, pp. 273-285.

[5] Biochem. Zeitschr., ii, pp. 264-270.

[6] Zeitschr. Physiol. Chem., xlix, pp. 124-187.

[7] Zeitschr. Physiol. Chem., xlix, pp. 188-201.

[8] Biochem. Jour, ii, pp. 81-88.

[9] *Ibid.*, i, pp. 475-484.

[10] Zeitschr. Physiol. Chir., l, pp. 394-413.

The Inhibiting Effect of Sodium Fluoride on the Action of Lipase. — Loevenhart and Pierce [11] have found by experiment that very small amounts of sodium fluoride accelerate the hydrolysis of the fats and lower esters by the extracts. The inhibiting action of the fluoride increases as the tubes become more acid. This is probably due to the production of hydrofluoric acid. Sodium fluoride does not influence materially if at all the hydrolysis of esters by alkalies, and it only affects the hydrolysis of esters by acids as the sodium salt of any weak acid should. From this it is concluded that the fluoride probably does not inhibit the enzymic hydrolysis of the esters by reacting, with the latter. The inhibiting action of the fluoride cannot be attributed to the precipitation of calcium. The other halides of sodium and potassium, as well as many other substances investigated, do not possess an action comparable in extent to that of the fluoride. Hydrofluoric acid, and in all probability all soluble fluorides, affect these processes similarly to sodium fluoride. The greater the amount of enzyme acting the less will be the inhibiting effect of given concentration of sodium fluoride. This proves that there exists a quantitative relation between the enzyme and the fluoride. Sodium fluoride does not destroy the enzyme. Of the two modes of action to be considered, (1) that the fluoride reacts with the enzyme, (2) that it reacts with an intermediate product formed in the action of the enzyme on the ester and resulting in an increase in the stability of the intermediate compounds, the authors favor the latter view, because the enzyme is not destroyed by the fluoride, and furthermore because the inhibition varies much with different esters. It is suggested that the term " zymolyte " be applied to the substance upon which an enzyme acts instead of the term " substrate."

A so-called Coferment of Lipase. — The observation of Magnus that there exists a coferment for the action of liver extract on amyl salicylate is confirmed by Loevenhart.[12] This coferment was found to be the bile salts. When ethyl butyrate is used instead of amyl salicylate no coferment is to be noted by this method and the bile salts do not accelerate this reaction. Therefore it is not right to apply the term coferment to the bile salts with reference to lipase in general. It must be stated that they have only been proven to act as such in the hydrolysis of amyl salicylate by liver extract.

CARBOHYDRATES IN THE BLOOD AND URINE.

Heptose in Human Urine. — Rosenberger [13] reports a case in which he was able to extract from the urine by means of methyl or ethyl alcohol three bodies precipitable by ether. The first was optically inactive, the second possessed dextrorotation, and the third, which at first was weakly levorotatory, became inactive. All three substances were reducing bodies and the dextrorotatory substance formed an osazone. The osazone had a melting point of 203° to 204° and an elementary composition similar to that of heptosazone.

Detection of Levulose in the Urine. — Attention is called by Jolles [14] to cases in which the polarization of samples of urine containing secreted fruit sugar is either very low or to the left and consequently the gravimetric and polarimetric methods may give very different results upon the same sample of urine. It is also pointed out that a number of other substances such as B-oxybutyric acid, glycuronic acid and many medicines which give products that are secreted through the urine may interfere seriously with the determination of the sugar by the polarimetric method. In addition, cases are reported in which fructose and glucose occur simultaneously in the urine. In view of these observations, the following methods are proposed. A modification of Selivanoff's test is suggested for the qualitative detection of the fructose. Ten cubic centimeters of urine are heated to boiling with a pinch of resorcinol and about 3 cubic centimeters of 10% hydrochloric acid. A red color indicates fructose. This test is applied in connection with the polarimetric and fermentation test, in which case its indication may be of some weight. The volumetric quantitative method for fructose is shown to be of little value, and the author therefore adopts the gravimetric method first proposed by Ost. The copper solution is made by gradually dissolving in water 17.5 gm. $CuSO_4.5\ H_2O$ to 250 gm. $K_2CO_3 + 100$ gm. $KHCO_3$, and the solution diluted to one liter. One hundred cubic centimeters of the copper solution + 50 cc. of the sugar-containing urine are quickly heated to boiling and kept so for ten minutes. The solution is rapidly cooled and filtered with suction through an asbestos filter. The precipitate is washed with hot water and finally with alcohol, dried, heated and reduced in hydrogen. The best results are obtained with urine of which 50 cc. reduces about 400 mgm. copper. A number of results are given, and also an algebraic expression worked out for use in calculating the polarimetric and gravimetric determinations obtained upon samples of urine containing both fructose and glucose.

A New Test for Sugar. — Fenton [15] points out that all carbohydrates of the hexose or polyhexose type yield brommethylfurfural when treated with hydrobromic acid in an appropriate condition. The furfural compound reacts with malonic ester to give a compound yielding a solution with a powerful blue fluorescence in the presence of alkali. The test is best applied to solids but may be done with liquids containing hexose in the following way: Four to 5 cc. of the liquid are poured on sufficient anhydrous calcium chloride to form a pasty mass. To the mass is added 10 cc. of toluene containing 5 drops of phosphorus tribromide. The mixture is boiled. The toluene solution is poured off, and a little malonic ester and alcohol added. The mixture is neutralized by adding alcoholic potassium hydroxide. A pink color appears. On dilution with alcohol and the addition of water, the solution exhibits a blue fluorescence. The test may be used to distinguish hexoses from pentoses.

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[11] Jour. Biol. Chem., ii, 397-413.

[12] *Ibid.*, ii, pp. 391-396.

[13] Zeitschr. Physiol. Chem , xlix, pp. 202-209.

[14] Arch. Pharm., ccxliv, pp. 542-549.

[15] Lancet, 1907, pp. 172-215.

Another Method for Sugar Determination. — Bang[16] gives a titrimetric method in which the results are as accurate as the ordinary gravimetric method; it is as follows: With a differential pipette 10 cc. of the sugar solution are measured into a flask of about 200 cc. capacity. To this 50 cc. of the copper solution are added and the total fluid boiled for three minutes. The mixture is quickly cooled and titrated with a standard hydroxylamine solution until colorless. The copper solution contains 12.5 gm. copper sulphate, purified according to Soxhlet, 250 gm. of potassium carbonate, 200 gm. potassium sulphocyanide, 50 gm. acid potassium carbonate made up to a liter with water. The hydroxylamine solution contains 6.55 gm. hydroxylamine sulphate and 200 gm. potassium sulphocyanide made up to 2 liters with water. A table is appended giving the number of milligrams of sugar for the number of cubic centimeters of hydroxylamine employed. The whole determination can be made within ten minutes.

Improved Method for the Determination of Sugar in the Blood and other Tissues. — As a result of the experimental work of Edie and Spence[17] give the following method: The blood previously collected aseptically in a sterile vessel, is defibrinated aseptically, then 50 cc. drawn off and introduced into a dialyzing tube contained in a wide-mouthed bottle of about 500 cc. capacity provided with a tightly fitting glass stopper. The dialysis is carried out in 300 to 150 cc. 0.9% sodium chloride solution, which is accurately measured, in an ice chamber. Equilibrium is reached in from forty to forty-five hours. At the end of this time the volume of the saline outside the dialysis tube is accurately measured, the bottle and dialyzing tube being then rinsed with water. The saline and washings are brought to the boiling point when an excess of boiling Fehling's solution is added and the whole kept gently boiling for five minutes. The cuprous oxide is filtered on a tarred Gooch crucible, ignited, and the reduction determined by the weight of cupric oxide thus obtained. By this method of estimating the sugar in the blood some insight has been gained as to the condition of that sugar. There is evidence to show that part of it exists as free sugar, another part as combined sugar, by this being understood those combinations of glucose with protein or lecithin, and a third part as polysaccharide or hydrolyzable sugar.

THE EFFECT OF ALCOHOL ON SOME OF THE SECRETIONS OF THE BODY.

Gastric secretion. — The experiments of Kast[18] show on pseudo-feeding of dogs and with dogs with a small accessory stomach that ethyl alcohol in small quantities and in dilutions under 10% stimulates gastric secretion. The stimulation leads to increased hydrochloric acid formation and secretion but not to a new formation of pepsin. An increased mucous production with alcohol of this strength could not be observed in man or in the dog. Concentrations of ethyl alcohol of 20% cause even a more intense gastric secretion together with an increased mucus production. With higher concentrations the secretion time is decreased and the mucus elimination increased. Alcohol over 50% strength causes intense mucus production, and a short and relatively small hydrochloric acid secretion. Alcohol over 70% leads to irritation of the mucous membrane by precipitation of the proteids. Amyl, propyl and butyl alcohols interfere with gastric digestion by inhibiting or retarding peptonization of the proteids and by irritating the mucous membrane leading to catarrh of the stomach.

Bile. — Salant[19] found that intravenous injection of alcohol into dogs does not materially change the rate of secretion of bile, and as a result does not have appreciable action on the biliary function of the hepatic cell. Alcohol injected intravenously has no influence on the content of solid constituents of the bile. When alcohol is injected into the stomach or intestines there is a marked increase in the flow of bile, and the solid elements are increased absolutely and relatively. On the biliary solids the organic constituents were increased somewhat more than the inorganic.

Hydrolytic Enzymes. — An investigation by B. Schöndorff[20] on the effect of alcohol on the content of glycogen in liver and muscle after being treated with this reagent shows that glycogen does not disappear in the liver which has been kept under alcohol. Similar results were obtained with muscle. In preserving organs for analysis under alcohol, it is better to rub them up with cooled alcohol. The diastatic ferment in the liver is not destroyed by alcohol; by removing the latter it recovers its activity. Cooling the organs to 21° C. does not destroy the activity of the ferment. In the muscles of the dog and the ox the glycogen disappears with great rapidity at room temperature. Ox muscle lost 32.7% and dog muscle 16.9% in one hour and twenty-five minutes.

Urine. — As a result of the experimental work of Hinkel and Salent,[21] they conclude that the administration of alcohol to dogs on a standard diet causes only slight variation in the nitrogen output. The total sulphur is diminished, and the neutral sulphur increased. The ethereal sulphates are diminished, as are the phosphates. The chlorides are also somewhat diminished.

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[16] Biochem. Zeitschr., ii, pp. 271-290.

[17] Biochem. Jour., ii, pp. 103-111.

[18] Arch. Verdauungskrankh., xii, pp. 487-507.

[19] Am. Jour. Physiol., xvii, pp. 408-429.

[20] Arch. Gesell. Physiol. (Pfluger's), cxvi, pp. 495-517.

[21] Proc. Sc. Exp. Biol. Med., Feb., 1907.

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Reports of Societies.

NEW YORK PSYCHIATRICAL SOCIETY.

STATED MEETING, MAY 1, 1907.

The President, Dr. Adolf Meyer, in the chair.

RECOMMENDATIONS CONCERNING THE IMPROVEMENT OF MEDICO-LEGAL METHODS.

Dr. Pearce Bailey, of New York City, read this paper. It was not difficult to point out glaring defects in our Code of Criminal Procedure, judged by the standards of modern psychiatry, but legal, judicial and even medical obstacles stood in the way of remedying these defects. Any change from existing conditions would be possible only after a severe and prolonged contest by concerted forces. The fundamental error in procedure in criminal lunacy cases was the test of responsibility, *i. e.*, the knowledge of right and wrong as to the act at the time of its commission. This had been condemned by medical writers as being no test at all. Should the letter of the law be strictly observed, no lunatic could, under it, escape the full punishment for his offense, unless it could be shown that, at the time of the commission of the act, he suffered from distinct clouding of consciousness. Under this law, nevertheless, many murderers had been acquitted by reason of insanity. A loophole had been left in certain states — not New York — by adding the "uncontrollable impulse" clause. When this clause did not exist the fate of the prisoner depended upon the construction which the jury saw fit to place on the knowledge of right and wrong, as mentioned in the law. The question would naturally arise why, if so unsatisfactory, this test had stood so long with so little variation. The reasons were evident. Defective as is the knowledge of right and wrong as a test of responsibility, no better substitute had ever been offered. Another reason why this law had stood might be found in the fact that the matter is always in the hands of laymen, to whom the science of psychiatry is practically unknown. This test would have to endure so long as the Code of Criminal Procedure remained what it is to-day, for the reason that this test is as good as any single test of insanity could be. Modern psychiatry demanded that this test be, not replaced by another, but be done away with altogether. No criminal precedure could be at harmony with modern views of mental disease as long as there was no middle course between responsibility and irresponsibility, and no means of judging between them except those furnished by the knowledge of right and wrong. Nothing had been more plainly taught by recent advances in psychiatry than that different mental states make different degrees of responsibility. No law which failed to take cognizance of this fact could be satisfactory to alienists. Before undertaking any legislation in the line of amending the Code of Criminal Procedure, the Society should bend its energies toward the passage of a law which emanated from the Society and which was in the hands of the Committee at Albany. This law, if passed, would do away with many of the present evils of court procedure. It was suggested that the model plan for procedure in criminal cases would be that the question of lunacy be referred by the court to a committee of three, two members at least of which should be medical men. These men should have been certified as to their moral character and should have passed an examination as to their qualifications to pronounce on the mental conditions. There should be several such experts appointed in every judicial district. The commission thus appointed should examine into the mental state of the prisoner and report to the court. They should determine the degree of responsibility, that is, they should determine the character of the mental disease, if any, from which the defendant was suffering, and report in accordance therewith that he was fully responsible, partially responsible or irresponsible. Partial responsibility in capital cases should be sufficient to remit the death sentence, but no one who had committed murder and who was acquitted on the ground of partial responsibility should be restored to liberty under ten years. In other felonies the cases of partial responsibility should have the shorter sentence optional with the judge. The report of the committee should be handed to the court and become part of the evidence and should be the only medical expert evidence.

Dr. William Hirsch, of New York City, was of the opinion that no law, however good, would remedy the present condition of affairs, so long as we have not to deal with honest men. If it be possible for corruption or any kind of dishonesty to enter legal procedures, then the best law could not be carried out in an ideal way. On the other hand, laws, no matter how defective, could be so handled that they would answer the purposes of humanity and truth, if we have to deal with honest men. This society should direct its attention to its own profession and endeaver to raise the standard of expert testimony to such a point that dishonesty and incapacity would not be brought to bear in criminal procedures.

Dr. William Mabon, of New York City, thought the present law unsatisfactory, but so many questions were involved that it would be difficult to formulate anything that would improve conditions as they exist. He advocated referring the matter to a committee who should investigate conditions not only in this country but abroad. Nothing could be accomplished until the legal profession could be brought into closer touch with the medical profession.

Dr. A. R. Dieffendorf, of Middletown, Conn., asked Dr. Bailey to state, in closing the discussion, just what standards physicians would have for determining the degree of responsibility. He believed that neither the legal profession nor the community would permit a commission of alienists to pass upon that matter without knowing the rules which the physicians applied. He asked further if Dr. Bailey, in looking up the matter, had been able to determine how the criminal procedure in Great Britain had brought about the remarkable condition to which he referred, viz.: that there were just as many men found not guilty of first degree murder on account of insanity as were found guilty and hung.

Dr. L. Pierce Clark, of New York City, was heartily in accord with the suggestions made by Dr. Bailey and favored the appointment of a committee to study the matter very thoroughly. The law in the main was far better than what is in force at the present time, but a proper statute could be worked out only after careful study from a legal as well as from a medical viewpoint.

Dr. William L. Russell, of Poughkeepsie, N. Y., was, on the whole, in accord with the suggestions presented in the paper, and believed that a committee might, by prolonged study and the presentation of preliminary reports, bring out a discussion of the whole matter that would be very helpful. He referred to the committee appointed two or three years ago by the American Medico-Psychological Association to confer with the American Bar Association, and thought it would be well for the committee under consideration to confer with this and other similar committees. A special procedure might be instituted to determine the advisability of detaining those who have committed murder or homicide and who have been acquitted on the ground of partial responsibility.

Dr. August Hoch, of White Plains, N. Y., said it was not so much a question of making, or urging the making, of a different law in regard to the matter of responsibility, as it was of urging that a better basis be furnished for forming a medical opinion. In most cases experts would not differ so much about a given case if all had the same facts and enough facts. The divergence of opinion arose because, in many instances, the experts were working with an utterly insufficient knowledge of the case; so insufficient, very often, that in everyday practice no conscientious psychiatrist would think of forming an opinion upon it.

Dr. Allan M. Lane Hamilton, of New York City, thought there should be some *rapprochement* between the medical and legal professions, and to this end suggested that a committee be appointed to confer with the Appellate Division of the Supreme Court, with reference to the question in hand. Dr. Bailey had been misinformed concerning English laws. In the question of murder the facts were left to the jury, which inquired into the matter, the question of insanity coming up later. Expert witnesses were not objected to, but the final decision was left to some representative of the Crown. He agreed with Dr. Bailey concerning the ten years' confinement of individuals acquitted of murder on the ground of partial responsibility. In disputed cases, however, the time of confinement need not necessarily be ten years.

Dr. Charles L. Dana, of New York City, did not take quite so pessimistic a view of the matter as did Dr. MacDonald. The committee, if appointed, should confer with prominent judges and lawyers, particularly criminal lawyers. The question of partial responsibility was an important one and if all alienists would accept the idea that there is such a thing as partial responsibility it would have its effect upon the method of procedure. It would be useful for the committee to undertake work along the line of devising a test for insanity which might be accepted by the legal profession.

Dr. Adolf Meyer, of New York City, said that in practically all European countries partial responsibility had been recognized in some form. The question was whether this could be so formulated as to be satisfactory to the community, for, after all, our laws were not absolutely bad. There had been heretofore too much expression of mere opinion on the part of alienists, without enough attention paid to the determination of the actual facts. The relative looseness in the determination of facts and the too liberal acceptation of hypothetical questions on the part of physicians had led to the unfavorable impressions existing to-day. It was extremely difficult to form an idea as to what should be considered sufficient facts to justify an expert in giving an opinion. Adequate observation of the persons should be in some manner invited, if not enforced, and alienists should raise among themselves the standard as to what facts are necessary to justify an opinion. It was the work of the physician to determine whether the individual had any mental disorder, and whether this disorder had anything to do with the commission of the act. The question of responsibility should be decided by the physician.

Dr. Pearce Bailey, of New York City, in closing the discussion, said the question of responsibility should be referred to medical men, but they would have no authority more than communicating their findings to the jury. While it might be impossible to change the present procedure, yet it was well enough to look into the matter to see what could be done.

Book Reviews.

Atlas and Textbook of Human Anatomy. By Dr. Johannes Sobotta, Professor of Anatomy in the University of Würzburg. Edited, with additions, by J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy in the University of Michigan. Vols. I and II. Illustrated. Philadelphia and London: W. B. Saunders Company. 1906.

It is not to be questioned that anatomical teaching has been greatly furthered during the past few years by improved illustrating and by the use of the atlas form of presentation. We are glad to notice another admirable book of this type by Dr. Sobotta, of Würzburg, edited, with additions, by Dr. Playfair McMurrich, of the University of Michigan. It has been the aim of the author to meet the needs both of the student and the physician in the production of his work, a distinction which we are inclined to think is at times too much insisted upon. It is not an atlas designed for the special student, and therefore is not to be compared with Toldt, which is much more comprehensive. A special feature of this book is the use of several colors in the plates. Particularly has this method been used in the treatment of the muscular system with results which are altogether to be commended. The illustrations in general are wonderful reproductions of the actual dissections, and give one a peculiarly good idea of the special relations of the parts.

The first volume is especially designed for use in dissection, and the illustrations have been arranged with this end in view. It takes up the subject of bones, ligaments, joints and muscles. The second volume is concerned with splanchnology, including the heart. The general method followed is the same as in the first volume. The illustrations which naturally constitute the essential portion of such a work as this are beyond criticism and cannot fail to be of the utmost value to any student of the subject who has not immediate access to the actual dissections. The book will doubtless take its place among the very best of the atlases dealing with human anatomy, certainly so far as the illustrations are concerned. The text is somewhat brief and descriptive essentially of the plates. Its conciseness is its virtue. We see no evidence that a third volume is to appear and miss any section on the central or peripheral nervous system. This is an unfortunate omission. The book in general is an admirable example of the extraordinary perfection which modern publishing has attained.

Obstetrics for Nurses. By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School, Obstetician to Mercy, Wesley, Provident, Cook County, and Chicago Lying-in Hospitals, Lecturer in Nurses' Training School of same. Second edition, thoroughly revised and enlarged, 510 pages. Philadelphia and London: W. B. Saunders Co. 1906.

This book is just what its name indicates and as a specimen of book-work is most pleasing. It tells the nurse what to do to aid the obstetrician, and also what to do if she is alone. The instruction for the preparation of the patient and also of the lying-in room is excellent. The dietary and the glossary are valuable features.

A Text-Book of Obstetrics. By Barton Cook Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania, Gynecologist to the Howard, the Orthopedic and the Philadelphia hospitals. Fifth edition, revised and enlarged, with 767 illustrations, 40 in colors, 915 pages, octavo. Philadelphia and London: W. B. Saunders Co. 1906.

This popular book, which first appeared in November, 1898, has already reached its fifth edition, which is much enlarged and is thoroughly up to date. It is a very safe guide for the practitioner, since only those procedures which have clinical proof back of them are advised. Special attention is given to puerperal infection, and the treatment of this important subject is excellent. The subject of pyelitis of pregnancy does not have the consideration its importance demands, and so far as it is discussed the statements are not according to the weight of evidence. The book will no doubt keep its high rank among the standard text-books.

Modern Clinical Medicine — Diseases of the Digestive System. Edited by Frank Billings, M.D. An authorized translation from " Die Deutsche Klinik," under the general editorial supervision of Julius L. Salinger, M.D. With 45 illustrations. New York and London: D. Appleton & Co. 1906.

This volume includes selected articles from many of the most eminent medical men of Europe. The diseases of the digestive tract are treated fully and at the same time in a concise, practical manner. The most modern methods of diagnosis are discussed and the treatment of the various disorders receives careful consideration.

It is a book of value to the surgeon as well as to the physician, since many of the diseases included lie on the border land of medicine and surgery.

Diagnostics of Diseases of Children. By Le Grand Kerr, M.D., Professor of Diseases of Children at the Brooklyn Postgraduate Medical School. Octavo. Pp. 542. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

The author in his preface calls attention to the facts that in infancy and early childhood diagnosis has to be based largely on the objective symptoms and that consequently their correct interpretation is of the greatest importance. The book is devoted to the diagnosis of disease in early life on these symptoms, and etiology, pathology and subjective symptomatology are touched on only incidentally. While there are many minor points which might be criticised and occasional omissions, the subject is on the whole very satisfactorily treated, and the book cannot fail to be most useful, both to the student and to the practitioner.

Atlas and Epitome of Diseases of Children. By Dr. R. Hecker and Dr. J. Trumpp, of Munich. Edited, with additions, by Isaac A. Abt, M.D., Assistant Professor of the Diseases of Children in Rush Medical College, in affiliation with the University of Chicago. With 48 colored plates, 147 black and white illustrations. Pp. 453. Philadelphia and London: W. B. Saunders Company. 1907.

When there are so many good books on pediatrics by American authors, it hardly seems necessary to translate those in other languages. If this seems advisable, however, it would seem wiser to select first-class books instead of second- or third-rate ones like this. We see nothing in this work to make it preferable to the compends by American authors, which, like all compends, are in themselves objectionable. The only thing we see in this book to commend are the colored plates, which are unusually numerous and some of which are very good.

Stöhr's Histology Arranged upon an Embryological Basis. By Dr. Frederic T. Lewis. 8vo, ix + 434 pp. 450 figures. Philadelphia: P. Blakiston's Son & Co. 1906.

Most authors of histologies have been contented to deal with their subjects from the standpoint of descriptive anatomy, and the facts of histogenesis have found places in their volumes only as footnotes or incidental paragraphs. Lewis's edition of Stöhr presents the novel feature of an histology built on embryological outlines. The rearrangement of this well-known text-book necessitated by such a departure has been no slight undertaking. The first part of the book, which covers the great majority of its pages, deals with cytology, general histology and special histology. The section on cytology, though largely rewritten, presents the same fundamental facts on the structure and function of cells that have been given in previous editions. The second section, that on general histology, deals with tissues not in the older, purely descriptive way, but from the genetic standpoint. The development of the mammalian body from the fertilized egg cell is briefly sketched and the differentiation of the germ layers is outlined. This affords an embryological basis for a consideration of the fundamental tissues; epithelium, mesenchyma, muscular, nervous and vascular tissue. The third section, on special histology, takes up the minute structure of the various organs of the human body somewhat as in the former editions, though here, as in previous sections, much new matter on histogenesis and even organogenesis is introduced. To hold the volume to what was approximately its former size, the general directions for making histological preparations, as well as the more detailed statements as to the preparation of the specimens from which the illustrations were taken, have been omitted or condensed into a few pages constituting the second part. Thus room has been made for the very considerable body of newly introduced embryological matter.

An examination of the volume shows it to be accurately and consistently put together, and its unusual freedom from typographical errors and misstatements reflects great credit on both author and publisher. The press is doubtless responsible for the partial loss of "side" in the explanation of Figure 26 and the faintness of Figure 138. Something might have been gained by treating the cerebral nerves (page 95) from the modern standpoint of nerve components rather than by dealing with them as composed of dorsal, lateral and ventral roots; and a description of the histogenesis of ciliated epithelium (page 31) might well have been added. But aside from a few small blemishes the volume is avowedly of very high excellence and should find ready acceptance wherever modern histology is to be studied and taught. It must not be forgotten, however, that an embryological treatment of tissues is only one step from the older descriptive standpoint toward a broad and comprehensive view of the subject, and that it is as important for the student to know the physiology of tissues as it is to be acquainted with their structure and origin. It is to be hoped that this departure in histology will be followed by further progress, in which, in addition to the structure and genesis of tissues, their physiology will receive consideration.

Epilepsy: a Study of the Idiopathic Disease. By William Aldren Turner, M.D., Edin. 8vo. Pp. xiv, 272. With 13 charts and 6 illustrations. London: Macmillan & Co. 1907.

We have several times had occasion to notice in the columns of this Journal the various studies on epilepsy which Dr. Turner has published in the English journals. These studies have been embodied in the volume before us, which is based upon the careful study of a thousand cases observed at the colony for epileptics at Chalfont-St. Peter, and at the National Hospital for the Paralyzed and Epileptic in Queen Square, London. The chapter on pathology is written by Dr. John Turner, from a study of one hundred and fifteen autopsies. A careful study of the literature, combined with this large personal experience, gives the stamp of authority to the work. The title is not wholly accurate, for the author follows the usual custom of including the convulsive attacks of cerebral infantile paralysis and organic disease of the brain under idiopathic epilepsy. He regards epilepsy as an organic disease of the brain, whose dominant cause is ancestral epilepsy — a disease indicative of family neuropathic degeneration. A neuropathic heredity was found in 51% and a similar heredity in 37.2%. Like most writers on the question of heredity in nervous diseases, Turner is content with noting the percentage of nervous disease in the heredity, without considering the nature of the disease or comparing the percentage with the percentage of nervous heredity in healthy persons. Thomann-Koller and Diem have found such nervous heredity in from 59% to 66.9% of healthy persons, so that the conclusions which Turner and others draw from their statistics is far from convincing as to the hereditary nature of epilepsy. He has also disregarded the teachings of Weismann as to injury of the germ plasma, which have, we believe, a very important bearing upon the genesis of epilepsy. The characteristic symptom of epilepsy, according to Turner, is the periodical recurrence of attacks of loss or impairment of consciousness, sometimes accompanied by convulsions. The convulsions are thought to be due to the deprivation of arterial blood in cortical areas, coinciding with venous and capillary stasis, in persons predisposed to nervous instability; as a consequence of this deprivation alterations are found in the large pyramidal cells of Betz. These changes lead to permanent alterations in the cortex of the nature of neuroglial sclerosis. The study of the mental states found in epilepsy is very complete and of great value. These are classed as the epileptic temperament, the paroxysmal psychoses, the psychical epileptic equivalents and the permanent interparoxysmal mental condition which leads to dementia. Much stress is laid upon the interparoxysmal conditions and the epileptic temperament, and the subject is treated more fully than in most other works, with perhaps a little undue emphasis upon the mental phenomena and the tendency to dementia from the influence of so many severe cases observed in an epileptic colony. Full consideration is given to the toxic origin of epilepsy and the author concludes that in some cases the epileptic condition may be of toxic origin. About 10% of the cases recover. In regard to treatment considerable stress is laid upon the benefits of a purin-free diet. The author, very wisely, we believe, opposes the teachings of certain New York writers who denounce the use of bromide, and upholds the efficacy of a judicious bromide treatment. Next to bromide he commends belladonna and zinc, which, in the early days, before the use of bromide, gave good results. We heartily commend the book as the most important monograph on the subject that has appeared in English since the classical work of Gowers, — a most valuable contribution to our knowledge.

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As a result of the anti-spitting crusade in Pittsburg, according to the *Journal of the American Medical Association*, forty-three were arrested on the first day.

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THE RESULTS OF SECTION OF THE SYMPATHETIC IN ESSENTIAL EPILEPSY.

When one carefully examines the recorded cases of epileptics treated by section of the cervical sympathetic, one is struck by the fact that the results obtained are most variable, for beside those cures which appear evident, there are numerous ameliorations and many unsuccessful results. Consequently, when this operation is undertaken, one is never sure that it will modify the attacks. And what is more important still is that the results are often published much too soon after the operation to be of any value. A number of patients have been followed for only a few weeks, a period ridiculously insufficient, inasmuch as in epilepsy one often encounters quiescence of the attacks for a considerable length of time, with or without treatment. These patients should be followed for years, which has been done for a certain number, and then usually it is found that the amelioration was merely temporary and what was taken for an improvement proved to be an unsuccessful result in the end.

Then again, one must be sure that the case is one of true epilepsy. Several published cases were afterwards found to be hystero-epileptics, while others considered as true epileptics in reality presented symptoms of associated hysteria, and it is easily understood that in these any interference might ameliorate the intensity or the frequency of the attacks. This is what appears to us not to have been sufficiently established in several published cases; it is true that very often the diagnosis is a difficult matter. These are the cases which, in the statistics, have given the greatest number of improvements or cure. In order to come to a just conclusion, one should take into consideration not simply the given result, because the precision with which the diagnosis is made, and more particularly the time during which the patient is under observation, have great importance in the determination of the ultimate results. These are the reasons why statistics differ so widely.

Alexander, in 1889, gave statistics of a series of twenty-four patients operated on by himself and obtained six cures, ten ameliorations, five unsuccessful results, two aggravations of the disease and one death by an intercurrent affection, in other words, 25% of cures. Jaboulay and Lannois, out of sixteen personal observations obtained only one cure, and this was in a hystero-epileptic, and three ameliorations; the condition of the other patients was not changed. At the Surgical Congress held in Paris in 1900, Jonnesco reported thirty-seven cases, which he had been able to follow for a considerable length of time, with the result that he obtained thirteen cures, eight improvements and sixteen unsuccessful outcomes, in other words 31% of cures. Chipault out of twenty-two cases obtained two cures and three improvements; in other words, successful results in 9%. Pilcz, out of eighty cases of essential epilepsy that he was able to follow for some time after the operation, reports 31% of doubtful improvement and not a single certain cure. Acevedo has published seven cases, all of which were improved so far as the attacks and mental condition are concerned, but the patients were followed only for a short time after the operation. White's statistics of twenty-three cases show 25% cures and 36% improvements. In several publications, Vidal records numerous instances of cure and a considerable number of improvements, while Braun, in 1901, records nine cases of sympathectomy without a single cure. In 1902 Obregia reported five cases that he followed for several years; the attacks which disappeared after the interference, recurred later and were quite as intense as before the operation. In the same year Winter collected nearly all the cases published up to that time numbering 213, but, out of these, he eliminated ninety-one, because they were reported too soon after the operation to be of any value, and out of the remaining 122 he found eight cures, or 6.6%; seventeen provisional cures, or 13.9%; twenty-three improvements, or 18.9%; and sixty-seven unsuccessful results, or 54.9%. From these results one should also eliminate all instances of hystero-epilepsy in order to seriously judge the value of section of the sympathetic, because it should be recalled that these patients may be influenced by any operative traumatism, so that it appears that in true essential epilepsy successful results must be very few indeed.

All operators have not sufficiently considered the restrictions here mentioned, and consequently they judge sympathectomy very differently. Some, as Hahn and Dejerine, consider the operation inefficacious and dangerous. Amat and Mariani declare it useless and Eulenberg as absurd. There are a few surgeons who are partisans of the operation, Hopkins and Deaver at home, and Vidal in France. The latter gives as an explanation of his successes a series of reasons which should be mentioned. He selects his patients and only operates on those who are favorably influenced by amyl nitrite; he removes the entire cervical chain and only operates on patients who can be looked after properly after the operation.

Although post-operative care is certainly of great value, the majority of writers recognize that epileptics are little influenced by surgical therapeutics, and this is demonstrated by statistics based on properly diagnosticated cases followed for a long time, and is what might be foreseen when the present conception of epilepsy is considered, namely, that it is a syndrome rather than a morbid entity. To apply a uniform treatment to cases having a varying pathogenesis must of necessity lead to therapeutic failure.

Section of the sympathetic in essential epilepsy is, consequently, not a curative operation, for it is lacking in the pathogenic basis to be efficacious in all cases. The failure of the operation is in the first place and above all due to the fact that the cause of the attacks is not known, and secondly because one merely produces temporary disturbances in the cerebral circulation. Apropos of this, it would be most interesting to ascertain if there is any relationship between the duration of the vascular disturbances and that of the temporary improvements occasionally met with. If some knowledge on this point were obtained it might serve perhaps to aid the better understanding of the influence of circulatory disturbances in epilepsy.

It is known that cerebral anemia may have some influence in the production of the attacks in certain toxic epilepsies which, clinically, often appear essential. By the use of amyl nitrite, Vidal ascertained those cases in which anemia alone produced the attacks. In certain epileptics it stopped the attacks, and in these alone should the sympathetic be operated on. Vidal, however, did not operate on all the patients who were benefited by inhalations of this drug, and he does not consider this method as infallible. Pitres has shown by the treatment of seventeen patients that this drug could not serve for the recognition of the nature of the epilepsy and he has seen convulsions produced by it in hysterics, while it has remained without effect in supposed epileptics and in cases of large cerebral neoplasms, consequently in just the cases where it should provoke an attack according to Vidal's theory. There is no preliminary proof which can demonstrate to what extent cerebral anemia intervenes in the pathogenesis of the attack and therefore there is nothing which will indicate beforehand the effect of section of the sympathetic in a given case of epilepsy. To sum up, it may be said that this operation is, generally speaking, of little value, but that a more complete knowledge of the various forms of epilepsy and their pathogenesis might allow one to come to some conclusion relative to the advisability of operative treatment.

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PLAGUE INVESTIGATION IN INDIA.

The appalling death-rate from plague in the far East might appear a reflection on modern prophylactic medicine were it not for the great difficulty attending the treatment of the disease among the native population. That the English government is active in its efforts to abate its inroads is again shown by the last number of the *Journal of Hygiene* which contains reports on Plague Investigations in India issued by the Advisory Committee appointed by the Secretary of State for India, the Royal Society and the Lister Institute. An excellent account is given, arranged in most systematic manner, of our present knowledge of the natural history of the disease and the curious pathological and etiological facts which are now under investigation. A large number of plague rats have been studied with great care, post-mortem, with the end of determining the value of naked eye examination of suspected rats, to what extent microscopical examination alone may be relied upon for purposes of diagnosis, and finally whether the examination of a large number of plague infected rats might reveal evidence of the mode of infection on these animals, evidently a matter of the greatest importance from the standpoint of epidemiology. As a result of these experiments, the somewhat unexpected conclusion is reached that the naked eye method is decidedly superior to the microscopic as an aid in diagnosis, and that with sufficient experience the diagnosis of plague may be made on the strength of the macroscopic appearances alone. There is apparently now no doubt that plague may be transmitted from rat to rat through the transference of fleas from a septicemic animal, and it therefore becomes important to determine the fate of the plague bacillus in the body of the rat flea; whether a single rat flea can transmit the infection; whether both male and female rat fleas can transmit the infection; whether other species of fleas can transmit it, and the mechanism by which the flea infects a healthy animal. It appears that the plague bacillus multiplies in the stomach of the rat flea, and also that a single flea may transmit the disease, whether male or female. Many other facts of the very greatest interest are deduced from this experimental study. Space does not permit us at this time to enter into a detailed consideration of all the conclusions reached, but it is evident that the rôle of the rat flea is coming to be well established, and it follows, therefore, that a beginning at least has been made toward the final extermination of the disease. We commend this admirable report to all those who may be interested in painstaking, scientific investigation on a problem of great practical import.

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OPPORTUNITIES FOR MEDICAL WOMEN.

The useful place which women are now occupying in medicine is no longer to be questioned. It remains, however, to discover in what departments of the profession women are likely to be of the most service to the commuity, and reach the highest personal development. Suggestions which should be of value were given by Dr. Osler recently at the London School of Medicine for Women. On this occasion Dr. Osler pointed out that there were four channels open to women physicians. The first of these he especially commended, namely, work in connection with the laboratory branches of medicine. He thought that women were especially adapted for this type of work, and went so far as to say that much of the best work in bacteriology, histology and many departments of pathology was now being done by women. There can certainly be no question that expert women are rapidly becoming an essential adjunct of a well-equipped laboratory, whether or not they have a medical degree. In the second place there is an excellent opportunity for women in connection with institutions, and particularly those in which the insane are treated. Here, again, the last few years has seen a notable change, inasmuch as a large proportion of the hospitals for the insane are now provided with at least one woman physician. In the third place, so-called general practice offers opportunities. The diseases of women and children constitute the most natural field; but here, curiously enough, the difficulty is met that women themselves are more prone to distrust those of their own sex than men in a professional capacity. This, no doubt, time will do much to overcome. Finally, Dr. Osler gave, as the fourth field of usefulness for English women, work in India, where their duties would naturally fall in ameliorating the diseases and conditions of their own sex. The life there would be, no doubt, hard, but on the whole he thought happier than that which they would be likely to lead in their own country.

We note that Dr. Osler made no mention in his remarks of surgery as an appropriate field for women. It is in this field that many women practitioners are eager to shine, and it is, of course, a fact that much surgery is being done by women and with success. It is, however, not to be expected that pre-eminent success will be attained by women in this branch of medicine. The life of an active practising surgeon brings with it unquestionably a greater nervous strain than any other connected with the practice of medicine. If for no other reason than this, it is hardly to be expected that women practitioners in any considerable number will be able to compete in this most exacting, practical department of the profession. There remain, however, many other opportunities, some of which Dr. Osler has pointed out, which should be quite sufficient to meet the ambitions of those women who have determined to make medicine their life work, nor can we at the present time question that in certain departments of medicine there is no reason why women should not excel, and possibly in the future gradually usurp certain fields of work. The real problem before the women physicians of this and other countries is to determine the sphere of usefulness in which they may most fully develop and devote their best energies to its cultivation. They will certainly meet with no discouragement in this attempt from their colleagues of the other sex.

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MEDICAL NOTES.

American Medical Editors' Association. — At the thirty-ninth annual meeting of this society, recently held at Atlantic City, sixty-four new members were elected. A committee on publicity was appointed, the duty of which will be to see that the medical profession, through the medical press, is promptly informed upon all matters of general interest.

Deaths in the Profession. — Dr. Theodore von Jürgensen, professor of medicine and head of the Medical Polyclinic at Tübingen, has recently died at the age of sixty-seven.

Dr. Max Schueller has died at the age of sixty-four in Berlin, where at the time of his death he was in charge of the Surgical Department of the Polyclinic of the Association of Domestic Hygiene. He had of late devoted himself particularly to a study of the etiology of cancer.

Death-Rate from Phthisis in England and Wales. — As elsewhere, recent statistics on tuberculosis show that in England and Wales there has been a decided decline in the death-rate. This has been a very general experience in civilized countries, and it is also noteworthy, as stated in the *British Medical Journal*, that there has been a very distinct tendency to a postponement of the age of death and probably therefore the age of infection. Fifty years ago the disease was most fatal in both sexes at the age-period twenty-five to thirty-five years. In females there was no change during the next two decennia, but in males the age of greatest mortality advanced to the period thirty-five to forty-five years, though in the first of these two decennia (1861-70) it was only a little more fatal at this age-period than in the age-period twenty-five to thirty-five. In the last decennium the age of greatest incidence advanced for men to the period forty-five to fifty-five years, and for women to the period thirty-five to forty-five years. What explanation can be offered for this change, we cannot venture to say; it is improbable that it can be due merely to an extension of the life of the consumptive. Whatever its explanation, it appears to mean a great saving of life during the most useful years, and must therefore represent a great gain to the nation.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 21, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 40, scarlatina 23, typhoid fever 9, measles 41, tuberculosis 50, smallpox 0, leprosy 1.

The death-rate of the reported deaths for the week ending July 24, 1907, was 15.74.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 20, 1907, was 158, against 219 the corresponding week of last year, showing a decrease of 61 deaths and making the death-rate for the week 13.52. Of this number 93 were males and 65 were females; 154 were white and 4 colored; 98 were born in the United States, 57 in foreign countries and 3 unknown; 34 were of American parentage, 103 of foreign parentage and 21 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 36 cases and 2 deaths; scarlatina, 32 cases and 0 deaths; typhoid fever, 16 cases and 2 deaths; measles, 47 cases and 1 death; tuberculosis, 68 cases and 18 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 12, whooping cough 1, heart disease 14, bronchitis 2 and marasmus 2. There were 7 deaths from violent causes. The number of children who died under one year was 27; the number under five years, 39. The number of persons who died over sixty years of age was 29. The deaths in public institutions were 57.

There were 1 case and 4 deaths reported from cerebrospinal meningitis during the week.

A Case of Leprosy. — It is stated that a case of leprosy has recently appeared at the Massachusetts General Hospital in the person of a domestic of Russian descent who went to that institution for treatment. The diagnosis has been confirmed, and she will be sent to the leper hospital on Penikese Island in Buzzards Bay.

NEW YORK.

A Centenarian.—John Kelderhouse, of Schenectady, N. Y., died on July 18, at the alleged age of one hundred and seven years. He was a native of Livingston Manor, N. Y., and was the father of thirteen children.

Contagious Hospital in Brighton. — An order granting the right to the Massachusetts Homeopathic Hospital to maintain a hospital for contagious diseases in Brighton has passed the Boston Board of Aldermen.

According to "Science." — The Paris medical faculty has recently announced that henceforth the incumbents of the special chairs of anatomy, histology, physics, chemistry and pharmacology will not be allowed to take posts as physicians or surgeons in the hospitals. Professors of these branches will be obliged to agree to devote themselves exclusively to their educational work.

Prohibition of Use of Unclean Milk Cans. — Governor Hughes has signed the bill recently passed by the Legislature, which amends the agricultural law, so as to prohibit the use of unclean and unsanitary milk cans, the confiscation of which is directed. The bill also provides for the appointment of two milk can inspectors in New York City.

Bequests. — Among the charitable bequests in the will of the late Isador Wormser, of New York, are: $2,500 each to the Mount Sinai Hospital and the United Hebrew Charities Association, and $1,000 each to the Montefiore Home and Hospital for Chronic Invalids and to the New York Roman Catholic Orphan Asylum.

Death of the Heaviest Person in New Jersey. — Mrs. Margaret McMahon, of Newark, N. J., who is stated to have been the largest person in that state, died on July 12, at the age of forty-eight years. Her weight exceeded five hundred pounds and part of the house had to be torn away in order to move the specially constructed coffin. When the body was in the coffin it required twelve men to lift it.

Employers' Liability Law Constitutional. — In a decision handed down on July 18, Judge Adams, in the United States District Court, declared the employers' liability law constitutional. This is the first decision in the state of New York in regard to this law. It is stated that in Georgia and Kentucky federal judges have decided that the law is unconstitutional, while in Illinois its constitutionality has been upheld. Judge Adams made the decision in the suit for damages of one Patrick Lancer, a longshoreman, who was injured while at work on the steamship *Columbia*, in October, 1906; stating, in his opinion, that the plaintiff was entitled to receive damages from the steamship company.

Boat for Tuberculosis Patients. — The *Southfield*, one of the old ferry boats of the Staten Island line, which has been put out of commission by the newly constructed municipal boats, now running to that point, has been placed by Commissioner Bensel, of the Department of Docks and Ferries, at the disposal of the committee on tuberculosis of the Charity Organization Society. The boat is a large one, with double decks, and it has been fitted up as a tuberculosis camp, with hammocks, steamer chairs, etc. A trained nurse is in attendance, and once a week the committee meets on the boat and the medical members of the committee serve each two weeks in turn as visiting physicians. The patients who are sent from the various dispensaries of the city, spend the day in the fresh air, and in the evening, with the exception of a few male patients, who remain all night on board, are dismissed to their homes. Each receives from three to eight eggs and from three to eight glasses of milk daily, and at noon a meal, consisting of bread and butter, hot tea or coffee and a cooked egg, is served. In addition, the patients are permitted to bring with them whatever food they choose. Although this undertaking has been but a short time in operation, the results appear to have been very satisfactory. A member of the committee, in speaking of them, recently said: "The patients are putting on pounds and the color is coming back to whitened cheeks in a wonderful manner. Now and then a good friend sends us some fruit, magazines or flowers, and with these and the extra diet and fresh air, our patients are getting along famously."

Obituary.

EMMANUEL MENDEL, M.D.

Few who have visited Berlin during the past two decades have failed to attend the courses of Emmanuel Mendel, who has recently died at the age of sixty-seven. The immediate cause of death was a weak heart and arteriosclerosis. Mendel was born in Silesia, studied at Breslau and Berlin, and received his degree in 1861, his dissertation being on a neurological topic. From the first his preference for this branch of medicine was evident, although for some years he practised in Pankow, a suburb of Berlin, as a general practitioner. This village is now well known to physicians as the site of Mendel's asylum. During 1864, 1866 and 1870 Mendel did military service and was twice wounded. He began to teach at the University of Berlin in 1873, and early made a reputation, particularly by his course on Responsibility. His chief claim for recognition in the future will doubtless lie particularly in his work in psychiatry. Among his most notable contributions were his papers on progressive paralysis of the insane, on diseases caused by accident and on mania. He was widely sought in an expert capacity by the courts and had much to do with the codification of the German common law, particularly in relation to the lunacy laws. Personally he was genial, large-hearted and generous. His place will be hard to fill in the university in which he taught for upwards of thirty years.

Current Literature.

The Journal of the American Medical Association.
June 29, 1907.

1. Smith, S. McC. *Specialization in Its Relation to General Medicine.*
2. Stucky, J. A. *Non-Operative Treatment of the Middle Turbinate.*

3. *Verhoeff, F. H., and Ellis, E. K. *The Bactericidal Values of Some Widely Advertised Antiseptics.*
4. Eaton, F. B. *The Relative Value of Clinical Medical and Surgical Knowledge to that of the Laboratory.*
5. *Lichty, J. A. *The Early Premonitory Symptoms of Pernicious Anemia.*

3. Verhoeff and Ellis have studied the bactericidal power of a considerable number of preparations for which antiseptic power has been claimed by the manufacturers. Some of the most widely advertised, used in full strength, failed to destroy the staphylococcus aureus after an exposure of four hours. Others showed more or less antiseptic power when acting alone, but when mixed with an equal volume of hydrocele fluid all failed to destroy the vitality of the staphylococcus aureus after an exposure of over two hours. The authors conclude that although antiseptic washes may be of some value in destroying bacteria on the surface of infected areas, thus preventing reinfection, it is impossible to find an antiseptic which will kill bacteria in the tissues in the presence of serum without injury to the tissues.

5. Lichty has studied 20 cases of pernicious anemia with reference to their early symptoms. The disease he regards as the result of a toxemia, mentioning the work of Herter, who has found evidence suggesting the B. aërogenes capsulatus in the intestinal tract as a possible producer of the hemolytic agent. The symptoms of the disorder may be placed mainly in three groups, as belonging to the digestive system, the nervous system and the cardiovascular system. In the digestive system it has long been recognized that in pernicious anemia there is often present the condition of achylia gastrica. Of the author's 20 cases achylia was present in 14, and as an early symptom in 9. Diarrhea often occurs. Nervous symptoms may occur early or late. Cases have been reported in which the spinal cord symptoms preceded the anemia. Of Lichty's 20 cases 4 showed symptoms of peripheral neuritis and 2 showed symptoms of tabes dorsalis, but the nervous symptoms were in none the first to appear. The cardiovascular symptoms, palpitation, dyspnea, etc., were present in all, but not before the diagnosis was made from the blood, except in one case. [F. W. P.]

Medical Record.
June 29, 1907.

1. Valintine, F. C., and Townsend, T. M. *Massage of the Prostate and Stripping the Seminal Vesicles.*
2. Prager, P. *A New Method of Identification Superseding Dactyloscopy.*
3. Dickey, W. A. *Diagnosis and Treatment of Gastric Ulcer.*
4. Smith, E. L. *Asthma: Observations on Three Hundred Cases.*
5. Fridenberg, P. *Mental Symptoms in Nasal Affections.*
6. Clark, L. P. *The Experimental Effects of Tobacco upon the Nervous System.*
7. *Clapp, H. C. *Diet in Pulmonary Tuberculosis.*

7. Clapp says that diet is a most important factor in the treatment of tuberculosis. A consumptive is much more likely to eat too little than too much. Systematic overfeeding and proper digestion of the food are the accepted remedies. The food must be palatable and well served and the amount must vary with the patient and his circumstances. The outdoor air will enable him to assimilate large amounts. Milk and eggs are the best foods to produce fats, which are most necessary to the patient. The author advocates three solid meals a day, with lunches between of milk and eggs, about three quarts of milk and six eggs a day being taken. Fresh meats are especially necessary for these patients, but a mixed diet is undoubtedly the best borne. Meat juice is valuable. Pastry, candy, fried foods and cabbage should be let alone. Alcohol is not advisable, but coffee, tea and chocolate may be taken moderately.

New York Medical Journal.
June 29, 1907.

1. Keyes, E. L. *The Prenuptial Sanitary Guarantee.*
2. Coplin, W. M. L. *Departmental Influence in the Suppression of Social Disease.*
3. Purrington, W. A. *Professional Secrecy and the Obligatory Notification of Venereal Diseases.*
4. Kaufmann, J. *Gastro-intestinal Disturbances in Influenza.*
5. Reardon, T. J. *Acute Oedematous Eversion of the Ventricle of Morgagni.*
6. Bryant, W. S. *The Radical Mastoid Operation.*
7. *Dunham, J. D. *The Diagnosis and Treatment of Gastric Neuroses.*

7. Dunham's article is a plea for more careful study and more rational treatment in the cases of gastric neuroses, which make up the great majority of all cases with stomach symptoms. The diagnosis requires a more general use of the stomach tube to exclude the presence of organic disease. Certain special forms of neuroses are mentioned.. Nervous anorexia or complete loss of the sensation of hunger is difficult to overcome and may simulate early tuberculosis or cancer. The treatment requires that all possible methods of diagnosis be employed and that the condition be fully explained to the patient; then, careful feeding with small amounts at frequent intervals, the three main meals of the day being preceded by a bitter tonic, will usually effect a cure. In the more advanced cases residence in a sanatorium or even forced feeding by the stomach tube may be necessary. Nervous vomiting is a serious condition, the diagnosis of which must be made by exclusion, and if possible by detection of a cause of the attack in some nervous influence. The vomiting usually occurs easily, without effort, and without regard to the kind of food ingested. Hospital treatment, high frequency current, forced feeding and hydrotherapy will effect a cure in most cases. Under the heading of neurasthenia gastrica are included many ill-defined disturbances of digestion of undoubted nervous origin, following debilitating influences and causing varied symptoms. The diagnosis is to be obtained by close study with special care to exclude ulcer. Where a positive diagnosis is impossible, a rest cure should be instituted as appropriate either to ulcer or to neurosis. Some patients may be relieved by simple reassurance. In more cases the improvement is slow. Residence in a hospital is desirable, also cold baths, systematic feeding, tonics, rest and methods of suggestion. [F. W. P.]

The Lancet.
June 22, 1907.

1. Barker, A. E. J. *The Nature and Treatment of Piles.*
2. Savill, T. D. *The Treatment of Hysteria.*
3. *Roughton, E. W., Legg, T. P., and Emery, W. d'E. *Two Cases of Excision of Ruptured Spleen.*
4. *Howell, C. M. H. *A Consideration of Some Symptoms which may be Produced by Seventh Cervical Ribs.*
5. Scatliff, H. H. E., Hobhouse, E., and Bushnell, F. G. *A Case of Acute Leukæmia (Lymphocythemia).*
6. Colman, H. C., and Marshall, C. R. *A Dangerous Dry Shampoo.*

3. Roughton, Legg and Emery report in detail operations on two cases, respectively aged seven and twelve years, of ruptured spleen. In all such cases the writer believes that unless the injury is very slight, excision of the spleen *in toto* is best. In the reported cases where a healthy spleen was removed in children, recovery has been generally rapid. There are three classes of cases: (1) convalescence is rapid and complete; (2) serious symptoms develop for a while, followed by a complete recovery, and (3) an intermediate group characterized by enlargement of lymph glands, anemia, some enlargement of the thyroid, emaciation with, later, a rapid recovery. In these two cases here reported, the post-operative symptoms were rapid emaciation and weakness, great anemia, drowsiness and intermittent elevation of temperature. The reds were 3,652,000 and the hemoglobin 60% immediately after the operation; regeneration began six days later, with a complete restoration to normal in a month. The leucocytes remained at about 23,000 for six days and then dropped to 10,000, with a secondary rise a day later to 17,000 and a gradual reduction to normal. There were a few nucleated red cells and myelocytes. There was no eosinophilia after operation. There was a decided lymphocytosis throughout, which has persisted to the present, three years after the operation.

4. Howell gives results of his studies of 16 cases of cervical ribs. The most important point in these anomalies is that even a rudimentary cervical rib may cause pressure on the brachial plexus with marked symptoms. In all his cases there was pain, numbness and weakness or tingling sensations in one hand; all these symptoms disappeared after the removal of the ribs by operation. A careful differential diagnosis must be made from syringomyelia, anterior poliomyelitis, peripheral neuritis, and certain other brachial palsies. Ocular changes, common in syringo-myelia, are unknown in this condition; any sensory change at once excludes poliomyelitis or progressive muscular atrophy. Scoliosis may be present in some cases. The x-ray will generally clear up all doubt as to the condition. [J. B. H.]

British Medical Journal.
June 22, 1907.

1. *Canthe, J. *Clinical Observations on Tropical Ailments as they are met with in Britain.*
2. Forsythe, D. *Referred Pain and Its Diagnostic Value.*
3. Pope, F. M. *The Treatment of Locomotor Ataxy by Fibrolysin.*
4. *Maclean, H. *On the Causes and Significance of Certain Ambiguous Reactions Obtained on Testing Urine for Sugar.*
5. Parker, R. *Ligature of Common Carotid for Arterial Dilatation and Epilepsy.*
6. Symmers, W. St. C., and Wilson, W. J. *On the Cultivation of the Meningococcus in the Present Epidemic of Cerebrospinal Meningitis in Belfast.*
7. Macewen, W. *The Rôle of the Various Elements in the Development and Regeneration of Bone.*

1. Canthe gives brief summaries of the diagnosis and treatment of some of the more common tropical diseases, such as malaria, in which he mentions his own case of "malarial neuritis," hemoglobinuria, dysentery and sprue, hepatic abscess and others. The various descriptions are brief, but are of value to the general practitioner on account of their practical nature.

4. Maclean calls attention to the fact that while Fehling's test for sugar in aqueous solution is the most delicate one we have, in certain urines, with small amounts of sugar, this test shows no reduction, owing to the fact that kreatinin is capable of holding in solution a certain amount of the reduced suboxide of copper. Kreatinin itself in more than normal amounts (1-2 gm. per day), will act as a reducing agent on copper, giving rise to various ambiguous reactions sometimes seen in urines known to be free from sugar. Contrary to the idea generally held, uric acid and urates do not have any reducing action on copper; phosphates, on the other hand, can do this to a slight extent. To avoid errors caused by these substances, all of which predominate in urines of a high specific gravity, any urine of a high specific gravity, 1,028-30, should be diluted down to 1015 before testing. By so doing many errors will be avoided. [J. B. H.]

Deutsche Medizinische Wochenschrift, No. 23.
June 6, 1907.

1. *v. Leyden, and Bergell, P. *The Pathogenesis and the Specific Destruction of Cancer.*
2. Greeff, R. *Peculiar Bodies (Parasites?) in Trachoma Cells.*
3. *Bassenge, R. *The Durability and Efficiency of the Typhoid Protective Toxin Prepared by the Brieger Method.*
4. Pick, A. *A Proposal for a Measure of the Intensity of the Patella Reflex.*
5. Klemperer, F. *Methods and Significance of Estimation of the Pulse Pressure.*
6. Klose, H. *The Use of Papayotin in Laryngeal Diphtheria.* (Concluded.)
7. Herschel, K. *A New Ear Electrode.*

1. Von Leyden and Bergell give a preliminary report of some experiments on the injection of a newly discovered liver ferment into tumors. This ferment is obtained from the freshly macerated livers of animals. It has little effect on isolated carcinomatous tissue, but injected *intra vitam* into the tumor mass it causes an extensive and markedly selective destruction of the cancerous tissue, leaving an unevenly marked boundary between sound and diseased tissue. This proteolytic ferment was injected into three cases, one a large sarcoma of the neck, another a recurrent cancer of the breast, and a third a carcinoma of the uterus. All these cases had numerous metastases and subsequently came to autopsy. In each case the injection was shown to have caused an extensive destruction of tissue resembling the necrosis and cellular solution due to enzymotic action.

3. Bassenge found typhoid toxin, prepared after the method advised by Brieger, effective after having been carried for two years on German naval vessels in tropical seas. This toxin is prepared by shaking typhoid bacilli in distilled water for twenty-four hours and filtering off the bacilli. It forms, according to the author, a sure and practicable means of protection against typhoid and one whose efficiency is not affected by change of climate and age. [L. G. M.]

Münchener Medizinische Wochenschrift, No. 22.
May 28, 1907.

1. *Spielmeyer, W. *Sleeping-sickness and General Paresis.*
2. *Groedel, F. M. *The Use of the X-ray in the Study of the Stomach.*
3. Bachmann, E. *Percussion Findings in Pleurisy with Effusion.*
4. Bárány, R. *The Investigation of the Reflex Vestibular and Optical Eye Movements, and their Significance in the Focal Diagnosis of Eye Palsies.* (Continued article.)
5. Perutz, F. *Abdominal Arteriosclerosis.* (Continued article.)
6. *Kayser, H. *The Technic of the Use of Ox-bile for Growing Typhoid Bacilli from the Blood.*
7. Grube, K. *A Method, Suitable for Private Practice, to Quantitate the Sugar in Urine.*
8. *Braatz, E. *Lead Poisoning Following Gun-shot Wounds.*
9. *Witzenhausen. *Phimosis as a Cause of Constitutional Manifestations in Childhood.*
10. Kaestle. *A New Device for Fixation and Compression in Roentgenography.*

1. Spielmeyer shows the points of resemblance between sleeping-sickness and general paresis, clinical and anatomical. The most striking of these is the lymphocytosis of the spinal fluid and the marked infiltration with lymphoid and plasma cells in the cortex, especially about the vessels. Degeneration of the pyramidal tracts, so common in paresis, was lacking in Spielmeyer's cases of sleeping-sickness. The relation of syphilis to trypanosome infections is interesting in this connection, for on the one hand syphilis is generally considered the most important cause of paresis and tabes, on the other, the author has produced the lesions of tabes in dogs by infection with the organism of tsetse-fly disease (trypanosoma Brucei). Should Schaudinn's theory that the spirocheta pallida is closely related to the trypanosomes be substantiated, the reason for this similarity in the lesions will be apparent.

2. This article by Groedel describes, with the aid of diagrams, the results of x-ray examinations of the stomach, chiefly after the ingestion of food mixed with bismuth. By the author's method of orthodiascopy of the stomach, exact measurements are possible. The x-ray examination gives a much more exact idea of the position and shape of the stomach than does the common method of inflation with air.

6. Kayser states that in using his method of cultivating typhoid bacilli from the blood (5 cc. sterilized ox-bile incubated 20 hours wth 2.5 cc. blood and then plated on Endo's or Conradi-Drigalski's media) it is best, in case of a negative result, to make other plates from the bile mixture at the end of 48 and 72 hours, because in some instances growth may be delayed. The use of pure bile salts instead of bile, as advocated by Meyerstein, has given inferior results in his hands. Kayser reports 94% of 69 cases positive by this method in the first week; the frequency with which bacilli can be demonstrated in the blood diminishes progressively as the disease goes on, falling to 43% in the third week.

8. Braatz has collected 6 cases from the literature in which the symptoms of lead poisoning followed gun-shot wounds at a variable period and disappeared after the removal of the bullet.

9. In Witzenhausen's cases phimosis in infants caused distention of the bladder with obstinate constipation, frequent urination and sometimes marasmus and convulsions. The prompt recovery from these symptoms after circumcision is worthy of note. [W. T.]

Therapie der Gegenwart.
May, 1907.

1. Fürbringer, P. *The Treatment of Bronchial Asthma.*
2. *Teichmann, F. *Therapeutic Uses of Digalen.*
3. *Meyer, H. *The Treatment of Chronic Constipation with Regulin.*
4. *Klemperer, G. *Escalin, a Drug for Checking Gastro-intestinal Hemorrhages and to Promote Healing in Gastric Ulcer.*
5. Uffenheimer, A. *The Theory of Infant Feeding from the Standpoint of Recent Biological Methods.*
6. *Mühsam, R. *The Treatment of the Urinary Retention of the Prostatic by Means of Suprapubic Fistula and Cystopexy.*

2. Teichmann reports on the results of the use of digalen in Stadelmann's clinic. Digalen is a pure crystalline preparation of digitoxin in a soluble form. When given by mouth it has much the same effect as preparations of digitalis; it is not adapted for subcutaneous or intramuscular use, because it causes local irritation. When given intravenously the effect is almost immediate, and there is a lengthening of diastole, the systole is stronger, the blood pressure rises and diuresis takes place. The rise in blood pressure is due partly to a vasomotor constriction which affects also the coronary arteries. For this reason the intravenous use of digalen is contraindicated in advanced cases of myocarditis and especially in coronary sclerosis, where the sudden rise in the peripheral resistance combined with a smaller supply of blood to the heart may result in collapse. The intravenous use of digalen represents a great advance in the treatment of acute cardiac failure where immediate stimulation of the heart muscle is required.

3. Meyer's results from the use of regulin (agar-agar plus a small amount of cascara) in the treatment of chronic constipation have been excellent, like those of most previous writers on the subject. Out of 71 cases 62 were favorably influenced, so that he considers it by far the best drug for constipation. Its special advantages lie in the fact that it is not necessary to increase the dose after long continued use, and that its action is almost wholly mechanical. The dose is a teaspoonful to three dessertspoonfuls a day, according to circumstances. It is best given in soup, mashed potato or apple sauce.

4. In escalin, Klemperer recommends an absolutely non-poisonous substitute for bismuth subnitrate in the treatment of gastric ulcer. It consists of very finely powdered aluminum mixed with glycerin and given in emulsion with water. The dose is 10 gm. Animal experiments showed that the aluminum forms a dense coating over the mucous membrane and is quite adherent to it. Twelve cases of profuse gastric hemorrhages all recovered under the use of escalin, and what is especially noteworthy, the blood soon disappeared from the feces, even for delicate chemical tests. In simple gastric ulcer without hemorrhages, the results were also very encouraging, for all recovered and the occult blood disappeared from the feces within 24 hours after the reappearance of the aluminum. The action of escalin is to make a thick crust over the ulcer, thereby stopping the bleeding and giving a chance for healing to take place.

6. The operation of cystopexy or attaching the bladder to the anterior abdominal wall has a beneficial effect on urinary retention secondary to hypertrophy of the prostate, apparently because it exerts a pull on the opening of the urethra into the bladder. In an old man whose general condition was so bad that prostatectomy was out of the question, Muhsam achieved a cure by the combination of suprapubic fistula according to Witzel, and cystopexy. Three months after the operation the fistula was closed and the function of the bladder normal. [W. T.]

Deutsches Archiv für Klinische Medizin, Bd. 89, Heft 5 and 6.

1. Matthes, M. *Some Observations on the Peripheral Circulation.*
2. *Kusumoto. *The Genesis of Renal Hemorrhage in Nephritis.*
3. *Linser, P., and Sick, K. *The Relation of Uric Acid and Purin Bases in the Urine and Blood of Patients Treated with X-ray.*
4. Müller, L. R. *Clinical Contribution to the Physiology of the Sympathetic Nervous System.*
5. *Külbs, F. *Clinical Contribution to the Pathology of Blood Pressure.*
6. *Bittorf, A., and Jochmann, G. *Contribution to the Knowledge of Sodium-Chloride Metabolism.*
7. *Rogge, M., and Müller, E. *Tabes Dorsalis, Diseases of the Circulatory System and Syphilis.*
8. *Schultz, W. *The Hydrocephalic Stage of Epidemic Cerebrospinal Meningitis.*
9. Hesse, E. *Influence of Smoking on the Circulation.*
10. Esser. *Blood and Bone Marrow after Cessation of Thyroid Function.*
11. *Schmoll, E. *Paroxysmal Tachycardia.*
12. Schieffer. *Cardiac Enlargement as the Result of Bicycling.*

2. In a paper published in 1906 (reviewed in this Journal, 1907, Vol. CLVI, p. 362) Askanazy discussed the occurrence of hematuria associated with chronic nephritis. He considered the hemorrhage to be the result of paroxysmal congestion intensified by the increased blood pressure of the condition. Kusumoto, in this paper, describes a case in which he found rupture of the small vessels of the pelvis of the kidney, which vessels histologically appeared to be veins. He does not think that the congestion theory advanced by Askanazy can be a satisfactory explanation of the condition, since hematuria is relatively uncommon in these forms of nephritis in which high tension is a very constant feature. Another explanation advanced is that the hemorrhage comes from the increased venous stasis associated with the act of defecation. However, physiologically, any increase in general pressure is associated with contraction of the renal vessels, but this matter of compensatory function may be absent in the vessels of chronic nephritis; consequently with the increase in general pressure, if there is associated a temporary venous stasis, this may be sufficient to produce rupture of the vessels. At any rate, in his case he has shown the actual anatomical rupture of veins in the pelvis of the kidney, without any associated inflammatory change.

3. The action of the x-rays on the metabolism in cases of leukemia has been very extensively studied, and especially the changes in the excretion of uric acid. However, these studies have given rather unsatisfactory results, because the patients are in such a physical conditions owing to the disease, that strict diet regulations cannot be carried out. Linser and Sick have studied the effect of the x-rays on the uric acid and purin bases in patients with normal blood condition, in which the diet could be strictly controlled; the cases were under treatment for local skin conditions. To exclude the exogenous purin bases a diet was used free from nuclein. Instead of short exposures to the x-rays, long exposures (4 to 8 hours) with the tube 100 to 150 cm. distant were used. It was found that these individuals showed as a result a decreased number of leucocytes associated with an increase of the total nitrogen excretion and an increase in uric acid and purin bases. They believed that both the leucocytes in the circulating blood and in the leucocytic tissue are affected. It is probable that this destructive action on the leucocytes is due to the formation of some toxic substance soluble and circulating in the blood. This view is supported by the long continuance of the leukopenia after exposure to x-ray cases and the incubation period necessary before the effect of the x-ray is evident. They found during exposure to the x-ray also an increase in the uric acid present in the circulating blood.

5. Here are recorded blood pressure observations on a number of cases representing various pathological conditions. Some of these are of considerable interest and

they make an addition to our knowledge of the blood pressure changes in certain conditions. The first case was one of tuberculous meningitis, in which cessation of voluntary respiration was followed by a greatly increased blood pressure (220 mm. of mercury). Artificial respiration produced at first a fall, followed by a rise to 200 mm. of mercury. These fluctuations in pressure continued, with the level constantly falling, until the patient died, two hours and twenty minutes after the beginning of the observations. In a case of angina pectoris the attacks were accompanied by rises in blood pressure. Both the attacks and the rise in blood pressure were favorably influenced by mechanical artificial respiration. In another case with the same condition there was a decreased blood pressure during the attack. A case of bronchial asthma showed an increased blood pressure and the attacks disappeared during artificial respiration. Other cases illustrated the possibility of the association of acute cardiac insufficiency accompanied by edema of the lungs and chronic passive congestion of the other organs with increased blood pressure. In a case of acute alcoholism the blood pressure was sub-normal, as low as 78 mm. of mercury, and the same was true of a case of tobacco poisoning. Four cases of high blood pressure in young individuals are reported. However, in these there is no report of the urinary condition and the presence of a chronic nephritis as a possible cause does not seem to have been considered. No general conclusions are attempted on the basis of these scattering observations.

6. These two observers in patients on low diet and in bed have determined the total fluid and sodium chloride content of the food and of the urine daily, and observed the effect of increasing at times the salt given. In pneumonia they find a decreased elimination of salt uninfluenced by an increase in salt given by mouth. The cause of this salt retention, they think, lies not in a primary retention of water, but in a peculiarity of the tissue and pneumonic exudate. In cases with pleuritic exudates they find no salt retention, but an increase in the salt output after increasing the salt intake. Salt can even act as a diuretic in these cases. In heart disease the water and salt excretion depends upon the circulatory condition, but each can be independent of the other. Salt increase in the diet does not lead to water retention, but can even have the opposite effect. The salt content of non-nephritic exudates, transudates and edema is frequently considerably higher than that of the edema of renal disease. In nephritis considerable variation was found in individual cases, but in general there is a good salt elimination which may be entirely independent of the water excretion. In most of these cases an increase in the salt of the diet increases the output of salt in the urine, and the relations of the salt excretion give no index of the severity or kind of renal lesion. The theory of a primary salt retention as a cause of edema is not supported by these observations. The edema appears rather to be dependent upon vascular changes. In no case were injurious effects observed from increasing the salt in the food, and consequently the salt-poor diet, as advised by others, seems to these observers unjustified, unless one means by such a diet merely a non-irritating diet, such as has been long used in nephritic cases. For them there is no virtue in a simple salt reduction in the diet.

7. Rogge and Müller point out the very great frequency of the association of tabes dorsalis and circulatory disease, especially disease of the aorta and aortic valves. In 24 selected cases two thirds showed this combination, and in one third there was aortic aneurysm. Another striking fact was the frequency with which the circulatory lesions were symptomatically latent. This association may explain some cases of sudden death in tabes and some of the so-called cardiac crises. It is also a further evidence of a syphilitic etiology, since we know that syphilis is a cause of such circulatory lesions, and rheumatism was strikingly uncommon in the past history of these cases. Not infrequently both conditions (spinal and circulatory) have been overlooked until the sudden development of a cerebral lesion ensued.

8. In cases of hydrocephalus following epidemic meningitis, Schultz has practised cerebral puncture. The result is a clearing of the sensorium, improvement of the appetite, cessation of convulsions and a general betterment of the condition. However, these are transitory, and most cases will probably finally die in spite of repeated tappings.

11. Schmoll has studied two cases by the graphic method, and concludes from these that paroxysmal tachycardia is due to the presence of extra systoles, which have their origin in the auriculo-ventricular bundle of His. [H. A. C.]

Revue de Chirurgie.
May, 1907.

1. *Tevrier, F., and Dujarier, C. *Prolonged Priapism.*
2. Le Damany, P. *Congenital Dislocation of the Hip.* (Continued article.)
3. *Schwartz, A., and Dreyfus, P. *Rupture of the Lung without Fracture of the Rib.*
4. *Délore, X., and Chalier, A. *Perineal Extirpation of Cancer of the Anus and Rectum.*
5. *Hardoüin, P. *Remarks on the Treatment of Glandular Cysts of the Pancreas.*
6. Dévé, F. *Hydatid Cysts of the Liver Containing Air.* (Continued article.)
7. Guibé, M. *Valvulus of the Small Intestine and of the First Part of the Large Intestine.* (Continued article.)

1. The authors have collected the histories of 48 cases of persistent priapism from the literature, to which they add one personal observation. Priapism lasting weeks or months may be of various origins: (1) nervous; (2) traumatic; (3) inflammatory; (4) leukemic; (5) idiopathic. The most frequent cause is found in leukemia. In the majority of instances only the corpora cavernosa are involved, though occasionally the spongiosum has been found congested, in which case there is usually difficulty with urination. The affection is often extremely painful. Whether the mechanism by which the condition is brought on be by thombosis, by a hematoma compressing the return blood vessels, or by nervous impulses, cannot be decided in the light of our present knowledge. Recovery is the rule. Of the 48 cases collected, 31 recovered spontaneously, 5 dying later of leukemia. Ten cases were cured by incision. The final result in most cases is probably loss of function. Operation is to be advised.

3. Schwartz and Dreyfus report the case of a man of nineteen who, falling under the wheels of a wagon, sustained a fatal rupture of the lung without fracture of any rib. A marked feature of such cases is emphysema of the neck and upper chest, the air reaching this location from the peribronchial and mediastinal tissues. Such cases nearly always occur in children or in young adults. The visceral pleura is often found intact, or presenting a few minute ruptures. Subpleural ecchymoses are numerous. In the author's case there was but little hemoptysis and only a moderate amount of blood free in the pleural cavity. [Such cases present a condition a step more critical, but in every way comparable with those of so-called traumatic asphyxia from compression of the thorax.]

4. The authors report the result of 19 cases of extirpation of anal and rectal cancer by the perineal route. The immediate operative result was favorable in all but 2 cases, one of which died of peritonitis, the other of collapse. The end results in 10 cases, lasting from four months to eight years after operation, showed either good health without recurrence, or death from some intercurrent disease. An artificial anus is to be avoided whenever possible and in the above series was used but once.

5. Hardoüin reports the case of a man of forty-eight who, three weeks after a severe abdominal trauma, noticed a mass in the epigastrium, somewhat to the left of the middle line. This was accompanied from time to time by violent colic, vomiting, distention and tenderness. There were neither sugar nor albumin in the urine. On distention, the stomach was found to lie in front of the tumor. At operation two liters of fluid were evacuated from a pancreatic cyst, the wall of which was found everywhere firmly adherent to neighboring structures. A second incision was made in the left loin, and the cyst drained through this, the original incision being closed. Recovery was prompt and in three months the fistula had closed. This procedure of bringing the walls of a large adherent cyst to the edges of a skin wound (called " marsupialization ") is strongly advocated when dissection and complete removal are impossible. [W. C. Q.]

RECORD OF MORTALITY

For the Week ending Saturday, July 13, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,456	559	Quincy	6	3
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	9	—
Baltimore	223	89	Brookline	4	—
Cleveland	—	—	North Adams	4	1
Buffalo	—	—	Chicopee	6	4
Pittsburg	—	—	Northampton	6	0
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	3	—
Providence	66	31	Hyde Park	1	—
Boston	184	58	Melrose	—	—
Worcester	35	11	Newburyport	—	—
Fall River	31	17	Woburn	6	4
Cambridge	16	4	Marlboro	2	0
Lowell	28	12	Westfield	5	1
Lynn	19	6	Peabody	—	—
New Bedford	23	3	Revere	4	2
Springfield	13	4	Attleboro	5	0
Lawrence	20	9	Clinton	1	0
Somerville	20	3	Adams	—	—
Holyoke	25	9	Gardner	3	—
Brockton	7	1	Milford	—	—
Malden	10	1	Watertown	1	0
Chelsea	5	2	Plymouth	—	—
Salem	6	1	Weymouth	—	—
Newton	6	1	Framingham	4	1
Haverhill	8	1	Southbridge	3	2
Fitchburg	8	3	Wakefield	—	—
Everett	5	1	Webster	—	—
Taunton	5	1			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 3, 1907.

Eager, J. M., assistant surgeon-general. Granted leave of absence for one month from July 8, 1907. July 3, 1907.

McIntosh, W. P., surgeon. Granted leave of absence for one month and fifteen days from July 25, 1907. June 26, 1907.

Stimpson, W. G., surgeon. Directed to proceed to Bellingham, Wash., for special temporary duty, upon completion of which to rejoin his station. June 27, 1907.

Stimpson, W. G., surgeon. Leave of absence granted Surgeon Stimpson for fifteen days amended to read for twelve days only.

Frick, L. D., passed assistant surgeon. Granted leave of absence for three days from June 22, 1907, under paragraph 191, service regulations.

Billings, W. C., passed assistant surgeon. Granted three days' extension leave of absence. July 1, 1907.

Stansfield, H. A., passed assistant surgeon. Relieved from duty at Havana, Cuba, and directed to report at the Bureau in Washington, D. C., July 3, 1907.

Schereschewsky, J. W., passed assistant surgeon. Granted leave of absence for one month from Aug. 1, 1907. July 3, 1907.

Salmon, T. W., assistant surgeon. Directed to proceed to Richford, Vt., for special temporary duty, upon completion of which to rejoin his station at Boston. July 2, 1907.

Sweet, E. A., assistant surgeon. Leave of absence granted Assistant Surgeon Sweet for fourteen days amended to read for eight days only.

Simpson, Friench, assistant surgeon. Granted leave of absence for seven days from June 22, 1907, under paragraph 191, service regulations.

Safford, M. V., acting assistant surgeon. Directed to proceed to Richford, Vt., for special temporary duty, upon completion of which to rejoin his station at Boston. July 2, 1907.

Stevenson, J. W., acting assistant surgeon. Granted leave of absence for twenty days from July 5, 1907, and excused without pay for the further period of two months. June 25, 1907.

Stoddard, C. S., acting assistant surgeon. Granted leave of absence for thirty days from May 20, 1907. June 28, 1907.

Tarbell, B. C., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Tarbell for ten days from April 15, 1907, revoked. Granted leave for thirty days from May 15. July 2, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Richford, Vt., for the examination of an alien immigrant. Detail for the board: Assistant Surgeon T. W. Salmon, chairman; Acting Assistant Surgeon M. V. Safford; Acting Assistant Surgeon J. H. Hamilton, recorder.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING JULY 20, 1907.

W. A. McClurg, medical director. Commissioned medical director from June 16, 1607.

F. W. F. Wieber, surgeon. Detached from command of naval hospital, Pensacola, and ordered to command the naval hospital, Canacao, P. I., sailing from San Francisco about August 8.

G. H. McConnon, assistant surgeon. Resignation accepted to take effect Aug. 1, 1907.

C. G. Alderman, assistant surgeon. Appointed assistant surgeon from July 9, 1907.

R. A. Campbell, acting assistant surgeon. Detached from duty on the Midway Islands and ordered home to wait orders.

F. P. W. Hough, L. W. McGuire, acting assistant surgeons. Appointed acting assistant surgeons from July 12, 1907.

M. C. Baker, assistant surgeon. Appointed assistant surgeon from July 12, 1907.

G. H. McConnon, assistant surgeon. Detached from the "Missouri" July 25 and ordered home to wait orders.

A. McK. Jones, acting assistant surgeon. Orders of June 12 revoked. Detached from the naval recruiting station, Chattanooga, Tenn., and ordered to the Naval Medical School Hospital, Washington, D. C., for treatment.

H. R. Hermesch, M. Boland, H. L. Dollard, E. P. Huff, H. L. Smith, W. G. Steadman, Jr., M. Donelson, E. E. Curtis, D. H. Casto, assistant surgeons. Appointed assistant surgeons from July 12, 1907.

J. D. Milligan, pharmacist. Unexpired portion of sick leave revoked. Ordered to the "Fish Hawk" July 27.

RECENT DEATHS.

Dr. Samuel Wimpelberg, of New York, died suddenly in Roosevelt Hospital in that city on July 12. He was graduated from the Jefferson Medical College, Philadelphia, in 1883, and till recently had practised at the Getty House, Yonkers, N. Y.

Dr. Charles Hodge Boardman, of Brooklyn, N. Y., who was a son of the late Rev. H. H. Boardman, D.D., of Philadelphia, died on July 16.

BOOKS AND PAMPHLETS RECEIVED.

The Delivery of the Lens for the Extraction of Cataract; Irrigation of the Anterior Chamber and the First Toilet of the Wound. By L. Webster Fox, A.M., M.D. Reprint.

High-Frequency Current in Ophthalmic Practice. By L. Webster Fox, A.M., M.D. Reprint.

Treasury Department. Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Report on the Origin and Prevalence of Typhoid Fever in the District of Columbia. By M. J. Rosenau, L. L. Lumsden and Joseph H. Kastle. Washington. 1907.

Deutsches Bäderbuch bearbeitet unter Mitwirkung des Kaiserlichen Gesundheitsamtes. Von Dr. F. Hinstedt and others. Leipzig: J. J. Weber. 1907.

Hay-Fever, Hay-Asthma, Its Causes, Diagnosis, and Treatment. By William Lloyd. London: Henry J. Glaisher. Chicago: W. T. Keener & Co. 1907.

Practical Fever Nursing. By Edward C. Register, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Report of the Commissioner of Education for the Year ending June 30, 1905. Vol. II. Washington. 1907.

Transactions of the American Dermatological Association at its Thirtieth Annual Meeting held in Cleveland, Ohio, May 31, June 1 and 2, 1906.

Massage, an Occupation for the Blind. By L. Webster Fox, A.M., M.D. Reprint.

The Alkaloids of Ergot. By George Barger, M.A., D.Sc., and Francis Howard Carr, F.I.C. Reprint.

Ergotoxine and Some Other Constituents of Ergot. By George Barger, M.A. (Cantab.), D.Sc. (Lond.), and H. H. Dale, M.A., B.C. (Cantab.) Reprint.

Address.

THE PAST, PRESENT AND FUTURE OF TUBERCULOSIS.*

BY FREDERICK C. SHATTUCK, M.D., BOSTON

There are obvious reasons why the honor of being asked to prepare the Shattuck lecture is peculiarly grateful to me. The terms of the will under which the society has established that lectureship provide that the income of the bequest shall be applied to the "collection and publication annually of historical or other essays on the climate of said Commonwealth, on the diseases of its inhabitants and on such other subjects as the said society or its government may select."

It is just one hundred years since Dr. Shattuck, having taken the degree of M.D. at the University of Pennsylvania, at that time the chief medical school of the country, settled in Boston. His father, Dr. Benjamin Shattuck, was a country practitioner in Templeton, Worcester County, an A.B. of Harvard in 1765, but apparently had no degree of M.D., there being no institution in the country at that time capable of granting it, and his circumstances not permitting him to cross the water to secure it.

His life was arduous and was brought to an end at fifty-three, I believe by tuberculosis. This disease also proved fatal to Dr. George C. Shattuck's first wife, probably to one or more young children, certainly to a daughter of twelve. Of seven children, the eldest alone grew up and married. Families of old New England stock are smaller to-day than formerly; but infant mortality is far less among them, so that the actual decrease in this stock is probably not as great as the smaller number of children would seem to indicate. However this may be, certain it is that the rigorous, changeable climate of New England has long had an evil reputation as being favorable to tubercular disease. This fact, in connection with the loss which consumption inflicted upon Dr. Shattuck's family, his desire to do what he could to make his beloved state healthier and happier, and the prominence which the prevention and cure of tuberculosis has assumed of late years in this community, as well as throughout the world, determined me to choose as my subject for the evening, "The Past, Present and Future of Tuberculosis." The subject may be well worn. It is, however, of vital interest, and I do not feel that I shall wear it out, whatever the effect of my remarks may be upon you.

Tuberculosis is no modern disease, its most frequent form and localization in the lungs — consumption — having been recognized and dreaded alike by the profession and the laity in the remotest times of which we have written record. And yet so universal and constant has been its presence in settled and civilized communities, so steady, sure and apparently unavoidable its ravages, that familiarity, although it did not breed contempt, did breed a certain indifference. Until the most recent times it was regarded as one of the manifestations of the inscrutable will of God, almost inevitably fatal, — a part of the necessary order of nature.

Kismet was on the lips of Christian, Jew and Mohammedan alike with regard to consumption. Thus, although dreaded, it was — and is — far less so than those infections which visit us only from time to time and to whose presence and effects we have thus not become so accustomed.

Hippocrates defined consumption as the disease the most difficult to treat and that which proves fatal to the greatest number.

Isocrates, about 400 B. C., is said to have been the first to write on the transmissibility of consumption by contagion.

Aretæus, about 250 B. C., recommended sea-voyages for consumption.

Two hundred years later Aritæus, the Cappadocian, thus described the appearance of the consumptive: "Voice hoarse, neck slightly bent, nose sharp and tender; cheeks lean, prominent and red; eyes hollow, brilliant and glittering; swollen, pale or livid in the countenance, the slender part of the jaws resting on the teeth as if in smiling, otherwise a cadaverous aspect."

Celsus, early in the first century A. D., advised change of air and outdoor life for phthisis. Let us note in passing that Celsus was a layman who set forth the medical knowledge of his time and of whose encyclopedic writings those on medicine have alone come down to us.

Galen held that phthisis is an infectious process; that there is danger in living with those affected by it. Then came the long, dark night of the Middle Ages when learning, so far from advancing in Europe, fell into a decline, barely kept alive by the monks until the Renaissance. Even the monks, however, devoted themselves to the Latins rather than the Greeks, and were interested in theology and religion, scarcely at all in natural science.

The Arabs, however, revered and tended the lamp of science lighted by the Greeks, and passed it on to the Moors of Spain, and the influx of Byzantine scholars into Italy after the fall of Constantinople greatly stimulated the awakening interest in Greek thought in that peninsula, whence it spread northward.

Avicenna, the Arabian, in the first half of the eleventh century, believed consumption to be one of the diseases which spreads from man to man.

Six hundred years later, Fabricius Acquapendente writes, "Celsus amongst Latins, Paulus Ægineta amongst the Greeks and Albucasis amongst the Arabs form a triumvirate to whom I confess that I am under the greatest obligation."

Montani in 1550 called consumption one of the most contagious and easily contracted of diseases. With the Renaissance came dissection illuminating anatomy and pathology.

Silenius first demonstrated the association between tubercles or nodules in the lungs and phthisis.

Morgagni would not perform an autopsy on one dead of tuberculosis, and was influential in having regulations passed by the municipal authorities to control the disease.

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*The Shattuck Lecture, delivered before the Massachusetts Medical Society, June 11, 1907.

Antonio Cocci in the first half of the eighteenth century advised the use of sputum cups, and urged the whitewashing of all close, small rooms in which a consumptive had lived. If the room was large and sunny less rigorous measures were deemed necessary.

Lazarus Riverius dwelt on the contagiousness of phthisis and notes its spread throughout an entire family by heredity or contact.

Michel Peter, writing about 1600, says, "I know of nothing more hideously fetid than the bedroom of a rich consumptive. It is a spot carefully enclosed where both air and hope are alike forbidden to enter. There are sandbags to doors, sandbags to windows, thick curtains envelope the bed where the unfortunate consumptive swelters in perspiration, and an atmosphere twenty times respired, twenty times contaminated by contact with his own diseased lungs."

The Dauphin of France, only son of Louis XV. and father of Louis XVI., died in 1765 of consumption. About a year later his wife died of undoubted consumption as shown by the autopsy, probably contracted through her devotion to him. About two months before her death Tronchin, the favorite pupil of Boerhaave, the physician and friend of Voltaire, a man who applied common sense to medicine, relying on hygiene rather than on bleeding, purging and puking, was called in. In the palace at Versailles it was the custom to close as tightly as possible all windows from November first (All Saints' Day) to Easter. Tronchin found the air of the room so foul that he ordered the windows opened, exclaiming, "The princess is poisoned." Malice and jealousy perverted the meaning of this remark, which won him the implacable hatred of the Duc de Choiseul. Tronchin was put in charge of the case, fed her generously, insisted on fresh air, made her walk and drive. At first she improved, the fever abated, and she slept without drugs; but the disease was too far advanced, lighted up afresh, and she did not long survive a large hemoptysis. A storm of abuse was heaped upon him by the profession. He was called the "worst of charlatans," and was accused of cutting short the life of his august patient by a treatment "as fantastic as murderous." Tronchin is not as well known as he deserves to be, having published nothing on medicine except a monograph on lead colic, which might have been better done. A memoir of him by a descendant was published in 1906 and should be widely read.

In 1760 a hospital was erected at Olivuzza for the accommodation of phthisical patients. In much more recent times the Italians especially, their country being sought by well-to-do consumptives from Great Britain and America, were accused by us of superstitious cruelty towards these patients, the friends of one who there succumbed to this disease being put to great inconvenience and expense during the last illness and the freshness of their grief.

In 1803 Chateaubriand wrote from Rome to a friend concerning the death from consumption of Madame de Beaumont, "I am in great difficulty. I had hoped to get 2,000 crowns for my carriages, but phthisis is declared in Rome a contagious disease, and as Madame de Beaumont drove two or three times in my carriages, nobody is willing to buy them."

The great Laennec himself succumbed to the disease, the recognition and pathology of which he had done so much to further. There seems no doubt that Goethe also had consumption and finally died of it.

It may be broadly stated that until within fifty years both the public and the medical profession regarded phthisis as incurable. Efforts were practically confined toward making the patient comfortable and prolonging his life, in a small way toward preventing the spread of the disease, seldom toward curing it.

Early in the nineteenth century a French doctor, more hopeful than the rest, wrote, "There are two kinds of consumption: that of the rich which is sometimes, and that of the poor which is never, cured."

It is an interesting fact that the two men who stood at the head of medicine and surgery in this community during my student and early professional life had both been tubercular as young men; but both lived to the due age of the psalmist, and both died of other diseases. I was privileged to hear from the lips of the late Dr. Edward H. Clarke an account of a massive pulmonary hemorrhage he had between Bagdad and Damascus while traveling for the benefit of his health.

Very great importance was attached to hereditary predisposition, and, diagnosis being less prompt and treatment less rational, the outlook for recovery was indeed gloomy.

I well remember in 1874 hearing a French physician, with whom I was making a visit at the Hotel Dieu at Lyons, remark, "*Messieurs, pour la phthisie il n'y a que deux remèdes, l'opium et la menterie.*"

I also heard the late Dr. H. I. Bowditch say that he valued his service at the City Hospital especially for the reason that it helped and strengthened him to see patients get well under his care. You remember that he was the first and leading specialist of his time in Boston in thoracic disease.

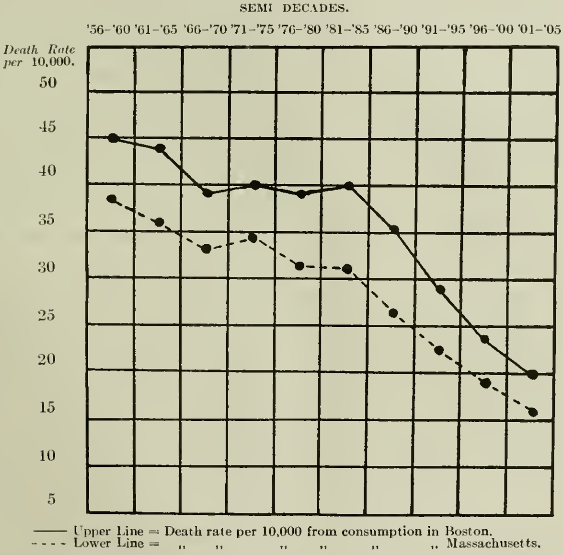
Those who could afford to leave home went to Italy, Madeira, Egypt, the Riviera. On this side of the water, Havana, Savannah, Charleston were the main resorts. Dr. John T. Metcalfe during the Civil War gave Nassau vogue, and later started Thomasville, Ga. He was not a consumptive as have been so many physicians identified with this or that place which they found helpful to themselves and made so to others.

Did time permit it would be interesting to dwell somewhat on the change of view with regard to the essential element of climate for consumption. Warmth and equability to minimize the risk of taking cold were in the ascendant up to about 1860. Then the equable though cold winter climate of Minnesota came into some vogue. Then equability fell from grace, and altitude combined with dryness and sunshine took the first place, especially for incipient cases. We now realize that climatic change, though in some cases very desirable, is not a *sine qua non* of cure.

Bowditch and Buchanan simultaneously and independently called attention to the relation of soil moisture to the prevalence of consumption, a relation now not much credited.

Some individuals were saved; some had their lives prolonged, yet the general hopelessness of the disease was admitted, though the post-mortem evidence of puckered and scarred apices had long been known but had failed to teach its full lesson.

CHART SHOWING DECREASE IN DEATHS FROM CONSUMPTION IN MASSACHUSETTS AND IN BOSTON.



It seems to me that ignorance of the pathology of tuberculosis was largely responsible for failure to advance at the clinical end. Laennec upheld the unity of tuberculosis; but the microscope led men astray at first, inducing them to confuse distinctions with differences. We had the desquamative pneumonia of Buhl, the catarrhal pneumonia of Niemeyer, and the dictum of the latter that the greatest danger of the catarrhal pneumonic, that is, consumptive, is that he become tubercular. We thus wandered in a maze of theory, based on observation it is true, but still theory, for years after Villemin in 1865 proved that the advocates of the infectiousness of tuberculosis were right, and made a step toward establishing the true criterion by which tuberculosis is to be recognized. For clinching knowledge as to this criterion we had to wait then nearly twenty years for Robert Koch and his masterly proof that a special bacillus is the sole cause of tuberculosis, and the indispensable factor in the production of all the multiform changes we had classed as consumption, lupus, scrofula, white swelling, hip and spine disease, etc.

The year 1882 marked a great era in medicine and may be regarded as dividing the past from the present of tuberculosis. We then for the first time began to see clearly, having found the cause, what we had to combat, and could begin to plan the intelligent campaign in which the civilized world is now engaged. The individual who was willing, bravely and cheerfully, to follow the directions of a wise physician and could also afford to do so, had a good chance fifty years ago, though in two respects particularly his chance has improved. His disease is recognized earlier, — a great thing in itself,— and his facilities for securing the prime *desiderata* for recovery are more varied and better.

A sharp contrast between the past and the present of tuberculosis lies in that good hope for recovery is extended from the exceptional to the average individual; in that we recognize and can minimize the danger of the spread of infection; in that knowing the cause of the disease and its mode of infection, by intelligent and concerted action we can prevent as well as cure. We knew that general hygiene was of the utmost value in the prevention and cure of tuberculosis just as we knew that stagnant water and defective drainage stood in some causative relation to malaria. The discovery that an infected mosquito is the necessary link in the chain of causation of malaria enables us to act intelligently and efficiently, instead of gropingly and inefficiently, along preventive lines, our cure of the disease in the infected man being practically no better than it was before Laveran discovered the plasmodium malariæ.

Let us not forget that a tent on the roof, a shed open to the sun and fresh air in the backyard of a city house, camp-life in the woods, are not " all that there is of the most modern," as the French say.

As appears clearly in charted form, mortality from consumption was dropping gradually in this state from 1855 to 1885, since when the drop has been more steady and somewhat more rapid. It is interesting to compare the mortality in Boston with that in the state. From 1855 to 1865 it fell from 45 to 40 per ten thousand; then was stationary for twenty years, and since 1885 has steadily dropped from 40 to 20. The constant influx of immigrants, many of them vulnerable, and their subjection to the adverse influence of urban tenement-house life and its adjuncts may, perhaps, account for the failure of the death-rate to decrease in Boston between 1865 and 1885, while the more rapid fall in mortality since 1885 may well be due to the measures of prevention and cure which are more apt to start in the larger centers.

It is safe to say that formerly scarcely a prominent and wealthy Boston family was free from its case or cases of consumption, often called " decline."

A century ago, and for many years after, women were subjected to many disadvantages. Robust health was hardly ladylike. Fashion in custom and in dress kept them indoors far too much. Outdoor exercise was limited to horseback riding for a very few, a drive or a social call at short distance on foot in good weather. Athletics would not have been tolerated for women even if they had existed. Female footwear was not adapted to the street, still less to country roads, and I have it on good authority that drawers were not worn by women until less than one hundred years ago, it being considered indelicate to clothe that part of the person so nearly after the manner of men. One of the numerous daughters of a wealthy merchant, all of whom long held out against the introduction of drawers for women, was remonstrated with by one of her friends who remarked, " But suppose you should fall down in the street," to which she replied, " A *lady* does not fall down in the street." It is not in flippancy of spirit that I mention these facts. They seem to me to throw an interesting sidelight on the times, and to give a hint as to why practically none of the descendants of those families die of consumption at present. Now and then one gets the disease, but it is promptly recognized and almost invariably cured. It is, however, time to leave the past and to let the dead bury their dead.

Strengthened by and relying on modern knowledge, we are now engaged (I), in the prevention of tuberculosis in all its forms, and (II), the cure and care of those now infected by it.

I. As already stated, it is in prophylaxis especially that we have gained by Koch's discovery. A few words must therefore be said on the mode of infection. The seed is the bacillus of tuberculosis; it is virtually omnipresent in civilized and settled communities; it succumbs readily to sunshine. How long it may retain its vitality in houses, fabrics, etc., we do not know, perhaps not as long as is often and by many believed. Theobald Smith tells me he cannot keep a culture alive more than three months even under conditions most favorable to the longevity of the organism. To his published work and ready kindness in imparting his knowledge I may here express my indebtedness. We are all his debtors. The bacilli of human and bovine tuberculosis are separate organisms to-day even if they may have had long ago a common ancestor. The bovine form occurs practically only in young children, is rare in them, and the risk of its communication from cattle to man is very small unless the udder is tubercular. Under no other condition can a sufficient number of bacilli gain entrance to the milk to prove harmful. The meat is safe as food. It is therefore irrational, unlimited funds not being at our disposal, to kill all cattle, otherwise well, which react to tuberculin. Much less money intelligently spent in dairy inspection, enforcing cleanliness, detecting and eliminating emaciated and sick cows, will serve all necessary prophylactic purposes.

Tuberculosis itself is very rarely congenital, so rarely that for practical purposes we can leave this mode of infection out of account. Whether the seed of adolescent and adult tuberculosis is planted in childhood, reaching the blood stream and lungs *via* the tonsils and intestines, as is held by so many of the French and by Behring, or not, is somewhat apart from the broadest view of prevention. In so far as they believe the implantation to come from milk they are probably wrong, the non-identity of human and bovine tubercle having been apparently proved. All floors are not clean. Babies in crawling and walking are close to them, and like dogs they are not over particular as to what they put in their mouths. The seed lives in man and must be able to get from one man to another, to change its dwelling, in order to persist. Its vehicle is the sputum in the vast majority of cases. It is therefore by efforts tending to prevent the preservation and diffusion of the sputum of those affected that we can most simply and efficiently limit the supply of seed, which furnishes such a rich harvest to the Great Reaper. It is fortunate that a remedy which must be generally applied is so simple, — really within the reach of the lowest intelligence and the most slender purse. The community as a whole is rapidly learning its interest in the care of sputum. The individual is, probably less rapidly, awakening to his duty, first, as a member of a family; second, of the community. We must continue to diffuse this knowledge and to enforce, as fast and far as we can, action in accordance with it.

The only way to absolutely eradicate tuberculosis lies in total destruction of the seed, a conceivable rather than an attainable possibility. It is notoriously a seed which flourishes on poor soil. Whether poor from the start — congenitally poor — run out in one or more of a thousand ways, or both together, matters little for practical purposes, save that the children of families with a strong tuberculous taint must be tended with extra care and wisdom. Therefore an important part of prophylaxis is to so enrich the soil, that is, to so increase the resistance of every member of the community, that such seeds as may gain lodgement will die without issue, or, at all events, without extension. Thus everything which tends to improve public health is helpful — cleanliness; good and sufficient food, well prepared; pure and ample water supplies; public parks and baths; children's playgrounds; legal restraints upon the greed and stimulation to the inertia which neglects the hygiene of tenements, workshops and factories; cultivation of a taste and provision for the means of outdoor exercise and recreation. These are far from being all, though they are among the most important agencies uplifting the public health. It is to them that the decreasing mortality from consumption up to 1885 is to be exclusively credited. Nothing like an accurate apportionment can be made of the relative value of seed destruction and soil enrichment since that date. Seed destruction is a new factor within twenty years; but during this same period we have seen ever-increasing attention to hygiene in all its branches, especially on the part of the state and the municipalities. The golf course and tennis courts in Franklin Park, the ocean pier at South Boston, public baths, the medical inspection of school children — imperfect as it is at present — these are straws which show the way the wind blows. Straws they are too in another sense, threatening to break the back of that patient camel, the city tax-payer, burdened with an extravagance — or worse — of expenditure, which no private business could or would tolerate. Quick transit tends to diminish the density of urban population. Corporations, partly under the pressure of public opinion and legal enactment, but also from the mingled motives of justice and self-interest, improve the conditions of their employees. Public-spirited and benevolent citizens are forming new organizations, and are also as individuals helping along the work. All indications point to great vitality in these influences making for the public weal. Individualism, the saving grace of fifty years ago, has been weighed in the balance and found wanting. Its antithesis, socialism, is advocated by some and feared by others, though the soil of the United States is probably less fitted for it than any other on the globe. The legal maxim, *caveat emptor*, is confronted by pure food and other laws limiting the freedom of the individual for the greater good of the community. The individual must be ready to forego privileges, some of them perhaps innocent as far as he alone is concerned. President Eliot well said in a recent address that it is in co-operation that we can attain the best results, and nowhere will co-operation enriched with public spirit yield a richer harvest than in, wisely and along broad lines, striving to prevent tuberculosis.

Among prophylactic measures, those of which Grancher may be regarded as the parent in France must be mentioned. In that country the belief is widely held by physicians that tuberculosis is usually contracted in infancy and childhood, even if it does not develop until adult life. Grancher and his wife started the movement to remove the children of tuberculous parents with their consent to country houses or sanatoria until the children are strong enough to resist the disease. It is claimed that 50% of those children are cured. There are only two such sanatoria on our greatly extended seacoast. Children with enlarged glands — tubercular — and those debilitated from any cause,— pre- or potentially tubercular — are followed up to their homes and either removed to "*écoles de plein air*" or built up at home by generous diet and instruction of the parents in general hygiene. It has been found far better to enlist the interest and intelligent co-operation of parents in better feeding than to furnish milk and eggs and the like at school. This work is growing rapidly and is in private hands, not, as is usually the case on the Continent, under governmental control or pay.

The proposed extension of medical inspection of the Boston school children and a detail of nurses to visit and teach the families could render great service along these lines, and may, it is hoped, spread widely and rapidly.

II. We now pass on to a brief consideration of the measures at present under trial for the cure and care of those not only infected but diseased. As Theobald Smith keenly observes, infection and disease are not quite one and the same thing. A person may be infected — harbor the bacilli of tuberculosis perhaps indefinitely — and yet remain perfectly well. He is not diseased, strictly speaking, until the infection spreads locally or generally.

Perhaps clearness may be promoted by the rough separation of the advanced and the early cases. I say rough advisedly, inasmuch as the best means to combat tuberculosis is a new subject, experimental, somewhat chaotic, rapidly developing. The leading principles are fairly clear; but we are to learn how to apply them to existing conditions in a decentralized country composed of forty odd sovereign states, presenting often wide divergencies in climate, industries and other important respects, not only between but also within each other.

Measures desirable in and applicable to Germany, for instance, may be entirely out of place in this country. It is in some regards easier to classify for the future than for the present.

Cure can be expected in very few of the advanced cases. In such we may aim at prolongation of life, promotion of comfort and the safety of others.

In the well-to-do the disease is usually recognized early and pretty well cared for at the present time. Among cleanly people with reasonably spacious, sunny and airy quarters, the risk of the spread of infection is very small. This appears clearly from the experience of the older hospitals and sanatoria for consumptives in Germany, England and this country. In such hospitals it is not common for attendants to acquire the disease, though Dr. James Minot tells me that six nurses have developed consumption at the Long Island Hospital since 1896. They all entered the training school with a physician's certificate of good health. He does not know whether or not they were examined soon after their arrival upon the Island. City politics are killing to body and soul alike.

Dr. Nichols, however, writes me that during the fifteen years he has been connected with the State Hospital at Tewksbury, one physician can reasonably, and two officers possibly, be supposed to have contracted the disease there. He also states that he has never had any evidence of the spread of the disease from one patient in the institution to another; and yet during the first half of this period segregation of consumptives was very incomplete, and those exposed, being paupers, were presumably not up to the average standard of resistance. Those who wish so to do can contrast here Boston and the state.

In the House of the Good Samaritan for over fifty years half the adult inmates have been consumptives, generally advanced cases, and no attempt at segregation was made until removal to the new building two years ago. During this half century, among all employees one nurse alone contracted the disease within the walls as far as is known. A good illustration of what can be done even under very unfavorable conditions is afforded by the so-called " lung block " in New York. It is in the most congested and crowded district in the world, the ward containing it averaging 78 human beings to the acre. This block alone holds nearly 4,000 people, of whom some 400 are babies. It is closely packed with huge grimy tenements which are honeycombed with rooms. Light and air have been slowly shut out to make more rooms. Walls, courts and airshafts are cramped, deep and sunless. The body of the block is packed with Jews, Irish and Italians, with a sprinkling of twelve other nationalities. Owing to the comparative immunity to tuberculosis among the Jews there are relatively few cases of consumption in this block in their race. One house, called the " Ink Pot," has front and rear tenements five floors high with a foul, narrow court between. Here live 140 people of whom 23 are babies, and here the plague thrives in darkness and filth, — filth in the halls, over walls and floors, in sinks and closets. On the ground floor in one corner where there is apparently little sun and light lives a German family who have kept their windows opened and their rooms well aired and spotlessly clean. They alone have escaped the disease. Practically every other tenement in the block has had its case of consumption.

It is of the utmost practical importance that the public should clearly understand that while tuberculosis is infectious its infectivity is slight, provided that simple precautions are taken.

Advanced cases, among those who, though not well-to-do, can still provide for themselves reasonably well and therefore usually stay at home, are a very important class to find, educate and follow up to see that they and those with whom they live practise what they are taught. Advanced cases among the very poor, who require so much personal attention, to say nothing of such food and hygiene as their families and friends cannot provide, are best cared for in hospitals, public and private.

At the State Hospital at Tewksbury, Dr. Nichols writes me under date of March 25, there are 247 cases of tuberculosis. In a special building and neighboring camps and shacks, half a mile from the main hospital, 160 men are cared for; but the cases have been sent in such numbers this winter that it has been necessary to put about 30 men in the earlier stages of the disease in the regular hospital wards. Dr. Nichols is asking the legislature for an addition for fifty patients to this building, merely to meet present and urgent demands. A building for female consumptives, also more than half a mile from the main buildings, will be ready for patients this spring. This is the only public state provision at the present time in Massachusetts confessedly for advanced cases; and to enhance its usefulness, the legislature a year ago so changed the law as to allow its benefits to consumptives without thus making them legal paupers. The Boston Hospital for advanced cases will be opened before long. There are a few private institutions solely for advanced consumption. There are others which receive such cases in common with other more or less incurable chronic diseases. The present provision is quite inadequate. It is true that less than one-third of the cases at the Rutland Hospital belong to the incipient class. Although it was for that class that the hospital was designed, not enough incipient cases apply to fill the beds, and more advanced cases are therefore taken. For this state of affairs the resident physician blames the medical profession in that it too often fails to make an early diagnosis. This blame is probably in the main deserved, though we all see patients who seek no medical advice until they have passed well beyond the incipient stage. The number of these cases will doubtless steadily diminish in the near future.

The present provision for less advanced and early cases in this state may be classed under:

1. Sanatoria.
2. Dispensaries.
3. Day camps.
4. Tuberculosis classes.

The sanatorium treatment dates back to 1851, Brehmer, of Goebersdorf, succeeding where Bodington had failed. The latter should be accorded the tardy credit which he did not receive during his life. In 1840 he, " an obscure country practitioner of Warwickshire," published an essay on " The Cure of Pulmonary Consumption on Principles Natural, Rational and Successful," based on the case of a young girl whose faith in him prevailed against the most strenuous opposition of her people and who passed her days, even in winter, out of doors on donkeyback. Although at first her cough was worse, she persevered, recovered, and lived to be eighty-one years of age. He built an institution within which to carry out his ideas, but could not hold out against universal opposition and transformed it into an insane asylum where later he died — a tragic story. Time does not permit even a brief history of the sanatorium movement, but I cannot forbear to mention Dettweiler, Trudeau and Vincent Bowditch. The first sanatoria were private, and our state took the lead in public provision for early cases at Rutland. It will not be many years before every state has one or more such centers, the movement now spreading to cities and towns.

It is natural that provision should be first made for early, presumably curable, cases. " What can't be cured must be endured." We like to see prompt results. The educative value of sanatoria for incipient cases is at present great. Every inmate learns what the effective weapons are for fighting his disease and how to use them. After his discharge this knowledge filters more or less clearly through him to others who stay at home, and also teaches him, and through him others, how to live without risk to the well. We already see, however, indications of a spreading belief that the greater need is for hospitals to receive advanced cases with disabling and incurable disease, and whose circumstances are such that they cannot at home receive the care which ordinary humanity demands, or be safe companions for the healthy. The State[1] Commission on Tuberculosis has just recommended the legislature to establish three hospitals in different parts of the commonwealth for such cases. It does not advise any more provision for early cases. Institution life at best has serious disadvantages, particularly for those but partially or slightly disabled. Such degree of productive or useful occupation as strength permits is conducive to health. This is difficult to secure in connection with sanatorium life, and it has been suggested that some kind of farm work be an adjunct to Rutland for those who are fit.

This can only be carried out during a limited part of the year. An objection common to health resorts and sanatoria alike, whether for the rich or poor, lies in the congregation of considerable numbers of persons suffering from the same disease, and in tendencies to a mental state resulting therefrom. The person who stays at such a place longer than his disease and circumstances in a large sense really demand from that moment gets harm physical, mental or both. Here, as everywhere in medicine, we must individualize as far as we can, and we can often do so farther than seems possible if we will only compel ourselves to the hard work of thinking.

Such luxurious provision as is made in some of the German institutions is neither necessary nor desirable. It is sheer extravagance begotten of too much money, analogous to that of some of our life insurance companies which have been so cussed and discussed of late. Just as we have begun to see that climate is only an indirect means for the treatment of cases of tuberculosis; that there is no part of the world where the disease does not exist if favorable conditions are present or are introduced, great advance is made in home treatment, which must and should be the only treatment for the great majority of cases.

This brings us to the tubercular dispensary of which Philip, of Edinboro, was the founder in 1887. The Royal Victoria Dispensary was not only the first of its kind but is so complete to-day as to serve as a model.

The Edinboro organization aims to provide:

(1) A place where poor patients can be examined;

(2) Where bacteriological examinations can be made;

(3) For instruction of patients;

(4) Dispensary for drugs, disinfectants, food, etc.;

(5) Visits in homes of patients by
  (*a*) doctors;
  (*b*) nurses;

(6) Means for the selection of early cases for sanatoria and late cases for hospitals;

(7) For the general guidance of patients and their friends, to answer inquiries from all interested persons on every question concerning tuberculosis.

There are four doctors (one is paid $300 a year), a trained nurse, a volunteer Samaritan Committee of ladies who look after school children and families of patients. There is a paid employee on the premises who helps take histories, etc. The dispensary costs $2,500 a year. Interest has been awakened in other cities and towns. There is now a sanatorium for early and a hospital for advanced cases. To complete every such organization there should be colonies — or some means of keeping track of the after life of arrested or cured cases, and of getting them proper employment, etc.

Calmette at Lille in 1900 opened the Emile Roux Antituberculosis Dispensary. His idea has been taken up in Germany especially by Van Pütter and Kayserling, where numerous cities have opened so-called " Fürsorge-stellen," " Care and Advice Stations." Here instruction is given to patients who must live at home; sputum examinations are made, food and medicine are given when necessary, and visits are made in the homes of the patients themselves. In Boston in 1899 at the Boston Dispensary this idea was adopted. The Phipps Institution, opened in Philadelphia in 1903 through the generosity of Henry Phipps and under the guidance of Laurence Flick, does this on a more thorough scale than almost anywhere else. In New York the Department of Health Clinic for the Treatment of Communicable Pulmonary Diseases, established in 1903, is the best example of such work under municipal authority.

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[1] Since this was written the legislature has adopted the recommendations of the commission and the Governor has appointed a commission to build these hospitals. State sanitary inspectors have also been appointed.

Recently in Boston the system of tuberculosis classes has been introduced, and thanks to the enthusiasm and devotion of Drs. J. H. Pratt and J. B. Hawes, 2d, and Cleaveland Floyd, is bearing most promising fruit. This gives a large amount of care to a small number of patients, the reverse of what is done in most dispensaries. The "class" is a unit which can be indefinitely increased. Five such classes have been formed in Boston, two in New York, and one each in Cambridge, Providence, Brockton, Lynn and Baltimore.

Philip, of Edinboro, and Calmette, of Lille, are the two great names in dispensary work. Calmette's are called Preventoriums. Besides giving milk, eggs, etc., to poor patients, in some instances the rent is paid, it being considered a good investment.

Day camps originated in Berlin — "Walderholungsstätte," founded by Dr. Becher. Insurance companies pay for the food, and railroads give special rates to and from the camps, two cents for eight miles. These camps are for patients too advanced for sanatoria or who for some reason or other must live at home. There are two such in Boston, the only two in America. Berlin has three, the only ones in Europe.

The weapon against tuberculosis is education: education as to how it is spread, how prevented; how treated for cure and alleviation, and for safeguarding the community. The campaign is on. Earnest, devoted leaders have come forth from the profession, working with small thought of money return. The public is ready to help, to co-operate with brains, time, money, service. Are we doctors as a body doing our full share? I doubt it. Too many of us, I fear — I myself cannot plead not guilty — are more or less afflicted with inertia, congenital or acquired. There is a large supply of enthusiasm everywhere among the laity, which only needs the direction of physicians to bring new land under cultivation as well as to increase the yield of that already planted.

We cannot realize too strongly that everything which tends to elevate the public health, directly or indirectly, makes the struggle for existence of the tubercle bacillus harder. At one or another place in the world almost every necessary specific step for prevention or cure is taken. One place or country has given special attention to one branch of the work and gone far in it; another to another branch. Some places have done little; too many nothing. The work of the immediate future, therefore, would seem to lie in generalizing and systematizing the work in conformity with the varying modes of government and administration of each country and independent state, with due consideration of its customs, conditions, industries, etc. Modification of details must be made to meet the different demands of large cities, the factory town, the village and rural community. Just as good results can be secured where local self-government prevails as under a centralized and paternal system; but people must be made to see their importance and to desire them, securing proper legislation and ordinances, and providing means for the enforcement of the same. In our own state, the work for the immediate future would seem to lie in:

1. The passage of a general law making the reporting of consumption compulsory. But no such law can be thoroughly efficient unless the medical profession as a whole is competent to make an early diagnosis, and is in such sympathy with the law that the physician puts obedience to it and its underlying principle above the selfish preference of this or that patient and above any fear that he may lose practice by reporting him. It is not likely that such opposition will be very serious or long-lived.

2. Laws providing for the disinfection of dwellings occupied by the consumptive after moving or death.

3. An extension of the anti-spitting law, so as to include at least factories, mills, schools and the halls of tenement houses.

4. Legislative provision for state medical inspectors, responsible to the State Board of Health, each in charge of a district within which he supervises organized work.

5. Each community in the organization should have such force of nurses, visitors, or both as each may need; that the poor may be followed up in their homes, taught what to do, helped to do it, if necessary, and encouraged to persevere in doing it. Much of this can be done without, or with trifling, expense. There is much intelligent energy running to waste which can be turned in this direction.

All the above recommendations are made by the State Commission to investigate measures for the relief of consumption. Their report should be read and pondered by every physician.

Immense service can be rendered by arousing the interest of private and incorporated employers of labor in mills and factories. When the example set by the A. L. Joslin Company in this state and by the Sharpe and Brown Company and Mr. Metcalf in Providence at the instigation of Drs. E. P. Joslin and Fulton is generally followed, the mortality returns will tell the story, and there is no reason why it should not be followed if we physicians do our duty. Mill owners and managers are as a class intelligent and humane. Let their physicians call attention to this matter. It is highly probable that there will be no economic loss to the employer. There is more likely to be a gain to him, and the gain to individual workers, as well as the community, is sure to be great.

The tuberculosis exhibitions which have been held are potent aids in teaching the public the possibilities of prevention and cure. Such exhibitions should be brought within reach of the great majority of the inhabitants of the state. While the campaign is primarily against tuberculosis, success in its prosecution must indirectly diminish the liability to, or serious effects of, many other diseases more or less intimately dependent on impaired vitality.

Past experience proves that the mortality from tuberculosis can be greatly reduced. There are those who go so far as to say that a systematic and energetic fight will render tuberculosis as rare as leprosy. Unless a vaccine comparable to that for smallpox, or some other means producing artificial immunity, can be discovered and universally applied, the above view would seem too sanguine. The problem of leprosy was a relatively simple one. That disease is far more difficult to transmit from one individual to another than is tuberculosis. Its lesions are mainly external and it is thus more easily recognized. The segregation of leprosy carried out during the Middle Ages could thus yield results hardly to be hoped for in the case of tuberculosis, an adverse factor in the attempt to stamp out which lies in that, unlike most of the more acute infections, it can be carried and perpetuated by a number of domesticated animals — cats, dogs, rabbits. The tubercle bacillus is being put on the defensive and we can be sure will fight for his life just as we are fighting for ours. Is it not possible that more resistant and virulent strains may develop, if not wholly, at all events partly, in proportion as we develop immunity? That nature is very careful of the species while seemingly regardless of the individual is as true of a bacillus as of larger organisms. Man has totally exterminated the great auk. The Labrador duck has utterly disappeared since 1860 without any assignable cause. The bison and the wild pigeon have practically disappeared. Animals which breed slowly, are defenseless, and, like the bison, require vast tracts of land coveted by civilized man, are handicapped in the struggle for existence. I am told that the few herds of bison which are preserved only just about hold their own, showing very slight, if any, tendency to increase. The balance of nature is very complex and may be very delicate. It does not seem probable that the disappearance of the wild pigeon, such enormous flocks of which still existed easily within the memory of many of us, can be attributed save in subordinate part to their slaughter by man. The part played by man in the extinction of the bison is probably larger than in the case of the pigeon. The preserved herds of bison are well cared for but can no longer migrate. Why do not they increase under protection as do moose and the white-tailed deer? Is it not possible that these beings had about reached their limit of adjustment to external conditions and that any slight change in the balance against them was too much for them? Our lives, and even the written records of man, are so short, and it is so hard for us, busy with our daily struggles, to project our thought and imagination far enough backward or forward. Man himself is a mere babe in arms in comparison with life on this planet, and his parasites in their present form must be younger still. The destructive moths which have caused so much trouble in these parts of late years find no adequate natural enemies in this country. In Europe they ordinarily are kept within bounds, but even there they now and then get ahead of their enemies for a time by reason of some change in the balance.

This line of thought may not be practical. It certainly does not materially influence action now or in the immediate future, but is seems to me deeply interesting and wholly pertinent to our subject of the evening. There is no tendency to race suicide in the tubercle bacillus. He finds an acceptable *habitat* in man, whose numbers are increasing and whose tendency in civilized countries to form large communities runs directly counter to some of the measures which he takes to protect himself against the bacillus. We know that we are decreasing and can further diminish the mortality of tuberculosis. Can we correspondingly decrease the morbidity? I doubt it. Tuberculosis seems likely to persist for a long time to come, perhaps indefinitely, in latent, more superficial, milder and more chronic forms. There can be no question that there are many persons — in all probability there are some such in this very room — who have or have had tuberculosis, even of the lungs, and who tolerate or have recovered from it without knowing that they have or have had it. Here again comes in the distinction of Theobald Smith between infection and disease. It is mainly to his suggestion that I owe the above line of thought.

If the master-word in medicine is work, that in the tuberculosis fight is education. Every teacher knows this to involve work — hard work. To paraphrase Talleyrand's definition of the main requirement of the diplomatist we can say, "*De l'éducation, encore de l'éducation, toujours de l'éducation.*"

The effort to compress so large a subject into reasonable limits has not been an altogether easy one. I trust that my sins of omission and commission may not be as obvious to you as they are to me.

Original Articles.

THE DAILY CARE OF CONSUMPTIVES AT A GENERAL HOSPITAL AS AN AID TO SOLVING LOCAL TUBERCULOSIS PROBLEMS.*

BY ARTHUR K. STONE, M.D., AND CLEAVELAND FLOYD, M.D.,
BOSTON.

In January, 1905, Dr. E. P. Joslin and myself, in our annual report, made the following recommendation to the Board of Managers of the House of the Good Samaritan who were expecting in the near future to build a new hospital building:

> "It is hoped that means will be found whereby women and children will be encouraged to come to the House of the Good Samaritan and spend the day in the open air, receiving a mid-day meal, encouragement and advice, and return to their homes late in the afternoon in time to prepare the evening meal."

At this time neither Dr. Joslin nor myself had any knowledge of a somewhat similar experiment

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*Read at the meeting of the American Climatological Association in Washington, May, 1907.

Protection from the high winds.

The Camp in winter.

The Camp from the Samaritan Hospital. Harvard Medical School Buildings in the background.

being tried in the day camps for tuberculosis in Berlin. From long experience in out-patient work at the Massachusetts General Hospital and the Boston City Hospital, we had become dissatisfied with the inadequacy of such treatment as could be offered many ambulatory patients, and I had already urged upon the administration of the Massachusetts General Hospital the development of a roof garden, that should be conducted along lines similar to those outlined above. As yet the necessary funds to carry out these plans have not been forthcoming.

May, 1906, the managers of the House of the Good Samaritan undertook the experiment suggested in the above recommendation and appointed Dr. Cleaveland Floyd to have charge of the out-patients under the direction of the medical staff. It is the story of the year's work at the House of the Good Samaritan which I wish to present to you.

Before beginning upon the detail of the work I will say a word as to the hospital. The House of the Good Samaritan is an endowed institution, managed by a board of trustees, who are largely made up of the personal friends and relatives of the founder, Miss Anne S. Robbins, who devoted her long life to the management of the institution, living and dying within its walls. Her example and enthusiasm are shared by those who now carry on the work. The new building is the first of the group of hospitals which will eventually surround the beautiful new buildings of the Harvard Medical School. There is about an acre of land around the House of the Good Samaritan. The hospital was open to patients more than a year before the opening of the new medical school buildings, and daily clinics were held there. There are accommodations for about 43 patients. Twelve beds are devoted to children's orthopedic cases. The remainder of the beds are divided between cases of advanced phthisis and general chronic conditions. The House of the Good Samaritan is in no sense a " home " but a hospital for the treatment of chronic disorders. The members of the medical staff make daily visits. There is a teaching laboratory and a graduate house-officer in attendance, a Baruch hydrotherapeutic apparatus is in process of installation, and the solarium and balconies provide an abundance of fresh air.

The wards for the tuberculous patients and the non-tuberculous are separated from each other by single rooms, dining-rooms, bathrooms, etc., so that there is no contact between the two groups. Those who are able, however, eat in the same room, but at different tables and have china of different colors. The china of the tuberculous patients is cleansed and sterilized by boiling in an entirely separate room from the general serving-room where the dishes of the non-tuberculous patients are washed.

In passing I may add that, so far as is known, during over forty-six years of the hospital's history, but a single case of tuberculosis has been acquired by any of the hospital staff; many of the servants have been with the institution over twenty years, and a number of matrons and nurses ten to fifteen years.

The active attention to the care and treatment of advanced cases yields as great satisfaction as do the cases reported by Dr. Bonney last year. Cases are arrested and all traces of bacilli disappear; some improve so much that the State Sanatorium at Rutland is ready to receive them, and others go to pleasant country surroundings among friends. Even those who do not recover, nevertheless amply repay the care that is bestowed upon them by the way in which they respond to treatment, so that their last days are days of comparative comfort.

The nurses employed in the wards are all graduate nurses. They are under the direction of the superintendent and her assistant, both graduates of the Boston City Hospital Training School. There are, including two night nurses, ten nurses to look after the patients and the operating room, etc., the expense for salaries and wages alone being $7,479.48 a year.

The heat, light and power are furnished by the power plant of the Harvard Medical School, which is designed to furnish similar service to all the other hospitals and buildings which shall be attracted toward this medical center.

The expense of running the hospital amounted last year to $10.79 per week for each patient, which is, of course, a large sum, as the care for such cases is usually computed; but considering the care and attention and food that the patients receive, the cost is very moderate indeed.

After the new hospital had been in satisfactory running order for the space of six months the medical staff renewed their suggestion that an " out-patient " department should be started. They now had the experience that had been acquired by the successful operation during the previous summer of the day camp conducted by the Boston Society for the Relief and Control of Tuberculosis. It seemed to Dr. Joslin and myself that the expensive plant which was in fine running order could extend its sphere of usefulness greatly at a very small additional cost. The managers generously agreed to try the experiment, even though it necessitated some alterations in the new building to arrange for a dining-room for the out-patients and a separate sink at which their dishes could be washed.

A portable house was purchased which was put up on the south side of the main building and away from the street. This is screened thoroughly on three sides and can be used if the mosquitoes are too thick for comfort or in case of a sudden shower or hard storm. But for the most part it serves as a store-house for chairs and blankets, books and clothes, rather than as a sitting-room. In the stormy days of winter, in case of disagreeable winds, the patients sit upon a cement platform beneath the balcony of the main building, where they are protected on three sides from the weather but having fresh air and sunshine from the open southern exposure. Here there is room for 25 steamer chairs in a row. Whenever the weather is at all suitable, however, the patients bring their chairs into the open and away from the buildings. During the hot days of the summer the patients move to the eastern end of the building for the sake of the shade. Harvard College has also kindly given the use of some unoccupied ground immediately behind the main building of the hospital on which there are some trees. This is very helpful, as in the summer there is an uneasiness among the patients caused by the heat that can only be alleviated by the possibility of a change in location. In the colder months the patients are contented to stay perfectly quiet in their chairs.

In May, 1906, Dr. Floyd started his day camp limited in numbers to 10 patients. The managers soon allowed him to increase his number to 15, and finding that the expense was not going to be overwhelming, in August allowed him to increase to 25. This is practically the whole number that can be accommodated on the grounds and in the dining-room or can be cared for effectively by a single nurse. It will be seen that by August, 1906, the capacity of the hospital for good had been increased over 60%, as we shall see later, at a very small additional cost.

The regimen of the patients is as follows:

At about 9 A.M. they begin to assemble, coming from their homes in electric cars if they do not live within short walking distance. The nurse is on hand to receive them and hear the report of the night and of affairs at home. She takes and records their temperatures, and helps them, if necessary, with their chairs, wraps, etc. A little after 10 o'clock they go to their dining-room where they have all the bread and milk they can eat, and in many instances it is fully 30 to 40 oz. of milk and several slices of bread. Eggs are added to this lunch in less rather than in greater amount according to the time of year and their expense. They then return to their chairs and remain quietly until 12.30, when they re-assemble for their dinner, which is the regular house dinner, meat or fish, potatoes and another vegetable, and some light pudding, with milk and bread and butter. In some cases an ounce of cotton seed or olive oil is added. For some reason or other the patients cannot be made to enthuse over cotton-seed oil, which others seem to have no trouble in administering to their patients.

Again the patients return to their wraps and chairs or the grass and shade of the trees. Two hours after dinner is a quiet time and no talking is allowed so that any may sleep that wish to do so. At 4 P.M. they are again assembled for another lunch of bread and butter and milk, and between five and six, according to the time of year, they return to their homes.

It is expected that all the patients, in addition to the food received at the hospital, have a breakfast and supper at home, and for the most part this is done; some, however, we fear, get very little besides what they receive from us.

The nurse is on duty all through the day and oversees the patients at their meals, takes note of those who are not eating well — and later interviews such to see what is the cause. It is part of her business to gain the confidence of the patients, so that they will tell her of their home worries, of their financial difficulties, about their husbands, children or lovers, as the case may be. At the weighing time, which comes for each patient once a week, the nurse is able to inspect the garments of the patients — for they are undressed and weighed in a sheet — and make sure that they are properly clothed. She sees that all who have not bathing facilities at home are tubbed and scrubbed at least once a week. Further they are taught cleanliness of person, and care and protection of those about them, and especially care of their mouths when coughing. Each patient carries on her arm a blue linen bag containing, within, a smaller waterproof bag, and also some sheets of tissue paper, which are used to protect the mouth when coughing, to receive the sputum, which is then placed within the waterproof bag. The papers containing the expectoration are burned each night, and the inner bags are washed in carbolic from time to time. This form of bag has been devised because few women have pockets in which a paper bag can be carried, and it has been found that they will not carry about a paper bag in their hands.

On Sundays the patients remain with their friends and families, and the nurse makes visits to the homes, sees where the patients live and sleep, sees the family who are there assembled, and is therefore able to make a report to the physician as to the home conditions. This inspection of the home and families is of great importance. Sometimes it is repeated on successive Sundays until conditions are made satisfactory, sometimes the conditions are so good that no further visits are necessary. But it is expected that a visit shall be made on every one about once in six weeks after the routine has been established. It goes without saying that this visiting requires tact on the part of the nurse, and not every one, no matter how skillful in the wards in the care of the sick, has the ability to gain the confidence of the patient and become her friend and that of the family as well. As the result of her visit or visits the nurse fills out a report which is filed in the records.

The physician calls each day, hears the report of the nurse, talks to the patients, and makes physical examination of one or more as the case may be, so that there shall be proper records of each case and that he shall have personal knowledge of the pulmonary changes from week to week. Practically all the medication is in the form of rest, food and fresh air. Heroin or codein is used if the cough is distressing, though in small quantities. Tuberculin is used in a number of cases both for diagnosis and for treatment.

The total number of patients treated since we started has been 71, and these have been given 5,900 days of treatment. These patients would be classified as follows: 1st, incipient, 8; 2d, well marked, 29; 3d, advanced, 34.

Of these there have been discharged: Arrested, 10; improved, 4, who went to Rutland, as home surroundings were unfavorable; relieved, 2 non-tuberculous, showing signs of consolidation, but proved to be chronic influenza by sputum and negative tuberculin test; unrelieved, 30, of whom 6 had died; under treatment, 25.

The 10 discharged arrested were under treatment for periods of time varying from three to eight months. Of these 10, only one was from the group of incipient cases and the others from the well-marked group. Since discharge these patients have been required to report to the Samaritan at least once every two weeks in order that there should be no undiscovered relapse. All are doing well and are steadily gaining in weight. Some of them have returned, unfortunately, to their former employment where the disease was contracted, four are taking complete care of their homes and one or two have returned to school or are remaining at home. Of the four improved cases who left us for Rutland two are doing well. One of these was from the incipient and the others from the well-marked class.

Of the cases unrelieved, 7 went to other hospitals, 3 went to Europe having shown no special change, 5 were discharged for insubordination, 5 gave up treatment in from one to six days, and 4 were unable to keep up. The 6 cases who died were all very advanced on admission and the prolongation and comfort of life was all that could be hoped for. Of the 25 cases under treatment at present, all but two advanced cases are doing well and it is expected that 4 will be discharged arrested before the middle of June.

A few striking cases are worthy of mention. A girl of twenty-two years from a poor home and surroundings about four miles from the camp, had well-marked involvement of both apices. The cough was distressing, and expectoration about 3 oz. daily. She began treatment ten months ago, steadily gained weight from the start, and with the constitutional improvement the process rapidly became quiescent. She gained 30 lbs. in six months, her lungs became entirely dry and she was discharged three months ago without a symptom and has remained well since.

A woman of forty years, showing an advanced process involving both lungs, with occasional night sweats and considerable expectoration came under treatment in December, 1906. She could not speak aloud on account of a larynx showing marked swelling and infiltration about arytenoids and false cords. She has gained 27 lbs., her cough consists of a slight attack every morning, her lungs are quiescent, and her voice has almost completely returned. A few weeks will probably add her to our list of arrested cases.

A woman of about twenty-eight years with a cavity in the left upper chest and extensive involvement of the right, after six months' treatment has gained 20 lbs., the general condition shows remarkable improvement, the lungs are rapidly drying up and we hope for cavity contraction.

Complications and emergencies have been very few in number. There have been no severe hemorrhages on the grounds, and only one patient when at home has had two moderately severe hemorrhages, of about one-half pint of blood each time. One other patient had a slight hemorrhage. Even chills are of rare occurrence, and no cases of pneumo-thorax have occurred. Diarrhea in the summer months and grippe in winter have been the greatest enemies, and while all have been retarded at times by these ailments, only one or two have been seriously affected.

One patient who had an advanced process with a quiescent tuberculous larynx, after five months of treatment gained 20 lbs., cough was dry and the lungs were almost free from râles. The patient caught a severe cold and the quiescent throat flared up. Swallowing became impossible from pain and she died in about four weeks, practically from starvation as the lungs remained quiet. She refused to enter a hospital.

High temperature is not of frequent occurrence, and when it persists the case is required to remain at home for a few days in bed, being visited by the nurse in the meantime until the patient is thought fit to report for treatment. Pregnancy has only complicated conditions in one case and here improvement has been so constant and marked that we hope to escape the almost certain usual termination of this disease following confinement.

Tuberculin has been in constant use both for diagnosis and treatment. We are giving Koch tuberculin T. R. (imported) in about 15 cases once or twice a week. We begin with a dose of .0001 mg. and steadily increase it, avoiding reactions until we reach 1 mg. The arrested cases receive tuberculin weekly when they report. This treatment is only given to selected cases where cavity, fever and hemorrhage are absent. We feel confident that this has benefited not a few cases in quieting tubercular laryngitis and stimulating resistance in cases that improved to a certain point and then remained at a standstill. We have been more ready to allow an arrested case to return to her former employment because fortified with increased resistance by this means.

All the cases are proved to be tubercular by finding tubercle bacilli in the sputum or by the tuberculin reaction. In several cases this latter test has been necessary, and here Koch's old tuberculin in successive doses of .1 to 1 and 10 mg. has been used at intervals of four days. In only two cases have we failed to get a positive reaction where it was required for diagnosis, and these have proved to be cases of chronic influenza.

Our experience has demonstrated that in the climate of Boston an open-air camp can be conducted successfully both winter and summer, spring and fall, — cold and wet and disagreeable days appear to have but little effect upon the attendance. The results of the experiment have been very satisfactory from the clinical side, and it seems that the treatment presents these distinct advantages.

The daily removal from their homes gives the patients a decided mental shake-up. They have the companionship of others, some of whom are worse off than themselves, they are distinctly doing something to make themselves well — taking the cure in the fresh air — and they are free for the time from the depressing influences and petty annoyances of home environment. The constant presence of the nurse in whom they can confide and talk over their family difficulties is of great assistance, and, at the same time, she deters them from conversation about their symptoms. The daily visits of the doctor, to whom trivial, but to the patient important and perplexing, questions can be referred, all tend to keep up the general morale of the patients. The responsibility for their own actual condition is shifted to the shoulders of the nurse and doctor and not carried in doubt by themselves. On the other hand, the constant supervision of the nurse enables the detection of unfavorable symptoms to be made early, as well as wrong-doing and recklessness. With the wards of the hospital always at hand to help out in cases of emergency, such as the appearance of a sudden rise of temperature, hemorrhage or other unexpected event, there is a sense of security not otherwise felt.

To those who still believe that temperature taking and the daily booking of symptoms are not desirable things for the majority of patients to do, this form of treatment must appeal; while those who think that it is a desirable feature in treatment can add it to the régime.

Many patients cannot be removed from home, and have even a small sum paid for their board without great discomfort to the whole family. In order that the mother may go to a sanatorium often the children have to be put away in "homes" or boarded. By our method the home is kept intact and as soon as possible the patient allowed to participate in the light home work during the mornings and evenings, often to the great advantage of all concerned. The daily education at the hospital is carried back to the homes with the result, we believe, that the other members of the family will lead a much more hygienic life than they otherwise would. The one disadvantage that we can see is that connected with the going to and coming from the hospital. There is necessarily a certain amount of wear and tear upon the patients during this time that is undesirable. To obviate this we are trying to have our patients, as far as possible, from the district immediately about the hospital. When this is accomplished, as it will be in the course of time, the House of the Good Samaritan will become a center for this particular portion of the city; and the ease of administration on the part of the nurse, and the one disadvantage to be urged against the scheme, will be reduced to a minimum.

As to discipline there is very little to say. There are so many applicants that if patients are neglectful and do not come regularly and punctually they are warned that if they persist they will be dropped from the rolls and their places filled by others. Naturally there are a number who come who do not like the restraint and discipline and quickly give up. Some are soon found to be too weak really to undertake the daily journey, but beg to be allowed to try and in a short time have to remain at their homes or enter other institutions for care and treatment. Most of the cases are, however, selected from patients presenting themselves at the general medical clinic of the Massachusetts General Hospital, where Dr. Floyd is also on duty, and it is here that he is able to make his selection of patients living in the vicinity of the hospital.

Incidentally, I may say that our experiment has aroused no interest among the doctors in the vicinity. When we started our experiment we invited all the doctors of the neighborhood to a tea at the hospital to explain to them our purpose and ask their co-operation, but no one came excepting one or two who were specially identified with the tuberculosis crusade, and had no need to be present, knowing well all about the work beforehand.

At the end of the year it is well to look over our books and consider whether in reality the experiment has been an economic success.

The first cost of the undertaking was defrayed by special gift to the hospital for this purpose, and nearly $1,000 was spent. With this money the portable house outside was purchased and set up for $324, and the necessary changes in hospital were made, to provide a new dining-room for the hospital help, and to provide water installation for separate dish-washing in the old dining-room that was to be used by the out-patients. Fencing and grading had to be done. In addition, chairs, blankets, comforters and hot-water bottles had to be purchased. These latter are not expensive and can be used for some time without renewal. These changes are in the way of permanent investment, and should not therefore be put into the general cost of maintenance, for the necessary changes in any other hospital would be entirely different and would depend on the local conditions. The cost of blankets, chairs, etc., depends on the quality. We have used the Allen camp chair, costing $1.75. It is light, easily handled and comfortable. Gray blankets have cost $4 per pair. Comforters are also useful in the winter and cost less than $1. Stone water bottles costing about 25 cents apiece are used, as they keep the heat longer than rubber ones, and do not leak as easily.

At the beginning of the experiment it was not found necessary to employ a special nurse for this service, but as the numbers increased the whole time of one nurse has been required. An additional maid was employed from the first to care for the dishes in the dining-room and assist the cook to serve the meals. These have been the only additions to the administrative staff of the hospital that has been required to care for the 25 patients. The remainder of the expense has been for their food. It is impossible to estimate exactly the cost of this food as a certain part is bought with the general supplies of the hospital — milk, butter, eggs and flour, the principal items, can be told exactly, but vegetables, meats, etc., can only be approximately estimated by comparison with the previous monthly expenses of the hospital.

Milk costs a trifle less than 7 cents per quart. Eggs vary from 50 to 20 cents, and are used accordingly. Butter costs on the average 28 cents. Flour has been $5.50 to $6.00 per barrel. The total cost of the experiment for extra service and food for the year has amounted to rather less than $2,000. For this amount there have been given 5,900 days' treatment, making a cost of 33 cents per day for each patient.

In the beginning, when there were only 6 to 10 patients, the actual cost of the total hospital expenses was less than it had been during the preceding year when the hospital was first opened. This was due to economies that had been introduced during the year. This is only mentioned as it was a great encouragement to the managers to find that the hospital bills rather decreased than increased during the trial period of expansion.

In conclusion, all that remains to be said is that the House of the Good Samaritan has apparently made an experiment which can be adopted by many communities to assist them in solving their local tuberculosis problem. Many towns and cities have small hospitals whose beds cannot from the nature of things be used to care for the cases of tuberculosis of the town or city. In the smaller places practically all the physicians are interested in these hospitals and therefore can co-operate in having a large portion of tuberculous patients who come under their care congregate at the hospital. This real knowledge of the patients and their home surroundings by the physicians themselves is an advantage that the physician of the large city does not possess and for the most part has to learn second-hand through the eyes of his visiting nurse. It is perfectly possible for ways to be devised so that each patient shall return to his or her own physician for treatment or advice, or the work can be delegated to a visiting man, as may be deemed wisest. Those who support the hospital by their contributions can be educated to the need of such a day-sanatorium by lectures and the organization of a committee on tuberculosis and thus still greater interest in the hospital aroused in the community. Such patients as can should pay a small fee for their care at the hospital. It may be possible later either to get a special pavilion built for the care of the very advanced cases of tuberculosis or to get the city authorities to take action and provide beds to which the stigma of pauper is not attached for this much-deserving class of sufferers. To the community having a hospital in active operation that will attempt to follow this experiment we feel that more can be done to help the sufferers from phthisis and at a much less relative cost and trouble than by any other means yet suggested to fight tuberculosis.

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Mrs. Russell Sage has given $125,000 to the Association for the Relief of Respectable Aged Indigent Females in the City of New York. The home of the Association, at 104th Street and Amsterdam Avenue, is being extensively enlarged, and when the addition is completed its capacity will be increased from 90 to 270 beds. — *Medical Record.*

ON NEUROLOGICAL AND PSYCHIATRIC DIAGNOSIS.*

BY LEWELLYS F. BARKER, M.D., BALTIMORE.

On taking up the subject allotted to me, "The Historical Development and Relative Value of Laboratory and Clinical Methods in Diagnosis, with Especial Reference to Neurological and Psychiatric Diagnosis," I must confess to have experienced some difficulty in deciding how to treat it. It was not entirely clear to me how sharply to separate clinical from laboratory methods.

If one means by a clinical method a procedure which is carried out at the bedside of the patient and by a laboratory method one which is applied in a room, building or workshop, especially fitted with suitable apparatus for conducting investigations in diagnosis, he is making a distinction where there is not always a difference, for the bedroom, at any rate in hospitals, is a room so fitted and is a laboratory. If by laboratory methods are meant those which cannot be applied at the bedside, then we have relatively few laboratory methods of diagnosis in neurology and psychiatry, though the recent development of biological reactions and complex metabolic studies give promise of more in the near future. Most physical, chemical and psychological methods of diagnosis can be used at the bedside, though it is not always convenient to use them there. Or if by laboratory methods we mean methods which are generally or more conveniently used in special rooms not occupied as the bed-room of the patient, then the field of laboratory diagnosis is wider, especially if instead of limiting the examinations in these rooms to the study of materials removed from the patient we take the patient himself there, as we often do, for the making of certain tests. But if the patient himself is removed to the laboratory for examination, the physician is at his side, and the method remains clinical. Thus it is obvious that bed-rooms are used as laboratories, and that laboratories are used for clinical work, and no sharp line can be drawn between the work and methods of the two places.

Nor is it feasible to distinguish clinical methods as methods of simple observation from laboratory methods as methods of experiment. For we make relatively few observations that are simple, unaided registrations of sense-impressions. On the contrary, the great mass of so-called clinical observations are observations under particular conditions modified at the will of the observer; that is to say, are experiments. Moreover, in all our clinical work — in the collection of facts, in the arranging of them, and in drawing inferences from them — the results of researches in laboratories are continually being utilized. Our observations, our arrangements of facts in sequence, and our conclusions are practically all based upon knowledge which at one time or another has been gained in special laboratories.

Thus while there are clinical methods in neurology and psychiatry that are not laboratory methods, and there are laboratory methods which can only remotely be regarded as clinical, it seems to me that all the methods used in neurological and psychiatric diagnosis must be regarded as clinical methods whether they are applied at the bedside or in any one of many clinical laboratories. My task is therefore made easier and it will be permissible, perhaps, to devote all the time at my disposal to a brief consideration of the way in which neurological and psychiatric methods of diagnosis developed to their present status. No hard and fast line can be drawn between laboratory and clinical diagnosis.

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* Read before the Congress of American Physicians and Surgeons in Washington, May, 1907.

The clinic is the mother of the medical laboratories, and they have one and all since their birth contributed to the parental support. The anatomical laboratory dates back three hundred years. The physiological and physiological-chemical laboratories, the pathological laboratory, the pharmacological laboratory and the hygienic laboratory were creations of the nineteenth century. The first general clinical laboratory proper for internal medicine was established by von Ziemmsen a little over twenty years ago.[1] The facilities now offered in well-equipped laboratories in connection with hospitals, manned by trained observers, are of incalculable value, bettering as they do the diagnosis, the prognosis and the treatment for the patients, besides serving for the promotion of knowledge. The recent division of the research work of the general clinical laboratory into biological, physical and chemical sub-departments marks another era in medical-laboratory specialization. The foundation of the electro-diagnostic and electro-therapeutic laboratory was a landmark in the history of clinical neurology, and the establishment of psychopathic laboratories, beginning with that set up by Kraepelin (1894), promises to be of fundamental significance for the advance of psychiatric diagnosis.

The diagnosis of nervous and mental diseases made but slow progress until comparatively recent times. Mere clinical observation unaided could do but little until (1) laboratory studies had supplied some preliminary knowledge of the structure and functions of the nervous tissues; and (2) the growth of psychology as a science had yielded some insight into the workings of the normal mind. Physicians had from early times on recorded a number of symptom-complexes, and pathologists had observed certain of the grosser lesions in the central nervous system, but a knowledge of the relation of symptoms to lesions grew far more slowly in neurology than in other departments of internal medicine. The reasons are not far to seek.[2] The mere mechanical difficulty of opening the skull and spine was an impediment to neuropathology. Further, owing to the chronic course of most diseases, those who observed the early symptoms rarely followed the cases to their termination, and in homes for the incurable and asylums where the late stages were passed through, there was too often lack of medical interest. The peculiar and complex structural organization of the nervous system was appalling to the majority of investigators. It was easier to study the pathology of diseases of the lung or liver, in which alterations in one area produced effects similar to those in another area of the same size, than to investigate the central nervous organs in which apparatus ministering to totally different functions may lie close together, perhaps only a few millimeters or a few centimeters apart, or in connection with which the disconcerting observation had been made that a lesion the size of a pin prick in one area can be of greater injury to the organism as a whole than the passage of a crowbar through another. In a whole series of diseases, manifestly of the nervous system, no anatomical changes were discoverable on thorough miscroscopic study of serial sections of the organs. It is but little wonder that the majority of physicians have preferred to work at problems which seemed easier to solve than those which the neurological and psychiatric inquirer is compelled to face.

Fortunately for the sciences of neurology and psychiatry, however, there have always been minds to which these problems have particularly appealed, and to which the difficulties, though great, did not appear insuperable. Romberg, inspired by Sir Charles Bell's great discovery of the sensory and motor nerves, and influenced by the more precise researches of Magendie, realized the value of applying physiological knowledge to the study of neuropathology and to neurological diagnosis; he gave modern clinical neurology a firm foundation by developing knowledge concerning disease of the peripheral nerves. In psychiatry, after Pinel had broken the chains in the Bicêtre, and John Conolly at Hanwell had promulgated the doctrine of "no restraint," a great step forward was taken when Griesinger made it clear that the science is a part of neuropathology and inseparable from it, and showed how necessary a thorough knowledge of the latter is for scientific work in the former. Griesinger's recognition of the defects in medical teaching of neural and mental phenomena and his demand not only for theoretical instruction, but for practical work by students in psychiatric clinics to be established at the universities, led first to the foundation of special clinics, and many years later to obligatory attendance and obligatory examinations in these subjects. These reforms gave an enormous impetus to the advance of both diagnosis and treatment in neurology and psychiatry.

Modern neurological diagnosis is a direct outgrowth of the physiological research undertaken on the nervous system at about the middle of the last century. The studies of the electrophysiology of muscles and nerves, the recognition of the spinal cord as an organ more or less independent of the rest of the nervous system, the inquiries into the functions of the organs of special sense and the relations of these to the higher psychic functions, the experimental investigations bearing upon the functions of the cerebral cortex — all were utilized for the extension of clinical methods of examination, and for the interpretations of clinical findings.[3] Slow but sure progress was made also through the control of clinical studies by autopsies and the macroscopic and miscroscopic examinations of the brain and cord. Especial activity in such studies was shown by the clinico-pathological school at the Salpêtrière, of which Charcot was leader. English neurologists, notably Hughlings Jackson and Gowers, also made valuable contributions. These, with the clinical electrical studies of Duchenne, Remak and Erb, did much to increase the accuracy of diagnosis. The invention by Helmholtz of the ophthalmoscope permitted the direct observation of a part of the central nervous system (the papillæ of the optic nerves), a method of examination so important for differential diagnosis that every neurologist feels impelled to perfect himself in it. The study of the neuroses, especially after the introduction of the Weir Mitchell cure, helped to bridge the gap between neurology and psychiatry.

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[1] *Cf.* Welch (W. H.): The Evolution of Modern Scientific Laboratories. Johns Hopkins Hosp. Bull., Balt., 1896, vii, pp. 19-21.

[2] *Cf.* Westphal (C.): Psychiatrie und Psychiatrische Unterricht. Berlin, 1880.

The laboratories of anatomy, physiology and pathology have afforded the data for the *diagnosis of the seat of lesions* and their nature. The localization has become more precise as these sciences have grown, passing from the gross terms cerebral, cerebellar, spinal and peripheral, through systemic, nuclear and segmental, to, more recently, the neuronal. Criteria for a *diagnosis of the nature of the lesion* have been drawn from pathological anatomy and physiology, and lastly progress has been making in the *diagnosis of the causes* of nervous diseases through advances in pathogenetic studies. Time will not permit even a sketch of the contributions to diagnosis made by the various laboratory subjects, but anatomy, physiology, pathology, anthropology, biology, chemistry, physics and pharmacology all have lent a hand. The nature of the infectious diseases which involve the nervous system — cerebrospinal meningitis, tuberculosis, syphilis, tetanus, influenza, leprosy, diphtheria — has been cleared up for us by bacteriological studies, and modern parasitology has revealed the mysteries of the coma of malaria and the sopor of African sleeping sickness. The clinical laboratories have applied the methods of chemistry, physics and biology and revealed to us the changes in the blood, the urine and the cerebrospinal fluid in nervous disease. New methods of examination are constantly being devised. Within a few months the workers in immunity problems have shown us how to demonstrate the presence of amboceptors for the syphilitic antigen in the cerebrospinal fluid of patients suffering from dementia paralytica. Each year we learn not only how to see, how to hear and how to feel more precisely, but actually to see, hear and feel things entirely new to us, to make observations of phenomena which all through preceding centuries have escaped detection by clinicians.

In searching for disturbances of motility, sensation, reflexes, nutrition, speech, intelligence, emotion or will, the tendency of modern neurology and psychiatry is to become ever more objective, to exclude as far as possible the subjectivity of the examiner in observation and record, for in this way only is it possible to obtain results which are comparable and which can be utilized for science. Hospital records strive now in describing what can be seen, felt or heard, to use words of pure description unmixed with judgments or inferences, though that they still fall far short of their aim, every one who has occasion to consult these records knows. To counteract the errors of omission and commission of description, other still more exact methods of scientific registration are being more and more employed. Thus optic methods of reproduction, photography (simple, stereoscopic and cinematographic) are helpful in both neurology and psychiatry, and various graphic methods of investigating motor disturbances are gradually finding a place. The phonograph has been utilized for the registration of phonetic expressions, and the analysis of phonetic processes by motor graphic methods has been begun.

Perhaps the greatest progress making at present lies in the improvement of methods of investigating the psychic states and processes in nervous and mental diseases. The examination of the psychic side of a patient, often more important than the somatic inquiry, should, it is now realized, be carried out just as systematically and objectively as the examination of the physical condition. Psychiatry has suffered seriously from subjectivity. Thanks especially to the transfer of the methods of psychophysics to psychopathology, data are gradually being accumulated which are independent of the accidental subject of the observer. The principle of the "uniform stimulus" and the principle of the "reaction-time" have been adopted in the clinical psychopathic laboratory with gratifying results.[4] The testing of the perceptive faculty, the investigation of sense perceptions, the study of the orientation of the patient, the trial of memory, the examination of powers of work, and especially the inquiry into the characters of the associative processes, as conducted by the physician who has been well trained in the modern psychiatric clinic, permit of a precision and an extension to which the old clinical conversation could not attain. Though our knowledge of facts is as yet very incomplete, our comparable experiences with accurately studied material too small to permit of such reliable clinical formalizing in mental disorders, there can be no doubt that as we continue to observe what actually occurs in nature and to sift our observations empirically, separating as well as we can the essentials from the episodal in the disease-picture, we shall arrive at generalizations that will give us a diagnostic power in psychiatry equivalent to that we possess in other branches of internal medicine.[5] The certainty with which it is now possible to make the diagnosis and prognosis in dementia paralytica is an instance in point. Hallucinations, delusions and abnormal moods, it has deen discovered, are less essential for diagnosis than are disturbances of orientation and of the perceptive faculty, motor states and flight of ideas. Single disturbances not pathognomonic in themselves assume diagnostic importance according to their special grouping, as, for instance, in the well-known example of the different relations of confusion, excitation and orientation in kakatonia, mania and amentia. The widening of the functions of the anamnesis in history-taking by Janet and the emphasis laid upon the katamnesis by Kraepelin, have markedly enriched our diagnostic data in psychasthenic states in the one instance and in processes which terminate in dementia in the other.

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[3] *Cf.* Erb (W.): Ueber die neuere Entwicklung der Nervenpathologie und ihre Bedeutung für den medicinischen Unterricht. Leipzig, 1880.

[4] *Cf.* Kraepelin (E.): Der psychologische Versuch in der Psychiatrie. Psychol. Arb., Leipz., 1896, i, pp. 1-91. Sommer R.): Lehrbuch der psychopathologischen Untersuchungs-Methoden(Berlin u. Wien, 1899.

Among the more interesting features of contemporary psychiatric diagnosis is the attention which is being paid to the so-called psychoanalytic method, as practised by Freud,[6] Riklin,[7] Jung.[8] Those who are working with Freud's method of investigating the psychology of daily life, of hysteria and of dreams are much impressed with the ingenious conceptions of that investigator and urge those who are skeptical not to condemn it on superficial examination or from prejudice due to Freud's over-emphasis of the rôle played by sexuality in the psyche. Some of the explanations which it is asserted the method affords almost remind one in brilliancy of the interpretation of the handwriting on Belshazzar's palace wall. The search for the hidden psychic complex, to which some painful emotion is attached, unbearable in conscienceness and accordingly suppressed, is proving to be a helpful idea in the study of psychiatric cases, Freud maintaining that the hallucinatory delirium may represent a compensation for unsatisfied desires, hinting that man sometimes resorts to a psychosis in order to find in its dreamy states that which is denied him in real life.

Further studies suggest that much light may be thrown upon paranoaic states by assuming that they, like the mental states of the hysterical, proceed from the suppression of painful memories, and that other symptoms in dementia precox — the weakness of apperception, the perseverations, the tendency to symbolism, the stereotypism, the command-automatisms, the apathy, the aboulia and the negativism (to speak in the slang of the psychiatrists) — may be determined more or less by the suppressed complex. Such an explanation, however, in order to account for the stability and resistance of the paranoid dement, contrasted with the mobility of the hysteric, has to assume a fixation of the affectivity in the one, possibly due to some metabolic intoxication (Jung), which is absent in the other.

A very great impetus would be given to neurological and psychiatric diagnosis in America if psychiatric clinics were to be established in connection with every great hospital or medical school. It is humiliating to think that this country, so far in advance in many other respects, is fifty years behind Germany, Italy and France in the recognition and satisfaction of this particular need. Since one in every three hundred inhabitants of this country is either insane or feebleminded, and the estimated cost to this country of psychiatric disease is, according to Dana, $85,000,000 annually, a cost which is increasing at the rate of 4%, the desirability of education in these matters is obvious enough. Half the money which was put into a temple recently reared by propagandists of a pseudo-scientific cult in Boston, in order to minister to certain psychic needs of some of the American people, would have been sufficient to build a first-class psychiatric clinic. The psychiatric clinics should come in America, and at once. Fifty years later is better than later! There can be no doubt that America will sooner or later lead in this, as she is doing in other sciences.

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THE HISTORICAL DEVELOPMENT AND RELATIVE VALUE OF LABORATORY AND CLINICAL METHODS OF DIAGNOSIS.[*]

BY RICHARD C. CABOT, M.D., BOSTON.

PHYSICAL DIAGNOSIS.

I SINCERELY hope that this Congress and the year 1907 will mark an end of the false and harmful distinction expressed in the title of this address; the distinction, namely, between "laboratory" and "clinical" methods of diagnosis. My first reason for objecting to this distinction is that it is impossible of definition. No one doubts that we apply what are called *clinical* methods of diagnosis to the patients who consult us at our offices or in a hospital dispensary; yet in such cases nothing occurs "at the bedside," because the patient is not in bed. My second objection is that there are many methods which are carried out sometimes at the bedside and sometimes in the laboratory, the difference depending not upon anything inherent in the method employed, but wholly upon extraneous considerations. For example, an examination of fresh blood must be made at or near the bedside; while an examination of stained blood may be made either at the bedside or elsewhere.

It may be said that the distinction is a real one, though not coincident with the literal meaning of the words. It is often supposed that by *laboratory* methods of examination we mean the most *exact* instrumental methods, contrasting them with the *rougher* and more approximate processes used at the *bedside*. But this distinction is obviously fallacious, for we have few more exact instrumental methods than the measurement of temperature by means of the clinical thermometer; yet this is often carried out at the bedside, or rather in the bed (in case the patient is in bed) and not in the laboratory. The measurement of blood pressure, by Erlanger's apparatus, is a very delicate, difficult and exact method of examination, which (in bed-ridden patients) must be carried out at the bedside. It is exact, instrumental and clinical; yet it belongs to the type of methods which are often thought of when we speak of "laboratory" diagnosis.

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[5] *Cf.* Kraepelin (E.): Ziele und Wege der klinischen Psychiatrie. Allg. Zeitschr. fur Psychiat., 1896-9, liii, p. 840. Wernicke (C.): Aufgaben der klinischen Psychiatrie. Breslauer ærztl. Zeitschr., 1887, p. 145.

[6] Freud (S.): Die Traumdeutung. Leipz. u. Wien, 1900; Zur Psychopathologie des Alltagslebens. (Vergessen, Versprechen, Vergreifen), nebst Bermerkungen ueber eine Wurzel des Aberglaubens. Monatsh. fur Psychiat. u. Neurol., 1901, x, pp. 1-95.

[7] Riklin: Zur Psychologie hysterischer Dammerzustände und des Ganserschen Symptoms. Psychol. neurol., Wochenschr., 1906.

[8] Jung (C. G.) Diagnostische Associationsstudien Leipzig, 1906; Die Psychol. Diagnose des Tatbestanden, 1906; Ueber die Psychologie der Dementia Præcox; Ein Versuch. Halle, 1907.

[*] Read before the Congress of American Physicians and Surgeons in Washington, May, 1907.

But although the distinction cannot be defined and does not in fact exist, we *do* attempt sometimes (and most disastrously) to approximate to it. There are physicians who work wholly in the laboratory and others who never visit the laboratory. The distinction between the "laboratory diagnostician" and the "clinical diagnostician" is a real but a vicious one. There should be no diagnoses made merely in the laboratory, and none merely at the bedside, unless what are called "laboratory methods" are carried out, as they may be carried out, at the bedside. There should be no diagnoses made without regard to all the essential facts of each case; and there are few cases in which all the essential facts can be attained in the laboratory and few in which a "bedside" examination suffices.

All that tends to make us build up our diagnosis *at a distance from the patient*, and without the constant reminders of every side of his case given us by his actual presence before our eyes, — all such tendencies, I say, are dangerous. There should be no laboratory practitioners and no clinicians who do not understand and use "laboratory methods," so called. Instruments, accuracy and common sense are of importance in all types of diagnosis, and of no more importance in any single type than in any other.

The only true division between the kinds of investigation which should be carried out upon patients is the division between

(*a*) The work of experimental research, and

(*b*) The work of medical practice.

Experimental work, whether in the laboratory or at the bedside, needs a different kind of training, a different mental attitude, sometimes a different standard of accuracy, and above all a different distribution of one's time. Very few men can do both the work of experiment and the work of practical medicine; but every practising physician should do both what is called "clinical" and what is called "laboratory" work; that is, every man should work both at the bedside and in the laboratory, if he is to do the best for his patient.

THE IMPORTANT DISTINCTION BETWEEN EXACTNESS OF METHOD AND CLEARNESS OF STATEMENT IN DIAGNOSTIC WORK.

Does physical diagnosis tend towards greater and greater exactness of method? Is the greatest possible exactness desirable in all methods of physical diagnosis? I think not. Exactness, like an umbrella, is sometimes very much in place, and sometimes not. There are methods in use to-day quite uselessly exact, and others in which a greater exactness is very desirable. The degree of accuracy desirable in any diagnostic procedure is governed wholly by the ends to be secured. A pair of scales perfectly adequate for the weighing of hay would be far too rough and inaccurate for ascertaining the weight of a patient as it varies from week to week, while the scales used for this latter purpose would be valueless as a chemical balance. Yet, on the other hand, it would do us no good to have a pair of scales by which we could weigh our patients with a degree of accuracy equal to that of a chemical balance, for we could *do nothing with the results* when we got them. We could infer nothing from the slighter variations and time and money would be wasted in the attempt. When I see statements of blood counts which tell us, for example, that the patient had 5,633 leucocytes to the cubic millimeter, I cannot help making two comments. First, that the degree of accuracy to which the statement pretends is wholly useless; and second, that it is only the *pretense* of accuracy after all. It is pseudo-science and not science. Now, if there is one thing which we who try to do scientific work should avoid more than another, it is, I think, this *pseudo-scientific pretension*, — the appearance of accurary expressed in figures and diagrams, when there is no such accuracy in fact. All blood counts should end with at least two zeros, usually with three.

Another province of diagnostic work in which we have a great deal of the appearance without any of the reality of accurate work, is the quantitative estimation of urinary sol[illegible] Excep[illegible] rare cases we can make no u[illegible] in they do not tell what they s[illegible] se of these figures; what the kidney is able to d[illegible]eem to tell, namely, bolic processes of th[illegible]o, or what the meta- The same is true of [illegible]dy are accomplishing. of acidity in gastri[illegible]he quantitative estimations pointed out by[illegible] contents, as has recently been most valuab[illegible] Dr. Charles P. Emerson, in his quantit[illegible]le work on clinical diagnosis. Our [illegible]ve estimations of gastric acidity cannot [illegible]ossibly be more than roughly approximate, owing to the number of disturbing factors whose influence cannot be measured. Hence, it is a "fake" to express them in three decimals.

There are many other instances in which we have a great deal more of the appearance of accuracy than of the reality, and a great deal more accuracy than we can use even were it real. On the other hand, there are some of our diagnostic methods which are now very much rougher than we wish they were, and where a great degree of exactness is most desirable. For example, the intensity, duration and pitch of heart sounds and breath sounds are data at present, appreciable only in the roughest way, and our statements about cardiac and pulmonary diagnosis are consequently full of lamentably vague terms. Whether to call a given breath sound bronchovesicular or not, whether we say that a given heart sound is accentuated or not, must often be very arbitrarily decided so long as we have no accurate methods of measuring these sounds.

What, then, is the immortal soul of this passing demand for general increase of accuracy in all places and at all times? It is, I believe, a demand for *clearness of statement.* Clearness of statement in regard to the results of our examinations is always and everywhere desirable; we cannot have too much of it. But this very clearness is often obscured by the use of figures and quantitative terms which mislead those who hear or read our statements. It is not only vagueness of statement, but the befogging of the sentence with statistics and figures that obscures our scientific writing. What we want to know from every man is — "Just what did you observe, and just what inference can be legitimately deduced therefrom?" About these matters we cannot be too exact.

TWO DOMINANT TENDENCIES IN PHYSICAL DIAGNOSIS.

(*a*) A tendency beginning to make itself felt in physical diagnosis is that which seeks *directness of contact* with the facts to be studied. Instead of conjectures about the condition of the bladder wall, conjectures based upon the subjective symptoms and upon the analysis of the urine, we are beginning to insist in all doubtful cases upon *direct inspection* of the bladder by means of the cystoscope. Methods of testing the amount of hemoglobin in the blood are more likely to be accurate if they can be carried out without processes involving dilution (and so errors), or contact with chemicals which may alter the coloring matter in some important respect. If we can compare the color of the blood directly with a standard, we have saved many chances for error. Dilutions and stains are of course necessary in many cases, but they all increase the likelihood of error in our results, and should never be used when more direct methods of examination are possible.

(*b*) Another tendency which I think will lead to very important results in the next decade shows itself in the distinction between *functional and anatomical diagnosis*, and in the increased importance attributed to the former. What we want to know is not only (or chiefly) whether or not lesions are present in any organ, but whether they interfere with the function of that organ or other organs, and if so, how far. Anatomical diagnosis asks: "How does the organ look and feel?" or "How would it look and feel if we could see it and feel it?" Functional diagnosis asks: "What can the organ do? How useful is it to the body?" Not appearance, but behavior, is more and more our interest. It is not of so much importance to know whether there is enlargement of the inguinal or axillary glands, or of the adenoid tissues of the throat, as whether these enlargements do any harm, interfere with any function. Especially is this distinction of importance in the field of gynecology. There are a dozen lesions in the adult female pelvis for every genuine interference with function; and the chief business of the diagnostician in this field is to discover which lesions to take seriously and which to disregard, which to treat and which to let alone.

"When you see a head, hit it: when you find a lesion, treat it." Such a maxim governs the practice of far too many physicians to-day. When we find a lesion, we should study with our best care, our best judgment and sense of proportion, all the facts in the case, with special reference to the question — "Shall I treat this lesion, or let it alone?"

THE VALUE OF SOME RECENT ADDITIONS TO THE TECHNIQUE OF PHYSICAL DIAGNOSIS.

The title of the subject assigned to me in this discussion bids me attempt an appraisal of the relative value of some of the different methods of physical diagnosis. To that attempt I now turn, choosing as best I can out of the many technical processes that might be passed in review.

First, the oldest and simplest methods are still the best; that is, yield the most information useful for the understanding and treatment of disease. Physicians looked at their patients and felt of them (that is, used "inspection and palpation") long before they practised any other method of physical examination; but these methods still yield us a far larger bulk of useful information about our patients than any other methods. Percussion, although discovered earlier than auscultation, does not, however, as a rule, yield as much valuable information. When we come to the examination of the secretions and excretions of the body, the same statements still hold true. Here also inspection yields us the most important information. In nine out of ten cases, as I see them in private practice, I make no examination of the blood other than that afforded by direct inspection of the color of the blood when soaked into a slip of paper. The visual data about urine, sputa and feces are still the most important. I am excluding here, of course, the data obtained by microscopic examination, which, literally speaking, are part of inspection, but not part of that ancient and honorable type of inspection which historically precedes all other methods.

Passing now to some of the more recent methods of physical examination on which a judgment may be pronounced, I should say that:

(*a*) The diagnostic value of *fluoroscopy and radiography* is established beyond doubt for all diseases or suspected diseases of bone, and for all diseases in which the presence of concretions is suspected. In such diseases I think it is essential that the patient should have access to a competent practitioner of radiographic technic. On the other hand, I do not regard it as essential, or even of any considerable importance, that every patient suffering from diseases of the heart, lungs or stomach should be examined by the x-ray. Although it is true that x-ray examination occasionally yields us information of great value in diseases of these organs, yet such cases are relatively rare. I do not think that x-ray examination of these organs should become a part of the technic of every up-to-date practitioner.

(b) The estimation of *blood pressure*, and especially of systolic blood pressure, seems to me also to have proved its value as a part of the routine examination of every case in which disease of the heart, arteries, brain or kidneys is suspected. My reasons for this statement are as follows: We all of us believe that it is of value in diagnosis to estimate the tension of the radial pulse; but it has been abundantly shown by the testimony of many competent observers that even the experienced finger is not infrequently led into wide errors in judging pulse tension. Such errors can be detected only by the use of instruments for measuring blood pressure. It is true that the information obtained by the use of these instruments cannot always be directly utilized for therapeutic purposes, yet its value, although not comparable to that of methods of examination such as inspection, palpation or urinalysis, is considerable when we take account of the *speed* with which an estimation of systolic blood pressure can be made. The time-factor can never be left out of sight. Relatively time-consuming methods, such as the counting of red blood corpuscles, or the cystoscopic examination of the bladder, can only be utilized in a comparatively small number of cases where the information to be derived from them is of the greatest importance. On the other hand, blood pressure measurements can be so quickly made that we are justified in using them, and indeed bound to use them, in a large proportion of our cases, even though it is true that the information they afford is relatively slight.

(c) *Cryoscopy* is not, I believe, of any considerable value in the diagnosis of medical, as contrasted with surgical, disease of the kidneys. It is a time-consuming and difficult procedure, and its results need to be interpreted with so much skill and caution that they do not recompense us for the labor involved.

(d) *The use of simultaneous tracings taken from the heart* and from one or another of the *peripheral blood vessels*, in the way especially popularized and recommended by MacKenzie, affords a great deal of interesting information, but not, so far as I can see, anything of any considerable value to the practising physician.

(e) In the *examination of sputa* we have progressed from the complex to the simple. Reduced to its essentials, sputum diagnosis means to-day a good look at the sputa in bulk, the judicious use of one's nose and the search for tubercle bacilli "early and often." Curschmann's spirals, Charcot-Leyden crystals, fibrinous casts, influenza bacilli yield no important clues for diagnosis, prognosis or treatment.

(f) To immerse the patient in a *warm bath during palpation of the belly* is a procedure which recommends itself, I think, more and more to those who have given it a trial.

In difficult cases the warmth may produce so much relaxation as to make it needless to resort to an anesthetic.

SUMMARY AND CONCLUSIONS.

1. The attempted distinction between laboratory methods and clinical methods of diagnosis is a false and misleading one. The attempt should be abandoned once for all. But the distinction between *experimental* research (in the laboratory or at the bed-side) and *applied diagnosis* is important.

2. The degree of exactness desirable in any technical procedure is relative to the end to be secured. We may easily have too much as well as too little exactness. But of clearness in the expression of our results we cannot have too much.

3. Modern physical diagnosis shows (among others) two dominant tendencies: (a) To seek and prize the most direct methods of examination. (b) To lay stress on the present functional efficiency of an organ rather than on the presence or appearance of anatomical lesions.

4. The old methods — inspection and palpation — are still the best.

Among recent additions to our technical resources three may be mentioned as likely to stand the test of time. These are:

(a) X-ray examination.

(b) Blood-pressure measurements.

(c) Palpation of the abdomen beneath the surface of a warm bath.

Reports of Societies.

AMERICAN CLIMATOLOGICAL ASSOCIATION.

Twenty-fourth Annual Meeting, held at Washington, D. C., May 7, 8 and 9, 1907.

The meeting was called to order in the New Willard Hotel, by the President, Dr. Thomas Darlington, of New York, May 7.

The President's address dealt with the source of pulmonary tuberculosis and its mode of infection. He believes that nostalgia is a great disadvantage in treatment at a distance from home. The good results at North Brother Island and at the Sea Breeze Hospital were noted. Typhoid fever and tuberculosis are much alike in the manner of implantation. The increase of heart disease was noted by charts and statistics were given from 1880 to 1905 for Boston, New York, Chicago, Philadelphia and ten other large cities in the United States. The most marked increase is shown in Boston, where the rate from heart disease was 11.71 in 1880 and 18.17 in 1905. New Orleans gives the greatest increase in the mortality due to Bright's, rising from 5.21 in 1881 to 17.30 in 1905.

Dr. Darlington believes that the vice of hard drinking is less prevalent than it was in the days gone by; drunkenness is less common, but stimulation is on the increase.

There is a growing tendency to promote the virtues of hygienic home treatment of tuberculosis at the expense of climatic treatment. The latter still has a most important place, but other methods are pushing to the front and must be considered.

The fresh air treatment of tuberculosis is not a formidable rival to the purely climatic cure. Without decrying my own city, it must be admitted that New York has a variable and most trying climate, yet we have a sanatorium for consumptives situated on North

Brother Island. This island stands at the junction of the East River and Long Island Sound, near that region very properly called Hell Gate. The climatic conditions at this point are distinctly unfavorable, and the patients received are mostly those afflicted with an advanced type of the disease. They are recruited from a class in whom good hygienic surroundings are at a discount; in fact, from the lowest strata of the "submerged tenth," yet the systematic routine of hospital existence, the outdoor life and good food give us results that are most encouraging. Apparently hopeless cases are being cured, and this is taking place despite climate, not with its aid.

The advantage of curing patients in the climate in which they must afterward live and the elimination of that most dreaded complication "nostalgia" are results of prime importance. No climate, however favorable, can avail much if homesickness develops, and the questions of the financial status of the patient and his future life are of too great significance to be overlooked. A contented mind is a therapeutic adjunct of the utmost value, as we all have had abundant opportunity to observe.

A study of the causative factors of this alarming increase naturally suggests the part played by the many so-called features of city life, and one of the most important factors in the relation of mental strain to the production of functional, followed by organic, lesions of the heart and subsequently the kidneys. The high-wrought, over-nervous activity of the modern city business man and the equally strenuous social whirl of the city woman: the mad rush of competition; the bustle, confusion, noise and unrest, so striking in comparison with the "*dolce far niente*" of the business and social life of a century ago; crowds and hurry; elevated stairs and "rapid fire" elevators; mental strain and physical bankruptcy — all seem so essential. They have come to be considered a striking characteristic of our national life; yet they are so deadly to our individual life that they furnish us with food for deep and earnest thought.

Dr. Samuel A. Fisk, formerly of Denver, now of Brimfield, Mass., presented a paper entitled

A SEARCH FOR A SUITABLE CLIMATE.

This account was largely personal and brought out the advantages and disadvantages of life in Colorado twenty-five years ago, before it became the Mecca for consumptives. Dr. Fish said that altitude *per se* is not a producer of hemorrhage of the lungs. He saw good results in cases of laryngeal tuberculosis, although the voice may be affected for years. Colorado climate must be used properly. It is not enough to simply get there, and then, metaphorically, draw a razor over one's throat by doing all sorts of imprudent things, which would not be entertained for a moment at home. But the climate rationally used is a great aid to the arrest and cure of most forms of phthisis.

Dr. J. Edward Stubbert: This seems to be in one sense an experience meeting; and, while I have never been in Colorado, I am extremely interested in Dr. Fisk's paper, from my own personal experience. I, also, was born in Massachusetts, near Boston. I also developed tuberculosis when seventeen. I was not sent to Colorado, was not sent across the Atlantic, but was sent to sea in the tropics. I came back with the disease, apparently, thoroughly arrested. Four years afterward I redeveloped it in New York City. The late Professor Loomis gave me three months to live. I spent short times in Lakewood, Atlantic City and in the Berkshires. I then went to China, where I stayed two years. There I lived in a climate where the sun shone five minutes in twenty-eight days. I came back from China and went South, where I stayed for a few months. I came back to New York City and then went to Central America, where I remained for five years. We all know what the climate of Central America is, showers from morning to night, with the sunshine in between. I then weighed 131 lbs. and now 186. Dr. Fisk and I, therefore, have two parallel cases, yet one went to Colorado and the other did not. One stayed at home and took short trips and the other took trips and went to Colorado. I have applied this rule to the treatment of many cases of tuberculosis, who had the means to travel and almost always with good results. Regarding a sea trip, I have crossed the North Atlantic many times, but would not send a patient there because of the necessity of being cooped up on the steamer. In almost every instance of what we call incipient tuberculosis, when I have sent patients to the South on a sea trip, they have recovered, for they could live and even sleep on deck. It seems to me that for our *patients* we should prescribe an out-of-door life and change rather than any specific climate.

Dr. V. Y. Bowditch: In 1890, at the meeting of this Association in Denver, I said that if I were threatened with tuberculosis, I would make my way to Colorado as quickly as possible and I have had no reason to change that opinion since, unless it be, possibly, that with the lapse of years I prefered to die earlier at home. I desire now merely to put myself upon record to this effect. We now have advanced methods of home treatment for the vast number of patients who cannot go away. Every case should be judged upon its own merits. I still believe that under certain conditions the more radical change *is much* the wiser method.

Dr. Delancey Rochester, of Buffalo: I am interested in this matter of sending patients to different climates, and from my experience I have come to realize that there are two places to which we may with advantage send them, — Colorado and North Carolina. If I cannot send them to either of these two places, I do the next best thing in substituting the mountains around my home and in the Adirondacks. My last resort is to employ the home treatment in Buffalo. We ought not to try to substitute the home treatment of tuberculosis for the climatic treatment when we find such excellent results from the latter treatment.

Dr. Fisk: I do not want to take issue with Dr. Barlow, except to say that when we were in Southern California in 1902, one night at Redlands, I hung my clothes near an open window and they were so damp the next morning that I thought I would take cold.

Dr. Judson Daland read a paper on

ASSAM FEVER OR LEISHMAN — DONOVAN DISEASE.

This disease has until a few years ago been supposed to be confined to Assam and the Madras region, but recently it has been observed in Egypt and Arabia. The newness of the identification of this disease is such as to make it not impossible that we may find cases in our own states, or in the West Indies. There has been no case yet under my notice except those mentioned. The most important point of the paper is the fact that this organism is specific and peculiar to Kala azar and only found there. Last June the first successful observation was made regarding the feeding of the Kala azar to the bedbug, and the discovery of the entire cycle within the bedbug demonstrated the fact that the bedbug was the normal alternate host.

Dr. John W. Brannan, of New York, read a paper on

AIX-LES-BAINS.

The season is from May to October. From the latter part of August to the middle of September Dr. Brannan found it quite warm enough to discourage any exertion, necessitating the advice to "laze and loaf." The waters have a temperature of 111° F. (44° C.) and contain carbonates and sulphates of lime, soda and magnesia, as well as barégine. The douche massage was described. The bathing room is equipped with two kinds of hose carrying water tempered to the desired degree. In one the water is under very high pressure and is used for douching the extremities; in the other it is under slight pressure and is applied to the back and the body. One doucher is placed in front and the other behind the patient, each provided with a flexible hose discharging great volumes of water in such a way that he can at will direct the water under high pressure, upon the different extremities, leaving both hands free for simultaneous massage of the muscles and joints. The other man gives attention to the back of the neck, shoulders and body. This process lasts eight to ten minutes and the water varies from 35° C. to 42° C. in different cases. The patient is carried back in a sedan chair to his room. Not much stress is laid upon a restricted diet by the physicians, except in gouty patients. Contra-indications are organic disease of the kidneys and liver and valvular disease of the heart with imperfect compensation. Comparison was made with Hot Springs, Virginia, whose waters are similar.

Dr. F. Creighton Wellman, of Benguella, West Africa, a corresponding member, sent a paper on the

CLIMATE, NATURAL HISTORY AND DISEASE INCIDENCE OF THE ANGOLA HIGHLANDS.

(Read by title.)

Dr. Paul M. Carrington, surgeon in the Public Health and Marine-Hospital Service of the United States, presented a paper on the

CLIMATE OF NEW MEXICO.

This paper contains data on all the important stations in the territory and particularly of Fort Stanton, where Dr. Carrington has been stationed for over six years.

Dr. Fremont-Smith, of Washington, D. C., read a paper on the

EFFECT OF FLORIDA CLIMATE UPON ACUTE AND CHRONIC DISEASE.

Having practised several winters at Palm Beach and St. Augustine, the author gave personal experience of the climate in its relation to disease. The frosts seem to be more severe of late than in previous years. The cold waves usually last about three days, followed by fair, sunny weather. The climate of St. Augustine or Ormond is not dry, nor is that of Florida in any part. It is moderately humid. St. Augustine stands upon a neck of land surrounded by the water of the sea, but separated from the open ocean by a narrow island forming the harbor. An account was given of the outbreak of typhoid fever at St. Augustine in 1902. Both Palm Beach and Miami are usually below the frost line. In 1899 the temperature fell once at Palm Beach to 33° F.; in 1906, to 25° F.; in 1907, to 28°. During each season there are at least three or four cold waves, sufficiently severe to render warm clothing and careful protection of the delicate imperative.

Dr. Smith then took up the incidence of dysentery, malaria and pneumonia and showed that they are rare. A good word was spoken for Nassau in the Bahama Islands.

Dr. J. Edward Stubbert read a paper on

SANITATION IN PANAMA,

and showed a series of lantern slides in illustration. Dr. Stebbert said that one cause of the great sickness that existed during the French régime was the filth and rank vegetation that covered the isthmus from one end of the line to the other. The situation of Colon was so low as not to permit of drainage. Street and house sanitation was carried out by Colonel Gorgas. Reservoirs were built; the Ancon Hospital was overhauled and mosquito bars supplied, subsidiary hospitals were established. Malaria runs a more rapid course than in the United States. Dr. Stubbert referred to a noted writer, who spent about eighteen or twenty hours on the isthmus, and then wrote a scathing article regarding its sanitary conditions. A picture was then shown of the reservoir supplying Colon, which this writer said did not exist, but which was there at the time of his visit. So greatly have the conditions been improved that in 1906 only 28 per 1,000 were on the sick list. The ratio of deaths per thousand was 41. There are now 87 physicians in the sanitary department, with 9 hospitals and one sanitarium.

Dr. Stubbert: In reference to the report of the death-rate on the Isthmus, I would like to say that I kept very careful records of the Nicaragua, Cuba and Panama death-rate. The official death-rate of Panama has never been tabulated. The death-rate on the Isthmus was enormous during the French *régime*. At Nicaragua it was .7 of 1%.

Dr. J. M. Anders, of Philadelphia, read a paper entitled

A PRELIMINARY STUDY OF HEMOPTYSIS DUE TO TUBERCULOSIS.

Subdivisions were made into cases occasioned by either congestion of the bronchial mucosa and lung texture, or ulceration or erosion of vessels, or rupture of miliary aneurisms. He questioned whether, in point of intensity, the hyperemia of early pulmonary tuberculosis is equal to that of many other acute and chronic diseases of the lungs, in which the tendency to free bleeding is decidedly less marked. It is probable that minute areas of necrosis are responsible for these early hemorrhages. Chronic valvulitis affecting the mitral segments in cases of pulmonary tuberculosis is a cause of hyperemia and congestive bronchitis. Tables showing the relation of age, sex and seasonal influence were exhibited.

Dr. Anders believes that residence far removed from the seacoast is best for patients suffering from hemoptysis. Rarefied, dry air is best. Coughing must be controlled and hot and alcohol drinks forbidden. Aconite in one-drop dose every third hour is advised.

Dr. E. O. Otis, of Boston, read a paper on

THE BLOOD PRESSURE AS A GUIDE IN THE TREATMENT OF HEMOPTYSIS.

The severer hemorrhages were not considered, but rather the less severe cases occurring generally in the earlier stages of the disease and chiefly the recurrent or persistent forms. A Janeway sphygmomanometer with a wide cuff was employed, and the nurses at the Massachusetts State Hospital at Rutland were instructed in its use. The standard blood pressure for each case was established and was found to be 126 for men and 120 for women. In 18 recurrent cases, when the pressure was found high, the nitrites were given; when low, ergot was used. Ergot is too slow, however, to produce immediate results.

Dr. Delancey Rochester: From observations which we have been making upon blood pressure, I am convinced of the very slight effect of drugs of any sort in reducing blood pressure and of the very temporary effect of any of them. We have had cases of diseases of the kidney and of advanced arteriosclerosis, in which there was high blood pressure. In one case the blood pressure rose to 255 and then the instrument broke; how much higher it would have registered I do not know. No drug used in that case had any effect, and in a number of other cases nothing but the nitroglycerin in solution made any impression upon the blood pressure. The effect of this was only for ten minutes, when there would be a fall of from 20 to 30 points and then it would rise again. The nitroglycerin in tablet had no effect. The amyl and various other nitrites were of no use at all. Sweating induced by hot air and steam baths and by hot foot baths, regulation of diet and use of purgatives were of some value.

Dr. Fisk: I desire to express my appreciation of Dr. Otis's paper and to suggest the beneficial effects of fresh air in coagulating the blood and of calomel in diminishing blood pressure.

Dr. Thomas A. Claytor: I want to substantiate what Dr. Rochester has said about drugs having no effect in the reduction of blood pressure. Nitroglycerin and the nitrites have been of little value in my hands. Potassium iodide given over long periods has had rather more effect. Rest, diet and purgation have been about the only satisfactory methods in my hands of reducing blood pressure.

Dr. Fremont-Smith: The value of the nitrites seems to lie principally in releasing the local spasm of blood vessels in which high tension exists. The nitrite of sodium and nitroglycerin in the neuralgias of various types dependent apparently upon local spasm of sclerosed blood vessels of are great value, as in certain headaches and in angina pectoris.

Dr. R. H. Babcock: This paper is extremely interesting and suggestive. I was much struck with the fact that the average blood pressure in these cases was moderately high, — 126 mm., with the Janeway instrument. Most of us have had the impression that blood pressure in tuberculous patients is usually toward the lower reading. I agree that the nitrites and remedies of that sort do not materially lower blood pressue. I should suggest that, if in any case of hemoptysis the blood pressure were high, the measures to reduce it in addition to rest would be such measures as quiet heart action, because patients with hemoptysis are more or less excited or disturbed by reason of the symptom, and an excitement on the part of the heart raises the systolic blood pressure. Therefore, such measures as rest, morphine and gentle purgation would certainly be indicated in these cases. Where blood pressure is extremely low I should question the effect of ergot, believing that measures such as abdominal pressure or ligation of the extremities would really be more efficacious than the administration of ergot. I believe, indeed, that even digitalis would be of great benefit. Dr. Otis will see that I am still unconvinced as to the advantage of ergot in cases of pulmonary hemoptysis.

Dr. Thomas Darlington: Not bearing directly upon the question of blood pressure, but upon the matter of nitroglycerin, I would like to say that within the last year the Department of Health made many analyses of tablets of nitroglycerin and in many instances the amount present in the tablets was so small as to be practically useless.

Another point in connection with nitroglycerin and of which I made some investigation over twenty years ago, is that in cases of poisoning by nitroglycerin it was found that ammonia immediately restores the color to nitrite poisoned blood; that is, ammonia with nitroglycerin is incompatible.

Dr. Otis: One of my objects in presenting these observations was to compare our experience with that of others, so as to obtain further light upon the relation of hemoptysis and blood pressure and thus, perhaps, arrive at something more definite and precise in treatment. Hemoptysis is not an uncommon occurrence; often persistent and recurrent, extending over weeks and months. I earnestly hope that others who see many cases in sanatoria or in private practice will observe the relation between blood pressure and hemorrhage and report their results. We may find that ergot still has its place in the treatment of hemoptysis.

Dr. F. M. Pottenger, of Los Angeles and Monrovia, Cal., read a paper on

THE RELATIVE VALUE OF HIGH AND LOW ALTITUDE IN THE TREATMENT OF TUBERCULOSIS.

Dr. Pottenger acknowledges that men are very much influenced by their surroundings and hence the difference of opinion on this question. After depicting the unfortunate condition of those who are sent to remote regions without proper means or safeguards, he made the proposition that a climate making great demands on metabolic processes requires a hardy man to endure it. Elevated climates fall in this class, are variable with seasons, and while the young and robust are particularly suited to such conditions, those in advancing years should be spared the excessive demand for tissue change. Rest is the better method of treatment of pulmonary tuberculosis.

Dr. W. Jarvis Barlow, of Los Angeles, reported on

TWO HUNDRED CHARITY CASES OF PULMONARY TUBERCULOSIS UNDER SANATORIUM TREATMENT AT LOS ANGELES.

Ninety-two per cent of the cases were beyond the first stage; they were mostly refined people reduced in circumstances. The paper showed very clearly that good results may be sometimes obtained by properly caring for those advanced in the disease. One is often astonished at what an improvement an advanced case, given up, makes when conditions have been made favorable. It is difficult to estimate the lives that may be saved by isolating these poor advanced cases, who are shut out from most of the charitable sanatoria. These 200 cases were treated during three and a half years. Raw eggs and olive oil are given to each patient. The oil is less expensive than cream.

Advanced cases are given a trial of three months and if the case showed progression, arrangements are made to send the patients to a place where family or friends can care for them. Many are sent back to the East. Advanced cases which make a marked improvement and begin to have normal temperatures are placed in cottages, so that, irrespective of the stage, there is no difference made in the cases doing well.

The problem of after-care was discussed and Dr. Barlow said that if financial conditions and housing capacity were larger, the ultimate results would seem to justify the indefinite care of undesirable cases.

Of the first 100 cases 93 showed on admission the second and third stages. Sixty-two per cent showed progression or died; 37% improved. Of the second 100 cases 91 were admitted in the second and third stages; 45% showed progression, or died; 55% improved.

Dr. Charles Denison, of Denver, exhibited a model of a "sleeping canopy," designed to afford tent advantages indoors and showed photographs of its adjustment.

Believing that deficient ventilation is responsible for most of our tuberculosis, great stress was laid on the susceptibility of the individual, and the need of fortifying the system and dispelling unreasonable fears. A camper in the Rocky Mountains can get so inured to the drafty air that he can sleep on the ground with the wind blowing 20 to 40 miles an hour and not think of "catching cold." So a sleeper, by having warm enough coverings on the bed and a thick woolen hood on the head in winter, or a light soft night-cap in milder weather, can so temper the air movement that no danger of catching cold will result. The canopy is made of denim. Specifications and drawings were shown.

Dr. Richard Cole Newton, of Montclair, N. J., read a paper on

PERSONAL HYGIENE IN THE PREVENTION OF CONSUMPTION.

The lesson was drawn chiefly from the experience with our American Indians during the last thirty years. While they are not inherently more liable to infection with tuberculosis than is a white man under like circumstances, their exceedingly filthy habits and fondness for liquor and unventilated dwellings make the mortality from phthisis great. In the nomadic life they had new locations every little while, but in permanent quarters filth keeps accumulating. In the same region, where the white man suffers least from tuberculosis, the Indian sickens and dies. An analogy between the Indians and negroes was drawn. Experienced army officers say that the red man is gradually becoming weaker and more prone to sickness. Infection plays a secondary part in the production of consumption and so does heredity. The principal cause is a man's life habits.

Dr. Arthur K. Stone and Dr. Cleaveland Floyd, of Boston, read a paper on the

DAILY CARE OF CONSUMPTIVES AT A GENERAL HOSPITAL AS AN AID IN SOLVING LOCAL TUBERCULOSIS PROBLEMS.

Statement of the experiment of the House of the Good Samaritan in the care of ambulatory cases of tuberculosis; daily medical supervision; out-door treatment; good food; home supervision. Twenty-five patients thus cared for with small addition to the administration force of the hospital; cost per patient, very small; results, good. [To appear in this Journal.]

Dr. F. I. Knight, of Boston, read a paper on

THE IMPORTANCE OF SUPERVISION OF PATIENTS AFTER LEAVING SANATORIA APPARENTLY CURED OF TUBERCULOSIS.

[See a future issue of this Journal.]

Dr. Vincent Y. Bowditch, of Boston, and Dr. Walter A. Griffin, of Sharon, read a paper on

SUBSEQUENT HISTORIES OF ONE HUNDRED AND SIXTY "ARRESTED CASES" OF PULMONARY TUBERCULOSIS TREATED AT THE SHARON SANATORIUM.

[See a future issue of this Journal.]

DISCUSSION OF PAPERS OF DR. BARLOW, DR. POTTENGER, DR. DENISON, DR. NEWTON, DR. STONE AND DR. KNIGHT.

Dr. J. M. Anders: I was very glad to hear Dr. Barlow speak in favor of the treatment of advanced cases of pulmonary tuberculosis. I think there is too much inclination to abandon active measures in this class of cases, whilst, as a matter of fact, they are occasionally savable. In 1900 I read a paper before this Association, in which I took the position that the tuberculin test was absolutely reliable as a diagnostic measure. I am not surprised to hear Dr. Bowditch say that finding the tubercle bacillus is, perhaps, after all, the only reliable diagnostic test. In 1900 the consensus of opinion seemed to be in favor of the opinion before mentioned. Since that time, however, I have had occasion to change my mind a bit in regard to this question, because I find that while we get typical and unmistakable reactions, as a rule, in rare cases, we cannot eliminate intervening conditions; and the subsequent course of two of my cases proved them to be something else than tuberculosis. The tuberculin test is, however, an almost absolute sign of the existence of tuberculosis. The question of a close observation of cases after returning home from sanatoria is one of the greatest practical importance, especially to the general practitioner. I fear that the latter is too much inclined to either discharge these patients when they return from sanatoria apparently cured, or allow them to use their own judgment as to whether they need further treatment or not. No fact is better established and this was brought forward in the papers read here this morning, than that temporary arrest and even apparent cure is often followed by fresh exacerbations without obviously existing cause. It seems to be a part of the natural history or course of the disease. We fail in our plain duty when we fail to keep in touch with these patients after their return from sanatoria. In all cases in which I have been able to keep them under supervision, the necessity for such a course soon became apparent. As stated by Dr. Knight, when they return to their home environment resistance becomes lowered and they are especially susceptible to intercurrent attacks of bronchitis and influenza, and, more than this, if the latter is not properly handled, it will lead to a relapse of the original disease. The same fact is recognized with reference to cases of pleuro-effusion that are apparently cured; they often merge into pulmonary tuberculosis subsequently. These convalescents also require close supervision, being, for the most part, tuberculous subjects, and I think it is a reproach to the medical profession that so many cases of apparently healed pleuro-effusion are allowed to develop into pulmonary tuberculosis. If there were maintained a state of high physical health and efficiency this sequel would be, to a large extent, prevented.

Dr. Delancey Rochester: I desire to enter my protest against the position of Dr. Bowditch and Dr. Anders, that the tubercle bacilli are absolutely necessary for the diagnosis of tuberculosis, or that the presence of the bacilli is the only ultimate test of the presence of tuberculosis. I feel that we can diagnose tuberculosis of the lungs and be sure of it without the presence of the bacilli and without the tuberculin test. It is not necessary to go into details as to methods, but I am perfectly sure, however, that we can make an absolutely sure diagnosis without this method.

With reference to Dr. Stone's statement that their patients were supplied with cloth bags, in which were rubber bags supplied with paper napkins and that the bag could be disinfected after the napkins were destroyed, some one has suggested that the bags be of paper. They could be bought for a few cents and could be destroyed every day.

I think in the matter of nourishment between meals, Dr. Minor's point is very well taken. I instruct my patients in business to have milk delivered to them at the office, or to take it from home with two or three eggs mixed with it before leaving home.

Dr. E. O. Otis: The subsequent career of sanatorium patients who are discharged with their disease arrested is a very serious question and deserves careful consideration. With the increase of sanatoria throughout the country and consequent increase of discharged patients, the problem of what to do with them so that they may remain cured and be capable of remunerative work becomes insistent. The farm colony that has been proposed is one solution of the problem and offers many possibilities. It might naturally become an annex to the sanatorium and discharged patients could become hardened and "the cure" made more permanent, so that subsequently they could return to their occupations in the city under favorable conditions of work, or be placed in the country in different positions, where they could lead an outdoor life. The first farm colony of this kind to be inaugurated as far as I know in this country is at the Stony Wold Sanatorium, at

Lake Kushaqua, in the Adirondack Mountains, under the supervision of its founder, Mrs. James E. Newcomb, of New York.

Dr. Thomas W. Harvey: I think that the literature which we have been receiving on tuberculosis, while it allows of the influence of the bacillus as a cause, gives much evidence of the prevalence in the minds of many medical men that the principal reason for the continuance of the disease is the presence of the general practitioner. He does not recognize the disease early enough, wants to keep it under his care, or sends it to the wrong place or sends it at the wrong time. The problem of the advice to be given concerning the immediate treatment of early cases of tuberculosis is almost as important as the question of their care after treatment in sanatoria. There are several elements in this question which I have seldom seen discussed. First, in choosing between treatment away from home and treatment at home, the question of sex is most important. Of the tuberculous patients whom I have had to advise in the early course of the disease, I have found that the women can be taken care of very often at home, but I have yet to see the man whom I have been able to take care of at home. That is due particularly, I think, to the fact that he is the money-earner. Even among the well-to-do the women can be taken care of better at home than can the men, in a percentage of ten to one. Second, the question of temperament. There are some men who will not submit to the discipline of sanatoria and have gone off by themselves and succeeded better. While the discipline received at sanatoria is most valuable to themselves, to their families and to the community, there are individuals upon whom it seems to have an antagonistic effect.

Dr. Leonard Weber, New York City: I believe if there is any disease common to man, the development of which depends on social conditions, it is tuberculosis, particularly tuberculosis of the lungs. It is true that by sanatorium treatment, public and private, by home treatment and by hygienic measures, much has been accomplished, but few cases of permanent cure of pulmonary tuberculosis occur and we shall stay far from curing until we find a specific remedy. We are accustomed to look at the tuberculous man only, tell him what he should and should not do, and to the working man how to live in order not to get tuberculosis; but I think this society must also look at the other man who is responsible to a very large extent. I mean by that, those men who run factories over time, who employ child labor, organize and run sweat shops; who build miserable tenement houses, get high rents and give little air and sunshine for it, together with all the other unhealthful conditions which lay the foundation for tubercular disease, not only in the feeble but in the rugged. The employer of labor, the builder of tenements and the owner of houses in unsanitary conditions ought to be looked after; they often need admonition and instruction and restraint to prevent infection and spread of tubercular disease.

Dr. Bowditch: I am very glad that Dr. Rochester brought up the question of diagnosis without the presence of tubercle bacilli in the sputum. It only shows that when one has a distinct impression in his own mind, he often fails to impart it to others. I would be willing to stake whatever reputation I may have had upon the truth of my diagnosis, simply from the history and from the physical signs alone. What I intended to say in my paper was that the tuberculin test had been given in certain cases in which bacilli were not found simply as an additional proof of a previous diagnosis, in order to convince the "doubting Thomases" that tubercular disease was present. At the same time I meant to state that the final convincing proof of the presence of tuberculosis is shown in the appearance of bacilli in the sputum.

Dr. Philip Marvel, of Atlantic City, reported

TWO CASES OF PAROXYSMAL TACHYCARDIA, WITH BRIEF REFERENCES TO OTHER CASES ALREADY REPORTED.

Case I was that of a woman aged forty-eight, who had seizures in which faintness and oppression in the chest were prominent symptoms. These recurred every month or six weeks. Dr. Marvel saw her in an attack of indigestion with severe cramplike pains in the abdomen, a dysenteric diarrhea, with considerable tenesmus and nausea, following a hearty meal, including crabs and oysters; after which she remained in the surf almost continuously for two hours. Her temperature was subnormal and she was pallid, with colorless lips. Dr. Marvel used external heat, enteroclysis, morphia hypodermically with digitalis later. The pulse had then risen to 192 by the following day. On the third day she had recovered.

Case II was that of a physician aged fifty-five, who was convalescent from grippe. Two weeks after arrival at Atlantic City, he was seized with a night attack of "over-action of the heart," as he expressed it. The pulse was about 200, feeble and accompanied by a sense of oppression and fullness about the cardiac region. These attacks had occurred during three years and occasioned great apprehension and extreme anxiety. A hypodermic of morphia allayed his fear, although the rate of the heart continued rapid. In a fortnight he had another attack and after three more weeks another very severe one, the pulse rising to 210. He had an attack of nephritic colic two weeks later and seven months after an operation for calculus of the kidney; he died of pneumonia.

Dr. Jay Perkins, Providence, read a paper on

CARCINOMA OF THE MEDIASTINUM SIMULATING ANEURISM.

A miner, thirty-three years of age, who for several years had worked hard in the Klondike, suddenly developed marked enlargement of the neck, followed by dilatation of the superficial veins of the whole body, accompanied by double murmur at aorta and later great enlargement of area of cardiac dullness, including dullness over whole of sternum, lower right chest (and before death whole right chest), and some enlargement of glands above right clavicle and in right axilla, x-rays showing pulsating mass to left of spine at arch of aorta.

Autopsy: Small carcinomatous growth pressing on superior vena cava; large carcinomatous growth under upper part of sternum; tuberculous infiltration of right lung. Heart and aorta normal.

Dr. Thomas A. Claytor, Washington, D. C., read a paper on

DILATATION OF THE HEART.

After considering the many cases of cardiac dilatation in which we can find a definite and tangible cause, there still remains a fairly large class in which we are not able to find any perfectly satisfactory explanation. We must fall back on the nervous system and say that the cause is loss of muscular tone.

Dr. Claytor cited a case of a lawyer who, though well advanced in years, had always been a man of remarkable vigor, who brought on the symptoms of a dilatation by the preparation of a long and important brief. He had just concluded his arduous task when he was suddenly seized with dyspnea and oppression in the cardiac region. Dr. Claytor found the heart considerably enlarged, acting very irregularly and a mitral systolic murmur present, but it was not determined whether this was due to a true valvular lesion or to a relative insufficiency from dilatation, as the patient fortunately recovered.

In another case, that of a woman aged forty, who for a long time had the physical signs of a mitral stenosis and then developed a broncho pneumonia, with a very harassing cough. After a few days of constant coughing, marked orthopnea with edema of the lungs developed. Examination showed a loud systolic murmur in the tricuspid area, in addition to the pre-existing mitral stenotic bruit; caffeine in liberal doses gave fairly prompt relief and the wall of the right ventricle so far regained its tone that the systolic murmur was soon scarcely audible.

Dr. Charles E. Quimby read a paper on

SOME MANIFESTATIONS OF ARTERIAL TENSION.

Dr. Quimby said that arterial tension, excluding syphilis and alcohol, is always a functional, not organic, condition, at first; a result and symptom, not a primary or direct cause. It is a symptom common to, and the only common symptoms of, many diverse and apparently unrelated (so-called) diseases. As such it points to their dependence upon a common cause, however diverse the symptom-complex; and thereby leads to recognition of the fundamental cause, with appropriate treatment. Illustrative cases.

Dr. Howard S. Anders, Philadelphia, presented a paper on

INFLUENZA AND WEATHER INSTABILITY.

Medical history is generally meager in meteorologic studies as related to most diseases, even in those which give *prima facie* evidence of being affected by meteorologic states. Tuberculosis is a partial exception. Epidemic influenza also. Writer's initial and serial studies since 1899. Recent recurrence of influenza in winter of 1906-7. Conclusions from former studies. Data and inferences from latest phenomena. Day-by-day weather instability and frequency and extremity of changes probably more to blame for susceptibility to influenza and its virulence than is shown by any study of monthly averages of barometric, thermometric, hygrometric, or sunshine percentage readings.

At the business meeting a memorial of the late Dr. S. E. Solly, of Colorado Springs, was read by Dr. James A. Hart; a memorial of the late Gen. Charles H. Alden, U. S. A., by Dr. Roland G. Curtin; a memorial of the late Dr. W. C. Glasgow, of St. Louis, by Dr. Guy Hinsdale.

The following officers were elected for 1908: President, Dr. Thomas D. Coleman, Augusta; Vice-Presidents, Dr. Judson Daland, Philadelphia, and Dr. Charles Fox Gardiner, Colorado Springs; Secretary and Treasurer, Dr. Guy Hinsdale, Virginia Hot Springs; Member of Council, Dr. Thomas Darlington, New York.

Next place of meeting, Boston, June, 1908.

Book Reviews.

Treatment of Skin Cancers. By W. S. Gottheil, M.D. Third edition. Revised and enlarged. International Journal of Surgery Company. New York.

In this third edition of Gottheil's little book, the chapters on treatment have been entirely rewritten and more than doubled in amount. Special attention has been paid to the subjects of the x-ray, radium and the high tension current in the treatment of skin cancers. The claims of arsenic as a therapeutic agent are still highly extolled.

Indigestion. By George Herschell, M.D., London. Third edition. 282 pages. Entirely rewritten. Chicago: W. T. Keener & Co.

A text-book devoted to the diagnosis and treatment of the functional derangements of the stomach. A new section has been introduced in this edition which takes up the selection and preparation of food for dypseptics.

Essentials of Diseases of the Skin. By Henry W. Stelwagon, M.D., Ph.D. Fourth edition, thoroughly revised. Philadelphia: W. B. Saunders Company.

In this fourth edition of Stelwagon's "Question Compend," the entire book has been subjected to a careful scrutiny and revision. Several of the more rare affections, such as blastomycetic dermatitis and hydroa vacciniforme, have been described.

Manual of Operative Surgery. By John Fairbairn Binnie, A.M., C.M. (Aberdeen), Professor of Surgery, Kansas State University, Fellow of the American Surgical Association, etc. Third edition, revised and enlarged; with 678 illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

Binnie makes an apology for this third edition, but no apology is needed. Since the first edition was issued some four years ago, we have regarded this book as the best manual of operative surgery published in the English language. In his writing of scientific English Binnie displays two admirable traits, — he quotes profusely and comprehendingly from other writers, and he punctuates their conclusions with searching practical suggestions of his own. He is a tireless reader, who searches the literature. He is a helpful and stimulating writer who presents facts in such a fashion that he who runs may read. Again, without hesitation, cheerfully and confidently we commend this book to operating surgeons.

Post-Operative Treatment. By Nathan Clark Morse, A.B., M.D., of Eldora, Iowa. Second edition, revised and enlarged. Containing 5 plates and 175 other illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

This second edition of Morse's useful book, following close upon the first, suggests the popularity of the writing and the need of such a work. The new edition is some thirty pages longer than the first, but essentially it is a reproduction of the book as published two years ago.

For the general practitioner and busy surgical assistant this book must be of service. Morse does not pretend to give us an elaborate original essay on post-operative treatment. His pages are filled with carefully selected extracts from the writings of others, and occasionally his own preferences are expressed.

The publishers have done their work well. The letter press and illustrations are good.

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BOSTON CONSUMPTIVES' HOSPITAL.

Although not widely advertised, the work of the Boston Consumptives' Hospital Trustees has been extremely active since their appointment as a board. As is generally known, land has been secured in Mattapan for the proposed tuberculosis hospital and measures are being taken to construct buildings as speedily as possible for the reception of patients. In the meantime, however, the board has turned its attention to matters of equal if not greater importance in its efforts to combat the disease by methods which accumulating experience has approved.

A step of great significance is the establishment of a dispensary or out-patient department in the city proper, which it is expected will be open for the reception of ambulatory patients early in September, if not before that date. For this purpose the property at 13 Burroughs Place has been secured, and is being equipped with all that is necessary for the complete examination of patients who may present themselves. In connection with this dispensary there will be a laboratory in which bacteriological work, and such other as relates to the problem of tuberculosis may be efficiently carried on. Dr. W. T. Councilman has been appointed pathologist to the dispensary, and the staff of physicians, under the headship of Dr. E. A. Locke, is ready to undertake the work which the proper conduct of the dispensary will entail. The hospital, which is as yet unconstructed, and this out-patient department are both to be under the superintendence of Dr. Simon F. Cox, whose admirable service in connection with the Long Island Hospital will be remembered.

It is the intention of the trustees to open this dispensary at first several mornings a week, and later, as the demand comes, to make it available also afternoons and evenings. The essential idea is to get as near the real tuberculosis problem in this city as is possible. To this end homes will be visited by a nurse who will be capable of examining into the conditions and instructing families in such measures against the disease as may be necessary. Milk, eggs and proper food in general are to be supplied to the sick, and, when necessary, to those of the family who may still be free from the disease. When the home is found not to be hygienic, assistance will be given in finding a more suitable place of residence. It is furthermore expected that families will be examined for tuberculosis or other diseases and referred to the proper country homes or hospitals, as the situation may demand. Cases are to be tabulated by families, by houses and mapped out by streets. Perhaps more important than all the other measures which we have suggested will be the attempt to eradicate the sources of contagion, which it is now generally acknowledged are the late cases which have hitherto found scanty consideration in our combat against the disease. The class work instituted by Dr. J. H. Pratt in this city will be further developed and taken up on a considerably larger scale than has hitherto been possible.

From the foregoing it appears that the trustees have conceived the admirable idea of constituting this out-patient department in the city proper a clearing house, as it were, for all cases of tuberculosis at whatever stage of the disease they may be. The design of the hospital at Mattapan is to care for the chronic and in great measure hopeless cases throughout the city; but this most important work does not in the least preclude the effort toward proper classification, which is eminently desirable in the present state of the problem. If it could be generally understood that this out-patient department in Boston is the tuberculosis center, where all cases may present themselves for examination and as a preliminary to their proper disposition thereafter, it is evident that a policy of centralization would be organized which would be of the greatest possible significance and value. At present, for example, applicants for the State Sanatorium at Rutland are examined at the Massachusetts General Hospital and other places in the city. The new plan, if carried out, would obviate this necessity, since all such patients could be examined at the new out-patient department at great economy of time and the avoidance of possible confusion. The management, also, of the special Boston hospital, although itself caring for a very small proportion of the patients seen, would come to have an increasingly accurate knowledge and control of the entire tuberculosis situation throughout the city, which would naturally be a source of increased efficiency.

It is not to be questioned that the Board of Consumptives' Hospital Trustees has inaugurated a wise and feasible plan and placed its execution in most competent medical hands. It will naturally take both time and accumulated experience before so comprehensive a scheme can reach the stage of complete efficiency, but with the co-operation of hospitals, special societies and individuals it is not to be doubted that the centralization which is evidently desirable will in time be accomplished. We cordially commend the plan as we understand it in all its bearings.

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LABORATORIES IN THE MEDICAL CLINIC.

The growing complexity of clinical medicine is well shown by the progressive development of the laboratories of a modern clinic of medicine. A comparatively few years ago the equipment of a clinical laboratory consisted of hardly more than a few test tubes, a half dozen bottles of reagents and a microscope, and these were amply sufficient for the demands coming from the bedside. The advent of bacteriology and its attendant methods of serum diagnosis brought a more extensive laboratory techinque into routine usage. Since those days the laboratory as an adjunct of the medical clinic has extended its scope much, so that now the modern clinic, to be well equipped for the routine study of cases and for clinical investigation, must possess a complex laboratory plant, where may be applied the methods of physiology, chemistry, bacteriology, pathology, physics and biology.

The attempt to meet these demands in this country has been made for the most part through the pathological laboratory with subsidiary departments of bacteriology, clinical pathology or chemistry in individual cases. By this means much valuable work has been done, but in most cases there has been an appreciable gap between the clinic and the laboratory, due to the fact that the pathologist at present in charge of most of these laboratories is not a clinician and so not accustomed to see the clinical aspect of possible problems. Thus the problems arising from the clinic are apt to be overlooked, or not fully appreciated. This may be said without belittling the work of the pathologist, for he has a definite place in the hospital equipment, with many fields of activity, which he has or is still working productively.

There is, however, gradually growing in America the idea of the laboratory of clinical medicine, directed by a head primarily a clinician, dominated by the problems of the clinic, peopled by those in training for clinical work and having the aid of men specially trained in chemistry, biology and physics. A recent number of the *Johns Hopkins Hospital Bulletin* (June–July, 1907) has a description of the laboratory organization of that hospital, which is of interest in this connection, with its subdivisions into a general clinical laboratory, a biological laboratory, a physiological laboratory and a biochemical laboratory, each with its own head. The chief features of this laboratory group are their compact organization, close association with the wards and the possibility of the solution of a wide range of clinical problems. The eighteen contributions from these laboratories which follow the introductory description of the organization and equipment show well the desirability of such a plant, though in type the inspiring enthusiasm of such a group of workers is inadequately shown; that can only be appreciated in a visit to a clinic of medicine so organized. In Germany such laboratories for some time have been adjuncts of the better medical clinics and explain in good part their activity in medical investigation. It is gratifying to see a similar development begin in America.

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CONFERENCE ON SLEEPING SICKNESS.

An international conference on sleeping sickness has recently been held in London. Although this disease is peculiar to Africa, there is evidence that through the increase of communication between tropical and semi-tropical countries a spread of the disease is likely. This has, in fact, already occurred to a considerable and somewhat alarming extent. It has appeared on the Egyptian Soudan on the north, has entered Rhodesia and is threatening Zululand. White men are not immune, and it is not as yet understood exactly what climatic conditions are essential for the life and propagation of the fly which is apparently the temporary host of the germ of the disease. It is known that the fly haunts regions rich in water and foliage such as are found in tropical countries, and it is a matter of apprehension lest the flies be carried into those regions where white settlements are situated. If this should occur, it is feared that the progress of the disease would be extremely rapid owing to the lack of immunity of the white races. The fatality of the disease is hardly appreciated by those who have not been brought into intimate contact with it. In epidemic form it is said to be more destructive than any other disease known. In Uganda, for example, which is the most infected area, it is stated that, out of a total population of 300,000, 200,000 have died. In view of these facts, it is apparent that the investigation of the disease, already well advanced, should be prosecuted with the greatest possible vigor. It is established that an animal parasite is the cause of the disease, which has been named Trypanosoma Gambiense, and that this parasite is presumably injected by the bite of a certain fly. Whether or not this fly is the sole bearer of the parasite and many other matters of detail are not as yet definitely determined. With our present knowledge of parasitic disease, however, and the extraordinary impetus which this line of investigation has recently been given, there is small reason to doubt that this increasingly fatal disease will before long be understood and mastered. It is a matter of the greatest possible importance to the colonization of Africa.

MEDICAL NOTES.

An Army Hospital. — Plans have been completed for the establishment of an army general hospital and medical station in the District of Columbia. A hospital building is now under construction, and it is intended to remove to this site, which is beyond the present Soldiers' Home, the army medical school, now on the Smithsonian Reservation. It is expected that a post-graduate school will be established for newly appointed assistant surgeons and for older officers who may wish to take up some special line of study. When completed, the hospital will be the largest of its kind under government supervision and will number many buildings. The site overlooks the national capitol, and the hospital is to serve as a memorial of the late Major Walter Reed, in recognition of his distinguished services in the investigation of yellow fever.

Medical Legislation in the Navy. — It is hoped by naval medical officers that legislation favorable to the hospital corps of the navy may be accomplished at the coming session of Congress. An increase of pay and reorganization of the service is regarded as essential if suitable men are to be secured in the future. A recommendation in favor of the establishment of a dental corps will also be presented and an effort made to permit the employment of women nurses, particularly at naval hospitals.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, July 31, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 51, scarlatina 21, typhoid fever 11, measles 38, tuberculosis 33, smallpox 0, leprosy 0.

The death-rate of the reported deaths for the week ending July 31, 1907, was 16.94.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, July 27, 1907, was 173, against 211 the corresponding week of last year, showing a decrease of 38 deaths and making the death-rate for the week 14.80. Of this number 96 were males and 77 were females; 168 were white and 5 colored; 110 were born in the United States, 56 in foreign countries and 7 unknown; 32 were of American parentage, 115 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 48 cases and 2 deaths; scarlatina, 18 cases and 1 death; typhoid fever, 20 cases and 1 death; measles, 58 cases and 4 deaths; tuberculosis, 48 cases and 18 deaths; smallpox, 0 case and 0 death. The deaths from pneumonia were 11, whooping cough 0, heart disease 19, bronchitis 4 and marasmus 5. There were 10 deaths from violent causes. The number of children who died under one year was 38; the number under five years, 57. The number of persons who died over sixty years of age was 26. The deaths in public institutions were 63.

There were 4 cases and 3 deaths reported from cerebrospinal meningitis during the week.

Appointment of Dr. Mooers. — Dr. Emma W. Mooers, formerly assistant pathologist at the McLean Hospital, Waverley, Mass., has recently accepted a position in the University of Munich where she is now assistant instructor in the Psychiatrische Klinik of which Kraepelin is the head.

Bequest to Massachusetts Charitable Eye and Ear Infirmary. — By the will of the late F. R. Sears, of Nahant, Mass., $20,000 is left to the Massachusetts Charitable Eye and Ear Infirmary, the income to be used to promote the happiness of the patients of the institution. Mr. Sears never had an official connection with the institution, but was particularly interested in its work.

Gift to Lynn Hospital. — Mr. Charles H. Newhall, of Lynn, has given to the Lynn, Mass., Hospital corporation 10,000 square feet of land adjoining the present hospital grounds. Mr. Newhall is vice-president of the hospital corporation and one of the chief benefactors of the institution. By the acquisition of this land the property will be protected and opportunity offered for future expansion.

Meeting of Massachusetts Association of Boards of Health. — At the quarterly meeting of the Massachusetts Association of Boards of Health, held last week on Gallup's Island, Boston Harbor, papers were read on Recent Public Health Legislation, by Dr. Henry P. Walcott, chairman of the Massachusetts State Board of Health, and Frank K. Wheatley, Senator from Plymouth County.

NEW YORK.

Bequests to Hospitals. — By the will of the late Mrs. Susan A. R. Moses, of Brooklyn, N. Y., the sum of $50,000 is left to various religious and charitable institutions. Among the charitable bequests, some twenty in number, are $5,000 each to the Brooklyn Home for Consumptives and to the Cottage Hospital of Laconia, N. H.

Wainwright Westchester Sewer Bill. — Governor Hughes has signed the Wainwright Westchester Sewer bill. This provides for the construction of a great sewer through a considerable portion of Westchester County, which is to empty the sewage of the district, including the large towns of White Plains, Mount Vernon and Yonkers, into the Hudson River. Much opposition was at one time brought to bear against the passage of the bill, particularly by the Merchants' Association of New York, on the ground that the sewer, with its outlet just below the city of Yonkers, would tend to increase the pollution of the Hudson's waters; but it is stated that this opposition was afterwards withdrawn when the bill had been amended in such a way as to obviate the menace to public health which was involved in the original measure.

Current Literature.

The Journal of the American Medical Association.
July 6, 1907.

1. Sanders, W. H. *State Medicine; Its Foundation, Superstructure and Scope.*
2. Gorgas, W. C. *Sanitation in the Canal Zone.*
3. *Arneill, J. R. *Digestive Disorders in Pulmonary Tuberculosis.*
4. *Connor, L. *Does the Opacity of Incipient Cataract Ever Regain Transparency?*
5. Ray, J. M. *Loss of Vitreous Humor in the Operation for Extraction of Cataract.*
6. Willson, R. N., and Marcy, A. *Rupture of an Aortic Aneurism in a Child of Four Years.*
7. Parker, W. R. *Neurofibroma of the Orbit, Kronlein Operation.*
8. *Munson, J. F. *Suprarenol Hemorrhage; An Unusual Cause of Sudden Death.*
9. Casselberry, W. E. *The Indications for Resection of the Middle Turbinal.*
10. Ricketts, H. T. *The Rôle of the Wood Tick in Rocky Mountain Spotted Fever.*
11. *Elliott, A. R. *A Clinical Study of Blood Pressure Variations in Diabetes and Their Bearing on the Cardiac Complications.*
12. *Solis-Cohen, M. *Latent Diphtheria. A Public Health Problem.*
13. Searcy, G. H. *An Epidemic of Acute Pellagra.*

3. Arneill calls attention to the frequency of enteroptosis with functional gastric and intestinal symptoms in pulmonary tuberculosis. These often cause the patient to limit his diet to the point of starvation. The patient's symptoms which result directly from the tuberculosis may be completely overshadowed by the psychoneurotic dyspeptic complaints. It is of great importance, therefore, that these receive proper treatment, largely by suggestion, rest, generous feeding and general correction of mode of life. A thorough investigation of digestive functions is often desirable, but in most cases the indigestions which arise in the course of pulmonary tuberculosis, too often as a result of over-feeding, can be treated along symptomatic lines, by bitter tonics and hydrochloric acid or by alkalies and antifermentatives. In general, incipient cases do not show abnormality of gastric analysis. Cases of moderate advancement show most often hypochlorhydria, but occasionally hyperchlorhydria; and advanced cases show diminished or absent hydrochloric acid and pepsin with diminished motor power. When this loss of motor power is due to enteroptosis, relief may often be given by means of adhesive plaster bandages or abdominal belts. The danger of over-feeding must not be disregarded; forced feeding should be persisted in only until nutrition has reached an eminently satisfactory point; it should not be pushed to the point of producing indigestion and obesity.

4. Connor has collected observations from 51 authors of 147 cases in which the opacity of incipient cataract has wholly or in part disappeared and the lens has regained its transparency. The occurrence of this phenomenon is admitted to be rare.

8. Munson reports a case of collapse and death in which at autopsy there was found to be hemorrhage in both suprarenal glands. Suprarenal hemorrhage is said to be very common in still-born and very young infants, but in adults it is comparatively rare. Clinically the cases simulate peritonitis or internal hemorrhage, show symptoms of suprarenal insufficiency (*i. e.*, prostration, loss of weight, diarrhea) or resemble apoplexy.

11. Elliott finds, contrary to the assertions of Potain and Teissier, that the blood pressure in uncomplicated diabetes is not increased. In severe progressive forms of diabetes, in young spare individuals, there was distinct hypotension.

12. Solis-Cohen reports 27 personal cases of latent diphtheria, in which no membrane was visible. In most cases there were slight symptoms in the throat. He further cites the findings of other investigators who obtained positive cultures in considerable percentages (3% to 29%) of large numbers of children with sore throats. He maintains that the prevalence of diphtheria is due to these latent cases, and to the so-called "carrier" cases in persons who have been in contact with patients with diphtheria and harbor the bacilli without showing symptoms. He urges that all cases of sore throat should be examined bacteriologically, that latent cases and infected "carriers" should be carefully sought out and isolated.

13. Searcy describes the occurrence of an epidemic in a colored insane hospital in Alabama which he finally identified as pellagra. The disease has never before been reported in the United States, but in all likelihood has occurred unrecognized. It is met in nearly all European countries, especially those bordering on the Mediterranean, and is due to the continuous eating of damaged corn. Poor hygienic surroundings and exposure to sun are thought to have a predisposing influence. The first symptoms are a

general lassitude and weakness, soon followed by gastric and intestinal disturbances, sore mouth and skin lesions of vesicles and bullæ most commonly on the backs of the hands and wrists. Patients take to bed on account of weakness; they are dull and depressed but complain little of any pain or discomfort. The temperature rarely rises more than a degree and a half above normal. Fatal cases die from one to several weeks after taking to bed from progressively increasing weakness. Where recovery occurs it occupies months. In diagnosis scurvy, acrodynia, purpura and erythema multiformæ are to be excluded. Post-mortem findings include pachymeningitis, some sclerosis of the brain and cord and fatty degeneration of internal organs. In the author's 88 cases there were 57 deaths. Of the whole number only 8 were males. Eighty per cent had been in fair or good health previously. No nurses had the disease. The corn meal used at the hospital proved on examination to have been made of mouldy grain and to contain quantities of bacteria and fungi. After this was changed no new cases developed.

[F. W. P.]

Medical Record.

July 6, 1907.

1. Post, G. E. *Operations for Urinary Calculi.*
2. Pilcher, J. E. *The Future of Medical Journalism.*
3. *Bissell, J. B. *Syphilitic Tumors of the Breast.*
4. Baker, A. H. *The Prevention of Venereal Disease.*
5. Leake, H. K. *Chronic Perforating Ulcer of the Bladder.*
6. Doran, W. T. *Report of a Postoperative Case of Fibroid Sarcoma Under the Enzyme Treatment.*

3. Bissell makes a plea for accurate diagnosis, thorough examination and ample deliberation in cases of tumors of the breast, since gummata of the breast are not extremely rare, and they can be cured by mercurial treatment without mutilation. After reviewing the differential diagnosis of tumors of the breast, and giving the history of five cases of syphilitic tumors of the breast observed by him, he gives the following conclusions: That as a rule late syphilitic lesions of the breast can be quite easily differentiated by careful diagnosis, and certain breasts can be saved from operation. In case of doubt we should resort to the rapid administration of mercury by hypodermic injection, and see what effect it has on the tumor.

New York Medical Journal.

July 6, 1907.

1. Carrington, P. M. *The Climate of New Mexico, Nature's Sanatorium for Consumptives.*
2. *Billings, J. S. *Auscultation Ratios in Pulmonary Tuberculosis.*
3. Northrup, W. P. *Early Recognition and Treatment of Pneumonia in Infants and Young Children.*
4. Oertel, H. *On the Histogenesis of Tumors, Particularly Cancer.*
5. Ross, G. G. *Some Thoughts on Malignant Growth of the Mouth and Lips.*
6. *Coakley. *A Pathognomonic Eye Symptom in Rabies.*
7. Bannan, T. *Medical Experiences: The Doctor.*

2. Recognizing the common observation of a relative dullness with prolonged and high-pitched expiration and increased voice sounds at the right apex which may be physiological, Billings has devised a method of examination which in his belief will serve to identify the pathological cases. He asserts that in cases of "physiological intensification" the increased intensity of the breath sounds is present over the lower portion of the right upper lobe as well as at the extreme apex; whereas in early tuberculosis the intensity at the apex is out of proportion to that over the lower portion of the upper lobe. To obtain numerical values representing the intensity of breath sounds at different points he uses a modification of the Oertel stethoscope. By means of this in 100 normal chests, 22 of which showed physiological intensification at the right apex, he found that the ratio of intensity of breath sounds at the apex to that of the sounds over lower portions of the right upper lobe was 5: 4 or 5: 3. In 22 cases with tuberculous infiltration the ratio was 2:1 or greater. He believes that a ratio of 5: 2 or less establishes a probability of pathological infiltration.

6. Coakley in observing the pupils of a rabid dog noticed extreme contraction of the pupils which resisted mydriatics, but within an hour of death gave place to sudden dilatation. The contraction of the pupils was greater than could be produced by morphine or other drugs, the effect of which was tested. In 114 dogs with rabies examined the contracted pupil was present in a great majority. Coakley believes that this condition of the pupils resisting mydriatics followed by dilatation a few hours before death is pathognomonic of rabies.

[F. W. P.]

The Lancet.

July 6, 1907.

1. Wilson, T. *The Ingleby Lectures on Pelvic Inflammation in the Female.*
2. Ehrlich, P. *Experimental Researches on Specific Therapeutics.*
3. *Cheyne, W. W. *Two Cases of Intermittent Hydronephrosis treated by Operation.*
4. *Lambkin, F. J. *An Improved Preparation for Intramuscular Injections of Insoluble Salts of Mercury in the Treatment of Syphilis.*
5. *Sargent, P. W. G., and Kisch, H. A. *Separation of the Acetabular Epiphysis of the Femur: its Relation to Adolescent Coxa Vara.*
6. *Taylor, A. *The Opsonic Index and Agglutination in Cerebro-spinal Meningitis.*
7. Hudson, A. C., and Panton, P. N. *An Investigation of Some of the More Unusual Forms of Acute Conjunctivitis.*
8. Macnaughton-Jones, H. *Important Epochs in the History of the Old School of Medicine in Paris.*

3. Cheyne gives the details of two cases of intermittent hydronephrosis with operation. This consisted in a nearly complete transplantation of the ureter from the upper part of the pelvic sac to the lower part of the sac thus allowing free escape of urine. The results in his two cases were very satisfactory.

4. Lambkin uses palmitin as a vehicle for the suspension of mercury for intramuscular injections in syphilis. He claims that it is non-irritant and non-toxic; it is not so easily oxidized as the other components of human fat, but is easily saponified and soluble in the human organism, and does not enter the circulation as a foreign body. It makes a more homogeneous preparation than any other, and its melting point can be raised or lowered with the greatest facility. The addition of pure absolute creosote and camphoric acid prevents pain, not only at the time of injection but that which usually comes on two to three days after an injection.

5. Separation of the acetabular epiphysis of the femur is a condition of not infrequent occurrence. Diagnosis is usually made after an x-ray has been taken for some trifling accident. Its relation to adolescent coxa vara is important. If a case of separated epiphysis with a history of injury is untreated, the deformity known as traumatic coxa vara results. Treatment consists in wrenching the bones into place under an anesthetic, and if this cannot be done the neck must be screwed or nailed to the epiphysis, the femur being rotated and abducted till the fractured surfaces are in apposition. The symptoms occur in the following order: (1) Slight limping and aching; (2) increased pain, sometimes preceded by slight trauma; and (3) deformity. These stages correspond to the pathological ones of (1) separation of epiphysis without vertical rotation; (2) rotation on vertical axis; and (3) coxa vara. The severity of the pain depends on the rapidity and extent of the rotation. The writer urges immediate skiagraphy of all cases of slight limp or aching about the hip joint in patients of 12 to 18 years.

6. Taylor concludes from his work on the opsonic index and agglutination tests in cerebro-spinal meningitis that a high opsonic index is pathognomonic of the disease, but that a normal index does not prove its absence.

[J. B. H.]

British Medical Journal.

July 6, 1907.

1. Gowers, W. R. *Sudden Cerebral Lesions: Their Diagnosis and Immediate Treatment.*

2. Williams, C. T. *Laennec and the Evolution of the Stethoscope.*
3. Kirkland, R. *Where Physician and Surgeon Meet.*
4. *Pringle, J. H. *Notes of an Experience of Stovain as a Spinal Analgesic in 100 Cases.*
5. Gardner, H. B. *The Care of the Patient during Serious Abdominal Operations.*
6. *Jordan, A. C. *Sterility among X-ray Workers.*
7. Cuff, A. *Spontaneous Aneurysm of the Dorsalis Pedis Artery.*
8. *Morgan, H. de R. *The Bacteriology of the Summer Diarrhœa of Infants.*

4. Pringle gives the results of the use of stovain in 100 cases including 31 inguinal herniæ, 12 appendectomies and 6 major amputations. He injects in the second lumbar space, and waits till there has been a free flow of spinal fluid before injecting .04 to .06 gm. of stovain. The patient is in the sitting posture. After the canula is withdrawn, the puncture is covered with collodion and the table raised at the foot. It takes 5 to 15 minutes to get the effect of the drug. The highest incision he has made has been for umbilical hernia. Out of the 100 cases there was one death, which however was not necessarily due to the anesthetic. There were 7 partial and 15 complete failures to produce anesthesia.

6. Jordan urges the most extreme care among x-ray workers to protect themselves from the malign influence of the rays on the sexual organs. He suggests several schemes to enable the operator to work with safety and comfort.

8. Morgan in his recent researches on the bacteriology of summer diarrhea in infants has found a hitherto undescribed bacillus, which preponderated among all non-lactose fermenting bacilli. It differs from the bacillus of hog cholera of McFadyean, from the B. Enteritidis of Gaertner and the B. Dysenteriæ of Flexner. He believes that the type of summer diarrhea of infants in America is clinically and bacteriologically different from that in England. [J. B. H.]

The Practitioner.

June, 1907.

1. Crawfurd, R. *Valvular Disease of the Heart. VI. Tricuspid Regurgitation.*
2. *Moynihan, B. G. A. *Duodenal Ulcer.*
3. *Galbraith, J. J. *The Pretuberculous Stage of Pulmonary Tuberculosis.*
4. *Rogers, L. *The Early Diagnosis and Cure of the Presuppurative Stage of Amœbic Hepatitis.*
5. Bishop, E. S. *Post-partum Hemorrhage.*
6. Simpson, W. J. *The Evidence and Conclusions Relating to the Mulkowal Tetanus Case.*
7. Hawthorne, C. O. *On Retinal Embolism.*
8. Hadfield, C. F. *The Treatment of Dropsy by Deprivation of Salt.*

2. At the end of 1906, Moynihan had operated on 114 cases of duodenal ulcer, with perforation in 11 cases. Out of 262 cases, 242 ulcers were found in the first part of the duodenum, usually on the anterior surface. In about 40% of his cases it was associated with gastric ulcer. He believes that in almost all cases of hyperchlorhydria the real trouble is gastric or duodenal ulcer. In 15 of his cases repeated and increasing hemorrhage was the cause of operation; this is a far more serious matter than hemorrhage from a gastric ulcer. In 7 of his cases gall-stones were present. The differential diagnosis of these two conditions is difficult. In the early stages where prolonged careful medical treatment can be carried out there is no need of surgical interference; if this cannot be done, he advises surgery from the start.

3. The pretuberculous stage of pulmonary tuberculosis may be roughly said to be that early stage at which the physical signs are indefinite and insufficient of themselves to justify a diagnosis of pulmonary mischief. They constitute a clinical picture which can only be recognized by experience. Over-attention to variations from the normal in the lung condition tends to exclude from consideration other broader and perhaps more significant symptoms and signs. The estimation of the length of time from the exposure to infection to the time of development of the first symptoms is an interesting and important but difficult task. In his cases this period averages three years. He could get decided evidence of infection in only 31% of 150 cases. The first symptoms are functional disorders, as, for example, loss of appetite, constipation, dyspepsia, etc. An evening pyrexia is very significant. Hemoptysis very often occurs with no physical signs. The result of coming to a "tentative diagnosis" so far as treatment is concerned amply justifies itself whether the real condition turns out to be tuberculosis, influenza or debility. The chief characteristic of the pretuberculous anemia is a muscular dystrophy affecting both voluntary and involuntary muscles. The bronchitis and "colds" of this stage are marked. Galbraith goes into the details of recent methods of diagnosis, such as wide variations of temperature, x-ray examinations, showing the small size of the heart, the ulnar reflex, examination with the thoracic perimeter, the tuberculin test and the opsonic index. The paper is an excellent recapitulation of this entire subject and is well worth reading.

4. In cases of amebic abscess of the liver it is found that weeks of fever with a slight leucocytosis precede the signs of pus. This is the pre-suppurative stage of amebic hepatitis. If this stage can be recognized a very important step will have been taken. The fever at this stage yields to large doses of ipecac, and thus the abscess stage is prevented. The writer cites various series of cases with and without dysentery treated with and without ipecac and gives the results. He believes it very important to try treatment with this drug before operating. [J. B. H.]

Deutsches Archiv. für Klinische Medizin, 1907, Bd. 90, Hefts 1 and 2.

1. *Schlayer and Hedinger. *Experimental Studies of Toxic Nephritis.*
2. *Wandel, O. *A Contribution to the Nature and Therapy of Chlorosis.*
3. *Theopold, J. *A Contribution to the Knowledge of Arhythmia Perpetua.*
4. *Heineke, A., and Meyerstein, W. *An Experimental Investigation of the Hydrops of Renal Disease.*
5. Blumenthal. *Aplastic Anæmia.*
6. *Schmidt, A. *Perforation of Anthracotic Softened Bronchial Lymph Nodes into the Bronchial Passages and its Clinical Diagnosis.*
7. *Selling, T. *Investigation of the Percussion Note.*
8. Fürst, T., and Soetbeer, F. *Experimental Studies on the Relation Between Filling and Pressure in the Aorta.*

1. The intimate relation existing between general blood pressure, local renal circulation and diuresis is well recognized, but disturbances of these relations in nephritis are not so well understood. The effect of certain stimuli on these relations in health is known. Their action on the experimentally diseased kidney has been studied by Schlayer and Hedinger, and the action of such stimuli used as a functional test of renal activity in various forms of toxic nephritis (potassium chromate, mercuric chloride, cantharidis, arsenic and diphtheria toxin). Blood pressure was studied in these experiments by a mercury manometer, renal volume by an oncometer, and diuresis by an apparatus for estimating the number of drops of urine excreted in five minutes. Renal lesions were studied histologically. By this means Schlayer and Hedinger distinguish two types of nephritis, a tubular (potassium chromate and mercuric chloride) and a vascular (cantharides and arsenic). Diphtheria toxin produces a combination of the two types. In the tubular type in the earlier stages there is no change in the vascular contraction and dilatation of the kidney and there is an increased diuresis. Later, dilatation is decreased and finally stopped with cessation of diuresis. Contractibility of the renal vessels persists. In the vascular type disturbance of vascular contraction and dilatation appears early, and soon there is a total insufficiency of the renal vessels, with very slight excretion of urine. In the tubular type albumin and casts are present in considerable amount, while in the vascular type they are slight. Histologically demonstrable lesions are much slighter in the latter. These studies show that albumin excretion can take place in both glomeruli and tubules, while casts are formed in the tubules without any relation to the blood vessels. With severe vascular lesions decreased diuresis is always associated, but the converse is

not true. In acute vascular nephritis there is a decreased blood pressure.

2. Wandel by therapeutic experiment on chlorotic patients attempts to answer the question whether in chlorosis there is a deficient stimulation of the hematopoetic organs, or an inability for them to form hemoglobin owing to a lack of iron. Stimulation of the hematopoetic centers he seeks by sweating in the electric light bath. This increases the number of blood corpuscles, and in secondary anemia rapidly restores the blood to normal. In chlorosis, however, the increase in hemoglobin is very slow as compared with that obtained after giving iron. Consequently he believes the second of the two hypotheses best explains the disease. In chlorosis hydrotherapy is an adjuvant in treatment, but not a substitute for iron. Iron in some form is necessary for successful treatment, whatever its way of acting may be.

3. Arhythmia is divided into three groups: (a) Infantile type, (b) type due to extra systoles, and (c) arhythmia perpetua. In the latter there is complete and persistent irregularity in which the length of systole and diastole and the force of contractions vary and the normal rhythm is completely lost. This form is usually associated with a systolic venous pulse which does not depend on a tricuspid insufficiency, but on a primary auricular pause. The condition is more frequently associated with chronic myocarditis than with valvular disease and may occur without there being a break in compensation.

4. Heineke and Meyerstein have studied the relations between hydrops and salt and water excretion in experimental nephritis. They used rabbits and injected uranium nitrate or potassium bichromate to obtain renal lesions. Between the two there is a considerable difference in action, the uranium salt producing the more marked edema. As in man so in these animals the edema does not appear always to be produced in the same way. In the uranium rabbits edema seems to be the result of vascular lesions and may appear without much of a demonstrable anatomical lesion of the kidney. In the chromium rabbits, on the other hand, the edema is more the result of lesions of the tubular epithelium. In both, salt retention plays a part, but with uranium it has a minor rôle. The tubular epithelium appears to have a secretory action for salt.

6. Schmidt finds that perforation of softened anthracotic lymph nodes into the respiratory tract is not very uncommon about Dresden. Usually an aspiration pneumonia followed by pulmonary abscess or gangrene results. The diagnosis can be made when the associated pulmonary tuberculosis remains in the background. The diagnosis is to be based on the old age of the patient, the pulmonary condition beginning as a putrid bronchitis and developing into abscess or gangrene, localized pain or tenderness in the region of the manubrium sterni and the presence in the sputum of small bits of friable material which on microscopic examination show large particles of carbon pigment and various degeneration products.

7. Selling has studied by means of resonators and with a receiving phonograph the note produced by percussion of the lungs in normal and pathological conditions. This paper is concerned more with a theoretical consideration of the acoustics of the percussion note than with any practical application in diagnosis. [H. A. C.]

Revue de Chirurgie.

June, 1907.

1. Quénu, E. *Separation of the Inferior Tibio-fibular Articulation.* (Continued article.)
2. *Desjardins, A. *The Technic of Pancreatectomy.*
3. *Niclot, and Romary. *Gunshot Wounds (Armes de Chasse) in their Relation to Infection.*
4. *Alamartine, H. *Tuberculous Hypertrophic Osteo-arthritis.*
5. *Dévé, F. *Hydatid Cysts of the Liver Containing Air.* (Concluded.)
6. *Le Damany, P. *Congenital Dislocation of the Hip.*

2. Desjardins describes a method of partial excision of the pancreas based on anatomical grounds. This can best be performed by excising the duodenum also. The various anastomoses necessitated by this procedure are well illustrated.

3. From various experiments Niclot and Romary conclude that a shot-gun wound should be considered and treated as though superficially infected. The skin should be cleaned with antiseptics. All exploration to remove shot should be avoided.

4. Alamartine calls attention to the fact that in hypertrophic osteo-arthritis and osteitis (the so-called syndrome of Marie) tuberculosis will be found as a cause in a much larger percentage of cases than is at present acknowledged. Further, in many cases a distinct family history of tuberculosis is present.

5. Hydatid cysts of the liver containing air may be divided as follows: (1) Cysts opening into a bronchus; (2) cysts opening into the digestive tract; (3) closed cysts; (4) cysts containing air after operation. Dévé has collected 57 cases of cysts of this sort. Several radiographs made with the body in varying positions are of definite aid in diagnosis. Wherever possible such cysts should be drained, as only a small amount of air will be absorbed after aspiration.

6. By a large number of statistics gathered from physicians, LeDamany finds that the frequency of congenital dislocation of the hip increases with the anthropological elevation of the race, attaining its maximum in the white female. This is in contradistinction to the rule governing all other congenital affections which are more frequent among the black races. [W. C. Q.]

Correspondence.

LETTER FROM PARIS.

(From Our Special Correspondent.)

Amateurs of Pure Science.

Paris, July 9, 1907.

Mr. Editor:

"My musical friend, at whose house I am now visiting, has tried all the owls that are his near neighbors with a pitch pipe set at concert-pitch, and finds they all hoot in B flat. He will examine the nightingales next spring." (Gilbert White, *Natural History of Selborne.*)

The dear soul! And to think that the universe waited until the year of our Lord, 1771, before knowing that the English owl hoots in B flat! However, since the circulation of the blood in the human body was only discovered in the century before that, it is perhaps not a matter for surprise that facts of minor importance had to wait even longer. Let us hope that the musical gentleman really did live until the following spring, so as to settle that little question about the nightingales. Think of that old dry-as-dust sitting up during the beautiful spring nights of England, blowing on his wretched pipe, instead of listening to the sweet songs in the bushes that it was only his privilege to hear during a brief period each year. He reminds you of Murger's Latin quarter student, "*Qui à la place du cœur n'avait qu'un vieux bouquin.*"

This by way of preface to a few remarks on the amateur of pure science in general. This is a being that always fills me with wonderment; a man to admire, in a way, while you deplore his lack of practical sense; a man to whom you take your hat off, as you would to one vounteering for a forlorn hope, while at the same time you inwardly remark that you thank God you are not such as he!

There exists scattered all over the world, but probably more so on the Continent than elsewhere, a large army of these amateurs of pure science, men completely detached from the world, its interests, struggles and ambitions, often pure "solitaires" without families, living in and for their laboratories, on some miserable salary that just supports their physical wants; and who at certain intervals produce some abstruse and painstaking work that is of no use to anything or anybody, and that at the end of the year is rewarded by some learned academy by a medal or a prize.

Just take, for instance, the reports of the Société de Biologie here in Paris, and run over the titles of the papers presented; and then ask yourself the question what could have been the object in view of the men who devoted all this time and labor to the elucidation of this or that point. One man, for instance, will discourse on the mode of termination of the motor-nerve filaments in the muscular fibrillæ of the quadriceps of the common house fly, *musca embêtans.* What practical result could he expect ever to come out of all this effort? for in this world the only effort that is of value is the effort that results in some advance to the welfare of our species.

Coming as I do from many generations of practical New England stock, I can comprehend nothing that is not practical; and when I look about me and see the quantities of matters of real practical interest to humanity that could very well stand a certain amount of thought and labor on the part of intelligent men, and feel that thereby the health, comfort and interests of humanity would be materially advanced, — it seems to me a great pity that all this mass of work on the part of these amateurs of pure science could not be directed into more profitable channels. For there is no disguising the fact that if it were feasible to calculate the amount of work put in by this class of society in the course of a year, it would be found to be very considerable indeed. When I look at their products, a yearbook of the Société de Biologie or of the Académie des Sciences, for instance, I can only think of one thing, a cemetery for the corpses of still-born infants, products of human energy destined to come to naught from the time of their inception.

Some indignant laboratory man will come back at me, no doubt, with the arguments on his side of the question: the practical results that *have* come out of the laboratory; that I take at best a narrow view of things; and that my ideals are low and merely utilitarian.

I have no idea of expressing disapproval of laboratory work in general; merely of what I call the amateur of science *pure,* that is, science for the mere love of science, without purpose or aim, science such as that of my hooter in B flat mentioned above.

Just take him as an instance. The amiable Gilbert thinks he has dropped onto something quite important, for he first reports the fact in his letter of Feb. 12, 1771, to the Hon. Daines Barrington, and then returns to the subject a second time in his letter of Aug. 1, 1771, to the same party, six months later, during which period he has had time to collect further data on this absorbing topic: " A neighbor of mine, who is said to have a nice ear, remarks that the owls about this village hoot in three different keys, in G flat (or F sharp), in B flat and A flat. He heard two hooting to each other, the one in A flat and the other in B flat. *Query:* Do these different notes proceed from different species, or only from various individuals? The same person finds upon trial that the note of the cuckoo (of which we have but one species) varies in different individuals; for, about Selborne wood, he found they were mostly in D; he heard two sing together, the one in D, the other in D sharp, who made a disagreeable concert; he afterwards heard one in D sharp, and about Wolmer-forest some in C. As to nightingales, he says that their notes are so short, and their transitions so rapid, that he cannot well ascertain their key. Perhaps in a cage, and in a room, their notes may be more distinguishable. This person has tried to settle the notes of a swift, and of several other small birds, but cannot bring them to any criterion."

There, you see, is the amateur of pure science in all his perfection. He began with the owl, and was so fascinated by the interest of the pursuit (appetite comes while eating) that he went on to a number of other birds, at the risk of acquiring insomnia and that apparently common though to me mysterious disorder which English people designate as " a chill on the liver " ! And all this to what purpose? *Faut-il, Seigneur, qu'il ait en du temps à perdre!*

Again, I know that the great German, Goethe, has said that " *es ist immer gut etwas zu wissen* "; and that deep thinkers all advise " a wide sympathy " in human affairs, " a broad-minded interest " in all about us. Still I think that there is a limit to that sort of thing, and that time and labor put into the elucidation of a subject merely for sport, for the pleasure of the chase, as it were, with no visible result at the end, is time and labor lost. The world in not one whit the better, in any conceivable way or shape, for knowing that the Selborne owls hoot in B flat, — when they don't hoot in some other key, sharp or flat!

In connection with Goethe's maxim, I was once called to see a patient here with a small subcutaneous abscess of the neck, and while attending to it I had time for a good deal of general conversation. He was a tall, spare Englishman of about fifty-five, evidently somebody, though I had no idea what; he might perfectly well have been either a superior officer, a distinguished surgeon, a leading divine, in fact, anything of rank you please. But two points struck me forcibly at the first visit: he was well posted in the relative merits of asepsis as opposed to antisepsis; and he knew all about the arguments in favor of operating in appendicitis during the first twenty-four hours, and, after the lapse of that period, of leaving it to get well as best it can. So I made up my mind by the end of my visit that this was some distinguished confrère in disguise, and that he was — well, excuse the language — pulling my leg. He ultimately turned out to be a celebrated judge, now a lord, who had found it profitable in his profession to know as much on all subjects as he conveniently could assimilate.

I was very much struck with the beauty of pure science once while attending a reunion of the Académie des Sciences here in Paris. This is the highest scientific body in France, composed of the leading men in all branches of science. To become a member of this body is the crowning step in all French scientific careers. Attend one of these meetings and you will see there gathered together all that France boasts of the very best.

Well, I went to see them, one day, and one tottery, aged gentleman, with a feeble, quavering voice, got up and addressed them on the order and place in which the buds and shoots develop on a certain plant during the growth of its initial spike; and while reading this document in his inaudible voice he turned his back frequently to his audience and drew on a blackboard tiny little diagrams which no one could see! This before a gathering of eminent surgeons, physicians, astronomers, chemists, mathematicians, physicists, etc. It was an extraordinary performance.

With the world filled with unsolved problems not only of a biological order but in all branches of knowledge, problems whose correct solution would be of immense benefit and interest to humanity, it is difficult to understand that these hooters in B flat can have the effrontery either to take themselves seriously and imagine they are accomplishing something of use, or that they should think that the world takes sufficient interest in their papers to read them when they appear in due season in the *comptes rendus.* What an appalling dust-bin must be the archival sanctum of such societies as the Biological, and others of the same class!

" Spectator."

PROFESSOR MENDEL'S GREATEST SERVICE TO NEUROLOGY.

Boston, July 26, 1907.

Mr. Editor: The obituary notice of Professor Mendel in this week's Journal omits any mention of his greatest service to neurology. One of the last acts of his life was to assist in preparing the number of the *Neurologisches Centralblatt* which contains his son's tribute to his memory and the regret of the publishers at the breaking of the associations of over a quarter of a century. The establishment and the successful management of the *Centralblatt* during all these years, before similar journals in other languages were even thought of, have made the neurologists of the world his debtor by giving them a full and careful summary of what was best in neurological literature. In addition to this Professor Mendel undertook the general editorial work of the *Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Neurologie und Psychiatrie,* to which he also contributed the section on the organic psychoses Although his volume (not " paper ") on general paralysis which antedates the *Centralblatt* still remains a classic, the *Centralblatt* itself and the *Jahresbericht* will be his most enduring monument and a worthy memorial of a genial and learned teacher.

Yours very truly,
Philip Coombs Knapp, M.D.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, JULY 20, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,555	733	Quincy	4	1
Chicago	—	—	Waltham	5	—
Philadelphia	—	—	Pittsfield	8	3
St. Louis	—	—	Gloucester	7	2
Baltimore	228	106	Brookline	3	—
Cleveland	—	—	North Adams	6	1
Buffalo	—	—	Chicopee	14	4
Pittsburg	—	—	Northampton	10	1
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	3	—
Washington	—	—	Leominster	—	—
Providence	73	37	Hyde Park	3	0
Boston	158	39	Melrose	3	0
Worcester	52	15	Newburyport	—	—
Fall River	56	39	Woburn	6	—
Cambridge	15	4	Marlboro	2	1
Lowell	41	21	Westfield	3	—
Lynn	20	5	Peabody	—	—
New Bedford	30	15	Revere	3	2
Springfield	20	7	Attleboro	2	1
Lawrence	25	12	Clinton	6	1
Somerville	10	2	Adams	—	—
Holyoke	25	13	Gardner	3	1
Brockton	12	2	Milford	—	—
Malden	3	—	Watertown	4	0
Chelsea	15	1	Plymouth	—	—
Salem	9	3	Weymouth	4	0
Newton	9	6	Framingham	2	—
Haverhill	9	1	Southbridge	5	2
Fitchburg	—	—	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	18	6			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 17, 1907.

KERR, J. W., assistant surgeon-general. Granted leave of absence for twenty days from Aug. 12, 1907. July 16, 1907.

MEAD, F. W., surgeon. Directed to proceed to Point Pleasant, N. J., for the purpose of examining keepers and surfmen of the Life Saving Service; upon completion of which to rejoin his station. July 16, 1907.

KALLOCK, P. C., surgeon. Granted leave of absence for seven days from July 15, 1907. July 12, 1907.

WERTENBAKER, C. P., surgeon. Directed to proceed to Ocean City and other points along the Chesapeake Bay, for the purpose of examining keepers and surfmen of the Life Saving Service; upon completion of which duty to rejoin his station.

STANSFIELD, H. A., passed assistant surgeon. Relieved from duty at Havana, Cuba, effective July 11, 1907.

BAHRENBURG, L. P. H., passed assistant surgeon. Granted leave of absence for seven days from July 15, 1907, under paragraph 191, Service Regulations.

HERRING, R. A., assistant surgeon. Granted leave of absence for eight days from June 30, 1907, on account of sickness. July 15, 1907.

KASTLE, J. H., Chief Division Chemistry Hygienic Laboratory. Detailed to attend the eleventh annual convention of the Association of State and National Food and Dairy Departments at Jamestown, Va., July 17-19, 1907. July 15, 1907.

CLEAVES, F. H., acting assistant surgeon. Granted leave of absence for six days from July 15, 1907, under paragraph 210, Service Regulations.

FOSTER, J. P. C., acting assistant surgeon. Granted leave of absence for twenty-seven days from July 20, 1907. July 16, 1907.

FOSTER, S. B., acting assistant surgeon. Granted leave of absence for six days. July 15, 1907.

SAFFORD, M. V., acting assistant surgeon. Granted leave of absence for four days from July 10, 1907, under paragraph 210, Service Regulations.

TOWNSEND, W., acting assistant surgeon. Granted leave of absence for seven days from July 14, 1907. July 12, 1907.

HALL, L. P., pharmacist. Granted leave of absence for seven days from July 16, 1907, under paragraph 210, Service Regulations.

NEVES, GEORGE, pharmacist. Granted leave of absence for 30 days from Aug. 10, 1907. July 11, 1907.

APPOINTMENT.

DR. **LOUIS A. THUNIG** appointed acting assistant surgeon for duty at Stapleton, N. Y.

RESIGNATIONS.

The resignation of Assistant Surgeon **E. M. STEGER** was accepted, by direction of the President, to take effect July 14, 1907. July 16, 1907.

The resignation of Pharmacist **GEORGE NEVES** was accepted to take effect September 8, 1907. July 11, 1907.

BOARDS CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., July 24, 1907, for the physical examination of certain officers of the Revenue-Cutter Service. Detail for the Board: Passed Assistant Surgeon J. T. Burkhalter, chairman; Acting Assistant Surgeon J. LaB. Ward, recorder.

A board of medical officers was convened to meet at San Francisco, Cal., July 24, 1907, for the physical examination of certain officers of the Revenue-Cutter Service. Detail for the Board: Surgeon H. W. Austin, chairman; Passed Assistant Surgeon J. D. Long, recorder.

RECENT DEATHS.

DR. **EDWARD J. GALLAGHER**, of New York, was instantly killed, on July 21, by the collision of his automobile with a railroad train at a grade crossing at the St. Albans station of the Long Island Road, near Jamaica. His fiancée, Miss Helen Madigan, who was with him in the car, was so severely injured, as well as burned by a gasolene blaze which followed the collision, that she died shortly afterward in the Jamaica Hospital. Dr. Gallagher was graduated from Bellevue Hospital Medical College, in 1887, and at the time of his death was visiting physician to the House of Calvary and the Cancer Hospital.

DR. **LEE MCELROY**, a young practitioner, of Elizabeth, N. Y., died, on July 26, in the Alexian Hospital in that city, of whose visiting staff he was a member. He was a native of Bardolph, Ill., and thirty years of age. He was graduated from the Northwestern University, at Evanston, Ill., and afterwards served as interne in the Alexian Brothers' Hospital, in Chicago. He had been practising at Elizabeth for the past two years.

BOOKS AND PAMPHLETS RECEIVED.

United States Department of Agriculture. Suggestions for Forest Planting in the Northeastern and Lake States.

United States Department of Agriculture. Practical Assistance to Tree Planters.

The Boston Floating Hospital. Thirteenth Annual Report.

Transactions of the Obstetrical Society of London. Vol. XLIX. For the Year 1907. Part II, for March, April and May. London. 1907.

International Clinics. By leading members of the medical profession throughout the world. Edited by W. T. Longcope, M.D., and others. Vol. 11. Seventeenth Series, 1907. Philadelphia and London: J. B. Lippincott Co. 1907.

The Practice of Obstetrics. By American Authors. Edited by Charles Jewett, M.D. Third edition, revised and enlarged. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1907.

Diseases of Rectum: Their Consequences and Non-Surgical Treatment. By W. C. Brinkerhoff, M.D. Chicago: Orban Publishing Co. 1907.

Note on Headaches. By Beverley Robinson, M.D. Reprint.

Endothelioma of the Ovary, with Report of a Case of Hemangio-Endothelioma Perivasculare. By Channing W. Barrett, M.D. Reprint.

Nothnagel's Practice. Diseases of the Intestines and Peritoneum. By Prof. Dr. Hermann Nothnagel. Edited, with additions, by H. D. Rolleston, M.A., M.D., F.R.C.P. Second edition, thoroughly revised. Authorized translation from the German, under the editorial supervision of Alfred Stengel, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Treatment of the Diseases of Children. By Charles Gilmore Kerley, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Cook County Hospital Reports 1906. Compiled and edited under the Direction of The Publication Committee of the Cook County Hospital Attending Staff. Chicago.

Sixth Annual Report of the Metropolitan Water and Sewerage Board. Jan. 1, 1907. Boston.

Original Articles.

COMPARATIVE TESTS FOR OCCULT BLOOD IN GASTRIC CONTENTS AND FECES, WITH ESPECIAL REFERENCE TO THE BENZEDIN TEST.

BY JOHN W. DEWIS, M.D., BOSTON.

From the Out-Patient Clinic of Dr. Joseph H. Pratt, Massachusetts General Hospital, Boston.

The demand in recent years for a sure and convenient clinical test for minute quantities of blood or "occult blood"* (Boas[1]) has led not only to discovery of new tests but to the modification and improvement of the older methods. Formerly, aside from the Teichmann test which was of little clinical value, a macroscopical examination was the only means adopted to determine the presence of blood in the stools, and it is only within the past four or five years in this country that other methods have been more generally employed. Any one who has used more exact tests will have found that in many stools very considerable quantities of blood may be present and be imperceptible to the naked eye. Schumm[2] states that stools with a blood content of 5% and more are often passed by as blood-free, and that on a plentiful milk diet, free of meat, even a larger percentage may be unnoticed. The same is true in the examination of gastric contents when, in the presence of free hydrochloric acid, there may be no visible evidence of blood, and yet a distinct reaction for blood be obtained. When the stomach contents are first withdrawn the presence of moderate quantities of fresh blood may be plainly seen, but the hemoglobin, in the presence of the acid gastric juice, is soon broken up and a solution of hematin is formed, causing the pink or red color to fade or disappear; or where large quantities of blood are present, to assume a brown color. Both Kuttner[3] and Ewald[4] call attention to this fact, and the occurrence is illustrated by the following case of subacute alcoholic gastritis: A patient brought to the clinic a specimen of red fluid with a grumous sediment which he had vomited two days previous, — the blood tests were intensely positive. Five hours after ingestion of a glass of milk, a stomach tube with closed end was easily swallowed and 15 ccm. of mucoid opalescent contents obtained; no food elements were seen, and there was not the slightest *visible* evidence of blood, yet the guaiac, aloin and paraphenyldiamin tests were all clearly positive. Free HCl was present.

It is not the purpose of this paper to consider the clinical value of detecting occult bleeding already proved by many observers (as Kuttner[3] Boas,[1] Boas and Kochman,[5] Schloss,[6] Clemm[7] Hartmann,[8] Rossel,[9] Schmilinsky,[10] Petrachi[11] and Rütimeyer,[12] and in this country, Steele,[13] [15] [16] Steele and Butt,[14] Tileston,[17] White,[18] and Friedenwald and Rosenthal,[19]) but to show by the following review of statistics and a series of comparative tests the methods best suited for clinical purposes.

TEICHMANN'S TEST.

It is more than fifty years since Teichmann,[20] working under Henle, after a long series of experiments, obtained hemin crystals, and demonstrated the process of their formation. Similar experiments on the blood had been independently carried on by Kunde[21] and Hunde,[22] and previously reported. Since that time Teichmann's hemin test has been, until recently, the chief method for detecting small quantities of blood. Hemin crystals, according to Hagar,[23] are produced in a blood dilution of 1 to 20,000; Thierfelder's analysis makes one part hemin correspond to about 162 parts of blood. It is not a sure test, nor convenient, and it is less delicate than other tests. Schumm[2] (p. 10) says that until 1902 he had frequently employed Teichmann's test, but could not recommend it for the detection of blood in stools as it sometimes completely failed, even when quite large quantities of blood were present, and in other cases he obtained a positive result only after many repetitions of the test. There seem to be fewer objections to its use as a test for blood in gastric contents.

SPECTROSCOPIC BLOOD TEST.

This method has long been employed to detect blood in solutions. But, as stated by Boas and Schmilinsky, the apparatus is too expensive and cumbersome for use by the general practitioner, and less delicate than the guaiac test. The cyanide of potassium test of Hofmann[24] and the hemocromogen test as employed by Hoppe-Seyler,[25] are probably the most delicate tests by means of the spectroscope. Jaworski and Korolwicz,[26] Schlesinger and Holst,[27] Schumm,[2] and Grünwald[28] also review the spectroscopic methods. Grünwald particularly advocates the cyanide of potassium test and gives the following table showing the relative delicacy of tests :

	In a Dilution of		
Weber's (his own results)	1: 2,000	(blood solution)	positive
Benzedin	1: 150,000	,, ,,	,,
Hemocromogen	1: 5,000	,, ,,	,,
Cyankalium	1: 5,000	,, ,,	,,

But, as shown below, we know that the guaiac test is more delicate than indicated in this table.

Schmilinsky (p. 2145†) gives a simple method of obtaining the blood spectrum by means of the hematoporphyrin method : a number of drops of stomach contents or feces, well mixed with water, are slowly added to a few cubic centimeters of concentrated sulphuric acid. If the solution is placed in a glass dish with plain parallel walls the spectrum can be easily recognized. The test is quite sharp and quickly carried out; if it is negative the guaiac test, which is more delicate, must be applied, so nothing is gained by its use.

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* Termed by Boas "occult bleeding" because blood is neither macroscopically nor microscopically demonstrable, but can be detected by chemical means.

† The principle, of course, is that of Hoppe-Seyler, and the sides of the vessel (known as the hematinometer) are 1 cm. apart.

GUAIAC TEST.

The guaiac test, next to Teichmann's, is the oldest clinical test devised for the detection of occult blood. Schönbein [29] discovered the test and established a majority of the facts relating to it; but at the same time His [30] determined many facts regarding the test, and a few years later van Deen [31] as the result of his experiments (published in 1863) proved the delicacy of guaiac as a test for blood, determined many of its limitations, and pointed out its value as a test in forensic medicine. Liman,[32] also, in this year (1863) reviews the work of van Deen and partially that of Schönbein. He made more than 50 applications of the guaiac test to various blood dilutions and other substances. In the past twenty-five years the results of all these experimentors have been many times tested and reaffirmed by various writers.

Schönbein showed that the iron of the blood was the means of transferring the ozone of the ozone-carrier (as (H_2O_2) to the tincture of guaiac. His (p. 213) remarked that the active substance of blood corpuscles, when dried or when a solution is heated to boiling, does not lose the quality of causing the blue color to appear; he heated a solution of blood corpuscles to boiling, then caused complete coagulation by adding a drop of acetic acid, and this coagulum, which was then washed with distilled water, still gave a blue color with guaiac and H_2O_2, and even the colorless filtrate gave a weak color reaction. His found that there was no difference between the activity of venous and arterial blood in causing a blue color on addition of tincture of guaiac and H_2O_2; but he found that no color appeared if the ozone bearer (Ozonträger) was first added to the blood solution and then the tincture of guaiac; but if to this mixture H_2O_2 was again added, a blue color quickly appeared. Schönbein (p. 213) found that pure blood serum caused no color change with guaiac, and washed fibrin only a slight reaction; bile and saliva gave an uncertain cloudy blue; chyle, fresh milk, casein (action destroyed on boiling), milk, sugar, epidermis, gastric mucosa, pancreas and liver substance, all gave a doubtful color; egg albumin, long macerated raw flesh, and fresh urine no reaction; fat and connective tissue, uric acid and urea a weak color.

Schönbein and van Deen both applied the guaiac test to a large number of metallic substances and the following are the chief preparations mentioned by van Deen: the oxide and sub-carbonate of iron gave negative results; the ferrous salts and sulphide of iron gave a slight degree of color reaction; the acetates and citrates and chlorides, particularly the latter, gave this reaction in more marked degree; the subacetate and sulphate of copper gave slight reactions similar to that of old blood; some of the reactions though not typical were sufficient to confuse; other copper salts, the red oxide of lead, coloring matters, as carmine and logwood, also sandal wood, all gave negative results.

In one of the many experiments with blood and guaiac van Deen found that when a portion of a three-year-old dried blood-cake (of calves) was mixed in water to a dilution of at least 1 to 40,000, the guaiac and old oil of turpentine still gave a positive reaction, though it was necessary to wait some moments for the blue color to appear; he found the test was equally sensitive for old or fresh blood. Liman [32] (p. 205) obtained no perceptible guaiac reaction in a blood dilution of 1 to 40,000.

It is surprising that, after so much experimentation with guaiac as a blood test, little mention was made of it till Vitali [33] published his paper in 1887. Then followed articles by Brücke [34] (1888) and Schuster [35] (1890). Vitali [33] found the test reacted to pus as well as blood. On account of the many exceptions to its use as a blood-test it had little clinical value till modified by Weber [36] in 1893. Weber found that by making an acetic acid ethereal extract, practically all the substances which may interfere with the test for blood are eliminated, particularly the preparations of iron, pus, saliva, milk and starch, or their action much weakened as in the cases of greens, spices and bile. The presence of bile in stools may obscure the trace of blue or green by brown shades when the amount of blood is small, and especially if bile is in excess. Schumm's method (see below) overcomes this objection. Brandenburg [37] found that when guaiac was added to pus it gave a blue color reaction without the addition of an ozone-bearing substance. Brandenburg found this reaction with pus was due to the nucleo-albumin which was precipitated by acetic acid, and that an acetic acid ethereal extract of *pure* pus gave no color reaction with guaiac; so that pus does not interfere with the blood test by Weber's method.

Besides the writers mentioned, many others have contributed to the knowledge of this test, including Kuttner,[3] Boas,[38] Boas and Kochman,[5] Schaer,[39] Hartmann,[40] Joachim,[41] Carlson,[42] Ewald,[4] and Mathieu and Roux,[43] and in this country within the past four years, Steele,[13] and Steele and Butt,[14] Benedict,[44] * Tileston,[17] White [18] and Cowie.[45]

Although Kuttner [3] had, in a measure, indicated the value of detecting small amounts of blood in stomach contents, Boas was the first to make general applications of the test for occult blood in affections of the gastro-intestinal tract.

The following are Weber's original directions: (1) A plentiful portion (about 5 gm.) of feces is rubbed up with water, (2) a portion of this mixture is treated with one-third volume of glacial acetic acid and (3) extracted with ether. (4) After clearing, a few cubic centimeters of the ether extract are poured off and to this are added about 10 drops of tincture of guaiac (see below) and (5) 20 to 30 drops of old turpentine. If blood be present the mixture turns to a blue-violet; if absent, a red-brown, often with a tinge of green. The reaction is more plain if some water is added and the color extracted with chloroform.

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* Benedict's modification of the guaiac test consists in adding to about 2 to 5 gm. of feces (diarrheal consistency) an equal amount of gasoline, then add about 1 ccm. fresh tincture of guaiac and an equal amount of old oil of turpentine. If blood be present, the gasoline, (which rises above the emulsion of feces, guaiac and turpentine) is colored green or blue according to the amount of hemoglobin present. Benedict claims for the test avoidance of delay and the spurting incident to the ether acetic acid extraction. The ingredients may be added in any order. The same objections, however, obtain with this test as with the original van Deen test.

Cowie [45] has modified Weber's test by adding an equal amount of distilled water to the acetic acid ether extract, and thoroughly shaking, before adding the guaiac, and claims for this method a greater delicacy than any other modification of Weber's test; *e. g.*, Weber, by guaiac, obtained a positive reaction for blood in stools after ingestion of 3 gm. of blood, while Cowie was unable to verify this by Weber's test, yet with his "water modification" he was able to get a *distinct reaction after the ingestion of 0.5 gm. of blood.* Cowie, like Boas, adds a few granules of powdered guaiac to the ether extract, instead of preparing the customary guaiac tincture; when the guaiac is dissolved, the oil of turpentine is added.

In the comparative tests given below, the following method was employed:

1. About 5 ccm. of liquid gastric contents or 3 gm. of feces (the feces should be thoroughly mixed and made fluid by rubbing up with a little water) are mixed with one-third the quantity of glacial acetic acid.

2. Extract with about 10 ccm. of ether. To avoid the emulsifying action of ether, instead of shaking the tube, it should be slowly inverted several times.

3. *A piece of clear brown gum-guaiac about the size of a cherry is crushed and then dissolved in a test tube half full of alcohol (or ether, see below). This tincture should assume a light sherry color. Green oxidized portions must not be used.

4. To perform the test, about ½ ccm. of the guaiac tincture is added to about 5 ccm. of the acetic acid ether extract and to this 1 ccm. of a 3% peroxide of hydrogen (the usual commercial strength) or an equal amount of old oil of turpentine. (The H_2O_2 may be added to the tincture of guaiac first, when, if the tincture is strong, it may turn milky, but this is clarified on addition of the ether extract. This procedure serves as a control on the guaiac.)

In the presence of blood, a blue color quickly develops, which deepens, and in two or three minutes gradually fades to a pale blue and disappears; in the case of feces the disappearing color is sometimes a faded green. In fecal extracts, also, various shades of purple, purple-brown or red-brown frequently replace the blue, and with small traces of blood even a green shade. This green shade may never result from pure blood solutions, but I am convinced this sometimes occurs with fecal extracts, as I have seen cases where only a green shade occurred with the guaiac when the benzedin and paraphenyldiamin tests were clearly positive. As much difference of opinion prevails as to what colors, other than shades of blue, result from the presence of blood, shades of green should not be considered positive when a more delicate test is negative. When peroxide of hydrogen is used two layers form and the color reaction appears in the upper ether layer. H_2O_2 seems to give a somewhat quicker reaction and Boas found it more delicate. Oil of turpentine may mix with the ether extract, the color appearing throughout the mixture, but it usually settles to the bottom where the color appears. It was suggested by Schmilinsky [10] (p. 2146), and recently by Cowie,[45] that a color scale may be arranged so that the guaiac test could be used quantitatively, but the writer believes that color changes can only be used in a rough and general way to estimate the quantity of blood, and, as Clemm [11] (p. 377) states, such a scale is inconstant and not worth the tax on the judgment.

Should an emulsion form in making the ether extract it can be broken up, as pointed out by both Schmilinsky [10] (p. 2146) and Schumm [2] (p. 19), by adding a few drops of alcohol and giving the tube a few turns. The latter author claims that Boas's [7] warning that alcohol itself may cause color changes cannot be accepted, as in 1,000 applications of the test he used strong alcohol many times for this purpose and never noted this occurrence.

If the stools contain much fat it is better first to extract with ether, as recommended by Boas and Rossel,[9] before making the acetic acid-ether extract, as the guaiac reaction is thus made clearer. (There is no danger of losing blood, as hemoglobin in a neutral or alkaline medium is not absorbed by ether.) If there is much hydrobilirubin or vegetable coloring matter present, the writer has found the guaiac test much improved by first extracting with alcohol-ether (equal parts), instead of ether, which removes not only the greater part of the free fat and fatty acids but much of the coloring matter as well but not of the blood. (See also Schumm's method below.) Boas, White and Cowie believe the fat extraction is not often necessary.

When turpentine is used as the oxidizing agent it should be perfectly pure and clear (as Mercks) and before ready for use should be exposed to the air in an open dish and in a dark place for at least a month; afterward it should be kept in a bottle uncorked, or only lightly protected with cotton. It should not be left in strong sunlight, for Schumm [2] (p. 20) has seen turpentine thus treated give an intense blue with the plain tincture of guaiac, and I have seen such a specimen give a tinge of green-blue with guaiac.

Guaiac resin for testing purposes should be clear brown or wine color. A large piece 4 or 5 inches through (if possible) should be obtained, and a clear piece broken off when needed for use. Any oxidized (green) portions should be thoroughly removed, as these without the presence of blood may give color reactions; and for this reason guaiac, for testing purposes, should never be kept in the powdered form, as every particle becomes oxidized and untrustworthy for blood tests. Guaiac may be dissolved in either alcohol or ether. It dissolves more readily in alcohol and is better for immediate use — it should be prepared about every hour. If a solution of guaiac is to be kept on hand, an ethereal tincture must be made, as this remains active for months.

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* As the following tests were begun by Weber's old method it was continued throughout, but the method used by Boas of adding a few grains of fresh guaiac directly to the ether extract and then adding the oxydizing agent is fully as delicate and more simple.

The writer has not found the ether solution as satisfactory as the fresh alcoholic tincture, and the green residue which forms around the rim of the bottle may be a source of error in the former. The best method, as already mentioned, is to add a few bits to the ether extract with each test.

It is customary, before testing for occult blood in the stools, to place the patient on a special meat-free diet. Sometimes, however, it is important to make occult blood tests without any change of diet. It is thus necessary to know how much and what kinds of meat will usually give a positive reaction.

It is generally stated that red meats* in moderate quantities, eaten once daily, will sometimes give positive guaiac, and that cooking, though it does not prevent, lessens this reaction, and also that fish, fowl and ham do not give a positive test even if eaten in considerable quantity. Eggs never interfere with the test.

I have often examined stools of patients who had been on a mixed vegetable and meat diet, but never obtained a positive reaction by Weber's test in any case in which blood was absent. This agrees with Cowie's statement (p. 412) that an ordinary meat diet seldom if ever causes a reaction for occult blood. Cowie (l. c.), however, obtained a clear, positive guaiac reaction after the ingestion of 10 gm. of scraped raw meat, but no reaction when smaller amounts than 10 gm. of scraped raw meat had been ingested. (Further meat experiments under benzedin.)

As to the action of the guaiac test on crude drugs, the various preparations of iron, etc., probably little can be added to what was stated by Schönbein and van Deen and Liman 50 years ago; but the acetic acid ethereal extract of the stools prevents all drugs, probably, from interfering with the guaiac test for blood, and Weber [36] (p. 143) himself found of 67 medicines administered in various combinations to patients, that the acid ether extract of stools of these patients gave no action with the van Deen test. By the same method stools gave negative results after ingestion of milk; the ether acetic extract removed cause of error in presence of milk, pus, saliva or spices; and greens or bile caused less confusion when van Deen's test was performed by Weber's method.

The blue shade one obtains by the action of the guaiac test on Blaud's mass and on the tincture of chloride of iron very quickly disappears, though it is very like that produced by old blood. When Blaud's mass is treated with acetic acid, water added and shaken with ether, the ether extract gives no reaction with guaiac. I have many times applied Weber's test to stools which were black through administration of Blaud's pills, the dose often being 30 gr. daily, and in the absence of blood no positive action was ever obtained. Steele and Butt [14] found, also, that ferric carbonate, 30 gr. daily, and ovoferrin and peptomangan in daily doses of 1½ oz. failed to give a reaction similar to blood by Weber's test. It is safe to consider that *no* drug in therapeutic doses will give a reaction by Weber's method which may be confounded with blood. The delicacy of guaiac as indicated by various writers is given in the following:

			In 1 gm. of Stools * with Blood Content of			
Boas & Kochman	+	guaiac	0.0008	gm.		
Schloss (p. 275)	+	,,	0.0008 0.0006	,, ,,		
Hartman (p. 51)	+	,,	0.00005	,,	to	0.00001
Cowie (p. 419)	+	,,	0.00035	,,		
Clemm (p. 377)	+	,,	0.001	,,		
Schmilinsky (p. 2146)	+	,,	0.01	,,		

+ equals positive.

* Or stomach contents.

Schloss (l. c.) was unable to confirm Hartmann's results either with guaiac or aloin, though Cowie [45] (p. 422) is inclined to believe the results of all correct. Schumm and Remstedt [52] (p. 993) obtained a barely positive guaiac solution of blood in water of 1 to 100,000; when 8 ccm. of the solution was used.

Schumm's [2] (p. 26–29) modification of Weber's test is performed in this way: About 4 gm. of feces (portion, size of walnut) is thoroughly rubbed up in a glazed porcelain mortar with 30 ccm. of alcohol-ether (equal volumes); the contents are then transferred to a clean coarse filter placed in a funnel (the filter should be unplaited and about 12 cm. in diameter); the residue in the cone is again treated with alcohol-ether (30 ccm.) and assisted in running through by stirring with a glass rod; when the filtration is completed some plain ether is poured over the filter and stirred as above, and when the ether has filtered off the residue is washed once more with ether. This process, in a *neutral* or *alkaline* mixture, usually removes the coloring matter, neutral fats and free fatty acids (soaps are not removed by neutral alcohol-ether), and it likewise removes the water present. Four cubic centimeters of glacial acetic acid are next added to the residue on the filter and gently but thoroughly worked through by means of the glass rod. Then 4 ccm. more of acetic acid are added and the stirring repeated, and when a greater portion of the acid has drained off, the combined acid filtrate is again poured over the cone and allowed to thoroughly filter. A number of cubic centimeters of the acetic acid filtrate is diluted with two or three times its volume of ether, and to this is added a half volume of distilled water, and the mixture shaken. If separation does not occur, add some alcohol, or ether, or water. The acetic acid ether extract is now tested in a thoroughly clean and dry † or alcohol-washed test tube. In the presence of hematin there appears in a short time a more or less clear violet-blue, red-violet or green-blue. Another portion of this extract may be used for spectroscopic examination. In the case of liquid stools the procedure is the same, only a larger amount is taken and stirred up with about four times the quantity of alcohol-ether. If the stool is acid in reaction it is first treated with a number of drops of concentrated sodium carbonate solution, and then with the alcohol-ether.

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* See experiments under benzedin.

† Cowie [45] insists on dry test tubes, as both he and his assistant, Dr. Roche, have obtained a positive guaiac (clear blue) when dry test tubes were used, and a negative test with the same specimen when tubes were not dry.

Schumm claims great delicacy for his method. The writer has made few comparative tests with this process, but in the cases where tried, the colors were not only more clear and intense than with the guaiac test by Weber's method, but likewise when other test-agents, as aloin or benzedin, were used. The respective color changes were greatly enhanced when an extract of the specimen was made as directed by Schumm. Were it not a time-robbing procedure, Schumm's method would meet about all the requirements for a clinical test.

ALOIN.

Aloin was first described as a blood test by Klunge [46] twenty-five years ago, later by Rossel [9] and then by Boas, [47] Koziczkowsky,[48] von Torday,[49] Petrachi [11] and others.

For a time it seemed that aloin might displace guaiac because of its greater delicacy and reliability. In the past two years, however, it has been less recommended and some recent writers, as White and Cowie, have concluded from their experience that it is probably less delicate than the guaiac. Koziczkowsky obtained a positive aloin reaction in a mixture of 0.025 gm. of blood with 2 gm. substance and Cowie [45] (p. 415) obtained positive aloin with 0.02 gm. blood to 1 gm. of feces, and a questionable reaction with 0.005 gm. to 1 gm. of feces.

The preparation of the material for the aloin test is in all particulars the same as for the guaiac test. Oil of turpentine is better than H_2O_2, inasmuch as the reaction is more clear. To prepare the aloin solution, a portion of the powder (a good preparation, and the one used in these tests, is that of Parke Davis) is placed in a *clean* dry or alcohol washed test tube — sufficient to fill the bottom of the glass — and to this is added about 10 ccm. of 75% alcohol (aloin is scarcely soluble in ether, only about 1 to 500); when the solution becomes yellow it is ready for use. The test is then performed throughout as with guaiac, using the same proportions of reagents. Aloin solution should be made fresh, as after standing about half an hour it usually assumes a pink or slightly red color which is increased on addition of old turpentine.

The color change in a positive reaction is a pink or slight red to deep cherry red, or, in extract of stools, a red wine color. The color reactions are not as prompt as with guaiac and in the presence of only small amounts of blood the red color is not distinct for ten or twelve minutes. If the color only appears after fifteen minutes or more it should not be considered positive, as this sometimes occurs in the absence of blood. By adding a drop or two of chloroform the appearance of the color is hastened.

When the aloin solution, ether extract and oil of turpentine are mixed, by lightly shaking, the aloin solution usually sinks to the bottom where the color changes occur, but sometimes, as pointed out by Koziczkowsky (p. 1199) and Steele, the mixture becomes uniform, particularly if the aloin solution is made with strong alcohol (95%).

Ninety-eight occult blood tests were made with aloin and compared with an equal number of guaiac tests performed as suggested by Weber. Fifty-one of these comparative tests were made in stomach contents, and in three of these cases, in which the guaiac test was negative, the aloin test gave slight red color in five to fifteen minutes, and in each of these three cases the phenyldiamin test was positive. On the other hand, in a case of hyperchlorhydria with free HCl 0.26%, the guaiac test gave a slight blue, while the aloin test gave only a very slight pink, not distinctly positive (in this case the paraphenyldiamin was positive and likewise the benzedin). In another case the guaiac test gave a slight *red*, the aloin a slight pink in about twelve minutes, which did not increase, and the paraphenyldiamin was slightly positive. In one specimen of urine the guaiac test was doubtful (slight green tinge), a pink color appeared with the aloin and the paraphenyldiamin was positive. In the other urinary tests the guaiac and aloin agreed, except in one specimen in which the guaiac test (slight tinge of blue) as well as the phenyldiamin were positive, the aloin was completely negative. In two specimens out of forty-seven stools the guaiac test was negative, while the aloin gave a slight pink and the phenyldiamin was positive; in the remaining tests there was no discrepancy between the aloin and guaiac tests. The above results indicate that the guaiac (Weber's modification) and aloin tests are about equally delicate. (Further comparisons under phenyldiamin and benzedin.)

PARAPHENYLDIAMIN TEST.

A new and very delicate reagent for detection of occult blood has recently been introduced by Boas.[50] It was originally employed by Storch [51] in detecting pasteurized milk. The reagent consists of a very dilute solution (about 1 to 200) of paraphenyldiaminchlorhydrate with the addition of peroxide of hydrogen. With unheated milk the reagent gives an indigo blue, and the whey, as it separates, shows a violet and brown; in pasteurized milk the test gives a blue-gray color.

This test with certain modifications has been found by Boas a reliable and more delicate test for occult blood in feces than guaiac or aloin, but not so sensitive as benzedin. He states that for months he used it exclusively as a blood test, but believes the other methods should be retained as control tests in cases of doubt.

To perform the test according to Boas the stomach contents or feces are prepared much as with the aloin and guaiac tests, except that a smaller amount of acetic acid, about 20 drops, is added to the contents and extracted with ether as in the guaiac test; to 2 or 3 ccm. of this ether extract add 1 or 2 drops of a very dilute solution

(1 to 100) of a paraphenyldiaminchlorhydrate; to the mixture is added 1 ccm. of a half normal alcoholic potassium hydrate solution, and then 10 to 15 drops of a 3% H_2O_2. Upon slight shaking there appears almost momentarily in the bottom of the reagent glass a characteristic olive green (or blue-green) color, but especially characteristic is the olive green ring between the layer of ether and peroxide of hydrogen; the upper layer shows a more or less violet color. The green color is very transitory and, according to the blood content, quickly changes into a more or less deep violet. In the absence of blood the green color is either very faint or does not appear at all. If the stools are deeply tinged with bile or hydrobilirubin, they should first be extracted with alcohol-ether.

Following the directions of Boas, I applied this test to 103 specimens of gastric contents, stools and urines, at the same time making comparative tests with both guaiac and aloin, and in 43 of the specimens additional comparisons with benzedin. In no specimen where I obtained a positive reaction with either Weber's or the aloin test did I fail to get some degree of reaction with the phenyldiamin. In 11 of the cases where the latter was positive, Weber's test was negative, and in 7 of these the aloin test was negative. In a majority of these 11 cases the transient green ring, which Boas terms "extraordinarily characteristic," was absent, and in such cases a diffuse light green tinged with yellow appeared, quickly changing to a weak dirty brown or washed-out violet. I have considered as negative those reactions of phenyldiamin where no green shade was discernible in the beginning of the color changes. In stomach contents less discrepancy was found between the results of this test and those of aloin and guaiac than was the case in feces. Almost invariably when the phenyldiamin gave a positive reaction with gastric contents, the guaiac gave a clear blue and the aloin a distinct red.

The phenyldiamin test was never positive when the benzedin was negative, but it was negative six times when the benzedin was positive.

Schumm and Remstedt [52] have recently modified the procedure as carried out by Boas in the following way:

To the fluid under investigation are added only 2 drops of a 1 to 200 solution of paraphenyldiaminchlorhydrate, then 1 ccm. of about one half normal alcoholic potassic hydrate, then 1 ccm. of a 3% peroxide of hydrogen, and last of all are added a few drops (about five) of a dilute acetic acid. A newly prepared watery solution of freshly defibrinated human blood tested in this way shows in a moment an olive green color which gradually turns to brown red. In such a solution these writers found this test to be somewhat more delicate than the guaiac, and claim they were able to determine blood when in a watery dilution of 1 to 100,000 when 8 ccm. were used; on the contrary, if the acetic acid was added before the potassium solution the test failed in a blood dilution of 1 to 40,000 — no greater than the delicacy of the guaiac test, determined long ago by van Deen.[31] Schumm and Remstedt [52] never obtained a positive reaction in the stools by means of this test when Schumm's modification of Weber's test was negative or only suggestive. I have made no systematic comparison with this modification of the phenyldiamin test, but the test is delicate and it might be preferred to Boas's method, if only on account of the readiness with which the color changes are detected at the *top* of the solution. There is no ring formation, but in very minute quantities of blood a light green color almost immediately appears and gradually diffuses toward the bottom of the tube, and in the meantime the various shades of violet (as described above) have begun to appear. Schumm and Remstedt (p. 994) mention that in weak dilutions of blood the olive green may not appear, but only a red color. This is easily demonstrated in a watery solution of blood.

BENZEDIN TEST.

Benzedin was first described as a color test for blood by O. and R. Adler [53] in 1904, and is the most delicate of all the clinical tests for occult blood. Of the many chemical combinations (amido bodies, phenols, amido acids, naphtholine and diphenyl groups) with which they experimented, they found that benzedin, of the diphenyl group ($H_2N\text{-}C_6H_4\text{-}C_6H_4\text{-}H_2N$), in a saturated alcoholic solution, and with the addition of peroxide of hydrogen, determined the presence of blood in a dilution of 1 to 100,000 (0.001%). Schumm, however, found the limit of delicacy 1 to 200,000, when he used 8 ccm. of a fresh watery dilution of human arterial blood. It would detect 0.00004 gm. of blood. The guaiac test under equal conditions he found required eight times this strength of blood solution to give a reaction (detecting only 0.00032 gm. blood). He claimed the delicacy of the reaction depended upon the quality of the benzedin used; he employed Mercks "benzedin purissimum," but he had obtained *commercial preparations of "benzedin puriss," which were not so delicate as the guaiac test.* Schumm's results are easily verified. I have found that fresh human blood (hemoglobin 100%) in a dilution of 1 to 200,000, by volume, gives a clear pale green, with an acetic acid solution of benzedin and H_2O_2 in one minute, turning to a pale red in 8 to 10 minutes. If the blood solution is first heated to boiling and the benzedin reagent added while the blood solution is hot the color changes are very rapid, almost instantaneous, but the green color is not so evident, and the red shade appears within half a minute. If the blood is first treated with glacial acetic acid or HCl and then diluted, the color changes seem not so distinct as with pure blood solutions, yet gave a positive benzedin in a dilution of 1 to 175,000. Boiling the acetic acid blood solution lessens the power to cause color changes. Siegel,[54] and Schlesinger and Holst,[27] and Schumm,[55] also review the subject of benzedin and report their investigations, but Schlesinger and Holst materially modified the test recommended by A. and O.

Adler and gave it a distinct clinical value, which the original test did not possess.

The Adlers[53] employed benzedin as follows: I. For urine, 10 or 15 ccm. are treated with a half volume of acetic acid and extracted with ether. On adding to the ether extract some saturated alcoholic solution of benzedin, with peroxide of hydrogen, the usual green color appears in the presence of hematin.

II. For feces, a small quantity is mixed with some water and to 3 ccm. of the unfiltered mixture is added 2 ccm. each of freshly prepared benzedin solution and peroxide of hydrogen, and three or four drops of glacial acetic acid. The presence of blood causes an intense green.

These authors, although they point out that certain oxidized ferments (indirect oxydases) in the presence of peroxide of hydrogen can be destroyed by boiling, do not mention this procedure in their directions.

Schumm[2] (p. 14) in applying the test to feces, according to this method found the reaction too delicate for clinical work.

Schlesinger and Holst, by modifying the original test, overcame the extreme sensitiveness and yet kept it beyond the delicacy of all other tests for occult blood in feces. Their method is as follows:

I. An approximately saturated solution of benzedin is made by adding a knife-point full of benzedin to about 2 ccm. of glacial acetic acid in a *clean* test tube; shake and set aside; the benzedin soon becomes dissolved. The solution is better if made fresh, though it is active after many days.

II. A piece of feces about the size of a pea is stirred up with a clean glass rod in a test tube about a fifth filled with water (test tube about 10 cm. long). The tube is then lightly closed with a stopper and the mixture brought to a boiling point over the flame. (The boiling destroys the activity of the enzymes.)

III. About 10 or 12 drops of the concentrated acetic acid solution of benzedin (I) is now poured into a clean test tube and 2½ ccm. to 3 ccm. of a 3% solution (ordinary commercial) hydrogen peroxide. A reagent is thus prepared which will not only serve as a control on the chemicals, but likewise on the reagent glasses.

IV. To perform the blood test we pour into the reagent (III) one to three drops of the boiled feces mixture (II) after lightly shaking it.

In the presence of blood there develops a beautiful green, blue-green or blue. The greater the blood content the more predominant is the blue. The appearance of the color-change in a case where the aloin test would be positive occurs in a few seconds, while in the presence of only a slight amount of blood ¼ to ½ minute is required. The time varies, but Schlesinger and Holst[28] state, and it is easily demonstrated, that even in the case of minute traces of blood the beautiful green color always appeared within two minutes. (Further description of color changes in Table I a.)

Following the modifications of Schlesinger and Holst[28] I have made 107 applications of this test (stomach contents, feces and urines), nearly all of which were in comparison with the aloin, guaiac and phenyldiamin tests. (In all the experiments I used the benzedin purissimum of Merck, Germany.) It is also important that the H_2O_2 should be pure, as I have found two preparations of peroxide of hydrogen which invariably gave a green color when added to the benzedin solution alone. "Dioxygen" of the Oakland Chemical Company and H_2O_2 of Parke Davis do not cause a green color with a pure solution of benzedin in glacial acetic acid.

In 36 of the specimens (gastric contents and feces) all four tests were applied to each specimen, making in all 161 applications (as in 17 of the specimens the benzedin test was applied both before and after boiling). In 12 of these series the results were uniformly negative with all the tests, five of the specimens were stomach contents, 7 were stools, obtained when the diet had been meat-free for at least three days. (These results demonstrate the importance of a negative benzedin test, and the amount of time it is possible to save in routine work where benzedin is applied first, as the whole test, including the preparation of materials, can be performed within two minutes.) In the gastric contents of one case, where the benzedin and phenyldiamin were distinctly positive the aloin was negative, but the guaiac showed a slight green developing in less than a minute, then disappearing; but in two specimens of stools the benzedin, phenyldiamin and aloin were positive, while the guaiac was negative. In one of these cases the aloin became a light red wine color at the end of 15 minutes, in the other a slight red in 10 minutes, and in this case the aloin and guaiac tests were repeated three times.

In 32 specimens of gastric contents the benzedin test was negative in 16. In 6 of this series the test was *positive before* boiling and *negative after* boiling the contents. This may show that enzymes * as secreted and under certain condi-

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* In connection with these examinations of the gastric contents, the benzedin test was applied to the following preparations:

+ = positive.
— = negative.

Preparation.	Age of Specimen.	How Treated.	Benzedin Test.	
From one manufacturer:				
Scale and powdered pepsin.	Three years old.	Not boiled.	—	
Scale and powdered pepsin.	Fresh from manufacturer.	Not boiled.	—	
Pancreatic powder	Fresh from manufacturer.	Not boiled.	+	
Pancreatic powder.	Fresh from manufacturer.	Boiled.	—	
Pancreatic powder.	Fresh from manufacturer.	Not boiled.	—	With acetic acid ether extract.
Essence pepsin.	Fresh.	Not boiled.	—	
From another manufacturer :				
Peptonizing powder (from tubes)	Fresh.	Not boiled	+	Deep green blue.
Peptonizing powder (from tubes)	Fresh.	Boiled.	+	Distinct green.
Peptonizing powder (from tubes)	Fresh.	Not boiled.	+	Distinct clear green with acetic acid ether extract.
Peptonizing powder (from tubes)	Fresh.	Boiled.	—	With acetic acid ether extract.

tions give a positive benzedin. In these cases the green color reaction was usually very light, however, and slow in appearing, though usually within two minutes. The tests were carried on side by side and six drops each were used of boiled and unboiled contents. When 1 ccm. or 2 ccm. of boiled contents are added to the reagent a light green may develop in cases where 2 or 3 drops cause no color change. The test may be negative in *unboiled* gastric contents not only when HCl is absent, but when the free HCl content is high.

In 22 specimens of stools 10 benzedin tests were negative and the remainder positive. No definite green color change was found *before* boiling that was absent *after* boiling the specimen, but in nearly all the 10 negative tests color change was wholly absent without boiling, proving that enzymes seldom, if ever, interfere with the benzedin test in stools.

Stools which are suspected of containing blood, but give a negative blood test, should be well mixed and again tested, as a stool may contain portions *passed at the same time*, one of which will give a strong positive blood reaction by all blood tests, and another portion give a negative result with the benzedin as well as all the other tests. Such an occurrence was illustrated in the case of a patient (a woman fifty-two years old) seen with Dr. J. B. Thornton, and presenting a group of symptoms which suggested gastrostaxis* or gastro-enterostaxis. At first the stools were composed of soft and unformed masses, dark blue, or black, then becoming tarry, or very dark. On the fourth day, after sudden cessation of all symptoms, the patient passed a stool which gave both negative and positive blood tests. In this formed stool one portion was brown and gave an intense positive reaction by aloin, guaiac, phenyldiamin and benzedin. Other parts were light yellow (as seen after milk diet), and portions taken from the center of these light colored masses repeatedly gave a negative result with the benzedin, and with all the other blood tests. In some of the masses there had been a slight admixture, giving positive benzedin reaction and perhaps a slight reaction with some of the other tests. This seemed to be such an unusual occurrence that a great many tests were made at different times (and with care) for confirmation. Why the benzedin test could be negative in such a case as this, when, as has been stated by Grünewald[28] (p. 110), a positive test with benzedin was obtained in the stools 2½ *days after ingestion* of a ham sandwich, seems quite inexplicable. Schlesinger and Holst,[27] however, obtained by their method a negative benezedin reaction in stools in one case 60 hours and in another 36 hours following the ingestion of meat, though it was always positive within 24 hours, and in one case it gave a positive reaction 44 hours following the ingestion of 0.5 gm. of blood.

Experiments 1 and 2 indicate the results of the benzedin and guaiac tests when applied to normal stools, after the ingestion of various foods, and the increase in delicacy of either test when applied to the fecal extracts prepared according to Schumm.

EXPERIMENT No. 1.

Day.	Food Eaten.	Time of Stool.	Adler's Benzedin test with Schlesinger's and Holst's Modification.	Benzedin with Schumm's.	Weber's Test.	Schumm's Modified Weber's.	Aloin with Schumm's Extract.
21st and 22d.	Hearty evening meal of very rare roast beef for two days, other meals meat free.	No examination of stool on these days.					
23d.	Food during day: 3 eggs, salt codfish and cream, potato, bread, butter, oatmeal, tea, coffee.	Morn'ng stool.	Strongly positive, specimen unboiled. Positive, specimen boiled. (*a*).		Positive (*b*).		
24th.	Eggs, oatmeal porridge, cream, milk, bread, butter, coffee.	Morning stool.	Positive, unboiled. Positive, boiled.	Intensely (*c*) positive.	Negative.	Positive (*d*).	Positive (*e*).
25th.	Oatmeal porridge, 1 egg, fish cakes, fresh mackerel, cream, milk, bread butter, coffee.	Morning stool.	Positive, unboiled. Negative, *boiled*.		Negative.	Negative.	Negative.
26th.	Breakfast, oatmeal porridge, few baked beans.	Morning stool lost. Stool at 3 P.M.	Negative, *unboiled*.	Strongly positive (*f*).	Negative.	Negative.	Negative.

Preparation.	Age of Specimen,	How Treated.		Benzedin Test.
Holladin.	Fresh.	Not boiled.	+	Strong blue with green tinge.
Holladin.	Fresh.	Boiled.	+	Color diminished, more green than blue
Protonuclein.	Fresh.	Not boiled.	+	
Protonuclein.	Fresh.	Boiled.	—	
Takadiastase.	Fresh.	Not boiled.	—	

It is difficult to show that some of the + reactions with these specimens were not due to blood. We should also expect a positive reaction to any considerable amount of enzyme powder that was active in *vitro*, but this was not the rule; and it may be that the enzymes which yield a positive reaction with benzedin are not always present or active in the commercial preparations.

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* H. Wale White: The Lancet, London, Nov. 3, 1906, p. 1189. *Idem.*, Jan. 12, 1907, p. 126.

(*a*) Color change, intense green in three quarters minute, in one to two minutes green changing to black, in three minutes black color has changed to claret-red and no further change in fifteen minutes. On adding more feces solution, claret-red returns through black to green, back through black to red. With the boiled specimen, the same changes occurred as above, only the colors were much less intense.

(*b*) The color change was a light green with red brown in one half minute, green and red disappeared and left a brown which faded.

(*c*) The color change was a clear and intense green with the ether acetic acid extract (Schumm), and with the straight acetic acid extract (Schumm) a very intense green blue.

(*d*) The color change was a suggestion of green, quickly followed by a dark red brown, but when the straight acetic acid extract was used (without ether extraction) the color was a clear blue.

(*e*) The color change was a tinge of red in five minutes with the ether acetic acid extract (Schumm), but on using the straight acetic acid extract a clear red wine color quickly appeared.

(*f*) Color change was a green blue with the straight acetic acid extract (Schumm) and a clear deep green with the ether acetic acid extract (Schumm).

Experiment No. 2.

On the 8th, evening meal, — cold roast beef, the other meals, meat-free; on the 9th, evening meal, — beef pie, other meals meat-free; on the 10th, eggs, lobster, salt codfish and cream; on the 11th, eggs and asparagus (otherwise on 10th and 11th meals were meat-free). Stools passed on 8th, 9th and 10th not examined. Examination of stools on 11th, thirty-two hours after meal of meat pie, showed both the benzedin and Weber's tests negative. In the case of benzedin the feces solution was unboiled. The stool was then extracted by Schumm's method and both the benzedin and guaiac tests were found clearly positive. Stool passed on 12th, fifty hours after meat pie gave a negative guaiac by Schumm's and only a slightly positive benzedin. Although salt fish fiber gives a positive benzedin the experiment shows it does not cause a positive reaction after digestion.

I have applied the benzedin test (method of Schlesinger and Holst) to various substances with the following results: Raw green vegetables gave a slight positive reaction, though it was not found that they materially interfered with the test, in gastric contents or stools, and particularly in the latter. Raw wheaten flour, corn and oaten meal, potato, carrot, parsnip and squash, all gave a quick positive reaction; when cooked the result was negative with all. All meats, cooked and uncooked, gave a strong positive reaction. Raw fish, fresh, dry and pickled, and shell fish (oysters and clams) gave a positive reaction with benzedin; cooking much weakened the reaction, and the color change was chiefly confined to the tissue substance, the solution showing only a weak green. Cooked lobster, not mixed with the visceral portions, showed no benzedin reaction. After the ingestion of any form of fish the feces usually caused no benzedin reaction, sometimes slightly positive after fresh fish. Eggs, raw or cooked, did not give a positive benzedin. The presence of biliverdin in the urine or feces caused a very strong positive reaction, but bilirubin, hydrobilirubin (or urobilin) as found in the stomach contents, feces or urine, either gave no benzedin reaction at all or only a slight degree of color change.* Blaud's pills give a quick but not intense positive reaction with benzedin, but after ingestion of *Blaud's pills* (30 gr. daily), the feces gave no positive reaction with benzedin (by Schlesinger and Holst's method).

The requirements of any clinical blood-test are accuracy, delicacy and simplicity of application. All of the occult blood-tests embrace one or two of these requirements, but Teichmann's and the spectroscopic tests have already been considered as generally inferior to all others. Taking *guaiac* as a standard, the above comparative tests show the following:

The *aloin* test is accurate and was found about equal in delicacy to the guaiac test, by Weber's method; if, however, a slight distinct tinge of green or a red brown is taken to indicate blood, then guaiac will be found the more delicate test. At first one is likely to be impressed by the singleness of color change in the aloin test; but, on the other hand, the aloin is slow of action, particularly in the presence of small amounts of blood, and, furthermore, we do not have the choice between H_2O_2 and oil of turpentine, — it requires turpentine. The aloin test holds no distinct advantage over guaiac.

The *paraphenyldiamin* test (Störch-Boas test) was frequently found on comparison more delicate than Weber's, and is probably more delicate than any modification of the guaiac test, except possibly Schumm's. Still, the test is not so simple as the guaiac test, and the varying color changes are confusing, and, in examining stools, bile and other coloring matters, are as likely to interfere as in the guaiac test. Apart from its delicacy, I can find nothing to recommend the paraphenyldiamin over the ordinary guaiac test.

Benzedin is by far the most delicate of the occult blood tests. In fact, the objection has been repeatedly raised that it reacts to such minute quantities of blood as to be clinically useless. The modification of Schlesinger and Holst overcomes the objection of excessive delicacy of the test, and renders it more practical and exceedingly simple (it can be performed within two minutes) and also prevents any possible reaction from enzymes. But even this modification may not prevent small amounts of blood (even non-pathological) from giving a slightly positive benzedin sometimes, but practice soon teaches what degree of color change indicates occult blood.

Frequently the benzedin test is negative, and it is for this reason of great value, obviating the need of other tests, and this is particularly true as a test for feces.

A positive benzedin and a positive guaiac would be more trustworthy than a positive benzedin alone, and guaiac is a *safer* test than benzedin for stools where meat has *not* been excluded from the diet.

Benzedin and guaiac together meet every practical demand of a clinical test for the presence of blood.

I am much indebted to Dr. Pratt for important suggestions in the subject-matter of this paper, as well as for facilities offered in his clinic.

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* I am much obliged to Dr. W. W. Barker, Medical House Officer, Massachusetts General Hospital, for a number of specimens supplied for these tests.

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◆

A CRITICAL ESTIMATE OF THE FERMENTATION SPECIFIC GRAVITY METHOD OF QUANTITATING SUGAR IN DIABETIC URINE.*

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IN 1861 Roberts[1] described a method of quantitating the glucose present in diabetic urine, which he spoke of as " the clinical method," on account of its simplicity and ease of application. His method consisted in determining the decrease in specific gravity of the urine caused by the action of yeast. Yeast fermentation splits up the glucose present and its amount can be determined by multiplying the difference between the specific gravity of the urine before and after fermentation by 0.23. This gives the percentage of glucose present. Roberts compared the results obtained by this with those from other methods of that day for quantitating glucose, and showed the considerable accuracy of his method.

Of late years the method suggested by Roberts has been rather neglected. In its place titration with some form of copper sulphate solution, polari-

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* Read in the Section on Medicine of the American Medical Association at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

[1] Edinburgh Med. Journ., 1861, vii, 326.

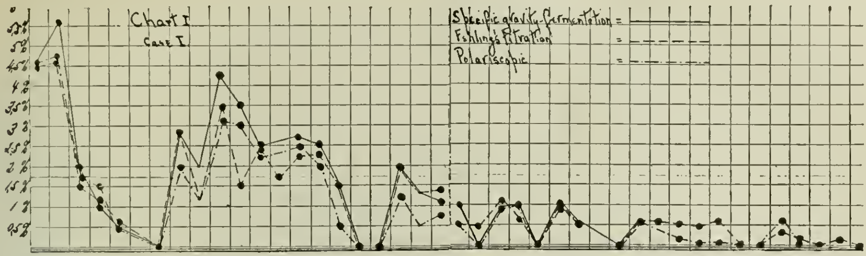

Chart I, Case I. Results of estimating the sugar in diabetic urine by the three methods.

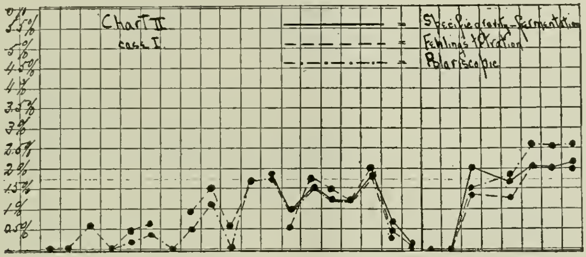

Chart II, Case I (continued).

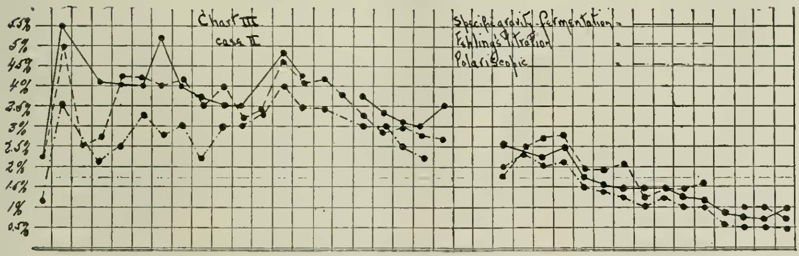

Chart III, Case II. Results of estimating the sugar in diabetic urine by the three methods.

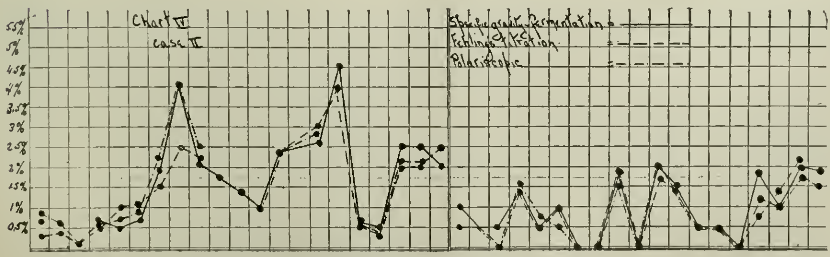

Chart IV, Case II (continued).

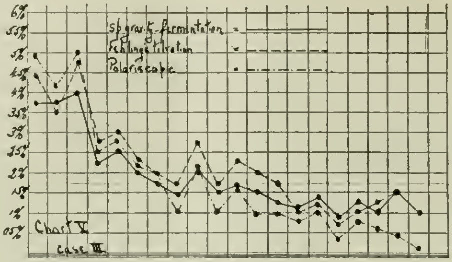

Chart V, Case III. Results of estimating the sugar in diabetic urine by the three methods.

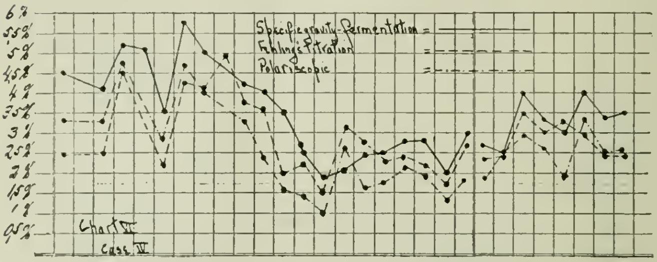

Chart VI, Case IV. Results of estimating the sugar in diabetic urine by the three methods.

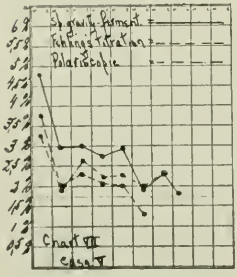

Chart VII, Case V. Results of estimating the sugar in diabetic urine by the three methods.

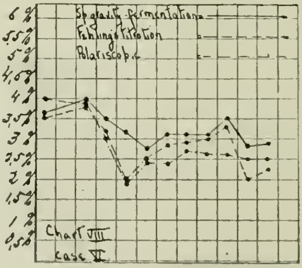

Chart VIII, Case VI. Results of estimating sugar in diabetic urine by the three methods.

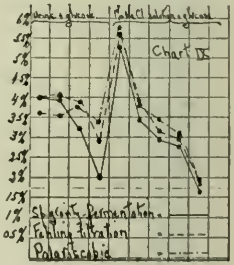

Chart IX. Results of estimating glucose dissolved in normal urine and in 1% solution of sodium chloride by the three methods.

scopic estimation, a fermentation method which measures the amount of carbon dioxide formed in the destruction of glucose, or other methods have been very generally used and comparison of the results of these various methods have been published by a number of observers.

Of all methods the fermentation-specific gravity one appears to be the simplest for the general practitioner, because it requires no laboratory and needs only a bit of yeast from the kitchen and the urinometer or specific gravity bulb, which every physician has. How accurate is such a simple method?

The question of accuracy is to be answered by comparing the results of this method with those obtained with other methods. During the past two years I have been able, with the aid of picked students from the fourth-year class of the Harvard Medical School, working under my direction at the Massachusetts General Hospital, to make such a comparison. We have made daily quantitations of the sugar present in the urine of several diabetic cases by (1) the Fehling's copper sulphate titration method; (2) the polariscopic method; and (3) the fermentation-specific gravity method. The estimates have been made in part by myself, largely by the students under my supervision. It has been our attempt to apply each method with such care and attention to detail as might be expected of a careful clinician working with adequate laboratory facilities. As a matter of fact, on the whole, more estimates of a given specimen were made and more attention was given to the avoidance of some of the commoner sources of error than it is fair to expect of even a very careful clinician. The polariscopic estimations were made with a Schmidt and Hensch half shadow saccharometer, and these results were controlled by a more accurate polariscope from the same makers.

The results of these estimations are graphically shown in Charts I to VIII. A glance at these shows a quite close agreement in the various quantitations. Chart III, which differs somewhat from the others, is from a case which during the first few days appeared to be excreting both levulose and glucose. At least this supposition would satisfactorily explain the considerable difference between the results of polariscopic estimation and those from the other methods. At the same time the urine on these days gave a strongly positive reaction with Seliwanoff's reagent, which reaction later disappeared. The occasional sudden variations seen in the other curves are probably due to errors in application of the method. All were typical cases of diabetes mellitus of moderate severity. In none was there coma or evidence of impending coma. The quantitations represent the per cent of glucose in a mixed specimen from the total 24-hour amount.

Chart IX shows the results of quantitating (*a*) normal urine to which glucose (Kahlbaum c. p.) has been added, and (*b*) 1% sodium chloride solution, in which glucose similarly was present. This shows a close analogy to the results obtained in diabetic urines.

To titrate a diabetic urine with Fehling's solution requires a considerable amount of time, care and laboratory equipment. The end reaction is not very sharp, and there is a considerable inherent error in the method. The polariscopic method requires an expensive instrument and the accuracy of the result is influenced by the presence of beta-oxybutyric acid, albumin, levulose and other possible constituents of diabetic urine.

The fermentation-specific gravity method as shown by the charts gives results as good as do the other methods. It is very simple in application, requires no laboratory equipment and involves a minimal cost for apparatus. All that is required is to take the specific gravity of the urine at room temperature, add a small bit of commercial yeast and place in a warm place, such as an incubator at 37° C., a heated room, near a stove or radiator, etc. Active fermentation soon begins and is evinced by bubbles and currents in the urine. When fermentation is finished the specimen partially clears and the evolution of gas ceases. A negative test with Fehling's or Nylander's solution proves the end of the process — 12 to 18 hours is usually sufficient. The specimen is now allowed to return to the room temperature of the previous specific gravity determination, and the specific gravity redetermined. The difference between these two readings, multiplied by 0.23, gives the percentage of fermentable substance expressed in terms of glucose.

A number of specimens were carefully filtered before the second specific gravity determination was made. This made no appreciable difference. The specific gravity bulb used was such as is sold to the physicians at a cost of from fifty to seventy-five cents. Many comparative readings were made, using a more accurately graduated longer specific gravity bulb and calculating the necessary allowance for temperature changes. Here again the differences are very slight, so slight that they might well be neglected. It is, however, important to use the same specific gravity bulb for both readings, since these cheap instruments vary considerably in their 1,000 level. Moreover, the specimen should be approximately at the same temperature at each reading, or a specimen with and without yeast be kept side by side and simultaneous specific gravity readings be made after the completion of the fermentation in the one, as first suggested by Roberts, for any considerable temperature variation will affect the specific gravity enough to change materially the result of the determination. Observing these few precautions, the results obtained are about as accurate as those given by the other two methods. The great simplicity of the fermentation-specific gravity method renders the chance of error in application slight, and it can be strongly recommended to the general practitioner in following the metabolism of cases of diabetes mellitus.

The facts presented above are not new. Yet it has seemed worth while again to call attention to so simple a method of quantitating glucose in urine, and to commend it as a sufficiently accurate method to enable the practitioner to treat scientifically his cases of diabetes mellitus. This is the motive of the paper. An accuracy sufficient for more exact chemical work is not claimed.

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THE TREATMENT OF FEVER CASES IN THE PUBLIC SERVICE.*

BY C. A. DREW, M.D.
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During the eighteen months ending April 1, 1907, 1,525 cases have been treated in the general hospital department of the State Farm. Of these 1,525 cases, 25 have been primary or secondary cases of lobar pneumonia. Of these 25 pneumonia cases, one died. All the others made good recoveries. Six cases of typhoid fever were treated during this period, all of whom made good recoveries.[1]

During the past three and one-half years, 38 cases of lobar pneumonia have been treated in this same hospital department of the State Farm with 3 deaths,— a mortality just below 8%. During this same period of three and one-half years, we have treated 30 cases of typhoid fever, all of whom made good recoveries.

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* Read before the Massachusetts Association of City Physicians, Boston, April 2, 1907.

[1] Six additional cases of pneumonia, each are alcoholic, all of whom recovered, have been treated since April 1, 1907. No typhoid since April 1.

For six years prior to Oct. 1, 1903,— the beginning of our hospital year,— we had treated 63 cases of lobar pneumonia with 21 deaths, about the average mortality, we believe, among intemperate men, and our mortality from typhoid fever had been 3 in 18 cases,— about 16.6%.

Making due allowance for the difference in the type of typhoid fever and pneumonia in different years, and allowing also for a probable difference in the physical condition of patients, a difference in the degree of leucocytosis and a probable difference in the strength of the army of bacterial allies engaged in the assault, still the contrast is marked between a mortality of 33⅓% for pneumonia and 16.6% for typhoid fever in the six years prior to October, 1903, and a mortality of 8% for pneumonia in 38 cases, and no death in 30 consecutive cases of typhoid fever since Oct. 1, 1903. If we note the further fact that for the past eighteen months the mortality in lobar pneumonia has been but one in 25 cases, exactly 4%, then the contrast is even more striking.

We have chosen the statistics of the past nine and one-half years because the writer has been chief of the medical staff at the State Farm during this period. The same trained woman nurse has been in charge of the nursing department during the whole time. With the exception of a competent surgical dresser and male night supervising nurse, the whole nursing force has been made up from men prisoners, without orthodox training, serving time for drunkenness, selected because of a demonstrated kindly disposition and an aptness in caring for the sick. Changes have occurred each year in the personnel of the junior members of the medical staff, but my junior colleagues were just as watchful and just as faithful in carrying out every direction and just as competent in detecting early danger signals when the mortality was 33⅓% for pneumonia and 16.6% for typhoid fever as during the past eighteen months. We cannot say whether the early cases were more or less severe than for the past eighteen months. A systematic blood count, bacterial comparison and differentiation would have added much to the scientific value of our observation, but we are in about the position of the busy practitioner,— our whole medical force is pushed with clinical work and the more scientific laboratory details are often neglected. Basing an opinion on clinical symptoms, I would say that the types of cases have not differed greatly.

Of our last 25 cases of pneumonia, all except 2 had been hard drinkers for years; 4 of the 25 cases were over sixty years of age, and the one who died had cirrhosis of the liver as a complication. In former years our cases must have been nearly all chronic alcoholics, as, with very few exceptions, they were serving time for drunkenness.

We think we have learned something and have modified our treatment. Whether our modified treatment has really made the smaller death rate, only time and added experience may enable us to say. In so far, however, as our limited experience may justify, we feel that we have learned a better way. In the early days we were not inattentive nor nihilistic regarding treatment. We followed the masters in medicine and believed that an abundance of fresh air, attention to the bowels, the most nutritious and easily digested diet, and liberal use of strichnine, digitalis and whiskey to meet heart weakness were our most effective weapons. We held it good reasoning that a man whose nervous system had been accustomed to large quantities of whiskey would be in great danger if he were not given alcoholics in liberal measure when down with typhoid fever or pneumonia. Our nurses were directed to give all the water the patient wanted, but the emphasis was on the whiskey and strychnine, and the water was credited principally as a convenient agent for diluting the alcoholic. In the light of our added experience, we are inclined to believe that the water added to dilute the whiskey was the more helpful part. We knew, of course, that water constituted 70% of the body weight, and of the brain even a larger percentage than the average for the whole body. We knew, when we stopped to think, that water was an important ingredient of the solid organs only in less proportion than in the digestive juices, lymph and blood. We knew how every muscle would shrink, stiffen and weaken under moderate heat by the rapid evaporation of the ingredient water upon which its flexibility largely depends. We knew the dependence of kidneys, lungs and skin and every excreting organ upon the maintenance of the normal fluidity of the vital secretions. Of all these facts we had a theoretical knowledge, and yet we did not fully know, because we did not allow the admitted facts a central place in the field of our consciousness. We did not realize how much the vital functions would be depressed by the too rapid loss of that life-sustaining oxide of hydrogen, known to the medical students as H_2O. If we had fully considered pure water in relation to that mixture of oxygen upon which our life so directly depends, and had remembered that the proportion of oxygen is even less in the air we breathe than in the water we may drink,— then we might not have been surprised to have found the vital forces rallying when reinforced by hot water and sodium chloride, in the proportion of the so-called normal salt solution, even more than when reinforced by the direct inhalation of oxygen or when stimulated by strychnine and alcohol. We do not suppose that water gives up its oxygen as does the air, and we do not suppose the hydrogen of water plays so large a part in the phenomena of life as the active nitrogen molecules in the atmosphere about us, and yet experience seems to suggest that a large quantity of pure water is only second in importance to an abundant supply of pure air when a high temperature and excessive exhalation of water is rapidly shrinking the muscles, and bacterial toxines are testing the eliminating powers of skin and kidneys beyond their normal functional capacity.

We knew, of course, in a general way, the tonic effect of cold and the atonic effect of heat upon all the ganglia of the sympathetic system, as well as upon the great cerebrospinal nerve centers themselves. We had been taught of the vaso-motor controlling centers in the medulla and of subordinate vasomotor centers located at different levels in the spinal cord. We had learned that there were vaso-constrictor and vaso-dilator fibers from these ganglia supplying every artery, and not these alone but even, as it is alleged, supplying lymph-vessels and veins. These facts of physiology had a place in our memory, but were crowded from the center of the field of consciousness. The masters in medicine had not laid emphasis upon these physiologic facts and we did not appreciate the therapeutic possibilities to be reached by the multitude of nerve terminals within the fifteen or twenty square feet of skin covering the human body, which may be played upon mechanically and stimulated by heat and cold to re-enforce exhausted ganglia and heart muscles, to accelerate or slow the blood current, to deepen respiration and regulate temperature and even to change the composition of the blood itself, — to which facts Winternitz in Germany, Rovighi in Italy, and Thayer, of Johns Hopkins, and others had testified. The evidence was experimental and seemingly conclusive, but these were not our masters in medicine, and their teachings were little regarded. It remained for Baruch, of New York, and Kellogg, of Michigan, to rouse our interest in the possibilities of hydrotherapeutics to a level at which it could bear fruit. These were they who gave definite instructions to which the value of teaching so much depends.

Baruch's statement, that he had not lost a case of uncomplicated croupous pneumonia in private practice since the adoption of the management of patients outlined in his work on hydrotherapy, would be more forceful if he would give the number of cases treated; but in a lecture delivered to a medical class in Los Angeles some six years later (February, 1904) this teacher repeats essentially the same directions as found in his textbook and adds: "In my hospital service the mortality has been reduced 50%, as shown by 156 cases collected by Dr. Albert Wittson, of New York. The mortality under this newer management has been 12%. Considering the desperate character of the cases brought to the hospital in its ambulances, and the fact that they are sometimes almost *in articulo mortis*, this is not a bad record. . . . In a fairly extensive private practice I may say with some hesitation, but with entire sincerity, that during the past ten years I have been under the necessity of reporting only one death from primary croupous pneumonia to the Board of Health. The number of cases I cannot state, but I am willing to accept the verdict of the New York Board of Health."

We can accept Dr. Baruch's statement at its face value, for we know he has had a large experience, and we believe he is not a physician who "plays to the galleries." The evidence seems to justify the claims of the leaders in hydrotherapy that cold applications to the skin with friction, or the reactions following such application increases hemoglobin and the number of red corpuscles in the blood current and the white blood corpuscles even to a much greater extent. It seems to be proven that hemoglobin may be increased 10% or more, the red blood cells 25% or more, and the white cells, or leucocytes, may be more than doubled by these hydriatric measures.* It seems also that a high temperature has the opposite effect on red and white cells in the blood current. The fact that this marked increase after short cold applications lasts but a few hours, unless the application is repeated, and that it is usually accompanied by a decrease in the size of the spleen lends support to the hypothesis of Winternitz that the red and white corpuscles are released from being pent up in spleen, liver and other vascular organs by stasis of the blood current whereby the red cells are enabled to resume their important function of delivering oxygen and the white cells are again free to battle for the human organism against the bacterial allies, which latter, to borrow from Bunyan and Osler, serve under the banner of "The Captain of the Men of Death."

Such are some of the considerations which lend strength to our faith that we have learned a better way to treat patients down with acute self-limited febrile diseases. Toxemia is the enemy we have most to fear. Our strongest allies are skin, kidneys and white and red blood corpuscles. To expel, so far as possible, the poison in the bowel is our first move in defense. To support our allies with an abundant supply of pure air and pure water all through the fight is of the greatest importance. We believe the amount of water required by the body in health is no fit guide to the amount required when the heat of fever is multiplying the water exhaled and evaporated. To quiet the pain and sustain the heart in penumonia, we apply cold, wet compresses, wrung so they will not drip, and covered with a dry flannel or Turkish towel over the whole chest or over the affected side and changed every hour, or else use the specially designed pneumonia ice-bag, with drainage, planned by Dr. P. A. Aurness, of Minneapolis. This pneumonia ice-bag is a powerful cooling agent and is so constructed that it fits either side equally well. Because of the drainage tube, the melting ice is much more refrigerant than an ordinary rubber bag containing ice water. This may be applied outside of a night-robe or gauze undervest. No patient has complained of discomfort because of this ice-bag, and no patient has failed to receive apparent benefit from its use. I would choose to use the less powerful cold compress in children, and I would take care that this ice-bag was not kept on after beginning resolution in pneumonia, nor from midnight till sunrise after the fourth day when beginning resolution with a rapidly falling temperature may be expected. Dr. P. A. Aurness, of Minneapolis, whose name this pneumonia ice-bag bears, reports more than 100 cases, including five cases of double lobar pneumonia, with no death and without complications to retard recovery. Dr. Aurness uses liberal doses of some mild alkaline mineral water and creosote carbonate every four hours in from five to fifteen drop doses besides saline laxatives and saline enemas; also stimulants of brandy, strychnine and digitalis when indicated. By saline enemas, Dr. Aurness may mean enemas of "normal salt solution," which we have found very useful, given warm, when the heart has shown a danger signal.

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* Rational Hydrotherapy, Kellogg, p. 120.

While Dr. Baruch's plan of cold compresses, frequently changed, has some theoretical advantages, our experience with the Aurness pneumonia bag has been so fortunate and the dry cold so convenient to apply outside of a night-robe or thin under flannel that we doubt if cold water compresses would do better for our adult cases. We are inclined to think the cold compresses, wrung out and applied every hour, as directed by Baruch, are more quieting to the irritated nerve centers, because the cold is quickly changed by the heat of the body to a neutral or warm compress, while the gentle shock, repeated hourly, sustains nerve tone and keeps up tonic capillary dilatation.

If we had a trained nurse with every case, at all hours, we would more often choose the wet compress for theoretical reasons. When the temperature is low and the nervous symptoms very prominent, we would follow Baruch in every detail. When the fever is high, the pain in the side marked, and the nervous symptoms not so prominent, the Aurness ice-bag, in our hands, has been very satisfactory.

If we had small open wards of about six beds each, so that we could reserve one ward for pneumonia and another for typhoid fever and had graduate professional nurses to care for all these infectious cases, then we would count ourselves fortunate indeed. The best we can do under our present crowded condition is to care for each infectious case in a single room, with a capacity of about one thousand cubic feet. Our "natural nurses," with the most humane intentions, are very apt to close the window when the doctor has gone, lest the patient take cold. But in spite of these disadvantages, we think it not too much to hope that we may continue to keep the mortality in croupous pneumonia and typhoid fever below 10%. In indulging this hope we do not forget the statement of Strumpell,* endorsed by other teachers, that "every case of drunkard's pneumonia is to be regarded as very unfavorable."

In conclusion, we have not changed our early opinion that there is no specific for typhoid or pneumonia that can be depended upon, although we are willing to accept an antitoxine when proved and found true. We do not use venesection, tartar emetic, veratrum, aconite, poultices, blisters or wet cups; nor mercurials, except an initial dose of calomel, which may be or may not be better than a saline purge. We have not tested bryonia, phosphorus aconite or arsenic of the homeopathic pharmacopeia, and are not prepared to deny to these drugs a specific action. We do give an occasional small dose of morphine, codein or one of the coal tar products, but, personally, I always feel in the presence of this necessity that our natural weapons of defense have not been well used.

In typhoid fever we have used acetozone † quite extensively and have credited it with germicidal and antiseptic properties. We have given this as an intestinal antiseptic, potent, if potent at all, by virtue of the nascent oxygen it gives off when decomposed. Of this antiseptic, we give an ounce of a one-tenth of 1% solution every hour, followed by six or seven ounces of pure cold water, if the patient will readily take that much. Typhoid fever patients rarely object to this solution and commonly take a glass of pure water readily to take away the taste. This we consider an additional advantage. We have repeatedly seen the temperature rise and abdominal discomfort increase when acetozone was omitted and promptly decline when it was resumed. This experience has led to the conclusion that in this organic peroxide known as "acetozone" we have an entirely harmless drug of real value.

It has been held by some that the practical result of giving fever patients liberal hourly draughts of cold water is to rob the blood of its normal salts, coincident with the more active elimination of the toxines of living and dead bacteria. We respect this opinion because it seems to be based on a physiological principle, and we meet the objection by adding the most important salts of the blood to the diet or give them in the form of a mildly effervescing drink. In pneumonia we often add 2½ gr. of sodium chloride, 1 gr. of pot. bicarbonate, and 1 gr. of ammonium carbonate to 4 oz. of cold water, to which solution we add a teaspoonful of lemon juice and give every hour while the mixture is slightly effervescent. By following this with 4 oz. of pure cold water, we think we refresh the patient, assist the skin and kidneys in their eliminating function, keep up blood pressure and sustain the heart. We rarely see the necessity of giving strychnine or an alcoholic till the onset of resolution in pneumonia, and more rarely still do we give an alcoholic in typhoid fever at all. This is about the sum total of our internal medication. The pure cold water we give, and the pure air we try to allow, we count first, and esteem the drugs we give of secondary importance. For nourishment, other than pure water, we depend largely upon milk, which is substituted for cold water once in three hours. If for any reason we use peptonized milk, which we assume is more quickly digested, we substitute the milk every second hour.

It is easy to understand the passive relaxation of the arterioles and capillaries of the skin under a hot poultice, and easy to understand how the load on the heart proper is lightened by the ensuing dilatation of the vessels of the skin. It is easy to understand the temporary relief of dyspnea in pneumonia from hot applications, but not so easy to understand why an ice-bag, a cold, wet pack or cold compress over the lung should ease the load on the heart. Clinical experience demonstrates beyond a peradventure that this is a fact, but the physiological law explanatory of the fact is not so commonly understood. Aurness testifies that an ice-bag properly made, with drainage, produces "such a vasomotor dilatation, evidenced by an intense hyperemia, as no other means known to science can produce without injury to the parts covered." Baruch quotes from and endorses Woods Hutchinson to the effect that the whole arterial system participates in the rhythmic muscular action of the heart, of which it is a less specialized extension. He accepts the term "skin heart" as used by Hutchinson and holds that cold applications stimulate the vasodilators and increase the force of the rhythmic contraction of arterioles. This increased tonicity of the "skin heart," according to this theory, so greatly increases its propulsive power that the slow blood current in the skin is augmented to the relief of the central heart, and the more rapid elimination of waste and toxines.

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* Text Book of Medicine, p. 180.

† See Note 1 at close of article.

It seems likely that the majority of the members of this society may not accept the theory of a "peripheral" or "skin heart." Baruch and Kellogg give a list of the men upon whose experimental work their faith is based. I would especially recommend the careful reading of Baruch's work because it is not only well written but is comparatively brief.

If our experience were your experience, I would think the reading of this paper hardly worth while. In response to the kind invitation of Dr. Gleason to lunch with you and talk to you I read you of those things which have proved helpful to us. We are not wedded to any theory or system of medicine. If the future shall reveal a specific against the Ebert bacillus or the Sternberg-Fraenkel diplococcus, we will welcome it gladly. In the light of our present experience, we hold we can best assist Nature by supplying liberally Nature's own life-sustaining remedies. As an east wind is to the heat-stricken children of the poor in Boston at the end of a torrid week in August, so pure cold water in liberal measure internally and intelligently applied externally * is to the fever-stricken children of the poor at all seasons.

Note 1. Acetozone is a mixture of equal parts of benzoylacetyl peroxide and an inert absorbent powder with a chemical formula of $C_9H_8O_4$. In the presence of water it undergoes hydrolysis and slowly decomposes. Such hydrolysis is said to be necessary to develop its full germicidal activity. This drug is one of the "organic peroxides" in which an excess of oxygen has been combined in such a way that it is somewhat slowly given off in a nascent condition. It is soluble in water at 77° F. in proportion of 1 to 1560.

Note 2. To obtain the best results, cold water given internally to fever patients should be at about 40° F. Cold compresses for adults should he dipped in water as near 60° F. as possible. For children under five, compresses at 80° are better. For children a full bath at 10° below the temperature of the body, with friction prolonged for twenty minutes, is very helpful. This general principle should be observed: the colder the water the shorter must be the application. Water is a potent remedy and may do harm if applied when the body is not in fit condition to react promptly to cold applications. That cold wet or cold dry applications should not be applied when the skin is cold or moist with perspiration goes without saying. When the skin is cold and clammy, the call is urgent for hot, dry flannels.

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* See Note 2.

ARTERIO-VENOUS ANASTOMOSIS.†

BY JOSHUA C. HUBBARD, M.D., BOSTON.
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My experience in arterial surgery has been obtained in two cases by doing an arterial venous anastomosis for reversal of the circulation. I feel that I have learned from them, although the number is small, certain facts which are worth recording. To make clear these points I will report the essential details of each case.

The first, already published in the *Annals of Surgery* for October, 1906, was that of a man of eighty years with senile gangrene of a portion of the right foot. Physical examination showed him to be a decidedly senile old man, with atheromatous arteries and a systolic heart murmur. No pulsation could be felt in the right dorsalis pedis artery. In May, 1906, he was operated upon. The femoral artery, which was decidedly atheromatous, and vein were isolated in Scarpa's triangle below the origin of the profunda and divided between Crille's clamps or elastic ligatures. The upper end of the artery was then invaginated into the lower end of the vein and the distal end of the artery into the proximal end of the vein. A complete reversal of the circulation was thus established. The technique of the invagination was as follows: Three double headed sutures were passed equally distant through the entire wall of the artery from inside out. The needles were then passed into the lumen of the vein about a quarter of an inch and at this point through its wall. When these sutures were drawn tight the artery was pulled into the vein. Re-enforcing sutures, including only the outer portion of the arterial wall, were placed here and there to catch the edge of the overlying vein to the artery. Number 1 Pagenstecher thread was used for all these sutures. When the controlling clamps were removed there was no leaking at either suture line and weak pulsations in the vein could be felt for a short distance below the anastomosis. There was absolutely no shock shown by the patient and recovery from the operation was satisfactory in spite of the fact that the senile condition of the patient made it difficult to keep him in bed or a dressing on the wound. After the operation the appearance of the leg did not change. There was no edema, dilatation of the veins or cyanosis. The gangrene which existed before the operation spread a little and then a line of demarkation formed. When the foot was later amputated, at the point of election on the tibia, both tibial arteries contained arterial blood. The stump healed satisfactorily but slowly. In March of this year, ten months after the operation, I saw the patient. He had a stump that was well supplied with circulation. There was no difference in appearance or size of this leg and the unoperated one.

Clinically this case was most successful, but the exact meaning of the presence of arterial blood in the tibial arteries at the time of the amputation I do not know. It seems that the arterio venous anastomosis must have increased in some way the amount of blood in the leg, for it is hard to believe that an amount of blood so small as to permit gangrene of the foot would be sufficient to nourish for ten months an amputation stump only a slight distance above the gangrenous area; and had clots formed at the sites of the anastomoses, it seems most probable that the gangrene would have extended rapidly up the leg instead of remaining localized.

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† Remarks made before the Academy of Surgery, Philadelphia, May 10, 1907.

The second case was that of an old woman of sixty years, with senile gangrene of the foot and a portion of the leg. The arteries were atheromatous. She was operated upon during February of this year. The femoral artery and vein were isolated in Scarpa's triangle and divided between clamps or ligatures below the origin of the profunda. The artery was much calcified and was so hard that some force was necessary to drive the needles through it and so brittle that the stitches tore out most easily. The intima formed a distinct lining to the vessel and was much like a second smaller tube inside a larger one. These characteristics of the wall complicated the technique immensely as I attempted to make my anastomosis according to Carrel's method, turning the walls so that at the suture line intima should come in contact with intima. The artery was so much like a pipe-stem that this was impossible, although a conscientious attempt was made. The ends of the artery and vein were therefore cut off freshly and the artery invaginated into the vein, as in the first case, the only difference being in the use of vaseline in this case to smear the ends of the vessels. The distal end of the artery and the proximal end of the vein were then ligated. The vein pulsated after the controlling clamps were removed. Pagenstecher No. 1 was used. There was no shock and no change in the appearance in the leg. Ten days later it was necessary to amputate above the knee for the gangrene which had been present before the operation. During these ten days it had become more pronounced, but its limits had extended only a little. During the amputation the anastomosis was cut down upon and removed. The artery was found filled with a loose, easily detached clot. This case was, therefore, a distinct failure.

From these cases I believe it is perfectly evident that there is no danger in continuing our investigations further, as there is no shock following the operation. Carrel's method is not applicable to a certain number of the cases where the operation is done on old persons with atheromatous arteries. In young persons and on experimental arteries it doubtless is most satisfactory, but as the operation has been proposed to cure conditions dependent upon lack of circulation in the extremities some other technique must be found, as practically all cases, except perhaps some due to trauma, will necessarily be in elderly persons. An objection which may be raised to the invagination method as employed in the above cases is the fact that the divided end of the artery leaves a certain portion of its wall in the blood stream uncovered by intima, which favors clot formation. This method was introduced by Dr. Murphy * in 1897 for the repair of the continuity of an artery and was recommended only after experimentation. The slight modification of invaginating the artery into a vein instead of into another portion of the same artery would seem to me not to invalidate the method. However, as at present, this objection might be raised, I am working on some scheme to obviate this difficulty, but as yet unfortunately cannot report results. Two ways to avoid this have occurred to me. One is by smearing vaseline or some other substance onto the cut end of the invaginated artery to keep it out of the blood stream. The other way was suggested to me by the appearance of the arterial wall in the second case, where the intima formed a distinct layer inside the others and one which remained intact when the others cracked away from it. I have thought that it might be possible to cut the outer layers of the artery a quarter of an inch or so back of the intima and thus leave a greater length of initima as a cuff, the back of which could be covered with vaseline, so that when invaginated into the vein it might stick to the venous wall and cover over the cut end of the outer portion of the artery.

Clinical Department.

GLOTTIC SPASM OF NASAL ORIGIN IN ADULTS.

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Spasm of the glottis of nasal origin in adults, a rare form of reflex laryngeal neuroses, was first described by Hack in 1882, and since that time fourteen cases have been published, making in all but fifteen recorded cases. To these I propose to add the sixteenth, but before doing so shall attempt to give a short résumé of the cases so far reported.

Case I. Hack.[1] A healthy physician, whose disposition was not at all nervous, suffered at night severe attacks of dysponea, caused by glottic spasm. Examination of posterior nares disclosed a marked congestion of the mucous membrane. After painting the posterior nares with silver nitrate, attacks disappeared for a long time, only to reoccur with the advent of a mild angina. Posterior nares again painted and attacks have not since reoccurred.

Case II. Heryng reports two cases. Man,[2] forty-nine years old, who had been suffering from spasm of the glottis for three years, the attacks occurring during day and night. Examination of the larynx showed nothing abnormal. Posterior nares and pharynx normal. Anterior rhinoscopy showed polyp in left nares in region of middle turbinate. Polyp was removed and patient was entirely free from symptoms for a year. He then returned, suffering fresh attacks, and on examining the nose a new polyp was found.

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* Medical Record, January 16.

This polyp was removed and attacks ceased, and have not since reoccurred.

Case III. Woman,[5] eighteen years old, who had been subject to spasm of the glottis for the past two years. She also gave a history of practising masturbation for two years. Besides spasm of the glottis, she had spasm of the bronchiols. These attacks were so severe that tracheotomy was resorted to, and the canular worn for two months, when it was removed. She soon returned, however, suffering a renewal of attacks, and tracheotomy was again done. Nasal examination was now made for the first time. Larynx and pharynx found normal. On examination of the anterior nares she was found to have a deviation of the septum, hypertrophy of the anterior end of the lower turbinate, right side, and a marked swelling and redness of anterior end of the lower turbinate on left side. Treatment consisted of touching up both turbinates with chromic acid, and during this treatment the canular was removed. Result. patient cured of both glottic and bronchiol spasms.

Case IV. Przedbreski's [3] case was a young woman, eighteen years old, who presented numerous symptoms of hysteria, with anesthesia of the epiglottis. Her attacks occurred most frequently in the evening, and were preceded by symptoms of intense nasal irritation. Larynx and pharynx normal. Septum deviated to the left and marked hypertrophy of the lower turbinate. Her hysterical condition was treated for three or four months without improvement, when the lower turbinate was then cauterized with chromic acid, after which attacks of spasm of the glottis entirely disappeared.

Case V. Soudrille's [4] patient was a brother physician, forty-four years old, who had suffered five or six attacks of spasm of the glottis during the previous fifteen days. During these attacks the face was congested and the hands blue. These attacks occurred at no special time, and without any prodromal symptoms. The examination of larynx and pharynx was negative, but examination of nose showed hypertrophy of the two middle turbinates and a swelling of both lower turbinates. Polyp was also found. Treatment consisted of removal of the polyp and irrigation of the nose with administration of potassium bromide. Result, patient cured.

Case VI. Ruault [6] reports the following five cases: 1. The first case was a woman, twenty-five years old, who had been suffering from these attacks for some twenty-nine months. Her first attack came on soon after her marriage. These attacks reoccurred every six to eight days, and always came on at one or two o'clock in the morning, while the patient was asleep. Her husband remarked that just previous to an attack his wife's breathing was markedly changed. This woman had always been extremely nervous, but presented no real symptoms of hysteria. Larynx normal and pharynx presented the appearance of a chronic catarrh. On examination of the anterior nares the introduction of a speculum was found to be extremely painful. Marked deviation of the septum and swelling of the two lower turbinates and middle turbinate on the right were found. After treatment, consisting of applications of chromic acid to turbinates, patient reported that she was free from all attacks of spasm of the glottis.

Case VII. 2. A woman forty-three years old has been subject to attacks for the past twenty-years. Her attacks date from the time of her marriage and occur sometimes at night and other times during the day, she having been taken with an attack in the middle of the street. At the time of her examination she presented a slight laryngeal catarrh and hypertrophic rhinitis. Treatment consisted in applications of the cautery to the anterior ends of lower and middle turbinates. Result, patient entirely cured.

Case VIII. 3. A woman, twenty-seven years old, subject to spasm of the glottis for the last six months, first one occurring on going in bathing in the ocean. Her attacks occurred more frequently at night, but occasionally during the day. Larynx normal and marked swelling of anterior ends of lower turbinate. Patient treated with irrigations of tepid water with borax and sodium bicarbonate. Result, patient cured.

Case IX. 4. Woman, thirty-eight years old, had been suffering from spasm of the glottis for one month, first attack occurring after severe cold. These attacks occurred both during day and night, and were preceded by short dry cough. Woman cried at the least provocation, and presented other hysterical manifestations. Menstruations have always been more or less painful, and physical examination showed marked tenderness in region of the right ovary, and signs of incipient tuberculosis in right lung. Examination of larynx and pharynx showed nothing abnormal. Examination of the nose showed septum deviated to the right, and left lower turbinate swollen and red. Introduction of speculum was extremely painful. Treatment consisted of irrigations of tepid water and borax. Result, patient cured.

Case X. 5. Man, fifty-one years old, had been suffering from attacks of spasm of the glottis for three weeks, time of attacks not given. Patient said that attacks were brought on by secretion dropping in throat. Examination of the larynx showed a slight hyperemia. Patient also presented evidence of nasopharyngeal catarrh. Examination of the nose showed septum deviated to the right, hypertrophy of the right lower turbinate, and a marked swelling of the left lower turbinate. Patient treated by irrigations of tepid water and borax used twice a day. Result, cured.

Case XI. Bosworth [22] reports two cases: 1. Man who had suffered for thirty-three years with spasm of the glottis. His first attack closely followed diphtheria. These attacks always occurred at night. Examination of the nose showed marked hypertrophic rhinitis and deviated septum. Treatment consisted in removal of the deviation and cauterization of the turbinates. Result, patient greatly relieved.

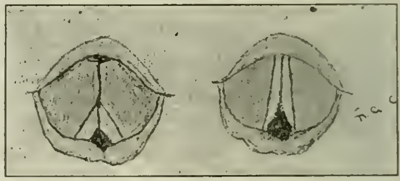
Case XII. 2. Woman, fifty years old, whose attacks always came during sleep, was found to have numerous nasal polypi, after the removal of which she never experienced another attack of glottic spasm. Bosworth also reports two cases of glottic spasm, the cause of which he gives as atrophic rhinitis. In both these cases the attacks occurred only at night. After treatment by nasal irrigation patients were entirely free from glottic spasm.

Case XIII. Hamilton Stillson [17] reports a case of a man, printer, thirty years old, who said he found himself every night in the middle of the floor gasping for breath; attempts at inhalation very noisy, very difficult and distressing. Could not state length of spasms, seemed several minutes. Stated that he could not catch his breath until unconciousness had almost supervened. These attacks never occurred in day time, but only at night and during sleep. Under good illumination Stillson elicited an exhibition of the spasm by touching the vocal cords with a probe. "Cords fell together like a valve, and efforts at inhalation seemed to suck them together." Short gurgling whoop was heard, which was repeated about once a second. Between the whoops there was a period of exhalation, short and easy. Profound cyanosis supervened, the ocular conjunctivar being markedly congested. Patient's distress was so marked that chloroform was administered, whereupon the inhalation became deeper and less noisy. Attack lasted about thirty seconds. Pulse slightly irregular and slightly accelerated. Patient never used alcohol, tea or coffee, and presented no evidence of rheumatism, syphilis or tuberculosis. Examination of nose and throat revealed a large spur on left side of the septum and a deviation toward the left. There was a hypertrophy of the lower middle turbinates, right and left, polypoidal degeneration of the mucous membrane, hypertrophy of the lingual tonsil and hyperemia of the epiglottis and false cords. With cocaine anesthesia hypertrophy of the lower turbinate and spur were removed. Result, complete cure.

Author's Case. Mrs. K., forty-three years old, came to my office with the following history: She had always been a healthy woman up to the time when she came to this country, seven years ago. At that time she suffered severe pain with swelling in the region of the appendix. Physician consulted then advised operation. She did not, however, submit to the operation, and continued to suffer pain off and on until a year ago. She has had two children, and no miscarriages. She consulted me in regard to attacks of suffocation, which occurred four or five times a day. She said that these attacks appeared without any warning or cause, and were so severe that she and her family thought at times that she would surely die. The first of these attacks occurred two years ago, and during the following year she experienced on an average one or two attacks a month. During past year they gradually increased in frequency. A little over a month ago she suffered from a severe cold in her head, and since that time has had from two to five attacks a day. They came on at no especial time, occurring occasionally during the day, and other times at night, although previously her attacks always came on during sleep. She has never been a nervous woman, and except for the pain in her right side and this present trouble she has been very healthy.

Patient was very hoarse and it seemed quite an effort for her to speak. She said that in the morning her voice was clear, but that it gradually became hoarse and "clogged up" toward evening. Examination of larynx showed typical picture of acute catarrh. Pharynx and nasal pharynx were normal. Anterior rhinoscopy showed marked deviation of septum to right, small spur and marked hypertrophy of middle turbinate on the left. With the application of a 1% solution of silver nitrate to the larynx I was able to elicit a spasm of the glottis which her husband and son said was typical of one of her attacks. Patient's face drawn as if in great pain. During the inhalation her head was thrown back and a short, loud whoop was heard. On expiration, head bent slightly forward, and expiration accomplished with apparently no effort. There was an interval of one second between inspirations. The duration of the expiratory action was about twice the length of the inspiratory. An examination of the larynx now showed almost complete closure by apposition of the true vocal cords up to the posterior vocal processes, and also an apposition of the false cords for slightly more than half their length. During expiration there was a slight relaxation of the true cord and a rather marked deviation of the false cords. Patient was now becoming cyanotic. After dashing cold water in her face three or four times the spasm relaxed. The duration of this spasm was one minute and a half, which her husband said was about one fourth the usual length of an attack.

Operation advised, and patient requested to report in four days. She returned, however, on the second day, and begged me to operate, as during the previous twenty-four hours she had suffered six spasms. After applying a 1% solution of cocaine the anterior end of the middle turbinate was removed with a cold snare. Nose then firmly packed with sterile gauze and patient returned the following day and said that she had one slight attack the previous night. Gauze removed and patient had considerable bleeding, which was checked by application of tannic acid. I intended operating on the spur and septum, but as the patient was entirely cured by the operation on the turbinate, she would not consent to the second operation.



Glottis during inspiration. Glottis during expiration.

Spasm of the glottis, as it occurs in these cases, is a spasm affecting all the adductor muscles of the larynx with the exception of the arytenoideus. It is a partial spasm, in contradistinction to that occurring in laryngeal vertigo, which is a complete glottic [16] spasm.

Diagnosis. — In making a diagnosis of glottic spasm of nasal origin, the following conditions which may give rise to spasm of the glottis in adults must be excluded: Intra-laryngeal; foreign bodies, tubercular and syphilitic affections, irritating vapors, polypi, edema and infiltrations. Extra-laryngeal; tabes, epilepsy, hysteria, tetanus, hydrophobia, chorea and tetany.[15] Hypertrophied tonsil, aneurysm of the left common [10] carotid or of the aorta,[11] dilated [12] stomach,[13] cervical adenitis,[19] goiter,[9] or pressure on phrenic [7] nerves [8] may also give rise to spasm of the glottis.

Dysponia spastica. — Spasm of the glottis only on attempted phonation is called dysponia spastica. The glottis remains closed as long as patient attempts to use his voice, and opens when there is no further attempt at conversation.

Laryngeal vertigo. — Patient is seized with giddiness, blurring of vision, and unconsciousness, caused by a complete glottic spasm, remaining in that condition but a few seconds, during which there may be spasmodic twitchings of the limbs and face.

The cause and origin of reflex. — The sensory nerves of the nose are supplied by the trifacial. The anterior ethmoidal nerve, a branch of the nasal nerve, supplies the anterior portion of the interior of the nose, while the remaining portion of the nasal cavity is supplied by the posterior nasal and by a branch of the dental. The reflex travels toward the center along the trigeminus, toward the periphery in the vagus. This has been demonstrated experimentally on animals by Francis Franck.[18] The results obtained showed the cause of this reflex in 11 cases to be congestion or hypertrophied turbinates, in 2 cases polypi, in 2 cases atrophic rhinitis, and in 1 case chronic nasal catarrh. That the exciting cause of the reflex is the periodic apposition of mucous membrane might be applicable in some of the cases, but is not in all. I believe the impulse arises in the termination of the sensory nerve, from a congestion or irritation of the surrounding tissue.

Hysteria. — That a nervous or hysterical disposition predisposes one to these attacks is not at all evident from an examination of these cases. In but 3 cases has any mention been made of this disposition on the part of the patient, while most authors have been particular to emphasize the fact that aside from glottic spasm their patients were in especially good health.

Sex. — Of the cases here collected, 57% were females and 43% males. This affection is much more equally divided as to sex than one would be led to infer from the perusal of the present textbooks.

Age. — In males the average age was forty-three years, in females, thirty-two.

Time of attacks. — In 7 of these cases the attacks occurred only at night, and in 2 others occurred most frequently at night, but in the remaining 7 cases the attacks came on at no especial time, which seems to contradict the statements made in regard to these attacks in our textbooks on the subject, which state that the attacks occur only at night. In my own case, during the first year in which she was subject to spasm of the glottis the patient experienced the seizures most often at night, but with the increased frequency of attacks they occurred as often during the day as during the night.

Sexual apparatus. — In 6 of the cases here collected we find direct connection with the sexual life or apparatus; menopause, 2; diseases of the sexual organs, 1; masturbation, 1; occurring directly after marriage, 2. Chaimberlain [14] reported 2 cases occurring in women at time of menopause, but in both cases neglected to examine the nose for nasal lesions. Przedbreski's [20] case of spasm of the abductors is of interest in that the attacks were most frequent at menstrual periods, and much more severe when patient went over the usual time.[21] Störk reports an interesting case in this connection. An impotent man married, and soon after both husband and wife suffered from spasm of the glottis. At this time the woman received treatment, but her condition failed to improve. She was seen later completely cured and the mother of three children, and as Stork explains: "*Sie hatte sich anderweitig Hilfegesucht und gefunden.*"

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Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Twenty-first Annual Meeting.
Held at Washington, D. C., May 7 to 9, 1907.

Dr. Harvey G. Mudd, of St. Louis, Vice-President, in the chair.

Tuesday, May 7, First Day.

THE PESENT STATUS, TWO YEARS AFTER THE ORIGINAL REPORT, OF EIGHTEEN MALE CASES OF ROENTGEN RAY STERILITY.

This report, by Dr. F. Tilden Brown and Dr. A. T. Osgood, of New York, was read by Dr. Osgood. In their original report it was stated that repeated long exposures to the Roentgen rays produced sterility in the male. They were still of the same opinion. Some had escaped permanent injury, doubtless because of avoidance of exposure. Some who then had bad records were now the fathers of children. The condition was not permanent in all cases. Some in whom no spermatozoa could be found and who were thought to be permanently injured had improved considerably, but the majority were still in the same condition. All who had done extensiv ex-ray work for several years showed an absence of spermatozoa. The amount of injury was directly proportionate to the changes in the spermatogenetic cells. The condition could be produced in animals, but required considerable exposure. The spermatozoa themselves were found to be highly resistent to x-ray exposures. There was no relation between the effect on the skin and that on the deeper organs. In no case had there been any evidence of deterioration of sexual activity.

Dr. Edward L. Keyes, Jr., of New York, asked Dr. Osgood whether he considered the improvement in some cases due to precautions taken by those men who improved which were not taken by some who did not improve, or whether he had seen improvement occur in men who continued to use the x-ray without precautions. He thought it might be interesting in this connection to detail a report made by Dr. Lapowski, of New York. He had reported that he had a case of eczema of the anus which resisted the ordinary methods of treatment. He sent the patient to be x-rayed, with a knowledge of the danger of producing sterility by the x-rays, and especially specified that the patient's testicles should be protected by a lead screen. The patient's seminal fluid was examined twice before the treatment, and living spermatozoa were found in great numbers. The x-rays were applied three times. At the end of that time the patient returned, when his semen was again examined twice, and found to contain a few dead spermatozoa. He was then exposed to the rays three times more, and two more examinations of the seminal fluid showed no spermatozoa whatsoever. He was then taken off the x-ray treatment. Three months later his semen was twice examined and found to be full of motile spermatozoa. The restoration was apparently immediate and complete.

Dr. L. Bolton Bangs, of New York, said that since this subject was presented by Dr. Brown some physiological questions had presented themselves to his mind, and he would like to have those who made the observations, and Dr. Osgood in particular, throw some light upon the subject. He asked if during the disappearance of the spermatozoa there was also an associated loss of sexual desire and a loss of the power of sexual intercourse. It seemed to him that these questions had a rather important bearing, and that they should be answered with some definiteness. He understood Dr. Osgood to say that there was no permanent deterioration in sexual capacity, but that was indefinite.

Dr. Francis R. Hagner, of Washington, D. C., said there was a case in Washington that had come under his observation, being that of a physician who had done considerable x-ray work. This physician had been married nearly two years and his wife had not become pregnant. Dr. Hagner had not examined him, but the physician had examined his own seminal fluid and found no spermatozoa. He then used a kind of lead apron in his x-ray work for a period of four months, at the end of which time his wife became pregnant.

Dr. Osgood, in closing the discussion, said that in the cases observed there had been no evidence of sexual deterioration in any form. They still retained the sexual desire and the power of sexual intercourse. This was a very important question, and we ought to have as much information in regard to it as possible. He could see how it might be applied to the relief of certain conditions in married life. As to Dr. Keyes' question, he thought that every man observed had taken precautions since that time. They all improved with precautions. He related the case of a man who began x-ray work in 1905, and who did considerable x-ray work for six months without any precautions. In February, 1905, he knew there were no spermatozoa in the seminal fluid. In June, 1905, there were very few. Several examinations in September and October of the same year showed absolutely no spermatozoa. Examinations were then made once a month until April, 1906, and no spermatozoa were found at any time. Three months later examination showed a few spermatozoa. After the first six months the patient had used very careful precautions. After July, 1905, he was using very careful precautions, but not until after April, 1906, were any spermatozoa found, and then only a very few. In August, 1906, his wife became pregnant, and since that time a very few had been found on repeated examinations. In one case in which improvement had taken place three examinations were made by different men, and each found one spermatozoön. In answer to a question by Dr. Bangs, Dr. Osgood said the patients were all young men, and that no mental effect had been observed. He said he had talked with Dr. Lapowski in reference to the case mentioned by Dr. Keyes, and he thought there was some question as to the amount of protection employed.

DEFORMITIES OF THE PENIS DUE TO SYPHILIS, GONORRHEA AND OTHER CAUSES.

Dr. Robert W. Taylor, of New York, read this paper. This was an important class of cases, concerning which there had been much want of knowledge. Syphilis played an important part in causing such conditions. Others seemed to be an occult symbiosis of syphilis and gonorrhea. Ulceration might occur either in the primary or tertiary stage of syphilis. Indurating edema was seen only in syphilis, most frequently as a complication of chancre. The condition commonly called elephantiasis of the penis was not uncommon in tropical countries, and was also seen in the negroes in the South. It was commonly believed to be due to filariæ, but it was really due to a slow streptococcic infection following gonorrhea or syphilis. No observer, either in America or in Europe, had ever found filariæ in any case of elephantiasis of the penis. Balanitis and phimosis, internal urethrotomy and total extirpation of the inguinal glands might be followed by deforming conditions of the penis.

Dr. John H. Cunningham, of Boston, said he was pleased to hear that Dr. Taylor had found no cases of elephantiasis of the penis to be of filarial origin. Recently in going through the literature while preparing a thesis for this Association he had been impressed by the fact that no case had been proved to be due to filariæ. Although lymph scrotum and elephantiasis of the lower extremities had generally been found to be caused by filariæ, none of the cases of elephantiasis of the penis had been attributed to that cause. It was known that the adult worm occluded the lymphatics, either by its own presence, or secondarily by producing an inflammation which constricts them and produces a dilatation distal to the point of constriction. These dilatations rupturing into the urinary tract would produce a condition of chyluria, etc. He asked if Dr. Taylor could tell whether or not an incision into a penis affected with elephantiasis would bring forth a chylous fluid. He had been unable to find anything on this point in the literature.

Dr. Taylor said that it seemed to him that the filariæ had been praised for labors not their own. It was a case in which generalizations had been made from a few cases. It was found in southern climates that filariæ would cause abscesses, but the long-continued hyperplasia that was called elephantiasis was undoubtedly caused by the streptococcus. In southern climates a little ulcer would occur, and then this would become infected with the streptococcus. This streptococcus infection was sometimes hereditary, cases having been reported in which children were born with elephantiasis. Chylous fluid was found in one of Dr. Taylor's cases. His studies convinced him that this whole subject had been misunderstood.

PRESENTATION OF INSTRUMENTS.

Dr. James R. Hayden, of New York, presented (1) an all-metal bladder syringe, that had the advantage that it could be readily sterilized. The piston was of rubber. (2) A modification of Dr. Gouley's tunneled sound, with the tunnel on the concave surface of the instrument, the object of this being to prevent in operations the cutting of the filiform bougie, which might occur with the old instrument. (3) A small bladder aspirator, which could be boiled, and which had the advantage of being very portable, whereas the old trocar and canula was quite a considerable instrument.

Dr. Edward L. Keyes, Jr., of New York, had used the form of syringe presented by Dr. Hayden, and thought it was better than any large syringe he had ever used.

Dr. John van der Poel said he was very much interested in Dr. Hayden's guide and tunneled sound. Two or three years ago he had shown a somewhat similar modification with a Benique or Guyon curve. Cases often came to the clinics suitable for the filiform, and in which only a filiform could be passed. The patient would not submit to operation, and the next time he presented himself the stricture would have retracted down to the same size as at first, and it would be necessary to go through the same process of filling the urethra with filiforms, then passing a tunneled sound and stretching the urethra up to 9 or 10 French. He had thought it wise to have made a number of tunneled sounds of different sizes to pass over the filiform, in order to perform rapid dilatation up to 14 or 15 French, after which it was generally possible to pass an ordinary bougie. These sounds ran up as high as 24 or 25 French, and in all of them he had the Benique curve. He had found in performing external urethrotomy that that curve was more practical, as with a strong sound the perineal tissues to be cut through could be compressed until they were not more than half an inch thick, instead of having to cut through a large amount of more or less spongy tissue. In that way it was easier and quicker to cut into the urethra. His instruments did not have the advantage of having the filiform on the anterior surface.

Dr. Harvey G. Mudd, of St. Louis, asked Dr. Hayden if he had found, practically, that it did facilitate the passage of the tunneled sound to have the groove on the concave surface.

Dr. Hayden, in closing, said the only advantage of having the filiform on the concave surface was to avoid cutting it. Sometimes in using the old instrument he had cut the filiform, which, of course, was a rather disagreeable accident. The only claim for merit was that with the filiform out of danger the operation was greatly facilitated.

A SUCCESSFUL CASE OF ANASTOMOSIS BETWEEN THE VAS DEFERENS AND THE GLOBUS MAJOR, FOR STERILITY FOLLOWING GONORRHEAL EPIDIDYMITIS.

Dr. Francis R. Hagner, of Washington, D. C., reported this case. The patient had had gonorrheal epididymitis on both sides, and before operation examination showed entire absence of spermatozoa. The operation devised by Martin, of Philadelphia, was done, by which an anastomosis was made between the vas and the globus major of the epididymis. An examination of the patient's seminal fluid a month after operation showed numerous spermatozoa, though no pregnancy has resulted. Dr. Hagner also mentioned a case he had seen with Dr. Martin, which Dr. Martin had operated on. This patient's wife had become pregnant since the operation, but had miscarried.

Dr. L. Bolton Bangs, of New York, had had no personal experience with the operation. He had considered it, and was hoping to have the opportunity of doing it, because it seemed to him to open up a wide field of conservatism and of hopefulness for those who were, at present at least, permanently sterile. He wished to know in what percentage of the cases operated on a permanent good result had been obtained.

Dr. Hagner said that Dr. Martin reported 5 cases last year. He thought they were all a success in that they had a return of spermatozoa. Whether there was a tendency to relapse, whether the spermatozoa again disappeared or not, he could not say, as the operation was still in its infancy. In his own case, the spermatozoa had increased at each examination. The last examination, a year after the operation, the semen was loaded with living spermatozoa.

THE SURGICAL TREATMENT OF STERILITY IN THE MALE.

Dr. Edward Martin, of Philadelphia, said his work during the past year in the operative treatment of sterility in the male had been a series of unbroken failures. He had had no successful case, and yet the reasons in each case were mechanical. All of the cases operated on had active, motile, healthy spermatozoa, but the obstruction was found to be elsewhere than in the epididymis. In one case there had been such a deep-seated inflammation in the epididymis that it was necessary to tap the testicle, and even then no spermatozoa were found, but subsequently they were found when the anastomosis was made He had found that the obstruction was not necessarily confined to the epididymis, but might affect the vas or the ejaculatory ducts. In order to determine whether there was obstruction between the epididymis and the posterior urethra, the vas was opened and some one of the soluble dyes injected into it. If the vas was patulous, the dye would appear in the next ejaculation. All the cases operated on during the past year failed to show any sign of the dye after this test, showing obstruction above the epididymis. The operation could be done perfectly under local anesthesia, without interfering with the patient's work. An important point in the technique was the handling of the veins very gently, in order to prevent phlebitis. After mumps there was apt to be so much atrophy that the operation was not available. He had demonstrated that where the conditions were favorable the operation was not only successful, but it apparently remained permanently so. There seemed to be no tendency to close up. Some of the cases had existed for several years, and active spermatozoa were still found. It was desirable before the operation to get rid of the chronic posterior urethritis which usually accompanied these old cases of epididymitis.

Dr. John van der Poel asked if Dr. Martin did not report last year one case where the wife had become pregnant after the operation.

Dr. Edward L. Keyes, Jr., of New York, asked Dr. Martin if he tapped the vas posteriorly.

Dr. Martin said he had reported a case last year in which the wife became pregnant after the operation. It was the case mentioned by Dr. Hagner. The proof seemed to be complete. The vas was reached by the shortest route, which was the posterior. The tunica vaginalis was cut through, and the whole of the epididymis exposed. With a pair of forceps, of the kind used by eye specialists, a portion of the epididymis was picked up and snipped out with a pair of eye scissors. If spermatozoa were present, a characteristic drop would appear in the wound. This was examined microscopically and reported on. If spermatozoa were not found, one should go a little higher up and a little deeper in. The openings were closed by a very fine stitch. A most surprising feature was that a man who had never had a vas had motile and healthy spermatozoa. Closure of the duct was not followed by atrophy in this particular case. Also, the fact was corroborated that spermatozoa were motile before they were mixed with the prostatic fluid. The spermatozoa did not need for their full development the passage through the epididymis, nor admixture with the prostatic fluid.

SPONTANEOUS FRACTURE OF CALCULI.

Dr. Arthur T. Cabot, of Boston, said the subject of spontaneous fracture of stones had always interested him, and two years ago, when he was in England, he looked over the beautiful collection of calculi at the Norwich Hospital, and was perfectly astonished to find about a dozen first-rate instances of spontaneous fracture in that comparatively small collection of stones. Spontaneous fracture was a characteristic of uric acid stones, or of a combination of uric acid with other substances. In stones of other constituents spontaneous breaking up took place only from without inwards, through solvent action, and the fragments did not show any of the characteristics of true spontaneous fracture. Oxalates often broke spontaneously, but never showed regularity in their fragments. Spontaneous fracture of uric acid stones was due to the arrangement of the crystals in the building up of the stones, and even the smallest stone showed a characteristic segmentation. The nucleus of a uric acid stone was always separated from the body of the stone by a layer of urate of ammonia. From this layer furrows and ridges extend toward the periphery. The presence of these furrows and ridges was the real arrangement which made for spontaneous fracture. The rifts and ridges might also start from layers more distant from the nucleus. It was only in exceptional cases that the nucleus fell away together with the other layers. Spontaneous fracture took place most successfully in the bladder since it was brought about in stones in the renal pelves only very rarely. Chemical action might be explained as a factor through the solution of the substances in the furrows or rifts, to allow of which it must be supposed that all or some of the rifts reached to the surface of the stone and were exposed to the action of the urine in the bladder. Spontaneous fracture was rather apt to take place in a urine which, having been concentrated, had become very dilute. It seemed as if this extremely dilute urine, filtering into the stone along these rifts or radiating striæ, dissolving the more soluble parts of the stone, freed the less soluble parts, and they became separated in the form seen in the photographs. Dr. Cabot said it was a revelation to him that spontaneous fracture was so frequent as he found it to be at Norwich. It was certainly very rare in this country. The stones found in this country were mostly secondary phosphatic stones, due to alkaline fermentation of the urine. Unfortunately, the present habit of crushing stones might destroy a good many good specimens of spontaneous fracture.

Dr. Ramon Guiteras, of New York, had had one case of spontaneous fracture of vesical calculi, which he had presented at the Academy of Medicine in New York. In this case there had evidently been three or four stones in the bladder. The bladder walls were found to be very much thickened, and the breaking up of the stones had probably been caused by the pressure of the bladder walls upon them. The diagnosis had been made of stones in the urethra. On operation through the perineum it was found that there were three calculi in the posterior urethra. When the bladder was opened it was found to be literally full of stone fragments, and 100 to 150 pieces were removed through the perineal wound.

Dr. James Bell, of Montreal, mentioned a case that had interested him very much a number of years ago of spontaneous fracture of stones in both kidneys. A stout, beer-drinking Englishman, about thirty-five years of age, came into his hospital service in a very bad condition. He had chills, high fever, scanty, purulent urine, and marked tenderness over the kidney regions. A diagnosis of renal calculi was not thought of, the condition being attributed to an infection of some sort. The patient's condition would not permit of an operation, and he died in about forty-eight hours after entering the hospital. Autopsy showed the pelves of both kidneys full of stone fragments. As the stones were not analyzed, he could not say what their composition was. The finding of the fragments was a great surprise, as at that time he had not heard of such a condition.

Dr. L. Bolton Bangs, of New York, said that when the advertisement of Buffalo Lithia Water first appeared, declaring that spontaneous fracture of stones in the bladder was possible, he, of course, ridiculed it, but subsequently at an operation where he did a suprapubic cystotomy for the removal of stone the appearances were such that he began to suspect that such a thing was possible. The majority of stones seen in practice in this country were those which might be termed secondary stones. But the appearances of the stones mentioned were such that it seemed to him the question of spontaneous fracture of stone in the bladder had not been given enough attention, and that such a thing was possible. It was a revelation to him to learn that there could be so many of such cases.

Dr. Hugh H. Young, of Baltimore, said this was an interesting topic, and one that had been very much neglected in the past. His attention was called to the subject several years ago, owing to a case he had then. An old gentleman suffering from enlarged prostate came to him, after spending six weeks at the Saratoga Springs. He came for operation, and a cystoscopic examination was made preparatory to operation. He was startled to find stones broken up in his bladder. This made a most beautiful cystoscopic picture. The fragments were removed by an evacuator, as after lithalopaxy, and 19 fragments were found that were beautiful specimens of fractured calculi. They agreed with Dr. Cabot's description, in that the nucleus removed did not participate in the fracture. In looking over the literature he was struck by an extensive series of articles in which the author had come to the conclusion that the fracture of the stones was due to a change in the composition or character of the urine, as Dr. Cabot had explained. Dr. Young's case bore out that contention. The patient went to Saratoga and lived six weeks, and evidently the fracture was produced by drinking that water. Enough attention was not paid to the hydrotherapeutic treatment of cases of calculus, either before or after operation.

Dr. Edward L. Keyes, Jr., of New York, asked Dr. Cabot as to the practical bearing of this subject. It was suggested to him by Dr. Bangs's remarks concerning the Buffalo Lithia Water. He said they had a collection at their office of over 200 stones, and yet they had no record or evidence of any spontaneous fracture in the bladder. This would bear out Dr. Cabot's statements as to its rarity in this country. He had his eye kept open for a record of a case in which the fragments of a stone spontaneously fractured had been passed spontaneously, but he had not been able to see that it made any difference in the treatment whether the stones were fractured or not, they were not passed, and the condition of the patient remained the same. Therefore, water as a means of producing spontaneous fracture of stones was totally valueless.

Dr. Cabot, in closing, said he did not think these observations as to spontaneous fracture could be taken as proving the value of Buffalo Lithia Water, because the stones could be removed so easily and thoroughly by mechanical means. It would be very rare indeed for a stone of any size to break up into fragments small enough to pass through the urethra. He did think that waters were very valuable after operations, for stone and to dissolve beginning stones. He has had cases which convinced him that stones in the kidney were dissolved.

(To be continued.)

Book Reviews.

Principles and Practice of Dermatology. By W. A. Pusey, A.M., M.D. New York and London: D. Appleton & Co. 1907.

We have read this new dermatological textbook of a thousand pages with special interest and find in it very much to commend. As the writer states, more space than usual has been given to the principles of dermatology; also general treatment has been very fully dealt with. Much space is given to some of the affections with which the writer has had special experience; for instance, blastomycosis. The chapter on this affection is admirably written and is accompanied by a number of excellent illustrations. The remarkable frequency of this affection in Chicago has afforded the author an opportunity to discuss the disease more intelligently than could de done by a writer from another city. Most of the illustrations are of great excellence. Rather less space than usual is given in this book to the microscopic anatomy of cutaneous affections. The author's well-known experience with x-ray therapeutics makes his comments on this method of treatment and its practical application of great interest.

Medical Diagnosis. A manual of clinical methods for practitioners and students. By J. J. Graham Brown, Assistant Physician, Royal Infirmary of Edinburgh, and W. T. Ritchie, Clinical Assistant Pathologist, Royal Infirmary of Edinburgh. New York: Imperial Publishing Co. 1907.

This manual of clinical methods has reached its fifth edition, an evidence in itself of a demand for the book. It is comprehensive in that a survey of both the theory and practice of the methods of physical diagnosis as well as clinical laboratory procedures is attempted in a book of very moderate size. This fact of course entails a scantiness of detail in many parts, but on the whole the choice of subject matter has been good and the result is a compact book containing much information, especially useful for the student beginning his study of clinical methods.

The book is well printed and mistakes are very few. The use of " stones " as a measure of weight is to be criticized in an American published book. Again the authors' condemnation of the binaural stethoscope and advice to use a simple wooden stethoscope is out of harmony with American usage. The use of the word " cirrhotic " in reference to the kidney is etymologically incorrect as is also " mammary " instead of " mamillary" line. Under the consideration of abdominal palpation the method of palpating with the patient in a warm bath should be included as a very helpful procedure in some cases in which general anesthesia might otherwise be required. On page 98 the impression is given that the standard in the Haldane hemoglobinometer is a 1% solution of hemoglobin instead of a solution of carbon monoxide hemoglobin. On pages 116 and 117 the authors' distinction between the lymphocytes included under pathological leucocytes and normal lymphocytes is not clear and a somewhat more extended account of the general histogenesis of blood cells would perhaps give a better idea of blood conditions than is obtained from the authors' account.

However, these criticisms are not intended as a condemnation of the book. In the main they apply to points of minor importance and the book is to be commended within the limitations set by its scope and size. The consideration given to graphic methods of studying venous and arterial pulses is in keeping with the present active interest in this method of study. The inclusion of a description of opsonins indicates that revision has kept the book up to date.

Diseases of Women. A clinical guide to their diagnosis and treatment. By George Ernest Herman, M.B. Lond., F.R.C.P. Consulting Obstetric Physician to the London Hospital; Consulting Physician-Accoucheur to the Tower Hamlets Dispensary; Late President of the Obstetrical Society of London and of the Hunterian Society, etc. With 265 illustrations. New York: William Wood and Company. 1907.

This is a book of 900 pages and of convenient size to handle. It is legibly printed on good quality paper, except that the plates of the illustrations are worn and therefore the figures are not as distinct as in the earlier editions. Gynecology is approached from the standpoint of symptomatology as the following chief headings from the table of contents show: General; Chronic Pelvic Pain; Pelvic Inflammation; Internal Hemorrhage; Hemorrhage; Leucorrhea; Disorders of the Vulva; Disorders of Menstruation; Disorders of the Sexual Functions; Disorders of Parts Adjacent to the Sexual Organs; Abdominal Tumours.

The book is not a compilation of the work of others, nor yet a system. It represents for the most part the views of a practitioner of mature experience and somewhat from the obstetrician's standpoint. It is intended for the general practitioner and not for the specialist. As to the relations of the family doctor to minor gynecology the author says (p. 5): " The minor gynecological ailments, real or supposed, are common, and the majority of them came first to the family doctor. We can by sound advice prevent the patient from magnifying trifles; can disabuse her of erroneous theories before they have become fixed in her mind; can dispel her fears for the future; can correct an unhealthy mode of life before it has had time to do harm. He can render these great services to his patients more easily than a specialist, because he knows more about his patients, is called in earlier, and sees them oftener." Also: " Major gynecology must always be reserved for the specialist."

Supplemented with a good American text-book for the technique of minor gynecology this is a valuable volume for the physician's library.

A Handbook of Skin Diseases and Their Treatment. By Arthur Whitefield, M.D. (London), F.R.C.P. New York: Longmans, Green & Co. London: Edward Arnold. 1907.

The writer asserts in his preface that although there are many large treatises on dermatology, he believes there is still place for a concise book for students and general practitioners, and this has been the object of this work. Treatment is especially dealt with, and on this subject the writer is particularly clear and practical. The new methods of Sir A. E. Wright are dealt with, probably for the first time in an English textbook. The photographs and micro-photographs in this book are of special excellence.

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FEES FOR LIFE INSURANCE EXAMINATION.

We have on various occasions alluded to the policy of the large insurance companies in reducing the fees for medical examination. Throughout the investigations which have recently brought the companies prominently to public notice it has been evident that the medical profession in its intimate relations with insurance corporations was likely to be a co-sufferer. This proved, at least temporarily, to be the case in the attempt to reduce the fees for medical examinations. The protest against such a reduction has been widespread and emphatic with results which are just now manifesting themselves.

It will be a gratification to the medical profession to learn that very recently two of the three large New York Life Insurance Companies, the Mutual Life and the Equitable, have notified their medical examiners that after Aug. 1, 1907, these companies will pay a fee of five dollars for each examination for new insurance, irrespective of the amount of insurance applied for. The five-dollar fee had been paid by these companies from their origin, since 1843 in the case of the Mutual Life, and it seemed unjust to cut down the schedule at a time when wages and salaries throughout the industrial world had been steadily rising and living expenses at the same time increasing.

For the first time in history a powerful corporation was met by an organized resistance of the medical profession throughout the country, led by the American Medical Association. A very large number of the County Medical Societies, especially in the South and West, passed resolutions denouncing the fees as inadequate, and their members agreed to make no examinations for less than five dollars. As a result, the companies lost a large number of their best examiners and in certain sections their business was brought to a complete standstill.

In this unhappy controversy the companies feel that their attitude has been greatly misunderstood, claiming that they adopted the new fee schedule reluctantly, feeling that it was necessitated by the strong demand for economy which applied especially to cost in obtaining new business, the New York legislature establishing a sharp limitation and making it a criminal offense to exceed this. All the items which entered into this first year's expense were materially reduced, among them being the medical examiner's fee. The law did not wholly go into effect until Jan. 1, 1907. At the end of six months' trial, the companies announced that their economies had been greater than necessary and there was in consequence a small unexpended surplus. Appreciating the medical examiner's work and his value to the company, as soon as it was demonstrated that this surplus existed, the companies gladly restored the old fee to the examiners.

Recognizing the delicate situation in which the medical directors have been placed, we do not desire to criticize their explanation. At the same time, the medical profession may justly feel satisfaction at the successful outcome of a contest which has upheld its dignity and developed a significant *esprit de corps*.

In view of all the facts, it is certainly unfortunate that any representative insurance company should maintain the reduced fees for medical examinations. It is impossible to urge that the recognized fee of five dollars is unfair or exorbitant for the service rendered, which naturally consists not only in the examination of a candidate for insurance but also in the rendering of an expert opinion as to his physical condition. It is perfectly apparent that, if life insurance is to be restored to the place of dignity which it has of late been in danger of losing, the medical examination must be regarded as significant and the medical examiners must be treated with the consideration which the character of their work demands. It should therefore certainly be a matter of gratification that the large insurance companies, with one striking exception, are reverting to a scale of fees which has been justified by long experience and which medical men serving in the capacity of examiners have a most legitimate right to demand shall be maintained.

THE PROGNOSIS AND THERAPEUTIC MEASURES IN CHEYNE-STOKES'S RESPIRATION OCCURRING IN THE NEPHRITIDES.

The prognostic value of Cheyne-Stokes's respiration in the various nephritides is very variable, according to different writers. For some, this phenomenon not only indicates a fatal issue, but even an imminence of the end. Such is, particularly, the opinion or Traube, Merkel, Ziemssen and Biot. Saloz is more inclined to believe that the prognosis depends both on the nature and the intensity of the causal lesion and on the condition of resistance of the indivdual, while Hallopeau, Petit, Rendu and Merklen incline to this view. Out of fifteen cases recorded by Maillard in his thesis, eight presented a periodical dyspnea preceding death within a few days, while in other cases Cheyne-Stokes's respiration was present for a few days, then regressed and was followed by a period of calm for a certain length of time. It should be pointed out, however, that intermittent dyspnea finally reappears at more or less prolonged intervals, only to end in the final period preceding death.

This variance in the evolution of Cheyne-Stokes's respiration in nephritis is due to the productive lesions and the prognosis should consequently be made from a knowledge of these causes. There may be lesions of cardio-arterial insufficiency, or, on the other hand, the cardiac muscle may not be involved, in which case Cheyne-Stokes's is merely an epiphenomenon, destined to disappear with the asystolia, which gave rise to it. On the other hand, when the cardiac muscle is affected in its anatomical integrity, the prognosis is serious, because the heart can no longer overcome the valvular insufficiency, and consequently ischemia is inevitable and becomes more and more marked.

In instances where the predominating lesions are due to an arterio-sclerosis, the prognosis is serious, but not fatal, depending in a large measure on the condition of the heart. Blood irrigation is defective and has become permanent on account of the pathological cause, but the heart may partially overcome this functional insufficiency for a variable length of time, by an increase in its activity. However, the time comes when the cerebral ischemia increases on account of the cardiac insufficiency, serious symptoms appear, including Cheyne-Stokes's respiration, and death soon occurs. And lastly, in those cases where cardiac and vascular lesions co-exist, the prognosis is bad, and here Cheyne-Stokes's phenomenon indicates approaching death.

Generally speaking, the condition of the heart should guide the prognosis and, if this muscle has preserved its anatomical integrity, nothing need be feared for the time being; but if, on the contrary, there is arythmia, the outcome is serious.

The knowledge of the causes of Cheyne-Stokes's respiration should guide us in the treatment. Rendu and Merklen have used digitalis with the hope of diminishing the cerebral ischemia by increasing the functional activity of the heart, but their results have been variable. Sometimes Cheyne-Stokes's respiration disappeared, while, on the contrary, in other instances, its intensity increased, and this is probably due, as Merklen has pointed out, to the vaso-constricting action of the digitalis. The administration of this drug should find its principal indication in those cases of Cheyne-Stokes's respiration due to functional cardiac disturbances of an asystolic nature, in which the muscle is worn out, but not degenerated and so has need of the tonic effect of digitalis. But every time that the cardiac muscle has become so changed as not to react to this drug, it is absolutely contra-indicated, and one should endeavor to facilitate to the utmost the work of the heart. This may be obtained by milk diet, various diuretics and caffein, and the diuresis produced and kept up by these measures diminishes the overcharge of the circulatory system and the heart's work.

When Cheyne-Stokes's respiration is due to generalized arterio-sclerotic lesions, and if the cardiac muscle is not pathologically changed, it is quite permissible to counteract the arterial insufficiency by the administration of digitalis, which will increase the contractile energy of the heart. The ischemia resulting from the vaso-constriction need not here be feared, since the walls of the arteries, pathologically changed in their intimate structure, will react in a lesser degree. One may also employ the ordinary treatment of arterio-sclerosis, such as the iodides and a milk diet, and this would seem a useful therapeutic indication, especially in those cases where it is no longer possible to act on the heart.

And lastly, if there is a coincidence of cardiac and advanced arterio-sclerotic lesions, the causal treatment is no longer possible, and here the use of morphine becomes the one of choice in the treatment of the Cheyne-Stokes's phenomenon. When properly used this drug may occasionally regulate the respiration and give the patient sufficient rest. This remarkable action of morphine has been known for a long time and Weber, Saloz, Frentzel, Rendu and Pic have all noted the happy influence of this drug, which, by the vaso-dilatation it produces, favors the afflux of blood to the cerebral vessels, so that it may be said that, in those cases where digitalis or the treatment of arterio-sclerosis have failed, hypodermic injections of morphine will be a valuable adjuvant in the treatment of Cheyne-Stokes's respiration in nephritis.

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INSTITUTES FOR MEDICAL RESEARCH.

The sixth volume of studies from the Rockefeller Institute for Medical Research has an added interest from the fact that it contains a description of the new buildings of the institute, together with the addresses delivered at the opening of the laboratories in New York, May 11, 1906. At present the Rockefeller Institute embraces three independent buildings, the chief of which is the laboratory building. Owing to its situation on a high bluff fifty feet above tide water, overlooking on one side the East River, this building has unobstructed light in all directions, and owing to its somewhat isolated position is also remarkably free from the disturbing noises of a great city. The laboratory building measures one hundred and thirty-six by sixty feet, and is five full stories in height. It is hardly necessary to say that the internal arrangements are constructed to meet the most modern requirements of laboratory research, particularly in its experimental aspects.

Now that this great institute, to be devoted solely to medical research, has become a reality, the natural question arises, and will surely arise often in the future, whether the establishment and development of institutes of research separate from established educational institutions is the best way to promote progress. The Rockefeller Institute has already justified its existence through a large amount of admirable, original work, which has proceeded from its students, and it is not to be questioned that the means will be forthcoming to extend this work in the future as occasion may demand. In general, however, the establishment of such independent institutes, except under the most favorable conditions, seems unwise and for the following reasons: In the first place, the cost of maintenance is very much greater for such an independent work than if associated with a pre-existing foundation. In the second place, the organization of the work is complex, and the difficulty of obtaining workers of experience and education considerable. In the third place, it is increasingly important that the various branches of medical science should be brought into closer relationship, as knowledge in each grows deeper. For these reasons, it is, on the whole, desirable that there should at least be a limit to the number of separate institutes, of which the Rockefeller Institute for Medical Research is one of the most notable examples. It is to be hoped that in the future great public benefactors will give toward the development and maintenance of existing institutions in close affiliation with university foundations, rather than establish more independent centers of research, which, however equipped and manned, must be handicapped by certain limitations which would not be the case under a general university administration.

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MEDICAL NOTES.

Centenarians. — The death of Mrs. Harriet B. Farrie, of Somerville, Mass., is announced at the age of one hundred years. Mrs. Sarah T. Robinson, of Lynn, Mass., has recently died at the reputed age of one hundred years.

Railroad Casualties. — According to a recent accident bulletin, the three months ending March 31 have had an appalling number of accidents, although somewhat less than during the previous three months. The total number of accidents to passengers and employees was 20,563. Of these 421 persons were killed. There were 3,991 collisions and derailments, of which upwards of 500 affected passenger trains. The money loss amounted to more than three million and a half dollars.

Death of Dr. William T. Howard. — Dr. William T. Howard has recently died at the age of eighty-six. Dr. Howard filled the first chair in gynecology established in this country at the University of Maryland, where he was a professor for thirty years. He was one of the founders of the American Gynecological Association and its president in 1884 and 1885.

A Practitioner for Seventy Years. — Dr. William Bayard, of St. John, N. B., completed seventy years of professional activity on August 1. Congratulatory messages were received by him from the University of Edinburgh, where he received his medical degree, and from various medical societies with which he has been associated. A personal letter was received from the president of the Dominion Medical Association, a position which Dr. Bayard himself had formerly occupied.

Typhoid Fever in the Philippines. — Typhoid fever, according to the *Report of the Bureau of Health for the Philippine Islands*, seems to be obtaining a firmer foothold in the Philippines than has heretofore been the case. As the changes which ordinarily accompany an introduction of modern improvements are more and more introduced in these islands, it is becoming more apparent that this disease is constantly affecting more persons. At the present time the construction of the new railroads in the Islands is responsible for the gradual introduction of typhoid in many places at which it has not been encountered heretofore. Fortunately, so far the disease has apparently been due to direct importation, cases having occurred among Americans and Japanese who have only recently come to the country, and either arrive in the incubation period or have ingested infected foods obtained in the countries from which these new arrivals come. Filipinos seem to be the victims only in so far as they come in contact directly or indirectly with the former nationalities. Almost fifty cases have come to the knowledge of this Bureau during the quarter. It seems probable that the reasons why typhoid has not spread more heretofore in the Philippines are not so much because of the tropical climate, but because the ordinary vehicles by which the disease spreads have not been present.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 7, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 24, scarlatina 21, typhoid fever 16, measles 38, tuberculosis 68, smallpox 0, leprosy 0.

The death-rate of the reported deaths for the week ending August 7, 1907, was 20.19.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 3, 1907, was 224, against 238 the corresponding week of last year, showing a decrease of 14 deaths and making the death-rate for the week 19.16. Of this number 130 were males and 94 were females; 220 were white and 4 colored; 153 were born in the United States, 62 in foreign countries and 9 unknown; 39 were of American parentage, 170 of foreign parentage and 15 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 38 cases and 3 deaths; scarlatina, 21 cases and 0 deaths; typhoid fever, 17 cases and 2 deaths; measles, 37 cases and 1 death; tuberculosis, 66 cases and 25 deaths; smallpox, 0 case and 0 death. The deaths from pneumonia were 13, whooping cough 5, heart disease 22, bronchitis 0 and marasmus 4. There were 22 deaths from violent causes. The number of children who died under one year was 53; the number under five years, 15. The number of persons who died over sixty years of age was 35. The deaths in public institutions were 78.

There were 2 cases and 4 deaths reported from cerebrospinal meningitis during the week.

Tetanus a Reportable Disease. — The Massachusetts State Board of Health has recently added tetanus and chicken-pox to the list of reportable diseases. It is hoped by placing tetanus in this list that more complete observations may be made upon the disease than have hitherto been possible.

Davis Memorial Fund. — Contributions in this state to the Davis Memorial Fund have been received by Henry O. Marcy, chairman of the committee, in the sum of $618. This amount has been remitted to Dr. Frank Billings, of Chicago, treasurer of the committee. It is hoped that more contributions will be forthcoming.

Boston Insane Hospital.— The admissions to the Boston Insane Hospital, according to the tenth report of that institution, for the year ending Sept. 30, 1906, were 316, 125 men and 191 women, which is 100 less than the preceding year. In spite of this fact, the daily average of the year was 701, as compared with 671 the preceding year. A study of the statistics shows that 30% of the admissions to this hospital were sixty years old or over, a percentage exceeded in Massachusetts only by the wards for insane patients at the State Hospital at Tewksbury. A plea is made in the report that more land be purchased and that additional buildings for men be constructed. The further recommendation is made that a small emergency hospital be established for cases of mental disease, bearing the same relation to the Boston Insane Hospital that the Relief Station bears to the City Hospital.

NEW YORK.

Typhoid Fever at New Jersey State Asylum.— On July 29 the Board of Managers of the State Asylum for the Insane at Trenton, N. J., appointed as medical director of the institution, Dr. Peter P. Rafferty, of Red Bank, chairman of the medical committee of the board, in the place of

Dr. John W. Ward, removed. During the past spring at least twelve cases of typhoid fever occurred in the asylum, and an investigation has shown the premises to be in a very bad sanitary condition.

An Epidemic of Sore Throat at Sag Harbor. — The town of Sag Harbor, Long Island, is suffering from a severe, though apparently not dangerous, epidemic of sore throat, the exact nature of which is not stated, and nearly the entire population is affected by it. The season has been a very dry one, and the trouble is attributed by the physicians of the place to the clouds of dust, caused by numerous automobiles. The whole of Long Island is much frequented by these vehicles, and while the practice of sprinkling the roads with crude petroleum to lay the dust is in general use in many parts of the island, it does not seem to have been adopted as yet in its eastern portion.

A Centenarian.— Mrs. Catharine Gilligan, believed to have been the oldest woman in the Borough of the Bronx, New York, died on July 30, at the apparently authenticated age of 107 years. She was born in County Sligo, Ireland, on St. Patrick's Day, March 17, 1800, and came to this country about twenty-five years ago. Her death was due simply to old age, and she is said to have prided herself on never having taken a drop of medicine in her life. She had eight children, twenty-four grandchildren, five great-grandchildren, and two great-great-grandchildren.

St. Barnabas' Hospital. The annual report of St. Barnabas' Hospital at Newark, N. J., recently published, shows that 1,028 patients were cared for during the last year in the wards and private rooms, and about 4,000 treated in the out-patient clinics. The endowment fund of the hospital has now been increased to $100,000.

Warfare Against Mosquitoes. — On July 31 the Board of Health held its regular weekly meeting on board the *Governor Flower*, the official cutter of Dr. Doty, Health Officer of the Port, while the vessel was steaming through the East River on its way to various points in the Borough of Queens, where there are salt marshes and many mosquitoes. On the way Dr. Doty gave some account of the warfare against the mosquitoes of Staten Island, which he has been waging for the past three years, and of the gratifying success which has attended his efforts at extermination, and the board determined upon certain measures to be adopted against the Long Island pests. Appropriations of considerable amount have been promised by the municipal authorities, with which to carry on the campaign, and it is proposed to enforce a law passed a year or two ago, which compels known private owners of salt marshes to ditch their own property.

Retirement of a Police Surgeon. — Dr. Stephen G. Cook, who was for many years a police surgeon, and for a considerable period president of the board of surgeons, was retired from the force on July 27, and will receive a life pension of $1,750.

Rule Regarding Fees at Bellevue Hospital. — The Board of Trustees of the Bellevue and Allied Hospitals have just established a new rule which requires that any patient admitted to any of these public hospitals, who is possessed of funds of more than $50, shall have deducted from such funds, on discharge, $1.50 for each day's treatment. It is expressly provided, however, that this deduction shall not diminish the amount returned to a patient to a sum less than $50. Some objections having been expressed to this regulation, on the ground that it was unjust to enforce such a rule in institutions supported by the city, Dr. Armstrong, medical superintendent of Bellevue, has made a statement in which he says that the Board of Trustees found that a number of patients who could well afford to pay for treatment in some of the other hospitals were being treated in Bellevue, and its allied institutions, at no cost to themselves. In view of this fact and in order to prevent the needy poor from being crowded out of the beds — and from the further fact that the charter of Bellevue requires it — they adopted the rule mentioned. There is a law in the city which punishes by fine any person who can afford to buy medicines, should he go to one of the free dispensaries and get medicine for nothing, and be detected in the act. There is no more reason why the dispensaries should be so protected than that the hospitals should, especially as both kinds of institutions were established for the needy, and not for those who can afford to pay for treatment.

Conviction of a Christian Scientist. — In the Court of Special Sessions on August 2, Clarence W. Byrne, the Christian Scientist, who some time ago was convicted on the charge of failing to provide medical attendance for his daughter, a child of six years, who died on May 1 from broncho-pneumonia, was sentenced to thirty days' imprisonment in the penitentiary. The conviction was secured under Section 288 of the Penal Code, which makes it a misdemeanor for a person to "wilfully omit, without lawful excuse, to perform a duty by law imposed upon him, to furnish food, clothing, shelter or medical attendance to a minor." The imposition of the sentence had been postponed in order that certain objections might be filed by counsel for the defense, but, after due consideration, these were over-ruled by the court. At the time sentence was pronounced an opinion was given by Justice McKean, Justices Mayo and Deuel concurring, to the following effect: "The sole question is whether the omission to furnish medical attendance under the circumstances constitutes a 'lawful excuse.' To answer that question by granting the motion in arrest of judgment would establish a precedent that might be extremely vexatious in other directions. An individual of some other cult, with equal plausibility and earnestness could plead disbelief in educational methods as an excuse for not sending children to school; could withhold food, clothing and shelter, leaving each, as part of his religion, to be furnished through the same or similar agency. Certainly the health and morals of children, sought to be conserved as a public benefit, come as naturally within the plea here as do the facts set up by the defendant by the way of justification. The difference between health and education is that one is physical and the other mental, but surely none will seriously contend that this differentiation measures or limits the potency of prayer."

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Current Literature.

Medical Record.
July 13, 1907.

1. Liszynsky, W. M. *Intracranial Tumor and Its Treatment.*
2. Livingston, A. T. *The Importance, in Surgical Cases, of Correcting Defective Unstriped Fiber, and Suggestion of Methods.*
3. Chappell, W. F. *Large Tumor of the Laryngopharynx, Removed by Subhyoid Pharyngotomy.*
4. Moffatt, H. *A Case of Typhoid Perforation of the Appendix; Operation and Recovery.*
5. Stow, B. *Paraplegia Caused by an Aneurysm of the Arch of the Aorta.*
6. Kaan, G. W. *Vaginal Implantation of Adenocarcinoma of the Uterus. Blood Metastasis in Recurrent Carcinoma.*
7. *Bishop, L. F. *Heart Disease and Blood Pressure. Physiological Re-education in the Cure of Cardiovascular Disease Resulting from High Tension.*

7. Bishop regards physiological re-education as of great value in the cure of functional cardiovascular disease. There must be persistent measures undertaken, covering weeks, months or even a year; but excellent results may be obtained even where compensation is destroyed. The first thing to accomplish is relief from worry and mental concentration for the patient. Next comes reduction of diet, including taking away of the sweets and red meats. Exercise should be carried on systematically, whether the patient wants it or not, except in those cases in which failing compensation necessitates a short time in bed.

New York Medical Journal.
July 13, 1907.

1. *Eliot, E. *Subcutaneous Rupture of the Spleen.*
2. *Conner, L. A. *On Certain Acoustic Limitations of the Stethoscope and Their Clinical Importance.*
3. Beardsley, J. G. *Pneumothorax.*
4. *Ripperger, A. A. *The Craving for Sweets in Diabetic Patients.*
5. Sawyer, J. P. *Incomplete Forms of Exophthalmic Goitre in Relation to Gastro-intestinal Disease.*
6. Taussig, A. E. *Gastric Cancer Producing a Gastro-cutaneous Fistula.*
7. Hill, E. C. *Diagnosis by the Nose.*
8. McKenna, J. A. *The Comparative Innocuousness of Foreign Bodies in Three Instances.*

1. Eliot describes the occurrence of subcutaneous rupture of the normal spleen (apart from injury to infectious or other enlarged spleens), resulting usually from direct violence, but sometimes also by contrecoup, or from falls on the feet from a considerable height. The rupture may be a simple laceration, or the organ may be reduced by contusion to a pulpy mass. The symptoms depend mainly upon the amount and rapidity of hemorrhage. Respiration is usually thoracic and there is nearly always tenderness and marked rigidity over the upper part of the left rectus and costal arch. The area of dullness extends down into the flank in proportion to the amount of hemorrhage. Resistance to depression by pressure of the eleventh and twelfth ribs, which are rarely fractured, will be present if rupture of the spleen has taken place. The most satisfactory treatment is splenectomy, the technic of which is described. Numerous cases prove that the spleen is not necessary in the bodily economy. Certain cases, it is true, have been slow in recovery and have suffered from anemia and emaciation, but these effects have been rare.

2. Conner mentions a number of auscultatory findings more distinctly obtainable by the naked ear than by the stethoscope. In 8 cases of aortic regurgitation diastolic murmurs almost or quite inaudible with the stethoscope were plainly heard with the ear alone. More important than these he regards cases in which bronchial breathing can be detected only by the naked ear, as examples of which he mentions instances where the diagnosis of pneumonia could be made a day earlier than by the stethoscope. In general, faint, high-pitched sounds are much more plainly heard by the ear alone.

4. Ripperger's article is an exhaustive accumulation of evidence that saccharin as used for sweetening effect is entirely harmless and without physiological action.
[F. W. P.]

The Journal of the American Medical Association.
July 13, 1907.

1. *Taylor, R. W. *Deformities of the Vulva from Early and Late Indurating Edema.*
2. Bogue, E. A. *The Relations of the Dental Arches to Pathologic Affections of the Nasopharynx and Adjacent Parts.*
3. Derby, G. S. *Ligation of the Carotid Artery for Malignant Recurrent Hemorrhage of the Vitreous.*
4. Carroll, J. J. *Metastatic Conjunctivitis in Gonorrhea.*
5. Stevenson, M. D. *Treatment of Lachrymal Obstruction.*
6. *Baker, A. R. *The Treatment of Strabismus in Young Children.*
7. Wyeth, J. A. *Technic of Appendectomy.*
8. *Tinker, M. B. *Gall Duct Obstruction Caused by Movable Kidney.*
9. *Jones, A. A. *Abdominal Symptoms of Thoracic Disease.*
10. *Folin, O. *The Acid Intoxication Theory.*
11. Nilken, A. *Acute Spermatocystitis.*

12. Todd, F. C. *A Method of Performing Tenotomy which Enables the Operator to Limit the Effect as Required.*
13. Wallis, J. F. *Cutaneous Tuberculosis.*
14. Richards, G. L. *Technic of the Operation for the Removal of the Middle Turbinate.*
15. Brödel, M. *How may our Present Methods of Medical Illustration be Improved.*
16. Bottomley, J. T. *Operation for Exstrophy of the Bladder.*
17. *Curtis, H. H. *The Etiology and Recent Treatment of Hay Fever.*

1. Taylor describes with illustrations the condition of indurating edema of the vulva, a condition which he believes to be too little recognized. It is almost always due to syphilis, most commonly as a complication of the hard chancre but sometimes as a late lesion; a few cases have seemed to result from chancroids or herpetic lesions. A hard, non-pitting induration of the vulva, more or less extensive, is the result. Antisyphilitic treatment if begun early may cause complete disappearance, but otherwise the swelling persists indefinitely. Some cases go on to atrophy with marked deformity, kraurosis vulvæ, elephantiasis, gangrene and phagedena.

6. Baker protests against the common practice of deferring the treatment of strabismus in children until the patients are able to read test type. In 75% of the cases the condition develops before the fourth year, and in a large proportion the onset is gradual. At first it is only occasionally present; in the second stage it is more or less constant but alternating between the two eyes; finally it becomes constant and monocular. Some cases recover spontaneously. In the first stages often the use of atropine for a few days in both eyes will effect a cure. If this fails, glasses must be prescribed at once by retinoscopy; the author has fitted glasses with most satisfactory results in children less than a year old. In the second stage, that of alternating squint, the results of correcting errors of refraction are also very satisfactory in overcoming strabismus. In older children great patience is often required in efforts to restore the fusion sense, using prisms and decentered lenses, atropin long continued, and insisting upon avoidance of close work for the eyes. The occlusion bandage should be given a trial. If these methods fail, operative treatment is necessary. The author, however, rarely operates on children under ten years of age, and regards operation as a confession of defeat.

8. Tinker calls attention to the occurrence of gall-duct obstruction from the pressure of a movable kidney. He cites two cases, in one of which was found a distended gall-bladder for which no cause could be found except that the right kidney was in a position where it might easily press on the ducts; in the other case it is not proved that the symptoms had anything to do with the biliary tract; both cases were relieved by fixation of the kidney. The author's technic of kidney fixation is described, essential features of which are separation of attachments to the colon, suturing the split capsule to aponeurotic structures in the incision and keeping the patient on the back or the right side for two weeks after the operation.

9. Jones describes cases of thoracic diseases in which the symptoms were referred so positively to the abdomen that it was, or might well have been, believed that acute abdominal disease was present. The conditions mentioned include pleuritis, pneumonia, empyema, aneurysm of the heart, angina pectoris and aortitis.

10. Folin's article is a searching review of the origin and development of the theory of acid intoxication in diabetes, from the early observations of β-oxybutyric acid by Stadelmann and of acetone and diacetic acid by v. Jaksch in 1883, to the recent studies of Knoop, Embden, Baer and Blum. The presence of β-oxybutyric acid, diacetic and acetone being unquestioned, these later investigators have attempted to trace their evolution. Knoop by linking the fatty acids in different stages of oxidation with the benzene group was able to arrest the process in certain intermediate stages, and to test the results by feeding them to dogs. From this work he reached the conclusion that only those fatty acid side-chains from which the carbon atoms can be split off two at a time can undergo oxidation in the animal body. Oleic, palmitic and stearic acid can thus give rise to but one molecule each of oxybutyric acid, whereas caproic acid can yield three, and butyric acid four. Embden passing these substances in aërated blood through excised livers, and Baer and Blum feeding them to patients, all reached confirmatory results. It is probable that the amino-acids which form from proteids can also produce acetone bodies. Much, however, remains unexplained, even if these findings are accepted. Why does the oxidation of carbohydrates diminish the formation of acetone bodies? why do not lactic and oxalic acids play a part in the assumed acid intoxication? and why does not the alkali therapy have more striking results? These questions are not answered.

17. Curtis summarizes the causes of hay fever or hyperesthetic rhinitis as, (1) an adynamic state of the nervous system, the correction of which is important; (2) pathologic changes in the nasal mucosa, such as polypi and deviations of the septum; (3) constitutional disorders such as gout, obesity and disorders of digestion, and (4) external irritants such as gases, dust, pollens, etc. Recently attention has been directed to Dunbar's antitoxin (pollantin) treatment. Opinions received from 34 prominent rhinologists are published, the majority being unfavorable to the claims made for the treatment; a number, however, indorse it. Medicinally suprarenal extracts hold the first place in treatment, in conjunction with constitutional treatment. Climatic treatment is the most efficacious of all. [F. W. P.]

The Lancet.
July 13, 1907.

1. Simpson, W. J. R. *The Croonian Lectures on Plague. Lecture III.*
2. *Corner, E. M. *The Most Frequent Hernia in Childhood and its Significance.*
3. Dreuw. *On the Treatment of Lupus.*
4. Warner, H. F. *A Case of Acute Lead Encephalopathy Following the Use of (?) Diachylon Pills as an Abortifacient.*
5. Pirie, A. H. *A New Method for Using X-Rays.*
6. Norton, E. E. *The Prophylactic Use of Antitoxin in Epidemic Diphtheria.*
7. Edington, A. *On the Use of a New Fluid for the Hematocytometer.*

2. Corner brings forward further figures and tables to confirm his opinions that herniæ in children are not congenital, but acquired, owing to the weakness of the abdominal walls and their distention by the gas fermentation going on inside the intestines. As to the most frequent hernia he finds a ventral hernia between the recti to be the most common. This fact has generally escaped notice. [J. B. H.]

British Medical Journal.
July 13, 1907.

1. *Monsarrat, K. W. *A Clinical Lecture on the Simulation of Malignant Disease by Chronic Inflammatory Affections of the Sigmoid Flexure.*
2. *Brook, W. H. B. *The Diagnosis and Treatment of Appendicitis.*
3. Burgess, A. H. *One Year's Work in Acute Appendicitis.*
4. *Thomas, J. L. *The Treatment of Complications and Sequelæ of Gastric and Duodenal Ulcers.*
5. *Barling, G. *Some Observations on Nephrectomy, with Statistics of a Series of Cases Operated on During the Last Ten Years.*
6. Greaves, F. L. A. *A Case of Pyonephrosis Containing Typhoid Bacilli in Pure Culture.*
7. Heard, R. *Two cases of Suprapubic Litholapaxy.*
8. Hellier, J. B. *Suppurating Vaginal Cysts.*
9. Whiteford, C. H. *A Case of Spreading Peritonitis Cured by Drainage of Pelvis, the Fowler Position and Rectal Instillation of Saline Solution.*
10. Patton, W. S. *Preliminary Note on the Life-Cycle of a Species of Herpetomonas found in Culex Pipiens.*
11. Heath C. J. *On the Duty of Restoring Hearing by Operation in Chronic Aural Suppuration.*

1. Monsarrat reports two cases of sigmoiditis, one chronic adhesive perisigmoiditis, the other subacute in-

filtrative sigmoiditis. In both diagnosis was confirmed by operation. The differential diagnosis from tuberculosis is made chiefly on the absence of tuberculosis elsewhere in the body. From malignant disease it is often impossible to distinguish from clinical signs. Microscopical examination at operation is the only sure method of diagnosis. For treatment of the acute forms he recommends rest in bed with a milk diet and daily enema. For chronic forms, a diet leaving little residue, olive oil enemata for constipation, and astringent rectal irrigation of .2% protargol when there is diarrhea.

2. Brooks speaking on the treatment of appendicitis concludes as follows: (1) The majority of cases will get over the attack if treated on simple medicinal lines. (2) The appendix should be removed during the quiet period. (3) During the attack the patient should be carefully watched and on any sign of fulmination operated on at once. (4) If there be suppuration, if all is going on otherwise satisfactorily, evacuation should be deferred until after the fifth day, care being taken not to open the general peritoneal cavity. If in doubt, operate. No elaborate search should be made for the appendix, it can be removed later. (5) In general suppurative peritonitis, the use of drainage, massive infusions and calomel is advised.

4. Thomas advises what amounts to the Ochsner treatment in perforated gastric and duodenal ulcers; *i. e.*, rest, no food, morphia, no palpation or manipulation of the abdomen, which should be firmly swathed, and washing the stomach free from contents. If operation is done, wipe out stomach contents from the abdomen, drain and leave alone, and do not sew up the perforation or disturb the intestines hunting for it. By this procedure he has been remarkably successful in his cases.

5. Barling has done 39 nephrectomies with one death. He uses the retro-peritoneal lumbar incision and advises a large enough opening to give plenty of room. He prefers to tie off the pedicle by its separate constituents rather than *en masse*. He has never done partial nephrectomy and considers it very rarely advisable.

[J. B. H.]

Deutsche Medizinische Wochenschrift, No. 24. June 13, 1907.

1. *Determann, H. *Poultices, Compresses and Packs.*
2. Rumpf. *Simulation and Dissimulation of Disease.*
3. Koppen, M. *Simulation in Mental Disease.*
4. Ledderhose, G. *The Detection of Simulation in Surgery.*
5. Groenouw. *Simulation of Eye Diseases.*
6. Stenger. *Simulation of Ear Diseases.*
7. Schill. *Simulation of Diseases among Soldiers.*

1. Determann reviews the history of hydrotherapy since its introduction into general medicine, and claims that an extensive plant is unnecessary and that much can be accomplished with simple means at the patient's home. The physician must understand just what physiological changes he wishes to produce and then use his hot and cold applications, compresses, poultices and packs in the various forms which the author describes at some length. Marked changes in the viscosity of the blood can be produced by these simple means, and many chronic and inflammatory processes are favorably influenced thereby.

[L. G. M.]

Münchener Medizinische Wochenschrift, No. 23. June 4, 1907.

1. Hammerl, H. *Rutan, a New Disinfectant.*
2. *Berger, C. *Gastric Erosions.*
3. *Bittorf, A. *Tenderness of the Testicle in Renal Calculus.*
4. *Mann, M. *Killian's Tracheo-broncheoscopy in the Diagnosis of Diseases of the Trachea and Bronchi.*
5. Kalb, O. *The So-called Hand-walking in Infantile Paralysis.*
6. Theilhaber, A. *Variations in the Structure of the Normal Endometrium and Chronic Endometritis.*
7. Ritschl. *Contracture of the Fingers, Due to Injury to the Extensor Tendons.*
8. Knauth. *Medico-legal Uses of the Widal Reaction.*
9. Federschmidt. *A Case of Tetanus Treated with Antitoxin.*
10. Goldschmidt, A. *Acute Poisoning with Citrophen.*
11. Determann. *A Simple Apparatus to Measure the Viscosity of the Blood.*
12. Neumann, F., and Fellner, O. *The Influence of Cholin and the X-Ray on the Course of Pregnancy.*
13. Bárány, R. *The Investigation of the Reflex Vestibular and Optical Movements of the Eyes, and their Significance in the Focal Diagnosis of Eye Palsies.* (Concluded.)
14. *Perutz, F. *Abdominal Arteriosclerosis.* (Concluded.)

2. Berger describes two fatal cases of hematemesis in which the autopsy showed superficial erosions of the mucous membrane of the stomach, but no bleeding vessel. In the second case the erosions extended far down into the small intestine. The disease is fairly well characterized, by profuse and repeated hematemesis in patients who have never presented symptoms of ulcer, and by entire lack of gastric pain. It has been described by Dieulafoy under the name of "exulceratio ventriculi simplex."

3. Bittorf calls attention to tenderness of the testicle on the same side as a hitherto undescribed symptom of stone in the kidney. He has observed its presence in several cases of renal calculus, and its absence in gall-stones and abdominal neuroses.

4. The value of Killian's bronchoscopy and tracheoscopy is well shown by Mann, of Dresden, who reports various interesting cases in which the exact diagnosis was possible by this method only. Especially worthy of mention is a case of primary carcinoma of the bronchus, in which the tumor could be seen through the bronchoscope, and a part of it removed through the tube with instruments.

14. The subject of abdominal arteriosclerosis as a cause of serious symptoms is one that has received considerable attention of late. Perutz gives a good critical review of the literature and relates personal experiences. The cases may be divided roughly into two groups: those resembling angina pectoris, and those in which abdominal symptoms predominate. In the former the familiar symptoms of angina appear, only the pain is localized in the epigastrium instead of in the chest. Lighter cases show merely paroxysmal attacks of pain in the epigastrium without the anxiety and dyspnea of angina. The second class of cases presents striking symptoms, consisting chiefly in colic, meteorism and constipation. The greatly distended colon may be plainly outlined against the wall of the abdomen. Physical examination usually reveals tenderness over the vertebral column near the navel, and signs of arteriosclerosis of the thoracic aorta or peripheral vessels. The blood pressure may be greatly elevated during the attacks, as noted by Pal. In some cases, especially those in excessive smokers, there seems to be only a functional derangement of the abdominal vessels, for the attacks disappear with the removal of the irritating substance. In the treatment diuretin is the remedy *par excellence*, often producing prompt relief. This is probably due to its vaso-dilating influence. The allied substances, agurin and theocin, have a similar action. Strophanthus or digitalis, iodide of potash and the nitrites are also to be employed as circumstances indicate.

[W. T.]

Berliner Klinische Wochenschrift, No. 19. May 13, 1907.

1. *Strauss, H. *Pseudo-anemias.*
2. Westenhoeffer. *The Nature of Tumors.*
3. Schaps, L. *The Injection of Salt and Sugar into Infants.*
4. *Kast, L., and Meltzer, S. J. *The Sensation of the Abdominal Viscera, and the Effect on it of Cocaine Injections.*
5. Sochs, H., and Ternuchi, Y. *The Inactivation of the Complement in Salt-free Media.* (Concluded.)
6. Minor, L. *Quinquaud's Phenomenon in Drinkers and Non-Drinkers, and in various Nervous Diseases.* (Continued.)

1. Under the name of pseudo-anemia, Strauss calls attention to a common condition in which the skin and often the mucous membranes are pale, but there is no true

anemia, the hemoglobin showing normal values. The cause is either decreased transparency of the skin, or local ischemia. Spasm of the peripheral arterioles is evidently present in lead poisoning and probably also in chronic nephritis. In a large group of functional nervous disorders the apparent anemia is probaby due to such a local contraction of the peripheral vessels, more or less permanent. Such patients frequently show other signs of instability of the vasomotor system, such as dermographia, flushing of the face, etc. The general condition should be treated, the use of iron being manifestly superfluous.

4. Experiences of various surgeons, especially Lennander, have apparently shown that the intestines and the other abdominal viscera are devoid of sensation. This work has been based on laparotomies on human beings under cocaine anesthesia. Kast and Meltzer, of New York, show in this article that the apparent anesthesia of these parts is entirely the effect, through the circulation, of the cocaine employed. Experiments on animals showed that the normal and, to a greater degree, the inflamed viscera are capable of sensation, while the injection of a small amount of cocaine promptly produces anesthesia.

[W. T.]

Zeitschrift für Klinische Medizin.

Bd. 61, Heft 5 and 6.

1. *Hofbauer, L. *The Causes of Orthopnea.*
2. *Rubenstein, H. *Lymphadenoid Metaplasia of the Bone Marrow.*
3. *Tallqvist, T. W. *The Pathogenesis of Pernicious Anemia with Special Reference to Bothriocephalus Anemia.*
4. Geigel, R. *Dicrotism in Aortic and Mitral Insufficiency.*

1. That the dyspneic patient cannot lie comfortably in bed is usually explained by stating that in a sitting posture the accessory muscles of inspiration are mechanically better placed for work. However, many dyspneic patients are compelled only to assume a sitting position in order to sleep. Further, if this explanation were true, tracings made of the respiratory movements should indicate either an impeded inspiratory phase or the action of accessory muscles of inspiration. However, in many patients such is not the case. In individuals with pleural effusion whose dyspnea is particularly considered in this paper, tracings of the respiratory movements show, on the contrary, that expiration is impeded or there is evidence of the action of the accessory expiratory muscles. While awake the accessory expiratory muscles act and there is no dyspnea even in the recumbent posture. During sleep they cease to act and the patient is only able to get sufficient air in the sitting posture. In the recumbent posture the dome of the diaphragm extends farthest towards the head, while in the sitting posture it has its lowest position. In this latter position the pulmonary vital elasticity is at its maximum, and the stretched lung contracts forcibly to expel the air. In pleural effusions the lung is not compressed but the fluid prevents expansion of the lung, and so there results a deficient elasticity of the lung which is the cause of the dyspnea. This deficient elasticity is increased by the sitting posture because the diaphragm has a lower position and so expiration is favored.

2. Rubenstein reports a case of a boy of sixteen with marked anemia, and no absolute leucocytosis. However, there was a marked relative lymphocytosis, and autopsy showed a lymphoid marrow. He discusses the classification of such a case. He does not regard it as belonging to the lymphatic leukemias, but thinks it may be considered a case of myelogenous pseudoleukemia (one of Pappenheim's groups of pseudoleukemia). Of this he is not certain, so he suggests the name "anemia perniciosa myelopathica," as describing the condition.

3. This is a paper of over 100 pages in length with a bibliography of 136 titles. It presents a number of facts derived from a chemical and experimental study of the relation of bothriocephalus worms to anemia, and the attempt is made to apply these results in an explanation of the pathogenesis of pernicious anemia. Tallqvist finds that the bothriocephalus worms contain a lipoid substance which is strongly hemolytic, and a proteolytic enzyme. This hemolytic lipoid is not excreted by the worm but is freed with the disintegration or digestion of the segments of the worm. Fed to animals or injected subcutaneously, the lipoid produces a distinct anemia which has many of the characteristics of pernicious anemia. Bothriocephalus worms from cases which are anemic, in contradistinction to those from cases not anemic, show definite evidence of disintegration. During this disintegration, which is probably in part an autolytic process, the hemolytic lipoid is set free in the intestine of the host, and as it is not injured by the digestive ferments there present it may be absorbed and produce a hemolytic action with resultant anemia. Other flat worms do not contain this substance, but similar substances are found in several organs of man, notably the intestinal mucosa. In the digestive disturbances of anemia such substances may be absorbed and so lead to the production of a pernicious anemia. Similar hemolytic lipoids occur in malignant tumors and may explain the anemia so often associated. The proof of the presence of a hemolytic lipoid in the bothriocephalus worm is satisfactory as also is the evidence of disintegration of the worms from cases with anemia. However, the result of giving the substance to animals is not to the reviewer very closely analogous to the blood picture of pernicious anemia, and the attempted explanation of the pathogenesis of pernicious anemia on this basis seems somewhat far-fetched. [H. A. C]

Therapie der Gegenwart.

June, 1907.

1. *Erb, W. *The Treatment of Neurasthenia.*
2. *Schnütgen. *Senator's Treatment for Gastric Ulcer.*
3. Lenné. *Further Observations on the Dietetic and Medicinal Treatment of Diabetes.*
4. *Klemperer, G. *The Treatment of Acute Articular Rheumatism.*
5. Kuhn, P. *Buttermilk in Infant Feeding.*
6. *Dammann. *Emotional Disturbances and their Treatment.*

1. Erb, while admitting the important part played by the psyche in neurasthenia, does not believe in the psychic origin now so commonly invoked for this disease. The mental symptoms, according to him, are merely part of the general "irritable weakness" of the entire nervous system. In the treatment, rest, nourishing food and fresh air, with hydrotherapy form the essential features. Later on, the nervous system is to be strengthened by gradually increased active and passive exercises, sports of various kinds, hydrotherapy. In the use of the last, mild procedures are best. A change of climate either to the sea or the mountains is often beneficial, and withdrawal to a sanatorium is essential in severe cases. The Weir-Mitchell treatment has not proved valuable in his hands. Erb deplores the present neglect of drugs for physical methods of treatment, for he has often seen great benefit from medicine, especially iron and arsenic, alone or combined with nux vomica, quinine and other nerve tonics. Psychotherapy is quite in place to combat the various autosuggestions and to give the patient a firm conviction of an approaching cure.

2. Senator's diet for gastric ulcer stands midway between the low diet of Leube and the liberal one of Lenhartz. Its distinctive feature is the administration of gelatin in considerable quantities, the gelatin serving both as a food and as a hemostatic agent. In 50 patients treated in this way, Schnütgen reports (from Senator's clinic) a mortality of 1%. A favorable result, either improvement or "cure," was obtained in 94%; the average duration of treatment in these was only three weeks. In most of them the weight showed no decrease, or even a slight increase.

4. Theoretical considerations led Klemperer to the belief that the action of the salicylates in acute rheumatism is largely due to the production of hyperemia in the joints. To test this belief, he treated 68 cases with Bier's passive congestion exclusively. The results were good, and in cases of slight or medium severity a cure was usually obtained. The relief of pain was, as a rule, prompt and striking. However, out of 19 cases which proved refractory to congestion, 10 were promptly cured with salicylates, and in general the results with congestion

were somewhat inferior to those obtained with the drug. He believes that the salicylates produce hyperemia in the joints and exert also a slight bactericidal action, and advocates therefore a combination of the two methods.

6. After classifying the various diseased states of the emotions, and describing the general treatment, Dammann proceeds to a warm recommendation of bornyval for all excited states, especially hallucinations. It produces quiet without stupor or sleep, and has no aftereffects. It was efficacious in nervous dyspepsia and in palpitation. Bornyval, or borneol-isovalerianic ester, combines the two active principles of valerian, the ethereal oil and valerianic acid, and is given in pearls in the dose of 0.25 gm. (4 gr.). [W. T.]

Correspondence.

AN APPEAL TO THE AMERICAN MEDICAL PROFESSION.

New York, July 30, 1907.

Mr. Editor: On May 8, the day following the meeting of the National Association for the Study and Prevention of Tuberculosis, there appeared in the *North American* of Philadelphia a most sensational article by Mr. Richard J. Beamish according to which, during the discussion of Dr. Flick's report on medication, I was reported to have advised the killing of dying consumptives quickly and painlessly by heavy doses of morphine and to have admitted that it was my daily practice to do so. It was furthermore said in this article that there had been a bitter debate and that the session adjourned in confusion. These false statements were copied by nearly all the newspapers in the United States, were cabled to Europe and made the rounds in the papers and magazines of England and the whole European continent. In spite of explanations and denials I had sent to the Associated Press, in spite of a strong letter written by Dr. George Dock, the presiding officer of the meeting, and sent to the leading medical journals of America giving the true version of my remarks, the false statement has continued to be published and republished and commented upon to the great detriment of the anti-tuberculosis crusade all over the world. For example, ignorant consumptives in St. Louis, who had read the sensational lie, refused the visit of the nurses sent to them by the Society for the Relief and Prevention of Tuberculosis. The *St. Louis Republic* which published this news item said, "Consumptives since they read that report apparently have a dread that the visit of the nurse may mean morphine to end their suffering." It became thus necessary to issue the following statement by order of Prof. Frank Billings, President of the National Association for the Study and Prevention of Tuberculosis:

"Various daily newspapers published on May 8 what purported to be a report of the remarks of Dr. S. A. Knopf, of New York, before the National Association for the Study and Prevention of Tuberculosis, in which he was made to say: 'It is my practice and your sacred duty when you see a dying consumptive before you to give the sufferer morphine in plenty that the end may come quickly and painlessly.'

"No statement was made by Dr. Knopf, but since, in spite of an immediate explicit denial by the doctor, a great many newspapers in this country and Europe continue to publish the false report as authentic news. Dr. Frank Billings, of Chicago, President of the National Association for the Study and Prevention of Tuberculosis, authorizes the following statement:

"'Quite apart from the false position in which the speaker was placed and the injury done him, the publication of such a piece of sensationalism cannot fail to have a very deleterious effect upon impressionable tuberculosis patients throughout the country and may keep others from seeking needed medical aid.'

"The following statement made by Prof. George Dock, of the University of Michigan, who presided at the meeting in which Dr. Knopf spoke, should preclude all further misunderstanding:

"'I heard clearly what Dr. Knopf said, I am sure that I know what he meant, and am sure that everybody in the room must have understood what he said. His words could not possibly be converted into the meaning given in the public press. It was perfectly clear that he meant to relieve patients in the last stages. Everybody knows this prolongs life while making it very much easier for the patient.'

"Livingston Farrand, *Executive Secretary.*"

I had hoped that this statement would put a stop to all further comments on and circulation of the sensational falsehood. I am free to confess that I have longed for the time when the lie would die out, for in spite of the loyalty manifested by my professional friends during these hours of trial, for which I beg them to accept my most heartfelt thanks, the ordeal had become almost unbearable.

It seems that such a lie dies hard and from time to time receives a new stimulus from the over-zealousness of some physician or layman. Thus, for example, through the courtesy of Dr. George H. Simmons, the editor of the *Journal of the American Medical Association,* I received a copy of the *Kansas City Journal* of last week, containing an editorial under the heading "Should Doctors Kill?" from which I quote the following:

"The question whether a physician is justified in shortening the life of a patient suffering from some incurable disease by administering anesthetics was given a fresh impetus recently by the declaration of Dr. S. A. Knopf before the tuberculosis congress in Washington advising that consumptives should be given heavy doses of morphine to hasten the end. To the credit of the profession it must be said that physicians generally repudiate the idea as atrocious and a violation of medical ethics. A Chicago physician, Dr. Charles Gilbert Davis, voiced this sentiment, saying: 'A physician who would make a statement of that sort should be taken out and hanged. The profession has not gotten so low that it must commit murder just because it has not yet discovered a cure for some disease. There is nothing incurable under the sun. Just because the cure has not been discovered, that does not mean that it never will.'"

In Dr. Dock's letter above referred to, as well as in the statement authorized by Dr. Frank Billings, the absolute falsehood of the respective newspaper report was clearly shown and it would seem that there was hardly an occasion for Dr. Davis to unburden his feelings for the benefit of the lay press.

Equally untrue was the report of the alleged "adjournment in confusion" and the "lively and bitter debate" which followed Dr. Flick's report, condemning the use of morphine and its compound. In refutation of this reflection made by Mr. Beamish on a body of scientific men composed of many of the leading American physicians, who have devoted their lives to the study and prevention of tuberculosis, permit me to publish, for the first time, an extract from a letter which was received recently by Dr. Joseph Walsh, the secretary of the section:

"I was present as secretary of the section at which you spoke and instead of the section breaking up in confusion as was stated in the newspapers, the section closed in the perfectly regular way, and your statement as generally understood by the medical men seemed to be generally agreed with."

I beg the Medical Press of the United States to copy this communication in the hope that it will help individual members of the profession to refute once for all the inconceivable proposition that any physician true to his calling could possibly propound such a doctrine as shortening the life of any patient entrusted to his care. To the individual member of the profession in this country and abroad I address a personal appeal to embrace every opportunity to disabuse any individual who may labor under the misapprehension that I or anybody else of the American profession recommended shortening the lives of consumptives or any others by the administration of chloroform, morphine or similar narcotics. I make this appeal not merely for my own sake but above all for the sake of truth and for the sake of consumptive sufferers in this and in other countries.

Truly yours,
S. A. Knopf, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, July 27, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	6	1
Chicago	—	—	Waltham	6	1
Philadelphia . . .	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	5	—
Baltimore	—	—	Brookline	1	0
Cleveland	—	—	North Adams . .	6	2
Buffalo	—	—	Chicopee	15	11
Pittsburg	—	—	Northampton . .	7	1
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	3	—
Washington . . .	—	—	Leominster . . .	—	—
Providence . . .	—	—	Hyde Park . . .	1	1
Boston	173	57	Melrose	1	0
Worcester	36	10	Newburyport . .	—	—
Fall River	75	53	Woburn	3	2
Cambridge	20	6	Marlboro	2	0
Lowell	64	32	Westfield	4	2
Lynn	16	3	Peabody	—	—
New Bedford . .	38	19	Revere	9	1
Springfield	19	7	Attleboro	4	2
Lawrence	26	15	Clinton	4	2
Somerville	19	3	Adams	—	—
Holyoke	16	11	Gardner	1	1
Brockton	11	3	Milford	—	—
Malden	8	2	Watertown . . .	2	1
Chelsea	16	6	Plymouth	—	—
Salem	9	2	Weymouth . . .	2	0
Newton	8	2	Framingham . .	—	—
Haverhill	13	1	Southbridge . . .	1	1
Fitchburg	—	—	Wakefield	—	—
Everett	6	2	Webster	—	—
Taunton	—	—			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 24, 1907.

Stoner, G. W., surgeon. Directed to proceed to El Paso, Tex., San Diego, Cal., and other ports on the Pacific coast and Canadian border, for special temporary duty, upon completion of which to rejoin his station at Ellis Island, N. Y. July 20, 1907.

McMullen, John, passed assistant surgeon. Granted extension leave of absence for seven days. July 18, 1907.

McMullen, John, passed assistant surgeon. Granted leave of absence for five days. July 24, 1907.

Von Ezdorf, R. H., passed assistant surgeon. Granted leave of absence for two days. July 23, 1907.

King, W. W., passed assistant surgeon. Directed to proceed from Tuckerton to Atlantic City and return, for special temporary duty. July 22, 1907.

Stansfield, H. A., passed assistant surgeon. Granted leave of absence for three months from July 12, 1907, with permission to go beyond the seas. July 18, 1907.

Holt, J. M., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Holt for two months from June 20, 1907, amended to be effective from July 7, 1907. July 18, 1907.

Vogel, C. W., passed assistant surgeon. Relieved from duty in the Philippine Islands and directed to return to the States, reporting his arrival at San Francisco. July 20, 1907.

Creel, R. H., assistant surgeon. Relieved from duty in the Philippine Islands and directed to return to the States, reporting his arrival at San Francisco. July 20, 1907.

Lyall, R., acting assistant surgeon. Granted leave of absence for three days from July 11, 1907, under paragraph 210, Service regulations.

Owen, H., acting assistant surgeon. Leave of absence granted Acting-Assistant Surgeon Owen for thirty days from June 1, 1907, amended to be effective from August 1, 1907. July 18, 1907.

Rodman, J. C., acting assistant surgeon. Granted leave of absence for fifteen days from July 1, 1907. July 17, 1907.

Seavey, L. T., acting assistant surgeon. Granted leave of absence for 21 days from August 15, 1907. July 10, 1907.

Wells, R. S., acting assistant surgeon. Granted leave of absence for thirty days from June 1, 1907, account of sickness. July 18, 1907.

Wells, R. S., acting assistant surgeon. Granted leave of absence for thirty days from July 1, 1907. July 17, 1907.

Morris, G. A., pharmacist. Granted leave of absence for fourteen days from August 10, 1907. July 22, 1907.

Watters, M. H., pharmacist. Granted leave of absence for 11 days from July 23, 1907. July 17, 1907.

Hall, L. P., pharmacist. Granted leave of absence for fourteen days from July 23, 1907. July 22, 1907.

APPOINTMENT.

Dr. Harry M. Friedman appointed as acting assistant surgeon for duty at Philadelphia, Pa., July 18, 1907.

Dr. Louis A. Thunig appointed acting assistant surgeon for duty at Stapleton, N. Y., declined appointment.

American Public Health Association. — The thirty-fifth annual meeting of the American Public Health Association, including the United States, the Dominion of Canada, the Republic of Mexico, and the Republic of Cuba, will be held at Atlantic City, N. J., from September 30 to October 4, inclusive.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 3, 1907.

L. W. Bishop, passed assistant surgeon. Unexpired portion of leave revoked. Ordered to the "Missouri" August 1.

C. W. C. Bunker, acting assistant surgeon. Ordered to the "Lancaster."

F. D. Chappelear, acting assistant surgeon. Resignation accepted to take effect July 31, 1907.

J. A. Murphy, surgeon. Detached from the "Des Moines" and ordered to the "Dolphin."

H. M. Tolfree, passed assistant surgeon. Detached from the "Dolphin" and ordered to the "Des Moines."

C. G. Alderman, assistant surgeon. Ordered to the Naval Hospital, Puget Sound, Washington.

RECENT DEATH.

Dr. Edgar Eltinge, retired, a physician formerly well known along the Hudson River, died at his residence in Kingston, N. Y., on July 27, at the age of seventy-nine years. He came of a medical family, dating back to colonial times, and was graduated from the College of Physicians and Surgeons, New York, in 1852. In 1884 he removed to Brooklyn, where he practised until three years ago, when he returned to his old home at Kingston on account of failing health.

BOOKS AND PAMPHLETS RECEIVED.

Nutrition and Dysentery. By U. N. Muderji, M.D. (Edin.). Calcutta: S. K. Lahiri & Co. London: Kegan, Paul & Trench. 1905.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. VI. 1907.

Practical Legislation for the Prevention of Blindness from Ophthalmia Neonatorum. By F. Park Lewis, M.D. Reprint.

The Abortion of Pneumonia. By V. Lehman, M.D. Reprint.

Rational and Effective Treatment of Hip-Disease. By P. Bruce Binnie, M.A., M.D., B. S. (Melb.). Compiled by Alex. B. Binnie, M.A., M.B., B. S. (Melb.). Illustrated. New York: William Wood & Co. 1907.

On Treatment. By Harry Campbell, M.D., B.S., F.R.C.P. New York: William Wood & Co. 1907.

Manual of the Diseases of the Eye. By Charles H. May, M.D. Fifth edition, revised. Illustrated. New York: William Wood & Co. 1907.

Elements of Human Physiology. By Ernest H. Starling, M.D. Lond., F.R.C.P., F.R.S. Eighth edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

A Dictionary of Medical Diagnosis. A Treatise on the Signs and Symptoms Observed in Diseased Conditions. By Henry Lawrence McKisack, M.D., M.R.C.P. Lond. Illustrated. New York: William Wood & Co. 1907.

A Manual of Surgery. By Francis T. Stewart, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Manual of Diseases of the Ear, Nose and Throat. By John Johnson Kyle, B.S., M.D. Second edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Eighth Annual Report of the State Board of Insanity of the Commonwealth of Massachusetts for the Year ending November 30, 1906. Boston. 1907.

Address.

THE PSYCHIC FACTOR IN DISEASE.*

BY DR. GEORGE CARROLL SMITH, BOSTON.

During the prevalence of the psychic epidemic, which amounts almost to a monomania in Boston, and is widespread over all New England, the writer has thought the attention of this society might be profitably focused for a brief hour upon this fad. I say *fad*, as it differs not in the least from similar delusions and makeshifts which have arisen, been exploited, had their nucleus of truth dissected out of them, and then dropped, under the searching light of scientific investigation. This epidemic differs in the following respects from that of ancient and medieval times: then the devotees and advocates were the ecclesiastics and people; now they are the various cults, some of the clergy, some of the people, and many of the physicians. There is nothing new in this idea, as it has existed from time immemorial; then why is it receiving so much attention? Is it not true that when no new thought comes to the front, old knowledge is raked over to see if there is not some idea in it which has not received sufficient attention? This factor is one which has not received sufficient emphasis — at least, so think the various cults, *et al.* — and as this method has biblical support it has become contagious. John Hunter said, "Everything new carries a greater weight and makes a deeper impression on a weak mind." It may be interesting here to note that all down through the ages, and especially in recent times, some of the greatest advocates of small and great problems, to establish their selfish sophistry and cunning, have wittingly misinterpreted that good Book which was designed to uplift and teach us a higher standard of living.

The powerful effect of the presence of the cheerful and optimistic family physician, speaking words of encouragement to his patient, has long been recognized not only by the doctor but by the by-standers as well, and, in numerous instances, at one interview in the doctor's office an issue of blood has been stanched. The palsied have walked, the deaf been made to hear, the dumb to speak, and the blind to see, but these, to the uninitiated, apparently miraculous cures, all save the first, took place among hysterics, hence the psychic treatment has reached its most conspicuous prominence and success in this effection. But in neurasthenia, hypochondria, melancholia and many other psychoses, as well as organic diseases to which there is almost always a neurasthenic element added, it has of late received renewed attention, and has in some hands been carried to unwarranted length, like electrotherapy, hydrotherapy or the appendix and ovariotomy craze. till now every case that is not clearly an organic heart, lung, stomach or kidney disease is at once declared to be psychasthenic and amenable to psychic treatment. The only reason for such an error is indolence, too great haste, or inability to make a correct diagnosis. When you reflect how difficult it often is to differentiate a general paralysis, a disseminated sclerosis or an exophthalmic goiter from a neurasthenia; a stomach neurosis from a carcinoma of that organ; a functional from an organic headache, etc., you can readily see how much easier it is to make snap diagnoses, and thereby save ourselves days, and perhaps weeks, of hard study to discover the latent disease.

The writer will endeavor in this paper to set forth his views upon the value of the psychic factor in the treatment of the so-called functional nervous diseases, where it is supposed, by some, to be our sovereign and only remedy. As it is generally conceded to be our most reliable method of treating hysteria, I shall not further allude to this disease, but devote my time chiefly to neurasthenia, briefly alluding to its congeners, hypochondria and melancholia. Every physician has to do with neurasthenia, as it complicates, to some extent, probably all organic affections in adults, and is often met with as an idiopathic functional disease, inherited or acquired. I am sure that we make the diagnosis of the idiopathic form much less often now than ten years ago, as long experience and study have improved our methods of diagnosing this affection. Sometimes long study of the case is necessary before the organic affection as the source of the diseased function is discovered. I will briefly cite the histories of a few cases seen during the past ten years. These are fairly typical of those which frequent the office of a doctor who has to do with chronic diseases, as well as the office of the general practitioner. The principal method of treatment used was psychotherapy, though in some instances other therapeutic methods were also used. Full details of these cases are for brevity omitted here, but later a routine outline of treatment follows.

Case A. Female. Age thirty-six. Single. Music-teacher. Father had melancholia. Mother had tuberculosis and died when patient was very young. The child grew up in the care of her father, later was brought under the care of a hypochondriacal stepmother. After her father died she was obliged to support herself teaching music, which she found very taxing; she was compelled frequently to work far into the night, and very soon thereby found she was not sleeping well; then began to worry about her insomnia, till she got so she could not sleep at all. She then lost courage and began to cry much of the time. Her appetite waned, and the bowels became constipated. She was annoyed with palpitation, and her memory failed. After consulting several physicians, she was sent to a nervine asylum and treated for a number of months, then to the various cults, until she was thoroughly instructed in the worst of all methods used for the cure of such cases, viz., auto-suggestion. When she came to me she was continually repeating to herself, and audibly, "I am going to sleep to-night, I am going to sleep to-night," keeping her obsession constantly before her mind. There was motor inhibition — she would take two hours to dress herself if allowed. She was analyzing her sensations and accusing herself for her deplorable state. Physical examination showed no evidence of organic disease. This was clearly a case of beginning melancholia. The treatment consisted in taking her away from all relatives, securing for her a good boarding place with a large, sunny room and a good nurse. Then the writer made out a program of mental and physical exercises for her which kept her busy all the time, with occasional resting periods. Her days were spent with music, art, French and swimming lessons, long walks, matinées, reading the standard periodicals. She was required to tell what she read from day to day. No one was allowed to discuss her health with her. She was given better subjects for thought, and for a few nights a mild soporific, then a placebo for awhile, finally nothing. After four months she was cured. The treatment was essentially re-education; the substitution of good ideas for bad, total change of environment, good air, sunlight, and, most important of all, occupation, but the greatest care was used to make her work pleasant, and to have a period of seriousness followed by one of fun. One year has passed without recurrence.

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* The Annual Address before the Rhode Island Medical Society, June 13, 1905.

Case B. Civil engineer. Age twenty-six. Patient first came to me when he was in college, with all the classical stigmata of neurasthenia inherited from and further nurtured by a hysterical mother. He was very thin and underfed from fear of eating. By a slow process of re-education he has gotten free of his symptoms after *seven years* of persistent mental training; but now, when he has an acute attack of indigestion, the gastro-intestinal symptoms last longer on account of his heritage. He is now filling a very prominent position in a neighboring state, and I referred him to an eminent doctor in New York if needed at any time. I was quite surprised, six months ago, to receive a letter from that physician, saying that my patient had called upon him and he had found tuberculosis in the left apex, and had advised his coming on to see me, which he did several days later, when his râles had disappeared and he was quite well again. Attention is called to this case for three reasons:

(1) It was one of the most obstinate of my cases which yielded perfectly to psychic treatment.

(2) The long time required for training.

(3) To call attention to the fact that the best diagnosticians may mistake functional nervous diseases for organic.

Case C. Clergyman. Age thirty-one. Patient's father, mother and two brothers were neurasthenic. A third brother was successfully treated by me for melancholia. Patient had a nervous shock at fourteen, which affected his eyes. The eye muscles were cut several times. At twenty-one, had nervous prostration, melancholia with suicidal tendency. Has suffered since with neuralgia of various parts of the body, but quite often beginning in the pit of the stomach. Ten years ago the pain was accompanied with chills, fever, vomiting and jaundice. He now has fatigueability, anorexia, indigestion, post-cervical ache, numbness and formication of the limbs. His nerve reactions are much quicker than normal, and he is very introspective. His gall-bladder region is exceedingly sensitive. This case illustrates the not uncommon occurrence of an organic disease in a neurasthenic patient. This patient bought an abandoned farm, worked on it for six months and regained his health.

Case D. Male. Age nineteen. Has always had headaches. Seven years ago was properly refracted, and the headaches became less frequent, till now they recur once a month, and are of the migrainous type. Is easily excited, and has emotional fatigue. Two years and a half ago fell from a hammock and got a diarrhea which has persisted at intervals ever since, four or five movements daily. Any excitement, like getting ready for a party, or to go to the theater, was enough to produce it. There was no mucous or blood in the stools, no tenesmus or griping. Had lost confidence in his bowels and rectal sphincter, and must always plan to relieve the former before any public undertaking. His father is nervous and has this form of diarrhea. Now the fact that this boy early heard his father complain so much of this particular symptom, coupled with his fall, was quite enough to determine the same symptom in himself. Drug treatment, directed by a very competent physician for two years, had failed. This patient was trained to control his sphincter and to regulate his daily movement after breakfast by the clock, and the force of correct habit soon asserted itself. He was under treatment about two months, and one year later reported himself well.

Case E. Male. An artist. Age twenty-seven. Family history negative. Patient well till three years ago. Has since suffered with dyspepsia. His meals are simple, but he bolts his food. Has constipation or diarrhea most of the time. Has had at times a good deal of gas in the stomach and bowels. The past six months has been blue. Worries a good deal; is tired all the time, and occasionally sweats on emotion. Has been told to rest, and tried it without benefit. He has lost confidence in himself to do good work, and recently gave up an order to paint a portrait because he feared he would fail if he attempted it. Two psychic treatments sufficed for the cure.

Occasionally it has been found necessary to isolate patients, but rarely to give them long periods of rest according to the plan established by our highly-respected pioneer, Dr. S. Weir Mitchell. An exact knowledge of the patient's life, including his environment, habits and mental resources, will alone determine the question of isolation. The question of absolute rest depends for its solution more upon his previous occupation and his temperament. If his life has been particularly strenuous in a mental or physical sense, he should have a short period at least of absolute rest in bed, with a milk diet which taxes the digestion least, and favors sleep, which is the greatest restorative. Most neurasthenics and practically all hypochondriacs and melancholiacs do best when frequently diverted, and kept busily occupied in varied but pleasing and interesting as well as serious pursuits.

For the purpose of study, the writer has taken at random a hundred neurasthenic cases from his card histories, and divided them into two great classes: (1) Those born with an inherited predisposition — children of tubercular, alcoholic, syphilitic and nervous parents especially — are predisposed to the affection, as the digestion of such patients is readily impaired, and their delicate nervous protoplasm suffers still more from faulty metabolism. Such patients are very susceptible to indigestion, mental or physical shock, fright and emotional disturbances, and from their number furnish us with our best types of traumatic neurasthenia. A large number of our nervous dyspeptics belong to this class, and by carefully watching their numerous bodily sensations the latter soon become pathological, and the habit of auto-suggestion is established and erelong such patients may become hypochondriacal.

(2) Those whose heritage is good, but who acquired the affection by bad environment, improper training in youth at home and in school; persons who worry for fear of not making both ends meet; and those who have habit spasm.

Of the 100 cases analyzed, 43 were clearly hereditary, 57 acquired. Forty-eight co-existed with faulty metabolism. It was interesting to note that low metabolism was the stigma in the majority of the hereditary cases, and in some of the acquired class, so that it is often difficult to assign some patients to either class, while in some of the acquired cases a severe disease of the gastro-intestinal tract in childhood could be elicited, which, of course, gave rise to the faulty metabolism. The frequency of tuberculosis in their parents clearly shows the necessity of stamping out this far-reaching scourge as a means of prophylaxis in diseases of the nervous system, as well as for other numerous well-known reasons.

Of the 48 metabolism cases, 30 were of gastro-intestinal origin; 7 followed severe illness; 9 were traumatic; 6 were brought on by shock or mental strain or worry; 2 followed the use of alcohol; 1 followed continual absorption of toxine from decayed teeth; 1 co-existed with floating kidney; 2 were due to the use of a stomach tube.

No cases in this series were found due to overwork, excessive use of drugs, eyestrain, nasal obstruction, middle ear disease, or disturbed or deficient sleep, unless we except Case A, in which insomnia was the ultimate cause of the slump.

The method adopted by the writer in the treatment of cases is essentially the same as that set forth by Professor Oppenheim in the "Psychotherapeutische Briefe" published last year, with this exception, that I do not carry this out by correspondence, as I have found office instruction served the purpose, and to save your time and patience I will briefly describe the treatment of a neurasthenic case of the common type, which comes to our office daily, which will show sufficiently the method involved in the psychic treatment of the functional diseases which are supposed to be amenable to cure by this method. The most conspicuous symptoms complained of by such a patient are fatigue, palpitation, constipation, diarrhea, insomnia, headache, loss of memory, worry, phobias, irritability. It is necessary to detain you now with only the most prominent of these. The patient is told that such symptoms are experienced at times by all human beings; the only difference between his sufferings and that of the rest of mankind is that his symptoms have become accentuated by giving them more attention, until they now last longer, and are more intense, and to eradicate them entirely it is necessary that he should understand their origin and nature, then he can readily see how they are to be avoided and eliminated. He cannot be too often reminded of the wisdom of the saying, "As a man thinketh in his heart, so is he." Reeducation is our watchword. It is explained to him that the more nervous a man is, the more readily he reacts to irritations from within and without. Let us first study fatigue, as it is one of the most common symptoms.

Fatigue is a state wherein, owing to overactivity of an organ, the nutrition suffers and halts. Under the Edinger law, an old pathological principle has recently been revived, to wit, increased function leads first to increased growth, but when carried to excess, particularly if spasmodic and irregular, it terminates in atrophy and degeneraton of the structures concerned, and is followed, *pari passu*, with an overgrowth of the surrounding structures.

Wells says, "Fatigue seems to be due to an intoxication with products of the excessive metabolic activity, and part of the symptoms, at least, seem to be due to acid intoxication. Among the metabolic products of muscular activity are known to be creatin, creatinin, sarcolactic acid and carbon dioxide. When the activity of a muscle is violent or prolonged, the sarcolactic acid and CO_2 accumulate, being formed faster than they can be removed." Halleck says fatigue shrinks the nucleus of a cell 50%. It required a long time for us to learn that we could not rest our brains by going into a stiff game of golf, tennis or polo; but physicians to-day who think and observe, know that the same brain innervates the muscles as the special senses and intellectual faculties. They also know that the sympathetic nervous system participates in the same hardships as the cerebro-spinal system. Indeed, upon the intregity of the former depends the kind and amount of work of the latter. Note the lessened activity of the arterio-sclerotic, and his ready fatigue.

Now, the fatigue of the neurotic may be physical, mental or emotional. The first two rarely occur, and the former is so generally harmless, and, indeed, so beneficial in early life, it may here be ignored. Charcot said a child under fifteen, when fatigued, stops working, while an adult forces his brain to continue. Again, an adult has grave responsibilities, which often weigh so heavily in consciousness that he cannot suppress them with other thoughts, and the emotional fatigue becomes superimposed. Of course, when mental fatigue is accompanied with worry, only harm can result. Every observer will agree with DuBois that emotional fatigue is psychical when due to worry, unpleasurable sensations, anger, passion or fear. Here unquestionably the fatigue is due to several factors, among which is the perverse function of the vaso-motor system regulating the blood supply to the nerve centers; but by far the most important factor is the habit of auto-suggestion. These patients are tired from habit before they start out to do anything. This, of course, is purely psychical, and their mental representations must be clearly explained to them, as due, perhaps, in the first instance, to fear, anger, worry, etc., but later to an auto-suggestion. This establishes the habit. The writer finds the fatigue habit, like most other habits, dates back to childhood, when everything is learned by repetition. Ribot says, fatigue in every shape is fatal to memory. The impressions received under such conditions are not fixed, and the reproduction of them is very laborious and often impossible. When the normal conditions are restored, memory comes back.

The habit of auto-suggestion must be broken. New thoughts must be suggested. An altruistic philosophy will appeal to some, while stoicism may be accepted by others. At all events, such patients require a good deal of suggestion, persuasion and encouragement. Professor James says the human individual lives usually far within his limits. He possesses powers which he fails to use. He energizes below his maximum, and behaves below his optimum. His life is contracted like the field of vision of an hysterical subject. The existence of reservoirs of energy that habitually are not tapped is most familiar to us in the phenomenon of "second wind." Ordinarily we stop when we reach the first effective layer of fatigue. We have walked or worked enough to desist, but if an unusual necessity forces us on, the fatigue gets worse up to a certain critical point, when gradually, or suddenly, it passes off, and we are fresher than before. We have tapped a level of new energy. This may go on indefinitely. Professor James quotes the Yoga exercises for increasing our will. The power that we do not use up completely can be brought, more and more, into use by faith. Faith is like the manometer of the will, registering its pressure.

Palpitation is next explained to our patient. He is told how it may arise. Numerous causes are cited, like over-eating, fermentation, shock, emotion, fright, strong tea or coffee, smoking, intestinal parasites, ovarian irritation, etc. Then the specific cause of *his* palpitation is sought after and found. The method of its intensification and prolongation is analyzed by showing him how the attack first arrested his attention and fixed his observation, so that he became introspective and repeatedly began to listen for the pulsation, increasing it thereby, and prolonging its duration, as he developed the acuteness of his hearing. His attention is called to the fact that when he changes his position so that he cannot hear it or his attention is diverted, he is no longer conscious of the palpitation, and to enforce this he is told that when the writer examined him with his attention concentrated upon his heart, it beat very forcibly and rapidly, but later, when his mind was fixed upon some other subject, the pulsation became normal. He is next shown how he may invoke palpitation by running up stairs, or going through some hard stunts in the office, and yet, as soon as he rests, or is diverted for a few minutes, he is unconscious of the beating. On the other hand, if he persists in studying it, he becomes more sensitive till he can, by force of will, set up palpitation, and can even become conscious of the pulsations of the arteries of the body. By carrying this idea a little farther, slight irregularities of the pulse are readily explained. He is shown how these pulsations, after a time, may become painful, on the ground that any disagreeable sensation long continued is painful. The cause of the first attack of indigestion is then sought, and most often found due to constipation, over-eating or bloating, which is readily explained as arising from faulty habits. The frequency of the repetition of the faulty habit prolongs the duration of each attack until it becomes quite permanent. Now, a healthy man should not, under ordinary circumstances, be conscious of the processes of his own circulation, digestion, peristalsis, etc., but by introspection this *is* possible, and gives rise to painful sensations. Rarely does the writer rely upon psychic treatment alone to relieve palpitation, because there are many other curative agents which give immediate relief, while the former requires long training. Among these agents is an ice-bag over the pericardium, which acts by virtue of its temperature, weight and suggestion. A pelotti, a kind of truss, suggested by Dr. Crofton, acts well also, emphasizing more the pressure and suggestion. Reflex stimulation of the vagus by deep breathing, or by smelling salts, often gives quick relief. The bromides are our best drugs, and the reader prefers the ammonium salt, as it does not depress, except in such cases as require depression. It is quite easy to see how a person lacking in nerve force may eat some indigestible food and suffer slight sensations of discomfort, which cause, at first, watchfulness, which soon leads to fear and worry to aggravate his distress, till he has really inhibitory impulses from his brain, causing motor insufficiency; and if maintained for a long time may cause secretory disturbances. Now the writer does not believe this is frequently the case, but does happen occasionally, even in the neurasthenic, and much oftener in the hysteric and melancholic. Whenever stasis occurs, of course fermentation takes place, which further intensifies the painful sensations, and, worse than all else, intensifies the fear and worriment. As *fear* and *worry* are really materially involved in all the other symptoms discussed in this paper, the writer is reluctantly compelled, for brevity's sake, to give them only casual notice. The best way of overcoming simple functional constipation and diarrhea is education of the patient.

Insomnia arises from a great variety of causes; among the most important of which are headache, reflexes from the heart or abdomen, or vaso-motor insufficiencies, which lead to cerebral flushing. These sudden irritations of the cerebrospinal centers quite suffice to cause restlessness enough to prevent the patient from falling asleep, or make him sleep so lightly that a little extra irritation from within or without awakens him often. Here, too, we see the force of habit in the most eclatant form. Active business men as well as society people, especially those of emotional temperament, carry the thoughts of the day to bed with them, and go on thinking about them well into the night. This habit must be stopped by happily diverting their evening thoughts into other channels which are full of fun and pleasure. Games, theaters, places of amusement, long promenades in company with cheerful and bright companions, singing or reading aloud usually serve this purpose best. In other cases, a warm bath or light calisthenics, in which the patient can use his brain as well as muscles, may be necessary. To this end, deep breathing exercises, which create a little muscular fatigue while fixing the attention, act well.

Another large class suffers from insomnia because of extremely sensitive peripheral reflexes from the skin as well as internal organs. These reflexes must be sought, found and corrected. Hydrotherapy is our best remedy with this class. The diet should be carefully regulated. Bromide, in frequent doses through the day, may be necessary to break up the habit.

The treatment of headache depends also upon its etiology. Often it is secondary to insomnia, gastro-intestinal reflexes or palpitations, and when the patient is relieved of such causes his headache disappears. Quite often, however, in the writer's cases, was toxemia the cause of the headache, especially that occurring early in the morning and disappearing after breakfast. The common sources of this toxemia are sometimes a pyorrhea alveolaris, a fermentation and putrefaction of the gastro-intestinal contents, coprostasis, insufficiency of the liver and kidneys, latent suppurative foci, perverse metabolism, gallstones, bladder diseases, etc. Not infrequently it is difficult to discover the toxic origin of the headache, and repeated examinations must be made, and the most careful eliminative inductive study instituted before an accurate diagnosis can be reached.

The subjects of auto-toxemia and faulty metabolism are of such pre-eminent importance in this study I am sure you will readily go with me into the most recent authoritative literature pertaining to this subject. Auto-intoxication, or intestinal infectious toxemia, is studied by watching the changes which the carbohydrate food and the proteid undergo in their passage through the intestine. The fermentation of the carbohydrates occurs in the lower ilium and colon; the putrefaction of the proteid takes place in the large intestine. Putrefaction, except in pathological conditions, never occurs above the ilio-cecal valve. In the cecum and ascending colon, putrefaction and fermentation are active together, hence bacteria are found most abundant in the cecum. Strasburg states that one-third of the weight of normal solid feces may consist of bacteria, and this proportion is greatly increased in diarrheas and lessened in constipation. Herter found that administration of indol to healthy men causes frontal headache, irritability, insomnia, and confusion; and a long continuance of the absorption of indol causes a strong reaction for indican in the urine and is sufficient to cause neurasthenic symptoms. A. E. Wright says, regarding the bacteriology of the intestinal canal, the bacillus coli and the streptococci allied to the pneumococci are the chief bacteria found in the colon in health and these are enormously increased in morbid conditions of the colon, and may spread to the small intestine, stomach and gall bladder. It is probable that the bacterium coli is the cause of the toxemia in neurasthenia. The products of fermentation — gases, fatty acids and lactic acid — are mostly absorbed by the intestinal wall. The gases are excreted again in the expired air. The fatty acids are either oxidized and expired, or eliminated unchanged in the urine. The fermentative products not absorbed go off as flatus. Putrefaction of protein produces ammonia, sulphuretted hydrogen and other gases, CO_2 and H and a number of bodies — aromatic oxyacids, phenol, skatol, indol, etc. These are absorbed by the intestinal wall, the gases are expired. The other substances are excreted in the urine as compounds of sulpho-glycuronic acid, or go off in the feces. Ortweiler and Müller have shown that the amount of indican in the urine varies with the length of time the feces remain in the colon; with the activity of the peristalsis; and, most of all, with the site of the putrefaction. If protein putrefaction extends up into the small intestine, the urine indican is much increased. Müller says in Kongress für innerer Medicin that many infectious diarrheas owe their origin to poisons taken in, already formed in the food; such poisons occur in meat, milk and cheese. Other cases may be due to the excretion, through the intestinal mucosa, of poisons formed in diseased tissue elsewhere, sepsis, pneumonia, uremia, etc. Such cases come under the head of infectious toxemia. Nothnagel took the same view while the French, English and American schools use the term auto-intoxication for this condition. You are all familiar with the usual symptoms of this toxemia — obstinate constipation, headache, giddiness, neuralgia, ill-humor, and so on. Gastric vertigo and tetany are explained by the French as auto-toxic, while F. Müller and other German scientists regard them due to a nervous reflex. The latter trace epilepsy, eclampsia and visceral psychoses to acetonemia, Albee and others to auto-intoxication. With either conception of the etiology of these toxemias, no one would for a moment expect to accomplish much in their treatment with psychotherapy. Improvement is only brought about by using every means at our disposal: (1) Elimination by all the emunctories of the body, but especially by the bowels and kidneys. (2) Hydrotherapy. (3) By adapting the food to the competency of the digestive organs. (4) Climatology — with special reference to sunlight, winds, etc. (5) Mental and physical exercises; in short, everything which will induce a better metabolism must be resorted to. Von Noorden says: " Mental action excites greater bodily activity by raising the potential energy of the nervous system." The nervous energy acts by setting free the muscular system. Psychical influence plays quite an important part in raising the potential energy of the nervous system, and in this manner arouses activity. Light and sunshine give rise to *muscular activity*, improve bodily metabolism, strengthen the action of the heart and lungs and favor the circulation of the tissue fluids; hence, light and sunshine must be regarded as very potent therapeutic remedies. In the same manner, Wolpert showed that cool winds act favorably by increasing bodily movements. These are, however, indirect methods of influencing favorably metabolism. Speck " found no alteration in gaseous exchange nor in heat formation when intense mental work was engaged in for a short period, and Atwater arrived at the same results after longer periods of three days." The standard taken for comparison was the metabolism of an individual in complete relaxation. Oppenheim found the same true for the metabolism of protein, and the latter, with Speck, affirms the same with regard to the excretion of nitrogen and urea during active mental work. Such scientific results should at least do away with formerly entertained notions concerning brain work.

To sum up, then, the requirements of the physician to practise psychotherapy successfully are:

(1) A strong personality.

"The mind casts a shadow just like the body."

"The mind of the doctor, in itself and in its manifestations, in conduct, manner, face, dress, ways, must, *ipso facto*, affect his patient for good or ill," says Schofield.

But we should remember, when striving to develop a strong and attractive personality, that the human side is by far the most important, or the saying of the witty Frenchman will apply to us, "He was born a man; he died a doctor."

(2) Thorough knowledge of the patient. The doctor must know his patient thoroughly, as Dr. Collins suggests, and, above all, should he know his mental habits and be able to put himself in his patient's moods, that he may make proper and helpful suggestions; otherwise he may antagonize his patient, or excite worse fears than he already has. We cannot regale a patient suffering with exophthalmic goiter by reciting Shakespeare, or relieve a melancholic clergyman by praying with him.

(3) Considerable knowledge of psychology is, then, necessary. Suggestions should always be made by the doctor, instead of the nurse, attendant or masseuse, who have had no training in this subject. And just here I would insist on exercising the greatest care in the selection of such attendants, as I am sorry to say the most of them have not yet learned that "silence is golden." The physician should have free hand in the selection of his consultants in these cases, as many of our best consultants on other affections, for want of knowledge of neurology, lack of interest in or patience with the functional neurotics, are not only incompetent, but do positive harm by incorrect diagnoses and bad suggestions. No better proof of this is needed than the obsessions of our daily patients, which have been fixed by former reputable physicians, under whose care they have at some time been. On the other hand, a good consultant will enlighten us, give us new zeal, and inspire our patient with a helpful faith. We are all, when in perfect health, or suffering from organic or functional disease, very amenable to suggestion.

The writer quite agrees with Dercum that "direct suggestion is most useful in hysteria, less valuable in neurasthenia, and least of all in hypochondria." Indirect suggestion is that generally employed in neurasthenia, but no general rule can be laid down which will apply to all cases. It should be remembered, however, that suggestive therapeutics is a synonym for psychotherapeutics, and it is the most powerful curative agent we possess in the class of cases alluded to, but it is a two-edged sword, hence upon your skill and tact in its use will depend your success. The assurance with which the physician says the patient will improve increases his faith. Unless your patient has faith in you, he should be encouraged, in a humane spirit, to put himself under another physician's care, since no doctor can successfully treat *all* his nervous patients.

(4) Broad, scientific medical training.

In the light of the foregoing, I am sure you will agree with me that in no other specialty is such a broad, scientific medical training necessary. As in every other method of treatment, a correct diagnosis must first be made, otherwise we may lose valuable time, and, perhaps, life, by treating a pernicious anemia, a latent tuberculosis, an interstitial nephritis, psychotherapeutically. A scientific, practical physician will use *every other therapeutic method at his disposal*, as well as psychotherapy. He will employ dietetics, hydrotherapy, electrotherapy, pharmacotherapy, isolation, rest, exercise, sunlight, pure air, winds, proper food and clothing, knowing that several remedial agents will often bring relief or cure more quickly than one alone.

Prophylaxis must always be kept in mind, as such a large percentage of neurotics trace the origin of their affection to their childhood. Parents should be educated along physiological and psychological lines. They should be taught to look after the environment and school life of their children as nearly all fixed habits are formed in early life by the repetition of simple acts; hence we see our purest examples of spasmodic tic in children who have learned them through mimicry. Dietetic and mental hygiene in youth will do much toward preventing mental slumps later in life. Barker has found that patients past middle life do not yield to psychotherapy so well as those between twenty and forty; first, because they are so opinionated; second, most people past forty already have organic disease. My experience confirms this view as applied to the functional neuroses, and I would like to add that the chief value of the psychic factor is in the care of organic diseases, as the functional affections are fast disappearing under the light of better diagnoses. I would emphasize, however, my belief that in *recent years* the eminent rôle played by psychotherapy is *wholly unjustifiable and misleading.*

The great mistake being made at the present time is in trying to incorporate the science of medicine with theology. The two sciences are just as distinct as law and medicine. The fundamental principles of right and wrong may be identical, but the deductive processes by which the sciences are built up are so different that the students of one know essentially nothing of the other. We of the medical profession, to-day, need the Bible to teach us morals, to make us humane, but not to teach us law or medicine. No man without a conscience founded on the highest sense of moral ethics is wanted in the medical profession. Let honesty prevail, then, from principle rather than policy. Let thorough earnest laboratory research, coupled with careful clinical study, not only of disease, but of humanity, continue in the future, as in the past, to actuate our profession. Then our brilliant record of progress in the last half century will pale before the still greater achievements of the century upon which we have but just entered.

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Original Articles.

THE BLOOD PRESSURE AS A GUIDE IN THE TREATMENT OF HEMOPTYSIS.*

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In the treatment of no symptom or complication of disease does that old aphorism of Hippocrates, "Experience is fallacious and judgment difficult," seem so true as in that of hemoptysis. Consider the differing opinions and experience of so many and keen observers from almost time immemorial to the present day; and still the treatment continues to be largely empirical. More particularly does this Hippocratic maxim seem true with regard to the use of ergot. Were such experienced clinicians and careful observers as Wilson Fox, West, Ransom, Cornet, and many others entirely deceived in their opinion and experience as to the value of ergot, or, as I am inclined to believe, did they not meet with apparent success sufficient to warrant their conclusions? Still, we must admit, as Fowler observes, that "in the great majority of cases of hemoptysis with a limited area of disease, the bleeding ceases spontaneously, provided the patient keeps absolutely quiet and observes the ordinary rules which prudence suggests," and, therefore, he continues, "it is obvious that under such circumstances any remedy which is given sufficiently often may obtain an undeserved reputation." And this may be as true of the nitrites, now a popular remedy, through the writings of Hare and others, as of ergot.

Hemoptysis is a symptom dependent upon many and varying conditions, conditions difficult, if not impossible, to determine in every case. We have the underlying cause, the local process, its activity, degree of softening, and the state of the blood vessels in the diseased area; we have the individual diathesis; we have the various exciting causes, the activity of the circulation or blood pressure, the state of the nervous system, exercise, metabolic activity, mental excitement, causes dependent upon the sexual system, cough, and, doubtless, many others. It is, therefore, obviously, extremely difficult to judge of the effect of any remedy or to administer it with precision, and, indeed, one despairs of ever arriving at any great accuracy in the treatment of this symptom and congratulates himself that, in so many cases, it ceases without treatment.

In what I have to say in these notes regarding hemoptysis, I do not include those cases of overwhelming and fatal hemorrhages, obviously due to the rupture of an aneurysm in a pulmonary vein, for no treatment in such catastrophes is of avail. I refer rather to the less severe cases occurring generally in the earlier stages of the disease and particularly to those which are recurrent or persistent.

Of late years, since the sphygmomanometer has come into use, the blood pressure as a causative factor in hemoptysis has been receiving renewed attention, although the older writers were not unmindful of this factor, as witness Flint, who says: "There is a marked difference in different cases with regard to the activity of the circulation, or, to speak more definitely, of the heart as represented by the character of the pulse." And Wilson Fox, who says, in referring to the use of ergotine: "It is a remedy which should be used in severe and intractable cases attended by a *soft* and *rapid* pulse," or, as we should say now, a low blood pressure.

Lawrason Brown read last year a very suggestive paper before the National Association for Study and Prevention of Tuberculosis upon the treatment of hemoptysis by the nitrites, based on observations of blood pressure; and Hare, of Australia, in various papers speaks enthusiastically of his success and that of others with nitrite of amyl in hemoptysis, based on the well-known action of this drug in producing a marked and rapid fall of blood pressure.

Hare † evidently assumes that every case of hemoptysis results from a comparative increased blood pressure and reports sixty cases from his own practice and that of others in which nitrite of amyl was used, and in which, with one partial exception, "the bleeding ceased or became reduced to a mere staining of the sputa immediately — that is, within a minute or so."

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* Read at the meeting of the American Climatological Association, Washington, May 7, 1907.

† The British Journal of Tuberculosis, Vol. 1, No. 1, p. 55.

Inspired by these reports, as well as actuated by the desire to see if we could obtain further light upon the value or worthlessness of ergot in hemoptysis we began, about a year ago, to take the blood pressure in cases of hemoptysis occurring at the sanatorium, and, so far as we were able, guide our treatment by the indication thus given.

A Janeway sphygmomanometer, with the wide cuff, was employed and the nurses instructed in its use.

As hemoptysis is such an alarming symptom and so often occurs without warning, our first effort was to stop the hemorrhage, and our blood pressure observations had, necessarily, to be more or less of a secondary matter. Furthermore the majority of cases occurred in the night or early morning, when the physician was not on hand to make or verify the observations or direct the treatment, so that the nurse at the inception of the hemorrhage followed the routine treatment, consisting of cracked ice, a small or large dose of morphia and atropine hypodermically, according to the urgency of the case, and the inhalation of nitrate of amyl, if it seemed to be indicated. Occasionally, only cracked ice was given as a placebo.

I have, however, eighteen cases, mostly recurrent, to report, in which the blood tension was taken at or as soon as possible after the hemorrhage began. In most of them, besides the immediate routine treatment above mentioned, if that did not suffice, either the nitrites or ergot were employed, depending upon the blood pressure; if this was comparatively high, the former was given, and if low the latter, whose physiological action, as we know, is an increase of blood pressure in the aortic system by a contraction of the arterioles through stimulation of the vasomotor nerves (Babcock, Kobert) and also, as Jacobi (quoted by Cushny) has shown, by direct action on the muscular wall of the vessels.

Hence, if ergot is of value, it would seem to be obviously so in a condition of lowered blood pressure when the hemorrhage might be considered to be more of a passive than an active one; and Babcock ("Diseases of the Lungs"), though he decries the use of this drug, very logically says: "If hemoptysis were in every instance due to relaxation and transudation, ergot might do good." Our reasoning was that if the blood pressure will enable us to determine these exceptional cases in which the hemoptysis is due to relaxation, why may not ergot be a rational indication in continued and recurrent hemorrhage — for the action of ergot is too slow to produce immediate results — and may not the success attributed to its use have occurred in just such cases? In a number of cases, whatever the blood pressure, if the indicated drug (by the blood pressure) appeared to exercise no beneficial influence upon the hemorrhage, we tried that contra-indicated by the blood pressure and apparently sometimes with success.

In order to obtain what might be considered a standard of blood pressure among tuberculous individuals, it was taken in 320 cases in the sanatorium, and the average was found to be 124 mm., Hg. Of the men it was 128 and of the women 115. Of 42 male patients the average blood pressure was 126, the highest 140, and the lowest 100. Of 43 female patients the average was 120, the highest 132, and the lowest 98. We, therefore, considered 126 mm. as the average blood pressure in tuberculous persons.

It must be remembered that the ordinary method we have of measuring the arterial blood pressure is not of precise accuracy, and apparently slight influences, such as mental excitement, physical exertion, the process of digestion, etc., cause it to vary considerably within certain limits. In the cases herewith given, for example, this variation is seen to be quite extensive. It is well to take the pressure several times at intervals in order to obtain a fair approximation of the real tension.

In the eighteen cases of hemoptysis, with the blood pressure herewith given, it is seen that the majority of them are below our average blood tension — some of them markedly so. The highest was 145 and the lowest 74; the average was from 109 to 119.

In nearly all the cases, when any treatment was considered necessary, the routine one, before mentioned, was at first employed, namely, ice, morphia combined with atropine, or heroin, with or without nitrite of amyl, depending upon the rapidity and amount of the hemorrhage. On the recurrence or persistence of the bleeding, either ergot or the nitrites, in the form of nitrite of sodium or nitroglycerin, were then tried, depending upon the blood pressure. If one of these two drugs did not appear to produce results, given according to the indication of the blood pressure, the other was exhibited whatever the blood tension might be. Both in certain cases seemed apparently effective, and both in others ineffective.

The detailed histories and charts of individual cases illustrate the varying treatment based upon the blood pressure, and the apparent results of the same. They also show how extremely difficult it is to estimate the effect of any one drug given for a complex symptom caused by so many and varying conditions, and they would also seem to indicate that the blood pressure, though of value as a guide, is by no means an infallible one; a conclusion which we should expect, for the tension is only one of the factors in this complex symptom.

These observations are, I am aware, imperfect and conflicting; they show nothing clearly. I trust, however, that they may throw some light upon the subject and indicate a little more definitely the path of treatment. I would suggest that the blood pressure should be taken of every sanatorium patient, since it can so readily be done in an institution as a part of the routine. We would then have this observation already at hand, as a guide, whenever a hemorrhage did

Cases of Hemoptysis at the Massachusetts State Sanatorium.

	TIME OF OCCURRENCE.	AMOUNT.	BLOOD PRESSURE.	TREATMENT.	RESULTS.
A	3 A.M.	ʒiii later. ʒii or ʒiii.	110mm. Hg.	No treatment at first. Calcium lactate subsequently.	First hemorrhage ceased. Small hemorrhage later and streaked sputum.
B	Night.	ʒii first day. ʒiii second day.	116 at first; later period 102 to 122.	No treatment.	Two small hemorrhages only on two successive days.
C	2.15 A.M.	℥iiiss.	104 at 10 A.M.; 112 at 6.15 P.M. on the next day.	Heroin and cracked ice.	Apparently ceased.
D	About 4 P. M. and in night.	℥i twice, two successive days and clots.	100 to 120.	Morphia or heroin during hemorrhage; ergot later.	Clots continued about twelve days; *no increase* of blood pressure under ergot.
E	Not given.	℥ss to ℥v on two successive days.	112 to 154.	Nitrites, calcium chloride, codeia.	Apparently ceased on second day.
F	Early morning and during day.	From Nov. 25 to Dec. 11, ℥xliii.	94.	Morphia, atropine, nitrites, ergot for several days.	Ergot appeared to stop the hemorrhage.
G	9 A.M. 8.45 P.M.	℥iii ℥i.	126 following day; in 6 days later, 88.	Morphia, atropine, heroin, ice, mag. sulph.	Apparently ceased.
H	Not recorded.	ʒii to ʒiii. On two successive days streaks.	112 to 120.	Not recorded.	Not recorded.
I	Early A.M. and P.M.	ʒx to ℥viii on various days.	85 to 98.	Heroin, morphia, atropine, nitrites, ergot.	Ceased, then recurred. Advanced case; died from sepsis.
J	1.30 A.M.	℥ss to ʒiii. Recurrent.	74 to 98	Ergot, ice.	Raised blood almost daily for nineteen days.
K	A.M. and P.M.	ʒi to ℥iv. Recurrent.	110 to 120.	Morphia, atropine, nitrite of amyl.	Apparently ceased. Slight spitting subsequently.
L	4 A.M. 3 P.M.	℥iii. ℥iv.	130. 130.	Morphia, atropine, Epsom salts; later, nitrites, ergot.	At once. At once. Thereafter many recurring hemorrhages.
M	Night and P.M.	℥ss to ℥iiss. Recurrent.	120 to 130.	Heroin, Epsom salts.	Ceased; in a few moments followed by clots.
N	9.20 P.M.	℥ss.	119.	Heroin.	Ceased at once, followed by clots.
O	P.M.	ʒi to ℥ss for several days.	130	Nothing at first. Ergot later.	At once. Recurred. At once.
P	Early A.M. P. M.	℥ii to ℥xv over many days.	120 to 135 before nitrites; 115 after.	Morphia, atropine, ice, nitrites, calcium chloride, aconite, salts.	Ceased after nitrites and aconite.
Q	A. M. P. M.	ʒss to ʒiv. Recurrent and persistent streaks.	113 to 145.	Morphia, nitrites; finally ergot continued.	Gradually ceased after ergot.
R	Willis. Early A.M. P. M.	℥ss to ʒiii. Recurrent streaks.	90 to 125.	Morphia, atropine, ergot.	Apparently ceased after ergot until blood pressure fell again.

18 cases.

occur. In one of our cases this was done for several days before the occurrence of the hemoptysis, and it was found that a fall in the blood tension preceded the hemorrhage. Ergot was used in this case continuously for several days — as the hemoptysis was recurrent — and with apparently good effect.

I have referred to our experience, which is similar to that of others, that in the majority of cases the hemoptysis occurs at night, or in the early morning hours. In eleven out of sixteen of the reported cases it will be seen that this happened. This fact throws some light upon the cause of the hemorrhage and at the same time gives us a hint as to treatment. It would appear to indicate that the blood pressure and sudden variations in pressure were a causative factor. Lawrason Brown thinks that Howell's theory of sleep offers an explanation of this; this theory being, in brief, that sleep is due to the fatigue of the vaso-constrictor center, and, in consequence, there is a dilatation of the peripheral vessels, when, in the early morning hours, the vaso-constrictor center is regaining its lost tone, variations in blood pressure result. To prevent this variation and equalize the blood pressure, Brown gives morphia and sodium nitrite between midnight and 2 A. M. It will be noticed that calcium lactate or the cloride was employed in several cases, on the coagulation theory. The cases are too few, however, to draw any definite conclusions, but my feeling is that this treatment is of small value.

Epsom salts are frequently used in our service and with apparent benefit, probably, as Babcock says, on account of the favorable effect of a laxative upon the "pulmonary circulation through stimulation of the splanchnic nerves, which are known to regulate blood pressure throughout the body."

Aconite has also been employed, but I need further experience to judge of its value.

In conclusion, from the experience in these reported cases and from our general experience, I would suggest a plan of treatment of hemoptysis somewhat as follows — provided, of course, that any active treatment seems indicated: First, a knowledge of the blood pressure of the patient from previous observations. On the occurrence of the hemorrhage, ice, morphia and atropine subcutaneously, and, depending upon the amount and rapidity of the hemorrhage, the inhalation of nitrite of amyl. A laxative dose of sulphate of magnesia, and, if the bleeding persists, or is recurrent, nitrite of sodium or nitroglycerin if blood pressure is high for the individual, or, if low, ergotin subcutaneously.

I am quite well aware that when I suggest the use of ergot I am uttering heretical doctrine, but in our experience it has apparently proved itself of value in at least a few cases when other remedies have failed.

I have to express my obligations to my resident physicians at the sanatorium, Drs. Dunham and Crane, who have conducted the detail of these observations and to whose experience and suggestions I am greatly indebted.

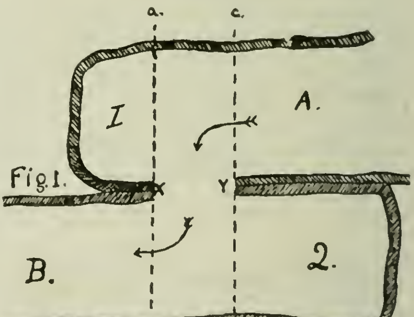
A SOLUBLE BOBBIN FOR INTESTINAL ANASTOMOSIS.

BY JOHN H. CUNNINGHAM, JR., M.D.,
Surgeon to the Long Island Hospital, Boston, Mass.,
AND
HAROLD W. BAKER, M.D.,
House officer at St. Mary's Hospital, Rochester, Minn.

Although intestinal anastomosis has been practised more or less since the fourteenth century, it has only been used with anything like satisfactory results for the last forty years. The introduction of aseptic surgery rather than any new method or device has brought it to its present state of perfection.

All intestinal anastomoses up to the fifteenth century were done with the aid of some mechanical device, *e. g.*, dry goose trachea, cylinders of cardboard, cylinders of fish glue and wood. Employing these devices, the cut edges of the intestines were approximated over the cylinders and sutured with a continuous unsterilized raw gut suture. These operations were not attended with much success, not only on account of the mechanical devices employed, but also on account of the resulting sepsis, although a few cases are recorded in which the patient survived.[1]

We find the surgeons of the eighteenth century speaking of all wounds of the small intestine as fatal, but saying that all wounds of the large intestine should be sutured. Until the middle of the nineteenth century very few satisfactory results were obtained. The feeling in regard to intestinal anastomosis at this time is very well expressed by Weinn's article in 1818, in which he says that "the process of intestinal suturing is a very dangerous undertaking and the mortality following this procedure is much greater than where the process of repair is left to nature's resources."



With the introduction of aspetic surgery began a new epoch of intestinal anastomosis. The subject received the attention of many surgeons from this time until the present day and many different mechanical devices have been advocated both for lateral and end-to-end anastomosis.

Until recently there has been no valuable data as to the relative efficiency of lateral and end-to-end anastomosis,— a most important point.

Lately it has been proven by the experimental work of Cannon and Murphy [18] that in lateral anastomosis we get the following results (see Fig. 1): It will be observed that the circular muscular fibers cut at x, y, paralyzes the peristaltic movement between the lines a, b, — c, d; the food, however, is carried through this dead space, a, x, y, c, by the force of the stream behind. The food stream coming down the approximal portion of the intestine A is forced against the blind end I, and is not pushed through the opening x, y, until the pressure in part A is enough to overcome the obstruction between points x, y. After this blind end of gut has become filled the force behind pushes the food through the opening x, y, into intestine B. The food having gone through the opening x, y, is forced against the opposite intestinal wall b, d. As all the circular fibers are cut in the area x, y, there is another dead space at x, b, d, y. There are no peristaltic movements in this area to carry the food on, and when the food stream behind cannot force it, we get a stasis of food at this area. By feeding animals with food containing bismuth and studying their peristaltic movements by means of the Roentgen rays, Cannon and Murphy have proved that a stasis resulted in this area, and in a few cases in which indigestible food stuffs, *e. g.*, hay and hair are fed, an absolute obstruction occurred.

They found out further that another disadvantage of lateral anastomosis is that frequently in their experiments the peristaltic movement of the distal end 2 of intestine B, produced invagination of the blind end 2, closing the opening x, y, and thus resulting in complete obstruction. (See Fig. 2.)

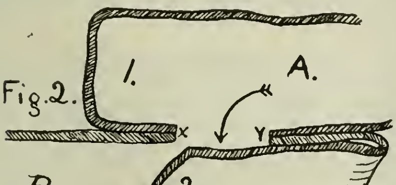


Fig. 2.

In comparing the lateral method with the end-to-end method it can readily be seen that practically none of the circular fibers are cut and that the uninterrupted peristaltic wave forces the food by the line of incision x, y, into the distal portion of intestine B. (See Fig. 3.)

Thus in comparing these two procedures, we find that in the lateral method, stasis, subsequent dilatation and obstruction may result, while none of these factors arise in the employment of the end-to-end method. It is evident, therefore, that wherever it is possible the end-to-end method should be employed.

The technique of performing the end-to-end anastomosis is the next important question. Shall we simply suture the cut ends of intestine together, or[3] shall we use a mechanical device to aid in the performance of this procedure? There is such a diversity of opinion in this matter that no definite statement can be made. The essentials in an end-to-end anastomosis are to complete the anastomosis quickly and to place the sutures accurately in order to prevent leakage and obviate a constriction at the site of the anastomosis. Operators familiar with intestinal work may perform an end-to-end anastomosis as quickly and as accurately without as with a mechanical device, but it is fair to say that an operator doing an anastomosis for the first time can perform the operation quicker and more accurately with than without a mechanical device. It is very much the same problem as to whether one can darn a stocking quicker and better with or without a bobbin to sew over.

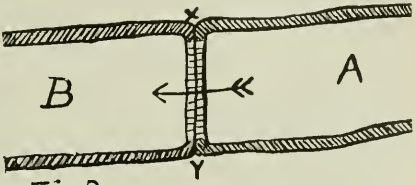


Fig. 3.

Without condemning anastomosis by simple nature, the rapidity and technique of placing the sutures is greatly facilitated when done over a bobbin of some other mechanical device. With a mechanical device we have the serous surfaces held in a position in which they are sutured. The device further serves as a conduit, thus minimizing any chance for leakage, as well as keeping the intestial lumen patent. There is a class of instruments the sole purpose of which is to prevent the escape of intestinal contents during the anastomosis.

These are applied to the intestines a short distance above the point of the incision and are not of actual service in performing the approximation. As it is the object of this paper to deal with only the latter class, they will not be considered here.

Mechanical devices of service in performing the anastomosis are best considered in three classes as follows:

I. Devices Which Aid in Placing the Sutures but Which are not Left in the Intestine.

Mudd's, Grant's, Lee's, O'Hara's,[7] Lepace's and Cabut's forceps. Wackerhagen's tube, Halsted's,[14] Praver's and Dorone's bulbs.

2. Unabsorbable Mechanical Devices.

Murphy's,[3] Graberini's, Juvara's and Jarborle's metallic buttons. Hayes's, Boari's,[9] and Ball's ivory buttons. Harrington's[4] and Granpazzi's segmented rings. Brochaw's and Caput's rubber rings. Collier's rubber tube. Clark's rubber bulb. Cazzini-Duplay's metal cylinder and Allingham's ivory tube.

3. Absorbable Mechanical Devices.

Neuber's,[10] Bonnier's, Robson's[8] and Littlewood's decalcified bobbins. Ball's, Hayes's and Collier's decalcified bone buttons. Senn's[2] decalcified bone plates. Bailey's and Allingham's decalcified bone tubes. Jones's decalcified bone cones. Gill's decalcified ivory button. Abbe's catgut rings. Alexander's and Andrier's potato cylinders. Wackerhagen's[1] wafer cylinder. Metcalf's[12] sugar cylinder. Holenhausen's bread cylinder, and Bell's tallow cylinder. Cunningham's maccaroni bobbin.

Of the first class (*devices which aid in placing the sutures, but which are not left in the intestine*) the most prominent are the forceps invented by O'Hara, and Halsted's inflatable rubber bulb. All forms of forceps present certain technical difficulties in their application. Further, they aid simply in placing the sutures and furnish no support to the sutured area. Coffey claims that in three-quarters of his experiments with O'Hara's forceps there resulted complete obstruction of the gut, which was produced by injury to the bowel in the application of the blades and therefore considers them unsafe.

Besides these forceps there are numerous rubber bulbs, tubes and ballons, which may be objected to on the ground that having been introduced into the intestine sepsis may result by contaminating the surrounding area during their removal.

Of the second class (*unabsorbable mechanical devices*) Murphy's button, a most ingenious device as well as a most delicate piece of mechanism, stands out first and foremost and may be taken as the type. This button has been used most extensively and has yielded good results. The main objection to it, as well as to the other devices of this class, is that there is a heavy foreign body left in the intestinal canal, which may remain *in situ* and cause obstruction either by its lumen, which is small, becoming plugged, or by its weight, causing a sag or kink of the intestines. Another disadvantage of this button is the fact that its liberation depends upon the sloughing of the intestinal walls, which are clasped within the opposing edges, and that this sloughing may not stop at a point inside of the adherent surfaces, but may extend beyond and a perforation result. Numerous cases are on record in which the button has been found subsequently in the abdominal cavity. Moreover, the raw unhealed surfaces left within the bowel may become adherent or by contraction partially occlude the lumen.

Of the third class (*absorbable mechanical devices*) Neuber, in 1884, was the first to use one of these devices for intestinal anastomosis. He devised a bobbin of decalcified bone, which was inserted into the lumen of the intestine, the severed ends being drawn over the bobbin and a purse-string suture passed around each end to be approximated. While Neuber was the first to introduce the absorbable device, Mayo Robson's decalcified bone bobbin is the best known member of this class.

These absorbable devices have all the advantages of the unabsorbable ones and by their absorption can produce no after complications, disappearing, as they do, by the natural processes of digestion.

An ideal mechanical device to be used in end-to-end anastomosis is one which will insure the normal passage onward of the intestinal contents, one which can be easily inserted which will facilitate the rapid and accurate placing of the sutures, keep the lumen patent, hold the serous surfaces in position until they have become firmly adherent and then be digested or dissolved and pass off in the intestinal stream without producing any intestinal injury or after complications.

The idea of employing a maccaroni bobbin occurred to one of the writers (Cunningham) several years ago. Maccaroni recommends itself, because it is easily digested in the intestine, is cheap, and may be made sterile in its preparation. During the past four years it was employed experimentally with success, but no detailed observations recorded. A few months ago the writers, aided by Dr. W. E. Ladd, undertook a series of experiments to determine how long the bobbin remained undigested in the intestine, with the following results:

The maccaroni used was a large size commercial maccaroni, cut into cylinders 3 inches long by ¾ of an inch in diameter and bobbins of special design. (See Fig. 4.) These were sterilized by dry heat. The experiments were performed upon cats, dogs and sheep. The observation in the latter class of animals, being more accurate, are given in detail as follows:

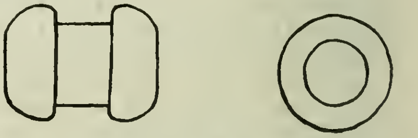


Fig. 4

Experiment 1. A sheep was anesthetized and intestine exposed through a median abdominal incision. The jejunum was incised to the mesentery and the maccaroni bobbin inserted. The ends of the inserted intestine were brought over the bobbin and sutured by interrupted Pagenstecher sutures, which were reinforced by continuous suture. Three such operations were done at different places in the small intestine. Three hours after operation the animal was standing and five hours after was feeding on hay.

Thirty-six hours after operation, aminal (in good condition and feeding) was killed and all three of the intestinal wounds were found to be healed, or at least to be firmly adherent. There was no leakage or sepsis. The maccaroni cylinders were completely disintegrated and no traces of them could be found in the intestinal tract.

Experiment 2. Operation same as Experiment 1. Three end-to-end intestinal anastomoses were performed over bobbins of sterile maccaroni, placed in different parts of the intestine. The edges were approximated as before.

Twenty-four hours after operation animal (in good condition and feeding) was killed. Intestinal wounds firmly adherent. No leakage or sepsis. The maccaroni bobbins had disappeared from the original site, but small pieces soft and partially digested were found in the intestinal tract beyond the points of suture.

Experiment 3. Operation. Two end-to-end anastomoses with maccaroni bobbin. Edges being sutured with only one continuous suture through all the layers of the intestine. Gastro-enterostomy was also performed with maccaroni as a mechanical device.

Twelve hours after operation animal (in good condition and feeding) was killed. The bobbin used in the gastro-enterostomy was found to have slipped into the stomach and was considerably softened although in no way disintegrated. The wound was clean but not as firmly adherent or in as good condition as the intestinal wounds. The bobbins in the intestine were found to be in position, considerably softened but not disintegrated. The serous surfaces were adherent and no leakage or sepsis was present.

These experiments tend to show that in the maccaroni bobbin we have a device which, besides facilitating intestinal suturing and holding the sutured ends in position until firmly adherent, serves as a conduit for the intestinal contents and at a period of time not under twelve hours or later than thirty-six hours, is digested and absorbed.

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Clinical Department.

VICARIOUS MENSTRUATION WITH A REPORT OF TWO CASES.

BY RALPH C. LARRABEE, M.D., BOSTON.

Vicarious menstruation is such a rare condition that some have denied its existence. A study of the literature certainly leads to the conclusion that many of the reported cases are spurious. Still there are many others that hardly admit of a doubt, cases, for example, where vicarious bleeding has occurred regularly for years, but has always ceased during pregnancy. The condition has occurred at all ages from the first menstrual period to the menopause. Some patients show pelvic abnormalities obstructing the flow, while in others the pelvic conditions have been normal. There is great variability in the site of hemorrhage, some bleeding from the nose, some from the lungs, stomach, rectum, eyes, ears, gums, bladder, nipples or umbilicus. In some the bleeding has been confined to a nevus, a scar, a fistula or a leg ulcer. Usually the hemorrhage occurs from but one site, but a few cases have occurred in which at regular intervals corresponding to the menses there has developed a tendency to bleed in various if not in all situations. Such a case is the following:

Case I. Mrs. E. F., aged thirty-six, applied for treatment at the Medical Out-Patient Department of the Boston City Hospital on Dec. 1, 1903. There was nothing of importance in the family history, particularly no hemophilia. She had two children, a boy and a girl, neither of them bleeders. The patient was born in England and came to America in 1898. Apart from an indefinite history of an attack of "inflammation of the bowels" she had always been well. She used liquor freely, frequently to the point of intoxication. The menstrual history was, up to the onset of her final trouble, normal.

In the summer of 1902 she began to suffer from menstrual irregularity and in December of the same year normal, uterine menstruation ceased wholly only to be replaced by the phenomena for which she sought relief. At more or less regular intervals, averaging somewhat less than four weeks, a dark colored rash would appear on the legs and more sparsely over the rest of the body. At the same time she would have nose-bleed and "blood-blisters" would appear on the lips, gums and tongue. Each attack lasted but a few days. Each attack left her paler and weaker than before, and in the intervals she did not regain her previous health. She complained also of headache, dyspnea, puffiness of the face and swelling of the feet. The bowels moved daily and the appetite was good. Her diet was ample in amount and mixed in character, including an abundance of fresh fruit. When first seen she was recovering from a severe attack.

Physical examination showed a well-developed and well-nourished woman in good general condition, but very pale. The area of cardiac dullness was slightly increased and there was a systolic murmur at the apex transmitted a short distance towards the axilla. The lungs, abdomen and abdominal viscera were normal. There was a fading hemorrhagic eruption, most marked on the legs, a large ecchymosis on the back of one hand and several small, hemorrhagic vesicles on the tongue and lips. The urine was normal.

The blood was as follows:

Hemoglobin, 45%; red corpuscles, 1,520,000; white corpuscles, 5,400.

A differential count of white corpuscles showed nothing abnormal. The most marked features of the smear were the achromia and the small number of platelets. No nucleated reds were seen. The coagulation-time was not studied, but the bleeding from minute punctures was unusually free and clotting appeared to be much retarded.

She was given iron, arsenic and calcium chloride and instructed to take in her food as much gelatin as possible. She steadily improved and at the end of a week there remained no evidence of the hemorrhages, except for the rapidly diminishing anemia.

The patient had prophesied her next attack for December 20, and as this date approached she was observed with both interest and skepticism. On the 21st she presented herself at the clinic in a condition that removed all doubts. There was a purpuric eruption on the legs and fore-arms, with a few spots on the trunk. There was slight bleeding from the mucous membranes of the nose and mouth. On the whole the severity of the attack was much less than before. She was not seen again until March 7 when she returned to the hospital in the midst of a very severe attack. She stated that in the interval she had had two others.

A second blood examination was made on March 11, with the following results:

Hemoglobin, 45%; red corpuscles, 2,912,000; white corpuscles; 15,100.

A differential count of white corpuscles showed nothing abnormal. There were no nucleated reds. There was marked achromia and marked variation in the size of the reds, the average being noticeably small. There was moderate poikilocytosis and slight polychromatophilia.

The woman was advised to enter the wards for the purpose of further study and treatment, but refused. She soon after became a patient of the Suffolk Dispensary. I am indebted to Dr. Clark of that institution for the information that the hemorrhagic attacks continued to occur at intervals approximating the menstrual periods. Each month she appeared to lose more than she regained and she finally died in an attack on Dec. 3, 1904.

To summarize: We have a woman who menstruated normally up to the age of thirty-five, when, without previous history of hemorrhages, menstruation ceased and she began to have regular, periodic attacks resembling hemorrhagic purpura. Severe, and finally fatal, anemia resulted.

There is nothing in this history to suggest hemophilia. There was no general, permanent tendency to bleed, no suggestion of the disease in the ancestors or children. Cuts and wounds healed as in normal individuals. Moreover, the age of onset is greater than in hemophilia, which rarely begins later than twenty-two.[1] Another condition which predisposes to hemorrhages in various parts of the body is cirrhosis of the liver and in this case the alcoholic habits of the patient strongly suggest its presence. The suspicion, however, could not be verified, and at best such a diagnosis would leave unexplained the close relationship between the hemorrhages and the menstrual periods. The physiology of normal menstruation is as yet but poorly understood, and one is certainly not justified in saying that in the case herein reported the periodical hemorrhages accomplished a function that would otherwise have been brought about by the normal uterine flow. In making the diagnosis of vicarious menstruation one merely registers the fact that the attacks resembled in their periodical occurrence the normal menses, which ceased when the attacks began, and that they were therefore somehow connected with that function. That they were truly vicarious in a physiological sense cannot be affirmed.

A review of the literature of the last twenty-five years shows very few cases like this one. Heitzmann,[2] in 1884, collected a number of cases of menstrual exanthemata, some of which were purpuric. In certain of these cases there was atrophy, under-developement or other marked anomaly of the uterus causing obstruction, and in one or two of these local treatment resulted in recovery. Rouvier[8] quotes Puech to the effect that out of 200 cases of vicarious menstruation 8 were from multiple sites, while out of the 334 collected by Rouvier 4 were from all parts of the body. In 1888 Butler[3] reported a case of a woman of alcoholic habits in whom the menses ceased for nine months. A general, hemorrhagic, vesicular eruption, together with bleeding from the nose and throat, occurred during this time, but it is not clearly stated that the attack recurred regularly at each catamenial period. She recovered.

I have found but four cases where, in place of the normal uterine flow, there occurred periodically a condition resembling the severe type of hemorrhagic purpura.

1. Barnes[4] described a case of Clark's. A woman of eighteen who had never menstruated began to have attacks every month of bleeding from the gums and nose and occasionally from the stomach, together with a purpuric eruption. She finally died of severe anemia in an attack. An autopsy showed, in addition to extensive hemorrhages in the internal organs, a rudimentary uterus and normal ovaries. In one of the latter was a recent, false corpus luteum.

2. Andrade (quoted by Barnes[5]) described a case in which hemorrhages from the stomach, nose, gums and skin replaced the normal menstrual flow. "Menstruation returned."

3. La Forte (quoted by Heitzmann[2]) reported the case of a woman of twenty-six who had had, since the age of fifteen, menstrual molimina, without actual flowing. At regular intervals there occurred bleeding from the lungs, nose and skin. The vagina was congenitally absent. A successful operation for the formation of a new vagina completely relieved the symptoms, normal menstruation being re-established.

4. Quite recently Schechner[6] has reported a case almost exactly like mine. A woman of forty-seven suddenly ceased to menstruate, the normal flow being replaced by subcutaneous hemorrhages and nose-bleeds of great and increasing severity. She finally died in an attack.

Fatal cases of vicarious menstruation are rare. In addition to the cases already referred to there are, in the older literature, a few dubious instances. In some of the cases reported as fatal, death was only in an indirect way due to vicarious menstruation. Kober,[7] for example, reported a woman with incipient tuberculosis in whom the normal uterine flow was replaced by regular, vicarious hemorrhages from the lungs. Each attack was followed by an acute process in the lungs. The patient finally died, but death was not a direct result of hemorrhage. In 12% of Rouvier's cases the vicarious bleeding was from a cancer of the stomach or a tuberculous focus in the lung. Two others died directly of hemorrhage, making a total mortality of 14%.

The following case represents a much different type:

Case II. Miss S. J. C., age twenty-nine, a nurse. For the opportunity of reporting this case I am indebted to Dr. J. N. Coolidge, to whose service at St. Luke's Home she was referred by Dr. S. M. Gordon, of Fall River.

The patient knows of no bleeders in her family. Two brothers and two sisters are living and are not bleeders. She knows nothing about her mother's father, to whom one would naturally look for a history of hemophilia. She has no maternal uncles. Her mother died with paralysis of both legs; she may have been syphilitic. No ancestors on her father's side were bleeders.

As long as the patient can remember she has been subject to severe nose-bleeds. She says that cuts and wounds bleed more with her than they do with others, and, as a child, she was always obliged to lie down when she cut her finger and hold it up. Blows always leave large ecchymoses. She once had a severe hemorrhage after the extraction of a tooth and was once in danger of her life as the result of bleeding from a wound on the leg. The resulting scar, however, indicates a wound of sufficient magnitude to be serious in a normal person. Seven years ago an abscess was opened without undue loss of blood.

Menstruation began at the age of twelve. The first period lasted two weeks and she lost a dangerous amount of blood. She continued to menstruate irregularly about every two weeks. Each time the uterine flow was preceded by nose-bleed for several days and was generally accompanied by bleeding from the gums. For the past four years there has been also a purpuric eruption. She never noticed blood in the urine, feces or sputum. She once vomited some black material that she thought was blood. The uterine flow was commonly severe, from six to twelve napkins being used. Sometimes the loss of blood was so severe as to incapacitate her for several weeks. These attacks occurred about once a year, always in cold weather.

She was first seen by the writer on Feb. 2, 1906, during a menstrual period which had commenced with a nose-bleed. Examination showed an apparently healthy young woman in good general condition and not pale. The only evidence of abnormal bleeding was a few small petechiæ on the fore-arms. The thoracic and abdominal viscera and the reflexes were normal.

An examination of the blood showed a normal percentage of hemoglobin and normal numbers of white and red corpuscles. Stained smears showed no abnormalities either in the differential count of leucocytes or in the morphology of the red corpuscles. The coagulation-time by the Brodie-Russell method was twenty-one minutes. The normal time by this method, according to Pratt, is four or five minutes.[9]

A guaiac test for blood in the feces, after abstinence from food containing hemoglobin for three days, was faintly positive.

Under treatment she improved rapidly, but the loss of blood at the menses continued to be excessive and the intervals short and irregular so that she was flowing more or less all the time. A day or so before each exacerbation of the uterine flow she always had nose-bleed and fresh crops of petechiæ. She was seen in April by Dr. Edward Reynolds, who found both ovaries diseased and recommended operation. Ovariotomy was performed by Dr. Wadsworth. The left ovary was triple the normal size and was cystic; it was removed without the tube. The right one was also enlarged and adherent with the tube to the back of the broad ligament. With some difficulty it was separated from its adhesions and removed with the distal half of the tube. There was considerable oozing from the bed of this ovary and from the two small punctures in the uterus made with the French hooks. The hemorrhage was not in any way alarming. Convalescence was perfectly uneventful.

For the first two or three months after the operation at the times when the menses were expected, she had slight nose-bleeds and hemorrhages from the gums, with a few spots on the skin. Then without any periodicity she continued to have occasional slight nose-bleeds and spots. About eight months after the operation she menstruated profusely, but had no accompanying hemorrhages from extra-genital sources. She was recently seen by the writer and appeared to be in excellent health. The coagulation time was nine and one-half minutes.

To summarize this case: A young woman, without family history of hemophilia, gives a story of a tendency to hemorrhagic conditions from early childhood. The first menstruation is accompanied by menorrhagia and thereafter each period is associated with an exacerbation of the hemorrhagic diathesis. Ovariotomy influences the periodicity but does not altogether abolish the tendency to hemorrhages.

This case is probably to be regarded as one of mild hemophilia, since the bleeding from the skin and mucous membranes at the time of the menses was merely an intensification of a permanent, though not well marked, hemorrhagic diathesis. It is a well-known and generally acknowledged fact that hemophilia is a disease of the male sex. But this rule is not an invariable one. Particularly if these mild forms are taken into account, the classical statement of Grandidier,[10] to the effect that only one bleeder in thirteen is a female, must certainly be modified in favor of the greater frequency of the disease in that sex.[11] The onset of the disease in this case in childhood is in accord with the generally observed facts in hemophilia. The fact that she was operated upon without undue loss of blood does not nullify the diagnosis, since bleeders quite frequently show the tendency to unusual hemorrhages only at certain periods. Litten [12] says that large surgical wounds are less apt to bleed dangerously than trivial ones, and even refers to a case in which Fordyce stopped a hemorrhage in a bleeder by enlarging the wound. According to Grandidier, women with slight hemophilia show little tendency to traumatic hemorrhage.

Female bleeders quite commonly suffer from profuse menstruation, but a study of the literature leads to the conclusion that there is not commonly at the monthly periods any increase in the tendency to bleed from other sites, such as was shown in my case. In some published instances, however, such exacerbations of the hemorrhagic tendency have occurred. Kehrer,[13] in 1876, mentioned three cases from the literature in which female bleeders had unusually severe manifestations of their disease at the time of the menses. Köhler [14] refers to a hemophilic woman who had severe bleeding from "all orifices," a few days before each period. Hadden [15] has reported a girl of fourteen in whom there was no family history of hemophilia. Purpuric spots had been observed at times for five years. There had been unusually severe hemorrhage from slight wounds, and two severe nose-bleeds. The first menstrual period was very severe and prolonged, and caused marked anemia. Blood punctures from the ears bled several days. There was a general purpuric rash. A subsequent menstrual period was associated with an abnormal loss of blood, but there were no petechiæ. The author considered the case one of hemophilia.

Extra-genital hemorrhages recurring at the menstrual periods fall naturally into three groups, of which the two more unusual ones are illustrated by the cases herewith reported.

In the first and commonest form the uterine flow is replaced by bleeding from some other site, but there is no general hemorrhagic tendency. Such cases usually run a favorable course, so far as the general health is concerned, the vicarious hemorrhage causing no more unfavorable symptoms than normal menstruation.

In the second form, typified by Case I, the normal flow ceases and there is a general hemorrhagic tendency, with a picture like purpura hemorrhagica. The resulting anemia may prove fatal.

The third form, typified by Case II, is probably to be regarded as closely allied to, if not identical with, hemophilia. In the few cases recorded a family history of this disease is often lacking, but there are several common and suggestive features. There is generally a history of purpura, nose-bleed or severe bleeding from trivial wounds in childhood. The first menstrual period is apt to be associated with severe menorrhagia. The cases are spoken of as vicarious menstruation merely because, along with the normal monthly flow, there may be an exacerbation or a tendency to bleed present at other times as well. Uterine menstruation is absent in some cases, but in others, as in ours, it is excessive.

Surgeons are naturally and properly loth to operate on these cases of hemorrhagic diathesis. Yet it is natural to expect that ovariotomy will give relief where the condition shows a periodicity corresponding to the menses. Bartlett[16] removed the ovaries from a woman in whom normal catamenial flow was replaced by periodic bleeding from the stomach, the operation being undertaken for other surgical indications. Two months after operation the vicarious bleeding recurred and continued at regular intervals of three or four weeks. This is the only case I have been able to find where ovariotomy was done in a case of vicarious menstruation. The case obviously belongs to the first group of the classification suggested above. In my Case I, operation seemed very promising since the hemorrhagic diathesis existed only at the menstrual periods, and yet the loss of blood was such as to cause a progressive anemia. In cases where vicarious menstruation is merely a manifestation of hemophilia, operation is to be undertaken with more timidity, and is of course not to be thought of in severe cases. It promises fairly certain relief from one source of hemorrhage, viz., uterine menstruation, and it offers a probability of relief from the periodic exacerbations of the hemophilic tendency.

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SENILE TREPIDANT ABASIA. REPORT OF CASES.

BY E. W. TAYLOR, M.D., BOSTON.

The following cases are reported to draw attention to a peculiar disturbance of gait occurring in elderly people and presumably associated in some as yet inadequately explained way with general arterio-sclerosis:

Case I. Mrs. C., eighty-three years old, was first seen Oct. 22, 1903. She gave the following history: Up to three years before she had considered herself well, except for the natural infirmities of advancing years. At that time she began to notice a disturbance in walking, particularly characterized by difficulty in starting. At times, when once started, she was able to progress fairly well, but the first movements necessary to taking a step were very much hindered, particularly when embarrassed by the presence of any one in the room. Going down a certain flight of stairs had become increasingly difficult and at the time of my first visit was impossible. The patient felt that she was growing worse.

Physical examination showed equal pupils with adequate light reaction, normal heart and no definite radial arterio-sclerosis so far as could be determined by ordinary methods of examination. The hand grasp on both sides was good; the reflexes of the arms lively, but not markedly different, with a probable slightly greater reaction on the left than on the right. The knee-jerks were both active, with a questionable Babinski sign on the left. No plantar reflex was obtained on the right. There was slightly greater difficulty in moving the left leg than the right. In general the patient appeared vigorous for one of her years and gave no indication of definite local or general disorder.

The point to which I desire to draw particular attention is her difficulty in locomotion. When standing and asked to take a step forward, it was practically impossible for her to do so by an ordinary act of the will. After much difficulty, hesitation and "muscular stammering," she was finally able to start the muscular movements necessary to walking, and still with much difficulty, taking short and uncertain steps, she was able to progress a certain distance with much show of effort. There was in this case no element of spasticity nor ataxia, nor could it in any sense be regarded as the gait of ordinary feebleness. The disturbance in locomotion, in other words, was out of all proportion to the other symptoms which she showed.

Certain exercises were prescribed which she followed out with faithfulness and with certain definite temporary improvement. When seen two weeks later she was distinctly better and was able to a certain extent to walk alone. At this time she complained of difficulty in writing very similar in character to that of walking. She was able to copy and write spontaneously correctly, but only after much effort.

She was seen again two years later, and during the interval had grown decidedly more feeble. She complained of spasmodic twitching of the legs at night sufficient to keep her awake. The reflexes were very active, still there was no ankle clonus, and the Babinski sign was altogether indefinite. As at the previous visits the left side showed slightly greater involvement than the right. The heart was arythmic and feeble; the pulse 100; the radial artery stiff. She had practically given up the attempt to walk. Except for general enfeeblement, there was still no definite sign of intracranial or spinal disorder of a gross sort.

Case II. Mr. M., referred by Dr. J. E. Goldthwait, Nov. 9, 1906. The patient was seventy-five years old, without occupation. He had not worked for four years, and had had difficulty in walking for from one and-one half to two years. He complained that he "couldn't do as he used to, couldn't handle his limbs, which were like sticks." His legs, he said, gave out, and his ankles had swollen for six months past. He had, however, no subjective disorder of sensation; was able to sleep and eat well. He was slightly deaf through thickening of the drum membrane, but was not troubled either by headache or vertigo. He had noticed some shortness of breath and a sense of pressure across the chest, but there was no cough in the morning or at any other time. He thought that his left leg was more affected than his right, and complained of stubbing his toes through difficulty in lifting his feet. There was no definite pain in his legs, but occasionally he had sharp twinges running down his legs which he called rheumatism, from which he had suffered to a greater or less extent for some years past. He complained also of frequent micturition and lack of perfect control, especially when nervous. He had also been much annoyed by a tendency to emotionalism which manifested itself by crying again and again through the examination.

Physical examination was in general as follows: Pupils were equal, with good light and accommodative response; no disorder in the distribution of the cranial nerves; the strength of the arms was normal, with slight reflexes; they showed no motor or sensory disorder; pulse was 80; the heart sounds clear, with both the aortic and pulmonic second sounds sharply defined. There was a pseudo-Romberg sign; no general loss of sensation, and a doubtful disturbance in the muscular sensibility of the right great toe. Knee-jerks were within normal limits and essentially equal. There was no Achilles, clonus or Babinski sign. The normal plantar reflex was slightly developed. The strength of the legs was good. Examination of the urine showed no significant abnormality. Here again the striking peculiarity was the difficulty in locomotion without any apparently adequate underlying cause in the central nervous system. The same difficulty in starting and in progressing as described in the preceding case was found. The disproportion between the physical signs of disorder either in the motor or sensory tracts and the disturbance in locomotion was very striking.

Case III. Mr. D., approximately seventy-two years old, was seen Nov. 30, 1906, in consultation with Dr. D. W. Cheever. The patient for the most part had led a sedentary and studious life, and for some years past had shown the inroads of time by general failing in strength. Physically he was handicapped by a marked curvature of the spine, rigidity of the spinal column and of the bordering muscles. He had presumably had two slight hemiplegic attacks in preceding years, one on each side, from which he had in general recovered.

Physical examination showed a high degree of radial sclerosis with somewhat weak heart sounds. The knee-jerks were active, but there was no Babinski phenomenon and no evidence whatever justifying the supposition of a systemic degeneration of the pyramidal tracts. Although the patient in general presented many indications of advancing years, these were wholly out of proportion to the extraordinary disturbance of gait from which he suffered and which had virtually made him a prisoner in his house. There was no paralysis of the legs, and in general the muscular strength was sufficiently good. In spite of this fact there had been increasing difficulty in locomotion, characterized by extreme difficulty in starting, a tendency to shorten the steps more and more as progress was made, and the incapacity to make a movement forward of more than a few inches. The patient is obliged often to stop, after going a few yards, tired with the great amount of muscular effort which he has been called upon to make. This disturbance of gait is absolutely analogous to that observed in the previous cases, and like them is out of proportion to the general physical disability.

A fourth case comes to mind of a hospital patient, an elderly man, who presented the same characteristic disturbance. The exact records of this case are not at hand, but the vivid remembrance of the gait disturbance unquestionably justifies placing it in the same category as the cases described. He found the same difficulty in innervating the muscles necessary to start the movements of walking. If left to himself, he likewise found the greatest difficulty in progressing, although much assisted, as, in fact, all these cases were, by encouragement, explanation and method.

The foregoing striking disturbance of gait, as seen in these cases, is undoubtedly the condition described many years ago by Charcot, as senile trepidant abasia. This disturbance has been rather overlooked in the intervening years, no doubt from the fact that it comparatively rarely occurs in the characteristic form which is unmistakable. In a paper read before the American Neurological Association in June, 1906, Collins discussed the question of "A definite clinical variety of a cerebral arterio-sclerosis,"[1] and drew a picture which he regards as pathognomonic of cerebral vascular disease, even although no external signs of arterio-sclerosis appear. With this picture those who have had much to do with elderly patients, as seen, for example, in almshouses, are familiar, though the clinical picture may not have been so clearly defined in their minds as that which Collins draws. Speaking of the disturbance of gait observed in his patients, Collins regards it as not unlike and possibly identical with the trepidant abasia of Charcot. In one place Collins describes the gait as follows: "When he (the patient) attempted to walk, the feet wide apart, shuffled along the floor a few inches at each stride, the strides sometimes fast, sometimes slow, while he made balancing movements with the hands." In this description no reference is made to the stammering character of the gait, the inability to start, and the curious ineffectual attempts to make progress. It is, however, probable that the gait to which Collins refers, represented rather a difference in degree than in kind from that which I have described in the foregoing cases and which Charcot, no doubt, had in mind when he gave to it the name "trepidant abasia." However, this may be the gait, when fully developed, is unique and unmistakable.

The best discussion of this type of disturbed locomotion which I have seen is given in a recent exhaustive paper by Karl Petrén, in which he deals with the relation between disturbance of gait in old age, produced by anatomical lesions and by functional disorders.[2] In this article, to which Collins also refers, Petrén accurately describes the gait disturbance to which I wish again to call attention. His general conclusions are that arterio-sclerosis lies at the basis of the disorder, but that it cannot be said that the disorder of gait is directly due to the changes in the blood vessels. On the other hand, hereditary influences and hysterical conditions are not to be seriously considered. The explanation of the disturbed locomotion, according to Petrén, is that the sclerosis of cerebral vessels brings about a mental state producing a subjective feeling of difficult locomotion which then has a pathogenetic effect in the production of a "Vorstellungskrankheit;" in other words, the disturbance of gait is directly produced by a feeling of incapacity superinduced by structural, vascular changes.

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[1] Collins: Jour. Nerv. and Ment. Dis., 1906, xxxiii, 750.

However fanciful such an explanation may be, the type of disturbance certainly demands something more than a mere physical reason for its existence. Examination of the patients shows no sufficient physical incapacity to account for the gait. There is no paralysis; movements in other positions may be made with comparative ease and freedom; the individual muscular movements of walking may likewise be accomplished without difficulty, but the entire act of taking steps voluntarily results in the stammering tendency to which allusion has repeatedly been made. Explanation, encouragement and instruction, on the other hand, quickly produce results, and it is not difficult to induce such patients to walk with comparative ease through the use of such simple means. It is, therefore, apparent, as Petrén maintains, that we have in this interesting disturbance to deal with a mental defect, presumably dependent upon the senile changes of cerebral vessels which have, however, not led to sufficient injury to produce marked degeneration of the motor tracts.

At this time, when the general subject of arterio-sclerosis is demanding much attention, it is worth while to call attention to this trepidant abasia of the aged as illustrative not only of the infirmities which the vascular lesions themselves produce, but also as demonstrating the probable secondary effects upon the mind, which in turn lead to a lack of confidence, finally resulting in a practical incapacity for voluntary walking movements. The interest of these cases, therefore, lies not so much in the gait disturbance itself, as in the curious chain of events which finally brings it to pass. Much may, no doubt, be done in the way of treatment by perseverance, both on the part of patient and physician, in retraining the motor functions through an appeal to the will.

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TUBERCULOSIS IN LONDON. — Notwithstanding its fogs and supposedly unhealthful climate, London has a lower mortality from tuberculosis than many other European capitals. In 1904 it was only 166 per 100,000 inhabitants, as against 257.5 in Berlin, 254 in Milan, 256 in Madrid, 314 in Vienna, 383 in Paris, and 387 in Moscow. — *Med. Record.*

Medical Progress.

PROGRESS IN THE THEORY AND PRACTICE OF MEDICINE.

BY HENRY A. CHRISTIAN, M.D., BOSTON.

BLOOD PRESSURE.

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When the determination of arterial blood pressure first came into vogue as a common clinical procedure, there was a very great interest in this subject and many papers were published about it. As is often the case with a new method, extravagant claims were made as regards its value in diagnosis and treatment. Since then somewhat of a reaction has taken place and there has been a tendency on many sides to greatly discredit the value of blood pressure determinations. However, they have a distinct value, and during the year ending July, 1907, a number of contributions, to our knowledge, of blood pressure values in various conditions have appeared. The more important of these will be reviewed here.

In considering blood pressure it is important to distinguish minimal or diastolic blood pressure and maximal or systolic. Most of the early instruments were intended to record the latter and a large amount of our accumulated knowledge of blood pressure concerns only systolic pressure, whereas at present we know that, without a knowledge of both, we are unable to form a satisfactory judgment of the condition of the cardio-vascular system. G. A. Gibson [16] has admirably discussed the various methods of estimating blood pressure. For the systolic pressure we have the instruments of v. Basch and Potain which act by local obliteration of the pulse as judged by applying the finger or some recording apparatus immediately beyond the point of application of the instrument, the Riva-Rocci instrument or some of its modifications (Cook, Martin, Stanton, Janeway) with a cuff which encircles the arm and so obliterates the pulse, the apparatus of Gärtner which obliterates the pulsation in one of the fingers, and other forms.

For determining both systolic and diastolic pressure the instrument of Erlanger is the most accurate but it is expensive and rather bulky. Diastolic pressure can be determined approximately with the Riva-Rocci group of instruments by noting the point at which the mercury oscillations are greatest (Janeway), by taking pulse tracings of the wrist and noting the level below which no further increase in the size of the pulse wave occurs (Sahli), by palpating the pulse and determining the point at which it regains its maximum beat (Strasburger). The first method is only satisfactorily applicable to a fairly large pulse, the second requires much time and care, the third is in very general use in Germany and is accurate after practice within a limit of variation of 5 to 10 mm. of mercury. As pointed out by Hirschfelder,[21] one source of error in the Strasburger method lies in the lack of uniformity of pressure exerted by the palpating finger upon the radial artery, but this error can largely be eliminated by laying the tips of the index and middle fingers on the lower end of the radius just lateral from the artery and palpating the pulse with the balls instead of with the tips of the fingers. Under these conditions variations of pressure by the fingers are exerted against the bone and not against the artery and the main source of inaccuracy disappears. Bingels has constructed an instrument for determining diastolic pressure which is a combination of a mercury manometer and sphygmograph with a recording apparatus which by means of the break and make of an electric current as the mercury rises or falls marks every 10 mm. of change in pressure. This appears cumbersome and seems to be less efficient than the Erlanger apparatus.

The question naturally arises, Is any instrument necessary to determine blood pressure; is not the palpating finger sufficient? Gibson [16] expresses himself very strongly on this point as follows: "We sometimes, even in this new country (America), hear it said by distinguished teachers that the educated finger is the best means of judging the arterial pressure; to the initiated such a statement is grotesque in the extreme. Undoubtedly the sense of touch, aided by a long experience, is of considerable value, and it is the duty of each of us to train the fingers to the best of our ability; yet the man who will gravely say that he is able to gauge the blood pressure by means of his fingers is quite as foolish as another man would be who gravely stated that he was able to take accurate temperature readings by applying his hand to the surface of the patient. During the last thirty years my efforts in training myself to assess blood pressure by the sense of touch have taught how extremely fallacious such a method must always be. . . . Those teachers who still oppose the use of our modern instruments of research in the investigation of blood pressure are on the same level as those who contemn the employment of such instruments as the ophthalmoscope."

Schilling [28] as the result of more than 1,000 observations on 350 individuals states that often the finger is deceived and that instrumental measuring of the blood pressure is necessary for any degree of accuracy. This has been the experience, I am sure, of almost all who have used some one of the instruments for the determination of the blood pressure and the discrepancy is frequently much, so that a patient judged by the finger to have a moderately high blood tension is found to have a very high tension. As an example of this there were recently at the Carney Hospital two patients in nearby beds, both nephritic cases. To the palpating finger of several observers there appeared to be no very great difference in blood pressure. Yet as determined by the Erlanger sphygmomanometer the one had a systolic pressure of 130 and diastolic of 90, the other a systolic of 220 and diastolic of 130. In each considerable edema was present and of about equal mount.

However, not all would agree with Gibson, as the following quotation from Broadbent[6] indicates. "It is by the radial pulse that we estimate clinically the pressure in the arterial side of the circulation, and it affords the educated finger information which, intelligently interpreted, goes farther and is more valuable than the instrumental registration of the blood pressure." A similar view is taken by Steven[33] who says, "But for the practical physician, in the investigation of blood pressure, the trained finger must be the ultimate appeal and it is, I hold, sufficient. It can give information of a kind and of a value in practice as a whole that no instrument, however ingenious, can supply."

To read between the lines of these expressed views of Gibson, Broadbent and Steven it would seem to me that they are talking in reality about slightly different things. Gibson and the adherents of blood pressure machines refer to the estimation of blood pressure alone, while the other group have in mind a number of qualities of the pulse determinable by the palpating finger and which give valuable information as to the condition of the cardiovascular system. No one would claim it advisable merely to register the blood pressure and not feel the pulse. The former gives a measured factor which in conjunction with other observed characteristics of the pulse is of great value. The blood pressure factor cannot be accurately quantitated except by means of instruments. To know the systolic and diastolic pressure in many cases is of great aid in diagnosis and prognosis.

As is now well known the width of cuff used with the Riva-Rocci form of apparatus is a source of variation in the results, as the narrow cuff gives high readings. Schilling[28] and a number of others have clearly demonstrated this. Schilling has further shown that the decrease in the height of a blood pressure reading decreases as the cuff is made wider until a width of 12 cm. is reached, beyond which there is practically no further change. With a cuff of that width the estimated systolic blood pressure closely approximates the actual intra-arterial systolic pressure. Another source of variation is the size of the patient's arm. Schilling has shown this by making readings on both arms of patients in whom one arm was larger than the other; the larger arm gives higher blood pressure values.

It is also important when making successive estimations on the same individual to have identical conditions each time since the ingestion of food, physical and mental exertion, and posture, influence blood pressure. There appears also to be a diurnal fluctuation. Change in posture effects especially the diastolic pressure.

Dawson[11] emphasizes the importance of qualifying the term "blood pressure" by the words systolic or diastolic, whichever is meant, and he insists on the necessity of determining both in order to understand the condition of the cardiovascular mechanism. The result of the neglect of this is illustrated experimentally in an animal by opening the abdomen, handling the viscera and allowing the peritoneal layers partially to dry. Under these conditions severe shock is produced. Yet systolic blood pressure falls but slightly. Diastolic pressure, on the other hand, rises and there is a considerable decrease in pulse pressure (the difference between systolic and diastolic pressures). The importance of knowing both systolic and diastolic pressures as determined in the brachial artery of man by means of sphygmomanometric methods is, according to Dawson, that from them we obtain the pulse pressure which, multiplied by the pulse rate, gives the systolic output per minute and is a measure of cardiac activity, since the pressures so measured in the brachial artery are equal to the lateral pressures in the aorta. This assumes that the pressure measured in the brachial artery is the end, not the lateral pressure. Bing,[4] on the other hand, maintains that the lateral pressure in the brachial is measured since, were it the end pressure and so the lateral pressure in the aorta, the pressure in the two arms would be equal, which is often not the case. Bing by a special apparatus shows that the pressure obtained depends in part on the state of contraction of the vessels of the arm and these changes do not necessarily represent changes in aortic pressure. So we are not dealing with the absolute systolic pressure according to Bing when we measure the brachial pressure by a sphygmomanometer. However, the values certainly are closely approximate and may be used as a measure of cardiac output.

H. J. Starling[32] with the Riva-Rocci instrument has studied the systolic pressure in cardiac cases. In many he finds hypertension, in none a pressure below normal. This is again evidence of the importance of the estimation of diastolic pressure, for without it we do not know the pulse pressure which is an index of the cardiac condition. According to Fellner[15] the particular value of pulse pressure determinations in cardiac cases is in connection with an estimation of the results of digitalis therapy, for a rise in pulse pressure indicates good effects from the drug, whether systolic pressure rises or falls. In aortic insufficiency, however, the variations in pulse pressure are of slight prognostic importance since many disturbing factors enter, but a high pulse pressure is of diagnostic value. In arteriosclerosis the results are very confusing, and pulse pressure determinations are of comparatively little value.

Blood pressure estimations, according to Rumpf,[26] may aid in the diagnosis of traumatic neurosis, since in such cases with tender points pressure over them leads to a rise or fall in systolic pressure along with other phenomena as acceleration of cardiac activity, decrease in size of pulse, irregularity of pulse and cyanosis of the face. These all vanish shortly after cessation of the stimulation. In neurasthenics organic cardiovascular lesions can be excluded with great probability if, after a graded amount of work, the changes in blood pressure and cardiac output remain within normal limits (Stursberg[35]). This may help in distinguishing nervous and organic cardiac disturbances. Bing[4] finds that the symptoms of hypertension, variability and liability of blood pressure and pulse rate, and abnormal activity of the trigeminus reflex (blood pressure changes following the inhalation of weak acetic acid vapor) singly or better in combination are a frequent finding and in a sense of diagnostic value in vasomotor neuroses, especially those of traumatic origin. However, this group of cases usually has other evidence of their nature such as tachycardia, dermographia, etc. In hysterical, neurasthenic and psychesthenic patients without vasomotor or cardiac symptoms all these changes are apt to lie within the high limits of the normal.

In Cheyne-Stokes's respiration Eyster,[14] by means of blood pressure studies, has been able to subdivide the patients into two groups. In one there is a rise of blood pressure during the period of respiratory activity and a fall during apnea; in the other the reverse conditions are true. In each there is a slowing of the pulse with the fall in blood pressure, so that in the first group the slow pulse comes with apnea, while in the second it comes with respiratory activity. The first group is associated with increased intracranial pressure, the second with cardiac and renal disease. These changes in blood pressure are not due solely to the changes in respiratory activity, since different curves are obtained when the Cheyne-Stokes rhythm is imitated by the normal individual.

It has been currently believed that the blood pressure is greatly increased in those working under increased atmospheric pressure. It was supposed that the superficial vessels were compressed and contracted and that there was a superficial anemia with corresponding engorgement of the large trunks of the internal viscera. This was considered to be a factor in some of the disabilities of compressed air workers. Brooks[8] has investigated the systolic and diastolic pressures with the Janeway sphygmomanometer in 75 men working under compressed air (31 lbs. above atmospheric pressure) in the New York tunnels. Pressures were measured before entering, after one to two and one-half hours' work in the compressed air and again after leaving. He obtained the following results:

	mm. of Hg.
Average systolic pressure before entrance,	116.19
,, diastolic ,, ,, ,,	91.08
,, systolic ,, in compressed air,	128.88
,, diastolic ,, ,, ,, ,,	87.68
,, systolic ,, after exit,	112.76
,, diastolic ,, ,, ,,	90.78

These changes are all within the limit of change produced by work under normal atmospheric pressure. As a corollary to these results Brooks states his belief that patients having cardiovascular disease should do as well at high altitudes as at low and that moderate renal or circulatory disease should not disbar men from working under moderate air pressure.

Systolic pressure during pregnancy and the puerperium has been studied by Vogeler.[36] During pregnancy he considers 100 to 150 mm. of Hg. normal. During labor the pressure rises, but after labor any departure from these limits is abnormal. Hypotension (below 90) is significant in estimating the importance of profuse or long-continued hemorrhage. Moderate hypertension (150–180) is not incompatible with the completion of a full-term pregnancy, but marked hypertension (over 180) is always a cause of grave anxiety lest eclampsia supervene. Vogeler believes that persistent hypertension with increasing edema and the development of cerebral symptoms is extremely dangerous and that interference with pregnancy would be the better policy.

Sheppard[30] considers blood pressure in typhoidal perforation and concludes that a rise is not so common as Crile's figures would indicate, but in conjunction with other signs is a valuable aid in diagnosis.

In Addison's disease the blood pressure is very low, 75 to 85 mm. of Hg. in a case of Short.[31] This author believes the pigmentation is also a result of the low blood pressure, for with the vascular relaxation there is an increased function of the pigment forming cells. Treatment in his case with adrenalin and digitalis gave good results for a period of some months, though the case eventually relapsed and died of the disease.

Since carbondioxide baths usually raise the blood pressure in cardiac cases as one form of their good effects, the question has been raised whether or not they are contraindicated in cases of high blood pressure. In two papers, Groedel and Groedel,[17] and Baur,[1] show that high blood pressure is no contra-indication if the baths are used with caution, since in most of these cases there is a very slight or no rise, and in many an actual fall. Bing[4] utters a note of warning against the use of blood pressure determinations in the estimation of the value of hydrotherapeutic procedures, since as shown by him the effect may be to cause changes in the peripheral vessels which influence the readings without changing the actual pressure. So minor changes in blood pressure readings may be of no significance.

Low blood pressures have usually been found in pulmonary tuberculosis. Reitter[27] has investigated the systolic pressure by means of the Gärtner tonometer in renal tuberculosis and finds that here the tension is usually below normal when there is no true nephritis or cardiac hypertrophy. Cases of renal calculus with pyelitis, on the other hand, usually show a normal or high pressure, so hypotension may be said to be suggestive at least of renal tuberculosis as against renal calculus. The cause of the lowered pressure of tuberculosis has been attributed by some to the action of tuberculin. Bauer,[2] however, fails to find any low tension produced in man or rabbits by injections of Koch's old tuberculin, except when the reaction was positive. Then there was a slight fall due rather to the reaction than to any specific blood pressure lowering substance in the tuberculin.

In chronic Bright's disease Elliott[12] finds a considerable hypertension as contrasted to cases of arterio-sclerosis with normal or slightly elevated blood pressure. In experimental uranium nitrate nephritis in rabbits there is a distinct rise of blood pressure (Brodzki[7]) showing that in some way the renal lesion is responsible for the rise. Since the systolic pressure often remains high in chronic nephritis both under conditions of improvement and deterioration in the patient's condition, it is of importance to know the pulse pressure, for a rise in that is of good prognostic omen, while a fall is of bad omen indicating an increased renal insufficiency (Fellner[15]).

Capps[9] has studied the changes in systolic blood pressure following the withdrawal of pleural and peritoneal fluid. With each there is a moderate fall of pressure followed by a gradual rise. The degree of fall depends rather on the rapidity of withdrawal than on the amount of fluid withdrawn.

The average systolic blood pressure in general paresis Walton[37] finds high as a rule. This is apt to be the result of accompanying cardiac and renal conditions. Excluding these cases, pressure is slightly below normal. The blood pressure has no diagnostic importance in general paresis.

The following quotation from Janeway[22] is a suitable introduction to any discussion of the therapy of high blood pressure. Janeway says, "The height of the blood pressure gives no indication whatever for treatment except along preventive lines. Hypertension is no more to be attacked therapeutically than is a heart murmur. Only those symptoms which point unmistakably to inadequate maintenance of the circulation or to sudden threatening danger give us the signal to interfere." The importance of this view cannot be overestimated. Janeway divides treatment into three divisions, (a) preventive, (b) adjuvant and (c) emergent. Under preventive he suggests rest, milk diet, avoidance of strains, excitement and excessive use of tobacco and alcohol. Digitalis is a valuable adjuvant and should be used at the onset of cardiac insufficiency, and the indications for its use are the same whatever the blood pressure readings. As emergent treatment, Janeway employs nitroglycerin and the nitrites, bleeding or light chloroform narcosis. In severe abdominal pain and headache associated with hypertension, morphine is often efficacious.

Oliver[25] employs somewhat similar treatment. He emphasizes a decrease in the bulk of food and a decrease in the amount of meat eaten. A reduced salt diet is often of use. A milk-vegetable diet is for this reason employed, since not only the sodium chloride used as a condiment is to be reduced but also food with a low salt content must be given. Oliver further recommends the D'Arsonval electric current and electric light baths. Medicinally he uses a morning saline in hot water combined with an intestinal antiseptic as benzolnaphthol, salol, etc., and gives thyroid extract, potassium citrate, the nitrites, iodides, hippurates or benzoates.

Steven[33] divides high pressure cases into two groups, (1) temporary and recurrent form and (2) continuous form. The latter is practically always associated with chronic renal disease and it is the renal condition that is to be treated. The former group is usually the result of errors or excess in diet or wine, constipation or nervous excitement. Treatment consists in removing the cause and a judicious use of aperients and the nitrites.

The effect of amyl nitrite inhalations on the blood pressure of man has been studied by Hewlett.[19] He finds a primary fall in systolic pressure followed quickly by a rise until the pressure passes above the original to fall again to normal in five or six minutes after the inhalation. The diastolic pressure acts similarly but to a less marked degree. With these changes there is an increased heart rate so that the result is to cause the heart to pump more blood and give a more rapid flow through the body under normal conditions. With nitroglycerin the effect on blood pressures was usually slight and inconstant.

Cook[10] points out that many patients still go to operation with the old routine of a cursory auscultation for cardiac murmurs and urine analysis for albumin and sugar, and during operation the general condition of the patient receives rather scant attention by the etherizer, who is usually an inexperienced man. Blood pressure determinations during and before operation, Cook thinks, furnish one of the best means of estimating the cardiovascular condition and determining the institution of appropriate treatment. Cases with high tension stand the added strain of operation as a rule poorly and tend to cardiac dilatation, excessive hemorrhage, vessel rupture or renal affections. If the hypertension receives appropriate preliminary treatment these dangers are minimized. For this Cook prefers sodium nitrite in ½ or 1-gr. tablets. During operation the Trendelenburg position should be avoided, care taken to prevent any asphyxia with the anesthetic, and not more gauze than is absolutely necessary should be crowded into the subdiaphragmatic region. Low tension cases as a rule stand operation well if proper precautions against shock and hemorrhage are taken, but after operation they seem to lack resistance to infection of all kinds. With them the preliminary fasting and purging should be less stringent and nourishing food should be given early. Strychnia in repeated doses of one-fortieth grain for the adult is apparently most beneficial. Blood pressure determinations after operation are of great value as aids in the diagnosis of hemorrhage, shock, infection and cardiac dilatation. In the latter the usual treatment is directed towards raising the tension, when often it is the vasodilators that are needed, not the Trendelenburg position, abdominal pressure, adrenalin, caffeine and saline transfusion.

According to Hare[19] the physician very often stimulates the tired heart when attention to the peripheral vessels is needed. When there is hypotension atropine, adrenalin and digitalis are indicated to prevent the heart from wasting its energy in pumping blood into a greatly relaxed peripheral vascular channel. On the other hand, with hypertension other treatment is indicated. Hare divides hypertension cases into three groups: (1) those in which persistently high tension is the result of spasm due to prolonged nervous stress combined with certain abuses as to habits of life, food and drink; (2) those in which tension is high because in addition to spasm there is gradually developing, or has already developed, fibroid changes in the vessels; (3) cases in which, after a prolonged period of high tension, there more or less suddenly develops persistent low tension. In (1) and (2) rest in bed, with massage and the nitrites is essential. In (3) rest in bed is needed but vascular stimulants are required. In all the iodides are valuable. If the high tension is the result of spasm, nitroglycerin will do good, otherwise not. This latter fact is frequently not borne in mind by the physician.

Venous blood pressure has been studied extensively by Sewall.[29] For measuring venous pressure he employs a small spring manometer. The arm of the observed individual is held at the level of the angle formed by the top of the fifth left cartilage and the sternum in order to remove gravity effects. A superficial vein is selected with a firm underlying tissue. The spring manometer is held freely in the hand, the pad is pressed down on the vein which is then wiped empty by a stroke of the finger and the pressure is relaxed on the manometer until the blood begins again to flow under the pad at the end of the instrument. The piston is then pressed against the side of its bed with the finger, the instrument is lifted and the pressure read off.

By this means Sewall[29] has made many observations on venous pressure. He finds that local and general exercise raise venous pressure; cold lowers and heat raises it; and there is a respiratory variation corresponding with the respiratory changes in arterial blood pressure. In cases with cardiovascular disease arterial and venous pressure may bear varying relations to each other as follows: (a) the ratio of arterial to venous pressure may be increased; (b) the ratio may be decreased; (c) the ratio remains unchanged but both are abnormally high, and (d) the ratio remains unchanged but both are abnormally low. As yet no great diagnostic importance can be attached to these changes.

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At an inquest held in an English city, according to the *Medical Record*, it was stated that there were signs of lead poisoning in the system of a man who had been a heavy drinker. The doctor explained that it was probably due to his having been an early-morning customer at public houses, as a consequence of which he would be served with the beer which had stood in lead pipes all night.

Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Twenty-first Annual Meeting.
Held at Washington, D. C., May 7 to 9, 1907.

(Continued from No. 6, p. 192.)

Wednesday, May 8, Second Day.

DRAINAGE TUBE FOR USE AFTER PERINEAL PROSTATECTOMY.

Dr. Francis R. Hagner, of Washington, D. C., presented a metallic drainage tube which he had devised for use after perineal prostatectomy. Rubber tubes often became plugged, necessitating removal. Dr. Hagner's tube was something like the Kemp rectal tube, except that it had four openings. It was made of silver, and was provided with a collar which was stitched to the wound. The tube could be removed, leaving the collar in place, simply by loosening a screw. He had also devised a metallic drainage tube, with a single current, for use after external urethrotomy.

PRESENTATION OF APPLIANCES TO FACILITATE THE MAJOR GENITO-URINARY OPERATIONS.

These, presented by Dr. F. Tilden Brown, of New York, included a portable folding board, leg rests, a modified clover's crutch, an apparatus for raising the loin during kidney operations, and cushions for the last apparatus.

PRESENTATION OF A NEW MODEL OF THE AUTHOR'S CYSTOSCOPE.

Dr. Brown presented a new model of his catheterizing cystoscope, and also a modification of the Otis observation cystoscope.

OINTMENT DEPOSITOR.

Dr. Hugh H. Young, of Baltimore, presented an instrument which he used in making applications of ointments to the posterior urethra. He had found during the past year that the ointment treatment of chronic urethritis, irritability of the prostatic urethra, etc., was very efficacious.

PUS TUBES IN THE MALE.

Dr. William T. Belfield, of Chicago, read this paper. He reviewed the anatomy of the posterior urethra, ejacular ducts, seminal vesicals and vasa deferentia. Prostatic concretions were normal features, because found in every adult male over thirty-five years of age. In later life they were increased with lime salts, and were apt to set up suppuration in the prostatic follicles. The spontaneous epididymitis so common in these patients seemed usually attributable to these concretions. The utricle had a distinct clinical importance, though ignored in all standard works. Only three references to disease of the utricle could be found in the literature. Infection and abscess were frequent. A typical gonorrheal abscess of the utricle was recently seen by himself and Dr. Schmidt, which was opened with the finger-nail, through the rectum. Abscess of the utricle should be opened through the rectum; abscess of the prostate through the perineum. The ejaculatory ducts might open into the utricle. He found four such cases in human subjects. This was natural in some of the lower animals, as the rodents. The gonococcus was rarely found in the seminal tube except during the first few months of a gonorrhea. While the gonococcus reached the posterior urethra in

75% of cases, it invaded the epididymis in only 10% of cases, or 5% of the epididymes. The colon bacillus was a rare inhabitant of the urethra, but a frequent invader of the vesicles. Pus infections of the vesicle, ampulla and epididymis were in large measure independent of the gonococcus. Dr. Belfield then described his operation of opening the vas and applying medication to the seminal tube and vesicle. He had now done the operation 97 times, in 76 cases, both vasa having been injected in 21 cases. Typical cases were reported.

Dr. Hugh H. Young, of Baltimore, thought the pathology and treatment of diseases of the ampullæ of the vasa deferentia had received entirely too little attention, and that a great many cases had been put down as chronic vesiculitis which were really chronic ampullitis, if that term might be used. He had used injections of iodoformized oil into the vas in cases of genital tuberculosis, after excising the epididymis, and had obtained good results.

Dr. Edward Martin, of Philadelphia, had never been able to tell by clinical examination whether the greatest inflammation was in the ampulla or the seminal vesicle. He had always hesitated to do the more extensive operation of opening and draining the vesicles, and thought Dr. Belfield had suggested a very good way of relieving the retention. He asked if Dr. Belfield had found any difficulty in entering the vas and keeping the opening patulous; whether he had had any cases of descending infection from the site of operation, and whether he had found cases of obliteration of the vas above his point of opening and between that and the principal site of infection, the base of the bladder. He also asked as to the ultimate disposition of the opening in the vas, whether it was sutured or not and whether obstruction tended to occur afterwards.

Dr. Francis R. Hagner, of Washington, D. C., said that in operating on a case of acute epididymitis together with an acute vesiculitis he had made one injection of argyrol into the vas with marked improvement of the vesiculitis.

Dr. Louis E. Schmidt, of Chicago, had had experience in over 20 cases, in many of which the symptoms suggested a prostatic trouble. He opened the vas, inserted a blunt needle, sewed it in place, and left it in for from one to three weeks, depending on the improvement. Injections of 10 to 20% argyrol were made daily, at first injecting 5 to 10 ccm., later 20 to 30 ccm. at a time. In three cases treated by this method, he had observed them for two or three years and there had been no return of their trouble so far.

Dr. E. E. King, of Toronto, said he had never had the courage to adopt this method of treatment for fear that he might set up a worse condition than the one he was trying to cure. He had used the opsonic treatment in several cases, with encouraging results.

Dr. Belfield said he had given the subject of stricture of the vas considerable attention. He had never used bougies, but had used silk worm gut, horse hair and brass wire. In only 3 cases had there been a distinct obstruction in the pelvic portion of the vas. Infection had extended downward into the epididymis in one case. The opening in the vas was easily controlled if the operation was done properly. He divided the vas transversely, passed his sutures, and left them loose until he was ready to restore the lumen of the vas, when the threads were simply tightened, drawing the divided ends of the vas together.

THE DIAGNOSIS OF HYPERTROPHY, CANCER AND INFLAMMATORY INDURATION OF THE PROSTATE, AND THE APPLICATION OF PERINEAL PROSTATECTOMY TO THESE CONDITIONS.

Dr. Hugh H. Young, of Baltimore, said the question of the operative treatment of carcinoma of the prostate was one of the most important in prostatic surgery. To do anything in the way of a radical cure, an early diagnosis was necessary. During the past year a great many more cases had come into his practice, and he had now carefully tabulated 75 cases. It was interesting to know that none of these patients was under fifty and only one over eighty years of age. The age limits in hypertrophy were different, a good many of those being under fifty and over eighty. The majority of cases of carcinoma were found between sixty and sixty-nine years of age. Nineteen cases had no symptoms longer than one year, 13 between one and two years, 21 between two and three years, 9 between three and four years, 6 between four and five years, 3 over five years, and in 3 cases over ten years. Forty-five cases began with frequency of urination, 28 with difficulty in urination, two with sudden complete retention and one with incontinence. Pain was a much less frequent symptom. Hematuria was the initial symptom in one case. In 72 of the 75 cases the prostate on examination was of a stony hardness. In no case was there no induration at all. In 38 cases the surface was rough or nodular, in 37 the prostate was smooth. The seminal vesicles were involved in 43 cases. During the course of the disease the symptoms differed little from those of hypertrophy. Pain and hematuria were just as frequent, or a little more so, in hypertrophy, and the urinary symptoms were very much the same. In prostatitis the symptoms were distinctly different, there being more sexual disturbance, as loss of sexual power, early ejaculation during intercourse, and often a peculiar burning pain in the deep urethra. A good many showed obstruction of urination, this symptom appearing in 34 out of a series of 358 cases. Eighteen required operation, of which 5 were cases of complete retention. Contraction of the bladder and irritability of the posterior urethra were more frequent in prostatitis. To be of benefit in carcinoma, the diagnosis should be made early. Dr. Young said he was not able to make an early diagnosis in a single case in which a diagnosis of carcinoma was made. Only one of these cases recovered, the others dying of recurrence. In prostatitis the vesicles were involved, and the surface of the prostate was usually more irregular than in carcinoma. In cases of chronic prostatitis in elderly men cystoscopy showed a slight median bar, but never the condition seen in prostatic hypertrophy. In carcinoma the seminal vesicles were involved in the later stages. Cystoscopy in carcinoma showed that the disease rarely reached the bladder directly, but as a rule traveled up behind the prostate into the region of the ampullæ and seminal vesicles. Only in two or three of the cases had the disease involved the bladder from the prostate. In carcinoma there was a marked thickening of the suburethral tissue of the prostate, it was difficult to pass an instrument, on account of stricture of the anterior part of the prostatic urethra, and there was a thickening below the trigone. A highly indurated condition of the prostate in a man over fifty ought to make one suspicious of carcinoma. If on cystoscopy one found a nodular median lobe, and possibly lateral lobes projecting into the bladder, and if on palpating the prostatic urethra with the instrument in it one found no thickening of the front portion of the prostatic urethra, it was probably not carcinoma. If there was stricture in the prostatic urethra, an induration and thickening beneath the prostatic urethra, and a stony hardness of the prostate on rectal examination, one was safe in making a diagnosis of carcinoma. On operation, if the operator was at all suspicious of carcinoma, a small piece should be removed, frozen and examined before proceeding with the operation. If it was cancerous, a complete perineal prostatectomy was done. He was of the opinion that the prospects of being able to effect a radical cure were better than in carcinoma of the breast, the prostate being more encapsulated than the breast, and the metastases later in their appearance. Radical cure was possible only by an early diagnosis, and in making an early diagnosis, every indurated prostate ought to be suspected. Dr. Young had operated on 22 cases of chronic prostatitis. They were patients distinctly unfavorable, who suffered with marked irritability of the posterior urethra and a certain amount of obstruction, generally associated with a contracture of the badder and hypertrophy of the bladder wall. Several of the cases had had complete retention of urine. Two young men under thirty had to use a catheter, one for twelve years. Five of the cases were operated on by the Bottini operation, with fairly good success, but it seemed if an operation was to be done perineal prostatectomy was much safer than the Bottini operation. It was better to do a cutting operation and remove a good deal of the prostate and leave good drainage for the rest. The cases operated on had had fine results. One of them had since become the father of a boy, and in others sexual powers had been interfered with only a few months. If the operation was carefully done, the power of sexual intercourse and ejaculation would not be interfered with. In one of the cases the incision was carried a little farther and the seminal vesicles drained.

Dr. William T. Belfield, of Chicago, said he had noted what did not seem to be present in Dr. Young's cases of carcinoma of the prostate, early and extensive metastases. The value of any method of treatment would depend on the ultimate results, and those would depend largely on the metastases. He had yet to be convinced that it was ever necessary to operate for chronic prostatitis.

Dr. L. Bolton Bangs, of New York, said primary carcinoma of the prostate was not so rare as it used to be thought to be. Notwithstanding all that Dr. Young had said, there were many cases where it was absolutely impossible to make an early diagnosis. So much depended on the refinement of touch, the temperament of the individual, the determination of relative firmness or hardness, etc. In his experience, the initial symptom was not necessarily hemorrhage.

Dr. Arthur T. Cabot, of Boston, had found nodularity more often in his cases than Dr. Young had described. He had found tightness of the prostatic urethra a characteristic symptom, and he had also met with a symptom which he had seen mentioned somewhere, and that was severe pain on withdrawing a catheter. Hemorrhage had not been an early symptom in his experience. He agreed with Dr. Young that carcinoma of the prostate remained a local disease longer than in many other locations. He had operated in two cases of chronic prostatitis, but they were very severe cases and in young men. He would try Dr. Belfield's plan.

Dr. C. L. Gibson, of New York, had used Dr. Young's technique in two cases of carcinoma of the prostate, and said he wished to contribute a word as to its efficiency. It was not so formidable an operation as it appeared from the photographs. The only difficulty was the separation from the rectum, which had to be dissected up carefully. He had never used Dr. Young's method of operating for prostatitis, but he had used Alexander's method of doing an external urethrotomy and opening and draining the lateral lobes.

Dr. Louis E. Schmidt, of Chicago, had operated in 3 cases of chronic prostatitis, in which the predominant symptom was pain. A year after the operation the pain was just as bad as before. The urinary symptoms were somewhat improved.

Dr. H. M. Christian, of Philadelphia, thought the stony hardness of the prostate a most important symptom. He agreed with Dr. Cabot as to nodularity of the prostate. He had noted sciatic pain in some of his cases. He thought the method of palpating the prostatic urethra with the cystoscope in the bladder was the most convincing and most important point. He was inclined to agree with Dr. Belfield that we had hardly reached the point where we were prepared to operate in chronic prostatitis in early adult life.

Dr. Edward Martin, of Philadelphia, said nothing had been said concerning the associated spasm of the vesical sphincter in chronic prostatitis, which could be relieved by over-dilatation. For this purpose he had had an instrument made by which the sphincter could be stretched up to 90 French. Bony metastases might occur before any symptoms of prostatic carcinoma appeared.

Dr. John van der Poel, of New York, mentioned two cases of carcinoma of the prostate he had seen recently. One of them was mistaken for sarcoma, on account of its regularity. Metastasis could not be made out in either case. Unfortunately, neither case would permit an operation. He said he would be loth to operate for chronic prostatitis. In none of his cases of prostatectomy had he been able to preserve the sexual function.

Dr. Edward L. Keyes, Jr., said he and his father had been doing a modified Bottini operation in cases of contracture of the neck of the bladder, with fairly good results. It was well worth while to consider the advantage of the instrument mentioned by Dr. Martin for stretching the neck of the bladder in those cases, and thought such a procedure was indicated when in those cases there was residual urine. He asked whether Dr. Young considered that prostatic hypertrophy did really begin to show itself clinically in young persons.

Dr. Harvey G. Mudd, of St. Louis, mentioned the case of an old man past eighty years of age, who had a large, smooth, soft prostate. On doing perineal prostatectomy when the capsule was broken through it was found that they were dealing with a large soft cancer of the prostate.

Dr. Young said in closing that he wanted it understood that he did not recommend operation as a routine treatment of chronic prostatitis. He had only operated in 4 cases of chronic prostatisis without obstruction out of about 1,000 cases.

NOTE ON PROSTATECTOMY.

Dr. Arthur T. Cabot, of Boston, said he wished to speak of the causes which he had seen for failure in prostatectomy. He had had an opportunity to observe the results from both perineal and suprapubic operations. Sometimes portions or flaps of the urethral mucous membrane were left, which later obstructed the mouth of the urethra. This was more apt to follow an operation done from above. In badly infected cases it was advisable to treat the bladder some time before attempting the operation on the prostate.

Dr. Hugh H. Young, of Baltimore, had seen cases in which a flap had obstructed the urethra after prostatectomy, and he thought in these cases it was advisable to excise the capsule along with the lobe, using a cautery to prevent hemorrhage. He had never had to remove a prostate piecemeal, and he thought this was because he made the lateral incisions very deep.

Dr. L. Bolton Bangs, of New York, could not agree with Dr. Young that it was always possible to enucleate the prostate and not remove it piece by piece. There were also cases in which it was impossible to remove the prostate through the perineum.

Dr. Francis R. Hagner, of Washington, D. C., said his experience agreed with that of Dr. Bangs as to the impossibility of enucleating certain prostates, even when the lateral incisions were made deeply.

Dr. John H. Cunningham, of Boston, had done the rapid median operation in 24 cases, in 2 of which there had been obstruction of urination afterwards, due to the fact that sounds had not been passed subsequent to the operation. It was important to keep these cases under observation and pass sounds for a time.

Dr. John van der Poel, of New York, mentioned a case where it had been impossible to enucleate the middle lobe, on account of its pedunculated condition, and in order to get it out it was necessary to remove the mucous membrane with it.

Dr. Hugh H. Young, of Baltimore, thought that where the mucous membrane was preserved it was never necessary to pass sounds after a perineal prostatectomy. He had met with only one case, in a series of 200 cases, in which there was stricture after operation, and that was in an old man who had a very fibrous median bar, and the urethra was incised in that case.

Dr. Cabot said he had two or three times removed several of these vesical outgrowths into the bladder. In one case he had removed four one after another. They were easily hooked out with the scoop used in removing stones. He always explored the vesical neck with his finger before putting in drainage after operation.

(To be continued.)

Book Reviews.

*Text-Book of Psychiatry.** A psychological study of insanity for practitioners and students. By Dr. E. Mendel, A. O. Professor in the University of Berlin. Authorized translation. Edited and enlarged by William C. Krauss, M.D., Buffalo, N. Y., President Board of Managers, Buffalo State Hospital for Insane; Medical Superintendent, Providence Retreat for Insane; etc. Philadelphia: F. A. Davis Co.

This, the first English version so far as we are aware of any of Professor Mendel's writings on insanity, is a text-book — rightly called a psychological study of insanity — for students attending clinics and young physicians who are subject to examinations. It is seldom that a book of its size — 300 pages — covers as this does such a wide range of subject and detail without sacrificing clearness and proportion to conciseness. In the process of condensation not only are all subjects that are likely to be of practical value to the student adequately treated, but a surprising amount of matter is included that is principally of interest to the experienced alienist. A helpful feature is the frequent use of example and illustration in the exposition of the subject. Another is the employment of apt terms to express in abbreviated form various manifestations or lines of morbid thought. Equally useful is the assembling of the different varieties or groups of mental disease in which a given condition may occur, — a practice often overlooked in text-books on insanity. These and other features together with the author's disease-pictures which are sufficiently descriptive for the purpose of the work should give the student a good working knowledge of the subject and a sound basis for its further study. As most students and young physicians will have to deal with the emergencies and other temporary conditions of insanity it perhaps matters little that the author restricts dementia precox to a rare variety which in point of frequency (2% to 3% of all cases of insanity observed) approaches the original hebephrenia of Hecker. The special student of psychiatry, however, will be more confused than ever in interpreting the nature of dementia precox to find such a high authority inculcating a conception of this disease which classes as separate and distinct " forms " or symptom-groups several conditions which, according to the modern doctrines of psychiatry, are regarded simply as episodes or phases in a chronic dementing process of not uncommon frequency.

The supplement contains a " guide for the examination of one mentally diseased and for the preparation of the clinical history " which is excellent. It is unique in our language for its comprehensiveness and minuteness of detail. For the Prussian procedures relating to the insane the editor has substituted the New York state laws and commitment form.

With the exception of an occasional crude or ambiguous expression the translation is a satisfactory one and the editor is to be congratulated on so promptly giving to English readers and workers so useful a book for clinical instruction from such an authoritative source.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vols. III and IV. Chicago: W. T. Keener & Co. 1907.

Volume III of this encyclopedia carries the subject matter practically through the letters E, F and G, and completes nearly one-third of the entire work. In this volume there are more than one hundred articles of less than one thousand words but of more than ten lines, discussing many subjects which might seem deserving of more extended comment, did the limits of the book allow. For example, metabolism, medical ethics, germinal pathology are included in this list. Attention is drawn to the fact that cross references, with which the volumes are liberally supplied, are of much value in making an encyclopedia practical through facilitating immediate reference. With this we are in entire agreement. The contributors to this volume, as to the earlier ones, are an assurance of the accuracy of the statements made.

Volume IV carries the work from the latter part of the letter G through H and a part of I, containing 872 subject headings. The articles are for the most part brief and well illustrate the possibility of concise statement of important facts, a quality which many books, even of this character, fail to attain. Up to this point we heartily commend the work to our readers, a recommendation which we may be assured will not be changed when the succeeding volumes appear.

Medical and Surgical Journal.

THURSDAY, AUGUST 15, 1907

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THE QUESTION OF SPONTANEOUS GENERATION.

After a long period of relative neglect, the subject of so-called spontaneous generation has again been revived through the recent publication of a book by Dr. H. Charlton Bastian, entitled, "The Evolution of Life." (E. P. Dutton & Co.) It will be remembered that some thirty years ago an active controversy went on regarding the origin of living matter in which the chief disputants were Dr. Bastian, Professor Tyndall and M. Pasteur. The controversy was aroused by a book published in 1872 by Bastian, entitled, "The Beginnings of Life," and actively prosecuted for a number of years. Now, for approximately thirty years, however, Dr. Bastian had not again taken up the cudgels in a discussion which had aroused much acrimony until the publication of the book to which we have alluded. Dr. Bastian is now emeritus professor of the principles and practice of medicine in University College, London, and consulting physician to several large hospitals. His professional life has been an active one, and it is evident that it was not through a withdrawal of his views but rather because of stress of other work that he has so long remained silent upon the subject which has always been of extreme interest to the scientific world. He now returns to the fray, reinforced in his position by the investigations of the past years, and at a time when all his adversaries, including Huxley, have passed beyond the reach of controversy.

In the exhaustive work which Bastian has now published he maintains his views, previously expressed, with unaltered firmness. He maintains that the logical point of view is to regard the production of living matter as a continuous series of evolutional results, and that the genesis of living matter is continually going on as it has been for ages past. To this process the general term of "archebiosis" is given. This point of view, Bastian urges, is substantiated by the most recent bacteriological investigation and by the study of various primitive forms of life. Huxley's famous dictum, *omne vivum ex vivo,* influenced by Pasteur's researches, Bastian asserts was not an impartial verdict, and that, as a matter of fact, Pasteur's own inductions have not stood the test of subsequent investigation. It is not possible in the space at our command to enter into the detail of argument which Bastian uses to substantiate his own and to repudiate the claims of his opponents. His general conclusion, however, is that the existence of lower organisms at this time cannot be explained as derivatives from primordial forms which originated in an incalculably remote past. Such an assumption, he holds, is contrary to the general evolutionary hypothesis. He believes, on the contrary, that the present existence of such organisms may be adequately and satisfactorily explained on the hypothesis that organic life in our own time is in the act of being continually evolved from inorganic matter.

It is not to be expected that this view of Bastian, commonly but not altogether properly called spontaneous generation, will be immediately accepted by men of science, but we likewise have no question that in this, as in other supposedly decided questions, renewed agitation will be of benefit and lead ultimately to the exact facts. From the point of view of the practical physician, the matter has a certain added interest. In relation to the contagium of various infectious diseases, it at once becomes of vital importance, not only to avert and find the source of infectious and contagious diseases, but also to search still more diligently into the conditions which render possible the production of the infecting agents. If certain fixed conditions are capable of producing agents of contagion, it forthwith becomes apparent that much of the work of the future lies in studying the conditions under which infection arises, as well as the natural history of the agents themselves. We may surely expect new light on this complex subject during the next fifty years. In the meantime it is well to maintain an open mind.

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AMERICAN PHYSICIANS IN GERMANY.

The kindness shown American physicians by German professors, privat-docents and assistants has been proverbial, but, perhaps, never more than at the present time. Their clinics are held with open doors, their wards and laboratories are readily accessible, and even paid courses are frequently given to one or more Americans at great personal inconvenience to the instructor. In one clinic four times a week the foreign visitors are invited to a demonstration at which interesting cases are shown and the new lines of research there being carried on are described. The recipients of these courtesies are to a considerable extent individuals whose stay at any one particular clinic is transitory, seldom those who have gone to Europe with the intention of entering upon original research either abroad or at home. For the German teacher it is, therefore, all " give," but no " take."

If German medical hospitality is proverbial, American appreciation of German medicine is widespread. And this is evidenced on all public occasions and in our literature. To a considerable extent this is known in Germany, but the mere presence of a large body of American students in their midst exemplifies our admiration rather than our gratitude.

It not uncommonly occurs, however, that Americans, while attending German clinics, appear in quite another light than they would desire. We refer to their habit of " just dropping into a clinic," without first asking permission. We are convinced that this is from ignorance of German university customs and from the wish to occasion no inconvenience to the instructor. But it is not generally appreciated in this country that the salaries of university teachers in Germany come from two sources — the university or government and the individual student. It is easy to imagine the sensations which might arise in an instructor's mind when, looking up to crowded benches, he sees a group of unknown foreigners who have neither asked beforehand the privilege of being present nor expect afterwards to present their acknowledgments. Occasionally the matter is even more aggravating, because the popular teacher (and the Americans always find such a one out) may see his own students, who have paid him to lecture to them, turned away because their places have been filled by medical travelers from many lands. As to the feelings of a German student on such an occasion, perhaps it is as well not to enter. The reputation which is afforded a professor by a crowded clinic is not so great as might appear, for in the eye of the University the number of registered students and not the visitors count. It is true that the evident interest and the wrapped attention which the stranger gives the lecturer must be an inspiration and a reward far greater than money alone, but this does not take away from the American the obligation invariably to ask permission to attend a German clinic. Such a request is easily made and it is optional with the professor in granting it, whether he allows any encroachment upon his time.

REPORT OF STATE BOARD OF INSANITY.

The eighth annual report of the Massachusetts State Board of Insanity covers a period relative to general matters for the year ending Sept. 30, 1906. The entire number of persons under supervision on October 1 was 12,388, or 274 more than the previous year. The larger proportion of these come under the category of the insane, being in the somewhat startling proportion of one insane patient to every 295 persons of the estimated population of the state. The statistics seem to show that there has been a slow but steady increase in the number of insane, but in the estimation of such statistics it should always be borne in mind that methods of classification are continually changing and that the condition itself depends largely upon definition. There has, however, been a decline in the number of patients treated at public institutions, a possible reason for which is given in the following statement: " It is probable that the present general prosperity tends to diminish the inflow of patients into institutions by furnishing work which in dull times might not be available for an indifferent class of labor, and, by affording a larger and steadier income to the bread-winner of the family, increasing the ability to care for dependents."

The statements which follow regarding commitments, first cases of insanity, nativity and other matters of statistical significance should be carefully read by those interested in the great problem which mental disease presents. It is evident, if our classifications can be made uniform, and if some definite conception of what is to be included under the heading of insanity be established, statistical reports will become of increasing value from year to year. This volume is an excellent example of a carefully prepared public report.

MEDICAL NOTES.

Yellow Fever. — It is reported that an outbreak of yellow fever has appeared in the American garrison at Cienfuegos. Up to August 13, eleven cases had appeared, but it is not likely that the disease will spread to any extent.

Professor von Leyden's Successor. — It is stated that Professor H. His, a son of the anatomist, will succeed Professor von Leyden at the University of Berlin in the chair of special pathology and therapeutics.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, August 7, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 24, scarlatina 21, typhoid fever 16, measles 38, tuberculosis 68, smallpox 0, leprosy 0.

The death-rate of the reported deaths for the week ending August 7, 1907, was 20.19.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 10, 1907, was 222, against 237 the corresponding week of last year, showing a decrease of 15 deaths and making the death-rate for the week 18.99. Of this number 128 were males and 94 were females; 218 were white and 4 colored; 161 were born in the United States, 64 in foreign countries and 7 unknown; 53 were of American parentage, 146 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 30 cases and 5 deaths; scarlatina, 19 cases and 0 deaths; typhoid fever, 19 cases and 0 deaths; measles, 33 cases and 3 deaths; tuberculosis, 48 cases and 14 deaths; smallpox, 0 case and 0 death. The deaths from pneumonia were 14, whooping cough 1, heart disease 27, bronchitis 0 and marasmus 8. There were 22 deaths from violent causes. The number of children who died under one year was 56; the number under five years, 24. The number of persons who died over sixty years of age was 34. The deaths in public institutions were 78.

Day Camp for Tuberculosis. — It is reported that 140 persons are enrolled as patients of the day camp for tuberculosis in Mattapan near Boston. Upwards of twenty are on the waiting list. From these facts it appears that this charity is demonstrating its usefulness and is appreciated by an increasing number. Most of the patients go from the tenement sections of Boston, South Boston, East Boston and Chelsea, in spite of the time taken in travel and often the excessive heat. Records already show marked improvement in many cases, and it is not to be questioned that the plan begun tentatively two years ago has proved a most valuable adjunct to the other methods in the treatment of the disease. Visitors to the camp are welcome at any time.

NEW YORK.

Roof Playgrounds and Gymnasiums. — Among the American delegates to the second International Congress of School Hygiene, just held in London, was Dr. Luther H. Gulick, supervisor of physical training in the New York public schools. He states that the Congress was deeply interested in the roof playgrounds and gymnasiums of New York. In his opinion, America leads the world in the matter of the physical training of school children, but in Europe more attention has as yet been paid to medical supervision. This, he believes, will not be the case long, as it is now being recognized that a complete knowledge of the child's physical as well as mental condition is essential before his education is undertaken.

Mortality during July. — The weekly reports of the Health Department show that during the month of July the mortality in the city represented an annual death rate of 18.71, as against 16.94 in June and 19.33 in July, 1906. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles declined from 28.5 in June to 27.75 in July; the weekly average from scarlet fever, from 26.75 to 17.75; from diphtheria and croup, from 38.75 to 32.25; from influenza from 4.75 to 0.75; from epidemic cerebrospinal meningitis, from 11.75 to 10; from pulmonary tuberculosis, from 159.5 to 150.25; from pneumonia, from 83.5 to 43.75; from broncho-pneumonia, from 97.5 to 77.25; from cancer, from 66.25 to 58.5; from apoplexy, congestion and softening of the brain, from 49 to 41.5; and from organic heart diseases, from 132.75 to 117.5. Among the diseases in which there was an augmented mortality, were the following: The weekly average of deaths from typhoid fever increased from 8.75 to 10.5; from malarial fevers, from 1 to 1.75; from acute bronchitis, from 13.5 to 14.25; from diarrheal diseases, from 67.25 to 323.75; from diarrheals under five years of age, from 60.75 to 313.75; from Bright's disease and acute nephritis, from 96.5 to 103; and from cirrhosis of the liver, from 19.75 to 25.5. The corrected death rate, excluding non-residents and infants under one week old, was 17.67. During the first part of July the health of the city was exceptionally good.

In the week ending July 6 the death rate was only 16.13, the lowest point reached since the first week of November of last year; while in the corresponding week of 1906 the death-rate was 19.19. Later in the month, however, there was a rapid increase in the deaths from diarrheal diseases in infants and young children, and in the week ending July 27 there were 550 deaths from this cause in children under five, as against 373 in the corresponding week of last year. The generally recognized association of broncho-pneumonia with summer diarrhea is also shown in the statistics; for while in the corresponding week of 1906 there were but 38 deaths reported from this disease, in the week ending July 27, 1907, these amounted to 85.

Obituary.

SIR WILLIAM TENNANT GAIRDNER.

The recent death of Sir William Tennant Gairdner removes another distinguished physician of the older generation. Dr. Gairdner was born in Edinburgh in 1824, and therefore had lived to the ripe age of eighty-three. His father had been a distinguished practitioner in Edinburgh, and it was not unnatural, therefore, that the son should follow in the same profession. He was graduated in medicine in 1845, while still under twenty-one, and shortly after graduation returned to Edinburgh as resident physician of the Royal Infirmary. In 1848 he became pathologist to the Infirmary, in 1850 a fellow of the Royal College of Physicians of Edinburgh, and in 1853 a physician to the wards of the Infirmary and lecturer on the practice of medicine. In 1862 he received the appointment of professor of medicine in the University of Glasgow, at the age of thirty-eight. He thereafter devoted nearly forty years to medical practice and research in the west of Scotland, and during that period numbered among his colleagues many men of great prominence, among whom were Lister, William Ramsey and John Caird. His interest in public health began while still at the Edinburgh Infirmary, and in 1863 the Corporation of Glasgow appointed him their first officer of health, a position which he held for nine years. Sir William was the first president of the Glasgow Pathological and Clinical Society, founded in 1873. He later made an unsuccessful application for the chair of medicine in Edinburgh, vacant by the death of Laycock. Although unsuccessful in attaining this object of his ambition, he received the honorary degree of LL.D. from Edinburgh University in 1883, and from that time on various other honors were bestowed upon him, among others knighthood in the year 1898. Some years before his death Gairdner had become the victim of the Stokes-Adams syndrome with the development of a periodic slow pulse which ultimately became permanent. His death, on the 28th of June, was sudden. Gairdner was one of that large class of physicians for which England and Scotland have become famous, who combined much learning with good fellowship and rare affability of manner.

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Current Literature.

Medical Record.

July 20, 1907.

1. *Lockwood, G. R. *The Clinical Course of Gastroptosis and Its Treatment.*
2. Hussakof, L. *On Recent Investigations of the Action of Radium on Plants and Animals.*
3. *Dardel, J. *Sulphur Waters in the Treatment of Syphilis.*
4. *Keating, E. *The Early Diagnosis and Home Treatment of Pulmonary Tuberculosis.*
5. MacDonald, A. *Studies of Juvenile Criminals.*
6. Stump, W. *Treatment of Malaria in the Vicinity of New York.*

1. Lockwood discusses gastroptosis and its management. Out of 2,000 patients he has found 351 suffering from gastroptosis. The disease runs a typical and characteristic course, and can be divided into stages. It begins with subnutrition and nervousness, and occurs especially in persons with an acute costal angle. In such persons prophylactic treatment should be instituted. In the first stage there is gastroptosis alone without any symptoms. In the second temporary atony sets in with intermittent symptoms, consisting of gas in stomach, heartburn and distress after eating. Later follow permanent and continuous symptoms. Gastritis is not an etiological factor, neither is tight-lacing. In fact, a straight-front corset gives support and is of value. Intermittent atony is brought on by mental and physical strain. Fermentation has been proven by the author's experiments not to occur in atonic stomachs, in which food is perfectly digested as a rule. High gastric acidity exists and prevents fermentation. Distress depends on the amount of gas and quantity of food. Neurasthenia and constipation result. Flushing of the colon will bring away strings of mucus. Restricted diet brings on subnutrition and makes the patient worse. Examination of stomach contents shows a top layer of clear liquid and a lower one of digested food. Inflation is valuable to aid in diagnosis. Treatment of permanent atony involves rest in bed for four weeks with entire absence of worry and of society, with a trained nurse in charge; hot baths and spinal douches, massage and a very nutritious diet, excluding fruits and red meats, given in six small meals a day. Bromide is an indispensable remedy. Under such treatment weight increases, the curvature of the stomach rises, and a cure is complete after six weeks or so. Prophylactic treatment consists of teaching the patient not to undergo strains, mental or physical, and keeping up the general condition.

3. Dardel says that the treatment of syphilis by the use of sulphur waters does not pretend to cure alone, but forms a very valuable auxiliary treatment which may be combined with a course of mercurial treatment and will help greatly in the absorption, action and elimination of the drug. The cure is indicated at any period of the disease, since nutrition suffers at all stages. Patients suffering from arterio-sclerosis, or liver trouble, and those that are highly nervous should not undergo an active sulphur cure. It is especially indicated in those that take mercury badly, or can tolerate but a small dose of it, and in those in whom therapeutic action of mercury is not easily obtained. Also in cases of great destruction of tissue, or severe infections in feeble and worn-out patients. Again in lesions of the nervous system, ulcerative lesions that threaten great destruction to the organs affected, and other such lesions in which there is no time to lose. The treatment strengthens the patient and enables him to take more mercury and assimilate it better. The sulphur of the water forms alkaline sulphides. Some are oxidized to hyposulphites and sulphites, but the most of it forms hydrogen sulphide, which is eliminated by the lungs and skin. It has a general tonic and exciting action and

liberates mercurial compounds stored up in the system. The author describes the use of sulphur waters externally and internally at Aix-les-Bains, where massage combined with douching is an important factor in the treatment. Marloiz water is also drunk.

4. Keating refers to cases that are really incipient, giving no marked tuberculous symptoms and no physical signs. The facts elicited from physical examination of the chest should be regarded as only confirmatory of the diagnosis. Important factors are family history, occupation, spitting of small amounts of blood, chilly sensations, very slight fever, an indefinite history of night sweats, loss of weight, constipation, clammy hands, a red line on the gums and shallow breathing. Respiration may be slightly jerking, with harsh inspiration. The pulse is accelerated. As to the treatment the author does not favor the use of tuberculin. He recommends beginning treatment with six weeks' rest in bed, in the open air as far as possible. Three meals a day should be taken and milk and eggs used besides. The most useful drugs are arsenic and nux vomica. No cough mixtures should be used. The best sedative is milk and eggs taken before going to rest for the night. Morphine is the only remedy for profuse hemorrhage.

New York Medical Journal.

July 20, 1907.

1. *Clark and Atwood. *A Report of Cases of Landouzy-Déjerine Myopathy (congenital), Thomsen's Disease and Enchondroma of the Hypophysis.*
2. Rectenwald, J. J. *Perforative Appendicitis Due to Plum Stone.*
3. Kenerson, V. *Seven Gunshot Wounds of the Body.*
4. Uhle, A. A. *Chancroid and Its Complications.*
5. Berg, W. N. *The Relation Between the Physiological Acton of Ions and Their Physico-Chemical Properties.* (To be concluded.)
6. Kennedy, J. C. *Pelvic Tumors in Little Girls.*
7. Bryant, B. L. *The Rational Treatment of Nervous Diseases.*
8. Chandler, G. *The Treatment of Acute General Peritonitis.*

1. Clark and Atwood report a series of cases of rare types of nervous disease. The first is a case of Landouzy-Déjerine myopathy or the facio-scapulo-humeral type of progressive muscular dystrophy. the atrophy first appearing in the face. This case is especially noteworthy in that the disease was apparently congenital; no other congenital case is found in the literature. Other conditions described are peroneal dystrophy, Thomsen's disease, multiple enchondroma, acute poliomyelitis in an adult, and two cases of anterior poliomyelitis with exaggerated knee-jerk. [F. W. P.]

The Journal of the American Medical Association.

July 20,1907.

1. *Bevan. A. D. *Nitrous Oxid as an Anesthetic in Major Surgery.*
2. *Mitchell, J. F. *Local Anesthesia in General Surgery.*
3. *Lusk, G. *Prepared and Predigested Foods.*
4. *Allen, A. H. *Homologous Bacteria as a Vaccine in Tuberculosis.*
5. *Wentworth, A. H. *The Cause of Infantile Atrophy Deduced from a Study of Secretin in Normal and Atrophic Infants.*
6. Keiper, G. F., and Burrage, S. *Yeast Cells as a Probable Cause of Ulcerative Keratitis.*
7. Woods, H. *Ocular Neurasthenia.*
8. Davis, A. E. *A Protest against the Employment of Paraffin Injections Near the Eyes or the Use of Solid Paraffin in the Capsule of Tenon after Enucleation, with Report of Two Cases of Injury.*
9. Rogers, F. T. *Premiums Paid to Experience.*
10. Zeisler, J. *Pemphigus.*
11. Hartzell, M. B. *The Salicylates in the Treatment of Lichen Planus.*
12. Stewart, J. C. *A Case of Benign Melanosis.*
13. MacLaren, A. *Personal Surgical Errors.*
14. Hess, C. *Modern Views on Physiology and Pathology of Accommodation.*
15. *Laplace, E. *Experimental Pathology and Surgical Treatment of Erysipelas.*
16. Hoover, C. F. *The Sudden Appearance of Apnea in the Course of Tabes Dorsales and Arterial Sclerosis.*
17. Hunt, R. *The Probable Demonstration of Thyroid Secretion in the Blood in Exophthalmic Goiter.*
18. Pyle, W. L. *Myopia Associated with Opacities of the Cornea.*

1. Bevan has gradually increased his use of nitrous oxid as an anesthetic, now employing it in a large proportion of his general surgical cases, including operations upon the gall-bladder, kidney, stomach and appendix. He maintains that it is the safest anesthetic as well as the most agreeable to take. Administered with air, anesthesia of a half hour to an hour can be secured. The expense involved in its use could be greatly reduced in hospitals if apparatus for its production were placed in operating rooms. It is proposed that a committee on anesthetics be appointed to study and report each year's progress in this field of work.

2. Mitchell advocates the more general use of local anesthesia. When first introduced local anesthesia fell into dispute on account of poisoning due to too strong solutions of cocain. Recent methods, however, with weaker solutions, the injection of nerve trunks, and the addition of adrenalin to solutions under the danger of cocain poisoning are slight. The author's experience includes a wide range of operations done under local anesthesia. In operating upon inguinal and femoral hernias he feels that general narcosis is never necessary. It is important to understand the relative sensibilities of different tissues. The skin being thoroughly anesthetized, there is little sensation in the subcutaneous tissues and in muscles so long as blood vessels, large nerve trunks and connective tissue bundles are avoided. Periosteum is exquisitely sensitive, but when this has been cocainized the bone beneath has no sensation, as is shown by a case of trephining which is described. The dura was incised and the brain cortex touched without sensation. The parietal peritoneum is sensitive but the visceral peritoneum and the viscera are not. Clamping and cauterizing the appendix give no sensation, but pulling on the mesentery causes pain referred to the epigastrium, and nausea. The liver and kidney have been incised without pain. In preparing solutions tablets of cocain .05 gm. and adrenalin .00016 gm. sterilized, are dissolved in sterile salt solutin. Such solutions containing 1% of cocain are used for nerve blocking, and .1% solutions are used for ordinary infiltration.

3. Lusk calls attention to the importance of a correct understanding by physicians of the food requirements of the body, especially the proteid and fuel requirements. He points out the false claims made for the advertised breakfast foods, the merits of which lie in their flavors and not in their exaggerated nutritious value. The various malt extracts are also mentioned as well as the peptone preparations, which consist chiefly of albumoses which are liable to cause diarrhea, and the liquid peptonoids which contain a considerable quantity of alcohol and only about 25 gm. of proteid to the pint bottle. It is said that many patients have died of proteid starvation through the ill-advised administration of these preparations. If used as a flavor or stimulant their limitations should be fully recognized.

4. Allen describes his work in attempting to produce a vaccine for tuberculosis from bacilli contained in sputum. The process is given in outline. The object in obtaining the bacilli from sputum is double. In the first place it is thought to be possible that the bacilli from the patient under treatment may be so specialized as to have special properties adapting them for use in immunizing the particular patient from whom they are obtained. In the second place it is thought that bacilli directly from the human body may possess properties which are lost in artificial cultivation. The preparations obtained contains, besides tubercle bacilli, pus corpuscles and other bacteria. The bacilli other than the tubercle bacillus may be of value in effecting immunity against secondary infections.

5. Wentworth suggests as a possible cause of infantile atrophy, a defective correlation of the several digestive organs, stomach, intestines, pancreas and liver. This hypothesis is based on the discovery of Bayliss and Starling of the substance called by them " secretin," originating

in the small intestine and passing from it through the blood to the pancreas, and to some extent to the liver, which organs are stimulated by it to secrete. He reports experiments on cats made to ascertain the effect on the pancreatic secretion of the secretin obtained by Bayliss and Starling's method from the cadavers of atrophic, new-born and other infants. The tabulated results show that the material obtained from the intestines of atrophic infants possessed little or no power to stimulate the flow of pancreatic juice in the cat, indicating either a lesser strength or quantity of secretin present. The secretin from well-nourished infants and children, on the other hand, always caused activation of the cat's pancreas. He thinks it very unlikely that the diminution of secretin can be due to inanition, as suitable food restores the functions rapidly before the general marasmus of the infant has been bettered. He has also experimented to ascertain as far as possible how much it can be due to digestive disturbances, etc., and while his investigation is not yet finished, he is inclined to offer the following hypothesis as the result of the research thus far to explain the cause of infantile atrophy. The digestive functions of the very young infant are not activated because it does not receive the only food capable of activating them, viz., mother's milk. This leads the stomach to secrete an inadequate gastric juice, and the duodenum is therefore not stimulated to form normal secretin. The defective secretin insufficiently stimulates the pancreatic secretion, and leads probably to as yet unstudied disorders of the function of the gut lower down. What renders the milk specific in this way is now engaging his attention and he hopes to be able to answer it in the future. It is possible that it is due to some hitherto overlooked specific substances or to certain hitherto disregarded factors in chemical composition.

15. Laplace advocates in the treatment of erysipelas superficial scarification of the reddened area and of the skin for an inch or so beyond its border, followed by applications of ice-cold bichloride of mercury acidified by the addition of 5 parts in 1,000 of hydrochloric acid.

[F. W. P.]

Bulletin of the Johns Hopkins Hospital.

May, 1907.

1. *Watts, S. H. *The Suture of Blood Vessels. Implantation and Transplantation of Vessels and Organs.*
2. Mumford, J. G. *Boston Medicine One Hundred Years Ago and a Notable Physician of the Last Century.*
3. Helmholz, H. F. *An Adenoma of Island of Langerhans.*

1. Watts's article begins with an exhaustive historical review of work done upon the suture of blood vessels, from the lateral sutures of wounded veins and arteries, the circular sutures of divided vessels and various anastomoses, to the implantation and transplantation of arteries and veins and the replantation and transplantation of organs. The results reported are too numerous for detailed mention in this abstract. They include many failures, and a general want of certainty of results remains even in the most recent work. Many successes, however, are striking, particularly those attained in the transplantation of organs, notably of kidneys, with maintenance of function. Watts then reports in detail the results of his own experiments, undertaken to determine in what proportion of sutures of vessels success may be expected. Working with dogs he operated 31 times upon vessels of the neck with perfect results in 28; of 12 operations upon the femoral vessels only 2 were entirely successful, the failures being attributed to the impossibility of keeping the wounds properly dressed. It is concluded that, when aseptic technic is good, completely divided vessels can be sutured with almost uniform success.

[F. W. P.]

Surgery of Gynecology and Obstetrics.

June, 1907.

1. *Moynihan, B. G. A. *Operations for Non-Malignant Disease of the Stomach.*
2. *Sampson, J. A. *The Relation of Ovarian Cysts to Abdominal and Pelvic Pain.*
3. Senn, N. *Ancient Military Surgery.*
4. *Graham, E. A. *Latency of Carcinoma.*
5. Taussig, A., and Sharpe, N. W. *Wrongly Diagnosed Cerebral Abscess.*
6. Beck, C. *Leontiasis Ossea with Halisteresis (Loss of Bone Salts)*
7. Hirst, B. C., and Knipe, N. L. *Fibromyomata of the Round Ligaments.*
8. *Kanavel, A. B. *Surgical Intervention in Leontiasis Ossea.*
9. Freeman, L. F. *Internal Derangement of the Knee-Joint.*
10. Herzog, M. *Peculiar Cases of Traumatism of Internal Organs, Some Due to Tropical Conditions and Practices.*
11. Richardson, M. H. *The Technic of Appendectomy.*
12. Stowe, H. M. *The Treatment of Post Partum Hemorrhage.*
13. Watson, A. *Hydatid Disease in Australia.*

1. Moynihan gives his results in 334 operative cases of non-malignant stomach disease, dividing them into the following groups: (1) Perforating ulcer, 27 cases with 18 recoveries and 9 deaths. (2) Recurrent hemorrhage, 33 cases, of which 27 recovered and 6 died. (3) Miscellaneous cases 248, with but 2 deaths. (4) Hour-glass stomach. 26 cases, with 4 deaths. The perforation of an ulcer of the stomach never comes unannounced. In many of the patients the symptoms have persisted for months, and in some they have been of greater severity in the weeks or days preceding the rupture of the ulcer. When perforation occurs there is a sudden agonizing pain, but there is neither shock nor collapse as a rule. The pulse at the first is not rapid and the abdominal muscles may not be rigid. Moynihan has always found exquisite tenderness of the skin, the least stroking of the surface with the finger being resented. He further insists that the onset of those symptoms, formerly considered as necessary to a diagnosis,—collapse, abdominal distension, rapidity and smallness of pulse — should not be allowed to develop. A diagnosis can be made from the history of ulcer, the sudden onset and continuance of intolerable pain, restriction of thoracic movements, surface tenderness, and abdominal rigidity, or restriction of the normally free abdominal movements. Early operation in these cases, with infolding of the ulcer, is always indicated. Unless the ulcer is so near the pylorus as to cause obstruction, or unless a second ulcer can be seen in the vicinity of the pylorus, gastroenterostomy is not necessary. Drainage is necessary only in the late cases. When used it should be by a supra-pubic wound with the patient kept in the sitting posture. In the cases in which hemorrhage necessitated operation, this was always from a chronic ulcer. It is the repetition of hemorrhage in increasing quantity at decreasing intervals that is the only cause demanding operation for its instant relief. Infolding of the ulcer with gastroenterostomy is the safest and best procedure in such cases. In men 50% of the bleeding ulcers are in the duodenum, while in women 66.6% are in the stomach. In performing the posterior no-loop gastroenterostomy the normal jejunal direction should be observed and maintained. To make the anastomosis always in one direction, Moynihan feels to be wrong.

2. The presence of abdominal or pelvic pain in patients with ovarian cysts usually indicates either secondary changes in the cysts, involving some sensitive nearby structure, or the presence of some other condition independent of the cyst which may cause pain. The principal causes of pain arising from ovarian cysts are traction or twisting of the pedicle, or traction on the parietal peritoneum from adhesions. These findings are based on 10 cases operated on by Sampson under local anesthesia.

4. Graham reports a case in which six years after amputation of the breast for scirrhous cancer, multiple metastatic foci were found in the viscera at autopsy, there having been absolutely no clinical symptoms leading to a suspicion of their presence. Dense bands of adult fibrous tissue intersected the tumor area; in some places there was a complete capsule around the whole mass.

8. Kanavel believes that in some cases of leontiasis ossea operation should be done either to relieve cerebral compression, or encroachment upon the orbital and nasal cavities. Obstruction of the blood supply and operations for cosmetic purposes may be considered. [W. C. Q.]

July, 1907.

1. Allen, D. P. *The Teaching of Surgery.*
2. *Mayo, W. J. *Acquired Diverticulitis of the Large Intestine.*
3. *Roberts, J. B. *Continuous Passive Hyperemia in Delayed Union of Fractures.*
4. Vaughn, G. T. *Aneurysmal Varix.*
5. Finney, J. M. T. *Rhinoplasty by Means of One of the Fingers.*
6. *Mayo, C. H. *Treatment of the Posterior Capsule of the Gland in Thyroidectomy.*
7. Huntington, T. W. *Non-Parasitic Cyst of the Spleen.*
8. Vanderveer, A. *End Results in Operation for Carcinoma of the Breast.*
9. *Greenough, R. B., Simmons, C. C., and Barney, J. D. *The Results of Operations for Cancer of the Breast at the Massachusetts General Hospital.*
10. Jonas, A. F. *End Results in Operations for Cancer of the Breast.*
11. Meyer, W. *End Results Following Operations for Carcinoma of the Breast*
12. Dennis, F. S. *Report of End Results Following Operations for Cancer of the Breast.*
13. Johnson, R. W. *Resection of the Sound Femur in Gigantism and Asymmetry.*
14. Weeks, S. H. *Some Considerations in Regard to Brain Surgery.*
15. Gerrish, F. H. *The Diverticulum Ilei as a Cause of Complete Intestinal Obstruction.*
16. MacLaren, A. *Prostatectomy.*
17. Allis, O. H. *Congenital Dislocation of the Hip.*
18. *Crile, G. H. *Further Consideration of the Surgical Treatment of Cancer of the Neck.*
19. *Freeman, L. *The Desirability of the Early Operations Upon the Nerves in Ischemic Paralysis.*
20. Stowe, H. M. *Prolapsus Funis.*
21. De Lee, J. B. *The Induction of Labor at Term.*

2. Mayo reports 5 certain and 4 probable cases of diverticulitis of the sigmoid. These cases all occur during the age when cancer is common (over forty years) and are often confounded with it. The clinical diagnosis cannot be positively made, but one should always consider this condition in a case presenting left-sided pain low in the abdomen coming in spells and associated with constipation. The rather sudden formation of a mass, following such an attack of pain, would make the diagnosis yet more probable. Blood in the stools is an important sign in favor of cancer. The surgical treatment depends upon the condition present. Localized suppurative cases must be treated by free drainage. If, in conjunction with the infectious process acute obstruction of the bowel develops, a temporary artificial anus should be made. If a considerable tumor is present and the symptoms do not show a tendency to disappear it is better to make a primary resection of the affected bowel before abscess and fistula supervene. The milder cases which tend to spontaneous recovery do not suggest operative treatment.

3. Roberts advises the use of elastic constriction in the treatment of delayed union of fractures. He uses the bandage more or less continuously and of a firmness just sufficient to produce a slight bluish venous congestion at and below the seat of fracture.

6. In an experience based on over 375 operations for goiter Mayo has seen but one case develop tetany and that only in the slightest degree. Some myxedema and other evidences of hypothyroidism have been present in a few cases before operation and in none has this condition been increased. In 5 cases the hoarseness from the effects of pressure has been increased by operation. The careful preservation of the posterior capsule of the thyroid gland protects against many of the dangers of thyroidectomy.

9. Out of 416 cases of primary operation for cancer of the breast at the Massachusetts General Hospital from 1894 to 1903 inclusive, 376 were traced to a conclusive end result at an average period of eight years after operation. Sixty-four cases were alive and well and 7 died without recurrence over three years after the operation. Counting in the operative mortality, there were 320 attempts at radical cure, 67 of which (20.9%) were successful. During this period palliative operations were performed on 56 patients (15%) and 52 cases were discharged untreated. Cases in which the tumor was ulcerated or was adherent to the skin or to the chest wall, and cases in which the axillary glands were palpably enlarged, gave notably less promising results than when these conditions did not exist. No case with palpably enlarged cancerous glands above the clavicle, and no case of cancer of both breasts, was cured. Medullary carcinoma was more grave than that of the scirrhous type, and adeno-carcinoma and colloid were relatively of a far less malignant type. The duration of the disease and the age of the patient exerted little influence on the prognosis. Extensive operations with wide removal of skin gave the greatest freedom from local recurrence. Removal of the pectoralis minor appeared to be of slight significance. Incomplete operations on early cases yielded better results than extensive operations on cases which were well advanced. Recurrence in the scar occurred in less than one-half of the cases; internal metastasis was most frequent in the lungs, mediastium, axillary and supra clavicular glands, the liver and the spine. Seventeen out of 88 cases (19%) of those passing the three-year limit without evidence of recurrence, showed recurrence later, and 4 cases developed recurrence six years or more after the operation.

18. Crile makes the following statements: (1) The operative technic of cancer of the neck has reached the point of development which enables the surgeon to operate each case individually, with sole reference to excising every particle of malignant growth, and in no way recognizing the so-called types of operation such as Whiteheads, Kocher's etc. (2) The loss of blood plays an important rôle in the remote as well as in the immediate results. (3) The immediate use of the x-ray applied upon the naked wound is useful. (4) The only tissue which must be respected to the extent of determining the breadth of the excision of the growth is the common or internal carotid artery; the sterno-mastoids — one or both — the sterno-thyroid, sterno-hyoid and platysma muscles, either on one or on both sides, need not be considered as of functional importance in weighing the chance for a successful eradication of a malignant growth. On the same ground, neither the internal nor the external 'jugular on one or on both sides need be considered, nor a unilateral excision of the vagus, of the phrenic or of the hypoglossal nerves. (5) The creation of a granulation tissue barrier across the base of the neck under cocain anesthesia, by the packing of iodoform gauze in the deep planes of the neck prior to operation, protects the mediastinum with almost certainty. (6) The immediate operative risk has fallen to a minimum. (7) The chances for final cures compare favorably with those of cancer of the breast. Of the patients operated previous to 1900 31% have no recurrence, while of those operated between 1900 and 1904, 40% have no recurrence.

19. Freeman emphasizes the fact that when the nerves are badly involved in ischemic paralysis, and show no signs of prompt recovery, they should be liberated from compression early, before hopeless degenerative changes set in. [W. C. Q.]

The Lancet.
July 20, 1907.

1. Hewitt, F. C. *General Surgical Anesthesia. Lecture I.*
2. Simpson, W. J. R. *The Croonian Lectures on Plague.*
3. Rogers, L. *A Common Sporadic Seven-day Fever of Indian Ports Simulating Dengue.*
4. *Forsyth, D. *Experiments on Prolonged Protein Feeding with Special Reference to the Thyroid Gland and the Osseous System.*
5. Ollerenshaw, R. *Male Triplets with Eclampsia in a Patient Aged Sixteen Years.*
6. *Clarke, H. H., and Sutherland, H. G. *On the Effect of Tuberculin on the General Tuberculo-Opsonic Index in Tuberculous Patients.*
7. Weber, F. P. *Multiple Hereditary Developmental Angiomata (Telangiectases) of the Skin and Mucous Membranes Associated with Recurring Hemorrhages.*

4. Forsyth experimented on fowls fed on semi-raw meat over a long period with a view to confirm or disprove Watson's statements that this diet will cause changes of

importance in the thyroid gland. He concludes as a result of his investigations that there are no changes or hypertrophy of the thyroid; and that there are no bony changes providing there is lime enough in the diet. In none of the birds was there any indication of gout, but there was an unusual amount of colloid in the pituitary gland. His results cast considerable doubt on Watson's experiments.

6. Clarke and Sutherland report results of a study of the effect of tuberculin (T. R.) on the positive and negative phases of the opsonic index. They believe that by rapidly increasing doses it is possible to raise the index for a considerable period. They have made 492 observations of the index in 32 tuberculous cases, but do not pretend to define the value of tuberculin in treatment, or of the opsonic index as a guide to that treatment.

[J. B. H.]

British Medical Journal.

July 20, 1907.

1. *Williamson, R. T. *The Vibrating Sensation in Diseases of the Nervous System.*
2. Cave, E. J. *The Spa Treatment of Neurasthenia.*
3. Smith, E. *Laryngismus Stridulus in Newborn Infants.*
4. *Wilson, T. S. *Remarks on the Value of Rhythmical Exercises in the Treatment of Spasmodic Neuroses.*
5. Childe, C. P. *The Educational Aspect of the Cancer Problem.*
6. Mackay, C. G. *A Case that Seems to Suggest a Clue to the Possible Solution of the Cancer Problem.*
7. Cheatle, G. L. *Inflammatory Changes in Posterior Spinal Root Ganglia in Cases of Cutaneous Cancer.*
8. Cunningham, H. H. B. *A Case of Streptococcic Conjunctivitis.*
9. Wellman, F. C. *Preliminary Note on Some Bodies found in Ticks.*

1. Williamson has made a study of the so-called "vibrating sensation" which is felt when a vibrating tuning fork is placed, foot down, on a subcutaneous bony prominence in many parts of the body. This sensation varies in health and in disease and its presence or absence may be an important diagnostic sign. He concluded that it is a delicate test for slight impairment of sensation in early tabes, in slight peripheral neuritis, and often in diabetes mellitus. In diseases strictly limited to the motor structures the vibrating sensation is not lost even at an advanced stage of the disease. If it is found to be lost it means that the disease is affecting the sensory structures also. In cases of paraplegia from spinal caries, and occasionally in spinal syphilis the loss of the vibrating feeling may be the only objective symptom of affection of sensation. In hemi-anesthesia due to organic disease the vibrating sensation is felt when the foot of the vibrating tuning fork is placed on the edge of the sternum on the side of tactile anesthesia, while in hysterical hemi-anesthesia the reverse is the case.

4. Wilson believes in treating the various spasmodic neuroses, such as spasmodic torticollis, not by surgery but by developing a rhythmical movement the reverse of the one constituting the neurosis, and curing it by this means. He gives the details of this treatment in torticollis and various trade spasms.

Deutsche Medizinische Wochenschrift, No. 25.

June 20, 1907.

1. Joseph, M. *The Treatment of Venereal Diseases.*
2. *Croner, F., and Seligmann, E. *The Retention of Atoxyl in the Organism.*
3. Sick, P. *Border Lands in the Bier Treatment.*
4. *Proskauer, A. *Typical Typhoid Ulcerations in the Stomach and Duodenum.*
5. Gossner. *A Simple and Easy Method of Performing Agglutination Tests by Means of Stained Preparations.*
6. *Kamp. *An Addition to the Knowledge of Myotonia Congenita.*
7. Goldschmidt, R. *A Simplified Trituration Apparatus.*
8. Leuwer, C. *A New Ear Pump.*
9. Boesser. *Treatment of Hay Fever with Injections of Atropine and Quinine.*
10. Schaffer. *New Principles in the Construction of Röntgen Tubes.*

2. Croner and Seligmann conducted a series of experiments on dogs and human beings showing that, contrary to previous reports, arsenic can be found in the stools and urine for considerable periods after the injection of atoxyl. In dogs the subcutaneous injection of 1.5 gm. for three consecutive days caused a marked arsenic reaction eighty hours afterwards. Tests on human beings gave the same results.

4. Proskauer reports the clinical history and pathological findings of a very severe typhoid in a young child. The immediate cause of death was a purulent peritonitis, which bacteriologically showed streptococci and for which no perforation of a typhoid ulcer or mesenteric gland could be found. The stomach, duodenum and jujenum were thickly strewn with typical ulcers, which were younger anatomically than those in the cecum. Culturally the ulcers showed the paratyphoid bacillus B, and the serum reaction was positive to this organism and negative to the typhoid bacillus. Such marked ulcerations in the stomach and upper intestine are exceedingly rare.

6. Kamp was able in connection with a case of myotonia congenita to trace the disease back through four generations, and concludes that the disease is inherited through both the male and female, but in the male line it is quickly extinguished, while in the female it persists for a long time. If the disease stops in one member of a family, the descendants are free from it.

[L. G. M.]

Tetany. Chovstek (*Wien Med. Wochenschr.*, *No.* 23) says that all those factors which previously have been considered as being the etiological cause, are merely exciting causes. In individuals affected with tetany, the onset of menstruation, an angina, or as the author has seen, the injection of tuberculin, is sufficient to excite an attack. The specific cause of the reaction in tetanic individuals is a constitutional one, and is probably associated with a functional disturbance of the parathyroid glands.

[L. G. M.]

Herpes in Cerebro-spinal Meningitis. Einhorn (*Wien Med. Wochenschr.*, *No* 23) finds that herpes occurs in over half of the cases of epidemic cerebrospinal meningitis, and that it has the following characteristics: it appears commonly from the third to the sixth day of the disease, and persists for a considerable period, rarely as long as fourteen days. The vesicles are unusually numerous and thickly sown, with fresh vesicles appearing alongside of old crusted lesions. The site of the eruption is often atypical as in the gluteal region, the lobe of the ear, finger, or scalp. The involution of the vesicles is considerably longer than that of the herpes in ordinary febrile diseases, and often leaves small scars. [L. G. M.[

Miscellany.

PHYSICAL CONDITION OF WEST POINT CADETS.

A writer in the *Medical Record*, having made some severe strictures on the physical condition of the cadets at the United States Military Academy at West Point, Lieut.-Col. Charles Moore Gandy, chief surgeon at the Academy, has taken sharp issue with the author of the communication. The latter claimed that the cadets were so overtrained, worked so hard, and got so little sleep, that their constitutions were so run down and they were so physically unfit that they were unable to resist infections or adverse conditions which were harmless to others. When he saw the corps he was painfully impressed by their bad condition, which, he believed, fully accounted for their lowered vitality and resistance. The great majority, he said, had thin, drawn features and very slender figures, suggesting emaciation.

They seemed to have been "worked down" or "trained" to a condition which the progressive element in the medical profession now recognized as one of dangerous exhaustion with little surplus for emergencies. In support of his claim he stated that the newspapers had reported that a large number of West Point cadets were made ill by their stay at the Jamestown Exposition and that two or three contracted typhoid fever, while a large number of cadets of other schools went to the Exposition and were quartered amidst the same unsanitary conditions, and yet no reports of such sickness were reported about these. Furthermore, he contended that even in athletics the West Pointers did not excel, while in science or letters the Academy's graduates were seldom heard from. Colonel Gandy states that it is true that three of the corps contracted typhoid fever at Jamestown, but this was not due at all to the unsanitary condition of their quarters. Two of them took the disease from eating ice cream, aganist which the cadets had been warned, and the third from drinking water from a penny-in-the slot device, which was supposed to furnish water, but which an investigation showed to be connected with a common water main. The general health of the West Pointers, he says, was as good as or better than that of the other cadets there, and if any infectious disease occurred among the latter it was hardly like that it would be reported, for the reason that immediately after leaving Jamestown the boys scattered to their homes in all parts of the country. In the year ending June 30, when he made his annual report, there was not a single case of contagious disease in the Academy, and for more than eleven years there had not been a death among the cadets there. He then denies the fact that the cadets were overtrained and claims that the corps is the finest body of young men in the country, physically, mentally and morally. He thinks the world has heard something of Ulysses S. Grant and Robert E. Lee. At the present time, Colonel Goethals is in charge of the work on the Panama Canal. His immediate aids are West Pointers, and it was to the graduates of the Academy that the country had to look for the carrying on of this great undertaking, after various others had given it up.

THE GYNECOLOGICAL STOMACH.

Women of all classes, when subject to diseases of the genital tract, tend to be dyspeptic as well. The two conditions are often results of the same cause, whilst too often, possibly, treatment aggravates both. That nutrition is not independent of the influence of some compound or some nerve agency in the genital organs there can be no doubt, but what that compound or agency precisely may be science has not as yet revealed to us. Hence, gynecologists are often taunted about their ill success in the treatment of dysmenorrhöea, chronic ophoritis, anorexia nervosa and allied disorders more or less intimately associated with dyspepsia as a more or less marked complication. On the other hand, surgery has triumphed where definite, objective lesions can be removed. It need hardly be said that we refer to ovariotomy and hysterectomy. Yet are there no objective lesions in any of the chronic cases, where stomach-aches, flatulence, vomiting or anorexia are so marked as complications? Are these gastric lesions due purely to lutein, of which we know but little, to vaso-motor changes somewhere, or to our own mismanagement combined with the patient's stupidity and hypochondria? Experience shows that there may be very definite lesions, so definite, indeed, that they ought to be diagnosable. Over twenty years since, Howitz, of Copenhagen, pointed out that gastric pains and dyspepsia after abdominal sections and peritonitis are not rarely caused by adhesions, especially omental. Operators sometimes find the transverse colon so much dragged upon by omental adhesions as to assume the form of a letter V, the point coming close to the bladder. The stomach itself is occasionally dragged downwards in the same manner. Dr. Cerné, of Rouen, discussed the gynecological stomach at the Congrès National de Gynécologie, held last April in Algiers. He admitted that too much had been talked about dyspepsia in ladies with a metritic diathesis, curable by treatment at inland watering places. He insisted, however, that cases are to be met with where a genital lesion is the origin and direct cause of gastric troubles. In enteroptosis, and even in many cases where the parietes are normal, the stomach comes down very low when the patient stands up, but it can be pushed up to its natural level by the hand with the greatest ease. Cerné carefully examined two patients where the stomach could not be replaced, for it was fixed by an adhesion down to one iliac fossa. Both patients were subject to disease of the uterine appendages, and, in Cerné's opinion, the stomach, or, at least, the omentum, adhered to the diseased structures. Other gynecologists have, we understand, met with adhesions of this kind. Hence, where there is a distinct history of old pelvic inflammation, verified by exploration of the genital tract, dyspepsia and other gastric disturbances may imply something more definable and more manageable than a pure neurosis. — *British Medical Journal.*

IMMUNIZATION AND THE PROPHET OF FRESH AIR.

Of the gospel of immunization we need only say that it is a dream, which, however beautiful, is still very far from fulfillment. It cannot be denied, however, that, even in its present inchoate stage of evolution, it has certain advantages. The pity is that so far, while its benefits are positive from the practitioner's point of view, they are often more or less problematic from that of the patient. But it cannot be said that the temper of mind to which the system gives rise in those who follow — or perhaps it might be more correct to say which gives rise to the system — is one that makes for the progress of practical medicine, that is to say, for the deliverance of mankind from the majority of the ailments from which it suffers. The Pharisee of science looks down on the mere physician or surgeon, giving thanks that he is not even as this publican of practice. Yet what the people ask for is the bread of cure, or, at any rate, relief, and from the laboratory they too often get a stone, occasionally even a serpent.

As for the other prophet, who foretells that the medicine bottles on surgery shelves will be replaced by sunlight and fresh air, the practitioner will probably be inclined to ask where he can get a sufficient and constant supply of these valuable therapeutic agents. The wholesale prescription of these things to poor folk "in populous city pent" is as "extraordinary" as any of those of the ancient doctor who is made the object of cheap ridicule. "Simple living" is by no means easy, except to rich people who have nothing else to do; and that otiose phrase "suitable diet" must sound like a bitter jest to poor starving folk who have to feed themselves and their children on what they can get — too often out of the gutter. — *Practitioner.*

RECORD OF MORTALITY

For the Week ending Saturday, Aug. 3, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1806	949	Quincy	7	2
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	6	1
St. Louis	—	—	Gloucester	3	—
Baltimore	255	135	Brookline	3	1
Cleveland	—	—	North Adams	8	2
Buffalo	—	—	Chicopee	16	11
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	9	—
Washington	—	—	Leominster	7	2
Providence	90	44	Hyde Park	7	3
Boston	221	68	Melrose	3	0
Worcester	36	10	Newburyport	—	—
Fall River	57	49	Woburn	9	3
Cambridge	19	5	Marlboro	4	1
Lowell	49	31	Westfield	3	—
Lynn	23	10	Peabody	—	—
New Bedford	36	27	Revere	3	—
Springfield	35	16	Attleboro	5	2
Lawrence	30	19	Clinton	2	2
Somerville	7	2	Adams	—	—
Holyoke	19	16	Gardner	4	3
Brockton	17	6	Milford	—	—
Malden	8	—	Watertown	4	1
Chelsea	24	12	Plymouth	—	—
Salem	15	10	Weymouth	—	—
Newton	13	3	Framingham	2	1
Haverhill	7	1	Southbridge	11	5
Fitchburg	5	4	Wakefield	—	—
Everett	3	3	Webster	—	—
Taunton	18	9			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED JULY 31, 1907.

Banks, C. E., surgeon. Leave of absence granted Surgeon Banks for one month from June 20, 1907, amended to read twenty-eight days only. July 26, 1907.

Smith, A. C., surgeon. Directed to proceed to Wheeling, W. Va., for special temporary duty, upon completion of which to rejoin his station at Pittsburg. July 25, 1907.

Frick, L. D., passed assistant surgeon. Granted leave of absence for seven days from July 22, 1907, under paragraph 191, Service regulations. July 22, 1907.

Goldberger, Joseph, passed assistant surgeon. Directed to proceed to Brownsville, Tex., and other places in that portion of the state, for special temporary duty, upon completion of which to rejoin his station in Washington, D. C. July 26, 1907.

McCoy, G. W., passed assistant surgeon. Directed to proceed to Brownsville, Tex., and other places in that portion of the state, for special temporary duty, upon completion of which to rejoin his station in Washington, D. C. July 26, 1907.

Warren, B. S., passed assistant surgeon. Relieved from duty at Boston, Mass., and directed to proceed to Chicago, Ill., reporting to the medical officer in command for duty and assignment to quarters. July 25, 1907.

Trask, J. W., assistant surgeon. Detailed as recorder of board for completion examination of applicants for entrance to the service, vice Joseph Goldberger, relieved. July 29, 1907.

Olsen, E. T., assistant surgeon. Granted leave of absence for seven days from July 26, 1907, under paragraph 191, Service Regulations.

Olsen, E. T., assistant surgeon. Granted extension leave of absence for seven days from August 2, 1907. July 26, 1907.

Stiles, Ch. W., Chief Division of Zoölogy, Hygienic Laboratory. Detailed to represent the service at the Seventh International Zoölogical Congress, to be held in Boston, Mass., August 19-23, 1907. July 25, 1907.

Brinckerhoff, W. R., Director Leprosy Investigation Station, Hawaii. Detailed to represent the service at the Sixth International Dermatological Congress in New York, N. Y., September 9-14. 1907. July 24, 1907.

Spohn, A. E., acting assistant surgeon. Granted leave of absence for thirty days from July 1, 1907, and excused for a further period of two months from the expiration thereof, without pay. July 29, 1907.

Townsend, F., acting assistant surgeon. Granted seven days' leave of absence from July 29, 1907. July 29, 1907.

Townsend, W., acting assistant surgeon. Granted extension leave of absence for seven days. July 28, 1907.

Macdowell, W. F., pharmacist. Granted leave of absence for fifteen days from August 1, 1907. July 29, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Chicago, Ill., for the purpose of making a physical examination of an Inspector of Immigrants. Detail for the Board: Surgeon G. B. Young, Chairman; Acting-Assistant Surgeon William Kinnnet; Acting-Assistant Surgeon J. J. Gerkin, Recorder. July 25, 1907.

BOOKS AND PAMPHLETS RECEIVED.

The Essential Similarity of Innocent and Malignant Tumours. A Study of Tumour Growth. By Charles W. Cathcart, M.A., M.B., C.M. (Edin.), F.R.C.S. (Eng. and Edin.). Illustrated. New York: William Wood & Co. 1907.

The Seventeenth Annual Report of the Eye, Ear, Nose and Throat Hospital, 1906, New Orleans, La.

Treasury Department, Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Bulletin No. 43.

Surgical Instruments in Greek and Roman Times. By John Stewart Milne, M.A., M.D., Aberd. Illustrated. Oxford. 1907.

Morris's Human Anatomy. A Complete Systematic Treatise by English and American Authors. Edited by Henry Morris, M.A. and M. B. Lond., F.R.C.S. Eng., and J. Playfair McMurrich, A.M., Ph.D. Fourth edition, revised and enlarged. Illustrated. In five parts, Parts III, IV and V. Philadelphia: P. Blakiston's Son & Co. 1907.

Materia Medica and Pharmacy. By Reynold Webb Wilcox, M.A., M.D., LL.D. Seventh edition, revised. Philadelphia: P. Blakiston's Son & Co. 1907.

Surgery, Its Principle and Practice. By various authors. Edited by William Williams Keen, M.D., LL.D. Vol. II. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Leprosy as Seen by the Hawaiian Practitioner. By Philip R. Waughop, M.D. Reprint.

Massage in Sprains, Bruises, and Dislocations. By Douglas Graham, M.D. Reprint.

Original Articles.

TORTICOLLIS.

The Results of the Treatment of Cases of Acquired and Congenital Muscular Torticollis at the Boston Children's Hospital, since 1879.*

BY E. H. BRADFORD, M.D.,
Consulting Surgeon, Boston City Hospital; Senior Surgeon, Boston Children's Hospital; Professor of Orthopedics, Harvard Medical School,
AND
JAMES WARREN SEVER, M.D.,
Junior Visiting Surgeon, Boston Children's Hospital.

The object of this paper is not to consider the subject of torticollis as a whole, but to present the conclusions in regard to the treatment of torticollis as justified by the experience obtained at the Children's Hospital in the last twenty-eight years. In this paper the term "torticollis" will be applied as referring to that deviation of the head which results from the contraction chiefly of the sternocleidomastoid. The term "torticollis" is, of course, equally applicable to other forms of deviation of the head, namely, that resulting from the reflex spasm in caries of the spine, that resulting from muscular irritation, from the presence of inflamed glands, that from irritation following arthritis of the vertebral articulations, and that resulting from a lack of balance of the muscles following general nervous disorder, but the subject here presented will be limited to a consideration of the methods of treatment of the ordinary torticollis due to the contraction of certain muscles of which the most important is the sternocleidomastoid.

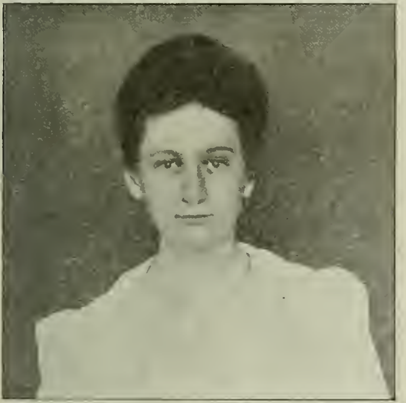

Fig. 1. Torticollis. Right. McDermott, age four and three-quarter years. Date of admission, May 26, 1888. Date of discharge July 13, 1888. Duration, fall at one year. torticollis began one year later. Contraction of right sternomastoid and anterior edge of trapezius. Operation, June 2, open incision, division of sternomastoid and fascia. Buckminster-Brown apparatus.

These cases of wry neck have been due to many causes, the principal one being congenital, the others being caused by the usual rheumatic, traumatic and post-febrile conditions, such as

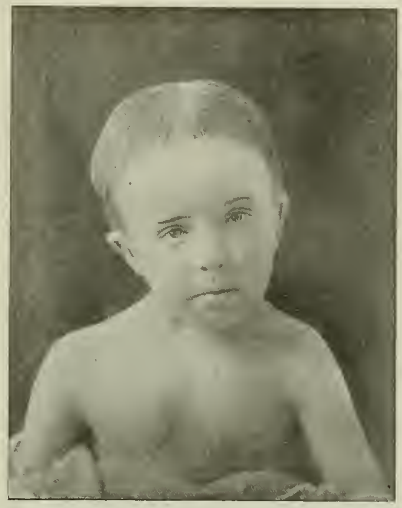

Fig. 2. Torticollis. Right. Howard, age four. Date of admission, Feb, 11, 1895. Date of discharge, April 15, 1895. Duration, two years. Cause, unknown. Operation, Feb. 14, 1895. Dead.

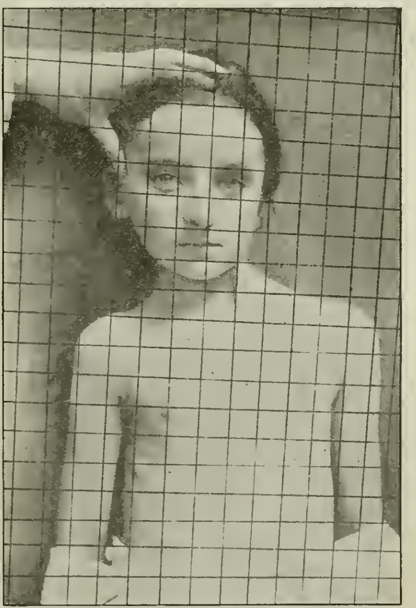

Fig. 3. Torticollis. Left. O'Connor, age eleven. Date of admission, Sept. 3, 1896. Date of discharge, Sept. 29, 1896. Duration since two years of age. No cause. Operation, Sept. 5. Fascia and probably both congenital insertions of muscles divided. Traction. Plaster.

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*Presented before the American Orthopedic Association, at Washington, May 9, 1907.

typhoid, measles, influenza and scarlet fever. There have been a number of cases of torticollis, but not of the true muscular type, due to tuberculosis, of the cervical vertebræ. These, however, have not been considered in this paper.

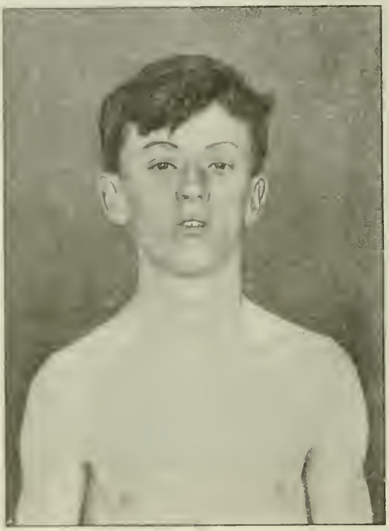


Fig. 4. Torticollis. Right. Driscoll, age five. Date of admission Aug. 28, 1896. Date of discharge, Sept. 3, 1896. Duration, three years. Since birth. Operation, Aug. 28, incision, myotomy, plaster.

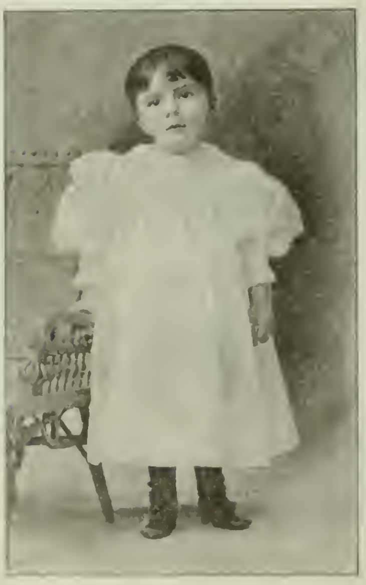


Fig. 5. Before operation.

We intend to show by this report that muscular torticollis in children from two to twelve years of age is easily cured by appropriate methods; that the result is immediate, that no post-operative gymnastics are needed so far as the cure of the deformity itself is concerned, that simple resection of the two origins of the muscle is all that need be done, and that only rarely need the Scalenii be divided; that the simple transverse incision is the best, and causes the least deformity in the resulting scar; that it is not necessary to remove the entire muscle, as has been done, and that the after-treatment is simple, and of not long duration.

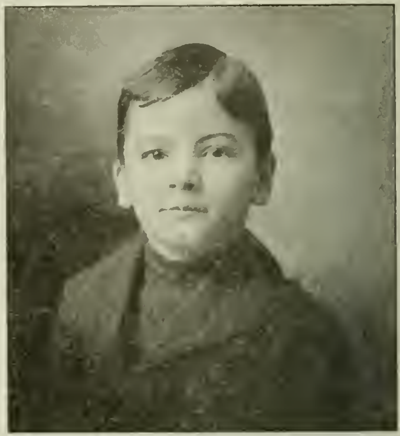


Fig. 6. After operation.

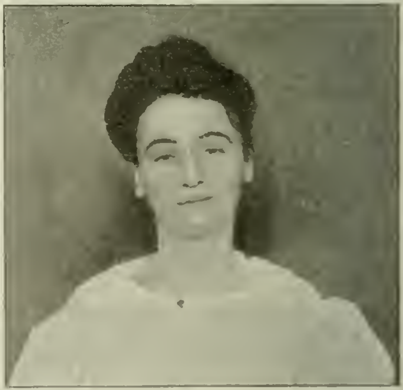


Fig. 7. Torticollis. Right. Carew, age eleven and one half. Date of admission, Feb. 15, 1900. Date of discharge, Feb. 28, 1900. Duration, since birth. Operation, Feb. 20, incision, myotomy. Buckminster-Brown brace.

We are able to report, however, one case, a child a day old, which presented torticollis due to a partial rupture of the sternocleidomastoid of one side, the result of manipulation at birth.

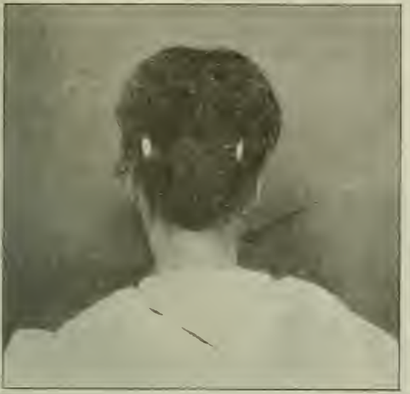


Fig. 8.

Whether this is a common cause of torticollis is a subject which will require the presentation of other facts than those the writers have at their command.

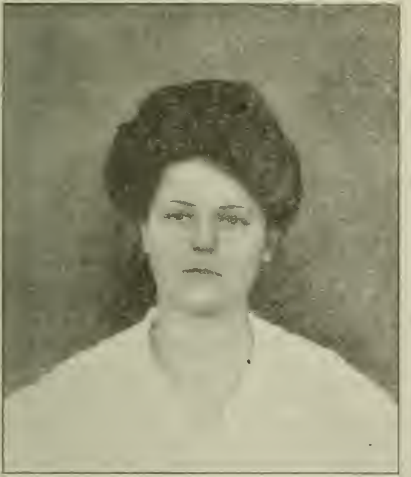


Fig. 9. Torticollis. Left. Carmel, age ten. Date of admission, Sept. 5, 1900. Date of discharge, Sept. 17, 1900. Duration, three years following measles. Operation, Sept. 11. Incision, myotomy, plaster.

ETIOLOGY.

In considering the etiology of the cases of torticollis occurring at the Children's Hospital since 1879 a number of them may be easily accounted for by various traumatic or inflammatory causes. These, however, form but a small part of the total number of cases.

In looking over Table No. 1, it may be seen that those cases which have had a congenital origin form by far the largest number individually.

TABLE NO. 1.

Total number since 1879,	90
Total number operated upon,	72
Congenital,	46
Not ascertained,	21
Abscess of neck,	3
Rheumatic,	5
Post-typhoid,	1
Post-measles,	1
Post-scarlet fever,	2
Cervical adenitis,	2
Hematoma at birth,	2
Instrumental labor,	4
Influenza,	1
Traumatic,	2

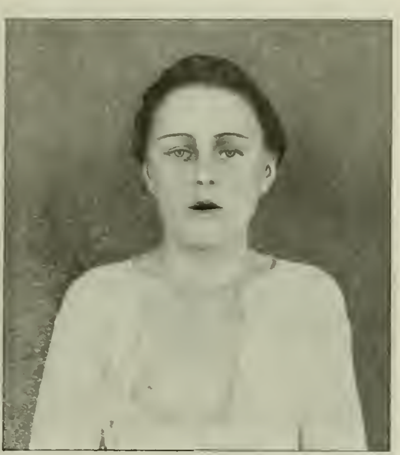


Fig. 10. Torticollis. Left. Clark, seven years, eleven months. Date of admission, Aug. 15, 1902. Date of discharge, Aug 21, 1902. Duration, last two years. Operation, Aug. 18. Incision, myotomy with plaster cuirass.

It will not be necessary to consider further these cases from an etiological point of view, with the exception of those of the congenital type.

Congenital cases. — The usual history in these cases has been that either of a deformity existing at birth, or of a gradually increasing deformity since birth. In none of these cases was there any history of hematoma or instrumental delivery.

There have been so many opinions expressed and causes assigned by various writers as to the cause of congenital torticollis, that it seems wise to review them briefly.

In looking over the great mass of literature on this subject we find that no definite conclusions have yet been reached. The theory of a hematoma alone as a cause has been disproved by Whitman and others, and Witzel has shown by experiments on animals that the artificial production of a hematoma is not followed by contraction of the muscle, either transitory or permanent.

Heredity is to be considered, but is not infallible.

Three of our cases occurred in the same family in successive children.

Diffenbach, Jeannel, Pfeiffer, Fischer and Jachimstal in defense of their theories all cite cases of hereditary torticollis.

The co-existence of other congenital malformations is to be considered as a cause also, such as clubfeet, hands, congenital dislocation of the hip, etc. In none of our series of cases was there any accompanying deformity.

Nervous origin. — Nélaton, Golding Bird, Gallavardin and Savy think that the cause may be sought in a lesion of the central nervous system, and cite a case with autopsy where there was found atrophy of the anterior horns of the spinal cord in the upper cervical region. They think that it may be analogous to infantile paralysis.

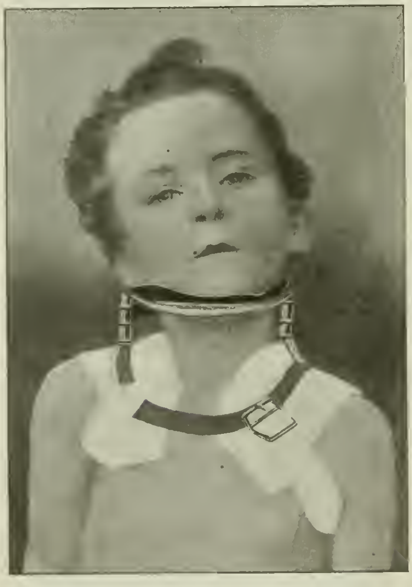


FIG. 11. Showing after-treatment with Buckminster-Brown brace.

However, the most plausible and reasonable theory which has yet been advanced is that of Josserand and Vianny, who advocate the *ischemique théorie*.

By a series of autopsies on cases of congenital torticollis in babies, with careful dissection of the sternocleidomastoid muscle with its blood supply followed by injection experiments on the arteries they have shown that the sternal head receives normally the smallest amount of blood furnished to any other portion of the muscle. With the head flexed and rotated in the position it would normally resume "in utero" the arterial supply is much diminished, or wholly cut off, owing to pressure on the sternomastoid middle artery, by the surrounding parts, and the proximity of the thyroid cartilage. This artery is a small branch from the superior thyroid artery, and is the sole source of supply to the sternal head of the sternomastoid muscle.

The deformity then is due to a markedly diminished blood supply, resulting in a degeneration of the muscle fibers, with subsequent sclerosis and contraction.

Facial asymmetry. — The question of facial asymmetry has not been covered as yet, and there are several points of interest to be considered in connection with it. Taken in order these are as follows:

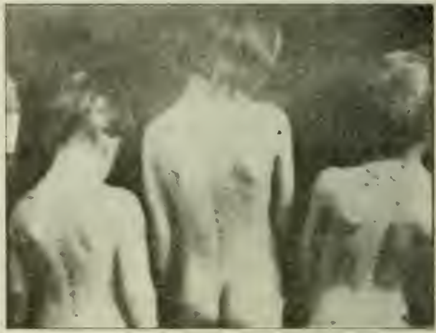


FIG. 12. Three sisters. Posterior view.

1. Causes of facial asymmetry.
2. Is it present at birth in congenital cases of torticollis?
3. How long may a case go without operation before the facial asymmetry becomes permanent, even after operation?
4. Is it wise to operate upon a case of long standing torticollis, with marked facial asymmetry which may result in a cure of the wry neck, but cannot cure a facial deformity?

1. "Asymmetry of the face is ascribed to the gravitation of the blood to the more dependent side, to muscular tension, to pressure and retarded development of the vessels and nerves on the side of the concavity; to tension of the soft parts, particularly the muscles of the sound side and the interference with function." (Young.) The atrophy of the affected side is probably due to faulty nutrition on account of compression of the carotid artery and other great vessels on the affected side, and to the misplacement of the epiphyses of the basilar portion of the occipital bone and the effect of the weight of the skull on the other cranial and facial bones. This latter theory probably explains the osseous changes in the face and asymmetry of the skull.

2. In most cases of congenital torticollis there is a facial asymmetry existing at birth.

3. A number of our cases were of eight and even ten years' duration, before operation, but examinations at present show practically no asymmetry or atrophy. It is probably safe to say that all

cases should be operated upon between two and ten years of age, if permanent deformity is to be prevented.

4. In adults with torticollis of long duration, presenting marked atrophy and asymmetry, it becomes a question for the patient to decide after having the situation fully explained to him. The asymmetry will probably not clear up, and the atrophy may become more noticeable.

PATHOLOGY.

There were no opportunities in our series of cases to verify the pathological condition in the cases of congenital origin, but as these conditions have been pretty well worked out by others we will simply summarize them briefly.

It is usually the sternal head which is affected. This presents on examination an interstitial degenerative myositis. It has never presented the characteristics of hemorrhage with muscular rupture.

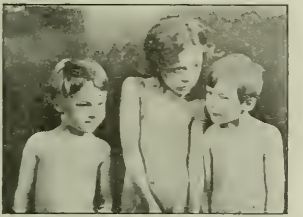


Fig. 13. Three sisters. Anterior view.

The affected area is usually found entirely deprived of muscular fibers, with few exceptions presenting a waxy, hyaline condition. What few muscular fibers may be left show a disappearance of their striæ. This condition is constant in children from two to ten. It is also found in any part where the vascular supply is interfered with, as in the ischemic paralysis of Volkman, too long use of the Esmarch bandage, too tight bandaging following immobilizing fractures of the arm, lesions of the great vessels, exposure to excessive cold, causing a slowing down or stopping of the arterial circulation. Histologically, these conditions are similar to those which exist in torticollis.

THE METHODS OF TREATMENT.

These may be enumerated as a non-operative method, muscular stretching, and stimulation; and an operative method, by subcutaneous tenotomy, or open incision.

The non-operative method. — In the cases which have come under this inquiry, a few have previously been treated by non-operative methods; one for several months at a western institution where the treatment consisted of a partial suspension massage and manipulation; in the second case the method was partially applied for some time by domestic nursing. Nothing can be said in favor of this method of treatment as it is manifestly irrational and unscientific. In all typical cases of contraction of the sternocleidomastoid muscle, the rational treatment, therefore, may be considered to be the operative method.

Operative method. — In the early experience of one of the writers, both as hospital interne and later in the early years of his practice as an orthopedic surgeon, the accepted method was by subcutaneous tenotomy. It was considered advisable to divide freely with a small tenotome both insertions of the sternocleidomastoid. One of the writers has performed this operation in two cases and would record his opinion that while the method is capable of giving satisfactory results and diminishes the danger of sepsis and does away with the possibility of a scar, yet the disadvantages of the method are so evident that no conscientious surgeon can recommend that method of operation. This will be readily seen by any one who has performed this operation by open incision and who is familiar with the anatomy of the sternocleidomastoid muscle.

The operation to be thorough will consist of an open incision thoroughly dividing the sternocleidomastoid. There has been some discussion among various writers on the subject as to the proper place of incision of the sternocleidomastoid; whether this should be divided at its insertion, the mastoid process; at its origin on the sternum and clavicle, or in its middle. There are disadvantages in the incision in each of these three points. These can be formulated as follows:

(*a*) The muscle at its insertion at the mastoid process can be readily reached; it can be stripped and separated well from its bony attachment without danger of dividing or wounding the internal jugular.

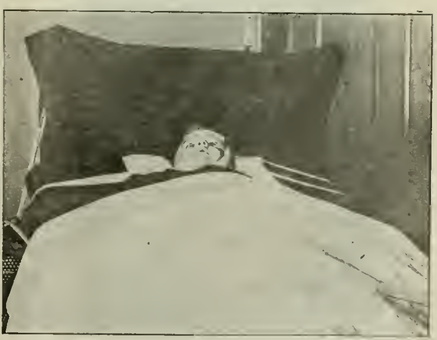


Fig. 14. Fixation apparatus in bed. After operation.

(*b*) The operation is readily performed and the resulting scar is in a position where it will not be noticeable.

(*c*) The disadvantages of the division of the muscles at the mastoid process are such, it would seem to the writers, as to prevent its adoption in preference to that of the division of the muscle at its origin on the clavicle and sternum.

(*d*) The chief disadvantage of the division of the muscle at the mastoid process is that the muscle at its insertion has a broad attachment and may be looked upon as a surgical aphorism that it is preferable in operating to use incisions which will divide the least amount of tissue. One of the writers has performed the division at the mastoid process in three cases; the results have been excellent, and the method is one which is of value in the hands of competent surgeons, but it does not seem to the writers to have any advantages which justify its adoption.

The division of the sternocleidomastoid at its middle has been advocated by a few surgeons, with the understanding that by this means there is a greater immunity from the possibility of a relapse. The separation of the divided muscle will be greater in its middle than at its ends. The skin incision can be made in the direction of the force of the muscle and in the fold of the neck, and no great danger of a disfiguring scar need be entertained. The muscle at this point, however, is thick, the carotid artery and vein lying close to it, and for this reason the operation requires an unnecessary amount of care through an increased amount of risk.

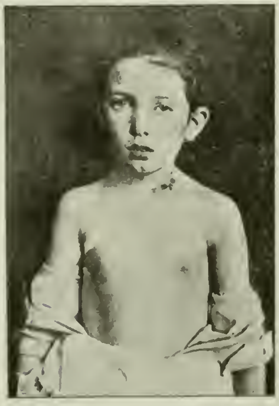


Fig. 15. Case in which scalenus anticus was divided.

The division of the muscle at its origin on the clavicle and sternum has the advantage of attacking the muscle where it is most superficial, the most easily reached, with the least dissection. It is for this reason that the writers would unquestionably place their preference for this point as the point for the muscular division in the treatment of torticollis.

It is advisable to take certain precautions to gain the best possible results. The question of scar is one which is of importance. A disfiguring scar upon the neck is, of course, a matter of some moment, and in one case operated upon by one of the writers a small keloid developed, which became a noticeable blemish. In a few other instances the union was not by first intention and a scar followed lasting through childhood. As a rule, however, the operation can be done with a minimum danger of any disfiguring scar. The surgeon, however, should bear this in mind and take unusual pains to prevent the scar and to secure the healing by first intention. It is desirable to plan in such a way that the scar will come just above or just below the clavicle, and that it will be parallel to the clavicle, it being manifestly easier that the skin incision should be made directly on the clavicle. In order to insure the proper position of the scar it is advisable to pull the skin up slightly before incising it. The skin can be divided without any risk if this is done, and it can be arranged that the scar should fall at a point where it will be least noticeable. The skin incision should be free, reaching from the middle of the sternum to at least one-third the length of the clavicle. The incision should be through the skin, subcutaneous tissue, as well as the external fascia, which includes fibers of the platysma. A director should then be inserted, passing it underneath the fibrinous attachment of the sternal end of the sternomastoid muscle and the muscle freely divided, cutting down on to the director which protects the deeper vessels. The director should then be inserted, passing it well under the clavicular attachment of the muscle, and the muscle divided in the same way.

An inexperienced surgeon performing this operation for the first time is apt to be disturbed at the size of the gap which follows, the retraction of the muscle, and also the apparent depth of the resulting hole. This need, however, occasion no alarm. It is essential that the whole of the muscle should be divided and that the muscular division should be made half an inch above the insertion. After the incision is made in the skin and the retracting pressure removed, the incision will be found to have its center just below the clavicle. This may be regarded as the point of selection, although it may be regarded as neces-

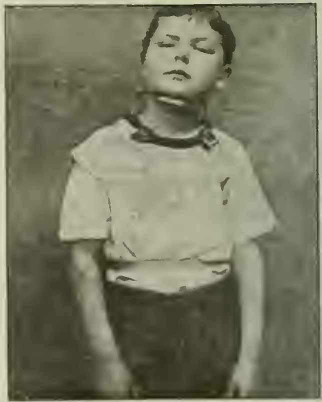


Fig. 16. Buckminster-Brown brace. After operation.

sary to divide the whole of the muscle, including the fascia which covers it, and any fibrinous bands which are lying in the course of the muscle. In order to be sure that everything is divided it is advisable for the surgeon to pass his gloved finger into the wound in order to feel if anything remains undivided. The surgeon should not, however, attempt to divide the deep cervical fascia which is entirely free from the sternocleidomastoid and which, lying directly over the internal jugular, should be spared. One of the writers wishes to record an error made in violating this caution, where a division of the deep fascia was performed in an excess of zeal from the desire to prevent the persistence of any possible contraction. The incision wounded the internal jugular and it was necessary to tie that vein, an operation which was both vexatious and dangerous. Fortunately no untoward result followed.

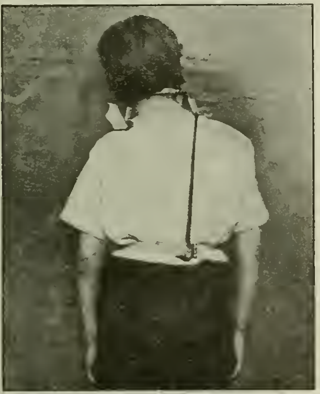


Fig. 17. Posterior view.

After the muscle is completely divided at both insertions, the surgeon or his assistant should take the patient's head in both hands and, having the shoulders held firm, the head should be twisted into an over-corrected position, and in this way all contractions in other minor muscles stretched.

One of the writers in one case was led to divide the scalenus anticus, but in the usual cases, in children at least, such an operation is entirely unnecessary.

If the operation is properly done no vessels are to be tied and the wound should be carefully closed. It it desirable not to pack the wound nor to leave drains in, in order to insure the absence of a scar. It is needless to say that complete asepsis is essential and that it can be readily secured by the employment of ordinary precautions. Although a cavity is left by the operation which would seem to require drainage, in the cases observed by the writers this has occasioned no trouble as the healing has taken place with the absorption of the blood clot.

Various ways are employed in dressing the wound from the ordinary dry dressing to sealing the wound with a tincture of benzoin. The writers are of the opinion that it is advisable to protect the wound with great care, not only from any septic invasion, but also from any friction. There is no great danger of wound gaping; and it is perfectly safe to close it with catgut sutures, but tension sutures should also be applied. The wound should be covered either with silver foil, or gelatin foil in order to prevent the possibility of rubbing the dry dressing; if that is not done the wound should be dressed the day following the operation.

After-treatment. — At the Children's Hospital two methods of fixation of the head following operation have been practised, both having been successful, and the writers have at various times preferred one and later the other manner of fixation.

If the child after an operation is placed upon a frame and the corrected position of the head maintained by three straps of adhesive plaster (see plate), one along the cheek of the elevated side, passing under the chin and stretching to a cord which hangs over the side of the bed, the chin can be held in an over-corrected position, provided a counter force is exerted by a strap of adhesive plaster passing upward over the opposite cheek, and a third strap passing under the patient's head, also connected with a weight, holds the plane of the face in a corrected position. These three straps can be arranged in a way to cause no discomfort. They permit the dressing of the wound if that is necessary, and, secured by sand bags at both sides of the head, furnish adequate fixation of the head in a corrected position.

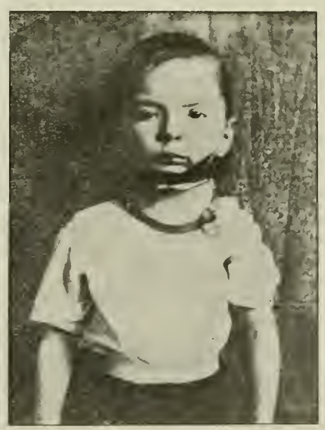


Fig. 18. Showing post-operative corrective apparatus.

In the earlier operations this was the method employed in all cases, but later the advantages of plaster of Paris as a means of fixation seemed manifest, namely, that the irksomeness of confinement to the bed is avoided for the patient. Considerable care must be exercised, however, in the application of the plaster of Paris bandages. In the first place the bandage must be applied in such a way that the head is securely held in an over-corrected position, the chin pointing to the opposite side to that which it held before, the plane of the face turned in an opposite direction from that which was held previously, and the ear on the contracted side, which was previously advanced, should be secured in a position more posteriorly. The mastoid process on the affected side should be as far away from the clavicle as possible. It is also important that the plaster of Paris bandage should not rub upon the wound. A window can be cut in the plaster so that the wound can be dressed or inspected.

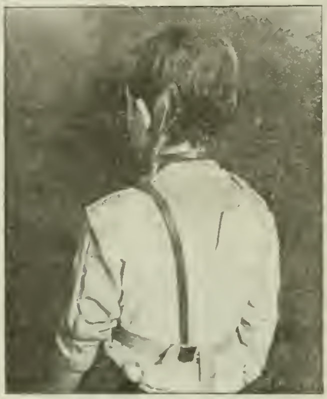


Fig. 19. Showing post-operative corrective apparatus.

In the application of the plaster bandage it is desirable that the upper part of the thorax be kept down, which, before the operation, had been raised. If the bandage is properly applied it causes no discomfort, but it can be readily seen that an improperly applied bandage would demand speedy removal.

Where the surgeon is perfectly sure of his technique, and a comfortable bandage is applied, it should be worn without change for a month, after which it can be renewed or left unchanged; but in case of the removal of the bandage some form of retention apparatus should be worn for at least three months following the operation.

Of the various apparatus which have been recommended the writers have found the wire collar, a modification of that introduced by Buckminster Brown, the simplest and most efficient. In place of this, however, a leather collar, including the neck and also the upper part of the thorax, can be used. It is advisable that over-correction should be maintained for at least three months, after which the head may be gradually freed from its support and massage employed if desirable. As a rule, however, massage is not necessary.

These technical details, although tedious, are perhaps of some importance as they lead to the establishment of satisfactory results which have been obtained at the clinic at the Children's Hospital. It has been somewhat of a surprise to read in many of the journals of the dangers of relapse following the operation for torticollis. In order to determine this, the writers have examined the records of the Children's Hospital, going back twenty-eight years. The cases that were investigated were not all operated on by the writers, but by the writers and their colleagues. No classification is made of the names of the operators, but the method of operation and the technique employed have been substantially the same by the various surgeons performing the operation.

The number of cases investigated was 90; replies were received from 62 cases. The records of such cases as were not heard from were obtained in the hospital, and a note made of their condition at their last visit. As these cases were chiefly the ordinary hospital cases, the after treatment being carried out in the out-patient department, which includes no better care than what is furnished in most out-patient departments, and when it is recorded that recurrence took place in only two cases, and that in one no benefit was considered to be derived from the operation, by the parents, it may be considered that the operation is one which promises with ordinary care and after-treatment perfect results.

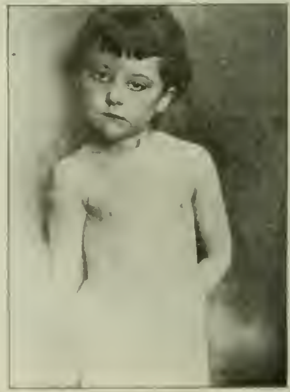


Fig. 20. Showing contraction of sternomastoid muscle.

It is essential that the operation should be carefully done. It is also essential that the aftertreatment should be thoroughly carried out. Neglect of either of these two factors would be followed by failure or partial success, but with attention and thoroughness the certainty of cure may be guaranteed.

Results of Treatment.

TABLE NO. 4.

Causes.	Operation.
Congenital,	43
Not ascertained,	15
Rheumatic,	1 sub-cutaneous tenotomy
Traumatic,	3
Cervical abscess opened and drained,	3
Instrumental labor,	4
Hematoma,	1
Post-influenza,	1
Post-measles,	1

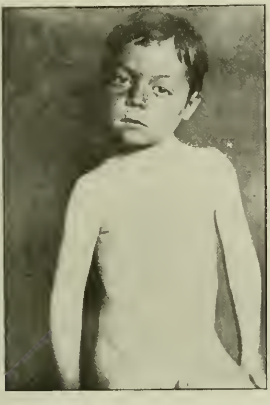
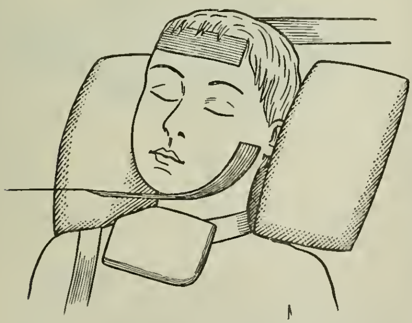


Fig. 21. Showing contraction of sternomastoid muscle.

There were two cases in which there was a second operation owing to a recurrence of the deformity at intervals of four years in each case. This recurrence was due probably to two causes, namely, lack of completeness of the operation, and insufficient attention to after-treatment.



Showing adhesive strap for over-correction in bed. Post-operative.

The recurrence, however, in but two of the cases traced, answers well for the routine carried out at the hospital, and the skill of the operators. One of these cases was of the congenital type, and one was due to instrumental delivery. Since the second operation there has been no further difficulty, and the results on one of these cases may be seen by referring to picture No. 1.

Post cards were sent to each one of the cases in the series, asking for the present condition of the case, how long a brace or any other apparatus was worn following the operation, and requesting the patient to report to the hospital if the distance from Boston was not prohibitive.

Replies were received from 62 cases, 12 were not heard from, and 18 reported for examination and photographs. The replies received were intelligent and answered the questions asked, and the tabulated results may be seen in Table No. 2.

TABLE NO. 2.

RESULTS OF CASES OPERATED ON SINCE 1879 AT THE CHILDREN'S HOSPITAL.

Number of years after operation.	Head straight in all planes.	Improved.	No benefit.	Recurrencé.	Not heard from.
1	11	4			1
2	3				
3	5				
4	7	1			
5	2	1		1	
6	3				1
7	3				
8		1			
9	1				
10	2				2
11	1				1
12	2			1	
13	1				
14	2				
	2				
16	2				
17	4				
18	2				
19			1		1
20					1
22		1			
23					
24					1
25					2
26					2
Totals,	53	8	1	2	12
Counted twice, 2.					

TABLE NO. 3.

Total number since 1879,	90
Total number operated,	72
Total number stretched,	2
Number discharged with apparatus,	28
Number discharged without apparatus,	7
Number discharged with Thomas collar,	10
Number discharged with plaster,	27
Right-sided,	37
Left-sided,	36
Not noted,	2
Died in hospital from intercurrent causes,	4
Died outside the hospital from unknown causes,	1
Average age,	6.8
Boys,	39
Girls,	51
Oldest operated,	12 years
Youngest operated,	2 years

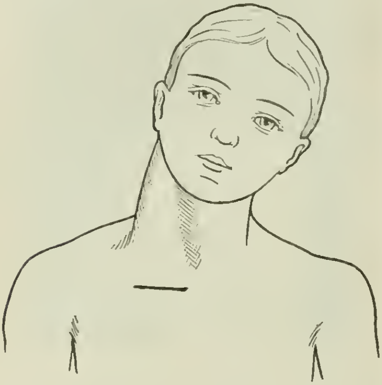
1. M. B. Girl, age eight. Right torticollis — duration since birth — no cause determined. Labor normal. No marked facial atrophy or asymmetry.

Operation, November, 1889. Open incision — both heads of sternomastoid divided. Plaster cuirass.

2. B. B. Girl, age six. Left torticollis — duration since birth — no cause determined. Labor normal. Operation, November, 1889. Myotomy. Plaster.

3. B. B. Girl, age five. Right torticollis — duration since birth — moderately contracted. No marked atrophy or facial asymmetry. Operation, November, 1889. Myotomy with open incision. Plaster. See group photos 12 and 13.

The three cases cited above are most interesting in that they occurred in successive children — all girls — in the same family. There is no family history of any similar previous condition, and there was a normal labor in each case.



Showing line of incision in skin.

The mother writes that the operations "were successful in every way." This was seventeen years after operation.

4. M. Van K. Age ten. Girl. Double torticollis — duration since birth. No further history obtainable. At two years of age she was operated upon in Michigan. Just what was done at that time could not be ascertained. There was a greater degree of contraction on the left side, as compared with the right. The head was thrown forward, and the shoulders elevated. There were no cervical ribs as sometimes occurs in these cases.

Operation, October, 1903. Myotomy with open incision on the left.

Result. — Apparatus. Buckminster-Brown brace worn six months. April 5, 1906. Father writes from Michigan that the operation was a success, and that the head and shoulders are quite straight.

5. N. McD. Girl, age four and three quarters. Torticollis, right. Duration two and one-half years following a fall. Torticollis noticed soon after. Operation, June, 1888. Open incision. Sternomastoid and fascia divided. Plaster for four weeks — followed by Buckminster-Brown brace for four months.

Result. — February, 1907, head in good position deep depression in the right neck, no facial asymmetry, motion all normal. See photo No. 1.

6. H. Boy, age four. Torticollis, right. Duration two years — cause unknown. Considerable tipping of the head to the right with rotation. Marked atrophy of the right face and asymmetry.

Operation. — February, 1895. Open incision, myotomy. This boy died in the hospital later from the measles. The picture is shown to illustrate the atrophy and facial asymmetry. Photo No. 2.

7. O. C. Girl, age eleven. Torticollis, left. Duration nine years, probably congenital.

Operation. — September, 1896. Open incision, myotomy and fasciotomy.

Result. — One year later head straight. Splint omitted. This case has not been heard from since. Photo No. 3 illustrates also the thread screen to show deviation.

8. Wm. D. Boy, age five. Torticollis, right. Duration-since birth. No cause assigned. Congenital. Marked contraction of the right sternomastoid muscle.

Operation. — August, 1896. Open incision, myotomy — plaster.

Result. — February, 1907. No facial atrophy or asymmetry. Slight prominence of the left sternomastoid muscle — small hollow above the clavicle on the right. Motions all normal. Head straight. Wore brace two months. See photo No. 4.

9. H. A. Boy, age, four and one half. Torticollis, right. Duration since birth. Forcible delivery. Parents noticed a lump over the right sternomastoid at birth.

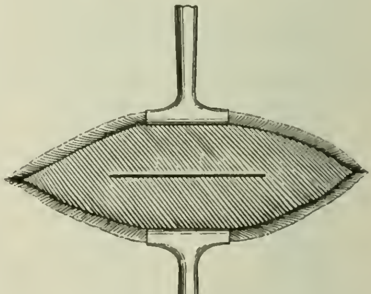
Condition. — Contraction of the right sternomastoid.

Operation. — November, 1899. Open incision. Myotomy both heads of muscle. Plaster four weeks, followed by Buckminster brace which was worn four months.

Present condition. — Head straight, moved freely in all directions. No atrophy of facial asymmetry. See photos Nos. 5 and 6. No. 5 before operation. No. 6, after operation.

10. C. Girl, age eleven and one-half years. Torticollis right. Duration since birth. Marked contraction of sternomastoid muscle — especially the clavicular portion. Only slight facial asymmetry.

Operation. — February, 1900. Open incision. Myotomy. Plaster for one month, and then Buckminster-Brown brace which was worn for seven months.



Incision in fascia.

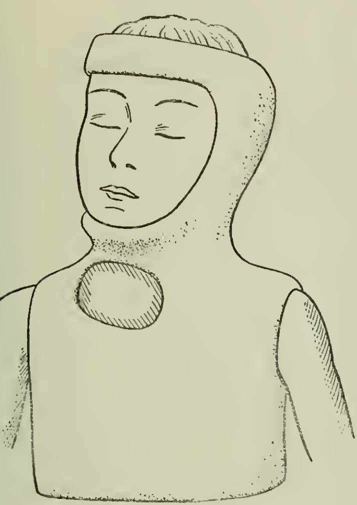
Result. — February, 1907, head nearly straight, still shows a slight tipping to the right. Sternomastoid muscle stands out as a distinct ridge as may be seen in photos Nos. 7 and 8, motions of head free.

11. B. C. Girl, ten years. Torticollis, left. Duration three years following the measles. Considerable contraction of the left sternomastoid muscle, no facial asymmetry.

Operation. — September, 1900. Open incision, myotomy. Plaster for five weeks. Brace, five months.

Result. — February, 1907, head straight in all planes. No asymmetry. Motions all normal. See photo No. 9.

12. E. C. Girl, age eight. Torticollis, left. Duration two years, cause not determined. Presents marked contraction of the left sternocleidomastoid muscle with facial asymmetry and atrophy. There is also a well marked degree of forward resistant shoulders and lateral curvature with reversed rotation.



Post-operative plaster cuirasse.

Operation. — August, 1902. Open incision and myotomy. She was put up in a plaster in the usual way and then fitted to a brace. The condition she presents to-day is not wholly satisfactory, for her brace was not worn consistently, which, combined with her lateral curvature and the forward shoulders prevented her complete cure. She is now under treatment for her lateral curvature. See photo No. 10. Photo No. 11 to show over-correction with the Buckminster-Brown brace as applied after an operation for a left-sided torticollis.

All of the acquired forms of torticollis responded as readily to treatment as those of the congenital type. Those cases which were not benefited or had recurrences were in the main due to the unwillingness of the parents to keep the brace on the proper length of time, and to have the child kept under frequent observation at the hospital.

The average length of time during which the child wore the plaster cuirass was about four to six weeks, after which the brace was applied to be worn for about six months, depending upon the individual conditions.

CONCLUSIONS

In view of the results of the study of this large number of cases, covering such a long period of time, the writers think that the following conclusions may be stated, namely:

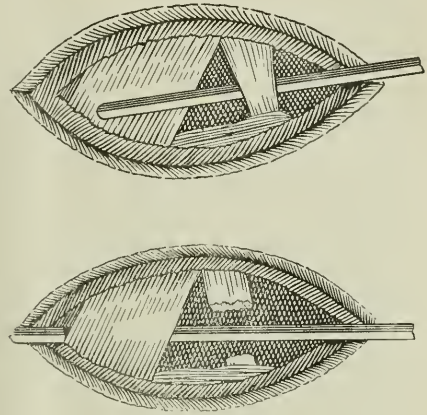
(*a*) That congenital or acquired muscular torticollis may be cured.

(*b*) That an open incision, with complete division of the two heads of origin of the sternocleidomastoid muscle, is all that is necessary, except in unusual cases.

(*c*) That the horizontal incision below the clavicle in the line of the skin cleavage is the best to use, in that it gives adequate room and also gives the best cosmetic results.

(*d*) That plaster of Paris is the easiest applied, holds the head in the corrected position, and allows ambulatory treatment, and is therefore the best immediate dressing.

(*e*) That the plaster cuirass should be worn not longer than two months.



Showing division of clavicular and sternal origins.

(*f*) That the Buckminster-Brown brace, Thomas collar, or wire collar should be worn for an average of four months following the removal of the cuirass.

(*g*) That it is best to operate on cases between the ages of two and twelve years, to insure a good result, and prevent permanent bony deformity of the face and head.

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Plans for a new building for the medical school of McGill University have been accepted by the Board of Governors, according to the *Medical Record*, and it is expected that the work of construction will commence without delay. The new building will be erected opposite the Royal Victoria Hospital, and is to consist of a central block facing the campus and connected at either side with pavilions running parallel with University Street and Carleton Road.

A SEARCH FOR A SUITABLE CLIMATE.*

BY SAMUEL A. FISK, A.M., M.D.
(Formerly of Denver, Colo.)

Part I.

Born in Massachusetts, I spent six of the first seven years of my life in St. Paul, Minn., where I had "lung-fever," in consequence of a servant, whom I was teasing, throwing a pail of water over me. This simple thing has influenced my whole life, for, from that time, my lungs have been my weak spot.

In the spring of 1880, while a student at the Harvard Medical School, I was confined to my bed constantly for four weeks with what was then called "acute lobular pneumonia." It was before the days that we hunted for bacilli, but they were probably there. The character of the attack, and the care and skill of the physicians who passed their opinion upon the nature of the disease, warrant the belief that I had consumption of the florid type. On leaving my room I went immediately to an outdoor life and a splendid table, in western Massachusetts. Seven weeks of this and two weeks of examinations and worry filled in the time to my going to the Rangely Lakes, which I found awfully hot. I then went into the White Mountains, where I staid until the first of September. On the second of November I was in Denver. After ten days I went to Colorado Springs, and in a month's time I was located on a ranch, a mile out of town. The first of April, of the year 1881, saw me in a small frontier town, Poncha Springs, one of the toughest places in this country, trying to practise medicine. I took a thoroughly unexpected trip back to Massachusetts that fall, and was gone six or seven weeks. The summer of 1882 found me the resident physician at Estes Park, Colorado. That fall and winter I spent in western Massachusetts, where I had strong hopes of remaining. However, an opening, with a fellow-classmate, took me to St. Paul, Minn. Desirous as I was of staying there, the melting snow, the penetrating chill of the air, the fur overcoats of the old-timers, worn on the first of April, and finally a chill, made it apparent that this was no place for me, and so I went back to Colorado. I shall not soon forget the grateful warmth and dryness of the air on the plains west of Omaha. This has been an oft-repeated experience. I wish now to record a trip to Salt Lake City, over the freshly completed branch of the D. & R. G. R. R. On the first of May, 1883, I opened offices in Denver, Colo., and my experience there covers a period of fifteen years, during which time I was in very active work, and handled, as my fellows of this Association know, hundreds upon hundreds of cases of consumption. Six months after opening offices in Denver, I was attacked with inflammatory rheumatism, and coincidentally with a diabetes insipidus, or at least a polyuria, which has lasted ever since. The record shows that on leaving college I weighed 151 lbs. I ran down under this attack to 124 lbs. and to-day I tip the scales at 182 lbs. The cough and muco-purulent expectoration were present, and the fever and sweats were slight, so far as I recall. Since going to Colorado there have been at least two other attacks of pneumonia, a spontaneous fracture of a rib, another attack of rheumatism, the passage of tenia, the colds, sore-throats, etc., that mortal flesh is heir to. It must be remembered, too, that I was a stranger in a strange land, working hard all the time. "A workman is known by his chips." Time and time again, as I have been about my work, and more especially at night, I have thanked my lucky fate that my lines were cast in Colorado. I did not spare myself, but went at all times and everywhere. For years I walked, while others rode; and I always endeavored to keep warm, and I invariably had a good appetite. My digestion was good, and was considered, although I aimed not to be, finical or over-nice. Finally the American Medical Association came to Denver. I was active in the work of that time, being chairman of the section of medicine, the chairman of the finance committee, the vice-chairman of the committee of arrangements, etc. In all I held seven positions, and when that meeting was over, I went to bed, had a masseur, and I have not practised my profession since. Many thought that I had "progressive paralysis." I certainly had a form of ataxia probably of a circulatory nature.

Since then, for six years and a half, I have been a wanderer, living in steamer trunks. I spent several months, in the spring of 1901, in California, and was there with this body again in 1902. One winter I was in Nassau, Bahama Islands. I have been in the British Isles four times in all. One summer I was in Nantucket for several months consecutively. Once I was as far east as Sidney, Prince Edward Island, the Provinces, etc. I have been repeatedly at certain points of the Maine coast. I have wintered and summered in the hills of New England, and now have my home there. I have been to my old home, in Colorado, time and again. The cities and the country have seen me; and all the time I have endeavored to lead the "simple life." I have walked hundreds upon hundreds of miles, slept hours upon hours; and have eaten well, but simply.

My reason for wearying you with this long personal narration is that it must furnish the basis for what I have to say. The figures can and must be looked for elsewhere.

When the trouble with my lungs attacked me, I was supplied with money, not lavishly, but in amounts sufficient to take me, and care for me within reason. I thus came under the class that has been wisely spoken of elsewhere, that could do as seemed best, — the class whose pocket-books are not masters of the situation. From the time that I began to work, in 1881, I have practically paid my way.

The problem that presented, in 1880, was that of a man, unmarried, twenty-four years-old, having a college and medical-school education, and a moderate purse, quite moderate; broken down with consumption. There were not, nor have there ever been, hemorrhages, and there was a good digestion, and a disposition on the part of the system to repair. I was sent to Colorado, and to Colorado I went, as thoughtlessly as any young man; my medical training did not cut any figure with me. I was sent and I went. In those days Colorado was not the Mecca for the consumptive that it has since become. I regard the choice as in every way a wise one. Why?

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* Read before the American Climatological Association, at Washington, D. C., May 7, 1907.

Colorado is pre-eminently a land of outdoor life. The constant sunshine invites and it is hard not to yield. This factor of constant sunshine is one on which too great stress cannot be laid. We all know what it means to get out of bed into a flood of brilliant cheer, and it is a great thing to have that cheer stay with one all day long, and day after day, week in and week out. The lack of it is very noticeable to one coming away from Colorado. It is a good deal like getting up at a hotel into a room on the court, one never knows what sort of a day it is. It affects one's spirits all day long. The air of Colorado is remarkably pure and dry. A collection of human beings always affects the quality of the air, and Colorado is wide. The dryness holds most anywhere in the state. It is a rare air, of an elevated region, and the barometric pressure is small. There is a moderate, very moderate, annual precipitation, and the drainage and the character of the soil favor soil dryness. There are about two hours of sunshine at Denver, on the first day of January, to one at Davos. Figures on all of these points have been presented to the profession again and again; they are accessible to any one, but the facts cannot be emphasized too often, in my opinion. Are these simple figures to be juggled with, as one turns a kaleidoscope? or do they hold a vital truth? There are those who say that in the cure of phthisis pulmonalis climate does not cut any figure, that change of climate is the thing; or rather that change of climate combined with suitable diet and regimen. These latter factors can be had almost anywhere, and undoubtedly do play a strong part in obtaining an arrest or cure of the disease, but one cannot get them on the Atlantic coast, or on the Pacific coast, either; or on the Lakes, or in most places. The Colorado air does not come bottled up like a table water, and if one wants it he will have to go after it. Beef-juice, eggs and milk, diet, drugs, brick buildings, etc., are to be had almost everywhere, but the peculiar combination of climatic factors, of which we have just spoken, has to be sought out, and I, for one, think that they are well worth the search.

It is possible to get some of them, separate from the others, at some other places. For instance, one can have sunshine, a dry soil and a pure air (when the wind is north, or northeast, right off of the water), for some of the winter months, at Nassau. But with it comes the additional facts that Nassau is far south, only a little over 25° north of the equator; that it is tropical in its climate; that it is depressing in its effects, and when the wind blows from the points to the south, and over the island, as it frequently does, it blows in a perfect horde of mosquitoes; that the water is cistern water, for Nassau is on a coral reef and the well-water is full of lime; and that the air may be pure, but it is frightfully humid. One would only go there, at the best, for a few months in the winter, to get away from the rigors of the winter further north, and instead of furs one would be wearing muslins, and be thoroughly uncomfortable at that. Nassau is depressing and does not tend to build one up. It is not the place, at all, for one looking for an arrest of this disease. Why bother about it? Some cases of fatty heart, some cases of Bright's disease, some with enfeebled circulation, from any cause; persons somewhat advanced in life, looking for equability of temperature and a moist skin, find Nassau, with its malachite sea and tropical foliage, very attractive. But for a young person looking for an arrest of consumption it is not to be considered for a moment.

A semi-tropical climate is that of southern California. It is neither as depressing as Nassau, nor nearly as invigorating as Colorado. The extreme south is about as far south as Charleston on the Atlantic coast. The climate partakes more nearly of that of the tropics. The palms, the eucalyptus, the pepper trees, are the chief foliage. In southern California proper, one does not run across the verdure to which we of the Temperate Zone are accustomed. An occasional beech is to be found in some of the cañons around Ventura. I well remember how grateful it was to me to find a large cluster of elms in front of the hotel at San José. Sitting in front of a blazing fire in the hills of Massachusetts, or trudging through the deep snows of a New York town, a winter spent amongst the roses or orange trees of southern California seems Elysium. It certainly is unaccustomed. But it must be remembered, for our purpose, that these luxuries are accompanied by *fogs*, dense and wet fogs, and that moisture of the air is very bad for the consumptive.

No one attempts to sit out of doors after sundown in southern California, and they do that in Nassau. It is not an unusual thing to find the asphalt around the hotel at Coronado quite black in the morning, from the moisture precipitated over night. In the morning the fog comes rolling in from the ocean, and it is frequently eleven o'clock before this bank of fog is cleared away so that the sun really shines. I recall that on our visit there, in 1902, one of our ex-presidents went around with an umbrella in his hand, prepared for rain. The old-timers did not carry theirs, they knew better.

We are told, in an article in our Transactions for 1904, that the writer witnessed a foggy spell of seventeen days' duration at Santa Barbara, in May and June of 1903, but he adds, "The fogs, being high, do not cause the deposit of so much moisture as one would expect from an eastern fog, or 'sea-turn.'" The writer on climate, in that charming little book, "Two Health Seekers in Southern California," says (page 142):

"Other consumptive patients find southern California entirely unsuited to their particular malady." As he has already practically eliminated hemorrhagic cases, the so-called catarrhal forms of pulmonary disease, the catarrhal phthisis of the older writers, the phthisis florida and the laryngeal phthisis, it does not leave much else for his group called "other consumptive patients." These two writers are residents of southern California. They are careful observers, and are telling what they see. Figures, too, show that there are over twice as many grains of moisture to the cubic foot of air in southern California as there are in Colorado. It is really a moist climate, and as such it is not suited to the consumptive in search of a cure.* It can be used and used wisely, too, for so many other conditions than consumption, that it should be given its just place by this Association. The roses are perfectly delightful; the climate is soft and soothing; the oranges we all know, but not in an orange-grove; it will stick in one's memory to sit by the gentle Pacific and hear the waves come in. Southern California is so charming, in so many ways, that there is no need of her claiming to be a panacea for everything.

It is claimed that the air of mid-ocean is remarkably pure, and one can sail the ocean blue in search of health. Having crossed the ocean between here and the British Isles eight times I can speak on that score, too. I am particularly fond of the water, and have had the good fortune to escape sea-sickness so far. I have experienced some pretty rough weather, too, and I have always enjoyed it. But however pure the air may be, I have found the vessel to seem cramped, and after a few days have longed to stretch my legs on shore. I have missed the babbling brook, the green meadows and the trees. I have wearied of looking over the rail at the gull or the porpoise. The milk and eggs do not seem altogether fresh. In one way or another I get tired of a vessel, and am glad to get ashore. It seems to me that this feeling would be intensified if one felt that he had to stay there, and moreover the ship diet would be a serious obstacle.

The hills of New England are unnecessarily severe for the invalid, and do not offer the inducements that one can get elsewhere. I cannot understand how the hills of New York can be much better.

It is argued against Colorado that it is not an all-year-round resort, that it is too severe there in winter; and to meet this objection, very largely, it has become the thing, of late, to send one's patients into New Mexico or Arizona for the winter months. This custom, it seems to me, is to be deprecated very much. I have rarely seen much good come of it. These are not the places in which the doctor, at home, wishes to put the patient; if for no other reason than that it is too hot by summer. In making the change back and forth, something amiss is likely to happen to the invalid, and one such fatal mistake costs so much.

Colorado is an all-year-round resort. That is just what it is. The arrest and cure of consumption is not a plant of hasty growth; in many cases it takes years. That state offers abundant opportunity for all the energies that any man can put forth. The danger is that the temptation may be too great. The temperature is not equable, I will admit it. I have thought this a point in Colorado's favor rather than against her. This freshness of the air is invigorating, it is stimulating, and the person seeking a cure is not seeking an opiate as well.

This brings up the point I wish to speak of, and in such a manner as to emphasize what I have to say. The arrest and cure of consumption requires courage, boldness. Is it an easy matter for the invalid to sleep out of doors, in the East, during our coldest winter weather? If the patient is not willing to make an effort to help himself, the attending physician has an almost hopeless task ahead. It is like a drowning man saying, "I will drown and nobody shall help me."

Another objection that is raised is not supported by figures. Colorado is frequently spoken of as being "windy." A careful investigation of statistics, furnished by the Weather Bureau, shows that the average daily velocity of the wind, in Denver, for a period of ten years, was much less than that of Philadelphia or New York, and that it was 85 miles less than that of Chicago and 101 less than that of Boston for the same time.

The question of atmospheric electricity I do not understand. I do know, however, that the air of Colorado is charged with this electricity, and that in the winter time it is very much in evidence. The clothing will snap, at night, as though one had rubbed across the carpet, in order to produce it.

Solly says that the tendency to hemorrhage is lessened in a high climate. Be that as it may, Reed, of Colorado Springs, pointed out to the State Medical Society, that hemorrhagic cases did well in the high altitude of Colorado. My own experience, and that of others, would tend to confirm this statement, very decidedly; *i. e.*, altitude *per se* is not a producer of hemorrhage of the lungs.

Quite a number of cases of laryngeal phthisis have been known to have been arrested. I had them in my own practice, and others did in theirs. Of course the ulcer left a cicatrice on the cord and the voice was affected. But the ulcer was healed, and loud and sustained speech was the rule. I have known this recovery, if it can be called a recovery, to last for years.

In regard to a return East to live, after a recovery obtained in Colorado, many persons fear, or say they fear, that, if they go to Colorado at all, they will always have to stay there. "Once in Colorado always in Colorado," they say. Even if that were so, which it is not, many a worse thing might happen. As has frequently been pointed out, Colorado will fully occupy any energy that one may see fit to give her, and she is capable of giving large return on all such ventures. Our Dr. Knight, for whom we hold the deepest affection, and whose judgment is so universally admired, put himself on record, on this point, way back in 1891, when he said before this Association, "I feel sure that patients cured in Colorado need not all remain there." My own belief is shown by my action. This principle is well established now, by many and indisputable cases. They occur in practice after practice. It is a good plan, however, not to swap horses while crossing a stream, and to make reasonably sure before trying any experiments.

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* Hermann Weber says, "Another idea, that equable climates are the best in the treatment of phthisis, should likewise (in addition to a warm climate) be much restricted."

This brings me face to face with a consideration of the so-called "home treatment." There is not one of us, I think, but would put himself in the best condition possible to overcome this disease, if he felt certain that he had it. He would take the best steps he could, all things being considered, and that right away. He would not fondle the disease. He would not play with the fire, but would take the most active steps to put it out. The best would be none too good for him. Why should he not do the same by his patients? Early diagnosis, and fresh air, combined with food, can do wonders, even at home. It seems wise to me to take every step, and that early and not as a last resort. The alternative is death, of a horrible kind. Why play with it? The question of what to do after recovery can wait. First secure the recovery. Don't ponder about getting there before the doors are closed, but go. Colorado may rule you out, instead of your ruling her out, and her help is needed.

This means, of course, that Colorado climate must be used properly. It is not enough to simply get there, and then, metaphorically, draw a razor over one's throat by doing all sorts of imprudent things which would not be entertained for a moment at home. But the climate, rationally used, is a great aid to the arrest and cure of most forms of phthisis. Experience has shown this to be true, in thousands upon thousands of cases. It is not every case that even then secures a recovery. Many die. Just so with antitoxin, the mortality is greatly diminished under its proper use, but patients still die of diphtheria. If you have phthisis pulmonalis you will, if you are wise, take every step you can to stamp it out, to make your own calling and election sure.

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A STUDY OF SEVEN HUNDRED AND FIFTY FRACTURES OF LONG BONES OF THE LOWER EXTREMITY, WITH SPECIAL REFERENCE TO THE CAUSE OF DELAYED UNION.

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Through the courtesy of the Trustees and Surgical Staff of the Boston City Hospital I was permitted to examine the hospital records in the preparation of this paper.

This series of cases was taken from the surgical records of the Boston City Hospital from 1890 to 1900. Fractures of the femur, of the tibia alone, and of the tibia and fibula together were taken. Fractures through the neck or condyles of the femur and through the heads or malleoli of the tibia and fibula were not included. Simple fractures of the shafts of the bones were the only ones studied. No compound fractures were considered.

For the purposes of this paper all fractures which did not unite within the normal limits were regarded as cases of delayed union, no distinction being made between delayed union and non-union.

This series comprises 281 fractures of the femur, 136 fractures of the tibia and 333 fractures of both tibia and fibula.

FRACTURES OF THE FEMUR.

There were 281 of these fractures in 276 patients, 217 of whom were males and 59 females. Five patients had both femora broken. The right femur was broken in 150 cases and the left in 131.

The fractures occurred at all ages. The youngest patient was eight months old and the oldest eighty-three years. The frequency of these fractures in youth is shown by the fact that 38% were in patients under ten years of age and 50% were under twenty years. Twelve per cent of the patients were over fifty years of age.

The majority of the fractures were through the middle portion of the bone, that is, 32% were at the middle, 33% at the junction of the middle and lower thirds and 23% at the junction of the middle and upper thirds, leaving only 7% through the upper third and 5% through the lower third. There were no fractures through the upper third of the femur in patients under ten years of age, and only 2 in those under twenty years. In the first five decades the majority of the fractures were at the middle of the femur or below, while after fifty years of age there were nearly twice as many fractures above the middle as below it, showing a tendency for the high fractures to occur in older people.

Eighty-three per cent of all the cases were solidly united within nine weeks, 4% left the hospital in less than 9 weeks and before the fractures were solid; 1% died shortly after entrance, 1% were operated upon for delay in union, and 11% required ten weeks or more for solid union to take place.

Forty-four per cent of the fractures which were solidly united within nine weeks were in patients under ten years of age, while of the cases requiring more than ten weeks for solid union only 6% were under ten years; but there were 7 patients over seventy years of age, and in each one of these the fracture was solidly united within nine weeks. Ninety-seven per cent of the fractures in patients under ten years of age were solidly united within seven weeks. Apparently fractures of the femur in children unite readily, but old age does not prevent union within the normal limits.

The following cases were found in the patients who were suffering from constitutional disease:

1. Rachitis, 5 cases, solid union took place in three, four, six, seven and fourteen weeks respectively. The patient whose fracture required fourteen weeks to unite was very poorly nourished.

2. Mitral disease with good compensation, 2 cases, one of which united solidly in six weeks and the other, which is described later, was operated upon for delayed union.

3. Marked arterio-sclerosis, 1 case, solid union took place in six weeks.

4. Malaria, 1 case, solidly united in six weeks.

5. Epilepsy, 1 case union solid in seven weeks.

6. Advanced sarcoma of breast and groin, 1 case, union solid in eight weeks.

7. Tuberculosis, 2 cases.

(*a*) Pulmonary tuberculosis, sixty-nine years of age, union solid in ten weeks.

(*b*) Sub-acute hip disease, solid union in nine weeks.

8. Fragilitas ossium, 1 case, union solid in nine weeks.

9. Diabetes, 1 case, solid union in nine weeks.

In looking for local causes as interposition of soft parts, comminution, poor apposition, and overriding of fragments and obliquity of fractures which might delay union, it was found that of the fractures which united solidly in nine weeks or less 14% were oblique fractures with overriding of the fragments; but of the fractures which required ten weeks or more to unite solidly 40% were oblique with overriding, and in some cases comminution of the fragments. The end results showed that in 4% of the former class there was some slight resulting deformity, and in 23% of the latter class it had been impossible to accurately approximate the fragments. This showed a tendency for the cases in which approximation of fragments was difficult to require more time for solid union to take place.

The following cases, three in number, would seem to strengthen this opinion:

1. Male, sixty-seven, an oblique fracture in the upper third of the femur. The limb was put up on an inclined plane with extension, and later in a Buck's extension. At the end of twenty-four weeks there was a shortening of 3 inches and union was only moderately firm.

2. Male, thirty, an oblique fracture of the femur in the lower third. The limb was put on a double inclined plane and later in a Buck's extension. At the end of eighteen weeks there were 1½ inches shortening, and some mobility at the seat of fracture.

3. Male, sixty-three, an oblique fracture in the upper third of the femur. The limb was put on an inclined plane, with extension. At the end of nine weeks there was overriding of the fragments, and mobility at the seat of fracture. At the end of sixteen weeks there was considerable mobility and moderate deformity. In these 3 cases repeated attempts were made to overcome the shortening and approximate the fragments, but without success.

Three patients were operated upon because of delay in union.

1. Male, five years of age, in excellent physical condition, fractured his left femur in the middle third. Abnormal mobility and shortening were present, but no crepitus could be obtained on manipulation of the fragments. The limb was kept in a Buck's extension for two months, when a plaster of Paris spica was applied for one month, but no union took place. The fracture was then cut down upon, and the end of the upper fragment was found encapsulated in muscular tissue, and separated from the lower fragment by considerable fibrous and muscular tissue.

2. Female, fifty-four, very stout, fractured her femur at the junction of the middle and lower thirds. There was much deformity and mobility in all directions, but no crepitus could be obtained. The limb was put in a Buck's extension, later in a plaster spica, and later still in a Buck's extension. At the end of twenty-two weeks there was free mobility at the seat of fracture. Operation showed the fragments overlapping 2 inches, with soft parts between.

3. Male, sixty-two, in good physical condition, fractured left femur at the junction of the middle and lower thirds. There was free mobility in all directions, the lower end of the upper fragment nearly penetrating the skin. The limb was put in a Buck's extension, but at the end of two months there was no union. Operation at that time showed that the upper fragment had transfixed a portion of muscle. The ends of the fragments were freshened and approximated without wiring. Union did not take place, and nine months later a second operation showed the fragments overlapping two inches, and without callus. The ends were freshened again and wired. The bone was solidly united in three and one-half months. This patient received a fracture of the radius at the same time that his femur was broken, but it united without delay.

The interposition of soft parts and imperfect approximation was responsible for the delay in these fractures.

Alcoholism had no apparent effect on union of fractures of the femur.

FRACTURES OF THE TIBIA.

There were 136 fractures of the tibia, 112 males and 24 females; 66 of the right tibia and 70 of the left. Forty-three per cent of the patients were under twenty years of age, 48% were between twenty and fifty years, and 9% were over fifty years; 94% of the fractures were at the middle of the tibia or below; that is, 21% were at the middle, 42% at the junction of the middle and lower thirds, and 28% through the lower third.

All the fractures above the middle of the bone were in patients over twenty years of age.

One hundred and twenty-three patients were under observation until solid union took place, 9 were discharged within five weeks without having become solidly united, 2 fractures were under observation for sixteen weeks without uniting solidly, and 2 patients died a few days after entering the hospital, one of shock and the other of delirium tremens. In no case was an operation for delayed union made.

Eighty-two per cent of these fractures were solidly united within seven weeks, and 9% required from eight to thirteen weeks for solid union to take place. The remaining 9% included patients who were lost sight of, 2 who died and 2 whose fractures were not solid at the end of nine and sixteen weeks respectively.

Twenty-eight per cent of the fractures which united solidly within seven weeks were in patients under ten years of age. In fact, all those in patients under ten years old were solid in five weeks or less. Of the fractures requiring from eight to thirteen weeks for solid union to take place, all but one were over twenty years of age. There were five patients over sixty years of age, and in four of these the bones were solidly united within seven weeks. One fracture in a patient of eighty-two years was solid in five weeks.

CONSTITUTIONAL DISEASES.

Two patients with fractured tibiæ were suffering from chronic nephritis. One of these fractures united solidly in six weeks and the other, showing no union at the end of four weeks, was given potassium iodide for suspected syphilis. His fracture united solidly in twelve weeks.

Alcoholism had no apparent influence on the union of these fractures.

LOCAL CAUSES.

Of 111 fractures which were solidly united within six weeks, in 12% special reference was made to their obliquity and deformity. In 107 of these cases, 96%, good alignment and approximation of the fragments was obtained, and in the remaining 4 cases the resulting deformity was only slight.

Of the 12 fractures which required from eight to thirteen weeks to become solidly united, 4 were oblique with considerable deformity, and two of these were comminuted. No one of these 4 cases was without deformity when union was solid. The other cases showed no apparent reason for delay.

FRACTURES OF THE TIBIA AND FIBULA.

There were 333 fractures of the tibia and fibula together, 82% of which were in males and 18% in females.

Fifty-five per cent of these fractures were of the right leg and 45% were of the left.

The fractures occurred at all ages, but were comparatively rare in children, 7% occurring in the first and second decades respectively. Seventy-one per cent of the fractures were in patients between twenty and fifty years of age and 15% of the patients were over sixty years of age.

Fractures of this class showed a marked tendency to take place in the lower half of the bones, 84 per cent being located at or below the middle. In 10% of the cases the bones were broken at different planes. There were 5 cases in which the tibia was broken in two places, 5 cases in which the fibula was broken in 2 places, and in 1 case there were 2 distinct fractures of each bone.

Two hundred and ninety-two fractures were under observation until solid union took place, the time required varying from three to thirty-eight weeks. Twenty-three patients were discharged within four weeks of the time of fracture and lost sight of. Twelve fractures were observed for more than nine weeks, without uniting solidly, 2 were operated upon for delayed union, and 4 patients died, all of delirium tremens, within eleven days of the time of fracture.

Seventy-eight per cent of the cases which were observed until solid union took place united solidly within nine weeks, while 12% required over eleven weeks to become solidly united.

There were 23 patients under ten years of age, all of whose fractures were solid within eight weeks. There were 237 fractures in patients from twenty to fifty years of age, and sixty-six per cent of these were solidly united within nine weeks. There were 7 patients over seventy years of age. Five of these fractures were solid within nine weeks, 1 patient died eleven days after his accident and in one the union was delayed.

In looking for constitutional diseases accompanying these fractures, the following were noted:

1. Tubercular disease of vertebra, 1 case. A boy ten years of age, fracture solid in four weeks.
2. Syphilis, 2 cases: (*a*) A man, twenty-nine years of age, fracture solid in seven weeks. (*b*) A man thirty-eight years of age, fracture solid in nine weeks.
3. Multiple spinal sclerosis, following syphilis, 1 case. A man, twenty-four years of age, fracture solid in 8 weeks.
4. Tabes dorsalis, 4 cases: (*a*) A man, fifty-two years of age, tabes of seven years' standing, fracture firm, but not absolutely solid at the end of five weeks, at which time trace of him was lost. (*b*) A man, fifty-five years of age, with an uncomplicated fracture, had solid union in nine weeks. (*c*) A man, sixty-five years of age, with a definite syphilitic history, had an oblique fracture, with overriding of the fragments. The end of one of the fragments sloughed through a leg ulcer at the end of seven weeks, and union was solid in sixteen weeks, but position of fragments was not good. (*d*) A woman, forty-six years of age, with tabes for ten years, had an oblique fracture with overriding of the fragments, union was solid in twenty weeks. The position of the fragments in this case was good.

In considering the local conditions which might delay union, it was found that 20% of the cases which united solidly within eight weeks were mentioned as being oblique fractures with overriding of the fragments, and the end results showed that in 92% good approximation of the fragments had been obtained. Sixty-seven per cent of the fractures which united in from nine to eleven weeks were oblique with overriding, and 84% were in good position when solidly united.

Of the cases which required from twelve to thirty-eight weeks for solid union to take place, 83% were oblique, with overriding of the fragments, and in only 62% had it been possible to obtain an accurate approximation of the fragments.

Of the cases which were under observation for more than eight weeks, without becoming solidly united, 89% were oblique fractures with overriding of the fragments. At the time of discharge, in only 39% had good alignment and approximation of the fragments been obtained.

Apparently, as the time required for solid union to take place increased, the percentage of fractures which were oblique, with overriding, and hence more difficult to hold in good position, increased; while at the same time there was a decrease in the percentage of good anatomical results. That is, fractures in which there was difficulty in getting a good approximation of the fragments, and these would naturally be the oblique fractures with overriding of the fragments, were the ones which, as a rule, required the longest time to become solidly united. There were two cases which are of interest in this connection.

In one case the left femur was fractured obliquely at the junction of the middle and lower thirds and the tibia and fibula of the same leg were broken in the lower third, no mention being made of obliquity in the latter fracture. The tibia and fibula united firmly in nine weeks and the femur required thirteen weeks for solid union to take place.

In the other case both bones of the left leg were broken at the junction of the middle and lower thirds. The fracture was oblique and comminuted. The right tibia was broken at the middle. The right tibia united firmly in five weeks, while twelve weeks were required for the fracture of both bones to become solidly united.

The location of the fractures apparently had no influence on the time required for solid union to take place.

Two patients were operated upon for delay in the union of the fracture.

1. A man, twenty-seven years of age, had an oblique fracture of both bones at the junction of the middle and lower thirds, with much deformity and overriding of the fragments, and considerable destruction of soft parts. At the end of twenty-eight weeks the fracture was still movable. Operation showed that the fragments were overlapping with soft parts interposed. There was some fibrous union.

2. A man, twenty-five years of age, had a fracture of both bones of the leg at about the middle. The fracture was oblique and there was considerable overriding of the fragments. At the end of twenty-one weeks there was still abnormal mobility at the point of fracture. Operation showed overriding of fragments with interposition of soft parts.

The cause of delayed union in each of these cases was evidently the interposition of soft parts between the fragments.

Some of the conclusions which may be drawn from the foregoing series of cases are:

1. In fractures of the long bones of the leg the proportion of males to females is about 4 to 1.

2. Fractures of the right leg are only slightly more frequent than of the left.

3. Fractures of the femur are proportionately more frequent in children than in adults.

4. High fractures in any of these three bones are rare in children under ten years of age, but are found in adults past middle age.

5. Fractures in children unite readily, and old age of itself is not a cause of delayed union.

6 The majority of fractures in which union is delayed are of the oblique or comminuted variety.

7. In the great majority of cases, delay in union is due to local causes, such as interposition of muscular tissue between the fragments, or faulty approximation of fragments.

8. Constitutional diseases rarely cause delay in union, but certain fractures, for some unknown reason, fail to unite, although the approximation is accurate and no constitutional disease is present.

Practically all who have written on this subject are agreed that local conditions, as interposition of soft parts, imperfect approximation of fragments, imperfect immobilization, etc., will delay or prevent union of fractures, but opinions differ as to what extent constitutional diseases will influence union.

Bernays says, "All cases of non-union which are not cured by proper approximation and immobilization are incurable, and are due to some unknown cause, or to some of the well-known constitutional vices, such as the different forms of malnutrition, cachexia and debility."

Bennett: "Fractures in persons who follow trades in which they handle lead, as painters, are apt to have delayed union." Birdsall recognizes both constitutional and local causes, and says. "The provisional callus is much greater where the bone is surrounded and well covered with muscular tissue. At least one third of the surface of the tibia has no muscular covering, therefore the fact that so large a surface of the tibia is subcutaneous is not an unimportant factor in delayed union."

Cheyne mentions the usual local causes, but thinks that alcoholism may distinctly retard union after fracture, that specific fevers during the progress of the case cause delay, and that when the fracture is in a rachitic patient, an abundant callus is thrown out, but normal ossification does not take place. He believes that general debility, old age and paralysis will cause delay in union.

Dunn thinks that in cases in which local and constitutional causes are not present, apparently the bone forming power of the cells is inhibited from some unknown cause.

Fisher, among other causes, mentions deficient blood supply due to relation of the fracture to the nutrient artery. Girdner says, "In cases of general paresis, non-union or soft fibrous union is the rule, and firm, bony union the rare exception." Park says that simple, delayed union may be caused by shock, old age, rachitis, gestation, lactation, scorbutus, syphilis, cancer, paralysis and local unrest; and that non-union may be due to the above causes or to faulty fixation and interposition of soft parts.

Exophthalmic goiter is given as the cause of delayed union in a fractured humerus, by White.

Pilcher leans toward the side of constitutional causes and thinks imperfect immobilization is not a cause of delayed union.

Snévé says syphilis does not cause delayed union unless the bone itself is the seat of the disease, old age and pregnancy are not factors, and that non-union is wholly and entirely a trophic matter dependent upon injuries to the nervous supply of bones.

Adams reports four cases operated upon for non-union. He considers "general lack of nourishment to the parts resulting from age" as the cause of non-union of a fractured femur in a man sixty-five years of age. The other three cases were due to local causes. Carothers thinks fibrous union is most likely to occur where immobilization is difficult, or neglected in treatment, while Callender says, "I have never seen the union of an ordinary fracture prevented by age. Even paralytic old people repair a fracture rapidly." Again he says that pregnancy, debility, paralysis and syphilis are no obstacle to the repair of fractures, and that all the cases of non-union of the bones of the leg which had been under his notice were instances of oblique fracture.

Fowler thinks alcohol does not interfere seriously with union, that the cause is usually local, and in certain cases no rational explanation can be given.

Oppenheim, quoted by Hartshorne, says that general cancerous conditions and syphilis do not retard union.

Senn thinks that old age and injury to the nutrient artery have no influence in determining non-union.

Murray, after a study of 76 fractures of the tibia and fibula, concluded that oblique fractures caused more displacement, lacerated the soft tissues and required longer to unite.

Stimson sums up the question as follows: "Certain general conditions have been deemed a cause of delay or failure of union, either through a specific poison as syphilis, or through deterioration of the health or a lowering of the vitality induced by them, as pregnancy, lactation, defective nourishment and acute diseases; but it is beyond question that the causes are usually local and that the most common one is a faulty relation of the fragments to each other, including therein the interposition between them of muscular tissue. Other causes are defective innervation, diseases of the bone, inflammation on the surface and defective treatment. It is also true that delay and even failure may occur, when no local or general cause can be found, when the fragments are in exact apposition and when the general condition is good."

The following tables may prove of interest:

Fractures of Tibiæ. Time of Solid Union in Decades.

Solid in weeks. Age.	2.	3.	4.	5.	6.	7.	8–13.	Total.
1–9 yrs.,	3	9	9	10				31
10–19 ,,		1	14	9	1	3	1	29
20–29 ,,		1	9	2	4	3	2	21
30–39 ,,			4	5	4	2	5	20
40–49 ,,		1	2	2	2	4	2	13
50–59 ,,				1	2		1	4
60–69 ,,				1	1		1	3
70–79 ,,						1		1
80–89 ,,				1				1
Total cases,	3	12	38	31	14	13	12	123

Femora. Time of Solid Union in Decades.

Weeks. Age.	3.	4.	5.	6.	7.	8.	9.	10–24.	Total.
1–9 yrs.,	4	20	36	21	17	3	1	2	104
10–19 ,,			7	10	9	2	2	4	34
20–29 ,,		1	1	5	12	5	6	9	39
30–39 ,,		1	2	6	12	4	3	8	36
40–49 ,,			2	5	6	4	4	3	24
50–59 ,,				2	4	3	1	2	12
60–69 ,,			1		2	2	1	3	9
70–79 ,,				1	1	1	2		5
80–89 ,,							1		1
Total,	4	22	49	50	63	24	21	31	264

Location in Decades — Tibiæ.

Age.	1–9.	10–19.	20–29.	30-39.	40–49.	50–59.	60–69.	70+.	Total.
Upper third,							1	1	2
Middle and upper third,			3		2	1			6
Middle third,	9	8	6	4	2	2	2		33
Middle and lower third,	17	19	9	9	2	1			57
Lower third,	2	4	6	13	9	2	1	1	38
Total,	28	31	24	26	15	6	4	2	136

Fractures both Bones of Leg — Location in Decades.

Age.	1–9.	10–19.	20–29.	30–39.	40–49.	50–59.	60–69.	70–79.	Totals.
Upper third,			1			2	2		5
Middle and upper third,		1	1	6	4	3		1	16
Middle third,	12	6	15	18	8		4	2	65
Middle and lower third,	6	8	25	40	19	13	2		113
Lower third,	4	6	23	26	20	14	3	4	100
Not in same plane,	2		9	8	10	3	2		34
Total,	24	21	74	98	61	35	13	7	333

In 10 of above cases tibia or fibula was broken twice.

Fractures of Femur — Location in Decades.

Age.	1–9.	10–19.	20–29.	30–39.	40–49.	50–59.	60–69.	70–79.	80–89.	Totals.
Upper third,		2	1	4	3	1	6	2		19
Middle and upper third,	27	6	8	9	3	8		3		64
Middle third,	49	11	12	9	7	1	1	1		91
Middle and lower third,	29	12	20	13	7	3	4	3	1	92
Lower third,	1	4		3	5	1	1			15
Total,	106	35	41	38	25	14	12	9	1	281

TIBIÆ AND FIBULÆ — TIME OF SOLID UNION IN DECADES.

Weeks.		2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	18.	20.	21.	33.	38.	Total.
Age 1– 9	yrs.,	2	4	5	7	2	1	2														23
10–19	,,			2	7	5	2	1	2													19
20–29	,,		2	3	8	12	8	16	5	4	3		2	1	1	1		1			1	68
30–39	,,		1	7	7	14	17	13	7	6	5	3	1	2	2	2			1			88
40–49	,,			2	4	7	8	12	5	3	2	2	1	1	1	1		1	1	1		52
50–59	,,			2	1	3	5	4	2	3	1	2		1	1	1	1					27
60–69	,,				1	1		4	1	2		1										10
70–79	,,				1	2		1	1													5
Total,		2	7	21	36	46	41	53	23	18	11	8	4	5	5	5	1	2	2	1	1	292

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HABIT CURE, MENTAL AND PHYSICAL.

BY JOHN WARREN ACHORN, M.D., BOSTON.

HERE is a commonsense problem for solution: A child at birth should have healthy automatic instincts, — for yelling, kicking, nursing. These come without rhyme or reason, unconsciously, except for those who have to listen to them. A child apes those about him and soon gathers, during the formative years, a basketfull of habits, aside from involuntary practices. Later on other factors mix with the development and play a part in the evolution. Finally the child is made up of a batch of consciously or unconsciously acquired habits, mental and physical, good and bad, which he controls in part and in part surrenders to according to the understanding he has and the beginning character he possesses, depending mainly upon mother teachings. Equipped, then, according to instincts, temperament, inheritances, parents, playmates, surroundings and education, he graduates finally into the world's arena.

If the first thought-impulses that traverse the wilderness of a child's mind are disturbed by parental anger, nagging criticism or other discipline irrational in character, the chances are that distrust of self will develop in the child. An initial thought or impulse, like a trail through the wilderness, should be laid down as nearly right as possible. Thoughts, like explorers, are prone to follow a "blazed trail" instead of swamping out a new and better one, even if it is known to be poor. It is this spirit of nagging criticism, so prevalent in New England in past time, in the case of children, during the vital formative years, that is responsible for many failures and much unhappiness in mature minds even. Children can be taught the fundamentals, — honesty, love, loyalty, appreciation, reverence, patriotism, work and play, without being made the victims of a guilty conscience, — right or wrong, you're wrong, is one way of defining it. Praise of the right sort acts as a nerve tonic; it is constructive, while adverse criticism stunts growth and fosters morbid mental impulses. A child should never be nagged until the burden of his formative day, through worry, distrust or other cause, is dragged into the night. Every morning he should be taught to start afresh, and when the sun goes down, that day for him should end, — it is past experience. This way of doing might be practised by everybody; the night is a poor time in which to criticize one's self for the imperfections of a day that is done; it is a poor time in which to do business, properly the work of the day.

We are privileged to use past experience as a guide to the future, but it is not to be looked back upon with regret. Looking backward fosters introspection and retrospection, both bad habits of mind; it fosters worry, the guilty conscience habit, and that of turning night into day, with consequent loss of nervous force from loss of sleep. If children, or any of us, for that matter, were made perfect in the beginning, we should have nothing in this world to do *really* worth working for. We should never willingly surrender any experiences of life; they make us what we finally become, a reflection of the best there is in us. Every expression line in our faces is an indication of self-building or self-denial in some direction, or should be. We are respected and loved by those about us as we grow older, because we have made a winning fight. The whole question is one of character building, or becoming one's own master, of finding one's self.

As the result of our training or lack of it most of us have come to be afflicted with physical and mental habits, which breed functional disorders, the persistence of which makes every-day life and living more or less of a nightmare.

For mental faults we have fear, false pride, over-sensitiveness, selfishness, envy, avarice, introspection, retrospection, obstinacy, loss of temper, jealousy, worry, hurry, — often due to procrastination, — hysteria and insomnia, along with many others. For physical faults, we have gross habits of eating, eating hurriedly, tea and coffee drinking to excess, neglect of regular bodily habits essential to health, neglect of sleep at the right time and in the right amount, surrendering to physical passions and desires known to be morally, if not physically, detrimental to health, or one's sense of well being, lack of cleanliness, alcoholism, the tobacco habit and many others. The one set has its habitat "above the ears," the other set "below the necktie," but they are one and the same thing, they are all habits or weaknesses due to our mental or moral make-up, vacillating or strong as the case may be, but they are all manageable or curable, provided the victim is not a degenerate, and has character enough to "nail to," or is willing to "hustle" for character. The cure is applied common sense simply, and the cultivation of one's power of resistance, until the mind and not the habit, whether mental habit or physical habit, is master.

Let us regard the thinking mind as a thin plate covering the floor of the brain just above the eyes. Above this plate worry, fear, anger, insomnia and the like have their habitat; they are the "rowdies of the mind" in the attic of the brain, who, by their unruly actions, keep up such a disturbance that the better habits, peacefully disposed in the rooms about, cannot work to the best advantage to generate impulses or forces that are constructive, elevating, or spiritual. Below this mind plate are the body habits. We will locate them "below the necktie," for the sake of attaching them to the body itself. Gross eating, hurried eating, tobacco chewing, candy eating, liquor drinking to excess, physical negligence and immorality, belong to this class of body habits.

People who are mentally and physically miserable, but suffering from no organic or infectious disease, often know why they are miserable, but they seldom make an unaided attempt at a cure, — such is the hold habit has upon them; and they do not voluntarily confess the fault or the cause, either to themselves or another, unless invited to do so, as at a confessional. The first essential to the cure of any habit is a willing mind. Will any one admit he hasn't character enough developed, in the course of a lifetime, perhaps, to conquer a habit, if it detracts from his usefulness, his happiness, or the comfort of those with whom he lives? If the habit is mental, a "rowdy in the attic of the brain," the mind of the sufferer is to be turned up; or if the habit is one of indigestion due to beans eaten at bedtime by a man over seventy, the mind of the victim must be turned down. The habits of childhood are all abandoned, as the years go by, such as playing tag, sliding knee-fashion on a sled, one and all except the habit of eating. Candy eating, for instance, properly goes with quick digestion and the activities of childhood; it is often persisted in to old age, greatly to the physical detriment of the individual who declines to relinquish the habit. The food that digests well at twenty is not necessarily the food that fits best at sixty, and yet who interests himself to find this out? Food, like everything else, should be changed or modified with advancing years, to meet the physical needs incident to lessening activities, both physical and mental. We eat, or should eat, only what is required to keep the blood pure and bright, for the blood goes everywhere and nourishes all the tissues. When food is properly eaten, less is required and the stored-up nervous force is not wasted getting rid of it. The system relieved of this burden of excessive food saves an amount of energy equal possibly to that used by the brain in its daily round of work, while the increased amount of mental vigor that follows the use of food up to what is physiologically required, but not beyond it, is sufficient proof of the nervous force otherwise dissipated in this way. Proof of this is within the reach of every one who cares to demonstrate it. The extra strain imposed upon the human machine, from over-indulgence, must wear it out years ahead of its time. The assimilation of too much food renders the blood current impure; these impurities clog the connective tissues everywhere and cause many of those chronic disorders from which people of mature years suffer. The better assimilation of properly masticated food, which is the first essential, in just the amount required, maintains the blood in its purity at its highest nutritional standard. Lust for food satisfies the baser instincts only. It stimulates sensuality, the inferior passions and desires, and robs man of his spirituality. Animal force in a flight of oratory may win the applause of the multitude, but never the hearts of the people. A mind "crowned" with over-eating may capture a city, but not the man at the head of the procession. If spirituality is one of the things needed in this world to offset its "splendid materialism," food properly eaten, thoroughly dissolved by the teeth and tongue before it is swallowed, is one way of gaining some of it. Plain living and high thinking work well under the same yoke. Perhaps the secret of longevity, sought for in fabled springs and patent elixirs, lies hidden in the proper utilization of our every-day foods, in marriage founded upon health as well as sentiment, coupled with moderation in all things.

Turning to the habit above the mind plate, let us discuss worry. Every one knows, or should know, that this is a form of nervousness, a mental condition and not a physical problem. It has no substance in fact and cannot be reached by drugs. The cultivation of a better habit is the only cure, and persistence in the attempt the only safeguard. There is no question but worry greatly impairs the physical well-being; it retards digestion and prevents natural sleep. During sleep is the only time when the nervous system is repaired; food when properly eaten and digested furnishes the material for repair. Yet worry or undue solicitude is classed below fear, which is defined as a painful emotion. Hypochondria is even more pitiful than worry; it is defined as "belief in a serious disease." The person who wills, wins; the person who *tries*, presupposes that he is going to fail. The *will* to do a thing has faith for a companion, while trying to do a thing has failure for a mate. It is good practice never to face a worry. If this worry is represented by some one in anger, turn on the heel and walk away; if it is in the mind, a happy thought, if possible, should be substituted for the ugly one. With practice this can be done. A happy experience, a fascinating story, a sentiment that appeals to the higher intellectual faculties, a short walk, the companionship of some one for a time whose moral courage fosters one's own, these and other resources within the reach of every individual, however humble, if cultivated, will serve as deliverers from this harpy or "rowdy of the mind," or any of the other habits mentioned, for that matter. At first breaking away from habit is difficult, because the mind doesn't respond to the feeble cry of the better impulse for recognition, the older habit being the stronger and much more readily started; but in the face of persistent patience the bad habit gradually weakens and finally the better one registers first on the dial of impulse, with sufficient force to maintain the balance of power, when the old habit, like a prairie coyote, slinks out of sight, and wonder lingers entranced that such a weakness could ever have existed. These harpies of the mind often return to roost in their old accustomed places or on some other piece of mental bric-a-brac. Gun for them, persist in winging them, and in time they will all be bagged and the mind cleared; this is often a task, but it is a feasible one. However much these birds may fly over our heads we must not let them build nests in our hats. The thought that flits does no harm, the thought that sticks does harm.

All New England says, "he don't," instead of he doesn't. This is an error in grammar, a matter of habit. If any one having this fault of speech and desiring to be rid of it will say, "he doesn't"; twenty times a day, and get some friend to tell him when the "he dont's" are numerous, if he will repeat a sentence with "he doesn't" in it frequently, and put a printed "he doesn't" on a slip of paper, where he can see it on his desk, or in front of his dinner plate, after a time the "he doesn't" gets into the memory of the mind and the "he don't" gets out. Finally, the "he doesn't" in every sentence in which it should appear will be seen in advance of the "he don't"; as the words come romping along to form a sentence, the "he doesn't" takes its place and the fight is won. Oblivion settles over the old way, and grammar may be seen walking down the avenue of thought and expression on the right arm of memory, not on the left. This correction illustrates how one can make a new road, or better one, through the brain in place of the old trail so long used, since childhood probably.

A man suffering from insomnia will often establish this fact in his anatomy by sitting up regularly half the night; or, perhaps, about sunset he begins to say, "I can't sleep," and then keeps on vaccinating himself with this idea until saturated with it. Of course he knows he can't, he bas been telling himself this for ten years, and he lies awake to prove it. Let him begin by saying, "I shall sleep"; let him say it forty times a day, — say it until the memory of "I can't sleep" fades and the affirmation "I shall sleep" takes its place. This comes about gradually, but finally the body of the person who *can* sleep, because he says he will, begins to relax, and impulses of a soothing, constructive character begin to travel the strained and dessicated nerves. Let the person suffering from insomina go to bed early. He is not to try to sleep. Sleep always runs away if chased; it is another prairie coyote if ever there be one. Mark Twain once said "that the coyotes he chased looked like gray streaks going, and they left a hole in the air where they whipped through." The person afflicted should remain indifferent to the question of sleep, after retiring. Those who have faith can help themselves by asking God to help them, — he surely will. It is certainly a comfort to have some higher power to which to appeal. One man, cured, prayed to his wife; she had been dead two years, and he had suffered from insomnia fifteen years. He loved and idealized her more than anything else; he was told she was not far away, that she simply had gone to join the Great Force that sent her here and had taken her away; if he prayed to her, he prayed to God who stood beside her listening. The influence of loved ones who have passed on never grows less with the living. The influence of every good mother is greater as her children, men and women, advanced in years, grow to appreciate the beauty of her life character. The only physical request made of this reluctant sleeper was, that he should take his every-day mind and hold his body still in bed with it, and not turn and twist as he had been accustomed to do; he was told that in time his mind would become positive instead of negative, and when his body relaxed, under the influence of affirmative auto-suggestion and positive memorization, with God's help, he would sleep. In six weeks he slept.

By various means and for various reasons, individuals will overcome any habit they decide to conquer, for all persons are not equally spiritual; but all seem to require some guiding purpose or inspiration. Love of children, faith in the advice of a friend, faith in the advice of a physician or of the minister, pride of the right sort, ambition, love of family,— these are the moving causes in many cases; then there is the desire to avoid sickness related to the persistence in some bad habit, or the desire with some to have nothing in their lives that might not be known, that might not be a universal law for all men to follow; and finally, and, best of all, there is the spiritual desire, by far the most potent, — for spirituality carries real faith with it and faith cures almost anything except organic and infectious diseases of a serious nature, while it goes far towards helping to heal some of these. One should cultivate his powers of resistance by any decent or ideal means until he has established right ways of thinking and acting in the place of wrong, and has such habits of body that both the mind and the body become healthy and remain so.

Concentration is one of the things required for the cure of any habit, as well as patient practice and a willing mind. Mental discipline or the ability to concentrate the faculties is what we should get in school or college; experience or real education is what we gain in the world at large. Concentration of mind is the thing that ails a fellow when he falls in love, and this form of concentration sometimes moves the admiration of the world. "Faint heart never won fair lady"; equally so, a faint determination never mastered an ugly habit. If the family man with a habit that is making the family miserable would put half as much concentration into curing his habit as he puts into some business problem, in order to make money that he really does not need and is too selfish to give away, he would soon conquer the habit and be, by so much, the better person. Social etiquette has reached such a fine point, under our modern way of doing things, that the members of the same family, living together, are bound to put up with each other's unwholesome habits, an etiquette which is a hindrance to happiness, when, if they had been trained in a larger-minded way, they might help each other, and foster better feelings by promoting happiness in the home they share.

Old persons with obnoxious habits are prone to say they are too old to learn; what they should say is, they are too selfish to learn, or prefer to have those about them put up with their "little meannesses," rather than themselves make the effort necessary to wipe out their habits. Such persons are not masters of themselves and never have been. No greater small sin is committed than this petty sin, when one member of the family persists in some habit that works to the detriment of all the rest and persists not for a month but for a lifetime perhaps.

To sum up, then, this question of habit cure; first comes the resolution to do the thing required, then the memorization of an affirmative expression, because it is constructive and toning, a good substitute for the expression that is negative and destructive. This practice should be kept up till memory takes on the affirmative expression, and the negative fades away; and along with this goes concentration of mind or purpose; and finally one should seek any influence known that will assist, such as optimistic friends, reading that elevates, change of scene or thought, exercise or prayer, if one has faith.

Those who suddenly and successfully quit one habit for another are of the hysterical temperament usually and become readily "vaccinated" with a suggestion given them; they become intoxicated with an idea at once; perhaps they are fortunate in that they can be hypnotized promptly and remain so; who knows? For the majority of us the problem of life is quite like all other problems we have ever done; we have to chisel each in turn out of the solid rock of inexperience. It matters little how often one fails, if only his purpose to win is kept in sight; each relapse is less and less serious and the falls are further and further apart.

Competition, the basis of that endeavor by which the world forges ahead materially, develops many habits that balance those which spiritual teachings develop in us. *Competition* is the greatest mental *force* in existence. Against competition the feeble efforts of the world at character building may be compared to a child trying to wrestle with a giant.

With six days in the week devoted to competition and a little more than an hour in the one day that is left devoted to spirituality, delivered at arm's length usually, is it any wonder that many fail and fall as a result of the unequal mental training?

The acceptance of spiritual teachings depends, in part at least, upon the stage of evolution and the practices of each individual. Many men have not been through the coffee grinder often enough. This in itself is a factor from the point of view of evolution. The spark is there, it is in every one; it is everywhere; but the expression of it has not been cultivated, perhaps. Spirituality depends upon cultivation or practice quite as much as upon anything else. Practice makes a good machinist, a good musician, perhaps a good Christian; patience and practice will cure any habit whatsoever, but habit-cure and Christianity represent different stages in human life from that held by the truly spiritual-minded. Christianity is a good habit; spirituality is something more. Christianity obtains when a man goes to church as a matter of liking or duty, or perhaps directs a Sunday school. He may be socially inclined, with organizing ability, enjoys recognition and takes a good job, for which there is pay in praise; or it may be he desires to help others gain an ascendency that he himself cannot understand; this is certainly unselfish and so far as it goes is first class. Such an attitude carries a man above his habits usually, — at least, it should. Spiritual teachings will not always take root in soil where only tares in the shape of worry, anger, avarice or bad habits, whether physical or mental, have been growing. Peace of mind affords happiness for some, perhaps, but not happiness for others. The man who is clean up to his chin, who obeys the written laws, or more especially the unwritten social laws, if he has good health, something to do which he loves to do, and a hobby for the sake of recreation, usually has a good time in living, for he gets along comfortably; but these qualities do not constitute spirituality. The spiritual man is not satisfied with peace of mind, he must be in touch with God through faith. The mind rules the body; the spirit also must have help. One who has a spiritual nature can soon raise his powers of resistance to a high level and weld the link of faith in the chain of his life, so that it becomes as easy and comforting for himt o talk with God as it is easy and helpful to talk with a dear friend, and more so.

A man must be taken in hand at that point in his education or evolution at which what is said to him will take root. People at the level of mere good citizenship do not all grasp higher teachings; individuals who indulge in mental practices that distract, or physical practices that debilitate, are poor absorbers of spiritual teachings. A man raised above his physical and mental habits is in a position to cultivate whatever tangible spirituality there is in him. One may gain faith because he has a spiritual side to his make-up, and yet be grievously at fault in his habits; this is probably the established order to-day with the majority of men. Too many people pray in one place and put their bad habits on exhibition in another. Those who have mastered their faults, by just this difference in level, are on a plane above that held by many who profess higher things, and their lives are perhaps more potent examples for good.

These worrying, nervous, threadbare people all about us, broken by the stress of modern civilization, are in need of just such relief as treatment and cure of their habits will afford. Their habits once mastered here, they themselves are better fitted for something higher, — for something far beyond and above Nature even, something so transcendent as to be quite beyond words; for something which profoundly influences life and the spirit of man, for something compared with which all other things are weak and unprofitable. "For I have felt a Presence that disturbs me with the joy of elevated thoughts; a sense sublime of something far more deeply interfused, whose dwelling is the light of setting suns." May we so live that we may grow nearer this glorious Presence which so exalts the beauties of the world for us.

Reports of Societies.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Twenty-first Annual Meeting.
Held at Washington, D. C., May 7 to 9, 1907.

(Concluded from No. 7, p. 230.)

A CASE OF ADENO-FIBROMA OF THE ANTERIOR WALL OF THE BLADDER.

Dr. **Francis R. Hagner**, of Washington, D. C., presented this specimen. He said he had never seen a case like it before. L. R., aged sixty-eight, had suffered with prostatic obstruction, with increasing severity, for five years. There was one quart of residual urine. The prostate was small and firm. Several diverticula were seen in the bladder, and also a small stone. On doing a perineal prostatectomy the stone could not be removed, and the bladder was opened from above. On examining the anterior wall of the bladder with the finger a tumor was felt to the right of the median line, under the mucous membrane. The pathological report showed it to be an adenofibroma, showing probably a beginning carcinoma. The peculiar feature was the location of the tumor under the mucous membrane.

THE OPERATIVE TREATMENT OF TUMORS OF THE BLADDER

Dr. **Louis E. Schmidt**, of Chicago, read this paper. An essential difference should be observed in dealing with benign and malignant tumors. The former should be approached from the inside of the bladder, the latter from the outside. In removing benign tumors two methods were used, the endo-vesical, by means of the cystoscope, and by suprapubic cystotomy. The first of these required special skill on the part of the operator, and would not become popular with general surgeons. In the second method, curved scissors should be used in removing the tumor, and ligatures placed as the tumor was removed. The common cause of failure in removing papillomata was because one large tumor was removed, while one or more smaller ones were left. The closed bladder should be suspended to the abdominal wall. In removing malignant tumors the tumor should first be located with the cystoscope, and then approached from the outside of the bladder through a suprapubic incision. The usual method of opening the bladder and hunting for the tumor was condemned. After making the incision, the prevesical fat should be stripped up so that the bladder would be exposed. A few guy-ropes should be fastened to the bladder. The entire bladder should be denuded of its surroundings. A flap of fatty tissue should be turned up over the exposed peritoneum to prevent infection. Any operation that did not remove more than one third of the bladder should be followed by closure of the viscus. A permanent catheter should not be used. The choice of anesthesia in these operations was of considerable importance. He used gas and had found that the patient urinated without the use of a permanent catheter. He had had several cases in which more than two thirds of the bladder was removed, and in which the function was complete after operation. Cystoscopic examination would usually show whether the tumor was benign or malignant. Suspicious ones should be treated as malignant. The operation was justified in malignant cases if it gave only two or three years of comfort. Dr. Schmidt summarized as follows: All benign tumors should be approached from the inside. All malignant tumors should be approached from the outside of the bladder. In all cases in which the loss of substance is not too great the bladder should be completely sutured after the removal of the tumor. The use of the permanent catheter following operations on the bladder should be abolished. All bladders following operation should be kept under constant cystoscopic observation. Gas anesthesia should be used in bladder work.

ELECTION OF OFFICERS.

The following officers were elected: President, Dr. Harvey G. Mudd, of St. Louis; Vice-President, Dr. John van der Poel, of New York; Secretary, Dr. E. L. Keyes, Jr., of New York; Members of Council, Dr. Hugh H. Young, of Baltimore, and Dr. F. Tilden Brown, of New York.

Thursday, May 9, Third Day.

Joint Session of the American Association of Genito-Urinary Surgeons and the American Gynecological Society.

SOME CONGENITAL VARIATIONS OF THE KIDNEYS AND URETERS, IN REFERENCE TO THEIR DEVELOPMENT AND SURGICAL IMPORTANCE.

Dr. **George S. Huntington**, of New York, exhibited an interesting collection of lantern slides illustrating these conditions.

THE RADIOGRAPHIC DIAGNOSIS OF RENAL LESIONS.

Dr. **Lewis Gregory Cole**, of New York, read this paper, and showed numerous lantern slides. He divided the rays into direct, indirect and secondary. With the indirect and secondary rays cut off it was possible to show not only the bony detail, but also muscles, fat, connective tissue and even the blood in the veins. With proper technique he believed any variety of renal, ureteral or vesical calculus of sufficient size to justify operation could be diagnosticated. This statement was made after experimenting with the softest calculus that could be found. Enteroliths, osteoplaques, phleboliths and calcified glands often made a diagnosis difficult, particularly in the case of suspected ureteral calculus. Exploratory operation sometimes failed to find stones when they were actually present, or some were found and others left, and for these reasons he thought the x-ray was more reliable. Catheterization of the ureters was better in ureteral stones than in renal stones, but was not certain in either. A combination of catheterization with a styletted catheter and the x-ray was the best method of showing ureteral calculi, the pictures being made at different angles.

SPECIMENS AND ILLUSTRATIONS OF RENAL LITHIASIS, PYONEPHROTIC STONE KIDNEY, AND RENAL TUBERCULOSIS.

Dr. **Charles H. Chetwood**, of New York, presented this collection of specimens and illustrations.

THE DIAGNOSIS AND TREATMENT OF CALCULI IN THE LOWER END OF THE URETER IN THE MALE.

Dr. **Hugh H. Young**, of Baltimore, said that a few years ago, while taking a trip through the West Indies he met a very interesting case on shipboard. One year previously the patient had had symptoms of renal colic, but now began to suffer with a peculiar set of symptoms. He had a dull, aching pain in the rectum, pain in the bladder at the end of urination, severe pain on ejaculation, and pain occasionally radiating up to the kidney and sometimes to the testicle. He was told that he had a stone engaged in the lower end of the ureter, which projected into the bladder, irritating it, obstructing urination, impinging upon the seminal vesical, giving the ejaculatory symptoms, and close enough to the rectum to give pain in that organ. He was cystoscoped and the stone was seen sticking out of the orifice of the ureter. The stone was removed and the patient recovered. Since then Dr. Young said he had studied more thoroughly the anatomy of that region, and he thought it was very plain that there was an anatomical explanation for the above group of symptoms. The lower end of the ureter came in contact with the seminal vesicle. The vas deferens hooked around and was very close to it. The rectum lay immediately behind. He had collected 5 or 6 cases showing more or less this group of symptoms in every case. He classified stones in the lower end of the ureter as intravesical, where the stone was projecting into the bladder; intramural, in which the stone was in the bladder wall; and juxtavesical, in which the stone was immediately behind the bladder and close to it. The second case he saw had a stone in the intramural portion of the ureter. This patient had pain in the bladder, severe pain during ejaculation and severe pain in the rectum when constipated. There was no pain in the testicle. In another case in which the stone was intramural there were frequency of urination, pain during urinating radiating to the end of the penis, and renal symptoms, but no rectal or ejaculatory symptoms. In another case in which the stone was a little farther up than that (2 cm. above the bladder) there was no pain on urination, no ejaculatory pain or pain in the rectum, but there was severe pain in the testicle. The stone was in the ureter where the latter crossed the vas deferens. Three other cases presented very much the same symptoms. The intravesical stones could be removed suprapubically, but in some cases the stone was so high up that it was necessary to do the extraperitoneal iliac operation. This extraperitoneal iliac operation had been done by Dr. Young in 8 cases, and he had found 10 others reported in the literature.

CALCULOUS ANURIA, WITH SPECIAL REFERENCE TO BILATERAL RENAL CALCULUS, AND TO THE SIMULTANEOUS PERFORMANCE OF BILATERAL NEPHROTOMY IN THOSE CASES, AND TO CALCULOUS ANURIA OCCURRING IN PATIENTS HAVING BUT ONE KIDNEY.

Dr. Francis S. Watson, of Boston, read this paper. He laid great stress upon the importance, when doing a nephrotomy, of nephrolithotomy in a case of calculous anuria, of cutting into the second kidney, whether the first kidney was found totally or partially destroyed. If the first kidney was totally destroyed, cutting into that kidney alone would only add shock to an already critical condition. So far as he was aware he was the only surgeon who acted upon this principle. It was very difficult to determine when cutting into a kidney just what its functional ability was, but if the surgeon was at all doubtful as to whether it was capable of sustaining life, the other kidney should be cut into then and there. If the contrary was the case the second kidney should not be cut into. Dr. Watson showed an apparatus which he had devised for patients to wear with renal fistula.

THE VALUE AND METHOD OF MENSURATION IN VESICAL URETERAL AND RENAL WORK.

This paper was read by Dr. Howard Kelly, of Baltimore, who made a plea for more careful, accurate and scientific methods in the study and recording of cases. He described his methods of measuring the female urethra, bladder and ureters, and of measuring lesions in the bladder. He also described his method of transvesical collection of urine, where for any reason the surgeon did not want to catheterize the other ureter. The diseased ureter was plugged with a large ureteral catheter, the bladder wiped out, and the urine from the other side allowed to collect in the bladder.

SPECIMEN: PUS KIDNEY.

Dr. William E. Mosely, of Baltimore, presented this specimen. It was a very large pus kidney, which was supposed to be a multilocular cyst of the ovary until the abdomen was opened. The patient presented the typical appearance of a woman with a large ovarian cyst. The kidney contained seven liters of creamy pus, and a stone was found blocking the upper end of the ureter.

A CONSIDERATION OF THE PATHOLOGY, DIAGNOSIS AND TREATMENT OF ACUTE UNILATERAL SEPTIC INFARCTS OF THE KIDNEY.

This paper was read by Dr. George Emerson Brewer, of New York. One year ago he had presented a paper before the Chicago Medical Society on "Some Observations on Acute Septic Infarcts of the Kidney." Since the publication of that paper a number of successful cases had been reported to the New York Surgical Society, and the criticism made that nephrectomy was not always necessary. In his former paper he was dealing only with the very acute cases, in which nephrectomy was the only measure to save life. The mild types frequently recovered spontaneously. The symptomatology of the milder types was obscure, and the diagnosis was usually not made. A typical case would show the usual symptoms: A female, aged twenty, had double femoral fracture. After three weeks of treatment, she suddenly became violently ill, with symptoms suggesting an attack of acute grippe. The temperature was 104°, pulse accelerated, pains in the extremities and back, tenderness over the right kidney, albumin and some pus in the urine. Exploratory nephrotomy was advised but refused. The symptoms increased in severity. There were now chills, fever, delirium, pain and tenderness in the back. Consent was finally obtained for operation, and the right kidney was explored. The surface of the kidney was found to be covered with deep red spots, and on section the kidney was seen to be full of small abscesses. Some cases closely resembled appendicitis and gall bladder disease. In the severest types nephrectomy should be done. In the milder cases, decapsulation and the opening of cortical abscesses would be sufficient. In the mildest type expectant treatment should be used.

SOME REQUIREMENTS OF "UP-TO-DATE" NEPHRECTOMY.

Dr. G. M. Edebohls, of New York, read a paper by this title. In recent years much work had been done in the endeavor to find a reliable method of determining the functional activity of the kidneys, either separately or combined, in advance of a contemplated nephrectomy. Nothing approaching a consensus of opinion had been reached. He considered his method of examining the fellow kidney through a second lumbar incision the one upon which most reliance could be placed. He advocated decapsulation of the second kidney in these cases to prevent anuria. His conclusion was that no nephrectomy should be done without examining and decapsulating the remaining kidney.

Dr. Caldwell, of New York, showed a number of lantern slides to illustrate the differential diagnosis between calculi in the urinary tract and those bodies outside the urinary tract which might be mistaken for urinary calculi. He agreed with most of Dr. Coles's conclusions, but did not think it was always possible to show a calculus with the x-ray. In the case of certain uric acid calculi, he believed, it was impossible to make a diagnosis. However, no other method was so accurate. He did not sanction the nomenclature used by Dr. Cole in describing the different varieties of rays.

Dr. Howard Kelly, of Baltimore, wanted to know if there was any secret about any part of this x-ray work.

Dr. Cole replied that there was absolutely no secret of success in x-ray work, except the one that Dr. Kelly had, which was attention to the minutest detail from start to finish.

Dr. L. Bolton Bangs, of New York, said he would like to inquire as to the diagnosis and treatment of these phleboliths. When he had found them, without relation to kidney symptoms and therefore without relation to radiographs, he had been puzzled as to their exact location and as to what to do for them. It was possible to remove certain ureteral calculi in the lower end of the ureter by manipulation, with an instrument in the bladder and a finger in the rectum. A case was mentioned in which this was done. He said he wished to inquire of the gynecologists present why kidney infections were more common in women than in men.

Dr. F. Tilden Brown, of New York, spoke of the importance of catheterizing the ureters, and particularly of the importance of employing the styletted catheter combined with radiography. He made a plea for the more general use of these measures. A case was mentioned in which by these measures it had been possible to make out a double ureter, the points of entrance into the kidney, etc. He could not agree with Dr. Cole that a negative diagnosis of stone could be made by the x-ray alone, no matter how carefully and completely the examination was carried out.

Dr. E. B. Cragin, of New York, in answer to the question asked by Dr. Bangs as to the greater frequency of kidney infections in the female than in the male, especially in women who had been pregnant, said it could be explained by the pressure of the uterus on the ureter, particularly the right ureter, due to the position of the uterus in the right oblique diameter of the pelvis, this latter accounting for the greater frequency of infection of the right kidney than the left.

Dr. Francis R. Hagner, of Washington, D. C., reported a case of renal calculus with pyonephrosis, to show the importance of considering the question of renal disease in cases having only bladder symptoms. The patient had never complained of any kidney symptoms, but on operation 30 stones were found in the kidney.

Dr. Howard Kelly, of Baltimore, said an important class of cases in which mensuration was used was cases of hydronephrosis. He collected the fluid and measured it as it came away.

Dr. Lapthorn Smith, of Montreal, mentioned a case of a woman who had come to him with what was supposed to be a large ovarian cyst. The abdomen was opened, and it was found to be a large pus kidney containing a number of large calculi. In reply to the question as to why women were more liable to kidney infections than men, he thought there were two reasons, their greater liability to tuberculosis and their greater confinement to the house, predisposing them to the uric acid diathesis and rheumatic troubles generally.

Dr. Cole said if the terms he employed to designate the different varieties of rays had been used before he was not aware of it. He wished to bring the subject before the profession generally as the reason for getting the results shown by Dr. Caldwell and himself. A large amount of indirect rays was the cause of failure.

Dr. Edebohls thought that kidney diseases were more common in women because movable kidney was more frequent in women than in men.

Book Reviews.

Clinical Lectures on Neurasthenia. By Thomas D. Savill, M.D., London. Third (revised and enlarged) edition. 8vo. Pp. xvi, 216. New York: William Wood & Co. 1907.

In the present edition of this work the lectures on diagnosis, pathology and treatment have been enlarged and a new lecture on etiology and prognosis has been added. Some of the errors of the first edition have been corrected, but the author still lacks any thorough knowledge of his particular subject or nervous and mental diseases in general. The need of a third edition, or even of a first edition, is inexplicable.

Surgical Diagnosis. By Daniel N. Eisendrath, A.B., M.D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Michael Reese and Cook County Hospitals, Chicago. With 482 original illustrations, 15 of them in colors. Philadelphia and London: W. B. Saunders Company. 1907.

Of the writing of many books there is no end. It is four years since the author of this volume produced his useful textbook on Clinical Anatomy. Since then he has been very busy with his writing. To this reviewer his purpose in compiling "Surgical Diagnosis" is not altogether clear. Why did he write this book? He tells us in the first lines of his preface: "A recognition of the necessity of making a correct diagnosis before instituting treatment has prompted me to write this treatise." That bromidic reflection is no stimulus to the unfortunate reviewer in these dog-days. Indeed, the position of a reviewer of books on surgery is a difficult one. Any scribbler is at liberty to review the latest novel of Mr. James, or Mr. Rhodes's History, but the surgical reviewer must be a specially trained person, and, therefore, himself either a rival workman or a friendly fellow-craftsman of him whose book he reviews.

With diligence and temper, however, will this reviewer perform his allotted task, after looking through carefully the octavo of 775 pages before him. The book bears abundant evidence of the toil of the author, and the enterprise of the publishers. The former has taken, in their order, the big and little topics of a treatise on Surgery, and faithfully and laboriously has he dealt with them. Dr. D. L. Schram, who supplies the chapter on examination of the blood, and Dr. G. Kolischer who writes upon cystoscopy, have abetted the author in the production of this volume.

The book deals with the subject of diagnosis only, — of the diagnosis of those affections which fall properly to the general surgeon. The author seems to have written with fairness and thoroughness, and to have made some study of surgical literature, if one may judge from the numerous familiar paragraphs; but nowhere in the book does this reviewer find proper references to current literature, or to well-known surgical authorities. Steadily for hundreds of pages the writing flows on, serving up to us familiar facts, rarely disguised in a new dress. There are nearly 500 illustrations, mostly photographs,— ordinary, uninteresting. There are a few suggestive skiagraphs, a few colored prints, outline drawings and sketches. The subject of "Surgical Diagnosis" is covered thoroughly; the work is a miracle of the commonplace, and one lays it down at last with his original query unanswered, Why did the author produce it?

The Technic of Operations upon the Intestines and Stomach. By Alfred H. Gould, M.D., of Boston. With 190 illustrations, mostly original, several of them in colors. Philadelphia and London: W. B. Saunders Company. 1906.

This is an interesting but curiously uneven book, of which a brief review is not easily accomplished, the good and the second-rate being so constantly commingled. Gould has written an elaborate monograph, addressed directly to the reader, but has adapted throughout a passive, negative and indirect *form* of address, which weakens constantly the force of his argument and exposition. The production is creditable to the publishers and artists, and bears witness to the diligence of the author. There are countless earmarks of the writer's immaturity in a knowledge of constructive technique, and one wishes that he had waited another year before rushing into print with so interesting a mass of material as yet undigested. He should have made a study of correct book-making, but his are common faults and one must overlook them in view of the really beautiful plates and the convenient form of the book.

The author evidently has spent a great deal of time in the laboratory, and his views and statements are based upon experiments upon animals, on anatomical research and an extensive study of surgical literature. He has been fortunate in securing the co-operation of Florence Byrnes, whose beautiful histological drawings illustrate the first chapters of the book, while one recognizes the hand of H. F. Aitken in the careful but somewhat formal and mechanical sketches of gross anatomy, — sketches which, together with those of Miss Byrnes, fill more than half of the 294 pages assigned to the text.

Gould divides his subject into six chapters, and his artists have supplied him with 190 illustrations. Chapter I deals with repair of intestinal wounds and repeats properly enough the well-known views of numerous authors. Incidentally we read in this and subsequent chapters interesting dissertations on Harrington's segmented ring, the best and most satisfactory exposition of that subject hitherto printed. The author deals comprehensively also with repair after the use of the plain suture, the Murphy button and the elastic ligature.

In Chapter II the writer plunges into a discursive essay on suture materials, needles, tying knots, sutures and clamps, — interesting topics, but injected somewhat out of place. Chapter II might better have been reserved for an appendix. It is good, however, and is notable especially for the beautiful cuts with which it is illustrated. In this chapter one reads a description of Gould's useful *reserved mattress stitch*, which is somewhat surprisingly described as "a modification of the Halsted mattress." At the time of writing, this reviewer has re-read Chapter II and compliments the author and artists on the clearness of description and the beauty of the cuts in that chapter.

Chapter III concerns itself mainly with an account of the blood supply of the intestines (Aitken's diagrammatic colored drawing of a section of gut and mesentery, with interlaced arteries and veins, is striking), and the reproduced studies of Monks, on intestinal localization, are as interesting as ever.

Chapters IV and V constitute the pith and marrow of the book. They deal with operations on the intestines and on the stomach and sketch in luminous detail the most approved technique of these operations. As usual, the illustrations are the notable features. Gould has been able to secure a few of Miss Byrnes's admirable anatomical sketches for these chapters, though the bulk of the illustrations come from the hand of Aitken. It seems a pity that one artist could not have supplied and made uniform all of the illustrations. Such a criticism may sound captious, but Gould's book is so ambitious, and in many respects so unique as a collection of illustrations, that one regrets every failure to attain perfection. The pictures show sundry methods of resecting, anastomosing, stitching, grafting omentum and supplying mechanical devices. Perhaps the most interesting subject with which the author deals in Chapter V is McGraw's colostomy with the rubber ligature. Chapter VI is as interesting as Chapter V. The admirable description and illustrations are satisfactory, especially the illustrations of Finney's "pyloroplasty." Nowhere else have we seen so lucidly demonstrated the difficult steps of Finney's somewhat obscure operation.

One cannot assert that Gould's book should be a *vade mecum*, the indispensable companion of every surgeon, but certainly it will be a useful addition to the medical student's library and to the Laboratory of Surgical Research.

This work is dedicated to the eminent teacher and distinguished surgical veteran, Professor Charles Burnham Porter, of the Harvard Medical School.

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SCHOOL FOR SOCIAL WORKERS.

It becomes increasingly evident that medicine on its practical side is coming nearer and nearer to the various social problems of the time. It follows as a natural consequence that in order to accomplish the best work in relation to social conditions which come within his scope the physician should have a somewhat special training. We have no doubt if the present development goes on, and there is no reason to question that it will not, that an opportunity will be offered a certain number of medically trained men to devote their best energies to the elucidation of social problems quite apart from the ordinary practice of medicine. It has been amply demonstrated, particularly during the last few years, at the Massachusetts General Hospital, that the opportunities for benefiting the poor lie far beyond the mere administration of drugs and other remedial measures. The success of this social work at this institution has been clearly indicative of the necessity for its wider recognition.

We are glad, therefore, in this connection, to call attention to the School for Social Workers in Boston, maintained by Simmons College and Harvard University, which begins its fourth year Oct. 1.

It is of general interest, together with like schools in New York, Chicago and London, as a new departure in the field of education; for these schools were opened, a few years ago, to help answer the call for good workers in charity, correction, neighborhood work and kindred forms of social service. The demand for such is greater than the supply. And the demand is increasing the demand.

The schools do not mean that the body of knowledge, the general principles and technique, on which effective social work is built, is now very extensive or difficult to learn, or that such work is to be wholly done by the so-called professional, but they show a growing appreciation in this field of human endeavor, as in all fields, of the value of experience, and of the economy of real preparation. The more professionals there are, workers of experience, who give their time and thought effectively as leaders, the greater should be the number of others who are doing and giving, some much, some little, but all helpfully, in all sorts of ways of social service.

The Boston School, for example, had twenty-seven students the first year. Last year there were thirty-eight. Nine of these were men. The men were registered in Harvard University, some of them being candidates for degrees, toward which the work in the school counted. The women were registered in Simmons College. One of them completed in the school the requisite courses for the degree of Bachelor of Science. Of the thirty-eight, ten were persons of considerable experience in some form of social service. Thus are brought together men and women students and workers, to consider from various points of view the problems which are of concern to all who would better social conditions. The course is one academic year. For exceptional reasons, it may be taken in two years. As a preparation for it, women may take a year as special students in Simmons College, studying biology, hygiene, psychology, ethics, economics, etc. But there are no requirements for admission to the school beyond evidence that the student will profit by the opportunities offered. Most of the students give their working time to the course; some give part time.

The instruction is largely by conference, helping students to think for themselves. There is study of, and reports on, selected literature. Lectures are given and special problems are presented by persons of exceptional experience in particular activities. Some very practical work with selected agencies, under skilled direction, is required. The topics of the carefully arranged program, following one another in logical order and being knit together, include the aims of social service; leading principles underlying all social effort; improvement of general conditions of living by community and voluntary action; neighborhood improvement in city and country; treatment of needy families, of persons out of their own families, of the offender and delinquent.

The announcement is now made that the school will conduct this coming year, and probably in the future, some research work in subjects touching charity and social advance. This work will be done, under skilled direction, by chosen persons, perhaps advanced students with practical experience.

There is evidently opportunity here for a properly qualified medical man to equip himself with a knowledge of modern methods in charity and to bring to the general work the much needed acquaintance with medical matters, and conditions of disease, which so frequently lie at the basis of social problems. The time seems ripe for the medical profession in general, and for certain selected members of it in particular, to extend the range of their activities into a scientific study of social problems to a degree not hitherto attempted. The School for Social Workers which has been established in this city would, no doubt, welcome one or more qualified physicians to its classes in order that the social problems may be approached and discussed primarily from the medical standpoint as well as from the standpoint of other interests and professions.

ACCURACY OF THOUGHT IN MEDICINE.

Each year at the meeting of the larger medical associations several general addresses are delivered. At times the subjects selected deal with some limited phase of medical science. More frequently broader relations of medicine are considered. In the latter there is of necessity often a repetition of subjects, rarely a reiteration of subject matter. Old truths are driven home in new forms, and well known facts go to make up a timely address. Such was the recent address in medicine of W. Hale White before the British Medical Association, a "Plea for Accuracy of Thought in Medicine." It was timely, not because there is less accuracy now than formerly, for such is not the case, but because the examples used by the speaker will impress on almost every medical man that there is yet much inaccuracy in medical thought. Moreover, through the address, beneath a superficial spirit of apparent pessimism, runs a broad undercurrent of optimism, an optimism that should inspire every worker in medicine to inquire, to observe, to experiment, for the field of possible discovery is shown still to be a broad one, and many facts which we accept without a critical thought should still be doubted, then submitted to critical observation and experiment with the confident expectation of the discovery of new facts. In these thoughts there is undoubted optimism and a suggested reaction against a possible unfortunate tendency of medical science to regard its problems as now highly specialized and only capable of solution by the trained worker in the well equipped laboratory. There are many problems of course for the latter, but the average medical man can still do much toward the general advance of medicine should he keep in mind some of the suggestions of Professor White, and for these reasons the address should be widely read.

In discussing diagnosis, Professor White says: "We should not make a diagnosis which implies a cause unless we have grounds from the previous experience of ourselves and others for prophesying what will be found at post-mortem examination. . . . I quite admit that we shall often have to say we do not know, and no doubt our diagnosis will sometimes be wrong, but at any rate our reticence and our mistakes will not retard, but will rather advance progress in medicine. . . . The primary duty of a physician is to find out what is the matter with his patient. Proper treatment can only be secondary to that. . . . Another reason for incorrect treatment is that many say, 'You must do something.' I can never see the reasonableness of this. The very fact that the medical man does not know what to do is actually used as a reason why he should do something. Surely it is the very reason why he should do nothing, for he may well do more harm than good." Certainly there is much common sense in this.

The pitfalls of deductions based on statistics and the necessity of a real knowledge of statistics are forcefully pointed out. In this respect both physician and surgeon are likely to err. The thoughtful reader of some of the examples used in this connection hereafter will and should consider most carefully his data and the contingent circumstances before venturing any conclusion. If this be done, fewer incorrect impressions will be accumulated on which to base principles that will long stand supported by the authority of time and well known author unless some inquiring skeptic prove their falsity.

SEVENTH INTERNATIONAL ZOOLOGICAL CONGRESS.

During this week the seventh International Zoölogical Congress is meeting in this city and, as was expected, has brought together a large number of distinguished zoölogists from various parts of the world. The meetings are for the most part being held in the buildings of the new Harvard Medical School which lend themselves peculiarly to such a gathering in which various sections are holding meetings at the same time, necessitating the use of many rooms for the reading of papers. Every effort has been made by the local committee to render the stay of the visiting men of science and their families enjoyable. To this end many excursions and entertainments have been planned, and there will be opportunity, therefore, not only to attend the various scientific sessions, but also to visit many points of historical or of educational interest in the vicinity of Boston. The general meetings of the congress, which have been very largely attended, are being held in Jordan Hall at the New England Conservatory of Music.

At the first general meeting of the congress, after introductory remarks by Prof. Alexander Agassiz, an address was delivered by Prof. R. Hertwig, of the University of Munich, on "Newer Problems in the Study of the Cell." This was, perhaps, the most notable contribution of the meeting, but many others, both from American and foreign investigators, will prove of much value as indicating the progress of science in the zoölogical field. An address by Professor Brooks on the subject, "Are Heredity and Variation Facts?" and the discussion of Entomology in its practical aspects by Dr. L. O. Howard will undoubtedly excite a high degree of interest. The section meetings are filled with papers chiefly of scientific interest, and it is not to be questioned that during the week will be presented the latest investigations in a wide range of correlated subjects.

These meetings, which are begun in Boston, are to be continued in Philadelphia, Washington and New York, so that the visiting zoölogists will have gained an adequate idea of the scientific foundations in the various Eastern cities, and, incidentally, will have learned something of American life. It is a matter of interest that such a congress should be held under the auspices of a medical school as is being done in Boston. It indicates the gradual integration of the natural sciences in conjunction with the development of specialism, and is altogether a hopeful sign for the future.

MEDICAL NOTES.

Scarlet Fever in Chicago. — According to the *Bulletin* of the Chicago State Board of Health, special attention has been paid to scarlet fever during the last twelve months, because fifty years' record of this disease in the city indicates that one of its characteristic epidemic waves has set in, which may not entirely subside for four or five years to come. These epidemic waves are due to accumulations of susceptible individuals during the periods of decreasing frequency of this disease, as is well shown in the diagram. Previous to 1876 the epidemics averaged six years apart, and the death-rate in 1859 reached the high point of 27.2 per 10,000 population. The epidemics gradually declined in virulence till that of 1876–7, with a rate of 19.05. The outbreak in 1879 gave a rate of only 7.92 and succeeding epidemics have shown a steady decline till 1906. The years 1896 and 1905 had a minimum of scarlet fever, with a rate of only 0.39 per 10,000 of population. Owing to the comparative freedom from the disease for several years, a large crop of susceptibles has accumulated, with the resulting epidemic of the past year. In 1906 the rate rose to 2.41 and January to June, 1907, showed a further increase to 4.45. a rate which has not been exceeded since 1884. Last month the rate returned to 2.38.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Aug. 21, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 27, scarlatina 29, typhoid fever 13, measles 10, tuberculosis 35, smallpox 0.

The death-rate of the reported deaths for the week ending August 21, 1907, was 20.82.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 17, 1907, was 220, against 228 the corresponding week of last year, showing a decrease of 8 deaths and making the death-rate for the week 18.83. Of this number 120 were males and 100 were females; 213 were white and 7 colored; 146 were born in the United States, 71 in foreign countries and 3 unknown; 36 were of American parentage, 163 of foreign parentage and 21 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 31 cases and 1 death; scarlatina, 24 cases and 0 deaths; typhoid fever, 11 cases and 1 death; measles, 19 cases and 2 deaths; tuberculosis, 43 cases and 25 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 6, whooping cough 1, heart disease 17, bronchitis 3 and marasmus 1. There were 18 deaths from violent causes. The number of children who died under one year was 70; the number under five years, 86. The number of persons who died over sixty years of age was 33. The deaths in public institutions were 75.

There were 2 cases and 3 deaths reported from cerebrospinal meningitis during the week.

Enlargement of Mary Fletcher Hospital, Burlington, Vt. — Additions to the Mary Fletcher Hospital at Burlington are being made at a cost of $100,000. Two new wings are to be built, stretching east and west from the main administration building, each 110 by 50 feet. It is proposed to devote one of these wards to surgery and the other to medical cases.

Gift to Worcester, Mass., Memorial Hospital. — Through the generosity of Mr. Charles H. Morgan and Mr. George L. Newton the Worcester Memorial Hospital has received funds to the amount of $80,000 for the erecting of new wards. Mr. Morgan's gift, of not over $40,000, is to be used for the construction of a maternity ward to be known as the Rebecca Morgan Memorial Ward. The remaining $40,000, given by Mr., Newton, is to be used for a building for private patients.

NEW YORK.

A Serum for Meningitis. — The newspapers report the apparent success of a new serum against cerebrospinal meningitis, devised by Dr. Simon Flexner, of New York, director of the Rockefeller Institute for Medical Research, in an outbreak of the disease at Castalia, Ohio. The serum was employed on the advice of Dr. George T. Ladd, of Cleveland, who is a member of the faculty of the Western Reserve Medical College and on the staff of the Lakeside Hospital. Whether it was given in other cases is not stated, but in three cases, in which the ages of the patients were respectively 23, 16 and 3 years, and which in the opinion of the local profession would inevitably have proved fatal without it, recovery followed the use of the serum. Dr. Flexner has been in Europe this summer, but is expected back very shortly.

Analysis of Food Products. — In the monthly bulletin of the State Health Department, given out on August 6, it is announced that the most recent analyses of food products, made for the purpose of determining whether preservatives are employed, show a considerable improvement in this respect. Out of nine samples of canned meats examined, but one contained a preservative. Of twenty-five samples of bottled beer examined, several contained sulphites, three or four, fluoric acid, and two, salicylic acid.

Fatal Poisoning by Cocaine. — A case of fatal poisoning by cocaine employed as a local anesthetic occurred in the practice of Dr. G. Lenox Curtis, a well-known specialist, on Aug. 15. The operation for which the cocaine was employed was the removal of tonsils and adenoids, and the patient was the seven-year-old son of Thomas T. Whiting, of Burlington, Vt., an intimate friend of Dr. Curtis. The operation was successfully performed and the boy appeared to be in excellent condition for half an hour afterward, when sudden collapse occurred, and the utmost efforts of Dr. Curtis and a colleague were unable to avert the fatal issue.

Arrest of President of Woodbury Dermatological Institute. — In order to test the new medical law enacted by the recent Legislature, Robert Buggeln, president of the Woodbury Dermatological Institute, has been arrested at the instance of the Public Health Defense League, and charged with violating a section of the law which provides that any person not a registered physician who shall advertise to practise medicine shall be guilty of a misdemeanor. Buggeln was arraigned in the Jefferson Market Police Court, and after the usual formalities was paroled in the custody of his lawyer. The proceeding begun by this arrest is of wide scope, and if the Health Defense League is successful in its contention, the decision of the courts will affect not only the practice of medicine by corporations of quack doctors and of patent medicine companies in the state, but also that of trust and fidelity companies with medical features, which undertake the business of attorneys. John S. Cooper, counsel of the League, is of the opinion that it does not matter whether a corporation employs physicians or not, and that persons who accept treatment under them are not protected by that provision of the law which makes all communications between physician and patient confidential. In Pennsylvania it has been determined that a corporation entirely composed of physicians may practise medicine, but he believes that this contention is not in accord with the spirit of the New York law. In support of this view Mr. Cooper quotes the opinion of the Appellate Division of the New York Supreme Court by which a lawyer, Abraham Kaffinburg, was disbarred. By this decision it was declared that when an attorney took his oath of office he became part of the machinery of justice in the state, and that his permission to practise was a personal license which he could not delegate to others. This doctrine, he maintains, must be applied with equal force to physicians. Under the Pennsylvania decision, should a corporation of physicians be formed, it is evident that any member of such corporation could transfer, with his stock, all of the privileges and duties enjoyed and performed by him to a layman. But, taking the opinion of the Appellate Division in the Kaffinburg case, which was affirmed by the Court of Appeals, in connection with the section of the law under which Buggeln was arrested, it would seem evident that no corporation, however formed, could practise medicine in the State of New York, or exercise the fiduciary relation which lawyers and physicians exercise, any more than a corporation could exercise the relation of a clergyman or priest. Another part of the section under which Buggeln's arrest was made provides that no one can conduct a medical practice under the name of another, and it has been established as a matter of fact, that John H. Woodbury, who organized and for a considerable time managed the Woodbury Institute, is no longer connected with that concern. The evidence which caused the arrest was obtained from the newspaper advertisements and the literature disseminated by Buggeln.

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Current Literature.

Medical Record.

July 27, 1907.

1. *Coley, W. B. *Inoperable Sarcoma. A Further Report of Cases Successfully Treated with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus.*
2. Dickinson, G. K. *Through Physiology to Pathology in Complications of Gall-Bladder Disease.*
3. *Brew, J. *Reinfection with Syphilis; Report of a Case with Hereditary Syphilis in the Child.*
4. Gallant, A. E. *The Long-Waisted Woman and Her Movable Kidney.*
5. Rosenwasser, A. A. *Apomorphine in Acute Alcoholism; a Plea for Its More Extensive Employment.*

1. Coley makes a report of forty-two cases treated by himself for inoperable sarcoma with mixed toxins of erysipelas and *Bacillus prodigiosus*, with twenty-six patients remaining well after a lapse of from three to fourteen years since the treatment. The author at first used the germs of erysipelas alone, but later found that the combination of the two germs had a better effect, as well as less danger, than the single germ. Later he used only sterilized cultures containing both the toxins and the bodies of the bacteria, since this mixture produced a much more decided effect than weaker ones. The curative action is brought about by increased leucocytosis and coagulation necrosis. The treatment should begin with not more than one-quarter minim diluted with boiled water. If the tumor is highly vascular, begin outside the tumor. When given in the tumor increase the dose by one-quarter minim, and by one-half minim if remote from tumor, until desired reaction is obtained. The tumor soon becomes smaller, more movable and less vascular. Its action is both local and systemic, and the systemic effect alone may be used successfully in cases that are inaccessible. The author finds about one hundred successes by other physicians by this method. It may be used as a prophylactic against recurrence after operation. A new field is in the injection of cases in which the amputation of a long bone appears necessary, and by its use the amputation may be avoided. The author gives a detailed description of twelve of his successful cases.

3. Brew describes a case in which there was every reason to believe that syphilis had existed and been cured and a reinfection had occurred. Most syphilographers at the present day agree in saying that such a cure and reinfection are possible, although rare. The patient described was treated carefully for an undoubted attack of syphilis, from which he recovered and remained without any syphilitic manifestations for fifteen years. He was then treated for a hard chancre followed by a macular eruption and sore throat. Marrying then, a syphilitic child was born to the couple, although the mother showed no evidences of ever having had the disease. The manifestations of the second attack could not have been tertiary in their nature.

New York Medical Journal.

July 27, 1907.

1. *Crile, G. W., and Cole, H. P. *Transfusion in Dogs Upon Whom Bilateral Nephrectomy Has Been Performed.*
2. Hudson Makuen, G. *Operations for Cleft Palate and Their Results; especially in Respect to the Improvement of Speech.*
3. Graef, C. *Some Points on Ear, Nose and Throat Conditions in Children of Interest to General Practitioners.*
4. Babcock, W. W. *A New Operation for the Extirpation of Varicose Veins of the Leg.*
5. Berg, W. N. *The Relation between the Physiological Action of Ions and Their Physico-Chemical Properties.*
6. *Allen, A. H. *Phagocytosis, etc., in Sputum, as a Measure of Resistance in Tuberculosis.*
7. Brandeis, J. W. *Consanguinity: a Factor in Immunity to Scarlet Fever.*

1. Crile and Cole performed bilateral nephrectomy upon 10 dogs, 5 of which were kept as controls and 5 of which were bled and transfused forty-eight hours or more afterward. The transfused dogs lived on the average longer than those not transfused, but not longer than dogs subjected to bilateral nephrectomy by other writers.

6. Allen has made studies of phagocytosis of tubercle bacilli in sputum with a view to determining whether or not the intracellular position of tubercle bacilli gave any evidence of the resistance of the patient. His results were in the main negative, except for the somewhat unexpected finding that cases treated with tuberculin showed less phagocytosis than those which had not received tuberculin. It is made clear that studies of phagocytosis in sputum are subject to error from many sources. [F. W. P.]

The Journal of the American Medical Association.

July 27, 1907.

1. Biering, W. L. *The Need of Medical Co-operation in Laboratory Work.*
2. Tenney, J. A. *The Relation of the Circumlental Space to the Causation of Glaucoma as Shown by the Würdemann Lamp.*
3. *Risley, S. D. *The Surgical Treatment of Chronic Glaucoma.*
4. Oliver, C. A. *The Preventive Treatment of Transferred Ophthalmitis (so-called Sympathetic Ophthalmitis).*
5. Gradle, H. *Future Observations on Retinitis Punctata.*
6. *Kolischer, G., and Schmidt, L. E. *Surgery of Tumors of the Bladder from a Modern Aspect.*
7. Ravogli, A. *Onychomycosis Trichophytina.*
8. Diller, T. *Two Cases of Tumor of the Ponto-Cerebellar Angle with Autopsies.*
9. Timme, W. *Carcinosis of the Brain and Spinal Cord.*
10. Varney, H. R. *Opsonic Therapy in Skin Diseases.*
11. *Bulkley, L. D. *Significance and Treatment of Itching.*
12. Theobald, S. *Indications for the Employment of Adrenalin Chlorid in Conjunction with Cocain in Operations on the Eye.*

3. Risley urges surgical treatment not only in the inflammatory types of glaucoma but in the so-called chronic or non-inflammatory types, when the gradual onset and lack of severe symptoms make early diagnosis difficult. In such cases the beginning is marked only by slight transient exacerbation of dimness of vision, with some discomfort, pain or sense of fullness in the eye or peri-orbital region. Recurrences occur with increasing frequency, and the impairment of vision becomes permanent. The eyes become injected, the cornea steamy, the tension of the eyeball somewhat increased, perhaps with cupping of the optic nerve. In such cases an early iridectomy may do much to check the progress of the disease. The technic of iridectomy is important to the success of the result. The difficulties encountered in the late stages of the disease are largely to blame for the failures reported in such cases. The steps of the operation are described in detail.

6. In a fully illustrated article Kolischer and Schmidt lay down the rules for the operative treatment of tumors of the bladder, the essential points of which are substantially as follows: First, benign tumors should be approached from the inside, malignant tumors from the outside of the bladder. In the endovesical operation on benign tumors the authors prefer the cystoscope of direct view, though when the growth is located at the vertex of the bladder, which is extremely rare, the so-called long wire loop of Nitze's operative cystoscope should be employed. In the operation by incision, the suprapubic is the route to be followed and the fundamental principle of the operation is that it should be conducted with one object always in view, *i. e.*, the complete closure of the viscus after the tumor is removed. A liberal incision through the anterior wall is absolutely necessary. The technic of both methods is given in detail. In case of malignant growths, the authors emphasize the importance of a topographic diagnosis of the tumor before operation and a free exposure of that part of the bladder, which is to be in the field of resection, so far as possible, and attempt should be made to reform the bladder after operation for malignant tumors, and it is remarkable how small a remnant will sometimes suffice to form a serviceable organ. When this is not possible, the best method, they say, is to establish permanent kidney fistulas. Kolischer and Schmidt believe that it is practically always possible to determine the character of a bladder tumor before operation; any one of experience in cystoscopic diagnosis can recognize a benign growth, and doubtful ones are to be considered and treated as malign. Nitrous oxide anesthesia should be the one chosen in all cutting operations. Besides its safety as regards the heart, it has the advantage that the patient returns to full consciousness immediately after the operation, thus affording better chances for natural micturition, early breathing exercises and administration of food and drink. A constant cystoscopic surveillance should be maintained over any bladder that has ever been operated on for tumor. The permanent catheter, they say, should be absolutely done away with.

11. Bulkley begins his article with a good general summary and classification of the causes of itching. These he divides under three headings: external causes, notably mechanical irritations, toxic agents, climatic influences, vegetable and animal parasites; idiopathic causes, neurotic and senile; and constitutional causes, notably autointoxication and constitutional skin diseases, such as eczema. These causes must be detected and removed if possible before treatment can be successful. Unsuitable underclothes must be changed, ivy poisoning prevented, extremes of heat and cold guarded against and scabies or pediculosis overcome. Particularly in neurotic and autotoxic cases constitutional treatment is important. Diabetes must be treated if present, and digestive abnormalities must be arrested. Tonics, such as iron, arsenic and strychnine, are of value. As for analgesics it is well to remember that opium and morphine are apt to aggravate the trouble; trional may do the same. Veronal on the other hand is of great service, also chloral, bromide and cannabis indica. In rare cases a few whiffs of chloroform may be used to produce insensibility until other measures can have their effect. Locally the avoidance of irritants and the prevention of scratching are of prime importance. For children a pillow case is an excellent means of restraint, the head being put through a hole made in the closed end and safety pins between the arms and the body and betwee nthe legs effectually controlling movements of the limbs. Of external applications carbolic acid stands pre-eminent. This is best used in the following formula: ℞. Acid, carbolic, ʒss–ʒj, pulv. calamin prep. ʒi, zinci oxidi ʒii, glycerin. ʒiii, aqua calcis ℥i, aquæ rosæ ad ℥iv. Ichthyol in from 10% to 20% solution in water or in oil is of value. Of ointments carbolic acid, the most efficient, is as follows: ℞. Acid carbolic gr. xx–xl; lanolin ʒi; boroglycerin ʒiv; ung. aquæ rosæ ℥iii; or on unbroken skin: ℞. Chloral hydrate and gum camphor each ʒss–i, compound lanolin ointment ℥i. Glycerite of starch may be substituted for the fatty base of ointments. Tar and oil of cade are also useful. [F. W. P.]

The American Journal of the Medical Sciences.

July, 1907.

1. *Halsted, W. S. *Hypoparathyreosis, Status Parathyreoprivus and Transplantation of the Parathyroid Glands.*
2. *MacKenzie, J. *The Interpretation of the Pulsations of the Jugular Veins.*
3. *Von Eberts, E. M., and Hill, W. H. P. *Bacterial Inoculation in the Treatment of Localized Infections.*
4. *Da Costa, J. C. *The Opsonic Index in Diabetes Mellitus.*
5. *Forchheimer, F. *Chronic Intestinal Auto-Inoculation.*
6. *Butler, W. J. *The Auscultatory and Percussion Findings in the Heart in Late Childhood.*
7. Roberts, J. B. *Improved Methods in the Successful Operative Treatment of Cleft Palate.*
8. Bullard, W. N. *Obstetric Paralysis.*
9. Burr, C. W. *Tactile Amnesia.*
10. Potts, B. H. *Difficulties in the Diagnosis of Brain Abscess.*

1. Halsted's article treats of the results of removal of or injury to the parathyroid glands, and the treatment of the disorder by feeding with the parathyroids of animals. A considerable number of cases of tetany have been reported following operations for goiter. One such case, described at length, fills a large part of this paper. It is known that during the operation the right inferior parathyroid was injured; following the operation the patient at once began to seem restless, and on the seventh day began to have periodic spasmodic attacks. Parathyroid feeding seemed to give marked relief, the fresh glands appearing to be more efficient than dried preparations. Experiments are reported in which parathyroids of an animal have been transplanted into the animal's spleen. In human patients Halsted has several times transplanted parathyroids into the opposite lobe of the thyroid when their nutrition has been imperiled during operation for goiter. In conclusion the danger of tetany as a result of operations upon the thyroid is reiterated, and certain directions are given for the avoidance of injury to the parathyroids.

2. MacKenzie proposes the terms "auricular venous pulse" and "ventricular venous pulse," to replace those of normal or negative venous pulse and pathological or positive venous pulse hitherto employed. A visible venous pulse may be present in apparently good health, or absent in severe cardiac failure. It sometimes appears temporarily in conditions of debility; it is possible that back flow from the auricle depends upon relaxation of the muscle band described by Keith as normally by its contraction shutting off the auricle from the superior vena cava. It is probable that the fibers controlling the tricuspid valve may also relax, permitting tricuspid regurgitation. MacKenzie gives evidence to show that tricuspid regurgitation is of more frequent occurrence than American physicians recognize. He analyses tracings of jugular pulsations which show three waves in each cycle: the auricular wave in the auricular systole, exaggerated in cases with marked auricular venous pulse; the carotid wave which he believes to be merely the transmitted pulsation of the carotid artery; and the ventricular wave, normally small, but very prominent in cases with the ventricular, the so-called pathological or positive venous pulse. MacKenzie believes that venous pulse of the auricular as well as of the ventricular type is caused by tricuspid regurgitation, and shows tracings of cases where, according

to the degree of compensation, the jugular pulse alternated between the two types with curves indicating the gradual transition between the two during the periods of change. He believes that the auricular pulse is seen when a slight tricuspid regurgitation has led only to slight overfilling of the auricle before the auricular systole, whereas the ventricular venous pulse is due to direct regurgitation of blood from the tricuspid valve to the jugular vein.

3. Von Eberts and Hill describe their technic in preparation and administration of bacterial vaccines, and report selected cases of brilliant results. In their work they have followed closely the methods of A. E. Wright, controlling the dosage by the opsonic index. Cases where the treatment was followed by recovery comprise the following conditions: tuberculous ulceration of the bladder; lupus; tuberculous arthritis; tuberculous cervical adenitis; furunculosis; carbuncle; suppurative periostitis; multiple abscess; acne indurata; gonorrheal polyarthritis; and epidemic meningitis.

4. Da Costa, in view of the susceptibility of many diabetics toward bacterial infections, notably toward cutaneous infections and pulmonary tuberculosis, has tested the opsonic index of 22 cases, using the staphylococcus as a representative organism. He finds the index quite constantly low, and especially so in three of the cases in which acetone and diacetic acid were present in the urine. The amount of sugar in the urine bore no constant relation to the diminution of the opsonic index. The article is concluded by a minute description of the technic of determining the opsonic index.

5. Forchheimer defines intestinal auto-intoxication as that condition in which toxins formed in the intestine are absorbed by the organism in which they are produced. These toxins are formed principally if not entirely from albumin and nuclein,. Some albumoses, phenol, indol and the purin bodies, especially the xanthins, are the substances of principal interest. Substances produced by the action of enzymes, albumoses and perhaps the xanthines are formed almost entirely in the small intestine. The bacterial putrefactive products are formed almost entirely in the large intestine. On absorption these substances are in part changed and rendered non-toxic in the liver, lymph glands and other structures, and in part they are excreted by the kidneys. The amount of toxic bodies formed depends upon the nature of the food, the time that it remains in the colon and the character of the processes within the intestine, some pathological modifications of which may be of more importance than is now understood. Clinically 77 cases believed to have intestinal auto-intoxication are analyzed. It is not stated upon what basis the diagnosis was made. The symptoms were extremely various. Riggs's disease of the gums, stomach and intestinal disorders were quite constantly present, especially the last of these. Indicanuria was found in 68 of the 77. Nervous symptoms, especially headaches, were frequent. Circulatory neuroses and myocardial changes were present in a majority of the cases. In closing, the reader is cautioned against making the diagnosis of intestinal auto-intoxication too easily, and expecting it to explain too much in the way of symptoms.

6. Butler's article is the result of his examinations of the heart in 100 healthy children. The outlines and position are carefully recorded as well as a description of the character of the sounds. Murmurs were present in 64 out of the 100, 16 of these murmurs being heard only in recumbency. They were as a rule variable and inconstant, not heard far beyond the cardiac borders, influenced by position and by respiration. Butler considers them to be accidental murmurs, perhaps cardio-pulmonary. He emphasizes the importance of recognizing them as not organic. [F. W. P.]

THE LANCET.

JUNE 29, 1907.

1. SIMPSON, W. J. R. *The Croonian Lectures on Plague. Lecture I*
2. KEETLEY C. R. B. *The Conservative Surgery of the Abdomen, especially of the Appendix Vermiformis, and its Relation to the Surgical Treatment of Chronic Constipation.*
3. GOLDSMITH, B. K. *The Influence of School Life on the Spread of Scarlet Fever.*
4. OLIVER, T. *Rescue Work in Mines: Lessons from the Courrières Mine Catastrophe in France.*
5. CLARKE, J. M. *Two Cases of Cerebral Abscess.*
6. *FORBES-ROSS, F. W. *Grocco's Triangle: Physical and Anatomical Explanation.*
7. *WILLIAMSON, R. T. *The Loss of the Tendo Achillis Reflex and its Diagnostic Value in "Alcoholic" Failure of the Heart.*
8. LUCY, R. H. *A Case of Splenic Abscess.*
9. *FLETCHER, W. *Rice and Beri-beri. Preliminary Report on an Experiment Conducted at the Kuala Lumpur Lunatic Asylum.*
10. SANDWITH, F. M. *The Introductory Gresham Lecture.*

6. Forbes-Ross goes into details of the physical causes and characteristics of that area of dullness in pleurisy with effusion found on the sound side of the chest near the spine. The height of this triangle is the height of the fluid on the affected side; it is a triangle in shape because the costo-vertebral groove is widest and deepest below, and narrows and becomes shallow as it ascends, so that the lung on the sound side is able to get nearer to the vertebral column and add its resonance to the dullness transmitted from the diseased side, whereas below it is separated by the thick layer of muscle in the costo-vertebral groove. The writer explains certain exceptions to this rule, especially as applied to empyemata.

7. Alcoholic heart failure is a form of cardiac syncope often met with in certain parts of England where especially large amounts of beer or spirits are taken. The diagnosis is based on the alcoholic history, the absence of valvular disease, of nephritis, and absence of other known causes of cardiac failure. Williamson believes that a valuable diagnostic sign is the loss of the Achilles reflex in these cases while in heart failure due to other causes it is always present.

9. Fletcher conducted an experiment on the lunatics in an insane asylum in Malay during a recent epidemic of beri-beri. A certain number were fed on ordinary uncured rice and others were fed on cured rice. Out of 120 fed on uncured rice 34 suffered from beri-beri and 18 died; of the 34 sufferers 10 had their diet changed to cured rice, and all recovered. Out of 123 fed on cured rice there were only 2 cases of the disease, both of whom had it on entering the asylum. He believes that it is caused directly or indirectly by the use of uncured rice. The causes might be (1) a poison in the rice, (2) deficiency of proteid matter in the rice with nitrogen starvation, or (3) that the rice is not sufficiently nutritious and leaves the body open to infection. [J. B. H.]

BRITISH MEDICAL JOURNAL.

JUNE 29, 1907.

1. *EVE, F. *The Pathology and Treatment of Tumours of the Jaws.*
2. *STARR, F. N. G. *A New Method of Dealing with Cleft Palate.*
3. DOWNES, H. *Severe Hemoptysis Treated by Means of the Ice-bag.*
4. CLARKE, A. T. F. *Goitre Operations under Local Anesthesia.*
5. TOMKINSON, J. G. *The Eclectic Treatment of Lupus Vulgaris.*

1. Tumors of the jaws are interesting on account of the great multiplicity of the structures which may be involved. The writer first considers epulis, basing his statements on 38 cases admitted to the London Hospital. In excising one of these tumors the teeth in the immediate neighborhood should be removed with the portion of the alveolar arch involved. He then takes up tumors of the jaw itself. Many of these originate he believes from the remains of embryonic tissues, "rests," and he classifies them into two large groups, (1) originating from these "rests," and (2) mostly carcinomatous, originating as a result of chronic iritation of some kind. He considers in detail the pathology of each group as to operation; the mortality is still large, 20% to 30%. A pulmonary ligature of the carotid and laryngotomy he thinks distinctly advisable. The tendency to implicate glands in tumors of this region

has been underestimated. He uses a Gigli saw in cutting through bony parts.

2. Starr in his cleft palate operations uses a thin aluminum plate along the roof of the mouth as a splint to prevent tension. He tried C. H. Mayo's suggestion to use tape for this purpose but found that although it decreased tension it increased the chance of infection and became very foul. The metal, however, has proved very satisfactory. [J. B. H.]

THE EDINBURGH MEDICAL JOURNAL.

JUNE, 1907.

1. *KER, C., and CROOM, D. H. *The Therapeutic Value of Formic Acid in the Treatment of Diphtheria.*
2. BATTLE, W. H. *Traumatic Rupture of the Intestine.*
3. DON, A. *The Diagnostic Value of Radiography in Tuberculosis of Bone.*
4. SYME, W. S. *Delayed Speech in Children.*
5. BARCROFT, D. M. *On Bier's Treatment of Acute Inflammatory Conditions by Hyperemia.*
6. *BULLMORE, H. H., and WATERHOUSE, H. *The Blood in Rheumatoid Arthritis.*
7. FISHER, T. *A Case of Continuous Murmur over the Pulmonary Area of the Heart.*
8. OLIVER, J. *Two Interesting Neoplasms of the Uterus.*

1. Ker and Croom believe that distinctly beneficial results are to be obtained in diphtheria from the use of formic acid, in doses of 5 to 20 minims of a 25% watery solution every four hours. Dosage is graduated more by the severity of the case than by the age of the patient. Convalescence was shorter, and there was a marked diminution in the number of paralyses.

6. Bullmore and Waterhouse have studied the blood in 24 cases of rheumatoid arthritis and conclude that anemia is always present. The leucocytes are normal in number with the normal differential count. In a few cases myelocytes were found. [J. B. H.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 20.

MAY 20, 1907.

1. *MARMOREK, A. *Further Investigations on the Tubercle Bacillus and Anti-Tuberculosis Serum.*
2. RIEDEL. *The Physical Treatment of Headache.*
3. MEYER, L. *A Case of Blepharoschisis.*
4. *PIORKOWSKI. *Iodofan.*
5. FRANZE, P. C., and PÖHLMANN, L. *Sarason's Oxygen Baths (Ozet-bader).*
6. MINOR, L. *The Frequency of Quinquaud's Phenomenon in Alcoholics and in Various Nervous Diseases.* (Continued.)

1. By various modifications of the mode of infection and of the bacilli used, Marmorek has been able to change at will the course of tuberculosis in guinea pigs. Bacilli of weak virulence can be obtained by using for injection the heart's blood of animals suffering from severe tuberculosis. The subcutaneous injection of such blood causes a local tuberculous abscess, while the intra-arterial, intravenous and intraperitoneal route does not result in infection. If, however, these weakened tubercle bacilli were "activated" after introduction by means of repeated tuberculin injections, infection did take place, and contrary to the usual course the lungs were involved early. Marmorek was even able by this method to produce cavities in the upper lobes following intraperitoneal and intravenous inoculation. The early localization in the lungs therefore depends, according to him, on the reciprocal relations between virulence of the organism and resistance of the body tissues. The question of hereditary predisposition to tuberculosis was approached in the following way: the young of tuberculous guinea pigs were subjected to inoculation with the before mentioned blood containing bacilli of low virulence, and killed at the end of several months. These animals in fact showed lesions of tuberculosis, which were absent in the controls. But it was necessary that the mother should be in an advanced stage of tuberculosis at the time the litter was born. The last part of the article deals with Marmorek's anti-tuberculosis serum. Animal experiments show that it will prevent infection if injected soon after inoculation with a dose of tubercle bacilli sufficient under other circumtances to produce the disease. The clinical value of the serum for man he claims is established for surgical forms of tuberculosis; the rectal method of administration is preferable because symptoms of the "serum disease" are avoided thereby, *i. e.*, fever, rashes, inflammation about the point of injection. For pulmonary tuberculosis he has provided a serum made by immunizing horses against, first, the tubercle bacillus, and later, the streptococcus. The exact status of this serum must be left to the future to decide.

4. Iodofan is a substitute for iodoform with the formula $C_6 H_3 I (OH)_2 . H CO H$. When brought in contact with wound secretions it splits off formaldehyde iodide. Piorkowski's experiments show that it is feebly bactericidal, but exerts a marked inhibition on the *growth* of bacteria. It also has a very prompt deodorizing action, which is much greater than that of either iodoform or formaldehyde. [W. T.]

No. 21. MAY 27, 1907.

1. *ENGEL, K. *Clinical Investigations on the Refraction-Coefficient of the Blood Serum.*
2. *RAUTENBERG, E. *The Pulsation of the Left Auricle and its Significance.*
3. *ASCOLI, M., and IZAR, G. *The Physiological Action of the Colloidal Metals on Man.*
4. *COENEN, H. *The Development of the Theory of the Basal-Cell Carcinoma.*
5. MINOR, L. *The Frequency of Quinquaud's Phenomenon in Drinkers and Non-Drinkers and in Nervous Diseases.* (Concluded.)

1. The refraction-coefficient of the blood serum, as Reiss has shown, corresponds very closely to its albumin content. The procedure is adapted for clinical purposes, requiring only a few drops of blood and little time for the determination. It does *not* vary as the number of red corpuscles. Engel reports the results of measurements with the refractometer in a variety of diseases. The lowest values, far below the normal, were found in parenchymatous nephritis, and are ascribed to hydremia. The coefficient is lowest with edema, but may be quite low in cases without edema. In heart disease with hydrops the values were only slightly reduced, so that the determination may be of diagnostic value under certain circumstances. In diabetes the coefficient was very high in several instances, but this cannot be ascribed with certainty to a high albumin content, for we do not know the effect on refraction of the sugar, acetone, etc., that are present in the serum. In acute infectious diseases the coefficient was reduced during the febrile period; in tuberculosis of the lungs it was normal except in rapidly advancing cases. Fifteen cases of cancer showed a marked hydremia, as judged by the low refraction values. In general low values point to the existence of hydremia, while high ones are more difficult of interpretation.

2. Rautenberg publishes curves showing the normal pulsation of the left auricle, registered by means of apparatus in the esophagus. He finds an elevation corresponding to the auricular systole, followed by another synchronous with the ventricular systole; diastole of the auricle is marked by a sharp fall in the curve. He interprets his tracings quite differently from Minkowski.

3. The interesting work of Ascoli and Izar shows that in healthy persons the intravenous or subcutaneous injection of stable solutions of colloidal silver or platinum produces a marked increase in the N excretion. This increase was found to involve chiefly the uric acid excretion, to a lesser degree that of urea and amido-acids; it began within a few hours and lasted several days. The phosphate excretion was not affected. Administration by mouth or rectum produced no increase of the total N, but a relative increase of uric acid. Sterilizing the colloidal solutions by heat rendered them ineffective as far as the metabolism was concerned.

4. Basal cell carcinoma of the skin includes those cancers which start subcutaneously chiefly on the face, and are derived from misplaced basal-cells of the rete Malpighi. They were formerly called endotheliomata. Coenen, as a result of his researches, believes they are derived from the glandular structures of the skin, the sweat and sebaceous glands, or the hair follicles. They include the so-called rodent ulcers of the face. [W. T.]

RECORD OF MORTALITY

For the Week ending Saturday, Aug. 3, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1806	949	Quincy	7	2
Chicago	—	—	Waltham	7	1
Philadelphia	—	—	Pittsfield	6	1
St. Louis	—	—	Gloucester	3	—
Baltimore	255	135	Brookline	3	1
Cleveland	—	—	North Adams	8	2
Buffalo	—	—	Chicopee	16	11
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	9	—
Washington	—	—	Leominster	7	2
Providence	90	44	Hyde Park	7	3
Boston	224	68	Melrose	3	0
Worcester	36	10	Newburyport	—	—
Fall River	57	49	Woburn	9	3
Cambridge	19	5	Marlboro	4	
Lowell	19	31	Westfield	3	—
Lynn	23	10	Peabody	—	—
New Bedford	36	27	Revere	3	—
Springfield	35	16	Attleboro	5	2
Lawrence	30	19	Clinton	2	2
Somerville	7	2	Adams	—	—
Holyoke	19	16	Gardner	4	3
Brockton	17	6	Milford	—	—
Malden	8	—	Watertown	4	1
Chelsea	24	12	Plymouth	—	—
Salem	15	10	Weymouth	—	—
Newton	13	3	Framingham	2	1
Haverhill	7	1	Southbridge	11	5
Fitchburg	5	4	Wakefield	—	—
Everett	3	3	Webster	—	—
Taunton	18	9			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUGUST 7, 1907.

Pettus, H. J., assistant surgeon-general. Granted leave of absence for twenty-six days from August 12, 1907. August 6, 1907.

Wickes, H. W., passed assistant surgeon. Granted leave of absence for one month from August 7, 1907. August 3, 1907.

Wilson, R. L., passed assistant surgeon. Directed to proceed to Fontainebleau, Miss., for special temporary duty, upon completion of which to rejoin his station at New Orleans.

Bahrenburg, L. P. H., passed assistant surgeon. Granted leave of absence for seven days from July 15, 1907, under paragraph 191, Service regulations.

Robertson, H. McG., assistant surgeon. Granted leave of absence for five days from July 25, 1907, under paragraph 191, Service regulations.

Mullan, E. H., assistant surgeon. Relieved from duty at Perth Amboy Quarantine Station and directed to proceed to Ellis Island for duty. August 1, 1907.

Wollenburg, R. A. C., assistant surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Ellis Island for duty. August 1, 1907.

Herring, R. A., assistant surgeon. Granted leave of absence for one day in July, 1907, under paragraph 191, Service regulations.

Porter, J. Y., sanitary inspector. Directed to proceed to Fernandina, Mayport, Carrabelle, and Santa Rosa for special temporary duty, upon completion of which to rejoin his station at Key West, Fla.

Delgado, J. M., acting assistant surgeon. Granted leave of absence for one day in July, 1907, under paragraph 210, Service regulations.

Duffy, Francis, acting assistant surgeon. Granted leave of absence for six days from August 5, 1907. August 2, 1907.

Elfers, J. C., acting assistant surgeon. Granted leave of absence for twenty days from August 3, 1907. August 5, 1907.

Hicks, B. L., acting assistant surgeon. Granted leave of absence for twelve days from August 4, 1907. August 5, 1907.

O'Reilly, W. J., acting assistant surgeon. Granted leave of absence for eight days from August 8, 1907. August 5, 1907.

Savage, W. L., acting assistant surgeon. Granted leave of absence for thirty days from August 4, 1907. August 1, 1907.

Schwartz, Louis, acting assistant surgeon. Granted leave of absence for one day in July, 1907, under paragraph 210, Service regulations.

Simonson, G. T., acting assistant surgeon. Granted leave of absence for ten days from August 5, 1907. August 7, 1907.

Wetmore, W. O., acting assistant surgeon. Granted leave of absence for seven days from July 7, 1907, under paragraph 210, Service regulations.

Watters, M. H., pharmacist. Excused from duty without pay for seventeen days from August 3, 1907. August 1, 1907.

Miskimon, R. R., pharmacist. Directed to proceed to Wilmington, N. C., reporting to the medical officer in command for duty and assignment to quarters. August 3, 1907.

APPOINTMENTS.

Dr. Roderick W. Browne appointed an acting assistant surgeon for duty at Norfolk, Va. August 7, 1907.

Robert R. Miskimon, of D. C., and C. Roy Ott, of Ohio, appointed pharmacists of the third class. August 3, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 17, 1907.

E. P. W. Hough acting assistant surgeon. Ordered to Naval Hospital, Annapolis, Md.

A. Stuart, passed assistant surgeon. Detached from command of the Naval Hospital, Sitka, Alaska, and ordered home to wait orders.

C. C. Grieve, passed assistant surgeon. Detached from the Navy Yard, Portsmouth, N. H., August 31, and ordered to command the Naval Hospital, Sitka, Alaska.

W. D. Owens, assistant surgeon. Ordered to the Navy Yard, Portsmouth, N. H., and to additional duty on the "Southery," August 21.

E. C. Taylor, passed assistant surgeon. Detached from duty at the Navy Recruiting Station, Memphis, Tenn., and ordered home to wait orders.

W. J. Zalesky, passed assistant surgeon. Ordered to the Navy Recruiting Station, Memphis, Tenn.

J. A. Biello, acting assistant surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

J. McMahon, pharmacist. Detached from duty at the Navy Yard, New York, N. Y., and ordered to the Naval Hospital, Norfolk, Va.

G. A. Lung, surgeon. Detached from the "Kentucky" and ordered home to wait orders.

A. R. Alfred, surgeon. Detached from duty at the Navy Recruiting Station, Pittsburg, Pa., and ordered to the "Wolverine."

A. G. Grunwell, surgeon. Detached from the "Wolverine" and ordered to the "Kentucky."

R. E. Stoops, assistant surgeon. Ordered to the Navy Recruiting Station, Pittsburg, Pa.

K. C. Melhorn, acting assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

R. S. Blakeman, passed assistant surgeon. Discharged from treatment at the Naval Hospital, Norfolk, Va.

BOOKS AND PAMPHLETS RECEIVED.

Thirteenth Annual Report of the Board of Health of the State of New Jersey, 1906, and Annual Report of the Bureau of Vital Statistics. Trenton. 1907.

Transactions of the American Pediatric Society. Eighteenth Session, held at Hotel Traymore, Atlantic City, N. J., May 30, 31, and June 1, 1907. New York: E. B. Treat & Co. 1907.

Green's Encyclopedia and Dictionary of Medicine and Surgery, Vol. V. Edinburgh and London: William Green & Sons. 1907.

The Physiology of Alimentation. By Dr. Martin H. Fischer. First edition. Illustrated. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1907.

Physicians' Manual of the Pharmacopeia and the National Formulary. By C. S. N. Hallberg, Ph.G., M.D., and J. H. Salisbury, A.M., M.D. Chicago: American Medical Association. 1907.

The Conservative Treatment of Chronic Suppuration of the Middle-Ear. By Samuel Theobald, M.D. Reprint.

Indications for the Employment of Adrenalin Chlorid, in Conjunction with Cocain, in Operations on the Eye. By Samuel Theobald, M.D. Reprint.

A Striking Illustration of the Efficacy of Constitutional Measures in Controlling Inflammation of the Mastoid Cells. By Samuel Theobald, M.D. Reprint.

Address.

THE DIGNITY OF MEDICINE.*

BY IRA J. PROUTY, M.D., KEENE, N. H.

Another year has rolled around and been added to the life history of this society. Every passing year brings its changes which are noticeable at our annual gatherings. The familiar faces of those long in the ranks are missed one by one, while new countenances are seen, and new voices are heard in discussion and around our banquet board.

I am not unmindful of the honor you have conferred in asking me to preside over this venerable society, for it certainly is an honor to occupy the executive chair which has been so ably filled in the past by men who have achieved national and even international reputation. As I have looked back over the years of more than a century that mark the life of the New Hampshire Medical Society, and have considered the work accomplished by the thoughtful, earnest men who have spent their lives in riding through summer's heat and winter's blasts, over the hills and across the valleys of our rough yet productive state, on their mission to relieve suffering humanity, a feeling of regret has come to me that no more records of their lives and works have been left by them to help and encourage those of younger years.

Our society was the third state medical society to be incorporated. It has on its long list of members nearly all the names that have been prominent in our medical annals. It never has been in such a prosperous condition as at the present time; all of the ten component societies are doing good work in furthering the cause of scientific medicine. I have visited during the past year several of these local societies and have been impressed by the seemingly good fellowship that prevails and the interest taken in the work, as evidenced by the papers and discussions.

There is still missionary work for us to do, for there are two hundred or more physicians in the state who should be added to our already long list of over four hundred. The north county society is the banner one of the state, having the largest percentage of members in proportion to the whole number of physicians in Coos County.

In the early days of the New Hampshire Medical Society and before, the doctor and the minister were looked up to by every one in the community as standing on a higher plane in the possession of knowledge. The parson, with his long straight coat, high cut vest, and sanctimonious bearing, and the doctor, calm, dignified, and always carrying his mysterious leather bag, made the people of the New England village stand in awe of them. Hawthorne has given us in "The Scarlet Letter" a singularly truthful picture of the old-time doctor: "Made up of earnest, studious, thoughtful, quiet years, bestowed faithfully for the increase of knowledge, faithfully, too, for others, caring little for themselves, kind, just, true, and of constant, if not warm, affections."

To-day all this is changed. The people have become better educated, especially in matters pertaining to their own health (although there is still a chance for vast improvement in this direction), so that there is not the difference between the professional man and the community at large that there was at one time. The times have changed; conditions of practice have altered and are altering rapidly. When we look back into the days of old, we find that the ideals which inspired medical men then are our ideals to-day — ideals which are never old, yet always fresh and new.

The custom of opening our meetings with a general address is an appropriate one, for it affords an opportunity to discuss some topics which, although not strictly scientific, are of deep concern to each and every one of us. It is well at times to take a somewhat general survey of our profession, to study its tendencies, and get if possible a clearer vision of what should be its aims and ideals.

I ask your attention for a few moments to the subject of "The Dignity of Medicine."

I suppose no one in this audience will for a moment maintain that our profession holds the position to-day that it did when this society was young. The doctor is not looked upon as he was in the days when he entered the door with his saddlebags or when his sulky turned in at the gate. I desire to speak of the dignity of medicine as shown by its beneficent work, as a great social power in any community, and as spreading everywhere a wholesome influence. This is the particular dignity which appears to me to have declined in recent years and largely ceased to inspire the respect which is due to it. It rests with you and me to help to recover and reconstitute this dignity which in a measure has been lost. Whatever the explanation of the fact, for fact I believe it to be, there can be no doubt that any loss of appreciation of it or prestige is not due to decadence or inefficiency in the service of medicine itself, for the progress has been greater and more beneficial to humanity within the last few decades than during the previous two centuries. We notice on the part of the public either a spirit of indifference or a disposition to be over-critical. The proofs of this are lamentably notorious. The inadequate provisions made for measures of public health, for the prosecution of research, and for the sanitary services generally, all bear witness to a mistrust of the high aims of medicine and an indifference to the unselfish and ill-rewarded labors of our profession. The humane efforts fail to impress people of enlightenment any more than those of ordinary intelligence. Often our most prudent advice is treated with suspicion, and the advisers, although experts in their subjects, receive little serious attention. It might have been expected that with the progress of education there would be a corresponding interest in, and a growing appreciation of, the value of medical science in all communities. The discussion of medical subjects in the public press, instead of enlisting intelligent sympathy with the efforts of our thinkers and workers, rather tends to place our patients in a wrong attitude towards their medical advisers, and induces a mood which sometimes seriously hampers the treatment of their ailments.

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* President's address before the New Hampshire State Medical Society, Concord, N. H., May 16, 1907.

The relations between intelligent patients and physicians are not as satisfactory now as they used to be, and there is apt to be less confidence, if not at times an actual mistrust, on the part of patients which assuredly does not work out for their benefit. The fault must either lie at our own door and concern us individually or it must be a sign of the spirit of the age in which we are living. Thus even modern medicine with all its advantages, improvements, and enlarged resources stands before the public shorn apparently of much of its dignity and the appreciation it formerly enjoyed. A measure of dignity has been accorded to the Church, to the Law, and to Physic, and, as I have said, the latter, in more recent years, has not kept its place. I am almost sure that the former do not continue to hold their places as they once did; we are not, however, concerned with them; they can look out for themselves. It may be that there is a common cause for a decline in the public estimation of all these professions.

There are problems facing us to-day, the solution of which will raise or lower the dignity of our profession in the eyes of the general public.

In his individual capacity the doctor has not been found wanting. Wherever you may go in civilized lands, the physician will be found self-sacrificing, patient and charitable, upholding the honor and dignity of his noble calling. Collectively medical men do not have that influence which we might expect and without which great movements for the welfare of humanity cannot be carried on. A lack of unity has prevented a realization of our hopes, and if we gain and maintain the pre-eminent position to which we are entitled, we must unite for the common good. The present organization of the New Hampshire Medical Society and of the American Medical Association is but a beginning; we must further the interests of these bodies unselfishly, not for ourselves alone, but that we may better fulfill our sacred obligations to mankind.

The people must be educated to a point where they can understand the broad humanitarianism of modern medicine. Society fails to appreciate the priceless gifts to mankind made by preventive medicine and sanitary science. We have failed to secure the support of the mass of the people to much needed sanitary reforms because we have appealed to them as one individual to another without the weight of an authoritative organization.

This great association of medical men is a pregnant fact, and ought to be a powerful active factor in moulding public as well as professional opinion into such lines as should be conducive to public and professional interests. For while with us professional interests must naturally take the first place, it should never be forgotten that the main purpose of our existence as a profession is for the public advantage, and from such a point of view all our actions will be estimated by the world at large. The time has come for the public to be taken into our confidence; if we wish better results we must enlighten the people, for with them lies the final word.

The dignity of the profession, its social and political position, will be materially enhanced when the bonds of fellowship are drawn more closely than they have been in times gone by. When the bulk of the members of the profession take the view that in union there is strength, the means of achieving more complete and practical fusion of the various elements which are now too far sundered will be readily found. Our state society is a representative of the great idea of the unity of medical science. Here we meet on common ground and each member learns from the others and takes home with him to ponder over and use again what he has received from the common stock. Each one of us in our living should seek as far as possible not to forget that as the arteries permeate the whole body and are in uninterrupted communication with each other, so we can only maintain the integrity of medical science by keeping in view the intimate relations and mutual bearings of all the various departments which go to make up the unity of the sciences. The benefits accruing from a large society are many, not only to its members, but to the community at large. When there is the largest attendance and interest there is the greatest degree of unity and good fellowship which is essential to the dignity and usefulness of the profession.

The influence of this society, if judiciously used in establishing and maintaining relations of confidence between the public and our profession, is certain to increase, and when important subjects are under discussion it will be for you, remembering that you are citizens first and doctors afterwards, to formulate your views on the essential points at issue, and then to give a long push, a strong push, a push all together. If we would have our profession respected, we must respect it ourselves by never speaking of it lightly, slightingly, or in a depreciatory manner.

If the medical profession were composed of men of less charity and forbearance, an unappreciative public would be left to their own impotent endeavor to solve the problems of sanitation and protective medicine. Is it any wonder that there is a tendency on the part of some to abandon a thankless undertaking, for it really seems sometimes that in spite of our most loyal efforts it will always be "truth forever on the scaffold, wrong forever on the throne." Why the populace as a rule are less responsive to concerted action on our part than to individual effort can, in my mind, be explained only on the ground that when physicians band together for any accomplishment, even if for the health and sole welfare of the people, they are regarded as a trust, and the public generally is antagonistic to organization.

Compare this prejudice to medical organization with the general approval with which our commercial bodies are regarded, and the result of such comparisons is almost disheartening. If a board of trade indorses certain legislative enactments for the protection of the financial interests of the community, the masses of the people have sufficient confidence in the integrity of such a board as wisely to rely on and be governed by its indorsement. The press will at once come to its aid and if need be a fund is created for the enterprise.

Let a medical organization, on the other hand, originate or indorse measures which have a vital bearing on the health of the same community and to whom will it look for support? The press is often subsidized by advertising charlatans, and the people, instead of according us their real support, are either indifferent to our efforts in their behalf, or are ready to rise in denunciation of our most honest purposes. The same confidence that is given us as individuals is denied us as an organization. It is our duty to create a healthy public sentiment, to educate the people to realize that we are striving to help them. Throughout our entire country I do not believe there is a law on a statute book passed at the instigation of the medical profession that is not productive of more benefit to the masses of the people than to the physicians themselves.

The unity which has long been desired by many for the profession at large is a unity without uniformity, a bond which allows of the freest individual development, while it serves only as a check to any outgrowths calculated to harm the commonwealth or to injure the neighbor. Such harm or injury may result from sins of omission as well as commission. It is important that in all we do or attempt to do, either as individuals or in combination, we should be studious to avoid, even in appearance, everything which might seem to the non-professional mind to savor of professional advantage, and we should never forget that we are professional men and not tradesmen. Not being wage-earners, we may guard ourselves against being misled into following the methods of those who at times are working for ends which appear selfish and from motives which sometimes seem unworthy.

The quarrels of doctors make a long chapter in the history of medicine. The larger quarrels are becoming less and less intense, and during the last century no new one of moment sprang up, while we can safely predict that in the present century, when science has thoroughly leavened the dough of homeopathy, the great breach of our day will be healed. In too many communities, both large and small, miserable factions prevail, while bickerings and jealousies mar the usefulness and dignity of the profession. Most of the quarrels among doctors are about the non-essentials, small trifles and annoyances — the pin pricks of practice — which perhaps would have tried the patience of Job himself.

The county society or local doctor's club is as professional cement. The meetings in a friendly, social way lead to a free and open discussion in a spirit that refuses to recognize differences of opinion. There is no room for envy, hatred, malice, or uncharitableness. By such gatherings there is brought about an attitude of mind which becomes habitually friendly, and a little of that old time courtesy and dignity which makes a man shrink from wounding another, especially a professional brother.

Much time has been spent uselessly in years gone by in formulating codes of ethics to govern physicians in their attitude towards each other. We should act as one gentleman naturally would to another. Rules and codes of ethics are only necessary for those who have not the instincts of gentlemen. To lay down rules for conduct in their relations with one another is puerile. It is sometimes required to tell boors how to imitate. Their effort at imitation is laudable but always transparent. As Herbert Spencer has well said, "Righteousness expresses of actions what straightness does of lines: and there can no more be two kinds of right action than there can be two kinds of straight lines." The rules for our guidance can all be summed up in that one great and golden rule laid down centuries ago, — "Whatsoever ye would that men should do to you, do ye even so to them."

We must not be surprised if we provoke misgivings on the part of the intelligent public as regards our level headedness and our honesty when we express dogmatically opinions regarding matters and life which are in plain contradiction to all experience and common sense. As in other professions we have in our ranks so-called "faddists" and it must be that they bring reproach upon many others besides themselves. It is not always easy to refute in public such opinions and conduct as I refer to, and most of us have sometimes to fall back on the wise dictum of Bishop Andrews, that "he who tolerates does not necessarily approve." We may be sure that anything approaching extortion or greed must seriously injure the respect which is due our profession.

The dignity of our profession is lowered when a physician's services can be bought at wholesale and peddled out at retail to further commercial ends, thus enabling canvassers and looters to catch members who are overpleased at being led to believe that they will be able to obtain good medical attendance upon the payment of a few dimes per month. It can only be regretted that there are among us such men who will be so misled as to sell themselves to such task-masters and to undertake professional work which they must know is not likely to be of much service to the public upon terms which they must feel cannot be remunerative to themselves. Some of you may say, "This is business." Weir Mitchell well says, "We are not business men; we belong to a profession and sell that which no man can weigh or measure." He further expresses the same thought: "How difficult it is for us to comprehend these men who are born and bred in a commercial atmosphere. They have set ideas and utter absence of tastes or pursuits outside of mere money making. They seem to have in life no other game."

Although, as has been said, we should not make our profession a trade, yet we certainly can, in a dignified way, stop being imposed upon by insurance companies, corporations, including hospitals and individuals, and under the so-called mantle of charity be defrauded out of our just dues. It is not the poor man with the family that asks the doctor to discount his bill, but very often the corporation or man with a good salary tries to impose upon us. We should willingly and at all times give our services to the truly worthy poor, but it must be left to us to decide who are worthy.

The greatest impediment to the dignity and progress of our art is now and ever has been the astonishing credulity of mankind in everything to which mysticism lends its false illumination. The glare of mysticism is too often mistaken for the light of science. In the words of a former president of this society, "Whatever is mysterious, or in the least partakes of the supernatural, forms no part of scientific medicine." "Knowledge comes, but wisdom lingers," and in matters medical the ordinary citizen of to-day has not one bit more sense than the old Romans, whom Lucian scourged for a credulity which made them fall easy victims to the quacks of the time, like the notorious Alexander.

Matthew Arnold defines charlatanism as the "confusing or obliterating the distinctions between excellent and inferior, sound and unsound or only half sound, true and untrue, or only half true." Napoleon one day, when somebody was spoken of in his presence as a charlatan, said: "Charlatan as much as you please, but where is there not charlatanism?" There certainly are charlatans and quacks outside of the profession, and must I say inside as well? If we of the household are not free from charlatanism and quackery, what of the people among whom we work? From the days of the sage of Endor, even the rulers have loved to dabble in it, while the public of all ages has ever revelled in its methods, — to-day as in the time of the Father of Medicine. Plato thus sketches the world-old trait: "And what a delightful life they lead! They are always doctoring and increasing and complicating their disorders and always fancying they will be cured by any nostrum which anybody advises them to try."

All departures from the accepted methods of healing, the breaking away from the conservatism and practices of the past, are not easy. We were schooled with the view that drugs were all-powerful, and consequently have allowed the dignity of our profession to become lowered by not investigating, until within the past few years, the use of remedies that are not drugs. The use of non-medical curative measures has been made prominent by such noisy pretense of skill in their use that reputable physicians have hesitated to take interest or to have confidence. The use of the various forms of electricity, hydrotherapy, massage and diet were practically under the ban, yet to-day we are beginning to see that they are among the most valuable remedies we possess. We should always bear in mind Sydenham's rule, "Whatever is useful is good."

A great feature of modern medicine is the return to psychical methods of treatment, the success of which depends upon the faith of the patient. There is a place in medicine for the practice of systematic mental therapeutics; and by the study of the subject and the employment of it in a dignified way, will result in its being taken out of the hands of "mental healers" and the like, just as the profession took surgery out of the hands of barbers and pretenders.

Faith is the great lever of life; without it, man can do nothing. Faith in us, faith in our drugs and methods, is the great stock in trade of the profession. Galen said: "Confidence and hope do more than physic, — he cures most in whom most are confident." That strange compound of charlatan and philosopher, Paracelsus, encourages his patients "to have good faith, a strong imagination, and they shall find the effects."

We often overlook or else are ignorant of our own faith cures, and are very sensitive about those performed outside the ranks. We must not expect to have a monopoly of this panacea, which is as free as the sun, and which may make every one in certain cases, as was the Lacedemonian of Homer's day, "a good physician out of Nature's grace." Faith in the gods or in the saints cures one, faith in little pills another, hypnotic suggestion a third, faith in a plain common doctor a fourth. The cures in the temples of Æsculapius, the miracles of the saints, the remarkable cures of those noble men, the Jesuit missionaries, the modern miracles at Lourdes and at St. Anne de Beaupré in Quebec, and the workings of the so-called Christian Scientists (no science and very little Christianity) are often genuine and must be taken into account in discussing the foundations of therapeutics. In the words of Osler, "The faith in which we work, the faith, indeed, which is available to-day in everyday life, has its limitations. It will not raise the dead, it will not cure cancer or pneumonia, or knit a bone; but in spite of these restrictions faith is a most precious commodity, without which we should find ourselves very badly off." The faith healing in these days, which goes under the euphonious name of Christian Science, is nothing more than mental suggestion. "The patient is told to be calm and is assured that all will be well: that he must try to aid the healer by believing that what is told him is true; the healer then quietly but firmly asserts and reiterates that there is no pain, no suffering, that it is disappearing, that relief will come, that he is getting well." A recent writer has pointed out that the growth of so-called Christian Science is that which underlies every popular fallacy. Oliver Wendell Holmes outlined very clearly the factors concerned, showing how easily abundant facts can be collected to prove anything whatsoever; how insufficient exalted wisdom, immaculate honesty, and vast general acquirements are to prevent an individual from having the most primitive ideas upon subjects out of his line of thought; and finally demonstrating the boundless credulity and excitability of mankind upon subjects connected with medicine.

There is no profession whose members are less trammelled by precedent, tradition, or prejudice than ours. Every one of us is free to choose his own methods and remedies. No rulings or creeds limit the application of our logic; no councils instruct us where to go for facts. We can go contrary to all usages and introduce revolutionary methods, and the profession welcomes our work if only it is justified by results. In using remedies that are not drugs, and I may say those that are, we must not think one is a cure-all, using it for all the ills that flesh is heir to, for if we do we are resorting to the same quackishmethods of those from whose hands we have wrested these remedies.

The practice of medicine is an art, based on a science, working with science, in science, for science; it has not reached, perhaps never will, the dignity of a complex science with exact laws, like astronomy or engineering; but with the records made in the laboratories it is becoming more exact year by year. We must not rely entirely on the men behind the 'scope. An oft quoted saying of Bismarck's is, " Politics cannot be made in the laboratory: they have everywhere to do with human doings." In an analogous manner we may well say " that medical science cannot be exclusively made in the laboratory; it has always and everywhere to do with human beings." Dr. L. Emmet Holt has recently well said, " The men of the laboratory to-day dominate medical thought. They form sort of an oligarchy, to whose decrees those who study medicine at the bedside only must needs submit, often with a subconscious feeling of their own inferiority. I cannot myself resist the opinion that the man of the microscope and culture tube just now occupies a place of too great importance, at least in the minds of the medical student and younger practitioner."

Nothing has given a greater uplift to medical thought and practice, and especially to diagnosis, than the laboratory. Its aid is indispensable, but it has its own proper place. The work done at the bedside has, I am sure, been undervalued, and as a natural result the pendulum has begun its backward swing, and from both sides of the Atlantic come voices cautioning against the undue magnification of the laboratory at the expense of other aids to diagnosis. Cabot has well said, " After the student has learned to open his eyes and see, he must learn to shut them and think." The object of all medical science is to help and to heal, and the object of all medical, artistic and scientific thinking is therapeutic thinking. The peculiar problem that confronts us as physicians is not so much the disease as it is the diseased patient, and the significance of medicine is to be sought in this object, — to protect the highest possessions of human beings, life and health.

We must ever study at the bedside and not rely wholly on the findings in the laboratory. The knowledge acquired by both is the only practical knowledge. One is almost useless without the other. The alpha and omega of practical medicine is well expressed by Froude : " The knowledge which a man can use is the only real knowledge, the only knowledge which has life and growth in it, and converts itself into practical power. The rest hangs like dust about the brain or dries like rain drops off the stones."

Those of you who have recently entered the profession will find as those longer in the service have found that Bunyan expressed it only too truthfully when he said, " It happens to us, as it happeneth to wayfaring men: sometimes our way is clean, sometimes foul: sometimes up hill, sometimes down hill: we are seldom at a certainty. The wind is not always at our backs, nor is every one a friend that we meet on the way."

Let us strive as individuals and as a society for the honor and dignity of our profession, impressed by the importance of the problems which we as its ministers have to solve. In this we but follow out the aims and ideals of those who have gone before and blazed the way.

Original Articles.

THE THREE LONG-CONTINUED FEVERS OF NEW ENGLAND.*

BY RICHARD C. CABOT, M.D., BOSTON.

Members of the New Hampshire Medical Society:

Mr. President: I wish first to express my gratitude to you for asking me to be present here, and to say that I am very sensible of that honor. I wish also to congratulate you upon the address to which you have just listened, to which I have listened with great pleasure and with most cordial agreement. I should like to refer particularly to the concluding portions in which your president has referred to the limitations of certain methods commonly classed as laboratory methods. I fully agree with him as to the limitations of those methods and as to the necessity of their being controlled always by bedside knowledge of the case.

I have chosen the subject which I am to put before you to-day because it has impressed itself upon me considerably in private work and in hospital practice, that there are in New England but three long, common, continued fevers, and also that there are some of the profession who do not realize this fact. I have spoken of my proposed address to a number of my colleagues in Boston, and most of them wondered what those three fevers would turn out to be. As long as that is so, and as long as the facts show that considerably over 90% of all long-continued fevers are due to one of three diseases it seems to be worth while to emphasize the point, to insist upon those three fevers and to speak of their diagnosis.

I must first define my terms. By " long fever " I mean a fever which lasts two weeks or more.

That usage is arbitrary, but for the purposes of discussion is convenient. A continued fever is, of course, a fever which does not touch normal at any time during twenty-four hours, and by fever itself (I am going simply by temperature measurements) I mean any disease in which the temperature is continuously above 99° F. I have limited my title to fevers of New England because if one goes into the tropics one meets with a number of other fevers with which you and I do not deal. But as statistics (which I shall give you in a few moments) show, there are but three long, continued fevers of New England — *typhoid, tuberculosis, sepsis.*

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* Read before the New Hampshire State Medical Society, Concord, N. H., May 16, 1907.

My attention was first drawn to this fact by a series of discussions which I hold once a week with the students of Harvard Medical School, in which we take all the post-mortem examinations of the Massachusetts General Hospital and compare the findings with the clinical records. We found that in this particular series that 97% of all cases in which there was a fever of more than two weeks turned out to be typhoid, tuberculosis or sepsis. From those figures I decided to go over a much larger number of cases from private practice and from the records of the Massachusetts General Hospital, and found that the ampler statistics confirmed the earlier impressions. That these three fevers would together make up 90% of all the long fevers in any part of New England I have no doubt, but within *this 90%* the number of cases of tuberculosis, of sepsis or of typhoid would obviously vary a good deal according to the local conditions.

In a hospital like the Massachusetts General, for example, where we never take pulmonary tuberculosis except by mistake, we have, of course, a much smaller percentage of tuberculosis than in some general hospitals. In hospitals where the "surgical" cases greatly outnumber the "medical," the proportion of sepsis of one variety and another would be very much greater than in any hospital where "medical" cases are in the majority; but still, the general proposition with which I have started would be the same in any community, in any hospital, viz.: that 90% or more of the long fevers are due to one of these three diseases.

I will now give you the figures in detail. Out of 784 cases which I studied for the purpose of this paper at the Massachusetts General Hospital, we had 586 cases of typhoid. The next largest item was sepsis, with 70 cases, or 9%, and then tuberculosis with 54 cases or 7%. I must define a little more exactly what I mean by sepsis. I mean all the diseases due to the pus-forming bacteria which are prone to exert their influence in any part of the body. I include, of course, abscesses and wounds, deep or superficial; puerperal fevers, appendicitis, fevers originating in the gall bladder and the pelvis; also those hidden, dubious fevers associated with vegetations on the heart valves, commonly called ulcerative or malignant endocarditis. Those here grouped together are essentially the same in their etiology and their general prognosis, except where we can remove the cause.

Next to these three common fevers comes *meningitis;* although it is usually associated with a short fever or with one which often touches normal, it may produce a continued fever; and 27 of our cases of cerebrospinal meningitis were of this type.

Next to that group comes *influenza,* 10 cases. No doubt this number would have been much larger if I had not made the arbitrary limit of two weeks. Most cases have a shorter limit than two weeks. I have no doubt some of these diagnoses are wrong. The diagnosis of influenza is very difficult to make at present, and it is possible some of these 10 cases were mistakes.

Acute articular rheumatism, 10 cases. It may turn out to be true that this disease is due to a rather mild infection with pyogenic, pus-forming cocci; if so these cases would be classed with the other types of sepsis.

Then come 5 cases of *leucemia,* and 4 cases of *malignant abscess* with fever. After that, *cirrhosis* and *gonorrhea,* 2 cases each, and then 13 other diseases, one of each.

LONG FEVERS.

Typhoid,	586	
Tuberculosis,	54	
Sepsis,	70	
	—	710 or 90%
Meningitis,	27	
Influenza,	10	
Acute rheumatism,	9	
Leucemia,	5	
Cancer,	4	
Syphilis,	2	
Cirrhosis,	2	
Gonorrhea,	2	
"Scattering,"	13	74 or 10%
Total,		784

Simply to know the facts shown in this table is of importance, because of the help it gives us in diagnosis by exclusion. If you have a continued fever, a long fever, you are pretty sure it must be one of three things. Then if you can exclude two of those three — as you often can — your diagnosis is made.

My next point is that the diagnosis of these fevers is *not only possible but important* because treatment makes so great a difference here. There are many diseases whose diagnosis is difficult but not especially important, because we cannot do much for them if we succeed in making the diagnosis. Your president touched on that point when he said that all scientific information, if it is to be important, must be scientific information that we can *use.* Many diagnoses of the rarer affections of the central nervous system, which take up nearly a third of the great books on diagnosis, do not seem to me very important, because we cannot do anything for these diseases, but the diagnosis of these three fevers is *important* because the treatment is important. And further than that, the diagnosis is usually *possible,* provided we think of it. The majority of mistakes in diagnosis which I have known in regard to these three fevers have been due to the fact that the infection which turned out to be the cause, was not considered at all. If these causes are considered, they can usually be recognized.

A few words on the diagnosis of these fevers. I think it is first of all important to realize that there is no such thing as "simple continued" fever, "slow fever," or "low fever," or "bilous fever," or "gastric fever." Among the fevers which I have seen in consultation, a considerable number have been diagnosed as some one of these things. The fever, it is true, is often "slow," but is not properly diagnosed by recognizing that fact. It may be also "low," but that is not enough to characterize it. It often has important gastric symptoms, but those are not the cause of the fever.

We get down to business, then, by excluding once for all these exploded superstitions.

Another fact of importance is that in New England, aside from cases brought in from the tropics, there are no cases of malaria which run an obstinate, continued fever. All the malarial fevers in New England are intermittent fevers and yield readily to quinine. I have seen in consultation a considerable number of cases which had been diagnosed as malaria, despite the fact that they did not yield to large doses of quinine given over considerable periods of time. It seems to me that this argues an ignorance of the fact that all malarias originating in New England yield readily and quickly to quinine.

There are no long, continued fevers due to hysteria, neurasthenia or any other affection of the mind, and there are no such fevers due to constipation. These suppositions come up frequently in differential diagnoses, but I think they should be excluded. Disorders of the nervous system give rise to fever, but not to long, continued fever.

I will begin with the diagnosis of fevers due to tuberculosis. I have seen a number of mistakes and made a number of mistakes in this matter, by reason, first of all, of paying too much attention to the symptoms and not enough to the signs; too much attention to what the patient says and not enough to what we find on examination. Three times I have seen, in consultation, cases of pulmonary tuberculosis which were not recognized because the patient did not cough. It seems not to be realized by a considerable number of physicians that now and then a case of pulmonary tuberculosis may go on very far without any cough. I remember especially a case of diabetes in which the post-mortem showed that two-thirds of one lung was entirely solidified by tuberculosis; yet there was never any cough at all. These cases are very exceptional. I do not mean to say that the average patient with tuberculosis does not cough and cough early and often, but it does not seem necessary to say that we can have pulmonary tuberculosis easily recognizable under the stethoscope and on examination, but not giving rise to any cough. Such a case is sometimes diagnosed as typhoid, or "low," "continued" or "gastric" fever, when the patient ought to be treated and treated vigorously for tuberculosis if he is to be saved.

Sometime ago I saw in my office a young man who had recently coughed up blood. He had felt perfectly well before that and had no cough. I examined his chest rather superficially, because I didn't want to stir up more hemorrhage by deep breathing. I found nothing. I had no considerable doubt that he had tuberculosis of the lungs, yet found no signs in his lungs, nothing but the hemorrhage. But since experience shows that the vast majority of all hemorrhages from the lungs, in the absence of traumatism, are due to tuberculosis, I told him he should treat himself as if he had tuberculosis. He went home and two days after that I had a delighted message from his physician. He said: "You'll be glad to hear that Frank has developed typhoid fever; it is nothing worse." He was running, indeed, a continued high fever exactly like typhoid. I said, "Are you sure it is typhoid?" He said, "Oh, yes, no doubt about it." I heard nothing more about the case for a couple of weeks when the physician called me up: "Won't you come out and see that patient again?" I went out and found half of one lung solidified with tuberculosis. Well, nobody could have wanted more than that boy's physician did to do the right thing, but it was an awful mistake. There the boy was in the house; all the windows shut; getting the worst possible treatment. The boy himself was intelligent and as soon as he knew what the matter was he insisted on being kept out of doors; his temperature came down within a week, and I believe he is going to get well in spite of the tragic mistake of his physician.

These cases of tuberculosis of the lungs without cough are diagnosed in my experience as one of three things: either they are called malaria — and that they are called quite frequently because of chills — or they are called typhoid, or else the doctor refuses to call — doesn't call — them anything; just says, "He's got a fever."

Let us consider first the cases characterized by chills. It certainly should be recognized, and I think it generally is, that not only may we have chills in tuberculosis of the lungs without cough, but we may have *a chill every day at the same hour.* There are many practitioners who, when they have a case of chills every day at the same hour, will give quinine and assume the diagnosis of malaria, no matter what the physical signs are. In these cases the mistake is always to be avoided by examination of the blood. No one can have malaria and repeated chills without showing parasites in the peripheral blood. They are always to be found and the test is easy, quick and decisive.

I might, perhaps, say a word about the method of examination for tuberculosis, because, although it is a well-worn subject, we are learning more all the time about it. I learned something a short time ago during a visit to Dr. Trudeau at Saranac. You know the old procedure for bringing out crackling râles at an apex, by getting the patient to cough and then breathe just after it. A patient came to me the other day to be examined for lung trouble. After I had made her cough and breathe in this way she said: "I can always tell whether a man who examines my lungs knows how to do it; if he doesn't make me cough and then breathe, I know he doesn't know his business." I thought I would pass that on to you for a hint to be remembered. Luckily, I happened to know that point and so didn't fall under her disapproval.

Dr. Trudeau and his assistants not only make the patient breathe hard and cough, but prescribe first a long inspiration, then full expiration, and a cough at the end of expiration. That they say will stir up râles and make them audible when nothing else will do it. That was a procedure I hadn't known and therefore I pass it on to you. The patient should always be examined in a quiet room; that is one of the necessities of the case and it is not always obtained. One can hear in a quiet room sounds which one misses otherwise. It is a good idea to wet the bowl of the stethoscope with water so it can't possibly slip upon the skin. Vaseline and grease are often used, but water does just as well and is much cleaner.

I pass to typhoid and its diagnosis. The history of the Spanish War of 1898 brought out very forcibly the fact that the practitioners who served then as contract physicians did not know typhoid when they saw it. When looking into that fact and the reasons for it, the commission appointed for the purpose seemed to believe that the reason these cases were not recognized was the lack of local symptoms. "These soldiers," the contract physicians argued, "have no diarrhea; they have no distention; they have no pain in the abdomen; how can they have typhoid? They feel pretty well and they are walking about." So the case was called "simple continued fever" and "gastric fever" and so on. I think it still needs to be said that typhoid in the majority of cases presents the picture of a patient who has fever *and nothing to show for it;* a fever and nothing local to account for it. I have been struck many times, when I was going over the abdomen of a typhoid patient, by hearing him say, "What are you feeling around there for? I am sick in my head and chest; I am not sick in my belly." The patient does not usually complain of his belly. He may have distention, but if the case is mild he usually does not, and in the great majority of cases he does not have diarrhea. Large statistics show that 75% of the cases of typhoid have regular bowels or constipation. This is natural, because it has become more and more obvious that typhoid is not a disease of the intestines at all, any more than diphtheria is a disease of the throat. It is a disease which has lesions in the intestines, but a disease in which bacteria are circulating through every organ in the body. It seems to me that the cultivation of the bacteria from the blood ought to become, more than it has, a routine method of diagnosis, although, of course, it needs a laboratory to have it properly carried out. Every considerable town ought to have such a laboratory where men can send to get the cultures and have their cases studied out from the bacteriological point of view.

Typhoid, then, being a general disease and not a local disease, a general bacterial infection, we ought not to expect local symptoms, ought not to think of it as a disease of the intestines. On the other hand, it seems to me that the importance of *negative evidence* is very great. Typhoid fever is oftenest the fever in which you do not find anything on physical examination. You may find enlarged spleen; you may find rose spots, but in many cases you don't find either. *You have a fever and nothing to show for it.* If you have the time and ability to make the blood tests, you do find something sooner or later in 99% of all cases, but still it is one of the fevers that show nothing on ordinary physical examination. We are realizing more and more, I think, that people may not only have typhoid fever and walk about with it, but may have typhoid and *no symptoms whatsoever.* The cultures from the gall bladder, taken at operations for gallstones, show typhoid bacilli so frequently in patients who never knew they had any fever, that I cannot help believing that people often have typhoid and do not know it. It has turned out that these poeple that have typhoid and do not know it may carry around bacilli in their gall bladders, which are emptied from the gall bladder into the intestines, and hence that the feces constantly contain bacilli, and are a menace to the community. I have no doubt that in some cases which cannot be traced to water or milk, such a perpetual "carrier of typhoid" is at the root of the whole trouble.[1]

Now, lastly, sepsis. Defined as I have defined it, sepsis is due to pyogenic cocci which may exert an effect on any part of the body. The great majority of such cases are diagnosed rightly. The sepsis has an obvious focus somewhere. The occasional mistakes of diagnosis are most apt to concern the liver. Abscess of the liver, whatever its source, very often gives rise to no local symptoms whatsoever; no pain, no tenderness; nothing but a fever. I remember two such cases taken for typhoid because of the apparently negative physical examination, cases which only at the end of a number of weeks showed their true character by the burrowing of pus to the surface. In the depths of the liver there are no nerves, therefore no sensation, no pain until the abscess burrows to the surface where the nerves are, and there gives rise to tenderness and pain.

I suppose we have all seen puzzling symptoms in cases following appendicitis in which the temperature had gone down to normal; then later the patient began to run a little fever, again with nothing to show for it on physical examination; perhaps a little bit of dullness in the right back, a little bit of what you might think was thickened pleura, but not enough to account for the fever. Those cases of unexplained fever after operations for appendicitis turn out generally to be abscess of the liver. The affections of the gall bladder are complicated in the same way by liver abscess, although the diagnosis is usually more obvious. Frequent in persons who have been in the tropics are the liver infections resulting from dysentery. Then there are the subphrenic abscesses burrowing under the diaphragm and originating most often in a perforating gastric ulcer. Those sometimes give no local symptoms. Temperature chills and leucocytosis may show us that there is pus somewhere, but give no idea where it is. Then there are the recognized cases of empyema following pneumonia. It has been well said that the vast majority of cases of unresolved pneumonia are really empyema.[2] I believe the number of cases of unresolved pneumonia is very small. I have seen them in post-mortem, but the vast majority of pneumonia cases that last more than ten days are empyema unrecognized. In these cases exploratory puncture ought to set us right, but I believe the diagnosis of empyema should never be excluded unless the chest has been opened, a rib removed and a thorough exploration made.

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[1] See Jour. of the Am. Med. Asso., June 10, 1907.

The continued fevers connected with the heart are often overlooked because they do not often give rise to any marked cardiac symptoms. The patient does not complain of his heart; he has heart murmurs and high leucocyte count, but he runs a simple fever often exactly like a typhoid and does not seem very sick. I think the term "malignant endocarditis" is responsible for wrong diagnosis in many cases. Endocarditis is pretty bad anyway, and if it is "malignant endocarditis" we think the patient must be very sick, yet many of them are not very sick. They are bright, feel well, eat well, sleep well, and you can't help believing that they must have some less serious disease with some less bad-sounding name; yet they will go on for weeks with nothing but a simple fever and finally die of exhaustion. In the diagnosis of these cases we depend on the presence of murmurs in the heart, the shifting of those murmurs from time to time, and the continuous presence of a high leucocyte count, which would not be present in typhoid, nor in uncomplicated tuberculosis.

In conclusion, then, summing up what I have said, I think it is important to realize the fact implied in my title, that there are but three common, long, continued fevers of this vicinity. Second, that these fevers, though often confused with each other and so unrecognized, can be recognized in the vast majority of cases provided we think of them at all and look for them carefully by the ordinary methods of physical diagnosis.

DISCUSSION.

Discussion of Dr. R. C. Cabot's paper opened by Dr. William T. Smith, Hanover.

We are all of us under obligation to Dr. Cabot for his very clear work on diagnosis, and he has added very much to that to-day, to my mind, by this discussion.

It is very gratifying to me to hear what he has said about fevers, for I have always felt that this was about as mystifying a portion of the ground that we are on as any. I think we have all found in our own experience many cases which we are unable to diagnose, and we have found many cases — all of us, undoubtedly — of wrong diagnosis between these different fevers, and where the names that he has suggested have been applied without any rational ground. I wish that what he has told us to-day might be incorporated in our textbooks. The trouble, of course, with the textbooks is that they undertake to cover the whole ground for all parts of the country, and the medical student in studying about fevers takes them all in as about on the same plane, and when he comes to apply what he has learned he is very apt to apply a name for a disease which is found only in the tropics to a condition which he finds in New England. It seems to me that what Dr. Cabot said about the limited number of continued fevers is perfectly true, and that we ought to recognize that fact, that it ought to be impressed on the minds of young men beginning practice.

Another thing that this paper makes me wish is that we might have blood examinations done free of charge by the state laboratory. Now our state laboratory is entirely capable of doing that work and does that work constantly, but it has to be paid for, and the result of that is that in many cases where the patient is poor and is not able to pay the fee, the blood examination is neglected where it ought to be made, where it would clear up without any further trouble the diagnosis. That is the practical point which I shall carry in my mind until we secure for ourselves at public expense the opportunity of having the blood of our patients examined at any time.

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THE ORGANIZATION OF TUBERCULOSIS CLASSES.*

BY JOSEPH H. PRATT, M.D., BOSTON.

The Emmanuel Church Tuberculosis Class was organized July 1, 1905. Since that time fifty-four consumptives have been members of the class. Seventeen have already recovered and returned to work. The disease has been arrested in 75% of the incipient and moderately advanced cases. The first three members who joined the class within a few weeks of its formation have been at work over a year. Although they had advanced tuberculosis the disease became entirely arrested, and they were restored to their full working capacity.

A description of the class method of treating pulmonary tuberculosis will appear in the next volume of the Transactions of the National Association for the Study and Prevention of Tuberculosis.

Three additional tuberculosis classes have been formed in Boston. The Suburban Tuberculosis Class was started by Dr. John B. Hawes in January, 1906. It was designed for patients who lived too far from the city to be visited by the nurse of the Emmanuel Church Class. The Arlington Street Church Tuberculosis Class is under the charge of Dr. N. K. Wood. It has been in existence over a year. Recently a class intended for principally Jewish patients was started by Dr. H. Linenthal and Dr. L. Mendelsohn of the Mt. Sinai Dispensary. A friendly visitor was selected who could speak Yiddish. The Cambridge Tuberculosis Class was organized by the Cambridge Anti-Tuberculosis Society in 1906. About six months ago classes were started in New York, Philadelphia and Baltimore, and more recently in Lynn and Brockton. Steps have been taken to form classes in Washington, Pittsburg, Troy and Los Angeles.

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[2] See articles by Vickery in Bost. Med. and Surg. Jour., 1907.

* Read before The Massachusetts Medical Society, June 11, 1907.

There are several advantages of the class method of home treatment over sanatorium treatment. It is more economical. There is no expensive plant to be erected and maintained. The money appropriated can be at once utilized for the care of consumptives. If the patient regains his health in his own climate and in his own home it is easier for him to keep up the hygienic life after he has returned to work. With a class of small size the physician and nurse can give more attention to the individual patients than is possible in most sanatoria. Early cases in other members of the family are more readily detected. The educational effect on the patient's friends and neighbors is greater.

The disadvantages are equally apparent. It is easier to secure the necessary control so essential to successful treatment in a sanatorium where the patients are always under the eye of the directing physician and the nurse. Better food and better care can usually be given a poor patient in a well managed sanatorium than in his own home.

In organizing a class the first task is to secure its adequate financial support. The Rev. Dr. Worcester of Emmanuel Church has raised about $1,000.00 a year for our class. This has been obtained by Sunday collections and by individual gifts. The first grant of $500.00 was obtained from a fund known as the Parish purse which is placed at the disposal of the rector. Facilities for leading the out-of-door life, such as tents, reclining chairs and blankets have been provided and medical care and the services of a paid nurse furnished.

We have not attempted to treat homeless and destitute consumptives. Some of our members have been aided by small allowances, and in a few instances board and room rent have been paid. It has been a constant aim to place the responsibility of the support of our members on their own families. Our work could have been made more efficient, not so much by increasing our membership as by increasing the financial aid to some of our poorer members during the period after recovery while suitable work was being sought. One of our class to whom we made an allowance of $1.00 a week and who also received $2.00 weekly for a short time from a Jewish charity was so pressed for money that he was forced to pawn his watch and his wife's wedding ring. Knowing the small amount of money in our treasury he took this step rather than apply to us for more aid. A graduate with no resources and a child dependent upon her was forced to accept a situation as waitress in a restaurant where the hours of work were from five in the morning until ten in the evening.

Dr. F. T. Fulton secured the necessary funds for starting the Providence Class from the Social Service Club of the Central Congregational Church of that city. He arranged for a representative of the Emmanuel Church Tuberculosis Class to give an account of the class method and the results obtained at the church. A series of lantern slides was shown and charts and records kept by the members of the class were exhibited. After this demonstration the club voted to appropriate $500.00 for the work.

A Boston woman, not connected with Emmanuel Church, became interested in the movement and arranged a small home meeting to which four of her friends were invited. After the method of work had been explained these five ladies subscribed $500.00 for the formation of a new class, the success of which in the hands of Dr. N. K. Wood was such that at the end of six months the Arlington Street Church was willing to assume the maintenance of the class. Dr. J. B. Hawes secured both money and volunteer visitors for the Suburban Tuberculosis Class by publishing an appeal in the Boston *Transcript*. Ex-Governor Douglas announced the day after the formation of the Brockton Tuberculosis Class that he would finance the enterprise and gave at the same time $1,000.00. The establishment of the Mt. Sinai Tuberculosis Class was made possible by Mr. N. L. Amster's gift of $500.00 for this purpose.

A young woman in New York raised among her friends sufficient money to start the first tuberculosis class in that city. It has already done a remarkable work. The director, Dr. W. L. Niles, has demonstrated that tuberculosis can be successfully treated by the class method under unfavorable conditions in the crowded sections of New York City. Dr. David Riesman's class in Philadelphia has been supported by one gentleman whom he interested in the movement. The expenses of the Baltimore class have been largely borne by Dr. Dencker, who in addition has given his entire time to the work. In Lynn circulars calling attention to the class method were sent out and by this means sufficient money was obtained to start a class. In Troy a society for the home treatment of tuberculosis was established under the patronage of influential men. Many people became interested, so that $1,200.00 have already been secured by five and ten dollar subscriptions. A copy of the circular issued by this organization will be found at the end of this paper.

These facts are presented to point out the various ways in which classes may be supported.

The co-operation of all the local charitable, religious and fraternal organizations should be secured. Although in a large city such as Boston a class may be maintained by a single church, it will be the better plan in most instances to have the work started under the auspices of some organization that can look for support to the entire community.

Failure will certainly result unless the services of a physician and friendly visitor are secured who are familiar with every detail of the modern treatment of consumption. Our work would have been impossible if we had not had from the beginning the services of a paid friendly visitor. She was expected to devote half of each day to the work. As a matter of fact our friendly visitor, Mrs. Orcon, has frequently insisted on working many additional hours. Our success has been chiefly due to her tireless devotion. I recently learned that she called daily for two weeks on one patient before she could induce him to sleep out of doors. He was an ignorant man and his friends and relatives warned him that death would surely follow if he made the attempt, as it was mid-winter. He has been sleeping in the fresh air for over a year and has not only gained the sixty pounds he had lost but the disease has been arrested and he has returned to work.

It is not necessary that the friendly visitor should be a trained nurse. Constitutional energy, tact and sympathy are the essentials. There have been several notable instances in which the work of the friendly visitor has been most successfully carried out by young women who have had no hospital training. Volunteer visitors can be of great assistance. We have had two volunteers who, working with the friendly visitor, have rendered efficient service in the solution of the social and financial problems. The social aspects need to be studied. They are quite distinct from the medical side. Students of sociology should join heartily with medical men in this work. The medical direction should be in the hands of one physician. He should be paid a salary sufficient to enable him to devote a fair portion of his time to the class and make a special study of the disease he is called upon to treat. A few weeks spent at Saranac or at the Phipps Institute in Philadelphia would be invaluable. Those in charge of the Boston classes will be glad to give instruction in the class method. It has been found that the tuberculosis classes have furnished an excellent opportunity for the physicians connected with them to acquire a good clinical knowledge of pulmonary tuberculosis.

Much depends on the selection of cases. The fact that all of our 9 incipient cases have recovered while 7 of the 10 far advanced cases have died indicates the value of early diagnosis and prompt treatment. Treatment is never begun too early; it is often begun too late. For the reason that the disease may be so insidious in its development and because recovery is not only more sure but more rapid when the patient is at rest, we have insisted that all of our patients should cease their work and devote themselves entirely to the task of getting well.

The present wave of optimism in regard to the treatment of consumption has its dangers. Many physicians make the fatal mistake of minimizing the seriousness of the disease in its early stages to both themselves and their patients. I am often asked by physicians to treat in our tuberculosis class consumptives " who are not sick enough to give up their work " or " who cannot afford to stop working." I am glad of this opportunity of pointing out to the members of The Massachusetts Medical Society their great responsibility in this matter. To let a man continue at work after the diagnosis of active pulmonary tuberculosis has been made is as foolish as it would be to let a fire burn unchecked until it became serious before calling the fire department. Doctors and social workers frequently speak of their inability to persuade consumptives to leave their work and take the rest treatment. This failure is usually due in the first place to the consumptive's ignorance of his true condition and, secondly, to his lack of financial resources. We have overcome these obstacles by telling him the truth and by promising that if he will join the class, keep absolutely quiet, sleep out of doors and follow our guidance in all things we will see that the ways and means are furnished.

When a suspected case is submitted to us a definite diagnosis is always made before treatment is instituted. If tubercle bacilli cannot be demonstrated in the sputum, the tuberculin test is tried. I have seen no harm result from tuberculin in the hundred or more cases in which I have used it. The initial dose I employed is $\frac{1}{10}$ of a mgm. If there is no reaction a second injection of 1 mgm. is given, and if necessary a third test with 10 mgm. is made. The details of preparing the dilutions will be found in the recent paper of my associates, Dr. Hawes and Dr. Floyd.[1] After the diagnosis has been made the patient is told that he has consumption, and if unwilling to heed our advice the seriousness of the disease is impressed upon him. In the old days, I have frequently overheard a conversation somewhat as follows between the hospital externe and a patient in whose sputum tubercle bacilli had just been discovered. " We find a little trouble in your lungs," began the doctor speaking rather hesitatingly, " I don't suppose you could give up your work for a few weeks and go to the Rutland Sanatorium, could you? " " No," said the patient, " I have a family to support and no money." " That is too bad," said the doctor, " it would be better if you could stop work and go to Rutland, but as you cannot do that be sure and stay out of doors all you can, eat plenty of food, take this medicine for your cough and come back and see me in two weeks."

I never saw cures produced by this method, and my experience accords with that of my colleagues.

Since the tuberculosis class was established I cannot recall a single instance in which we have failed to induce a man of fair intelligence and good habits to stop work and to take the treatment. If a man tells me he has a wife and children dependent upon his weekly earnings and no money on hand I advise him to explain the situation to his relatives. Often there is a brother-in-law who is earning fair wages. I try to impress the following facts upon the sick man: the disease has its clutches upon him. Soon his strength will begin to fail and within a few months in all probability he will be too ill and weak to work. Then he will tax the resources of his family to the utmost. Often some one who might be earning money must remain at home to care for him. In addition to the expenses of his illness there is the increased financial burden attending death and burial. After the breadwinner is dead, provision must be made for the wife and children, not for months but for years. It is cheaper for the consumptive to get well than to die. This plain speaking may seem brutal, but it is often the means of saving life. It is a line of argument that rarely fails with the relatives. If they refuse to loan money, we have been able to secure from other sources the necesrary funds to enable the patient to take the treatment.

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[1] Bost. Med. and Surg. Jour., 1907, clvi, p. 694.

In Oxford, Providence and Brockton several large manufacturers have provided free treatment in sanatoria and at home for consumptives in their employ. Dr. F. T. Fulton, of Providence, has found that those men who began treatment before constitutional symptoms had developed were able to return to work within a few months. Among these there has been thus far no recurrence of the disease.

Our greatest need in the Emmanuel Church Tuberculosis Class is provision for the exceptional cases who need prolonged financial aid, and for the after-care of our graduates. Many difficulties, financial and sociological, are presenting themselves. The medical problems have been largely solved. Much could be accomplished by giving a small allowance to the individuals in whom the disease has been arrested while they are seeking suitable employment. In Bardswell's valuable monograph on the Consumptive Working Man will be found the report of an after-care committee, as it is called, which was organized by the Kelling Sanatorium at Holt, Norfolk. This committee sent a printed leaflet to employers of labor, a copy of which will be found appended to this paper. There is urgent need that similar committees be formed in this country. In England employment was furnished chiefly by people with gardens and by farmers. Light work indoors is better for a consumptive with arrested disease than heavy work out of doors. If obliged to spend the day in-doors the individual with arrested disease should not fail to sleep in the open air.

The establishment of a loan fund for the benefit of individuals of good character in the curable stage of the disease would be of great economic and philanthropic value. The administration of such a fund might be quite independent from that of the tuberculosis class. In some cases the issue between life and death depends upon whether or not there is an available fund of a few dollars a week. Our patients are of entirely different type from those familiar to charity workers. In the majority of cases the disease had been the indirect result of over-work. They are thrifty and are able to live quite comfortably on little money. The fact that they carry out the class treatment faithfully for weeks and months indicates that they have perseverance. If such a fund is established loans should be made only after the needs of a case have been most carefully investigated. As only a limited number of cases can be helped at first preference should be given to those who can be most quickly and surely returned to the ranks of breadwinners. Patients who have used alcohol to excess should be viewed with suspicion. An intemperate man under our care who made speedy and marked improvement went on a debauch with the first money he earned after returning to work. Experience with young married women is also disappointing, for the reason that pregnancy and child-birth are so apt to be associated with a lighting-up of the disease.

If there are children in the family and the resources are scanty it is well to find temporary homes for them in the country, especially if the mother is tuberculous. In this work we have been greatly aided by the Children's Mission. Not only does the removal of children lessen the difficulties of caring for the family, but it often saves the children from becoming victims of the disease. We found unsuspected cases of tuberculosis among the children in no less than twenty per cent of the families represented in the class at the present time.

Attention should be called to the establishment in New York of a special employment bureau for the handicapped.[2]

If after-care committees be formed in connection with our tuberculosis classes it is probable they would proceed on somewhat similar lines. An effort should be made to interest the employers of labor in this work. The positions of watchmen or care-takers should be specially sought for our graduates. Honest, sober and reliable men could be furnished.

Most of our graduates have been able to return to their former employment, and yet maintain their health. If arrest is secured in advanced cases only light work under favorable conditions should be attempted. It is even more difficult to secure suitable work for women than for men.

A specific instance of the difficulties that confront us may be given. In November, 1906, a type-setter entered the class with incipient phthisis. He owned a little property in England, and although he earned fair wages had saved no money. His wife was a nervous invalid, unable to take boarders, and there were two children to be cared for. We turned to Mr. A. M. Wilson, the efficient secretary of the Boston Society for the Relief and Control of Tuberculosis, and he was able to obtain a weekly loan of $10.00 for a period of about two months. The property in England was not regarded as good security, and he was unable to dispose of it. After this relief failed a lady in the Emmanuel Parish loaned the same amount weekly for four months longer. The disease in the lungs became completely arrested. About six weeks ago, just as he was on the point of returning to work, symptoms of tuberculosis of the spine developed. For nearly a month he received free treatment in the wards and convalescent home of the Massachusetts General Hospital. Last week we were told by the orthopedic surgeon to whom we referred the case that an apparatus to hold the spine immobile must be worn for three months more. The outlook for complete recovery is good. He feels well and strong, but so long as he is obliged to wear the plaster cast he will be unable to do his work as a "job compositor." The printing firm for whom he worked has held a place for him. What shall be done in this case? There is the rent to be paid and the family to be fed. At the last meeting of the class the friendly visitor reported that there was no food in the house and he had to borrow a nickel for his car fare from a neighbor. I am glad to report that he received this week $10.00 from the class fund. Only temporary aid can be furnished from this source. Inasmuch as the total amount of money at our disposal is not over $20.00 a week it can readily be seen that we cannot pay out $10.00 weekly to one individual for any length of time. What better memorial for a relative or friend could there be than the establishment of a loan fund for cases such as this?

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[2] See the interesting paper by T. C. Janeway and C. C. Carstens in *Charities*, Feb. 3, 1906.

To show what can be done with a small amount of money the case of a young seamstress may be cited. She consulted a physician in the spring of 1906 on account of a cough. He found tubercle bacilli in her sputum and referred her to our class. She had only $50.00, and her parents who lived in Nova Scotia were too poor to help her. She was boarding with a friend who charged her only $2.50 a week. We gave her this amount weekly for four months and loaned her a tent and reclining chair. She enjoyed the privileges of the Parker Hill Day Sanatorium where lunches and a good dinner were furnished free. She entirely recovered and returned to her home in Nova Scotia for the winter. She writes that she has been perfectly well since graduating from the class and expects to return to work soon. Who can doubt that the loan of $40.00 saved her life?

The social and economic aspects of this movement are assuming increasing importance. Is it not possible that in the practical work of the tuberculosis crusade the sociological and medical departments of our universities may combine? The churches with their organized forces might furnish great aid if they were awake to their opportunity.

Although it has been demonstrated that the class method furnishes an economical and efficient means of treating tuberculosis in the homes of the poor, three important points should be borne in mind if the tuberculosis classes are to be successful. First, they should be directed by physicians familiar with the details of the modern treatment, and the right women should be selected for the position of friendly visitor. Second, there should be adequate funds for the support of the class. Third, every physician in the community should learn to recognize the disease in its early stages and to refer the cases for treatment without delay.

Appendix.

COPY OF THE CIRCULAR ISSUED BY THE AFTER-CARE COMMITTEE OF THE KELLING SANATORIUM.

To Employers of Labor and Others Interested in the Working Class Consumptive:

It is felt that it should be more generally recognized that, in dealing with consumption, sanatorium treatment is only the first step.

Of suitable cases, treated at a sufficiently early stage, a large proportion are discharged fit for work, but if the good gained at the sanatorium is to be maintained it is essential that the patient should, on leaving, be able to go to suitable employment in suitable surroundings.

The Committee of the Kelling Open-Air Sanatorium, feeling the vital importance of this side of the work, have appointed a special sub-committee called the After-Care Committee, who consider the future of each of the sanatorium patients, and where necessary endeavour to obtain suitable work for him when he leaves such employment and surroundings.

Work is provided for a certain number at the sanatorium itself, but as it is impossible to provide in this way for more than a very small fraction of those discharged, the committee now venture to appeal to employers of labour to assist them.

They can help, it is suggested, in two ways:

1. By being willing now and then to find temporary light work for a man.

2. By occasionally giving one of our men the chance of a suitable permanent position.

In the first case the idea would be to enable the man for a short time to earn a bare living wage in suitable surroundings while he looked about for permanent work, and, in the second, to provide him, at no doubt a moderate wage, with suitable permanent employment.

Our men are almost all skilled in some trade, and we would obtain in every case a character from the previous employer.

It would be clearly understood that no responsibility whatever as to the man's health should be undertaken by the new employer; if a man so employed should break down, the committee would like to be informed, and would do all they could to secure him further treatment.

The employment may be either out of doors or in pure air in-doors. It should not involve any great physical effort, nor should it require to be done against time or high pressure.

The following list contains a few of the employments suggested:

Light work about a farm or garden.
Driving.
Care-taking.
Agency work as, for instance, insurance agency, rent collecting, or some form of travelling, etc.
Clerical work if in good conditions.
Estate work, such as light carpentering, looking after an engine, etc.
Motor car driving.
Check taking.
Door keeping, and many others.

The risk of infection has been mentioned as an objection, but there is no doubt that it has been greatly exaggerated and, in any case, it is certain that a man who has been treated at a sanatorium, whose symptoms have disappeared and who has been taught the precautions, is not only unlikely to be a source of infection, but is actually a missionary of health to all with whom he comes in contact.

The preferential consideration given to subscribers with respect to the admission of patients into the sanatorium will be given to any employers who will consent to give, instead of a subscription in money, this invaluable practical aid.

May we write to you when we want employment or a man? Please reply to ——, the Hon. Sec., Kelling Open-Air Sanatorium, Holt, Norfolk.

COPY OF THE APPEAL FOR THE SOCIETY FOR THE HOME TREATMENT OF CONSUMPTION IN TROY.

"We must care for the consumptive in the right place, in the right way, and at the right time until he is cured; instead of, as now, in the wrong place, in the wrong way, and at the wrong time until he is dead." — Pryor.

There has been, during the last few years, a great revival of interest among both physicians and business men in the question of consumption. Every one is coming to realize that this plague is the most dangerous of any kind that we have to contend with.

It kills, every year, more people than any other disease. Last year there were 240 deaths from consumption in Troy, an average of 20 each month. The great majority of the deaths were among the poor between the ages of 20 to 40 years, the time of life when men and women are most essential to the support of their families and of their children. They cannot go away or receive the benefits of treatment in a sanatorium, therefore they must be cared for at home.

In many cities of the United States measures have been taken to fight this disease and the results have been remarkable. We are going to fight consumption in Troy and we ask for your interest and assistance.

A class is to be formed of consumptives who cannot afford to leave home to go to a sanatorium or to pay for continuous medical care. The society has secured the voluntary services of Dr. H. W. Carey as physician-in-charge, and Dr. H. C. Gordinier and Dr. J. B. Harvie as consultants.

The class will be under the care of the physician and a nurse who will instruct the patients in the three essentials for recovery — *Rest, Living Out of Doors and Proper Food.*

The class meets once each week for examination by the physician, and each member is visited at the home by the nurse, who will see that the instructions are properly carried out. This is the method used so successfully in Boston, Providence and New York, where, in most instances, the progress of the disease has been arrested, in many instances cured.

The cost of maintaining the class is $50.00 a patient a year, the expenditure being limited strictly to the purchase of tents, cot-beds and reclining chairs to enable the patient to live comfortably out of doors and to pay for the services of the nurse. In order to meet the expenses of carrying on the work for a year we must have $1,000.00 in hand and we ask your aid by a contribution of $10.00.

(Signed) Paul Cook,
Frank E. Howe,
Edward Murphy, 2d,
George Alfred Cluett,
Leland Thompson,
Edgar H. Betts,
Committee.

DISCUSSION.

Dr. John B. Hawes, of Boston: I have been associated with Dr. Pratt right from the start, and from the very beginning I was tremendously impressed with what this class method can accomplish. There is one thing which he has not mentioned, and which I think is one of the principal factors in successfully handling these cases, and that is, the personal element. Every one of these patients who have come here to-day is a personal friend of mine. They are being taught how to help themselves. As Dr. Pratt's class increased the need of another class was apparent, and there was another started at the Massachusetts General Hospital under my charge, and this was called "the suburban class," of which there are now three. The patients sleep out of doors wherever possible, and come to the hospital for the class work once a week when they are able, where we talk over the details of the past week. The first patient shown here by Dr. Pratt had been under my care at the hospital for six weeks, and nothing seemed to be accomplished under the old out-patient system until Dr. Pratt commenced this system of personal supervision of the patients in their homes, and to the hard, individual, personal work which he has put into it, I think the credit is largely due.

Dr. I. J. Clark, of Haverhill: A year ago there was a committee appointed in Haverhill to look into this matter, and to further the treatment as much as possible. This committee included members from Lawrence, Newburyport and our own town. I am very glad to report that we have organized a society in Haverhill, and solicited funds from our people. We have officered it with about all the doctors and clergymen, and I have patterned it as far as possible after Dr. Pratt's method. It does not seem practicable to have a class at present, but I have suggested it to the supervisor. I intend to work with him in carrying out the details. We are also to have the state exhibit. It seems to me a movement which every town of any size should take up. It is surprising to see how much interest in this is shown by the public. I do not think the matter will lack for means. I am very much interested in this matter, and will say that we find it very difficult to carry out the rest treatment. I had a patient recently who by careful supervision and treatment had become much better with no fever, but he insisted on going camping out and fishing trips, and he had a relapse. He did very well, however, under the treatment while he remained quiet.

Dr. David Townsend, of Brookline: There is one phase of the work which has not been mentioned, the "Day Camp." The Boston Association for the Relief and Control of Tuberculosis has operated such a camp the past two summers on Parker Hill in Roxbury through the courtesy of the Robert Brigham trustees. This summer the camp has been established on the estate bought for the proposed Municipal Consumptive Hospital through the courtesy of the Municipal Hospital trustees. The camp is modeled after those in Germany, particularly those in Berlin. The patients come for the day only, they arrive early in the morning and go home late in the afternoon. They are given two lunches, one at ten, the other at four o'clock, and a dinner in the middle of the day. Each patient is examined once a month, and weighed once a week; his pulse and temperature taken twice a day. The aim of the officials of the camp is to know each patient intimately, and to encourage him to confide in them. His day at the camp is regulated and everything done to remove all worry and anxiety. He is kept under careful supervision. Such a camp may be readily attached to a hospital, and can be run at a moderate expense as has been proved by the Good Samaritan Hospital, in Boston, the past year. A day camp is of value as it removes for a time the source of infection from the community and the home; it enables some cases to obtain admission to a sanatorium which could not otherwise go; it enables cases to obtain proper care which, although suitable, for some reason cannot go to a sanatorium; it obviates in some cases the necessity; it helps to complete the cure in some cases which have been discharged from a sanatorium. It is also a value on educational lines. As to the permanent good which results I can only say that of the cases present at the camp in the season of 1905, one third are able to work all or a part of the day. One point which I would like to emphasize is the importance of a complete examination of all the members of a family in which there is a tuberculous patient. In this way we are enabled to detect the disease in the earliest stages, and to take proper steps to prevent its spread.

Dr. A. C. Getchell, of Worcester: One other point should be touched upon at this time it seems to me. It is the matter of ways and means. Dr. Pratt's results are very encouraging and his work is of great value. Can others in other places do as good work? He has the material resources of a large church and a well supported tuberculosis organization at his disposal. Looking to our work in Worcester we have neither; nor, so far as I can see, are we likely to have. On the other hand it is quite within the range of probability that one of our large hospitals may soon make proper provisions for poor consumptives. As a practical measure I think we will sooner provide suitable care for these unfortunate persons by putting our main energies upon utilizing the equipment of existing institutions with such slight additions as may be necessary. As has been said, Dr. Pratt's personality is an important element of his success. While this has contributed so largely to his work it cannot be counted on with definiteness in other places. To my mind the great value of his work, and I sincerely hope he will keep on with it, is a demonstration of what can be done at home with the moderately poor consumptives. But I feel that we shall make no material progress in caring for the very poor, the most dangerous class of all, until we provide adequate institutional care for them.

Dr. C. S. Millet, of Brockton: One word about the personality of Dr. Pratt, about which we have heard so much this afternoon. If there is anything in taking a real heart-felt interest in your patient, in paying attention to detail and insisting upon entire obedience on the part of the one most interested, which the rest of us can't imitate, then, of course, Dr. Pratt's personality is certainly the most important factor in the kind of work which he has originated.

Otherwise there is nothing about this work that any man here can't do.

MEDICAL INSPECTORS: THEIR FUNCTION.*

BY CHARLES HARRINGTON, M.D., BOSTON.

Yesterday there was passed by the Senate to a third reading, a bill, which already has passed the House of Representatives, entitled, "An Act to Provide for the Establishment of Health Districts and the Appointment of Inspectors of Health."[1] The bill was first reported in the House on May 1, by the Committee on Public Health, after full consideration of so much of the annual report of the Chief of the Massachusetts District Police as relates to the manufacture of clothing in tenement houses; so much of the Governor's address as relates to medical examination of minors in factories; a petition for legislation relative to the spread of tuberculosis; a petition for legislation to provide for the transfer of certain powers and duties of the inspection department of the District Police to the State Board of Health; a petition for legislation to provide for proper sanitation, ventilation and light in factories and shops and for the appointment of medical inspectors; a petition for legislation to prohibit overcrowding and bad air in factories and workshops; and a petition that medical inspectors be appointed throughout the Commonwealth.

Should the bill become law, it will be the duty of the State Board of Health to "divide the Commonwealth into not more than fifteen districts to be known as health districts, in such a manner as it may deem proper and necessary for the carrying out of the purposes of the [this] act"; and, this having been done, it will devolve upon the Governor to appoint in each such district "one practical and discreet person, learned in the science of medicine and hygiene, to be state inspector of health in such district." The appointees will hold office for five years, but may be removed by the Governor and Council at any time.

The duties of the inspectors will be so varied and extensive as to make the positions anything but sinecures, and in most districts their proper performance will demand of the incumbents practically their entire time and will involve constant travel from place to place. The bill provides, in the first place, that each inspector "shall inform himself respecting the sanitary condition of his district and concerning all influences dangerous to the public health or threatening to affect the same." This alone will be no small task, for although the area of the Commonwealth, in comparison with that of almost all other states of the Union, is small, the 15 districts together will include 33 incorporated cities and 321 towns, and each district, therefore, must contain a considerable population, divided among not a few distinct communities, large and small, urban and rural, manufacturing, agricultural, residential and mixed. In order, therefore, to inform himself and keep informed as to the sanitary condition of his district, and to carry out the duty with which he is specifically charged in the next clause, to "gather all information possible concerning the prevalence of tuberculosis and other diseases dangerous to the public health within his district," he must keep in touch with all of the local health authorities thereof, watch the incidence of communicable diseases in each city and town, inquire into their causes, be prepared to suggest preventive measures and to "take such steps as, after consultation with the State Board of Health and the local health authorities, shall be deemed advisable for their eradication."

Impressed with the value of the medical inspection of school children, the attention of his Excellency the Governor was drawn to the advisability of extending the same protection to minors employed in factories, under conditions which, in very many cases, are far more inimical to health than the conditions to which those confined for shorter daily periods in schoolrooms are subjected; and the matter was made the subject of an earnest recommendation in his inaugural address. If the bill becomes law, it will be the duty of each inspector to have an eye on all employed minors, to examine them as to their health, and, whenever advisable or necessary, to call their ill-health or physical unfitness to the attention of their parents or employers and of the State Board of Health. In some districts this duty will make large demands upon the inspectors' time, for in many manufactures large numbers of minors find employment in rooms where they are exposed to influences which tend to break down their resistance to disease, and especially to tuberculosis.

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* Read before The Massachusetts Medical Society, June 11, 1907.

[1] The bill was enacted in both houses, and was signed by the Governor on June 19.

A third duty imposed upon the inspectors is that of enforcing, under the direction of the State Board of Health and in place of the inspection department of the District Police, the provisions of existing laws relative to ventilation, light and cleanliness of factories; to providing suitable seats for women employed in manufacturing, mechanical, or mercantile establishments; to the employment of minors in the manufacture of acids; to proper water-closets for factories and workshops; to defective sanitary arrangements, drains and water supplies; to nuisances; to cleanliness, ventilation and provision for water-closets in public buildings and schoolhouses; to manufacture of clothing in dwelling houses and tenements; to providing pure water for employees; to installing hoods, suction pipes and fans or blowers where dry grinding on emery wheels is carried on; and to the maintenance of suitable dressing rooms and wash rooms in foundries. In other words, every manufacturing establishment, every public building and every schoolhouse will be under the sanitary supervision of the health inspector of the district in which it lies, and it will be the duty of that officer to visit each such place with reasonable frequency, to report upon its condition and to enforce the law relating to any defect or omission.

In addition to the duties specifically mentioned in the bill, the inspectors will be required to perform such other duties as the State Board of Health — under whose general supervision they will be — may from time to time determine. They will be required to keep records of their proceedings and observations, to submit annual reports to the board, and from time to time to furnish the board with information concerning conditions affecting the public health in their repective districts; and whenever they send written suggestions to local authorities they shall send copies thereof to the board.

From this brief résumé, one may well understand that for the proper and adequate performance of the various duties imposed upon them the incumbents of the positions must necessarily be men of good medical training and experience; of good physique, for the work will be arduous; of good judgment in sanitary matters, and endowed with that most necessary qualification, tact.

DISCUSSION.

Dr. H. L. Chase, of Brookline: I only rise to express a hope that members of the profession will make suggestions to the Governor as to the appointment of suitable men for these very important offices of inspector.

Dr. W. J. Sleeper, of Westford: I indorse what Dr. Harrington has said, and it seems to me that this matter of factory and health inspection should very properly be under the supervision of the Board of Health, and not under the District Police as it has been so many years. It is not the function of the police, and it has not always been carried out in the wise way it should be. While their intentions were good they lacked the necessary qualifications that scientific knowledge would give.

In answer to Dr. Henry Jackson's question as to whether much of the work could not be done by non-medical men, Dr. Harrington answered: An effort was made to induce the committee to strike out the word "medicine" and insert in place thereof the word "sanitation"; but inasmuch as the work of the proposed inspectors is very largely medical and requires medical training the committee declined to make the change and decided that the word "medicine" should be retained.

It is true that some of the work which the inspectors will have to perform can be done by others than graduates in medicine, especially that having to do with inspection of factories. As a matter of fact the graduate of an engineering school is likely to be a better judge of ventilating apparatus than the average medical man. The medical man knows when ventilation is defective, but may not know how to direct changes to bring about improvement. Again, it does not require a man skilled in medicine to point out that a given atmosphere is overcharged with dust and fumes. On the other hand, one of the most important duties of the proposed inspectors is to examine into the health of all minors employed in factories. Such an examination is beyond the power of the most gifted engineer, unless he has had a medical training.

It must be understood that this bill was based upon a large number of petitions indorsed by a number of different interests. In the first place, there were those who sought to take the factory inspection out of the hands of the District Police, and prominent among these were leaders of the labor unions, who asserted before the committee that until the inspection of factories was taken out of the hands of the District Police and put under men with scientific training they could not hope for sanitary improvement of factories. Other bodies interested were those working for the suppression of tuberculosis, and it will be noted that this disease is specifically mentioned in the bill, it being one of the duties of the inspectors to inform themselves concerning the prevalence of tuberculosis and other diseases dangerous to the public health, and to suggest methods of combating the same. There were others who for many years have wished to have the state divided into health districts, with medical officers of health such as are employed in a number of states, and in Great Britain and other foreign countries. Attempts so to divide the state have hitherto met with no success, and it would probably have been absolutely impossible to secure legislation appointing medical officers of health without a combination of interest such as came into being this year.

With reference to the point that it does not require a medical man to do some of the work of the proposed inspectors, let me call attention to the fact that there is in the bill a clause which empowers the State Board of Health to employ such sanitary experts as may be needed; this has reference to ventilation and other matters involving a knowledge of engineering.

Dr. H. L. Dearing, of Braintree: In connection with what Dr. Harrington has said, I wish to say that in Braintree the inspection of the schools and factories has been carried on by three public-spirited physicians, and from our experience it seems very plain to us that the medical man is the only man who is fitted to make these inspections properly. In our investigations we have found that the floors of the factories are in very bad, in fact often filthy, condition. Before inspection the floors were washed up twice a year, now they are washed up twice a week. The danger of drinking out of the same cup is well illustrated by this example which I will cite. One of the large employers of the town came to me with a sore on the lip, which he and I also felt sure came from using the same cup as the employees. He told me that after that he would see that there was proper medical inspection of his factory.

The chairman, Dr. A. T. Cabot, of Boston: It seems to me that it is not only the duty of the members of the associated committees to recommend to the Governor capable medical men to serve as inspectors, but that it is also their duty to ally themselves with the inspectors when appointed, and to assist them in every possible way.

FACTORY INSPECTION.*

BY FRANK G. WHEATLEY, M.D., NORTH ABINGTON, MASS.

Legislation to protect the public health has for many years been the settled policy of this Commonwealth. Every year the legislature enacts new laws or amends old ones. While in many cases changes in law have not notably improved conditions still the general trend of legislation has been helpful. Perhaps the last two or three years have been more than usually fruitful in protective legislation. The legislation leading to recent investigations of health conditions in industrial life by the State Board of Health has been of especial value, largely because of the intelligent methods of investigation adopted by the very able and efficient secretary of the board. Competent men were selected to do this work, and the commercial side of the problem, that is, the employers' interests, were duly considered. As a result of these investigations we have a certain amount of valuable information that may be made a basis for a more intelligent appreciation of the problem. The conditions discovered were in many cases fairly good, but in a discouragingly large number distinctly bad and, on the whole, the theory that a large number of municipalities have local boards of health, either incompetent or unwilling to do their duty, seems to be established. A necessary inference from this condition is that it is incumbent upon the Commonwealth in some way to come to the rescue, and it is hoped that pending legislation, of which it may be premature as yet to speak, may accomplish a great deal along this line. Factory inspection as a phase of the general health question is every year becoming more important. This because not only is the total number of factory employees increasing but the small workshop employing comparatively few people is giving place to the mammoth plant where thousands work under the same roof.

I propose to consider briefly the three groups of people which the subject naturally suggests and the effects of such grouping upon the general subject. These groups are (*a*) Employers; (*b*) Employees; (*c*) The General Public.

To the employer of labor factory inspection has in many cases come to be looked upon with disfavor. Arbitrary regulations enforced by ignorant and tactless inspectors, the interference with one's private affairs and additional expense are probably the most potent reasons for this state of affairs. I do not believe that the average employer objects to the establishment of reasonable sanitary regulations. He is too intelligent a man not to know that the employee whose environment is all that it should be in regard to pure air, proper temperature, proper light, proper toilet accommodations and freedom from exposure to contagious disease is of more value to him than the employee whose environment is unhealthy. I believe that the average employer, if approached in the right way, will prove a help rather than a hindrance to efficient factory inspection. In other words I think he needs education along health lines rather than additional legislation. Added to his interest as a manufacturer is his interest as a large tax payer in the general health of the community. In many cases the nature of the work done in the factory is such that under the most favorable conditions health is somewhat endangered; but I am inclined to believe that the so-called dangerous employments have been unduly advertised, and that inventive genius has and will continue to minimize the evil. There are, however, certain obstacles to the production of ideal health conditions in thickly settled communities that are well nigh insuperable under present conditions. I refer to the disposal of waste in communities where sewerage is not furnished by the municipality. My attention has recently been called to a case of this kind where an ideal handling of waste by the manufacturer would be so expensive as to be prohibitive. In such a case great care should be exercised to so handle the matter as to command the approval of intelligent public sentiment.

The employee is, of course, theoretically in favor of rigid factory inspection, and is, I think, as a rule willing to do his part to make it a success. Quite a large percentage, however, while apparently taking delight in seeing the employer compelled to spend money for sanitary appliances, are the first to abuse the facilities given them. Then, too, restrictions in cases of contagious disease are likely to prove unpopular. Here education along sanitary lines is also needed.

To the public factory inspection is of vital interest. The enormous expense which poor health brings upon the community, to say nothing of the humanitarian side of the question, should awaken the interest of every public-spirited citizen in the subject. Then, too, the product of the factory has in so many cases a bearing upon the health of the consumer that the public cannot afford to allow it to be prepared under unhealthy conditions. I want to impress upon every medical man present the importance of the subject, and to suggest that you can by your personal efforts do a great deal to popularize and make effective scientific factory inspection. The medical man above all others is in a position to educate public sentiment along such lines. If the Commonwealth is to inaugurate an efficient factory inspection it must have an enlightened public sentiment in favor of such inspection.

In the crusade against tuberculosis now so well under way in the state, intelligent factory inspection is an important factor. The state has just made a large appropriation for hospitals for the treatment of tubercular patients. Let us hope that in another decade we shall have so lessened the number of those thus afflicted that the hospitals will be poorly patronized.

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* Read before The Massachusetts Medical Society, June 11, 1907.

It is interesting in this connection to note the work that is being done outside the state along the same lines. Pennsylvania has just appropriated one million dollars with which to fight the white plague, and even our diminutive neighbor, Rhode Island, comes bravely to the front with an appropriation of three quarters of a million. With the work done in Germany recently you are all doubtless familiar. There seems to be a general awakening all along the line, and it is for us, the medical men of the old Bay State, to see to it that our beloved Commonwealth is in the very forefront of the battle.

DISCUSSION.

The Chairman, Dr. A. T. Cabot, of Boston: The subject of factory inspection is now before us for discussion and is one which we should all consider carefully on account of its effect in prevention of tuberculosis. We should urge adequate factory inspection and try to enlist the help of employers to obtain it. Rhode Island has taken steps toward factory inspection which I think we might study with interest and profit. In their experience with factory inspection they have found that one of the most satisfactory inspectors is the foreman who is always in the workroom with the hands. He does not know all the symptoms of consumption, perhaps, but he knows a cough when he hears it, and after hearing a man cough day after day, he is able to advise such a man to go to the doctor for examination. It is the cases which are early discovered which can be sent to a sanitarium. Those are the cases which come back to the factories, and are living examples to the workmen of the value to them of factory inspection.

Dr. C. S. Millet, of Brockton: In the city of Brockton during the past six months I have been trying to carry out this line of work in the so-called Walk-Over Shoe Factory, and all parties concerned — that is, the members of the firm, the superintendents of the different factories and the employees — have been willing and even anxious to aid me in every way.

In talking to the foremen, I have tried to tell them what to look for in their efforts to determine whether or not a man is probably affected and should have his lungs examined. The objective symptoms which seem to be most frequently the result of a tuberculous infection are four in number, and named in order are, hemorrhage, cough, emaciation and pallor.

First, hemorrhage: Any spitting of blood, no matter how slight, should always be sufficient grounds for a careful physical examination. Persons who raise blood are quite apt to conceal it, if possible, probably because of the curiosity and excitement which the sight of blood always arouses; hence, the foremen should always follow up the scent if they perceive any blood upon the floor anywhere about the factory.

Second, cough: Osler has said that a cough which lasts over three weeks is very suspicious; and certainly if this symptom, even though it may be insignificant in character, shows the least tendency towards chronicity, the origin must be determined.

Third, emaciation: If a man is thinner than he should be compared with his height, or if he has recently lost weight to an appreciable degree without apparent cause, then again it is of the greatest importance to discover whether or not he has tuberculosis.

Fourth, pallor: This symptom one should always consider at any rate suggestive enough to demand an explanation. It may be due to an actual anemia, as shown by the test for hemoglobin, or it may be caused by an unnatural condition of the circulation through the skin; and in either case the cause is so often tuberculosis that a physician must be absolutely certain as to its source before he can exclude the disease in question.

In conclusion, I would like to say that this work of seeking out cases of tuberculosis among mill and factory operatives must always be done with caution and sometimes even with secrecy, in order not to make it possible for the other hands to shun or ridicule a fellow-workman who has been subjected to an examination.

Dr. W. J. Sleeper, of Westford: I think that factory inspection will do a great deal to blot out the great white plague in that it will call attention early to any trouble in the chest; and I think also that it is very important to secure the co-operation of the employee. The increase in speed in the factories, while it produces an increase of production, is certainly a detriment to the employee, and I see no way of correcting the condition except by means of the two weeks' vacation in the summer time. It seems to me that the giving of vacations for the purpose of recreation and change of scene should be encouraged by our Society.

Dr. Eleanor Way-Allen, of Walpole: In Walpole a committee has been formed for the relief and control of tuberculosis, and we have found that people cooperate with us very well. We have put up "No Spitting" signs and are recommending men and women to physicians if we find they are failing in health. The largest employer has a physician at his own expense to examine patients. We have found that working with the foremen is a very successful method.

Dr. J. C. Pitta, of New Bedford: In New Bedford, as you all know, there are many large factories, and they are a long way from the most progressive methods of fighting this disease. There is not a great deal of inspection. A large number of the people come from my country (Portugal). Last year there were over 120 sent back because they had tuberculosis. I tried to organize a society for the protection of our people, and we have succeeded in doing something. Some of them have been sent to the State Sanitarium at Rutland, and the bills paid by our Society. We have a nurse who goes around and takes their temperatures and gives them good advice. We think we have done much work, but could do more if we had the assistance of other societies.

I am also a member of the District Committee in New Bedford, and for quite a number of months we have not had a meeting, due mostly to the fact that the president of the committee was sick, and afterwards was so busy that he could not give the time to it, and we got somewhat discouraged. Still we have done quite a good work after all. We succeeded in getting a tuberculosis exhibit in City Hall, and it was attended by quite a large number of people of the community. Most of the patients sent back to the old country and most of the patients attended by this society have been mill hands. Many of them drink from the same cup, and they are constantly in a dusty and overheated atmosphere.

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It is reported that several cases of anthrax have been discovered among the cows in dairies in Orange County, N. Y., and that a number of cows have died of the disease. The state veterinarian has ordered the isolation of all cattle exposed, and is making great efforts to stamp out the disease.— *New York Med. Jour.*

Boston City Hospital.

CLINICAL MEETING OF THE STAFF, DEC. 20, 1907.

A CASE OF MULTIPLE OPERATIONS FOR ABDOMINAL ADHESIONS.

BY F. B. LUND, M.D.

L. R., aged thirty-six, colored, had been operated upon in Philadelphia eleven years ago for uterine fibroids. Three years later she was operated upon at the Roosevelt Hospital in New York, for acute obstruction by bands, and again, soon after that, for chronic obstruction. Five years ago she was operated upon for a large ventral hernia by the writer, and soon afterward by Dr. J. C. Munro, for chronic obstruction, due to adhesions. Dr. Munro had some difficulty to find any free abdominal cavity to work in, owing to the extent and character of the adhesions, but finally was able to make a Murphy button anastomosis between the lower part of the ileum and the sigmoid. This operation relieved her so that she was able to go back to work. She enjoyed fair health and worked as a cook until recently, when she was sent to the hospital by Dr. Courtney, suffering from abdominal pain, distention and constipation. I operated upon a small ventral hernia in the right iliac region without relief. Her distention and discomfort continue, and further operation is proposed in a few days.

A few days later this was performed. The entire lower abdomen was found filled with intestines adherent to each other and to the abdominal wall, so that no real abdominal cavity could be gotten into until the incision was carried into the epigastrium along the border of the left rectus. Only about two feet of free intestine was found, starting from the beginning of the jejunum. With great pains and care, separating coil from coil and fold of mesentery from fold, about seven feet of the small intestine were freed. The loop of the sigmoid was found, but appeared to be obstructed at the pelvic brim, so that anastomosis with this, it was thought, would be unsatisfactory. The lower sigmoid and upper part of the rectum were so buried beneath the coils of small intestine, that it was impossible to free and bring them up. The finger introduced as high as possible per anum passed the valves and seemed to enter the lower sigmoid. At any rate, as far up as I could reach, the rectum was unobstructed, even somewhat dilated. The half of a Murphy button was carried up as far as possible into the rectum in a pair of long curved clamps, and by making the rectal wall prominent with this, it was possible to dissect the coils of small intestine away from above so as to come down upon it. The other half of the button was then introduced into the lowest coil of small intestine, which had been freed, about seven feet from the beginning of the jejunum, and the rectum was cut from above, so as to let the inner cylinder of the button project through it. Then by pushing down the upper half of the button, it was possible to effect an ileo-rectostomy in the bottom of the pelvis without sutures and with a minimum of soiling. It was recognized that by this procedure the entire large intestine was placed out of commission, and possibly hardly enough small intestine left to maintain nutrition, but it was necessary to get by the obstruction, and this was the only way to do it, except by an enterostomy, and the disadvantages of a permanent enterostomy of the ileum are too obvious to dwell upon. The abdomen was sewn without drainage. The wound was a long one along the outer border of the left rectus. The veins supplying the rectus were found and left intact.

The patient did well at first, and the distention was relieved, though she had three or four liquid movements a day, owing to the loss of the drying function of the large intestine. The button was passed in about two weeks. After about a month distention and vomiting appeared and rectal feeding had to be resorted to. This was tolerated for a short time only, and then small amounts by mouth were begun. Now (Feb. 15) there is no distention, the patient is being fed by mouth, and seems to be improving a little. The recent distention is undoubtedly due to the tying up by adhesions of the little bowel she has left. No further operation seems possible, and the question of her ultimate survival, with the limited amount of badly crippled intestine she has left, seems rather likely to be decided against her.

TWO CASES OF INTRALIGAMENTOUS FIBRO-MYOMA OF THE UTERUS, AND THE METHOD EMPLOYED TO CONTROL BLEEDING FROM THE BED OF THE TUMOR IN THE BROAD LIGAMENT.

BY C. M. GREEN, M.D.

Case I. J. B., aged fifty, had had two children and three miscarriages. For three months she had had irregular, profuse uterine hemorrhage; and for two months obstinate constipation, obviously due to the pressure of a fibroid tumor which completely filled the pelvis. At operation a sessile growth, two to three inches in diameter, was found at the right cornu, the corpus uteri was of about normal size, but growing from the supravaginal cervix was an intraligamentous mass as large as a fetal head. The broad ligaments were laid open and the tumor removed with great difficulty. There was considerable oozing from separated adhesions. Some surgeons control bleeding in these cases by gauze pressure-drains, an opening being made into the vagina for removal, and the gauze covered in by closing the peritoneum. The reporter believes that a better way is to secure hemostasis, and at the same time to obliterate the cavity in the broad ligaments, by applying several tier sutures, and this method was followed in the two cases reported.

There was no post-operative hemorrhage in this case; but the patient died of shock and exhaustion on the second day.

Case II. J. L., thirty-nine, single, had a large, multiple-fibroid uterus extending above the umbilicus, and the chief symptom was pain. There was a large, intraligamentous mass growing from below the peritoneum; this was enucleated, supravaginal amputation of the uterus was done, the broad-ligament cavity was obliterated by suture, and covered with peritoneum. This case has made an uninterrupted recovery, and will be discharged in a few days.

Dr. Green also showed an unmarried girl of eighteen, on whom he had operated, whose case was interesting from its rarity, — procidentia of the uterus in a nullipara. Two years previously, when sixteen years old, she had lifted a wash-boiler filled with clothes, and as a result, apparently, she suffered prolapsus uteri, so that the cervix protruded from the vulva. After unsuccessful treatment with pessaries in the Out-Patient Department, she entered the hospital, when the uterus was found retroverted and retroflexed, and it protruded from the vulva on straining. It was thought best to perform ventral suspension. At operation both ovaries were found cystic, and were resected. After the usual convalescence, examination shows, with the patient in the erect posture, that the uterus is in normal axis and position.

Referring to the subject of the conservative surgery of the ovaries and Fallopian tubes, Dr. Green reported a case from his service, on whom he had operated in 1903 and 1904, and whose subsequent history he had recently learned:

R. F., aged twenty-nine, married six years, IV-para, entered the hospital Nov. 16, 1903, on account of backache and constant vaginal discharge. The uterus was retroverted, the right tube swollen, and the cervix torn. Curettage and bilateral trachelorrhaphy were performed, and the patient was discharged, apparently well, on Dec. 7.

Twelve days later, the patient returned, on account of pain in the left lower abdominal quadrant, and a diagnosis of salpingitis was made. At this time the husband acknowledged that he had gonorrhea. The abdomen was opened, and the left appendages were removed. The right tube, although swollen and congested, was pervious, and it was left *in situ*. The cystic right ovary was resected, the uterus was suspended, and the patient was discharged well, Jan. 31, 1904. It was thought at the time that the patient ran some risk of a second laparotomy by the conservative treatment of the right tube and ovary, and in view of the obvious Neisser infection.

The subsequent history of this patient is as follows:

She menstruated on March 18, 1904, and on Dec. 15 of the same year she gave birth to a full-term child, without any complication from the suspension of the uterus. Last June, eighteen months later, another child was born; and at the present time, although somewhat debilitated by lactation, the patient is entirely free from pelvic symptoms.

In this case conservative treatment of diseased appendages was successful; in some cases it is not. But is it not better occasionally to perform secondary laparotomies than to deprive young women of all hope of maternity, when even small portions of ovarian tissue may be left *in situ*, and when a tube, although not entirely healthy, may yet perform its function?

CANCER OF COLON.

BY FRANKLIN W. WHITE, M.D.

Male, aged thirty-six, good family history; operated upon for piles two years ago. For last eight months indigestion, occasional vomiting or regurgitation immediately after meals; epigastric distress occasionally relieved by food. In last month pain in right navel region; bowels loose of late. Best weight, 204; loss of 43 lb. in last few months.

Test of gastric secretion and motility show normal motility and secretion normal (free HCl, 43; total acid, 60) or increased (free HCl, 60; total acid, 98). The usual treatment for hyperacidity had relieved the symptoms somewhat.

I saw patient first on March 13, 1906; examination showed a large, vigorous man, slightly pale. A deep rounded solid mass, size of an apple, was found just above and to right of navel, slightly tender and movable, not felt bimanually in flank; liver, edge easily felt, not continuous with tumor. One examination of feces for blood on meat-free diet was negative. Diagnosis of probable cancer of bowel was made and patient referred to Dr. F. B. Lund, of Boston, for operation. At operation a cauliflower cancer was found encircling the ascending colon five inches above the cecum, with few secondary glands in the mesentery. The bowel and glands were resected and a side-to-side anastomosis made. Recovery was uneventful.

Patient had gained 40 lb. in the nine months since operation, has worked hard and steadily, had practically no digestive symptoms. He considers himself well.

The interesting features of this case are the brilliant immediate results of operation and the association of abdominal cancer with gastric hyperacidity. The unusual position of the tumor of the lower part of the ascending colon is explained by the adherence of the omentum to it, which dragged it upward and toward the median line. The single negative guaiac test of the feces for blood shows the need for repeated examinations in suspected cancer of the bowel. Curiously enough, positive results of the blood test are decidedly less constant and frequent in cancer of the bowel than in cancer of the stomach. Cases reported by Boas and Ewald confirm this observation, but no one has explained it.

GASTRIC ULCER.

BY FRANKLIN W. WHITE, M.D.

Male, aged forty-six. For two years he had had distress or pain two or three hours after meals; occasional vomiting; gradual loss of weight. In last three weeks there was much epigastric pain; frequent vomiting of small amounts of "coffee ground" material. Patient was pale, emaciated, very weak; had recent rapid loss of weight, 25 lb. in all. Hemoglobin, 65%; reds, 3,000,000. At first visit vomited a pint of typical "coffee ground" material, containing abundant free HCl.

Gastric contents after test meal, 150 cc., free HCl, 63; total acidity, 90; guaiac positive. Epigastrium diffusely tender; no tumor; 500–800 cc. of brownish fluid containing free HCl and digested blood were vomited on two occasions before breakfast.

The man's whole appearance, anemic, cachectic; the "coffee ground" vomiting, the gases and excess of fluid in the fasting stomach suggested cancer, and this diagnosis was made by two experienced physicians. The abundant reaction of HCl favored ulcer, or the early stage of a cancer developing upon an ulcer base (we know that this is the only form of cancer in which hyperacidity is likely to persist). This second diagnosis seemed to best explain the symptoms, the early distress, pain and vomiting at the height of digestion (ulcer), and the late, rapid loss of weight and strength, anemia and "coffee ground" vomit (secondary cancer). The treatment was rest in bed; exclusive rectal feeding first week; liquids and soft solids by mouth next four weeks; no meat extracts were given. The feces were examined frequently for blood by the guaiac test, with the following results:

Nov. 20, positive,
Nov. 26, positive,
Nov. 28, positive,
Nov. 29, positive,
Nov. 30, negative,
Dec. 1, positive,
Dec. 3, positive,
Dec. 8, negative,
Dec. 12, negative,
Dec. 13, positive,
Dec. 15, negative,
Dec. 17, negative,
Dec. 19, negative,
Dec. 23, negative and negative thereafter.

The intermittent appearance of the blood in the feces was very strong evidence in favor of ulcer and against cancer. The diagnosis of simple ulcer was finally made and justified by the consequent history.

The patient gained 20 lb. in the next few months; has worked steadily during the past year and felt perfectly well, except for brief attacks of hyperacidity, which are promptly relieved by appropriate diet, olive oil and alkalies.

The especially interesting features in this case were the valuable aids in diagnosis, given by the guaiac test of the feces for blood and the good immediate (one year) result of medical treatment.

The presence of a large amount of fluid in the fasting stomach was not due to organic pyloric stenosis, but evidently to hypersecretion, or possibly to stasis of fluid from pyloric spasm.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-second Annual Meeting, Held at Washington, D. C., May 7, 8, and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

The President, Dr. Clement Cleveland, New York, in the Chair.

METASTATIC CARCINOMA OF THE TUBE AND OVARY IN CANCER OF THE CERVIX UTERI.

Dr. Fred J. Taussig, of St. Louis, Mo., read a paper on this subject, in which he concluded that mild chronic inflammatory conditions of the tube and ovary were frequently met with in cancer of the cervix. Whether this was merely a coincidence or not, he would be unwilling to say. On the other hand, cancerous metastases in these organs were extremely rare in cervical cancer. In fact, he could find no record of such metastasis in an operable case. In carcinoma of the body, however, they were not infrequently seen in tube or ovary, or both. Hence it would seem logical to advise the removal of both tubes and ovaries in every case of cancer of the body. If, however, the patient was still five or ten years from the time of the menopause, and the site of the cancer be in the cervix, the saving of one ovary would be attended with practically no risk to the patient and might relieve her of the disagreeable symptoms of the premature menopause. Since this could be done without interfering with the complete removal of the lymphatics directly tributary to the cervix he believed it logical to leave one ovary, or a portion of one ovary, in every operation for cervical cancer in a woman under forty years of age.

DISCUSSION.

Dr. J. Wesley Bovee, of Washington, D. C., said metastases in cancer of the uterus were by no means common, and that as the disease spread metastases occurred. This emphasized the fact that in the cases brought to the attention of the gynecologist he was helpless in the treatment of cancer of the uterus; that in the cases in which the conditions would ordinarily offer great hope of success we would find that metastases occurred in those structures which we would not remove, the result being that cancer recurred or continued unsuspected. At best, the treatment of cancer of the uterus was not hopeful, notwithstanding the claims of radiographers and the demonstrators of radium, etc., and those who did the most radical surgical operations. He was not prepared, in the present light of surgery of cancer of the uterus, to accept the suggestion of the essayist, that it was safe to leave a portion of an ovary or even one ovary in extirpating cancer of the uterus. His own conviction was that the operation should be as radical as it could be consistent with saving the life of the patient.

Dr. Lapthorn Smith, of Montreal, reported a case of cancer of the cervix in which operation was done early by another surgeon, with every possibility of a complete recovery of the patient and freedom from recurrence; yet this woman came to him a year later, with no sign of recurrence in the vagina, but with two distinct masses in the ovaries which could be readily felt. He considered it too late to do anything in an operative way. This case made such an impression on him that ever since, when doing vaginal hysterectomy, he always removed the tubes and ovaries. He did not think it was safe to leave an ovary or a piece of an ovary, when there was such a tremendous risk of recurrence.

Dr. Reuben Peterson, of Ann Arbor, Mich., desired to place himself on record as voicing the sentiment of Dr. Bovée against the leaving of one ovary, or part of an ovary, in the operation for cancer of the uterus. This was a step backwards, and was not in accordance with progress that had been made in the last ten years in the treatment of cancer of the uterus. He was not convinced that the leaving in of one ovary after the removal of the uterus helped the patient, so far as the menopausal changes were concerned. He had been unable to see much, if any, difference where an ovary had been left in and where it had been removed, after the removal of the uterus for cancer.

Dr. Walter M. Chipman, of Montreal, doubted whether it was a wise thing to leave even one ovary, or even a part of one, after the removal of the uterus for cancer, no matter where the cancer was situated. While it was true that the ovary was not in the direct path of the lymphatic distribution of the pelvis, yet so great and so rich was the anastomosis that he thought the leaving of ovaries must always be a risky procedure.

Dr. Taussig, in closing the discussion, said he anticipated that most men would hardly agree with him as to the advisability of leaving a portion of an ovary in the class of cases under discussion; but he believed, however, from the statistics that the procedure was not at all unsafe, and it seemed to him that it was just as logical to advise the removal of the appendix as to advice the removal of the other ovary. The appendix was a useless organ; the ovary — at least in the opinion of some — helped to make the menopausal disturbances less severe in women under forty years of age, if left.

A NEW METHOD OF VERSION.

Dr. A. F. A. King, of Washington, D. C., spoke of the correction of transverse presentations by the hitherto unrecognized factor of thigh-pressure upon the abdomen, induced either (1) by posture, or (2) by manipulating the lower limbs. The former, he said, was Nature's method of preventing and correcting cross-presentations; and in primitive races was daily exercised by the squatting posture during defecation, etc. Squatting was not a symmetrical proceeding; the two thighs did not press equally. One foot was flat upon the ground and in advance; the other, in the rear, rested only on its toes. The thigh of the front foot would press high up upon the breech end of the fetus; the thigh of the rear foot would press low down upon the head forcing it from the iliac fossa into the pelvic brim, as was illustrated by diagrams.

THE SUPERIORITY OF PRIMARY OVER SECONDARY CESAREAN SECTION; FEASIBILITY AND ADVANTAGES OF A PREDETERMINATION OF THE METHOD OF DELIVERY.

Dr. Edward Reynolds, of Boston, spoke of primary operations being determined upon in advance of labor and performed at an elected date, or with the advent of the first pains. Secondary operations may be performed as soon as a test in labor had shown that the natural powers were likely to fail and before serious exhaustion set in. Late operations were considered in the light of a last resort. Late sections were already discredited; while secondary sections were still the most frequent class. He gave the statistics of primary, secondary and late sections of the last ten years. Primary section was a very safe operation; while secondary section was only moderately safe. Late section was attended with a high mortality. In general, the mortality was roughly proportionate to the amount of labor endured before operation. Decision before labor was a matter of great moment. The doubtful cases were constantly narrowing and should be done away with. Accurate prediction of expected difficulty required: estimation of the shape and relation of the pelvis (measurements alone were entirely unreliable); of the probable muscular character of labor; of the size and ossification of the head. Methods of estimation of the maternal obstacles required knowledge of the maternal powers (these could be foretold with considerable accuracy); and of the mechanical character of the head. He emphasized the value and importance of obtaining a previous history in multiparæ.

He submitted the following classification: (*a*) undoubted Cesarean section cases; (*b*) cases clearly capable of delivery without the Cesarean; (*c*) doubtful cases.

As to the treatment, in Class A he would resort to primary section; in Class B, labor and the intrapelvic operations. In Class C, a final examination under ether at the date of election, the method finally decided on, and decision adhered to. The predetermination of methods was work for experts only. Lastly, he pointed out that a more friendly relation between the specialist and the general practitioner was desirable.

PUBIOTOMY.

Dr. Henry D. Fry, of Washington, D. C., read a paper on this subject. Pubiotomy was a satisfactory operation, so far as the operation itself went, for enlarging the pelvic girdle in moderate degrees of pelvic contraction. It was easy to perform and could be employed in simple flat pelves with a conjugata vera of 7 or 7½ cm. Separation of the severed bone for 4 or 5 cm. was usually sufficient to enable easy extraction with forceps.

The principal objection to the operation was the difficulty encountered in the after-treatment. These difficulties were little, if any, less than those which brought symphysiotomy into disrepute. The pelvis must be immobilized and the patient kept in the dorsal position several weeks. Maternity institutions could overcome the objection to a large degree by the use of a special bed, as the hammock suspension bed described by Ayres. Williams used the Bradford frame after two of his operations. Jewett employed an ordinary hospital stretcher "the poles of which were lashed to the top rails of an iron bedstead. A trap-door was provided for the dejecta." Montgomery recommends a pelvic sling suspended from the ceiling and attached to a compound pulley. Ordinarily, after pubiotomy and symphysiotomy, the evacuations of the bladder and bowels were attended with discomfort, and it was a hard task for the nurse to keep the parts clean, which was the more important after secondary operations where the patient was already septic and the soft parts contused and lacerated. In consequence, therefore, of the unsatisfactory convalescence after pubiotomy, the operation would obtain in this country a limited field of usefulness as an elective operation. Cesarean section offered a substitute free from this objection and its indications would be extended to embrace these cases of minor degrees of pelvic contraction. With a head movable above the inlet, and one which will not descend by suprapubic pressure, that operation should be performed primarily. When the head was moulded and engaged, forceps might be tried tentatively before resorting to section.

The indications for pubiotomy may be stated as follows: A living child and some contra-indication to Cesarean section. The usual conditions presented were: a moderate degree of pelvic contraction, which had been unrecognized generally, ineffectual efforts employed to deliver with high forceps, the woman exhausted, and infection probably started. If the child be dead, craniotomy; if alive, pubiotomy, in spite of the objections raised against it. It was better to have a live woman at the end of a tedious convalescence than a dead one after a "successful" operation.

INDUCED LABOR AND DELIVERY BY ABDOMINAL SECTION.

Dr. Edward P. Davis, of Philadelphia, said that among obstetric operations there was none which in selected cases gave better results than the induction of labor. This was especially true in disproportion between mother and child whether caused by pelvic contraction, excessive fetal size, or prolonged pregnancy. Private patients were especially benefited by this operation, as they usually came early under the care of the obstetrician and gave him a better opportunity to study their cases than did hospital patients. Private patients who had passed through a disastrous first confinement were often safely delivered in subsequent labor by the induction of labor. Experience, however, and the study of statistics showed that induction of labor was not without serious disadvantages; it was a process uncertain in duration, often exposing the patient to considerable loss of rest and to prolonged suffering. Labor was rarely terminated without some active interference, and this was most often to be accomplished through a cervix poorly prepared for dilatation. Some of the methods employed to terminate induced labor produced unfavorable presentations and positions of the fetus, increasing the risks to mother and child. While it is possible, considering the interests of the mother first, to have a low mortality and morbidity rate for her, the best results so far published gave a very considerable mortality and morbidity for the infant. He believed that the induction of labor compared in gravity, when the interests of both mother and child were considered, with other major obstetric operations.

The author then cited six cases to illustrate the statements he had made.

He strongly urged the importance of conducting cases of induced labor in such a manner that the patient shall be in favorable condition for a major operation, if necessary. He did not believe it justifiable during induced labor to make efforts at delivery by forceps or version unless the conditions were such as to make it reasonably certain that these operations will be immediately successful. If engagement of the head did not develop during induced labor the use of the forceps was a dangerous procedure. If the operator was sure of the size and contour of the pelvis, and reasonably certain of the comparative size of the fetus, version, where the head did not engage, was the safer operation. The writer would not resort to delivery by section in a case where efforts at delivery by forceps or by version had been made. He believed that with careful antiseptic technique it was possible to introduce bougies within the uterus, or even to employ dilating bags without infecting the patient. These procedures should not cause lacerations and should not essentially wound the epithelia of the genital tract. It was impossible, however, to make tentative traction with forceps, or to practise the manipulations necessary in attempting version without producing lesions in the genital tract through which infection might enter. It was his practice then to decline celihysterotomy in all cases where forceps or version had been tried.

In severely septic cases, the child being dead and unsuccessful efforts having been made at delivery, he believed that the Porro operation would give the best results. In cases where forceps or version had been tried without success, if the child was living, he believed that the consultant should again try whichever of these procedures he thought best, utilizing Walcher's position if advisable; failing in these craniotomy should be done.

As to pubiotomy, a sufficient number of cases had been published to show that the operation, like all other surgical procedures, was not without its dangers and disadvantages. A maternal mortality of from 5 to 7% and a fetal mortality of 17% indicated its severity.

As to delivery by abdominal section, all things considered, and especially when the fetal mortality was taken into consideration, the claims of abdominal section for safe delivery of mother and child could not be disregarded. He did not believe that at the present time a dogmatic opinion could be formed concerning any one method of delivery. Another factor of importance was the value placed by parents upon the life of the child.

DISCUSSION.

The papers of Drs. Reynolds, Fry and Davis were discussed together.

Dr. Egbert H. Grandin, of New York, said the conclusions and line of argument advanced by Dr. Reynolds were in accord with those which he presented in a thesis read before the society seventeen years ago entitled, " A Plea for the Elective Cesarean Section." He contended then that this operation was ideal and although seventeen years had elapsed since, he had not seen fit to change his position.

As to pubiotomy, he would advise it in preference to symphysiotomy, although he had not done the former operation, but had performed symphysiotomy twice, with living mothers and living children, and, so far as he knew, with no disability on part of the women.

Dr. Lapthorn Smith, of Montreal, condemned pubiotomy. Last summer he performed two Cesarean sections, and could testify to the surprising ease with which the operation was done in both cases.

Dr. James Clifton Edgar, of New York, was uncertain as to where to draw the line between Class A, and Class B, in the cases discussed by Dr. Reynolds, that is, the antepartum cases, and the early intrapartum cases. It occurred to him that if Class B or the early intrapartum class, was moved a little forward, and the women not allowed to stay in labor quite so long, instead of a mortality of 3% as reported by Dr. Reynolds, it would approach 1% in the antepartum cases. Where Cesarean section was undertaken in the latter part of pregnancy there was difficulty in securing good drainage.

Pubiotomy did not appeal to him, although he had never done it. He had, however, done six symphysiotomies.

Dr. Robert A. Murray, of New York, thought that eventually, in the vast majority of cases, obstetricians would gradually come to the point where they would let women go to labor prepared to do a Cesarean section, and not interfere with high forceps, or version, or any other method that would produce traumatism of the cervix and possibly cause infection which would defeat the result to be gained from a clean Cesarean section.

Dr. Robert L. Dickinson, of Brooklyn, N. Y., said the only Cesarean section case he lost was a young woman who suffered from toxemia throughout her pregnancy. She was operated on at the beginning of labor pains, but gradually died from a lack of resistance after an easy Cesarean section. For many years obstetricians had had control of the second stage of labor, and with Cesarean section, forceps and version the obstetrician could do what he chose. But the obstetrician had stood helpless before the difficult dilatations and before badly developed cervical conditions. He thought it was unobstetrical to insert a bougie into the uterus as it might loosen the placenta and carry infection. We could not be sure of absolute cleanliness.

The papers were further discussed by Drs. E. W. Cushing, of Boston; George Gellhorn, of St. Louis, Mo.; Seth C. Gordon, of Portland, Me.; Malcolm McLean, of New York; Willis E. Ford, of Utica, N. Y.; Philander A. Harris, of Paterson, N. J., and the discussion closed by the essayists.

OVARIAN PREGNANCY.

Dr. J. Clarence Webster, of Chicago, presented a specimen of ovarian pregnancy. The case was almost identical with the one he reported three years ago, though more interesting, in that the embryo was in position in this specimen. One could see the amniotic cavity with the embryo in position. The thickness of the ovarian tissue averaged about half an inch, except the placental area, where it was thicker. There were several hemorrhages in the ovarian tissue, especially in the position of the placenta.

UNIQUE SPECIMEN.

Dr. Webster presented another specimen which he obtained two years ago while on a vacation in New Brunswick from Drs. White and Ferguson. The patient from whom the specimen was removed was a man, thirty-three years of age, who was admitted to the hospital with symptoms of acute peritonitis. He had had for many years an irreducible scrotal hernia, and it was supposed there was strangulation. The man had been kicked by a horse. An incision was made in the left inguinal region; no hernia was found, but a structure which looked like an adult uterus, tubes and ovaries. The uterus was removed, and what appeared to be a cervix. It was adherent around the inguinal ring; the abdomen was rapidly opened, the patient being practically moribund by that time. The incision was closed, and nothing more was done. Patient died. The specimen was given to Dr. Webster, and he had carefully worked it up. On first presentation it seemed like the adult female genitalia, but careful dissection and microscopical study disclosed uterus and tubes, and what appeared to be ovaries were testicles, but which occupied exactly the same position as the ovaries in the female. The mucosa resembled that found in the adult female. Microscopical examination showed the glands were complex. He emphasized particularly the adult uterus. The tubes had the characteristics of those of an adult female, except the fimbriæ were not so complex. There were fewer fimbriæ; but the relationship to the testicle was exactly the same. On one side there was more marked ovarian or testicular fimbria. On examination of the broad ligaments he found on one side there was a cyst. Both round ligaments were present, but on the side on which the cyst existed the round ligament was flattened out and thin. On careful dissection of the broad ligaments there was a marked tube, about 4 mm. in diameter, slightly convoluted, extending from the upper inner portion of the broad ligament towards the cervix. It was quite firm and had the consistence of a pipe-stem. He pointed out the Wolffian duct, and the vas deferens, also the cervix and prostate. The patient was the father of twin children.

DISCUSSION.

Dr. E. W. Cushing, of Boston, narrated the case of a man, operated on for hernia, in which a uterus was found in the hernia.

Dr. Thomas S. Cullen, of Baltimore, said that some years ago in Baltimore there was found at autopsy in a child a complete set of both female and male pelvic organs.

THE CARE OF THE WOUND AND THE AFTER-TREATMENT OF LAPAROTOMIES.

There was a symposium on this subject.

THE METHOD OF CLOSING THE WOUND.

Dr. Seth C. Gordon, of Portland, Me., read a paper on this subject. He spoke of the time required for perfect union of abdominal wounds, and also pointed out the necessity for using such sutures as can be retained at least two weeks without absorption. He emphasized the use of suture material which is not absorbable and which can be removed at the end of two weeks, as well as the use of suture material that was least liable to infection.

(To be continued.)

Book Reviews.

Diet in Health and Disease. By Julius Friedenwald, M.D., and John Ruhrah, M.D. Second edition, thoroughly revised and enlarged. Philadelphia and London. 1906.

The first edition of this book appeared in 1905 and was reviewed in these columns.

While there are no radical changes in this second edition numerous minor revisions and additions remove some of the previous criticisms.

In the chapter on Chemistry and Physiology of Digestion reference has been made to Professor Chittenden's Experiment on Physiological Economy in Nutrition.

Additions have been made in the chapter devoted to Recipes.

A new list of diets arranged under the headings of the more common diseases has been inserted at the end of the book.

The concise manner in which the entire subject of Foods and Diet is treated recommends it as a book for ready reference.

Abdominal Operations. By B. G. A. Moynihan, M.S. (London), F.R.C.S. Leeds. Second edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1906.

The first edition of Moynihan's book was exhausted in a few months and this second edition needs no apology. Certainly the book is one which should be familiar to every surgeon. It is the work of a master; a skilled technician, personally and abundantly familiar with the problems of which he treats, and he writes in a fashion which compels attention. He is interesting, pointed and practical, but not diffuse. Generously and almost unnecessarily he gives credit where credit is due. Perhaps one misses the abundance of quoted cases and the general philosophizing, which so often have made readable, and added charm to, elaborate surgical treatises, but Moynihan's purpose is directly and immediately to tell his story and to teach his lessons. In this he succeeds admirably.

As the author says, he concerns himself exclusively with the surgery of organs common to the two sexes and embraced entirely by the peritoneum. He omits, therefore, all consideration of genito-urinary and gynecological surgery. The book is divided into five sections and is fairly well illustrated. One regrets the absence of an index to the illustrations. Section I comprises 9 chapters and deals with such general considerations as bacteriology, methods of operating, complications and sequels, peritonitis, abscess and visceral ptosis. It would be futile here, as elsewhere in this short review, to criticize in detail Moynihan's dealing with these subjects. He appeals to every progressive surgeon. One notes, however, that in dealing with the treatment of diffuse peritonitis he fails to describe J. B. Murphy's important and useful " seeping " method. To this reviewer he seems to lay too little stress also on the value of pelvic fixation and abdominal support in the treatment of visceral ptosis. Sections II and IV, made up of 19 chapters, comprise elaborate dissertations on those surgical operations for which Moynihan is most famous in this country,— operations on the stomach, liver and bile passages. Those of us who have read his previous books, compiled in association with Mayo-Robson, will recognize the familiar note of his former writings. Probably no other book to-day sums up so completely the surgical treatment of gastric and hepatic disease as this latest work of Moynihan. Section III, including 13 chapters, treats of operations upon the intestines, and in this field the author finds scope for expressions of conviction, which many American readers will learn for the first time. He gives us in Chapter XX a full and elaborate résumé of Monk's well-known views on intestinal localization, reproducing that writer's admirable illustrations; he devotes Chapter XXI to the subject of sutures, and then in subsequent chapters goes on with an excellent summary of the more important operations upon the intestines, — enterostomy, colostomy, anastomosis, resections, operations for rupture and obstruction, for embolism and fecal fistula. Chapter XXX contains a readable discourse on the treatment of appendicitis, while the following two chapters deal with typhoid perforation and intestinal occlusion. Section V, comprising 8 chapters, treats of diseases of the pancreas and spleen. The opinions there expressed and the conclusions drawn are in no wise remarkable, but the summary of knowledge given is highly satisfactory.

Although the reviewer of Moynihan's book finds in it no startling assertions or striking novel propositions, he is constantly impressed with the personal note struck by the writer. There is no flavor of scholiast or pedagogue. Moynihan writes as a practical surgeon addressing himself to practical surgeons, with the result that he has produced a book altogether acceptable in the reading, instructive of present accomplishments and suggestive of future brilliant possibilities in the great field of abdominal surgery.

The Practical Medicine Series. Under the general editorial charge of Gustavus P. Head, M.D. Volume ix, Anatomy, Physiology, Pathology, Dictionary. Edited by W. A. Evans, M.D., Adolph Gehrmann, M. D., and William Heely M.D. Series 1906. Chicago: The Year Book Publishers. 1906.

This is a good work for practitioners who wish to keep in touch with recent advances in physiology and pathology. Nearly all the articles abstracted deal with subjects of interest and importance to clinicians. The reviews are well written and the salient points clearly presented. Only seven pages are devoted to anatomy. The section on physiology occupies 25 pages, nearly 200 pages deal with pathological and bacteriological topics. At the end of the volume is a list of new medical words with definitions.

Surgical Diseases of the Chest. By Carl Beck, M.D., Professor of Surgery in the New York Post-Graduate Medical School and Hospital. Visiting Surgeon to the St. Mark's Hospital and the German Poliklinik, etc. With 16 colored and 162 other illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

Beck's fairly comprehensive monograph, profusely illustrated and well presented by his publishers, is valued at $5 a copy. We fancy this fact will limit its sale. After a laborious search of the literature and what appears to have been an honest, painstaking study of his topic, the author has produced a manuscript which would doubtless have made an admirable showing in a System of Surgery or small book, but the elaborate and ambitious presentation by the publishers may deceive the unwary into believing that they are purchasing an exhaustive volume. It is obvious, however, that the author has done his work frankly and conscientiously. He points out in his preface that surgery of the chest is a much neglected field compared with the surgery of other cavities of the body, and proposes modestly to make good the lack.

The book contains six chapters, on the anatomy of the thoracic wall and the diaphragm; on the surgery of the thoracic wall; on intrathoracic diseases; on the value of the Röntgen method in thoracic surgery; on subphrenic abscess, and on diseases of the breast. There is an admirable bibliography and a partial index.

We have read through this book with some care and have gleaned from it a good deal of suggestive information, particularly on tumors of the thoracic wall and on the surgery of the heart and lungs; but we find no striking new contributions to the very interesting subject with which the author deals. A detailed criticism of the book seems needless, though one cannot but regret a somewhat faulty perspective in the general arrangement and frequent obscurity in phrasing.

We commend the book to the general surgeon, for it certainly sums up, in convenient form, our present knowledge of a difficult and little understood subject.

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HEMORRHAGIC INFARCT OF THE INTESTINE.

Hemorrhagic infarct of the intestine is a lesion which is produced by the obliteration of a mesenteric artery or vein. An infarct of venous origin is usually due to a thrombophlebitis of the mesaraic veins. The blood stagnates in the intestinal portion of the vein, and produces a congestion with the progressively increasing tension, due to the continual afflux of arterial blood. The origin is varied.

These venous thromboses may be secondary, and represent the result of the extension of an adhesive pylephlebitis primarily seated in the veins of the mesentery. When the lesion is primary it appears in the intestinal veins following a general infection, or even from a purely intestinal infection. An infarct thus produced rarely becomes localized to the large intestine by thrombosis of the inferior mesenteric vein. Usually, however, the small intestine is the seat of the lesion, the thrombosis involving one or several branches of the superior mesenteric vein. One will find a sanguineous infiltration involving a segment of the mesentery, varying from one half to one meter in length, with a very intense congestion of the capillary vessels and thrombosis of the veins. The loop of intestine becomes necrosed and contains hemorrhagic products. A sero-sanguineous ascites arises in all cases, although small in amount; the quantity of fluid never exceeds 1,000 cc.

The clinical evolution of intestinal infarct presents much similarity with that of intestinal obstruction. The patient is suddenly seized, in the midst of flourishing health, with violent abdominal pain and vomiting, which, in the first place, is merely alimentary, but which is not long in becoming bilious. The pains rapidly become diffused, extending towards the kidneys and lumbar region, and their acuity remains just as severe up to the time of death. From the very onset a very abundant diarrhea makes its appearance; the stools are liquid and yellowish in color and are constantly voided. This diarrhea is of short duration, and in less than twenty-four hours all movements cease and the clinical picture changes to that of intestinal occlusion accompanied with fecaloid vomiting. In other cases the diarrhea persists and takes on a bloody aspect; this enterorrhagia is a most important and almost pathognomonic sign when it appears, accompanied by the abdominal pain and vomiting.

Upon examination in the early progress of the affection, one may find a tympanitic area localized over the coil of gut involved, but later on by palpation a soft, elongated, rounded tumor may be felt, movable under the exploring hand and easily palpable, this representing the diseased gut. At the time that the symptoms of occlusion appear, the abdomen becomes generally distended, and there is slight dullness in the iliac regions, due to the hemorrhagic ascites.

In other words there are two distinct periods in this affection; in the beginning there is pain and diarrhea and later on occlusion. Death is the final outcome when the patient is not radically treated and occurs either in coma or collapse.

The diagnosis is easy, for it is sufficient to recall hemorrhagic infarct with its evolution divided into two stages, which are practically characteristic, and when once the diagnosis is made, treatment should be undertaken at once. This is, laparotomy with resection of the diseased intestinal coil, followed by end-to-end anastomosis. The two cut ends of the gut may also be stitched into the wound, thus creating an artificial anus. At the present time, the affection being most infrequent, few cases have been recorded, but by early operation two complete cures up to this time have been obtained.

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REPORT OF THE IMPERIAL CANCER RESEARCH FUND.

The fourth and fifth annual reports of the Imperial Cancer Research Fund, which is under the direction of the Royal College of Physicians of London and the Royal College of Surgeons of England, are in our hands. The earlier reports gave a detailed description of contemplated investigations and were taken up essentially with methods of organization and of prospective work. In the third report certain definite results were given, but the general result of the three years' investigation has led to a certain alteration in the plan of work, which is shown in these last reports. Although perhaps not so apparent, an increasing amount of work is being done, concentrated particularly on the nature of cancer and on attempts to control the disease artificially. The staff of workers in the laboratory has been increased, and many papers have been published representing the discovery of a considerable number of new facts. The time, however, is thought not yet to be ripe for the publication of a scientific report, which would be the third from this laboratory.

The general results of the past year, largely obtained through animal experimentation, controlled by comparative biological and statistic investigations, have thrown light on the nature of the local and constitutional conditions associated with the origin of cancer, and it has also been possible to form more definite conceptions of the nature of the change responsible for the rapid multiplication of cancer cells. Some interesting statistical facts have been secured regarding the relative frequency of cancer in different parts of the body, occurring in particular geographical regions. Recognizing the fact that cancer may occur in all vertebrate animals, it has been concluded that the search for a common external agency is futile, but that the search for a common intracellular change will presumably lead to more definite results. There is no evidence justifying the communicability of the disease from person to person, and it therefore follows that individual and family liability should receive increased attention. Death from cancer is a menace of much importance and, possibly, though this is not definitely established, of increasing significance. A recent statistical estimate in England shows that after passing the age of thirty-five the chance that a man will die of cancer is one in twelve and a woman one in eight. Such statistics are always of interest, though much remains to be done on this side of the question before the real significance of these figures may be properly estimated.

The experimental investigations have concerned themselves largely with inoculation of cancer and with minute study of the development of the cancer cell and the conditions under which this is possible. One conclusion of significance is that no satisfactory evidence of the existence of substances in the serum of affected animals exists which is directly harmful to the cancer cell. Alleged cures of cancer have been investigated with the not unexpected result that no curative value has been found in any of them. The much advertised trypsin cure has proved wholly inefficacious on careful experimentation and has been found incapable of curing mice of inoculated cancer or of influencing the progressive growth of tumors. The complete surgical removal of the new growth remains the only effective method of cure.

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SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS.

The sixth International Dermatological Congress, which is to be held at the New York Academy of Medicine from Sept. 9 to 14, under the presidency of Dr. J. C. White, of Boston, bids fair to be the most important meeting on cutaneous diseases which this country has seen. It is a sign of progress that papers may be presented in five languages, either English, French, German, Spanish or Italian, and may be discussed in the language most familiar to the speaker. If we fail in the attainment of a universal language, which on the whole seems probable, it will not be many years before men of intellect will be able to understand and possibly to discuss papers delivered in the leading foreign languages. Such a meeting as this of the Dermatological Congress is likely to do much toward bringing about such a result.

The program contains many subjects of vital interest to medical science and to medical practice. The field of dermatology has been rather unexpectedly broadened during the last few years; in the first place through the revelations of bacteriology, and in the second, through the increasing knowledge of parasitic diseases. We notice among other papers of special interest one by Dr. W. R. Brinckerhoff, on the "Reaction of the Rat to Inoculation with Leprous Tissue." Although it is not to be supposed that Dr. Brinckerhoff's researches have yet gone very deeply into the etiology of leprosy, owing to the short time he has been engaged in this work, the preliminary results of his investigations will be awaited with interest. It is announced that Dr. E. E. Tyzzer, of Boston, will speak on the Pathology of the Brown-Tail Moth Dermatitis and Dr. H. P. Towle on Hysterical Skin Gangrene, a subject which has long excited an active and at times heated discussion. The opsonic methods as applied to skin diseases are to be discussed by Arthur Whitfield, of London, and the general topic of syphilis, presented by Professor Neisser, of Breslau, will undoubtedly be of much interest. In general the meeting promises to be a most notable one, and we may expect that at least a temporary ultimatum will be given on many subjects related to cutaneous medicine.

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DEATHS BY LIGHTNING.

That the somewhat widespread fear of thunderstorms is in a measure justified is shown by recent data collected by the Weather Bureau. According to this report, it is stated that about 800 people are killed in the United States each year by lightning, or approximately one to each 100,000 of the population. The regions which are most dangerous in this respect constitute a statistical study not without interest. It appears that the greater part of Florida, the lower edge of Georgia and a corner of Alabama experience the greatest number of thunderstorms yearly, about forty-five. Slightly further north the number of storms decreases, although they are frequent throughout the Southern States and also in the more southern of the Central States. From the Virginia capes to Connecticut an average of twenty-five thunderstorms occur yearly. Boston has twenty each year. From the New England States toward the west the frequency of storms decreases until on the Pacific Slope there are practically none. The regions of greatest danger, however, do not correspond with the frequency of storms. Southern Vermont, Massachusetts, Rhode Island, Connecticut, New York and a number of states west and south give a record of five deaths to each 10,000 square miles. The statistics furthermore show that four times as many persons of outdoor pursuit as of indoor occupations are struck. Of those struck one in every three persons survives, and this proportion might be greater if immediate treatment were at hand. Finally, more than half the persons killed by lightning are those who have taken refuge under trees. The foregoing figures certainly show that lightning as a cause of death is not negligible, and also that during violent thunderstorms ordinary precautions against being struck are justifiable and should not be regarded as an excess of timidity.

MEDICAL NOTES.

A Hospital for Automobile Victims. — It is stated that the family of the late Thomas E. Stillman, of New York, has given to the town of Lisieux, France, an addition to its hospital where accidents, especially those resulting from automobiles, are to be treated. The gift is made in memory of Mr. Stillman who died in the hospital a year ago from injuries sustained in an automobile accident. The addition to the hospital has been formally accepted by the mayor, and the names of the donors will be inscribed on the tablet reserved for benefactors of the city.

A National Sanitation Board for Cuba. — It is reported that a National Department of Sanitation is to become effective in Cuba, the *personnel* of the department consisting of one chief and a board of five members holding office for four years. This board will have complete control of sanitary matters in Cuba, and it is expected through its means to prevent future outbreaks of yellow fever, as well as to regulate other matters of public health.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Aug. 28, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 34, scarlatina 26, typhoid fever 24, measles 12, tuberculosis 42, smallpox 1, leprosy 1.

The death-rate of the reported deaths for the week ending Aug. 28, 1907, was 19.60.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 24, 1907, was 243, against 227 the corresponding week of last year, showing an increase of 16 deaths and making the death-rate for the week 20.79. Of this number 135 were males and 108 were females; 241 were white and 2 colored; 166 were born in the United States, 75 in foreign countries and 2 unknown; 47 were of American parentage, 168 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 35 cases and 1 death; scarlatina, 23 cases and 0 deaths; typhoid fever, 19 cases and 2 deaths; measles, 14 cases and 1 death; tuberculosis, 57 cases and 28 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 16, whooping cough 2, heart disease 16, bronchitis 3 and marasmus 11. There were 19 deaths from violent causes. The number of children who died under one year was 81; the number under five years, 100. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 97.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

A Case of Leprosy. — It is stated that a man forty-five years of age, a resident of Lynn, Mass., is suffering from leprosy and that he will be taken to the Leper Colony on Penikese Island. The patient is a Russian by birth and has been in this country several years. Although he has been under observation for some time, the disease has only recently been diagnosticated as leprosy.

Public Health in Massachusetts. — In the course of a recent speech at Provincetown, Mass., President Roosevelt paid the following tribute to Massachusetts:

"I also hope that there will be legislation increasing the power of the National Government to deal with certain matters concerning the health of our people everywhere; the Federal authorities, for instance, should join with all the state authorities in warring against the dreadful scourge of tuberculosis. Your own state government, here in Massachusetts, deserves high praise for the action it has taken in these public health matters during the last few years; and in this as in some other matters, I hope to see the National Government stand abreast of the foremost state governments."

NEW YORK.

Arrest for Neglect of Medical Aid. — Peter Paterson of Tottenville, Bourough of Richmond, has been arrested and committed to jail in default of $2,000 bail, on a charge of criminal negligence in not accepting medical aid for his infant daughter, fifteen months old, who died on Aug. 19 from whooping-cough and summer diarrhea. Both the parents of the child belonged to a sect known as the Christian Alliance, which like the Eddyite cult, rejects medical attendance, and at the coroner's inquest on the case it developed that when they found it was seriously ill they sent for a regular physician, simply that a death certificate might be obtained in case it should not survive. His prescriptions were never filled and prayer alone was relied on for relief of the illness.

Death of Dr. Miles Henry Nash. — Dr. Miles Henry Nash, of New York, died recently at Ridgefield Park, N. J. He was born in Norfolk, Va., in 1833, and was graduated from Jefferson Medical College, Philadelphia, in 1855. He began practice with his father in Tallahassee, Fla., and later served throughout the Civil War as a surgeon in the Confederate Army. For a considerate time he was in charge of the Llewellen Hospital. At the close of the war he practised for a short period in Georgia and then removed to New York, where for eight years he was assistant to Dr. J. Marion Syms, the eminent gynecologist. For twenty-six years he was connected with the Demilt Dispensary, first as an attending physician, and from 1888 as house physician. A few months ago, when his health began to fail, he was made physician emeritus. His faithfulness and kindly disposition endeared him to the large medical staff of this great institution and to thousands of patients.

Epidemic of Typhoid Fever at Trenton Insane Hospital. — The State Sewage Commission of New Jersey has just made a report on the epidemic of typhoid fever at the hospital for the insane at Trenton which states that their investigation showed that the outbreak was due to a leak in the city's sewers, which seeped into a spring used for drinking purpose. A report made at the same time by the medical committee of the hospital managers states that since April 8, 1907, there have been 103 cases of typhoid in the institution, as follows: Number of cases in April, 4; in May, 11; in June, 15; in July, 62; Aug. 1 to Aug. 15, 11. Of these patients 18 were individuals employed about the hospital grounds, and the remaining 85, patients and attendants. There have been 18 deaths from the disease, 2 of which occurred in patients treated outside the institution. On Aug. 15 there were 41 patients still under treatment. On only 4 of these was the temperature over 99°, most of the remaining ones being in advanced convalescence.

Bequests. — Frederick F. Ayer, of New York, has presented, through Dr. Moses G. Parker, the sum of $100,000 to the Ayer Home for Young Women and Children at Lowell, Mass., for the purpose of enlarging the work of the institution.

Among the charitable bequests in the will of the late Cortlandt Parker, of Newark, for many years the leading member of the bar in New Jersey, is $3,000 to St. Barnabas' Hospital in Newark.

Obituary.

CHARLES FOLLEN FOLSOM, M.D.

Dr. Charles F. Folsom, of Boston, died in New York at the Roosevelt Hospital, Tuesday, Aug. 20, 1907. He was born in Haverhill, Mass., April 3, 1842; his father was a clergyman, Nathaniel Smith Folsom, D.D. Dr. Folsom was graduated from Harvard College in 1862, and took, in addition to his bachelor's degree, the further degree of Master of Arts. He later entered the Harvard Medical School, receiving his degree in medicine in 1870. The long interval between his graduation in the academic department and the medical school is accounted for by the fact that he passed some time in South Carolina as a representative of the Freedman's Bureau. During his stay in the South he contracted malarial fever which necessitated a long sea voyage and still further delayed the prosecution of his professional studies. As a part of his preliminary medical training, he served as a medical house officer at the Boston City Hospital, and at once thereafter entered upon the practice of his profession in Boston.

From that time forward Dr. Folsom held many places of trust and responsibility and steadily advanced to a high professional standing. One of his interests, which he maintained to the end of his life, was the somewhat neglected study of mental disease. In pursuance of this interest, he served for a time at the McLean Asylum, connected with the Massachusetts General Hospital. He was also a lecturer on mental diseases at the Harvard Medical School, from 1879 to 1882, and from 1882 to 1885 an assistant professor in the same subject. Previous to this he had also lectured on matters connected with hygiene, and in the years 1877 and 1878 had the title of lecturer in that subject. His interest in hygiene began soon after his entrance upon the practice of medicine. In 1874 he succeeded Dr. George Derby as secretary of the Massachusetts State Board of Health and maintained his connection with the board for eight years. He was also a member of the first Metropolitan Sewerage Commission, and was one of the commissioners appointed by the National Board of Health to inspect Memphis, Tenn., after the serious outbreak of yellow fever there. He subsequently succeeded Dr. H. I. Bowditch as a member of that short-lived board. In 1879 he was made secretary of the Massachusetts Board of Lunacy and Charity, a position which he held for two years. He was for many years on the Staff of the Boston City Hospital as a visiting physician, but resigned long before his usefulness to the institution began to wane. He was appointed by Governor Wolcott a member of the commission to inspect State Charity Institutions, of which Prof. Davis R. Dewey was also a member and of which Mr. W. F. Wharton was chairman. Dr. Folsom served as an overseer of Harvard University from 1891 to 1903, inclusive, and during this long term of service proved a most useful member of the board. More recently he held the position of president of the Harvard Medical School Alumni Association; in fact, this was one of the last honors to be conferred upon him. Dr. Folsom's society affiliations were large. He was a fellow of the American Academy of Arts and Sciences, honorary member of the Association of American Physicians, a member of the American Medical Association, a fellow of The Massachusetts Medical Society, a member of the Boston Society for Medical Improvement, the Boston Society of Medical Sciences, the Boston Society of Psychiatry and Neurology, a member of the Boston Statistical Society, of the National Geographical Society, and a trustee of the Danvers Asylum during its early years. He was also connected as physician at one time with the Massachusetts Infant Asylum and with the Carney Hospital. He wrote on many subjects connected with hygiene, public health, mental disease and general medicine, both in reports and journals.

The mere mention of the positions which Dr. Folsom held, the duties of which were always most conscientiously and serviceably discharged, indicated exact industry, rare attainment and unusual versatility. He achieved high standing and wide reputation in hygiene, in state medicine, in psychiatry and neurology, and since 1881 took a foremost place as a practitioner and consultant in internal medicine. He was a very competent diagnostician and a resourceful therapeutist with confidence in the action of drugs. His patience and kindness to the sick and the sorrowful who sought his care and counsel were beyond all praise. As a writer he was clear, concise, convincing. He was for many years a valued coadjutor on this Journal. Dr. Folsom went to Europe with his wife early last June and returned unexpectedly, suffering from a malignant endocarditis, from the effects of which he died. He will be greatly missed by many people. The state, the community and his profession are all the poorer for his death and that at an age when continued service might still have been expected from him.

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Current Literature.

Medical Record.
August 3, 1907.

1. *Bettmann, H. W. *The Evolution of Gastro-enterology.*
2. Luys, G. *The Separation of the Urine of the Two Kidneys.*
3. Glasgow, M. *Primary Dysmenorrhea.*
4. Parker, F. J. *The Eye Symptoms of Sporadic Trichinosis with Report of Cases.*
5. Wilcox, A. S. *Venereal Prophylaxis — a Problem in Social Hygiene.*
6. Hall, J. N. *The Need of Earlier Diagnosis.*
7. Kelsey, C. B. *Two Unusual Cases of Rectal Hemorrhage.*

1. Bettmann finds that new impetus has been given to researches as to the physiology of the digestive system. As to gastric peristalsis, emotions inhibit it and handling the intestines does the same. Operations close the pylorus for six hours. The impulse for the closure of the pylorus is due to the reaction of acid chyme. We have recent additions to the knowledge of the movements of the intestine. There is an oscillatory movement that breaks up the food masses, but does not propel it forward. By antiperistalsis the bowel contents are churned about in the cecum until most of the liquid is removed. The small intestine is inhibited by vagus stimulation, and excited by the splanchnics. True peristaltic waves are caused by stimulation of Auerbach's plexus. Knowledge of the chemistry of digestion has been much increased. Pepsin is secreted before food enters the stomach, and pancreatic juice when the chyme enters the duodenum. The excitor of pancreatic secretion is secretin, produced by the duodenal mucosa when stimulated by HCl. The upper small intestine secretes, while the lower absorbs. Gastric digestion is relatively unimportant. The study of the feces gives valuable information. Mucus means inflammation, if visible in the colon. Purulent mucus means ulceration. Connective tissue remains in the stool means impaired gastric digestion. Intestinal disorders are hepatogenic, pancreatogenic, or essential intestinal. Too good a digestion, leaving little residue, may cause constipation. The intestinal bacteria offer a new field for investigation. As old age approaches intestinal putrefaction is easier. There are the indolic type, the saccharobutyric and the combined types. Cholecystitis is practically always due to infection.

New York Medical Journal.
August 3, 1907.

1. *Peabody, G. L. *A Case of Carcinomatous Metastases in Unusual Sites.*
2. *Jacoby, G. W. *Intradural Resection of the Posterior Roots of a Number of Spinal Nerves for the Relief of Intractable Pain.*
3. Bray, H. A. *Aetiology and Treatment of Pruritus Ani.*
4. *Vedder, E. B. *The Leukocytes in Dengue.*
5. Wolf, H. F. *The Present Status of the Methods of Physical Therapeutics.*
6. Minor, J. L. *Examination of the Eyes of the Pupils in the Public Schools of Memphis.*
7. Wight, J. S. *Post-operative Treatment of Malignant Disease of the Buccal Cavity.*

1. Peabody's case is unusual in that the metastases from a cancer of the breast seemed to show a predilection for the central nervous system, occurring especially in the meninges, the spinal cord and the peripheral nerves.

2. Jacoby advocates a more general use of the intradural resection of posterior spinal nerve roots for the relief of intractable pain. This operation has commonly been regarded as one in which the danger is out of proportion to the results to be hoped for. This opinion, however, is based only upon three cases, in one of which a moderate Brown-Séquard paralysis occurred from clot formation, and in two of which death followed the operation, probably not from the operation alone. Jacoby believes that the danger of this operation is not greater than that involved in simple laminectomy. He cites 15 cases (one original). In only 13 of these is the late result given. In 8 of the 13 the relief proved permanent and complete; in the remaining 5 there was amelioration of the pain, but only incomplete relief. In the cases of incomplete relief it is believed that the number of nerve roots resected was insufficient.

4. Vedder reports the results of studies of the blood in dengue made during an epidemic at an army post in the Philippines. He finds, as other authors have done, that the red count is not notably changed but that leukopenia is constant throughout the disease. By differential counts it is shown that the polymorphonuclear leukocytes are early greatly diminished, and that a corresponding increase occurs in the small lymphocytes. There is a more moderate increase in the large lymphocytes, and a slight one in the eosinophiles. These features of the differential count are suggested as points of some value in distinguishing dengue from malaria and from yellow fever.

[F. W. P.]

The Journal of the American Medical Association.
August 3, 1907.

1. Snyder, J. R. *The Status of the Child.*
2. *Gottheil, W. S. *Ten Years' Experience in the Treatment of Syphilis by the Intramuscular Injection of Insoluble Mercurials.*
3. *Whitehouse, H. H. *Liquid Air in Dermatology, its Indications and Limitations.*
4. Bull, C. S. *The Value of TR as a Diagnostic and Therapeutic Agent in the Recognition and Treatment of Tuberculosis of the Eye; with Report of Cases.*
5. Frank, M. *A Parabolic Reflector for the Illumination of Test Types.*
6. Pepper, W., and Nisbet, V. *A Case of Fatal Hemolysis Following Direct Transfusion of Blood by Arteriovenous Anastomosis.*
7. Smithies, F. *Hemiplegia as a Complication in Typhoid Fever, with Report of a Case.*
8. *Schmieden, V. *The Treatment of Pseudarthrosis and Retarded Callus Formation by Injection of Blood.*
9. Ingals, E. F., and Friedberg, S. A. *The Treatment of Hypertrophic and Intumescent Rhinitis with the Galvanocautery.*

10. *Kyle, D. B. *Chemistry of Saliva in Relation to Hay Fever.*
11. *Harris, H. F. *Slow Fever.*
12. Edgar, J. C. *Gonococcus Infection as a Cause of Blindness, Vulvovaginitis and Arthritis.*
13. *Adler, H. M. *A New Indicator for the Mineral Acids.*

2. Gottheil's article is an enthusiastic description of the advantages which he maintains are to be gained by the use of intramuscular injections of insoluble salts of mercury, chiefly the salicylate, in the treatment of syphilis. The results are held to be much more rapid and more efficacious, both in the cure of the disease and in the prevention of relapses. As a matter of convenience to the patient the method is further said to be preferable to that of medication by mouth or by inunctions, since the weekly or bi-weekly injections, if properly given, are almost painless and without danger. One precaution, however, is to be observed, — the needle, disconnected from the syringe, should be watched for a few seconds after it is inserted to make sure that it has not entered a vein, an occurrence met in perhaps one out of 25 injections. Toxic effects have been rare. In the discussion following this paper the general feeling seemed to be adverse to the injection of insoluble mercurials on the ground that the absorption was uncertain and could not be controlled.

3. Whitehouse believes that we have in liquid air a dermatologic remedy of real worth, at least in a limited field. He gives its physical properties and the facts so far as known as to its bactericidal value, which seems to be practically *nil*. We must look, therefore, to changes induced by it in cellular metabolism for its therapeutic effects, and he states that it relieves pain in pathologic conditions, lessens discharge and odor and tendency to hemorrhage. Mild applications favor healthy granulation, while stronger ones destroy exuberant growth. It has little reactionary effect on scar tissue, and, therefore, he believes that it has a diagnostic value on epithelioma. The conditions in which he finds it of value are pigmentary, hairy and vascular nevi, angiomata, lymphangioma circumscriptum, lupus erythematosus, lupus vulgaris and epitheliomata (unaccompanied by lymph-gland invasion). It should be applied on a swab, which can be adapted to any form desired, and the elements governing the effects produced are: (1) the degree of saturation of the swab; (2) the accuracy of contact; (3) the amount of pressure exerted, and (4) the duration of the exposure. As a rule, the slower the method the better the result. Special directions are given as to the treatment of the various conditions and a number of cases are reported. He thinks that in a certain class of epitheliomata it is a distinct power for good.

8. Schmieden calls attention to Bier's method of treating pseudarthrosis and retarded callus formation by injections of human venous blood between the separated fragments of bone. It is based on the theory that the formation of callus in fracture is due to the inflammatory reaction caused by the hemorrhage attending the fracture, and this inflammatory reaction failing, we can re-excite it by making, so to speak, an artificial hemorrhage. In Bier's clinic, the technic is as follows: The site of the "false joint" as well as the arm from which the blood is taken are rendered aseptic. By the use of a light constricting band the veins are made prominent and then one of the largest vessels is punctured or incised and 30 or 40 cc. of blood are drawn into the syringe. The syringe must be large and its needle sufficiently strong in order that the blood can be readily forced through it. It must be strong also because much force is needed to inject into the hard scar tissue. The blood must be forced, not only between the fractured ends, but also around them in places where, from periosteal and paraosteal tissue, callus may be formed. It is important also that the blood be injected immediately after its removal, using the same syringe into which it has been drawn to prevent coagulation in the syringe. Blood containing its fibrin gives better results than defibrinated blood. From 20 to 40 cc., according to the size of the bones, is injected, the operation being repeated every ten days. In most cases there is a visible reaction and after its subsidence a tumor remains that becomes callus. Sometimes one or two injections suffice, in other cases five or six may be needed. The more recent the fracture the greater the success, hence the best results are obtained in cases of retarded callus formation. In some old cases of pseudarthrosis the method fails, but the same is true of all other methods. In a large number of injections made in this way he has never seen any harmful effects. He has often injected blood taken from another healthy subject and has found it more effective. The facts support the conclusion that the extravasation of blood is the natural irritant which excites callus formation. The technic is simple, and the method is recommended with the hope that the results obtained in Bier's clinic will be substantiated by the experience of others.

10. Kyle believes that hay-fever can be traced, in a large proportion of cases, to abnormalities in the nasal secretion and the saliva. He has done much work in the investigation of the saliva and mentions a number of conditions which he regards as of clinical importance. The reaction may be excessively acid or excessively alkaline. There may be an excess of ammonia compounds or of sulphocyanides. In treatment of hay-fever he maintains that we should be guided by the results of such examinations. By means of the internal use of the citrate, lactate or benzoate of soda, the dilute mineral acids, the salicylates or sodium chloride, he has been able to relieve 60% of his cases without local treatment.

11. Harris discusses the so-called slow fever which occurs during the summer months in southern Georgia. It has been variously regarded as a form of malaria, as a form of typhoid, and as a distinct disease in itself. The clinical symptoms are not described at length, but the essential feature is the continued fever with absence of the usual positive evidences of typhoid. The author has studied 45 cases of the disease. In 24 of these the spleen was enlarged. Blood smears made in all cases failed to show the presence of malarial organisms. Blood cultures from 12 cases yielded typhoid bacilli in 6 cases and paratyphoid in one. Agglutination tests were positive in but 12 of the 45. Two cases were fatal but no autopsies could be obtained. In the discussion which followed the reading of this paper it was generally agreed that the disease must be a mild atypical form of typhoid.

13. Adler calls attention to the indicator discovered by Dr. R. L. Emerson, of Boston, called "carminogen." Solutions of this reagent in contrast to those of Günzburg's reagent, are permanent. Test papers, made by saturating filter paper with such solutions, are also permanent if kept from the air. As an indication for the free mineral acids carminogen is fully as delicate as Günzburg's reagent.

[F. W. P.]

Annals of Surgery.
July, 1907.

1. *Halsted, D. S. *The Results of Radical Operations for the Cure of Carcinoma of the Breast.*
2. *Greenough, R. B., Simmons, C. C., and Barney, J. D. *End Results of 376 Primary Operations for Carcinoma of the Breast at the Massachusetts General Hospital.*
3. *Ochsner, A. J. *Final Results in 164 Cases of Carcinoma of the Breast Operated upon during the Last Fourteen Years at the Augustana Hospital.*
4. *Jacobson, N. *End Results Following Operation for Carcinoma of the Breast.*
5. *Oliver, J. C. *The End Results Following Operations for Carcinoma of the Breast.*
6. *Cabot, A. T. *Carcinoma of the Breast. A Study of the Pathological Conditions and Their Relation to the Question of Recurrence.*
7. *Pilcher, L. S. *End Results Following Operations for Carcinoma of the Breast.*
8. Ransohoff, J. *Very Late Recurrences after Operation for Carcinoma of the Breast.*
9. Wharton, H. R. *Carcinoma of the Bones Following Carcinoma of the Breast.*
10. *Gwyer, F. *Thymus Gland Treatment of Cancer.*
11. *Syms, P. *Peritoneal Tuberculosis.*
12. Goodman, C. *Acute Diffuse Gonnorrheal Peritonitis.*
13. Stimson L. A. *Some Practical Deductions from Personal Experience in the Treatment of Appendicitis.*
14. De Forest, H. P. *Motor-Boat Fractures.*

1-7. Halsted reports 32.3% of cures of cancer of the breast based on a total of 232 cases The immediate operative mortality was 1.7%. The statistics of the Massachusetts General Hospital have been already abstracted. (See Bost. Med. and Surg. Jour., Aug. 15, p. 237.) Of 98 cases traced, Ochsner reports 34 which have lived beyond the three-year period following operation for breast cancer. Of 71 cases traced by Jacobson which were operated more than three years ago, 35 are still living; 33 died of metastases, and 3 within a year after operation of other diseases. Cabot has operated on 42 private cases of breast cancer up to 1904. Nine are free from recurrence (21.4%); 5, though living, have recurrence.

10. Gwyer reports marked benefit in the treatment of inoperable carcinoma by extract of the calf's thymus gland. It has been found to produce the following results: (1) diminution or elimination of pain; (2) diminution of the size of the growth; (3) " Its use is followed by better digestion, by more regular action of the bowels, and improvement of the general condition, as evidenced by a clearer skin and eyes, greater energy and a general sense of health and well being." Gwyer still advises operation in all operable cases, and also in so-called inoperable cases for the removal of as much diseased tissue as possible, so there will be a minimum to be absorbed and eliminated.

11. Syms, from a review of the literature on peritoneal tuberculosis during the past ten years, emphasizes the following points: (1) operations should not be undertaken during the first year of infancy; (2) surgery offers but little hope in the adhesive variety of the disease; (3) the serous variety offers the best prognosis under the various forms of treatment, and the surgical treatment of this variety offers the best results obtainable in this disease; (4) the operation should have as its foundation the removal of the original focus of the disease, as tubercular Fallopian tubes, appendix or mesenteric glands; (5) laparotomy should not be performed when the peritoneal trouble is only one phase of a more or less general tuberculosis. [W. C. Q.]

The Lancet.

July 27, 1907.

1. Simpson, W. J. R. *The Croonian Lectures on Plague. No. IV.*
2. Hewitt, F. W. *General Surgical Anesthesia Lecture. No. II.*
3. *Buchanan, R. M. *The Carriage of Infection by Flies.*
4. *Ross, R., Salvin-Moore, J. E., and Walker, C. E. *A New Microscopical Diagnostic Method and Some Simple Methods for Staining Liquid Blood.*
5. *Rundle, C., Mottram, J. C., Williams, R. S., Orr, J., and Williams A. E. *A Case of Cerebro-Spinal Meningitis; Isolation of the Specific Organism; Preparation of a Vaccine; Recovery.*
6. Pavy, F. W. *A Study of the Conditions producing the Anomalous Reaction not Infrequently met with in Testing Urine for Sugar with Fehling's Solution.*
7. Williamson, T. D. *A Case of Cerebro-Spinal Meningitis during Pregnancy.*
8. *Nierenstein, A. *The Treatment of Trypanosomiasis.*
9. Ede, F. C. *Cerebral Hyperemia as a Factor in the Therapeutic Action of Lumbar Puncture (Illustrated by a Case of Tetany).*

3. Buchanan presents experiments on the carriage of infection by flies in swine fever, staphylococcal abscess, pulmonary tuberculosis and anthrax. He shows that flies alighting on any substance containing pathogenic organisms are capable of carrying these organisms in large numbers on their feet, and depositing them on surface after surface with which they come in contact.

4. Ross and Salvin-Moore describe certain granular elements in normal red blood corpuscles supposed to be nuclear remains. These can be found with appropriate staining methods in normal blood and in one case of malarial anemia they were present up to 11%. Three methods of staining liquid blood are described.

5. Rundle and others give the details of a case of cerebrospinal meningitis successfully treated with a vaccine made from an organism isolated from the patient's blood. They are confident of good results in other cases.

8. Nierenstein discusses the treatment of trypanosomiasis by arsenic compounds, by dye-stuffs (malachite green, fuchsin, etc.) and by atoxyl. He gives the preference to atoxyl, to be followed by mercury and fuchsin. [J. B. H.]

British Medical Journal.

July 27, 1907.

1. Robertson, W. *Remarks on an Outbreak of Epidemic Cerebrospinal Meningitis.*
2. *Ballantyne, A. J. *Remarks on Ocular Symptoms in Cerebrospinal Meningitis.*
3. Dunn, P. *Infective Cyclitis in Relation to Penetrating Wounds of the Eyeball.*
4. Lorimer, G. *An Address on Medicine in Ancient Greece: the Methods of Hippocrates and Work Accomplished by him.*
5. Williams, O. T. *Abnormal Fat Assimilation Associated with Some Diseases of the Intestine.*
6. Hewlett, R. T., and De Korté, W. E. *On the Etiology and Pathological Histology of Beri-beri.*
7. Symes, J. O. *Arthritis and Erythema Nodosum.*

2. The most striking feature of the eye symptoms in meningitis is the great variety shown — squint, retraction of the lids, changes in the size and reaction of the pupils, etc. — in the same patient from day to day. Conjunctive hemorrhages, which do not occur at the onset of other acute illnesses, may be useful in diagnosis. The presence of conjunctivitis is also an early symptom, and may help to distinguish this from other forms of meningitis. The absence of ocular symptoms does not justify a favorable prognosis. [J. B. H.]

The Practitioner.

July, 1907.

1. *Halliburton, W. D. *Diabetes Mellitus from the Physiological Standpoint.*
2. *Bradford, J. R. *The Pancreas and Diabetes Mellitus.*
3. Hall, I. W. *The Basis of Therapy in Diabetes.*
4. *Labbé, M. *Diet in Diabetes.*
5. Brunton, L. *On the Heart in Relation to Diabetes.*
6. *Kraus, F. *The Carlsbad Treatment of Diabetes and Glycosuria.*
7. Taylor, J. *On the Nervous Symptoms Associated with Glycosuria.*
8. Morris, M. *Skin Disease Associated with Diabetes.*
9. Jessop, W. H. H. *The Ocular Complications in Diabetes Mellitus.*
10. Perkins, J. J. *The Pulmonary Complications of Diabetes.*
11. Hyslop, T. B. *Diabetes and Insanity.*
12. *Wallace, C. *Diabetic Gangrene.*
13. *Fletcher, H. M. *On Diabetes in Children.*
14. Beddard, A. P. *The Urine in Diabetes.*
15. *Brown, W. L. *Acetonuria: Its Clinical Significance and Treatment.*
16. Smith, W. G. *Clinical Notes upon Testing for Sugar in Urine.*
17. Sikes, A. W. *Gouty Glycosuria.*
18. Williamson, R. T. *On the Action of Certain Drugs in the Treatment of Diabetes Mellitus and Chronic Glycosuria.*
19. Parsons, A. R. *The Treatment of Diabetes Mellitus by Drugs.*
20. Dawson, B. *Glycosuria and Life Insurance.*

1. Halliburton summarizes the latest news on the physiology of the liver and the pancreas in relation to glycosuria and diabetes, and discusses in detail the various animal experiments from which these facts have been deduced.

2. Bradford presents cases and discusses the various lesions of the pancreas which do and do not cause diabetes. Experimental results certainly associate glycosuria with the loss of an internal pancreatic secretion, and postmortem evidence tends to show extensive degeneration of the islets of Langerhans in diabetes.

4. Labbé summarizes the treatment of diabetes by diet, gives his own special methods, and considers those recommended by others.

6. The treatment of diabetes in Carlsbad can be divided

into five parts: (1) internal use of the waters; (2) the diet; (3) baths; (4) the use of all those different therapeutic methods and proceedings called "physiologic therapy"; and (5) pharmaceutical treatment. These Kraus takes up in detail. He urges physicians to send cases for treatment in the early stages when they are yet in a position to benefit by a stay at Carlsbad.

12. Wallace strongly advises amputation of all cases of diabetic gangrene, not only for surgical reasons but because the progress of the disease itself is sometimes checked, and often sugar disappears from the urine, temporarily at least.

13. In children the onset of diabetes is more sudden, the course more rapid and the termination almost invariably fatal. There appears to be greater freedom from associated diseases, especially pulmonary complications. During twenty-two years at St. Bartholomew's Hospital out of 506 diabetics 5.4% were under sixteen years. Heredity seems to be a strong factor in the etiology of this condition. Acute illnesses may be predisposing factors. Skin affections are very common. As regards diet in children a strict carbohydrate-free diet only rarely can be adopted.

15. Acetonuria is the result of increased metabolism of fat. This will occur in any starving tissue, but it is particularly apt to occur if oxidation is deficient. Deprivation or non-utilization of carbohydrate food causes both starvation and deficient oxidation. Acetonuria is often seen in diabetes, recurrent vomiting, pernicious vomiting of pregnancy, in certain gastro-intestinal disorders, and associated with broncho-pneumonia as well as a result of delayed chloroform poisoning. The treatment depends on the cause but consists largely in diminishing the fat, increasing the carbohydrates, and neutralizing the acids already formed by soda bicarbonate.

Münchener Medizinische Wochenschrift, No. 24.

June 11, 1907.

1. Stadelmann, E., and Wolff-Eisner, A. *Septicemia Due to the Typhoid and Colon Bacilli.* (Continued article.)
2. * Tiedemann and Namber, T. *A Case of Cerebrospinal Syphilis.*
3. *Schultze, W. H. *The Differential Diagnosis of the Different Varieties of the Streptococcus.*
4. Sauerbruch. *The Radical Operation of Very Large Inguinal Hernias.*
5. *Pfeiffer, C. *Transplantation of Goiters and Experimental Graves's Disease.*
6. Blumberg, M. *A Diagnostic Sign in Appendicitis.*
7. Stohr, H. *Atypical Cell Proliferation and Carcinoma.*
8. Hecht, A. F. *An Explanation of the Appearance of Green Stools in Infancy.*
9. Jahr, R. *An Intra-ureteral Method for the Removal of Impacted Stones from the Ureter.*
10. Neustätter, O. *Abnormal Laughter as a Reflex from the Eye.*
11. Ipsen, W. *Silvery Discoloration of the Hair.*
12. Kraft, E. *The Demonstration of Pentose in the Urine.*

2. The noteworthy features in this case of cerebrospinal lues was the appearance of tabetic symptoms, specially gastric crises and ataxia. The explanation of this was found at autopsy in degeneration of the posterior columns in the cervical and lumbar regions.

3. This article is a discussion of the status of the different varieties of streptococcus, of which the author recognizes with Schottmüller the following four varieties: S. longus, S. erysipel., S. mitior, S. viridans, S. mucosus, and S. lanceolatus (pneumococcus). These may be certainly differentiated by the use of Schottmüller's blood-agar and of litmus-nutrose-agar (Drigalski's medium). In blood-agar the S. longus shows a hemolytic areola, the mucosus gives an abundant slimy growth, while the S. lanceolatus and S. mitior both show green colonies. The latter two are distinguished by the use of Drigalski's medium, which is turned from blue to red by the S. mitior, but is unchanged by S. lanceolatus. The mucosus is not merely a variety of the pneumococcus, but a distinct species, for it retains its cultural characteristics and never changes so as to resemble the pneumococcus. The failures of some authors with these media are ascribed partly to the use of old cultures, partly to improperly prepared media.

5. The transplantation of goiters from man to animals hitherto has met with little success. Pfeiffer, however, has found transplanted bits of thyroid apparently functioning 127 days after operation. His method was to transplant small pieces of thyroid *immediately* on removal from the human subject into the spleen of dogs or goats. One feature of Graves's disease, tachycardia, was constantly present in all cases. It was greater, however, when the goiter of Graves's disease was used for transplantation, than with simple goiters. [W. T.]

Berliner Klinische Wochenschrift, No. 22.

June 3, 1907.

1. *Fraenkel, C. *Investigations on the Spirillum of European Relapsing Fever.*
2. *Lassar, O. *Atoxyl in the Treatment of Syphilis.*
3. Determann. *The Influence of Cold and Heat on the Viscosity of the Blood.* (Continued article.)
4. Bing, H. J. *An Apparatus to Measure Blood Pressure.*
5. Stillmark, H. *A New Sphygmomanometer.*

1. This article deals with the experimental inoculation of mice, rats and apes with specimens of the African and Russian varieties of the spirillum of relapsing fever. Fraenkel found that immunization against the one variety did not protect against inoculation with another variety, and that the serum of immunized animals used in the Pfeiffer experiment or hanging drop destroyed only that variety of spirillum which had been used for inoculation.

2. The destructive action of atoxyl on the trypanosomes of sleeping sickness suggested to Lassar, the well-known Berlin dermatologist, the use of this drug in syphilis. His results were disappointing at first, owing to too small dosage, but when he increased the dose to .5 gm. (7½ gr.) three times a week, he obtained surprising success. The syphilitic lesions, whether chancre or gumma, or secondary eruption, disappeared with great rapidity. He emphasizes the fact that close watching of the patient is necessary, owing to the possible poisonous effects of the drug. The future must decide how permanent the results with atoxyl are, and in what cases its use is indicated. [W. T.]

No. 23. June 10, 1906.

1. *Schiek, B. *The Treatment of Scarlet Fever.*
2. Haaland, M. *Observations on Natural Resistance to Tumor Growth in Mice.*
3. Lavueur, A. *Artificial Radium Baths.*
4. *Lohnstein, H. *A Piece of Wax Removed from the Bladder by Solution in Benzine.*
5. Posner, C. *An Interesting Case of Suprapubic Prostatectomy.*
6. Hansemann. *Remarks on Cancer of the Skin.*
7. *Determann. *The Influence of Cold and Heat on the Viscosity of the Blood.* (Concluded.)

1. To avoid the infection of the home on the return of scarlet fever patients from the hospital, Schick has adopted the following plan, with good results: the patients in the hospital are divided into three classes, those in the early, middle and convalescent periods. These are isolated from one another and a patient passing from one division to another is bathed and receives a change of clothing. By this means the danger that a child may be a carrier of the disease is reduced to a minimum. Uncomplicated cases are discarded at the end of six weeks with the advice that they be sent for two weeks to the house of relatives who have no children. The treatment consists chiefly in rest in bed, and a diet without meat, with cardiac stimulants freely used where indicated. Moser's serum has given excellent results. (This is anti-streptococcus serum made by using streptococci from the heart's blood of scarlatina patients for the injections of horses without intermediate passage through animals.) It must be given in the first few days to be of benefit, and so used, in the dose of 200 cc. subcutaneously, apparently aborts the disease. It does not, however, avert heart and kidney complications.

4. Lohnstein in a case of persistent hemoturia with cystitis, found as the cause a piece of wax in the bladder. With the cystoscope it could be seen floating on the surface of the water in the bladder. A few injections of benzine dissolved this foreign body without unpleasant symptoms.

7. An interesting contribution on the viscosity of the blood is made by Determann. He finds that after cold baths the viscosity is always considerably increased, while warm baths have the opposite effect. The electric light bath, however, increases the viscosity, perhaps owing to the possibility of evaporation of the sweat, which is absent in the warm bath. The blood pressure, red count, hemoglobin and specific gravity usually, but not always, showed parallel change. Artificial venous congestion caused a considerable increase in viscosity, due no doubt to the increased CO_2 content. [W. T.]

The Action of the Blood Serum of Nephritics upon the Frog's Eye, Resembling the Action of Adrenalin. Schur and Wiesel (*Wien. Med. Woch., No.* 23) found that serum obtained from patients suffering from chronic nephritis, even when diluted 20 times, caused marked dilatation of the pupil of the excised frog's eye, while serum from control individuals, healthy or otherwise diseased, never caused similar action. Apparently the mydriatic action of the nephritic serum is due to a functional increase in the "chromaffine tissue" of the suprarenal glands. This tissue is found constantly increased in chronic nephritis, especially with hypertrophy of left ventricle and high blood pressure. [L. G. M.]

◆

Correspondence.

LETTER FROM FRANCE.

[*From our Special Correspondent.*]

Taking One's Own Remedies.

The Pyrenees, Aug. 15, 1907.

Mr. Editor: It is an excellent practice for physicians to taste their own medicines. Old Professor Guyon used to prescribe for his cases of genito-urinary tuberculosis a strong solution (4%) of creasote in cod liver oil. Curiosity led me one day to taste this mixture, and from that time to this I have never ventured to give creasote in that way; it is simply horrible, and would require a stomach of boiler-iron to stand for any length of time.

After I became a physician I formed the habit of tasting the preparations I prescribed, "to see whether it is right"; in reality, to learn what they were like. This custom served a twofold purpose: it familiarized me with all sorts of things of which I should have been cognizant but was profoundly ignorant, and it enabled me at a pinch to be very dogmatic. When recalcitrant patients complained that their medicine was nasty I was able to reply very sharply that such was not the case, "I have taken it myself," — an unanswerable retort.

As regards the first point, — the faculty at which I studied, a very ancient and renowned institution, had so organized its curriculum that the graduate of a five years course, that required an A.B. degree for entrance, was altogether unfamiliar with the appearance of pharmaceutical preparations and had never made a pill, powder or potion in his life, although he had given up an entire year to zoölogy, botany, physics and chemistry. When, then, as a young physician, I first began to prescribe, it was a constant source of interest, and often a surprise to me to behold the aspects of the products of my pen; and I passed through a number of those "regrettable incidents," which I dare say other physicians experienced too in their early days, when things didn't quite materialize as it had been hoped they would. I have a very vivid recollection of one patient bringing me a bottle in which phenacetin crystals were gayly bobbing up and down on the surface, when they ought to have been dissolved!

My aspirations for summer vacations are generally of a lofty nature, but this year I have had to accompany a relative to a spa for a course of treatment. So that I, who for years have been in the habit of distributing people to cures around Europe, have this time been obliged to take up again my former practice of trying my own remedies. However, though not a very exhilarating performance, it has not been without its peculiar interest.

This cure lies in the Pyrenees, the mountain-chain running from the Mediterranean to the Bay of Biscay, and forming the dividing barrier between France and Spain. Our particular spot is in the western portion of this range, where it runs down to the ocean, with Biarritz, the fashionable French watering-place, on the one hand, and San Sebastian, the summer resort of the Spanish royal family, on the other.

And here I desire to open an extra-medical parenthesis. The genial editor is probably away on his summer vacation, and I am counting on the "Sub" being short of copy, to let it go through.

The reason I gave the geographical details above is that philologically this western end of the Pyrenees is one of the most interesting regions in Europe, as it is inhabited by the remnants of a very old and remarkable race, the Basques. When at the dawn of history the Kelts issued from Asia and swept across the central and western portions of the continent they found them already occupied by a people whom the Romans called Iberians, but who speak of themselves as Euskarians. The present Basques, a few hundred thousand only, are the sole survivors of this once mighty race. In a similar way the Slaves and Teutons, who came after the Kelts, found in the north a people whom they pushed before them, and whose only representatives to-day are the Tshudic tribes, Finns, Lapps, etc., that lie along the Arctic coast.

These two peoples, then, are the oldest in Europe. Now when philologists came to look into the question they perceived that whereas the languages of Europe belong to the Indo-European family, that of the Basques and Tshuds cannot be connected with it in any way. These races were in possession of Europe when our forefathers arrived there; but whence they came or to whom they belong, no one has the least idea.

When the Basques woke up to the fact of their uncertain origin and great antiquity, their flesh became proud and their minds imagined a vain thing. Their language was the oldest in Europe and could not be connected with any other. The explanation was self-evident: it could only be that of the Père Éternel in person. And having laid claims to this parentage they stick to it and are to-day convinced that the tongue they speak and which no one can understand is the same as that spoken in Heaven! It is on account of this interesting point that I have thought it allowable to make this digression; since to rub elbows freely with people speaking the language of Heaven, and to see it in print and on the corners of the streets, is not given to ordinary mortals every day.

At San Sebastian I went into a shop to buy a Basque paper. The good woman looked at me dubiously, and remarked, as she handed it over: "*Si el Señor no entiende el Basquense,*" — the paper is not likely to be of much use. And she was about right; for a more hopeless looking lot of print I never saw. Judge for yourself: here is a paragraph taken at random:

"*Gizon onen, aitatu diran lanak, ikaragarrizkuak izandu ziran. Eraso ziyan bakarr bakarrik, Euzkadiren esati indarsubari ta onekin batubak zeuden euzkotarr zitalari. Atari ta etxeko jaun eta jabe izanik, kutizi kemen aulgarriyari begiratu gabe, denari jazarra bildurrgarriyan, ekin ziyon. Nai etzuben izan neurtu ta ez zenbatu oben aunditasuna.*"

Now I have a bowing acquaintance with the principal Latin, Teutonic and Scandinavian (though not Slave) languages; but there is not one syllable in that paragraph that I can make out, — and I may say the same for the rest of the paper. So there you have an illustration of what the Boston *Transcript* will look like when you reach the Elysian Fields; and you can now realize what is in prospect for any one intending to move on and settle in that district. Proper names run on this order: M. Borthagarayenia is a real estate agent in Cambo; Itxasson is a railway station; and Mlle. Ichuribéhère makes garments for the adornment of her sex.

The language is said to be *extremely* difficult to acquire, and to resemble Japanese in certain particulars. The people themselves relate that the Devil came and lived among them once for seven years to try to learn Basque, but finally had to abandon the attempt. Here, however, there appears to be some misunderstanding. We have authority, the Scriptures, Dante, Milton, for believing that the Devil was once himself an Angel in Heaven, from which he was ejected on account of political troubles. The Euskara was consequently his mother tongue. If then at a later period he found himself entirely ignorant of it, this must be the earliest recorded case of retrograde amnesia.

I was moved to hear the true ring of this venerable speech, so I went to mass. This is the best way to judge what a language sounds like when you are first in a strange land. I once tried it on in Holland, forgetting the reputation of its inhabitants for "slimness," and had to sit out a Reformed Church service of *nearly two hours*, and listen to an endless sermon in two innings on Barabbas. The sacristan had slipped around and locked the doors!

I am happy to say that the fat curé who discoursed to the Basques that day — women below in the body of the church and men in galleries upstairs behind — was more of a Christian than his gloomy confrère in Holland; for his doors were very wide open, and we men strolled in and out and smoked between times. To listen to the language is nothing like as angular at it looks; in fact, its sound is quite pleasant, with no one peculiarity striking you disagreeably, as is often the case with a language you do not understand. I have now written to this curé for a small grammar; it is just as well to get the thing under way, if the language has got to be learned; though I fear that in these uncertain times my chances of coming any nearer things celestial than my brief sojourn among the Basques are not very great.

But to return now to medical matters, from which we have drifted pretty far.

In this Basque region I came across something distinctly out of the ordinary over here, — a really intelligent public railway W. C. Travellers in Europe have noticed the inexpressibly filthy conditions that usually prevail in such places among the Latin peoples, and since we are among medical men I may mention as an instance a W. C. I once saw in a good hotel in Italy, where the white window curtains, which hung down low by the seat, had been used by several persons for purposes where most people employ medicated paper. If I had not seen this myself I am afraid I should never have believed the story.

The Basque arrangement consists in a tile room whose floor slants in one direction, and at the further end of which is a depression pierced with a hole on whose either side is a small pedestal for the feet. There is a flushing apparatus of considerable force, and the entire room can be swept with a hose. Nothing more suitable from the point of view of cleanliness can be imagined, and as regards hygiene the system presents the advantage of the natural squatting posture which, in case you have never thought of this point, is a factor of no little importance in intestinal exoneration. There seems little doubt but that among the reasons for the great prevalence of constipation at the present day is the defective attitude in which the body is placed in the modern luxurious W. C. The squatting attitude of the primitives behind the nearest bush, with the great pressure brought to bear on the intestines by the mass of the thighs, was far preferable. Try the plan on a few constipated patients, and observe for yourselves.

The waters of our spa are pleasantly warm, alkaline and mildly sulphurous, the kind that are habitually spoken of as rotten eggs. This is, however, a gross libel. They are not at all disagreeable, even to drink; and employed in the form of spray, gargle or inhalation their sedative and modifying effect on chronic irritation of the mucous membranes is unmistakable.

This resort is frequented mainly by persons obliged to overtax their voice professionally: preachers, singers, lawyers, etc., but first and foremost among the clientèle is the curé, who is here in shoals, — half the curés of France and Navarre. I never saw so many curés, mostly elderly men worn out in their calling. What can there be in the mass that tears their throats to pieces in this fashion? Some of them have no voice left at all. Old Germain Sée used to be very caustic in speaking of this spa, to which, he observed, the curés went to meet the cocottes, all of them for the purpose of treating their mucous membranes!

But as I looked at these curés a thought occurred to me. To reach the spa they *all* have to pass through Lourdes, only two hours distant, and supposed, I believe, to be the holiest spot of pilgrimage in the Catholic world. The question then that at once crops up in the mind of the ungodly is this: Why do these curés come to be treated here, where they have to stay three weeks, instead of stopping off and being cured instantaneously at Bernadette Sonbirous' grotto? Can it be that, like other "preachers" who could be named, they are not given to taking their own remedies?

Seekers after the humorous should come and see this gargling establishment. The treatment is done in public, in long rows of little stalls, fifty on one side of the hall, and as many on the other. Taking your stand in the center aisle you see the patients all in profile. It is not easy to describe the *coup d'oeil;* but those of you who have farms can get an idea of it by going out and watching the chickens drink: the prolonged dip of the beak in the water followed by the stretch of the neck aloft with the idiotic look of ecstasy in the eye. That is about the picture.

It is surprising to observe the variety of ways in which the human being can gargle in public. There is the self-conscious man. He takes a small sip, gargles the roof of his mouth a moment, sends half of it down over his shirt front, and then looks in horror to the right and left to see if any one observed what he had done. Then there is the short-necked fat Monsieur with the apoplectic face. His efforts are quite alarming; his tint becomes purple, his eyes project from their sockets, and in the early days I used to feel for a lancet and prepare for phlebotomy. It never came off, however. Another manner is the gargle ecclesiastic. This was generally a very dignified affair. Some of the curés found the ordeal very trying, but resigned themselves to it with a humble spirit. You could see from the supplicating glances they cast on high that they were hoping that this mortification, too, would be reckoned to their credit. But the man who really rejoiced my soul was the old habitué, the patient with a previous season or two, who knew the trick. He comes in with an air of proprietorship, calls the girl by her first name, takes his water to his stall, pulls a small towel out of his pocket and ties it around his neck, and then with one hand on the side of his stall he throws himself back to arm's length and gargles with a conviction and uproar that can be heard for rods away. He was a daisy.

The fact is that it is not an easy matter to gargle in public, and that it requires some little practice to detach yourself from your surroundings and become unconcerned. The women seem to succeed better than the men. One little woman in gray that I used to watch was a wonder. She could gargle much longer at a time than any one else, and I came to the conclusion that she must possess in her interior some pneumatic apparatus on the order of the fish's swimming bladder.

One or two other points about this region may prove of interest. It is a land where the poppies are *yellow*. Now fancy that! This seems to upset the appointed order of things. In all well regulated countries with which I am familiar the wheat is sprinkled with poppies scarlet and cornflowers blue; and the puffs of wind as they pass along ruffle the surface of the field slightly and make it look like moiré silk. But what becomes of your landscape if the poppies are yellow!

Again, the peasants here have the loveliest mountain dogs, about the build of the Newfoundland but lighter, with white coats and the pointed head of the bear. Now it is a curious fact that the Pyrenees were once famous for their bears. These dogs are simply delightful, and the best natured beasts in the world in spite of their size. I saw one walk up to where its family baby was sitting on the floor and proceed to carefully lick its face and head indiscriminately with its great red tongue. The baby didn't seem to mind; merely tried to ward off the tongue with its arms.

But I see that I must close, although there are many things to relate about this beautiful Basque region. The present is, as I said, a vacation letter; when I return to Paris I shall have some recent medical developments to report.

"Spectator."

RECORD OF MORTALITY

For the Week ending Saturday, Aug. 17, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1656	821	Quincy	14	8
Chicago	—	—	Waltham	10	4
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	5	1
Baltimore	241	96	Brookline	5	1
Cleveland	—	—	North Adams	—	—
Buffalo	—	—	Chicopee	10	7
Pittsburg	—	—	Northampton	4	0
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	10	5
Washington	—	—	Leominster	4	1
Providence	64	23	Hyde Park	2	—
Boston	220	86	Melrose	0	0
Worcester	62	36	Newburyport	—	—
Fall River	49	62	Woburn	3	2
Cambridge	34	16	Marlboro	1	1
Lowell	50	20	Westfield	7	4
Lynn	26	12	Peabody	—	—
New Bedford	38	26	Revere	11	3
Springfield	29	9	Attleboro	8	3
Lawrence	54	35	Clinton	1	0
Somerville	19	7	Adams	7	6
Holyoke	—	—	Gardner	4	2
Brockton	12	3	Milford	—	—
Malden	13	7	Watertown	5	3
Chelsea	8	4	Plymouth	—	—
Salem	15	9	Weymouth	8	3
Newton	7	1	Framingham	1	1
Haverhill	14	3	Southbridge	4	3
Fitchburg	—	—	Wakefield	—	—
Everett	6	4	Webster	—	—
Taunton	—	—			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUGUST 14, 1907.

Geddings, H. D., assistant surgeon-general. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station in Washington, D. C.

Cofer, L. E., passed assistant surgeon. Granted leave of absence for 1 month. August 13, 1907.

Grubbs, S. B., passed assistant surgeon. Granted leave of absence for 1 day, August 11, 1107. August 10, 1907.

Francis, Edward, passed assistant surgeon. Directed to proceed to Mobile, Ala., for special temporary duty, upon completion of which to rejoin his station at Mobile Quarantine Station. August 9, 1907.

Collins, G. L., assistant surgeon. Granted leave of absence for 1 day, August 16, 1907. August 14, 1907.

Olsen, E. T., assistant surgeon. Granted leave of absence for 1 month and 28 days from August 18, 1907.

Miller, W. W., assistant surgeon. Relieved from duty at Ellis Island, N. Y., and directed to report at the Bureau in Washington for temporary assignment in the Hygienic Laboratory, August 9, 1907.

Gibson, L. P., acting assistant surgeon. Granted leave of absence for 8 days from August 8, 1907.

Gustetter, A. L., acting assistant surgeon. Granted leave of absence for 30 days from September 1, 1907. August 6, 1907.

Hunter, S. B., acting assistant surgeon. Granted leave of absence for 6 days from August 7, 1907. August 10, 1907.

McGinnis, R. H., acting assistant surgeon. Granted leave of absence for 30 days from September 1, 1907. August 8, 1907.

Nute, A. J., acting assistant surgeon. Granted leave of absence for 20 days from August 20, 1907.

Rodman, J. C., acting assistant surgeon. Granted leave of absence for 3 days from August 8, 1907. August 10, 1907.

Safford, M. V., acting assistant surgeon. Granted leave of absence for 4 days from July 15, 1907, on account of sickness. August 8, 1907.

Safford, M. V., acting assistant surgeon. Granted leave of absence for 4 days, from August 8, 1907, under paragraph 210, Service regulations.

Simonson, G. T., acting assistant surgeon. Granted leave of absence for 10 days from August 5, 1907. August 7, 1907.

Walkley, W. S., acting assistant surgeon. Granted leave of absence for 6 days from August 18, 1907. August 10, 1907.

Goodman, F. S., pharmacist. Granted leave of absence for 30 days from July 5, 1907, on account of sickness. August 8, 1907.

Goodman, F. S., pharmacist. Granted leave of absence for 28 days from August 5, 1907. August 6, 1907.

Troxler, R. F., pharmacist. Granted leave of absence for 11 days from August 19, 1907. August 6, 1907.

Eldredge, M. B., pharmacist. Granted leave of absence for 23 days from September 3, 1907.

PROMOTIONS.

Assistant Surgeon A. M. Stimson commissioned as passed assistant surgeon, to rank as such from July 27, 1907. August 5, 1907.

Assistant Surgeon W. C. Rucker commissisned as passed assistant surgeon, to rank as such from July 27, 1907. August 5, 1907.

Assistant Surgeon W. K. Ward commissioned as passed assistant surgeon, to rank as such from July 27, 1907. August 5, 1907.

Assistant Surgeon J. W. Trask commissioned as passed assistant surgeon, to rank as such from August 16, 1907. August 5, 1907.

APPOINTMENTS.

Dr. Charles W. Chapin commissioned as assistant surgeon in the Public Health and Marine-Hospital Service, August 8, 1907.

Dr. Edward R. Marshall commissioned as assistant surgeon in the Public Health and Marine-Hospital Service, August 8, 1907.

Dr. Raymond B. Scofield commissioned as assistant surgeon in the Public Health and Marine Hospital-Service, August 8, 1907.

Dr. Emil Krulish commissioned as assistant surgeon in the Public Health and Marine-Hospital Service, August 8, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 24, 1907.

James H. Holloway, passed assistant surgeon. Camp Columbia, Cuba, will proceed to Palmira, Province of Santa Clara, Cuba, for duty, relieving Assistant Surgeon William A. Angwin. (Orders issued by the Commanding General, Army of Cuban Pacification.)

M. W. Baker, passed assistant surgeon. Detached from the naval hospital, Boston, Mass., and ordered to the naval hospital, New Fort Lyon, Col.

E. C. Taylor, passed assistant surgeon. Ordered to the naval hospital, New York, N. Y., for treatment.

SOCIETY NOTICES.

The Thirty-fifth Annual Meeting of the American Public Health Association. — The thirty-fifth annual meeting of this association will be held at Atlantic City, N. J., from Sept. 30 to Oct. 4, 1907.

Mississippi Valley Medical Association. — The thirty-third annual meeting of the Mississippi Valley Medical Association will be held at Columbus, O., Oct. 8, 9, and 10, 1907, under the presidency of Dr. H. Horace Grant, of Louisville, Ky. The orator in Medicine will be Dr. Geo. F. Butler, of Chicago, Ill., and the orator in Surgery Dr. Frank D. Smythe, of Memphis, Tenn.

RECENT DEATHS.

Charles Follen Folsom, M.D., M M.S.S., of Boston, died in New York, Aug. 20, 1907, aged sixty-five years.

Dr. Horace G. Leslie, of Amesbury, Mass., a widely known physician and citizen, died Aug. 23 at the age of sixty-five. He received his medical education at the University of Vermont and went to Amesbury in 1867, where he has since lived. He served during the Civil War as a surgeon. In 1891–2 he was a member of the State Legislature, and in general was known not only as a physician of capacity, but also as a public spirited citizen.

Dr. Samuel Beyea, a prominent physician of New Rochelle, Westchester County, N. Y., died on Aug. 18 at the Roosevelt Hospital, New York, after an operation for gallstones. He was in the forty-third year of his age and had practised in New Rochelle for the past fifteen years.

Address.

SOME GENERAL CONSIDERATIONS REGARDING TUMORS.*

BY W. T. COUNCILMAN, M.D.

When your society honored me by requesting me to give this address I thought it would not be amiss if I should try to give you some of the general views on the subject of tumors which have come to me through their study. In this study the clinical side of the subject has been considered only so far as it has a direct bearing on the pathological side, so I must be pardoned if I touch but lightly the clinical aspect.

The subject of tumors is of perennial interest for the clinician, the pathologist, the embryologist and the medical statistician. The enormous advance in medical knowledge in the past three decades, which has brought to light the essential nature of many of the infectious diseases and thereby given us the indications for their control, which has revolutionized surgery and made it probably the most important branch of medicine, has but lightly affected the subject of tumors. It is true our knowledge of modes of diagnosis and methods of treatment, of structure, of modes of growth, has been increased, and the application of that knowledge to clinical treatment has given brilliant results, but of the essential nature of tumors we know but little more than we did thirty or even sixty years ago.

A tumor is a new formation of tissue which is without function and which has the power of independent and unlimited growth. At some point in the body the cells begin to grow and produce a tissue which may be circumscribed and easily separated from the adjoining parts, or it may be so infiltrated and closely related with the healthy tissue that it cannot be separated as a distinct mass. The growth arises from the cells of the body, and the structure produced agrees more or less closely with the tissues of the normal body. In some cases there is more analogy with the embryonic than with the adult tissues. The tumor may be composed principally or entirely of cells just as are the embryonic tissues, or between the cells there may be a varying amount of intercellular substance. Considered in its widest relations the tumor is atypical, that is, it does not conform to the type of normal structure. In some cases the tumor may agree exactly with a corresponding tissue in the normal body; thus it may be impossible to distinguish by the most careful microscopic examination the tissue of a myoma of the uterus from the normal muscle of that organ, but the departure from the type is shown by the fact that the tumor forms a circumscribed nodular mass of muscle such as does not appear in the normal uterus.

The tumors are independent structures which live in the body as does a parasite, taking their nourishment from it, but the body as a whole has no influence on the tumor. The nutrition of a tumor is independent of the general nutrition of the body. In cases of general malnutrition all the tissues of the body are affected, some, of course, much more than others, but it is not an uncommon thing to find a rapidly growing tumor in an individual in whom the general nutrition is reduced to a very low degree. The cells of a tumor are independent of the laws governing the general nutrition.

A tumor is without function. No matter how closely its structure may agree with that of some normal structure, it never exerts a corresponding function. One of the most striking examples of this is seen in the lipoma which is composed of fatty tissue which both macroscopically and microscopically agrees with the structure of the normal fat. We know that the adipose tissue is a special form of tissue in which fat is deposited, serving as a nutritional storehouse and increased or diminished in the varying nutrition of the body. Notwithstanding that the lipoma agrees in its structure with the normal fat, it in no way serves the nutrition of the body. I have seen a large lipoma in an individual in the last stages of tuberculosis and in whom the normal fat was reduced to the very lowest degree. No matter how strikingly similar the structure of an adenoma may be to that of a normal gland its cells do not produce a corresponding secretion.

The growth of a tumor is independent of the laws governing the growth of normal tissues. We know that in the course of normal development each tissue is produced by a process of differentiation. Tissues which in their full development differ widely both in structure and function are formed from cells of like character. The individual organs and the body as a whole continue to grow until a size is reached which corresponds to the type of the species, when the general growth ceases or is limited to that sufficient to repair loss. The growth of all organs is interdependent; at any time in the period of growth the same relative degree of development and size will be found in the different organs. No organ develops independently of the others; the liver and kidney correspond in size with that of the individual. In certain organs the growth is continuous from the embryonic period to the completion of growth; in others, as in the genital glands, there is a long period of quiescence after the embryonic period, and growth does not actively begin until the onset of puberty. The life of certain tissues is passed quickly. The thymus, certainly an active organ during fetal and for a short post-fetal period, instead of continuing to grow with the rest of the tissues, early undergoes atrophy. All the lymphoid tissues reach their full development early and atrophy instead of continuing to grow with the other organs. Notwithstanding that growth ceases with full development or is limited to the very slight degree necessary to compensate for the wear entailed by function, a considerable energy of growth remains which in various ways can be excited to activity.

Certain tissues and certain organs have a power of regeneration or of reforming tissue which may be destroyed to a very much greater degree than others. In general, the younger the individual the greater the power of regeneration of the tissues; a tadpole quickly regenerates the tail when this has been cut off, but the adult frog is incapable of regenerating a limb. The less highly differentiated a tissue the greater the power of regeneration; the slightly differentiated epithelium removed from the surface of the body is quickly replaced, but nerve ganglion cells once destroyed are never renewed again nor can such a complicated structure as a renal glomerulus be renewed. We must assume that there is some means of regulating normal growth. Whether growth is regulated by means of the production of an internal secretion, or whether the regulation is more of a physical nature and due to the mutual relations of pressure is unknown. Certain things show the possibility of the regulation of growth by chemical substances. The thyroid probably has some such influence but the most definite example of the influence of a chemical substance on growth is that of the internal secretion of the corpus luteum. It has been shown that the growth of the mammary gland which accompanies pregnancy may be produced in a non-pregnant animal by the injection of an extract of the corpus luteum. That growth may be stimulated by alteration of the normal relations of the tissues to one another is shown in the repair of injuries. The surest way to excite a tissue of proliferation is by the production of an injury. All repair of wounds is due to this power of growth. Growth thus started by an injury persists until the normal relations of tissue are again established, when it ceases. Growing tissue demands more blood and new blood vessels are formed in it, but hyperemia alone will not excite tissue to grow; the tissue regulates its blood supply.

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* An address delivered before the Maine Medical Association, June 13, 1907.

As compared with the normal tissues the independent growth of a tumor is its most striking characteristic. It is lawless, unregulated, and has no relation whatever to the growth of the body as a whole nor to the growth of the different organs. The fetus developing in the uterus of the mother is no more independent in its growth than is the growth of a tumor. Each may be regarded as an independent parasite deriving only nutrition from the host. A tumor begins to grow by certain cells of the body multiplying rapidly and independently. The cells in their general features conform to the cell type of the species but they show an extraordinary degree of variation. The cells of a tumor derived from squamous epithelium have the general characteristics of this and those derived from cylindrical epithelium have the general characteristics of cylindrical epithelium. As a rule, from the microscopic examination of a tumor, we can tell from what sort of tissue it is derived. Cell growth and multiplication in a tumor take place as in the normal tissues but present many variations. In normal cell division complicated processes take place in the cells which render it possible for the new cells to have parts of all the contents of the old. In the division of tumor cells the process is much more irregular. New cells are formed which have but a part of the contents of the parent cell, and instead of the cell dividing into two equal parts a triple or fourfold division may take place. It still remains a mooted question whether the tumor, once having started, grows only from itself or whether adjoining tissues can take part in the growth and become a part of the tumor. Certainly, in most cases this does not take place but I have occasionally seen in tumors of the breast appearances which seemed to indicate that certain of the ducts and other structures of the gland which had become included in the infiltrating growth of the tumor were taking on the same sort of growth and forming a part of the tumor. In certain tumors derived from the skin epithelium I have seen similar appearances in the hair follicles and glands. It is very difficult in these cases to be certain that the apparently normal cells which seem to be changing into tumor cells are not really tumor cells which have replaced the normal cells.

We distinguish in general two forms of tumor growth. One, termed the expansive growth in which the tumor enlarges as from a single center, remains a coherent mass and pushes away the surrounding tissue. Often the connection with the surrounding tissue is so loose that no trouble is experienced in the enucleation. Such type of growth is seen in those tumors which contain considerable intercellular substance or in which the cells are woven together to form a compact mass. In the infiltrating mode of growth the cells penetrate into the spaces of the surrounding tissue and in their growth force themselves or are carried by the lymph streams even deeper into this tissue. In such a tumor it is impossible to determine the limits of the tumor by the naked eye examination. What appears to be normal tissue may contain numbers of actively growing tumor cells.

Tumors are always connected with the surrounding tissues by blood vessels, and usually by considerable amounts of connective tissue as well. The blood supply varies and depends upon the rapidity of growth of the tissue. Tumors like other tissues make demands upon the blood for their nutrition, and the more active the growth the more abundant is the blood supply. The vessels vary much from the normal and have not the characteristic division into arteries, capillaries and veins. Into a normal organ one or several arteries enter, break up into capillaries and these coalesce to form a system of veins. There is nothing similar in the vascular supply of tumors. From all sides vessels of different caliber and often of capillary structure enter into the tumor, divide and ramify in it without definite arrangement. This is understandable from the development of the tumor which does not take place in a definite arterial territory but only in a small part of one, and the existing vessels are utilized for nutrition and very greatly enlarged. New vessels are continually being formed to keep pace with the rapid growth, but these have rather the character of the vessels formed in inflammatory tissue and are not differentiated into arteries and veins. Owing to this irregularity of vascular formation the circulation of a tumor is not so perfect as that of a normal part.

In certain tumors, particularly the sarcomas, the vessels for the most part may be mere channels in the tissue lined by a single layer of endothelial cells. The thin walled vessels are easily compressed by the growing masses of cells, and necroses and infarctions, the result of the disturbances of the circulation, are common. In many tumors hemorrhages as a result of rupture of vessels or of necrosis of their walls are seen. Necrosis also occurs as the result of imperfect nutrition, the blood supply not being able to keep pace with the rapid growth of cells. All these degenerations are found chiefly in the center of a tumor, the cells on the outside where they are closer to the blood supply are usually better preserved. In consequence of these degenerations connected with insufficient blood supply the size of a tumor may give an imperfect indication of the rapidity of growth, for the central degenerated tissue may be absorbed and replaced by cicatricial tissue which occupies but a small space. The best example of this is given in contracted scirrhus of the breast, the periphery of which may give all the characteristics of a rapidly growing tumor while the center has become converted into a mass of cicatricial tissue containing but few of the essential tumor cells.

The growth of a tumor may be rapid or slow, continuous or intermittent. A tumor may remain quiescent for months or years and suddenly take on rapid growth without any apparent cause. Rapid growth of a tumor is due to rapid cell formation, and is especially seen in those tumors in which cells and not intercellular substance form the chief constituents. Where a growing tumor comes in contact with the adjoining tissue the latter always suffers. Any tissue, be it the most resistant in the body, gives way before it. In part it may simply be compressed or pushed aside. The cells are destroyed in part by the effect of the pressure upon them, in part by the interference with their nutrition which the increased tissue pressure brings about, the compressed intercellular substance forming a capsule around the tumor, united with it by blood vessels and their accompanying connective tissue. A slowly growing tumor may produce great deformity of the surrounding tissue without destruction.

The slower the growth the greater the deformity which will be produced. Liver cells may be flattened out into long spindles around slow metastatic nodules, and I have seen the spinal cord compressed into a flat ribbon-like mass by the constant pressure exerted by a tumor of the dura. In other cases the tissue gives way without showing evidences of pressure. Cells and tissue may simply disappear when the growing tumor comes in contact with them. Occasionally the tumor cells are phagocytic, and surround and devour the tissue cells; in other cases the tissue cells seem to dissolve by contact with tumor cells. In the normal growth of bone the old bone is constantly removed by the action of large cells termed osteoclasts, which act in the same way as do the giant cells around foreign bodies. Where a rapidly growing cellular tumor comes in contact with bone this may be removed by the tumor cells acting as osteoclasts. The tumor cells are able to make stronger demands on the nutritive material which is present, and in addition their presence and contact has in some unknown way a pernicious influence on the normal tissue. The growth of the mass of a tumor is in the direction of the least resistance. In consequence of this a tumor seated near a surface of the body projects above this and is often connected with the body by a pedicle. The best examples of this are given by the tumors with expansive growth as the myomata of the uterus which may form either submucous or subserous tumors connected with the uterus by a small pedicle.

Around a tumor which grows by infiltration it is not uncommon to find smaller and larger nodules apparently not connected with the main mass. Careful examination will show in many of these cases that the separation is not complete but there is a strand of tumor tissue forming the connection. In other cases the separation is complete. These secondary masses are due to the extension of the growth along tissue spaces which offer little resistance, and when a locality favorable to greater expansion is reached a nodule is produced. Growth and tissue infiltration then proceed in the secondary nodules in the same manner as in the primary.

Under metastases we understand the secondary nodules which appear in different parts of the body and which have no connection with the main and primary tumor. These may appear in the most different organs, either singly or in hundreds or thousands, and may vary in size from a pin's head to several pounds. The metastases may be much more conspicuous and larger than the primary tumor. The metastases really represent a part of the primary tumor, and are due to cells and portions of tissue which have become separated from this and in various ways transported to different parts of the body where, being part and parcel of the primary growth, they grow with all of the characteristics of this. The conditions which they find in new regions may be so favorable that the primary nodule may be far surpassed in size. Single cells may by means of their own ameboid activity crawl along the tissue spaces and lymphatics often in a direction contrary to the course of the lymph stream and become the founders of new growths. Their progression is, however, much more frequently passive; they enter into the blood or lymph streams and they are carried in the direction of current until they reach narrow spaces, such as capillaries and lymph reticulum through which they cannot pass. The most extensive metastasis is by means of the blood vessels. The cells find their way into the blood either by growing into the vessels or from the lymph by means of the thoracic duct. Most frequently the cells are carried into the capillaries, but larger portions, which may be separated when the primary tumor invades large vessels, not infrequently lodge as emboli in arteries of greater or less size. The metastatic growth may then be associated with the circulatory disturbance resulting from the arterial occlusion. Where the cells lodge and the metastatic nodules form depends upon a number of conditions which are only in part physical. The entry into the blood is most apt to take place in veins, and hence the most frequent metastases in blood infection is in the lungs, the cells finding here the first capillary territory. The width of the capillaries is also of influence, those of the lungs being so wide that cells of considerable size may pass through them. The blood metastases in tumors of the alimentary tract takes place from the cells being carried by the portal veins into the liver, which offers by its numerous capillaries in which the circulation is slow favorable conditions for the lodgement of foreign substances. The most abundant metastases by means of the blood are found in the sarcomas which from the close relation of the tumor tissue to the blood vessels give favorable conditions for the entry of cells into the blood. The metastases will be the more abundant the smaller the tumor cells and the greater their energy of growth. We may find cases of sarcoma in which these conditions are fulfilled in which there are countless numbers of metastases appearing in every organ of the body. In one such case at the autopsy numbers of tumor cells were found in the circulating blood. The comparative freedom of certain organs in the body from blood metastases cannot be explained solely by the varying conditions of the circulation. Metastases are comparatively rare in the ovary, the uterus, and the brain, all organs which from the large blood supply and the abundance of capillaries should be favorable for the lodgement of cells. It must be said, however, that metastases in the liver and lung are easily recognized by their variation in color and consistency, and we should not compare the frequency of metastases in the ovary and testicles with that of the entire liver or lung but with equally large areas of these organs. It must be remembered that not only must the cells effect a lodgement but they must find in the foreign situations favorable conditions for their growth.

Metastases by means of the lymphatics is, on the whole, more common than by the blood. Especially in the carcinomas the cells from the beginning are not only in close relation with the lymphatic system but actually within it. The epithelial cells of a carcinoma penetrating the connective tissue as they do must enter into the tissue spaces and by means of these into the lymph vessels. Even if we accept the prevalent view that the system of lymphatic vessels is a closed system similar to that of the blood vessels the relation of the lymph vessels to the tissue is certainly closer than is that of the blood vessels, and cells from the tissue can more easily enter into them. It is rare, for instance, that we find a carcinoma of the breast in which a careful search will not show metastasis in the axillary lymph nodes, and I have repeatedly found carcinoma cells in the lymph vessels apparently on the way to the nodes. Secondary nodules are also formed by a process termed "implantation." This takes place when the primary tumor extends to a surface and cells or portions of tumor tissue become separated and attach themselves to other parts of the surface. This is especially seen in tumors of the ovary which extend to the peritoneum. In such cases the peritoneal surface may be literally sown with small tumors which have arisen in this way. Similar implantation may take place, though more rarely, in the case of tumors growing on mucous surfaces.

The metastases give us a further example of the marvelous capacity of the tumor cell for growth. When tumor cells are carried to a different part of the body they will grow in their foreign surroundings. In this they are sharply distinguished from the other cells of the body. There have been many experiments made to imitate the metastases of tumors by transferring normal tissue to different parts of the body. Entire organs may certainly be transplanted, and if they form sufficient vascular connections they will grow and function in their new situation. Cells, however, when separated from organic connection with the organs and placed in different situations, may, for a time, show some capacity for growth, but they finally atrophy and disappear. The result is the same whether adult or fetal tissues be chosen for the experiment.

One of the unfortunate conditions met with, particularly in the malignant infiltrating tumors, is a tendency to return in the same place after operation. It is now generally believed that this return of the tumor is due to the incompleteness of removal, and as we have learned more about the mode of growth of tumors and applied that knowledge to surgical operations, return is less often seen than formerly. In an infiltrating tumor, as a carcinoma of the breast, there is no certain means of telling at the operating table how far into the surrounding tissue the tumor extends. Not only must the tumor be removed, but all the lymph vessels which may possibly contain cells of the tumor on the way to the nodes must be removed. The operator must fully appreciate the fact that the cells of the tumor represent really infectious particles, any one of which remaining in the tissue may lead to a return of the tumor. It is self-evident that at the operation the tumor must not be cut into and the cells scattered. The idea is also held that the return of the tumor is not necessarily due to presence of some of the initial tumor cells, but the tissue in which the tumor primarily arose may retain a capacity for tumor development which may lead to the formation of a tumor similar to that removed.

The division of tumors into those which are benign and those which are malignant serves a more or less useful purpose. Strictly speaking no tumor is benign. The situation of a tumor may be the criterion of its danger to the individual. A simple fibroma, so situated that by its growth organs essential to life may be compressed and their function interfered with, may involve greater danger for the individual than would a rapidly growing carcinoma in a less important situation. The characteristics of a malignant tumor, apart from the situation, are rapidity of growth, a tendency to invade surrounding tissues, to produce metastases and to cause a condition of general malnutrition in the bearer. The benign tumors are circumscribed, their growth is slow and expansive, they can be successfully removed and do not produce metastases. The clinical importance of a tumor can usually be determined on microscopic examination. Rapidity of growth is shown by the number of nuclear figures indicative of cell division which are present. As a rule those tumors which show an excess of cells compared with the intercellular substance have more malignity but there are many exceptions. As a rule, also, the more the structure of a tumor departs from the normal structure, the more atypical it is, the greater the malignity. This is well shown in the carcinoma as compared with the adenoma. Both tumors arise from the epithelium, and this constitutes the essential element in their structure. In the carcinoma the epithelium forms solid masses and strands, the cells having no definite relation to each other and the whole structure of the tumor has no analogy with the normal epithelial structures. The cells have lost all function and even their capacity for orderly form and arrangement, retaining only the characteristic of growth. Between the masses of cells there is connective tissue which does not form an integral part of the tumor and whose chief function is to bear the blood vessels for the nutrition of the epithelial masses. Neither blood vessels nor connective tissue penetrate within the epithelial cell masses. In the adenoma the separation into epithelial cell masses and stroma is as pronounced as in the carcinoma, but the epithelial cells do not grow in an atypical disorderly manner but have the same definite relations to one another which they have in a gland. They retain to a certain degree, at least, the characteristics of their type. Owing to this typical arrangement there is less tendency for the cells to be separated from their connections and invade or be carried into the surrounding tissue. In certain situations, however, as in the alimentary canal, the adenoma may be fully as malignant a tumor as the pure carcinoma. The same departure from the normal type is seen in the sarcoma as compared with the fibroma; although arising from the same tissue as the fibroma it is atypical in being composed of cells with little or no intercellular substance. In the fibroma the cells retain their physiological property of forming intercellular substance.

That condition of general malnutrition termed "cachexia" which is so often found in the bearers of malignant tumors, cannot be explained by any single factor. It is true that the tumor cells make a stronger demand on the nutritive forces than can the normal tissues, but the withdrawal of nutrition alone cannot account for the cachexia. With the rapid cell growth of malignant tumors there is constant degeneration and absorption, and such products of degeneration have a toxic action on the body. There is also in many cases the accompaniment of intense pain due to the pressure of the growing tumor on sensory nerves, producing sleeplessness and anxiety. The greatest degree of cachexia may be observed in cases where, with these conditions, there is interference with the nutrition of the body due to the situation of the tumor, as when constriction of the alimentary canal is produced.

The study of the regeneration of tissues has shown us that like tissue comes from like. Epithelium only develops from epithelium, blood vessels only from blood vessels, etc. The formation of unlike tissue is termed metaplasia, and tissues nearly related can be formed from one another. Thus it is possible for the several simple forms of epithelium to be transformed into one another, as when the interior of the uterus becomes covered with squamous epithelium, or when islands of squamous epithelium are formed in the trachea. The various forms of connective tissue can be formed from one another. In chronic inflammatory conditions both cartilage and bone can be formed in connective tissue at a distance from normally situated cartilage and bone. Tissues wholly unlike, representing a wide differentiation, cannot pass into one another. The same holds true for the tumors. A tumor representing a definite tissue is only formed from such tissue, an epithelial tumor arises only from connective tissue. This holds good even for the differentiated epithelial structures. A tumor of the squamous epithelial type only arises from squamous epithelium, a cylindrical cell carcinoma only from a surface covered with cylindrical epithelium, a glioma only from pre-existing neuroglia. But there seem to be many exceptions to this rule. There are certain tumors which differ in all respects from the tissue from which they apparently spring. It is not uncommon to find a tumor in the kidney surrounded by kidney substance and apparently springing from this, which repeats the structure of the adrenal gland. In the same way tumors of the parotid may contain epithelium very unlike the epithelium of this gland and in addition cartilage and other structures. In tumors originating in the genital glands we may find among a variety of tissues highly differentiated epithelial structures. Then tumors are to be explained in two ways. They either develop from cells such as the germinal cells, male or female, which in themselves carry the capacity of forming the further differentiated tissue, or they develop from portions of embryonic tissue which have in the course of development become separated from their organic connections and hence do not undergo further development. These tumors of complex structure are termed "teratomas" from the analogy which they show to the malformations, or embryomas from the similarity of their tissue to that of the embryo. As we shall see later this theory of embryonic inclusions plays an important part in the etiology of tumors.

Of the cause of tumor formation our knowledge is most deficient. The theories which have been advanced and in many cases defended with great ingenuity may be considered under three heads. First, the traumatic theory, which assumes that a tumor forms in consequence of an injury to a part. It is probable that this theory has a wider acceptance than any other. It is based largely on statistical evidence. A person presenting a tumor is asked in regard to an antecedent injury. The character of the injury and the length of time which has elapsed between its receipt and the appearance of the tumor is little considered. There is a tendency always to connect a present with some antecedent event, and careful inquiry can usually elicit a history of injury which would have been otherwise forgotten. The tendency to refer a tumor to an injury seems to me very much like the widespread belief of the laity that a malformation may be due to some event which has produced a mental impression on the mother. The examples most usually cited as evidence of the relation between tumor and trauma are the carcinoma of the lower lip in man, supposed from the habit of smoking, and carcinoma of the scrotum which develops in chimney sweepers as a result of the constant irritation produced by the soot. It is perfectly true that the carcinoma of the lower lip is much more common in men than in women and that the habit of smoking is more prevalent in men. But the traumatic theory does not explain why the tumor develops chiefly on the lower lip. Carcinoma of the cheek is, if anything, more common in women than in men, notwithstanding the more frequent injuries produced by the shaving habit. Epithelial tumors do not appear on those portions of the surface of the body which are most subject to injury. The epithelial carcinoma is comparatively rare on the hands, and almost unknown on the feet. Carcinoma of the rectum does not appear as a rule immediately at the anus, where we might suppose that injury and irritation would be greatest, but higher up in the gut and at the point where the squamous epithelium of the skin joins the cylindrical epithelium of the alimentary canal. It has been held that a trauma may act in two ways in producing a tumor. In one theory the cells may be excited to proliferation and this may continue, finally leading to the production of a tumor. The matter of cell proliferation is not as simple as it appears on first sight to be and is only one of the phenomena which the tumor presents. The surest way to produce a proliferation of cells is by an injury. Depending upon the character of the injury there may be a great difference in the degree and the character of the proliferation. The action of certain bacteria is characterized by the formation of new cells in their vicinity, and the new tissue produced may be so characteristic that we can determine from it the causative agent, as in the case of tubercle and leprosy bacilli. In other cases around a simple injury a tissue is produced which differs from the normal tissue of the part in the abundance and character of the cells, which extends considerably beyond the territory immediately injured and which has a certain similarity to the tissue of certain tumors. Certain toxic substances, particularly bacterial products, excite proliferation in tissues apparently not affected by the direct injurious action of the agent. One of the most striking examples of proliferation is seen in the lymph nodes in the vicinity of the vaccination area in vaccinia. The typhoid toxin has a remarkable influence in producing proliferation of the endothelial cells, particularly in the lymph nodes and spleen. Other agents may excite to proliferation the peritoneal epithelium or the cells lining the capillaries of the glomeruli of the kidneys. All of these examples, however, whether acting locally to the injury or at a distance, can only be regarded as in the category of regeneration. The injurious substance, whatever its nature, affects the interrelation of cells or systems of cells with each other and with the organism as a whole and proliferation takes place until the normal balance is restored. In certain cases, as between the epithelium and the connective tissue, one tissue seems to hold the other in check. In case of continued impairment of the connective tissue, the epithelium, where it comes in contact with such tissue, has the power of invading it and growing as in an epidermoid carcinoma. As soon as the limit of the injured tissue is reached the epithelial growth ceases. All of these examples are far removed from analogy with tumors. The new tissue does not continue to grow as a parasite and independently; it ceases when the integrity of the organism is restored and when the action of the agent producing the injury is removed.

In the second place it is held that the injury may lead to tumor formation, in that by means of it cells are separated from their organic connection with the tissue to which they belong and that such separated cells may assume independent characters and become the origin of tumors. Ribbert was formerly inclined to assign to such separation and displacement of tissue an important rôle in the production of tumors. There is no experimental evidence for such view. Tissues so displaced either after remaining a time are absorbed and disappear or they become permanent and grow as in their old situation. There have been a great number of such experiments in which both adult and fetal tissues have been separated from their normal connections and implanted in other parts. Embryonic and fetal tissues so displaced show a greater activity of growth than adult tissue, but finally are, like these, absorbed and disappear. In considering the effect of trauma in the production of tumors the very numerous experiments which have been made on man are usually left out of consideration. I allude to effects of surgical operations. In these the most varied injuries are produced. In most cases in addition to the acute injury involved in the incisions there is combined the chronic injury and irritation of the sutures. Moreover, the most ideal displacements of tissue are produced. Cells and tissues in greater or smaller masses are separated and included in foreign tissue. It is probable that in every suture placed in the skin epithelial cells are dragged into the subcutaneous tissue, and this is more particularly the case in intestinal surgery. Yet I have never heard of an instance in which a tumor, with the possible exception of a keloid, appeared in the site of a suture after a surgical operation. Most surgeons, I think, hold with greater or less tenacity to the traumatic theory of tumor formation, and yet the thought of the possibility of a tumor following their traumas does not enter into their calculation. In any consideration of the traumatic theory it must be remembered that tumors of various sorts are quite common pathological conditions, that traumas are also common and that combinations of the two incidents might be frequent and striking. The theory lacks all experimental confirmation and, as it stands at present, it has much the same footing as does the theory of maternal impressions as a cause of malformation. In both there are many striking coincidences.

Another theory which has had many defenders in the past two decades, though less now than formerly, is that of living parasites being the cause of tumors. In the first place an analogy was sought between certain of the infectious diseases, especially tuberculosis, and the malignant tumors. At first sight the analogy seems striking. In both there is a characteristic tissue produced, and a primary focus from which the disease extends, the extension taking place by means of the blood and lymphatics. There is, however, this striking difference: In the case of the tubercle there is an agent, the tubercle bacillus, which is carried to various places and excites proliferation in the various tissues leading to the formation of the tubercle. In the malignant tumor it is the tumor cell which is carried from place to place and this does not excite proliferation but itself proliferates. The cancer cell has its analogy not with the tissue which is produced by the bacillus but with the bacillus. The part which the tissue plays is to act as a host, in greater or less degree hospitable to the invader. The tissue reaction which is often seen around a tumor metastasis is the analogue with the tubercle. That it is the tumor cell to which the metastasis is due is an easily observed fact. In favorable cases it is possible to follow the formation of a metastatic nodule from a single cell, and isolated cells are often found in the lymphatics and blood vessels on their way to lodgement and metastasis production.

Support was found for the bacterial theory in the fact that cultures made from tumors often showed the presence of bacteria. It was soon found, however, that these bacteria were not specific, that they were found chiefly in tumors to which bacteria had access by ulceration and that they represented nothing more than common, invading wound bacteria. As we have become better acquainted with the different classes of infectious agents each class in turn has undergone the odium of accusation as the etiological agent of tumors.

Following the bacteria the blastomycetes had their turn. They were not only found in tumors as were the bacteria but tumors were said to be produced by the injection of pure cultures into animals. Certain of these organisms are infectious for animals; they find in their tissues conditions favorable to their growth and produce circumscribed nodules varying in size which to the naked eye greatly resemble tumor metastases. As in the tubercle, histological examination shows that the nodule is composed of actively multiplying organisms and cells coming from the tissue.

The protozoa seemed to offer a still more favorable field for etiological quest. Many of these are intracellular parasites, and in the course of their cyclic development they assume a variety of forms within the cell. No infectious agent produces a lesion which seems to have such an analogy with the tumor as in the coccidial disease in the rabbit's liver. The organism here enters the epithelial cells of the bile ducts. These cells proliferate with great rapidity, papillary ingrowths into the ducts are formed and circumscribed nodules are produced which have, both to the eye and microscopically, a striking similarity to papillary and intracanalicular papillomata. But the cells of the nodule are not infectious; they are produced by the action of the coccidium, and apart from this organism they have no independence. The striking morphological changes which are produced in the development cycle of the coccidia also led to the belief that certain small bodies, often found included in tumor cells, chiefly in carcinomas, were forms in the developmental cycle of some protozoan. As knowledge of the protozoa increased and better technical methods for their study were developed this has appeared always more improbable. There are undoubtedly certain microscopic things often found included within tumor cells the nature of which we do not know. Their character probably varies; some of them show similarity in form and size and seem of the same character, but others vary in all respects. Nothing approaching a protozoal cycle has been made out, and the inclusions are best explained as products of cell and nuclear degeneration, or products resulting from inclusion of other cells, or products of cell secretion.

And finally the spirocheta have had their turn. They have been described in the transferable tumors of mice and in turn shown to be a common reinfecting organism in the mouse, and their occasional presence in tumors to be explained as is the occasional presence of bacteria. Further support of the infectious theory was given by the discovery that the tumors of certain animals are inoculable. Carcinomata of mice are inoculable and a few other tumors, both carcinomas and sarcomas, have been found in rats which were capable of transmission. In the ordinary inoculation procedure small pieces of tumor are rubbed up into an emulsion which is injected beneath the skin, or a small piece of tumor tissue is placed in an incision beneath the skin. But this has been shown to be very different from the transmission of an infectious disease. The infectious disease is transmitted by transferring to the inoculated animal the cause, and this growing in the tissue produces the lesions by its reactions on the tissue. In the transference of the tumor the tumor cells grow in the inoculated animal just as they would grow in a metastasis. It is here again the tumor cell which has the capacity of a parasite, and not an inoculation of an infectious agent, which causes the tumor cell to form. The only parasite it would be possible to conceive of would be one living within the cell and transferred with the cell. The defenders of the parasitic theory seem to have had in mind only tumors of the carcinoma type.

But all tumors have so much in common that any cause must be equally applicable. Moreover; there must be a different cause for every tumor, certainly our knowledge of infectious diseases forbids us to believe that the same parasite can in one instance produce a carcinoma, in another a fibroma, and in another a teratoma. The parasitic theory could give us no explanation whatever of the congenital tumors. Take the example of a congenital tumor of the kidney, in which the tissue more closely resembles the Wolffian body than it does any adult tissue, or the congenital tumors of the retina in which there are embryonic neural structures, or the glioma of the coccyx in which neuroglia is found far removed from its normal situation, and it is impossible to think of an infectious agent producing such formations.

Some analogy has even been sought in the comparison of the infectious nodular growths in plants with true tumors. These, however, are not tumors except in the sense that the coccidial nodule in a rabbit's liver is a tumor. Again, tumors seem to be more common in those organs of the body which are most secure from their structure and situation from ordinary infections. Apart from the accidents which may happen in pregnancy and lactation there are few infections which have their seat either in the uterus or in the mamma. It would be useless to go on enumerating the arguments against infection by living organisms being considered a cause of tumors. Every theoretical consideration is against the theory and not one proven fact has been shown as a substantiation of the theory. It is, however, interesting to see how stimulating to knowledge an hypothesis even with so little in its favor may be. It was brought forward at a time when the limits of pure anatomical research on the subject by the methods then in use seemed to be exhausted. It served to stimulate the imagination and to again turn the attention of able investigators to renewed research, and the most important of the knowledge we have on tumors may be traced to the influence of the hypothesis. The literature on the subject, both pro and con, has reached an extent that it is almost impossible for one to control it. It would be absurd to say that the hypothesis cannot be true, but if an infectious living organism be found, which will produce a growth having all the characteristics of a true tumor it must be an organism of a different class, and act in a way at variance with all we know of the action of infectious organisms.

The third theory of tumor formation is that known as the embryonic or germinal theory. This theory has so far held its ground much better than either the traumatic or the infectious theory. Although not original with Cohnheim it was advanced and defended by him with so much vigor as to have become known as the Cohnheim theory. Briefly stated, this theory assumes that in the course of embryonic development, certain of the tissues do not undergo perfect development but remain in an imperfectly developed or embryonic condition and are included within the developed tissues. It is assumed, further, that in the course of embryonic development in the opposing intergrowth of tissues, and in the complexities of tissue formation which then take place, such separation of embryonic tissue easily takes place. Such separated tissues will then be abnormally situated or included in other parts, and may go on to complete anatomical or functional development as is seen in the accessory spleen, adrenal gland, and pancreas, or they may remain undeveloped or imperfectly developed. Such embryonic or imperfectly developed portions of tissue withdrawn from the influences of the interrelations of parts would be capable of life as independent of the organism as a whole as a parasite would be. The cells would retain the embryonic capacity of growth and be free from the restrictions of growth which are imposed upon tissues by their relations with each other and with the body as a whole. This theory brings the subject of tumors in close accord with the malformations, in thus referring them to an embryonic origin. This theory accords best with what we know of tumors, and so far as I know there is nothing incompatible with it. It is perfectly certain that in embryonic development such separations of tissue not infrequently take place, and also certain that tumors do develop from such separated parts. Thus we may find portions of fully developed adrenal tissue included either in the capsule or in the cortex of the kidney, and we also not uncommonly find tumors in this situation which have the characteristics not of the kidney but of the adrenal gland. Even tumors which are seemingly of glandular origin often do not arise in the substance of glands but in tissue adjacent to but not connected with the gland. A great many examples might be cited as evidence that tumors frequently originate in such misplaced tissues, but the theory does not give a complete explanation. It does not explain the growth; it does not show why these misplaced tissues develop into tumors; why the development is associated with certain periods of life; why it is not possible to produce tumors by the artificial inclusion of embryonic tissue; why the inoculation of tumors succeeds only in certain animals. To this hypothesis as to the origin of tumors which seems to have so much in its favor there must be added another as to cause. We must assume that at a certain period these germinal remains gain a power which enables unrestricted growth to take place, or what amounts to the same thing, the other tissues lose their power of restraining and regulating growth. It would be impossible in the limits of this paper to enter into a consideration of this part of the subject.

Nor will it be possible for me to take up the subject of the experimental study of tumors which is being actively prosecuted in a number of laboratories and by men well qualified for research. It is from such experimental study in which all of the conditions can be controlled that we have most to hope. The subject of tumors is, further, one of general biological interest and should be attacked by the embryologists and zoölogists who bring to the investigation both new methods and new points of view.

Original Articles.

STENOSIS OF THE PYLORUS IN INFANCY.*

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We all are more or less familiar with stenosis of the pylorus in adult life, whether it be caused by a benign or a malignant lesion. Stenosis of the pylorus occurs also in young babies. It presents a unique pathology — benign in its anatomical characters but most malignant in its fatality. It occurs with greater frequency than is generally supposed. It is too often overlooked. The diagnosis is sometimes confusing. One type of the disease is almost invariably followed by death if treated unintelligently.

It is for these reasons that I propose to present for your consideration the salient facts concerning stenosis of the pylorus in infancy and its surgical treatment. These are subjects of the very greatest practical importance to the general practitioner of medicine, the pediatrist and the surgeon.

FREQUENCY.

Scudder and Quinby, in May, 1905,[1] two years ago, analyzed all cases of this disease. During seventeen years' literature, since 1888, 115 cases were recorded, 55 autopsies and 60 operations. Since this time, during the past two years, from May, 1905, to May, 1907, about 40 cases have been reported. Papers upon this subject have contained the records of isolated cases treated medically and surgically. No very important addition to our knowledge of the subject has been made during this time.

The pathologist at autopsy and the surgeon at operations upon the living baby have together convinced all hitherto doubting pediatrists and internists that this disease exists as a distinct entity and that it demands active consideration in the differential diagnosis of the acute abdominal diseases of early life. In those communities in which there exists an accurate knowledge of this disease cases are being repeatedly discovered. Stenosis of the infantile pylorus is not uncommon.

PATHOLOGY.

The findings are constant and uniform. Occupying the position of the normal pylorus is a tumor, small, smooth, oval, hard, movable and without adhesions. The tumor varies in size, averaging that of a hickory nut. This tumor has a constant structure — a hyperplasia of the circular muscular fibers of the pyloric segment. There is also either an hypertrophied or a thinned stomach wall, occasionally a dilated esophagus, a narrowing of the pyloric lumen, an hypertrophy of the mucous membrane and a collapsed empty intestine.

ETIOLOGY.

The cause of the hyperplasia of the circular muscular fibers is unknown. There are three hypotheses suggested to explain the conditions:

1. That of Pfoundler — a spasmodic contraction due to post-natal gastric irritation.
2. That of Nicoll — a simple overgrowth of the sphincter muscle of the pylorus.
3. That of Thompson — an inco-ordinated action of the stomach muscles dependent on functional disorders of the gastric nervous system, resulting in gastric spasm.

A discussion of the etiology is fascinating but unprofitable.

CLINICAL PICTURE.

An apparently healthy breast-fed child is born. Upon the third or fourth day he vomits whatever he may have taken from the breast. The vomiting continues at irregular intervals, and is evidently independent of the quality of the food. The child loses weight. All kinds of artificial foods and modifications (home and laboratory) of cow's milk are used without permanent success. He wastes away, weakens and dies.

The cause of death affixed to the certificate is one of the following: "Infantile atrophy," "Gastric irritation," "Sub-acute gastritis," "Inanition," "Chronic gastritis," "Gastro-intestinal catarrh."

If in cases of this kind observations were made with accuracy the following significant facts would often be found: the baby's tongue is perfectly clean; the breath is sweet and natural; the appetite is a little less ravenous than usual; though hungry be doesn't feed greedily, he is soon satisfied.

After feeding, the baby shows signs of abdominal discomfort, his face is covered with grimaces, he wriggles about uneasily, he even cries wth evident pain, he then vomits. The vomiting is very forcible, through the nose as well as mouth; is often mistaken for a simple regurgitation from a full stomach. The hypertrophied stomach wall contracting violently against the obstruction at the pylorus causes the gastric contents to be expelled forcibly through the relaxed cardiac orifice.

The frequency of the vomiting is dependent upon the number of feedings and upon the amount taken at a feeding. The quantity vomited varies with that received into the stomach. The material ejected is the milk and food taken. There is usually no bile, no mucus and no blood in the vomited material. There is almost never hyperacidity of the stomach contents. After the vomiting the baby is quiet and sleeps until he next feels hungry.

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* Read at the Annual Meeting of The Massachusetts Medical Society, June 11, 1907, Section in Surgery, and at the Annual Meeting of the Dubuque (Iowa) County Medical Society, June 18, 1907.

[1] The Jour. of the Amer. Med. Asso., May, 1905.

If the abdomen is carefully palpated a distinct tumor may be felt above and to the right of the umbilicus. This tumor being small and partly covered by the liver is not always readily felt. An enlarged mesenteric gland has been mistaken for a pyloric tumor. If the abdomen is inspected in a good light immediately after a feeding, a strong gastric peristalsis will be noticed. This was very evident in two of the cases I have to record.

The dejections are somewhat variable in character, but because of the slight amount passing through the pylorus they are small and meconium-like, occasionally fecal in character, at times watery.

The stomach will be found dilated in proportion to the duration and degree of the obstruction. Epigastric fullness and a sunken lower abdomen are suggestive.

The child loses in weight despite treatment, because of starvation.

DIAGNOSIS.

Characteristic vomiting; a pyloric tumor; visible gastric peristalsis; gradual and progressive loss in weight despite skilled feeding; this sequence of these signs is significant. An absence of a *seemingly important* sign is of comparatively little consequence. The total picture is most suggestive.

The obstruction to the pyloric lumen caused by the tumor is variable. Difficulty in diagnosis is measured by the degree of obstruction. There is little doubt about the diagnosis if the obstruction becomes complete. If on the other hand the obstruction is incomplete or partial, there will be doubt.

An obstruction may result from a tumor at the pylorus, also from a spasm of the pyloric muscle independently of tumor formation. The symptoms may simulate a chronic gastric indigestion. Each of the signs found in cases of pyloric stenosis may be present in cases of infantile indigestion, but the particular quality and sequence of symptoms characteristic of pyloric stenosis are absent. The completed picture is wanting. Vomiting is not always symptomatic of obstruction in young babies, cerebral disease may be imminent. There is little danger of confusing an intestinal indigestion with pyloric stenosis.

Pyloric stenosis in infants if untreated is usually fatal. A few cases are reported in which medical treatment is said to have effected a cure. Unfortunately no medically treated case has been demonstrated to have had the disease. Surgical treatment has cured more than half of these desperate cases.

OPERATIVE TREATMENT.

The degree of the obstruction and the general condition of the child should be the basis for treatment. The cases arrange themselves into three groups:

1. The obstruction is evidently complete or almost complete — operation is demanded at once.
2. The obstruction is partial and the child is not doing well and is losing weight — operation is likewise indicated.
3. The obstruction is partial and the child is doing fairly well, and is not rapidly losing weight. With this third group one may be justified in experimenting with medical treatment, but only for a short time. It must always be remembered that remissions of symptoms occur. Improvement may be but temporary; the strength of the child must not be allowed to greatly diminish before operation is done. In this third group (in which obstruction is partial, and the child is doing pretty well under medical treatment) are found the so-called cases of " pyloric spasm " which are supposed to yield to medical coaxing. Such is the case reported by J. L. Morse, in September, 1906.[2]

It is more and more evident that prolonged medical treatment of certain of these cases is irrational. The risk and danger to the child's life is often greater than if operative treatment were instituted early. Heubner of Berlin presented a series of cases all treated medically without operation. His mortality rate is low. I believe, from a careful analysis of his cases, that deductions cannot be drawn from his 21 cases till they are followed a longer time. It is questionable if he had to do with true pyloric stenosis.

There are very real dangers attending the treatment of this disease. The immediate danger is apparent, viz., the letting slip the opportune time for operation, misjudging the condition of the child. The later danger is that there may occur in youth and in adult life gastric difficulties dependent upon the persistence of infantile conditions. Instances are recorded by Beardsley, Sonnenberg, Hansy and Shaw which make this latter possibility very real. Both of these dangers are probably eliminated by operation.

The mortality following operation still remains high — but the mortality of operation upon weak and wasted infants will always be large. Many different operators with varied technique and the consequent absence of exactness will always record a high mortality in these desperate cases. An exploratory laparotomy upon a young infant in which the diagnosis is in doubt, and in which improvement has ceased, is certainly wise. I have to record one such exploration. The operation of choice in cases of pyloric stenosis is a posterior gastro-enterostomy, done with clamp and suture. The Loreta operation of divulsion and pyloroplasty are two other procedures thought well of by some.

There is little doubt of the existence of cases which simulate pyloric stenosis with tumor, and which improve and apparently recover under some one or more of the following procedures: resting the stomach; lavage of the stomach with weak alkalis; warm abdominal poultices; nasal tube feeding; the administration of opium and atropine; the giving of opium before feeding (one eightieth of a grain); the use of alkalis; experimentation with food by changes, both in quality and quantity; rectal feeding.

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[2] Bost. Med. and Surg. Jour., Sept. 27, 1906.

That there actually are cases[3] of pyloric stenosis with tumor, which have recovered completely under medical treatment has not yet been demonstrated. Until this demonstration is made, I prefer the certainty of surgical treatment to the uncertainty and very high mortality of medical experimentation. Seefish in 1904 mentioned three cases which "recovered" under medical treatment, and were all operated upon before twelve years of age. Surgical supervision of medically treated cases will help to diminish the large mortality of cases treated medically.

From my own limited experience of the past two years, I have to report 5 cases. I will not at this time relate these cases in detail (two have been previously recorded), but will mention briefly certain facts of interest concerning each.

In the first case operative treatment was withheld because the child was moribund. The stomach of this child exhibited at autopsy a typical pyloric tumor and an hypertrophied stomach wall.

In the second case an exploratory operation was done upon a very sick child, and the tumor was not present. The child has since recovered, and is, after a stormy experience with various foods, increasing in weight.

Of the 3 remaining cases, in each of which a posterior gastro-enterostomy was done:

Case III[4] has the distinction of being the youngest case yet operated upon; he was fourteen days old. He had been artificially fed. The stomach was not very large.

Case IV[5] was twenty-four days old. He had vomited from the third day after birth. The stomach wall was thickened. He had been breast fed.

Case V [recorded here for the first time; to be reported in full elsewhere] had likewise been breast-fed. He was twenty-two days old. The stomach wall was edematous, and markedly thickened in the pyloric part.

In the last 3 cases the signs of the disease were typical. The tumor was characteristic. All 3 cases recovered from the operation. All have been followed, and each child is now robust and well, two years, one year and ten months, and seven months, respectively, since the operation.

Sufficient time has now elapsed to make it possible to know the real results of a gastro-enterostomy in these cases. I have succeeded in determining the condition of certain cases of other observers several years after operation. The cases of Abel, Löbker, Fritzsche, Kehr, Schotten, Giles, and Stiles, quoted in the original paper,[6] are alive and well; four of them six years, one four years, one three years, and one two years following operation. These results are significant. They demonstrate: 1, that these presumably otherwise normal children have escaped the difficulties of obstruction; 2, that nutrition does not suffer following gastro-enterostomy in cases of infantile pyloric stenosis. Posterior-gastro-enterostomy is an effective measure under these conditions.

These cases of gastro-enterostomy following pyloric stenosis in early life form a series of great experimental value. The operation is done under almost normal physiological conditions, excepting for the mechanical obstruction. Presumably no other disease exists in these tiny new-born individuals. There is very little disturbance of digestion. The results are absolute. The effects produced by the operation are uninfluenced by disorders of digestion and other diseased states so commonly found in adults. These results, therefore, go far to confirm and substantiate the evidence accumulating from adult cases that posterio-gastro-enterostomy properly performed is physiologically harmless. Pyloroplasty and gastroduodenostomy, whether of the Kocher or Finney type, are theoretically and physiologically ideal procedures. Posterio-gastro-enterostomy is proved to be physiologically satisfactory, and in these cases of infantile stenosis is certainly anatomically the choice of all procedures. Whether the obstructed pylorus recovers itself after the gastro-enterostomy and functionates naturally after a time is as yet undetermined, because there are no records of autopsy findings long after operation. Katzenstein by his study of alterations of stomach digestion following gastro-enterostomy and Joslin's studies in metabolism of fats lead one to view with interest these cases of gastro-enterostomy in infants, particularly with reference to the subsequent nutrition of the individual. No instance of peptic jejunal ulcer is recorded following a posterior gastro-enterostomy for pyloric stenosis in infancy.

I may be pardoned if I mention here some of the practical matters which one treating these cases surgically will find helpful.

Preparation of the baby for operation. — The baby is weak. A nutrient and stimulating enema containing salt solution and whiskey, to make ℥ij, given very slowly through a soft rubber catheter, will help the child remarkably, especially if there is time to repeat it before operation. The stomach need not be washed out, for the vomiting which has persisted has usually left the stomach empty. The skin of the abdomen is very sensitive. Local preparation should be restricted to bathing the abdomen after etherization, first with castile soap and water applied with a gauze sponge (green soap is to be avoided) and then with warm 70% alcohol. The arms and legs are to be covered with sheet wadding or an equivalent, secured best by a little bandaging. The baby may lie upon a blanket, underneath which are two or three warm water bottles, the water not being warmer than 100° F.

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[3] Such are supposed to be the cases recorded recently by Reinach, Marx, Murdock, Morse, Harper, Griffith, Sutherland, Hutchinson, Neild, Rob, Crahim, and Heubner, all carefully observed and each treated by medical means. The cases have been followed and are known to be free from all signs and symptoms of gastric disturbance from several months to two and one-half years after treatment ceased.

[4] Bost. Med. and Surg. Jour., Dec. 14, 1905.

[5] *Ibid.*, Feb. 22, 1896.

[6] Jour. of the Amer. Med. Asso., May, 1905.

The *anesthetic* is preferably ether only. This should be administered by a most skilled anesthetist. Little ether is needed after the abdomen is opened. It is essential that the anesthetic be continued sufficiently to preclude the likelihood of a prolapse of gut from the wound. There is very great shock to a little baby from over etherization.

The *instruments* should be adapted in size to the very small parts to be manipulated. Small short-toothed forceps and small scissors should be used for work upon the gut. Retractors are not needed and their use should be avoided. Retractors may increase shock, traumatize the wound and stimulate post-operative adhesions. I believe that a small clamp is efficient in preventing hemorrhage from the bowel wall, in diminishing soiling of the peritoneum by intestinal contents, and that it facilitates the suture. A needle holder is unessential — it's a time consumer — the fingers make the best needle holder in the operation of gastro-enterostomy. A zero or double zero chromic catgut is satisfactory for the inside intestinal suture, while a fine Pagenstecker linen thread is secure for the inside suture in the gastro-enterostomy.

THE OPERATION PER SE.

The *abdominal wall* is extremely thin. The abdomen may be opened unexpectedly. The *liver is large.* The median incision will be best made both above and below and to the left of the umbilicus. The incision should be large rather than small, perhaps three inches long. The small opening necessitates greater handling of the abdominal contents. The little larger opening enables the operator to secure the jejunum very readily without the trauma of much handling. Nothing should be removed outside the abdomen excepting the parts to be operated on, the stomach's posterior wall and the jejunum. The great omentum, containing little or no fat tissue, is drawn upward as a thin film from over the intestines. Care should be exercised lest the very transparent and veil-like thin gastro-colic omentum be incised too vigorously and the stomach wall itself suffer by being nicked by the knife. The *mesentery of the jejunum* is short in proportion to the width of the gut as compared with the adult mesentery, consequently it is with difficulty at times that the intestine can be brought forward to the anterior stomach wall for an anterior gastro-enterostomy without constricting the transverse colon unduly. In my cases I have made no loops, and have placed the stoma near the origin of the jejunum. The *stoma* in the infant's intestine should be from three-fourths to one inch long when sutured. If a very large stoma is made, obstructive difficulties may be caused by the wall of the gut opposite the stoma blocking its lumen, as suggested first by Cannon. This I have had happen following gastro-enterostomy upon cats. After suture, the parts are returned to their natural places so far as possible, the jejunum to the left of the spine.

In *closing the abdominal wound* no attempt should be made to close by layers. Through and through sutures of silkworm gut are satisfactory. These sutures should not be drawn too tight, for the suture cuts its way through the young skin readily. Some one has suggested that these sutures be tied over bits of tiny rubber tubing to prevent them cutting the skin.

In placing the *sutures* the needle should avoid wounding the large vessels of the suspensory ligament of the liver which may lie very close to the right edge of the wound. The sutured wound is covered with a gauze sponge, and the abdomen is supported by two or three narrow straps of zinc oxide adhesive plaster. Traction on the sutures is reduced thus to a minimum. The position of these plasters may be changed to avoid their chafing the skin. An ordinary binder helps to support the abdomen.

AFTER OPERATION.

Feeding the baby. — The importance of the proper feeding of these tiny little babies after operation for pyloric stenosis cannot be overstated. If the intestinal suture is well placed, the stoma is strong and is in less danger of leaking at first than after some ten days. It is common experience with suture of the intestine in the adult that the second week is the time of death from leakage. The feeding should, if practicable be in the hands of a skilled feeder of babies. Breast milk is the ideal food. Difficulties arise rapidly if an artificial food is needed. The amount to be allowed at each feed must be tentatively determined; fairly large amounts are usually well borne immediately after the operation. The baby is in great need of water, and it is a mistake to keep the total quantity low, especially if the food used agrees.

If breast feeding is possible the baby is allowed to nurse for two minutes at first. The time is gradually lengthened. If breast feeding is impossible it is best to begin with a whey, half ounce every two hours. Two days later may be used a weak modified milk, 2% fat, 5% sugar, 5% proteid, 5% lime water, and equal parts water. Gradually one may increase the richness of this mixture. Post-operative rectal feeding may be needed for a few days. Salt solution enemata are helpful.

The *temperature* is often high, even though there is no evident sepsis. In two of my cases the temperature immediately after operation was 104° F. and 105° F. It represented a normal reaction to this operation. This temperature gradually dropped during six days and then remained normal.

Even though the operation is done upon a weak baby it is not productive of great *shock.* The baby behaves very much in this particular as the adult after a stomach operation.

Vomiting does not cease with the operation. Vomiting persists for several days and ceases gradually. There was no vomiting in my first case (No. 3) after seven days; in my second case (No. 4) after six days; in my third case (No. 5) after about six days. This post-operative vomiting is less forcible than the vomiting previous to operation, and of course contains a little bile, and may contain a little old blood the first twenty-four hours. The post-operative vomiting may cause a breaking open of the wound, unless it is carefully sutured, with resulting prolapse of the intestine. This has happened in a few reported cases. In one case with which I am familiar replacement of the gut under ether was followed by a perfect recovery.

From the anterior abdominal wound may start an oozing of *blood* the second or third day. This occurred in one of my cases (No. 5). It was difficult to control this oozing until a suture was taken through the whole abdominal wall. The amount of blood lost was not great, but was sufficient to make an appreciable difference in the facies of the child. Little babies bear a hemorrhage poorly.

There may be considerable *abdominal distention* following operation. This is relieved by small suds and glycerine enemata. In one case (No. 2) of exploratory laparotomy, six days after birth, there was considerable difficulty in keeping the sloughing *umbilical cord* from infecting the abdominal wound at the time of operation. Immediately after operation the cord was kept dry with boracic acid powder and neither a primary nor a secondary infection occurred. A few cases are recorded in which convulsions followed operation. These convulsive movements may be allied to the cases of gastric tetany occurring in adults. One case with which I am familiar recovered after these convulsive attacks.

Hernia, or a bulging of the abdominal wall at and in the region of the cicatrix, has occurred in two of my cases. This bulging has not proved sufficiently great to demand operation. A snug abdominal binder should be worn for one year after operation. The suture had best be removed on about the seventh day, or before much cutting of the skin is present, and the abdominal wall supported by zinc oxide adhesive plaster strips. In no group of cases with which I am familiar is the elimination of all the causative factors of shock so rapidly effective in establishing convalescence as in these cases of infantile pyloric stenosis.

Speed, implying familiarity with one's technique; absolute asepsis; hemostasis; a minimum amount of handling of the gut; an absence of trauma to the abdominal wound; conserving the body heat — these are the requisites of success in operations upon these tiny individuals.

The Pasteur Institute of Minnesota at Minneapolis is fully equipped and ready to receive patients.—*Journal American Medical Association.*

LEAD POISONING IN A RURAL COMMUNITY.*

BY WILLIAM N. COWLES, M.D., AYER, MASS.

The purpose of this paper is to give an account of my experience with lead poisoning among the people of several country towns in my vicinity, viz.: Harvard, Shirley, Littleton, Acton and Ashby, Mass.

The persons affected have been chiefly residents of farm houses, using water drawn from wells or springs through lead pipe. I have observed the cases during the last ten years, at first rarely, but later with increasing frequency, as my interest in the subject and ability to recognize the condition in its various forms have increased.

No attempt will be made to treat of lead poisoning in general. The cases will be related as briefly and with as little detail as possible, consistent with establishing the nature of the affection, and the extent and variety of the damage due to this intoxication.

Mrs. W., sixty-six years of age, consulted me in June, 1899, on account of what she called rheumatism; she was well and active until her present illness. The trouble began eight months before, in the hands, soon spreading to the shoulders, neck, feet, and knee and hip joints, becoming all the time steadily worse.

The finger and wrist joints were swollen and stiff; there were pain and tenderness in the course of several large nerve trunks, both brachial regions being affected.

The pain was much worse at night; she walked with difficulty on the level and could not ascend steps without help; she could not dress her hair, and fed herself with difficulty. There was no apparent paralysis. Lead poisoning was suspected, but inquiry showed that the water supply at her house was drawn from a well by means of a well-sweep and wooden bucket.

No source of lead could be discovered after persistent inquiry, until the patient recalled that about two years before an old lead clock-weight had been accidentally dropped into the well. The well was pumped free of water, and the clock-weight found and removed. In two weeks Mrs. W. noticed an improvement in her lameness, and in four months she was entirely well. She lives at the same place and uses water from the same well, but has had no return of the lameness.

This piece of lead has about 32 square inches of surface. The smaller sizes of lead pipe have more surface than this for each foot of length.

Lead pipe in a well usually goes several feet under water, giving many times the surface of this weight for solution of lead from the *outside* of the pipe.

G. H. C., forty-six years of age, lived with his family on a farm in New Hampshire, for twelve years, from 1891 to 1903, using spring water carried by lead pipe. In April, 1903, he moved to a farm in Littleton, Mass., where he also used spring water running through lead.

In the fall of 1904, a year and a half after moving to Littleton, C. began to be troubled with shortness of breath on exertion. His heart was enlarged, and his radial and temporal arteries tortuous and thickened. A year later lead poisoning was suspected; lead was found in the water used by the family, and iron pipe was put down in place of the lead. Seven months after the lead pipe was removed C. was given a course of potassium iodide, and lead was found in his urine.

At present he bears exertion a little better, but his heart is still enlarged, and his arteries still thick and hard. He has never before had any serious sickness, and comes of a long-lived family.

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* Read at the Annual Meeting of The Massachusetts Medical Society, June 12, 1907.

Mrs. C., thirty-seven years of age, wife of G. H. C., a pale, thin, and delicate looking woman, after living a year and a half in Littleton, began to be troubled by obstinate constipation; the bowels could be moved only by powerful cathartics or enemata; the colon could be felt through the thin abdominal wall like a solid cord. At times the introduction of an enema was impossible, except under the influence of a dose of morphine. The evacuation at such times consisted of small, hard lumps of feces, with much mucus in shreds and strings.

I made a diagnosis of mucous colic, and prescribed a coarse vegetable diet, as recommended by Von Noorden. The patient held to this diet faithfully for several months, with great relief. At this time I flattered myself upon the acuteness of my diagnosis, and the successful treatment of the case.

A year later, in the fall of 1905, Mrs. C.'s abdominal trouble returned with great severity. There were intense colic, constipation, slow pulse, flat abdomen, a distinct lead line on the gums and the discovery of lead in the household water supply. The mucous colic had become plain lead colic; the usual treatment of lead poisoning brought complete relief; Mrs. C. is now well with gain of flesh and ruddy color, and has had no return of the colic, either mucous or lead.

Mrs. G., mother of Mrs. G. H. C., suffered from a persistent and debilitating diarrhea, for two and a half years from the time of moving to Littleton with her daughter, until lead was eliminated from the family water supply, when she recovered, and has been free from diarrhea for the last year and a half.

T. G., seventy-eight years of age, has lived in a farm house in Harvard, Mass., since 1899. The house was then supplied by water drawn from a well through 275 feet of lead pipe. Two years later, in the spring of 1901, his right hand, right leg, left hand and left leg, in the order named, became weakened to such an extent that he was confined to his bed. At the same time he suffered severe but intermittent abdominal pain. The abdominal symptoms and the weakness of his arms and legs became steadily worse, until September, four months in all, when the extensor muscles of both hands and both feet were paralyzed. His abdomen was hard and tender. There was a prominent lead line on his gums. The family was then supplied with water known to be free from lead. He made a tedious and partial recovery. At present, six years after his lead poisoning, his grasps are good, he opens his hands partially and feebly only. He walks with some difficulty, and falls if his knees happen to become much bent. The extensor muscles of his forearms, thighs and legs are wasted and weak. He says he feels well. He has a ruddy complexion, soft peripheral arteries and a normal urine.

J. M., forty-seven years of age, has lived for the last ten years on his farm near West Acton, Mass. Seven years ago he had a serious sickness accompanied by great pain in the abdomen, for which he was treated at the Massachusetts General Hospital where he was told that lead poisoning was the cause of his trouble. He has had a similar sickness every summer since.

I was first called to him in the summer of 1905, for a well marked lead colic, in which he had great pain, constipation, slow pulse, with wakeful and delirious nights. His skin was of a muddy pallor, his hair very gray, his radial and temporal arteries tortuous and hard. There was a plain lead line on his gums.

The family was supplied with water brought from a spring in milk cans. Projecting into this spring was a piece of lead pipe, once used for pumping water into the house. A little probing with a slender stick showed that the water entering the spring came in alongside the lead pipe, after flowing a considerable but uncertain distance in contact with it. There was ample chance for solution of lead from the outside of an old pipe. J. M. was told that this lead pipe was the cause of his sickness, and he was advised to remove it.

A year later, in the summer of 1906, I was called to him again, because of a repetition of his colic, and found the lead pipe still in the spring. He was advised again to take it out. About a month after, he was attacked once more with colic, and the pipe had not been removed. I then told him that he must put away the lead pipe or get another doctor, and he finally got rid of the pipe. Lead was found in his urine at this time. His health has improved, but he is still far from well. After ten years of lead poisoning, at the age of forty-seven years, he looks, talks and acts like an old man.

Mrs. P., eighty-four years of age, has lived for about fifty years in a house in Shirley, Mass. For many years (forty or more) she has been partly crippled with what she called rheumatism. She was not able to walk outside of her house for years on account of lameness of her knee, ankle and toe joints. Her hands were nearly useless. The wrist and knuckle joints especially were swollen and deformed. All these joints were painful and tender, the pain being much worse at night. Many kinds of treatment had been tried without benefit, several at my suggestion. The water supply at this house has always been spring water pumped a long distance through lead pipe. It has been examined and lead was found in it. Two years ago, at my suggestion, water was taken from the public supply through an iron pipe, and the spring water was stopped. Since the change, and with no other treatment, Mrs. P. has lost her rheumatism entirely. She walks with ease and comfort. Her wrist and finger joints are free from swelling and she uses them with much facility.

Mrs. J. E., sixty-four years of age, consulted me in 1897 for "sciatica." There was also a history of rheumatism affecting the joints of the hands, with a long continued, painful affection of one shoulder and arm, the pain being worse at night.

The water supply of the family was drawn through many rods of lead pipe. Lead was found in the water and in the patient's urine. Iron pipe was substituted for lead. Mrs. E. recovered completely and has been free from rheumatism for the last ten years.

Mrs. M. has lived on her farm in Harvard, Mass., forty-seven years. Water for her house comes from a spring, through lead pipe, and contains a dangerous quantity of lead. She has suffered for many years with what she calls rheumatism. Her finger and wrist joints are enlarged and distorted. She suffers pain and lameness in all her extremities. Her health in other respects seems good. Her color is good.

Nellie M., forty-three years of age, daughter of Mrs. M., has always lived at home. She is pale and cachectic in appearence, looking much older than her years. She began to have pains in the extremities, which she calls rheumatism, about twenty years ago. Her left leg and thigh were first affected. Lameness was troublesome, and pain was severe at times. For the last seven years she has suffered much pain in the left shoulder, arm, forearm and hand, worse at night. The left hand trembles with a moderately coarse tremor. She suffers from frequent and severe headaches. These people have been warned many times in the last few years that their water supply is dangerous, but they continue to drink the lead water and suffer the pains.

W. K., fifty-seven years of age, has lived on his farm in Harvard, Mass., eighteen years. During the last five years he has had sciatica, brachial neuritis, and many other painful ailments of an indefinite nature. In March of this year he was seized with severe headache which lasted for two weeks. He has the appearance of a very old man; his heart is enlarged; his radial and temporal arteries are thickened and hard. His house is supplied with water from a spring, through lead pipe. The pipe corrodes so much that it leaks and requires repair several times each year. The water at the house contains considerable lead. K.'s urine contains a large trace of lead.

Mrs. K., fifty-one years of age, wife of W. K., looks much older. Her hair is completely white. Her skin is of a grayish pallor.

In the spring of 1906 she had a severe brachial neuritis. A year later she suffered from a sharp attack of lead colic. K. has been warned of the danger of lead poisoning by Dr. Royal, of Harvard, and myself many times during the last few years, but he has only lately become a believer and turned from drinking lead water.

A. S., fifty-four years of age, first consulted me in 1904, on account of a troublesome vertigo. His heart was enlarged; his peripheral arteries thickened and tortuous; he had a pulse of high tension and the urine of chronic interstitial nephritis. Lead was found in his urine. For ten years he had been using rain water stored in a cistern with distributing pipes of lead. A year later, in 1905, a progressive cerebral degeneration appeared in S., and he died in the summer of 1906.

Mrs. S., Harvard, Mass., in middle life, consulted me several years ago because of recurring pain in the abdomen. She had a plain blue line on the gums and was using water brought to her house through lead pipe. I warned Mrs. S. and her husband of the danger of using the contaminated water, but they were skeptical and clung to the lead pipe. Dr. Royal, of Harvard, tells me that Mrs. S, has suffered several attacks of brachial neuritis in the last few years, and that he has had the water at her house examined for lead, with a positive result. In spite of these warnings they refuse to abandon the lead pipe.

Mrs. R., forty-six years of age, has lived for ten years in a tenement house in Shirley, Mass. She suffers greatly with neuralgic attacks, affecting at various times the head, face, both brachial regions and the right crural region. Such treatment as she has received has been of little use. Her house is supplied with spring water carried in lead pipe. Examination of this water for lead is positive.

Mrs. C., seventy years of age, has lived in a cottage house in Harvard, Mass., since 1891. During much of that time she has been greatly troubled with "rheumatism." In the autumn of 1903 she had several attacks of angina pectoris. She was very pale, with swollen ankles and the urine of a chronic nephritis of moderate degree. The family used water drawn from a well through lead pipe. Examination of the water for lead gave positive result, and its use was stopped. Mrs. C. passed a poor winter with much cardiac distress and edema of the legs. In the spring of 1904 she got some relief and has gradually improved since. She now has the urine of chronic interstitial nephritis, with a pulse of high tension and good cardiac compensation. Her life is tolerable.

George H. C., seventy years of age, husband of Mrs. C., lived in the house now occupied by them from 1850 to 1863, and from 1891 to the present time. He has been the victim of dreadful headaches for many years (forty or more). At the time of the discovery of lead in C.'s well water (1903), he was pale and emaciated and suffered frequently from severe headaches, lasting several days at a time. Since the lead water was stopped he has improved greatly in health. He has lost his headaches, has a ruddy color and has put on much flesh. From 1894 to 1903 Mr. and Mrs. C. passed several winters in California, being much pleased with the effect of the change of climate upon themselves, he always losing his neuralgia and she her rheumatism in California, only to find them again in Massachusetts. Since stopping the lead water they have been as free from these ills in Massachusetts as in California.

Mrs. C., mother of G. H. C., lived in the same house with the same water supply, from 1850 until her death in 1880 at the age of eighty-two years. In 1855 she began to be troubled with "rheumatism," which gradually increased, affecting the hands and feet chiefly. She was completely crippled for the last thirteen years of her life, having comfortable days and intolerable nights.

CONCLUSION.

This group of cases is but another illustration of the many forms in which lead poisoning makes its appearance, and the various kinds of damage done by it.

The acute cases are few; the chronic painful and disabling affections and arteriosclerosis, with the things that go in its train, are in the majority.

My own experience is one of failure for years to recognize lead poisoning as a frequent cause of many of the painful and disabling ills that I have been called upon to treat. I recall many instances of vague abdominal troubles, and of painful and crippling affections of the extremities which the patient called rheumatism, and for which I had no better name, that I tried vainly to relieve, and which may well have been due to poisoning by lead.

Other physicians may have failed to recognize lead poisoning as I have done. Many people look upon what they call rheumatism as something to be endured without hope of relief, and the cause of their ailment is never discovered. Arteriosclerosis comes on insidiously, until some terminal accident occurs, and lead as a possible cause is rarely thought of. It seems fair to assume, therefore, that my cases are but a fraction of those occurring in the same locality, the whole making a heavy burden of pain and disability upon the community.

The use of lead pipe for carrying water is common throughout the whole of rural New England. The mischievous quality of dissolving lead differs, no doubt, in the waters of different localities and at different times. But I believe such use of lead is always and everywhere dangerous, and that the possibility of serious poisoning ought to be more generally recognized than it now is.

Boston City Hospital.

CLINICAL MEETINGS OF THE STAFF, MARCH 21 AND APRIL 18, 1907.

LIPOMA OF THE EPIGLOTTIS.

BY T. A. DE BLOIS, M.D.

If you will look over my right shoulder by the aid of the transillumination lamp, furnished by the better current tap, I will show you three out of my five cases which have come up to-night. First is Mrs. L. B., a patient in the Throat Department, absolutely without previous history, as regards syphilis, tuberculosis, carcinoma, etc. . . . You will observe on the left margin of the epiglottis a whitish mass. This swelling is easily compressed, is without pain and is apparently a cyst of the epiglottis. I only saw it for the first time to-day. Some day I will cut it, or perhaps, on account of its juxtaposition to the larynx, I will aspirate it.

(Meeting of Thursday, April 18.) I would like to add a few words about the case which I reported a month ago, as a cyst of the epiglottis. Yesterday I again saw this case; it had enlarged very much; it had not ruptured spontaneously as I thought it might; it easily compressed under pressure with the probe; there evidently was no fluid there. Besides this, the tumor had become nodulated. From gross appearances, I should say this was not a cyst, but a fatty tumor, "lipoma." It might, of course, prove malignant; modulated tumors frequently are. Fatty tumors of the air passages are not so rare. I have reported one; Dr. Farlow reported two; some unknown Italian, with questionable veracity, reported thirty. My second case, Miss O. K., has tuberculosis of the larynx. You will see the little yellow masses of tubercular deposit on the epiglottis. By and by it will break down. But what is much more important is the tubercular ulceration of the pillar of the fauces. This is rare. Of course, the prognosis is of the worst.

My third case, Mr. X. L., has tuberculosis of the larynx. He presents the peculiarity of having both the pyriform swelling of the arytenoids and the interarytenoid proliferation of tuberculosis. This will so affect him that he will lose the power of swallowing solid food much earlier than if he had the single lesion either on the interarytenoid space or else on the arytenoids; either one of these is rapidly fatal. But perhaps my friend, Dr. Leland, can give a more hopeful outlook from his varied experience.

I. A CASE OF SLOW-GROWING ANEURISM OF THE AORTIC ARCH. II. PONTINE HEMORRHAGE. III. ANEURISM OF BOTH CAROTIDS. IV. PROFOUND ANEMIA AND PURPURA. V. A CASE OF CARCINOMA INVOLVING THE THYROID GLAND. VI. A CASE OF ACUTE RHEUMATISM WITH MIXED ERYTHEMATOUS AND PURPURIC ERUPTIONS.

BY CHARLES F. WITHINGTON, M.D.

I. This case is interesting, among other reasons, for the fact that we had the patient under observation in this hospital nearly a year ago and have the records and measurements, as well as x-ray plates, to show the progress of the disease in the last twelve months.

The patient is a man of forty-four years. He denies venereal disease. About eighteen months ago he began to have dyspnea and some regurgitation of solid food soon after swallowing it. No pericardial pain; no edema. He entered my service April 1, 1906. There was at that time asthmatic breathing. The right side of the heart was 2 cm. from the parasternal line; above at the level of the second rib, the dullness swung out to 5 cm. from the median line. At the same level dullness extended equally far to the left. There was a tracheal tug and a thrill. The radiograph showed a shadow corresponding to the percussion dullness.

After leaving the hospital he had dyspnea and some regurgitation of food. He felt as if bread and other solids "stuck" in his gullet.

He has recently re-entered the hospital, and the present x-ray plate shows the transverse measure of the aneurism to be about 1½ cm. greater than a year ago. The growth has been to his left, corresponding to the descending portion of the arch. His dysphagia is very marked for everything but liquids. There is a tracheal tug and the right radial pulse is slightly in advance of the left. There is no laryngeal paralysis. There is cough and auscultation; shows an almost complete absence of breathing throughout the left lung; at the same time there is perfectly good resonance all over this lung. This combination, where one can exclude pneumo-thorax, is practically conclusive of obstruction of a primary bronchus. We may then believe that this man has from his slowly growing aneurism, two marked pressures, one on his esophagus and one on his left primary bronchus. While unable to work, he is reasonably comfortable.

II. The specimen shown came from a man of fifty-five, who fell unconscious while at his work, never spoke or moved again and died in three or four hours. There was no localized paralysis, but a slight spasticity of arms and legs. There was a Palinski reaction on the left side.

The specimen shows numerous white plaques throughout the basal vessels. There is a hemorrhage in the center of the pons, with fluid blood and clot and an area of softening about 2½ cm. wide surrounding the clot.

III. The patient is a colored woman, aged nineteen, single. She has a history indicating probable syphilis and there is a diffuse macular eruption over the trunk. She has had several attacks of rheumatism during the last eleven months, with dyspnea and cough. For the last seven months the abdomen has been distended, and two months ago it was tapped and a large amount of clear fluid withdrawn.

She has a dilated heart, 2½ cm. to right, and 13 cm. to left of median line, with a loud systolic murmur at the apex and both systolic and diastolic murmurs at the ensiform. The liver is distinctly palpable through a thin layer of fluid and its edge, smooth and hard, is felt at the navel. There is considerable ascites and fluid in both sides of the back, from the angle of the scapula down, but no edema of the legs.

There is fusiform aneurism, seemingly 1½ inches or more in diameter, involving the right common carotid from the level of the clavicle to the angle of the jaw. It is markedly expansile and shows a murmur and a thrill, both corresponding with systole. The jugular vein pulsates over it.

The left common carotid shows a less advanced stage of the same pulsation. The pulsation is very strong, covering about the same length as the right aneurism, but the breadth is not much over ½ or ¾ inch.

No other peripheral vessels appear to be affected.

The case seems inoperable at present, because, first, of its multiple localization, and, secondly, because of the marked involvement of the heart itself. It is well known that cardiac enlargement is not produced by aneurism alone, even of the aortic arch, and the evident dilatation which we have here indicated so marked a degree of valvular and myocardial trouble as to forbid operation for the aneurism.

IV. This patient has profound anemia and purpura,[1] of rapidly progressive development. The patient, a vigorous Italian laborer of twenty-one, has complained for only two weeks of severe headache and sudden loss of sight in one eye. For the last few days he has been bleeding from the gums, and the blindness of the right eye proves to be due to a large retinal hemorrhage. For the last two days purpuric spots have been appearing on the left arm and the belly. The spleen is not enlarged and there are no enlarged lymph nodes.

The only blood examination yet made shows hemoglobin 35%, reds 1,2000,000, whites 3,500. There is achromia and marked poikilocytosis, but no nucleated reds are found. A differential count of the white corpuscles gives polynuclears 12%, large lymphocytes 22%, small lymphocytes 66%. No eosinophiles. In the three days that the boy has been under observation, he has been rapidly losing ground.

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[1] This case, which proved to be one of aplastic anemia, is reserved for fuller publication later, together with post-mortem findings.

V. The patient, a woman of thirty-seven, says that up to six weeks before entrance, she was well. At that time her throat began to swell and there was difficulty of speaking, with cough, dyspnea and great prostration. The most obvious thing about her at entrance was a greatly enlarged thyroid gland substantially as it is to-day. The enlargement is uniform, involving both the lobes. On the outer side of this on either side is a greatly enlarged lymph gland, the larger being on the right; both have increased rapidly since she entered the hospital. There is no exophthalmus nor Stelwag nor von Graefe's sign. No tumor. The heart is rapid, regular, full, without murmurs.

There is, as you see, great hoarseness and a crowing respiration, suggesting croup. A laryngological examination shows a tumor of the right arytenoid, encroaching on the glottis, which the throat department say is malignant. These extrinsic carcinomata of the larynx are particularly rapid of growth. The lymph node on the side of the tumor is the larger of the two. The propinquity of the thyroid to this growth makes it probable that the tumor of that organ is also a carcinoma, secondary to that of the arytenoid.

There is a slight dullness extending down the sternum and a little to either side of it, as far as the heart. This x-ray picture shows a shadow corresponding to this dull area, which is believed to be due to secondary involvement of mediastinal glands.

The liver is much enlarged and its lower edge, below the navel, is markedly lobular, one especially distinct lump, as big as a lemon, being felt at the outer edge. No axillary or inguinal glands are felt to be enlarged. The great dyspnea of the patient suggests the possibility of a sudden choking. In that case, intubation would be impossible, owing to the site of the primary growth and trachiotomy would be exceedingly difficult by reason of the great size of the thyroid. (The patient died, fortunately without asphyxiating.)

VI. The patient, a girl of twenty, had an attack of rheumatism, several years ago, without skin manifestations.

The present attack is one of acute joint inflammation, with loud presystolic and systolic mitral murmurs. From the beginning she has had a copious skin eruption, which, when first seen, was of a pale red color, not raised above the surface, not painful. The spots are very thick, especially on the back legs and buttocks, and took at first marked circular forms; gradually dark purpuric spots became mixed with them and finally the eruption became wholly purpuric. The case is of interest as showing the relations of both forms of skin eruption with rheumatism. Osler and several other writers have called attention to the interchangeability not only of the two eruptions, which we have here, but also of these with urticaria and angioneurotic odema. The patient has none of the gastro-intestinal symptoms which may accompany the erythemata and which often accompany the purpurias, urticarias and angioneurotic edemas.

I. A CASE OF OBSTETRICAL PARALYSIS IN A BABY EIGHT DAYS OLD. II. POST-DIPHTHERITIC INTESTINAL PARESIS.

BY C. M. GREEN, M.D.

I. The mother of the patient was admitted the day after delivery, suffering with pneumonia, from which she died four days later. Delivery was reported to have been effected with low forceps. The baby was well developed, weighing 8.25 lb. and had a cephalhematoma in the region of the posterior fontanelle; the left arm was completely paralyzed. The x-ray disclosed no gross lesions.

Many of these cases recover under the long use of massage, passive motion and, perhaps, electricity, with attention to general nutrition and the prevention of local atrophic changes from disuse. In the more serious and in the neglected cases, surgery now promises at least partial relief. Attention is called to a paper of Dr. Alfred S. Turner, of New York, on "Results from the Surgical Treatment of Brachial Birth Palsy," which appeared in the *Journal of the American Medical Association* for Jan. 12, 1907.

II. The patient is a young woman, with abdominal pain and distention, dullness in the flanks, and obstinate constipation. Five years before, in another hospital, an exploratory laparotomy was performed on account of abdominal pain; but nothing found to explain this symptom. The patient now declines to take ether, and without anesthesia nothing had been found to account for the symptoms, except the obvious intestinal paralysis. It would seem that this atony of the bowel is adequately explained by the history.

The woman was in the South Department in July, 1906, suffering with diphtheria. Seventeen days after entrance she began to have loss of power in hands and legs; she also had paralysis of the muscles of deglutition, and regurgitated liquids through the nose. At this time also she began to be troubled with constipation. Seven weeks later she was transferred to the Second Medical Service, where she was treated for four weeks for abdominal distention and constipation. She then passed four weeks in the Convalescent Home, whence she was sent back to the hospital and re-admitted to the Second Medical Service; the abdominal distention and constipation had grown worse. Here she remained three months; there was still some loss of power in hands and legs, but the paralysis of the muscles of deglutition had disappeared.

The case as now seen appears to be one of post-diphtheritic intestinal paralysis, and under treatment with high turpentine enemata, the distention has considerably diminished and the symptoms are somewhat relieved.

I. OCULAR INJURIES FROM DYNAMITE EXPLOSIONS. II. SYMPATHETIC OPHTHALMIA. III. CONJUNCTIVAL GRAFT FOR CORNEAL ULCER.

BY ALLEN GREENWOOD, M.D.

I. Three cases of ocular dynamite injuries, showing varying degrees of severity. The first case was injured Jan. 10, 1907, and now shows in the right eye a healed puncture wound of the sclera, just to the nasal side of the ciliary region, with good resulting vision. The left eye shows a fair vision after the removal of the traumatic cataract, which resulted from perforation of cornea and lens. The cataract was removed by suction and irrigation.

The second man was injured Jan. 22, 1907, and shows the left eye destroyed and shrunken. The right eye shows a central leucoma adherens, with light perception. In this eye an iridectomy may later restore some vision.

The third man was injured Feb. 18, 1907, and shows such extensive lacerations of both eyes that phthisis bulbi is the expected outcome, with complete and permanent blindness. These men, all Italian laborers, were injured by driving the point of their picks into an unexploded dynamite cartridge.

II. This patient has been struck by flying glass, resulting in perforating injuries to both eyeballs. In both the injury involved the ciliary region. He entered the hospital Dec. 16, 1906, and was discharged Dec. 27, with both eyes quiet and having good vision. He was re-admitted Feb. 7, 1907, with both eyes showing a moderate irido-cyclitis, and it was found impossible to tell which eye was the offending one and which the sympathizing one. Both are improving under mydriatics, heavy doses of salicylates and inunctions of Hg.

III. A woman of forty was shown, who had developed three months before a progressive ulcer of the lower corneal margin. This had increased in spite of all treatment, until it involved one third of the circumference of the cornea and was about 4 mm. wide and half through the thickness of the cornea. A week before showing her, the ulcer had been curetted under ether and a flap of conjunctiva transplanted, so as to cover the whole of the ulcerated area. This conjunctival graft has become firmly attached to the previously denuded corneal area, and the eye is quiet and comfortable.

A CASE OF PERFORATION OF THE INTESTINE IN TYPHOID FEVER. OPERATION. RECOVERY.

BY F. B. LUND, M.D.

Wm. A. L., aged thirty, was admitted to the service of Dr. John L. Ames, on Oct. 31, 1906. He had been ill at his home for four weeks, suffering chiefly from headache and vomiting. On entrance he had a temperature only slightly above normal, presented rose spots and was believed to be in the fourth week of a typhoid and beginning to convalesce.

During the night of Nov. 1, he had slight abdominal pain, so slight, however, that he did not summon the orderly on duty. At about 8 a. m., on Nov. 2, he was suddenly seized with very severe abdominal pain, he was seen by Dr. Ames at about nine, who found normal temperature, pulse 120, but of good quality, very marked muscular spasm and tenderness over the whole abdomen, especially marked in the right iliac region. The writer saw him in consultation with Dr. Ames about 9.30 a.m., which was within two hours of the time of the perforation. The diagnosis seemed plain, and on the patient's being informed that his bowel had sprung a leak, he was too only glad to let us try to close it.

Under ether an incision four inches long was made around the border of the right rectus. The cecum, which lay just beneath the incision, was found to be thick and reddened, having fibrin flakes upon its surface, but inspection disclosed no perforation. The lowest coil of the ileum, which is the best probable seat of perforation, was then found by running the forefinger around and beneath the cecum and hooking it up close to the ileo-cecal junction; the marked inflammation of this coil made it evident that the perforation was close by, and on looking at the under side a small plug of feces was seen projecting from a pinhole perforation. The wall of intestine about the ulcer was thick and stiff from inflammatory infiltration, but the ulcer was closed by two layers of continuous inverting sutures of catgut. The purulent and fecal contents of the pelvis were washed out with salt solution, and the entire abdomen was washed out, as the intestines, as far as could be seen, were all acutely inflamed. A cigarette drain, with a large rubber tube in the middle, was carried to the bottom of the pelvis, through the lower angle of the wound, and the remainder of the incision closed by through-and-through sutures of silkworm gut. The drain was so placed that in case the suture should give way, the leak would take place into its track. This proved a valuable safeguard three or four days later, when a fecal fistula became established. The patient was put to bed in a sitting position and so remained during convalescence. The temperature was normal after the operation and remained so. Infection of the wound resulted in some sloughing of the aponeurosis, and even in hemorrhage from the deep epigastric artery, but recovery was finally complete.

I. CASE OF BENIGN INDURATED ULCER OF THE PYLORUS SIMULATING MALIGNANCY OF OPERATION. EXCISION OF THE PYLORUS. DIVISION AND RE-SUPPLANTATION OF COMMON BILE DUCT. RECOVERY. II. CASE OF PYLORIC OBSTRUCTION DUE TO ULCER SCAR AND ADHESIONS. POSTERIOR GASTRO-ENTEROSTOMY. RECOVERY.

BY FRANKLIN W. WHITE, M.D.,
AND
F. B. LUND, M.D.

I. The patient, a carpenter, aged fifty, was first seen by Dr. White, on Nov. 7, 1906. He had had ocasional intervals of indigestion for the last twelve years. In the last six months the disturbance had been continuous and severe. His mother died of cancer of the breast. Previously used tobacco and beer to excess. His earlier trouble consisted of epigastric distress and soreness, both before and after meals, usually increased by eating. Much gas on stomach, occasional vomiting, constipation, no loss of weight. No history could be obtained, which definitely indicated a previous ulcer. His best weight was 150 lb. at the age of twenty-five.

In the last six months his digestive trouble has been more severe and steadily increased. He has had nausea and distress and pain in the epigastrium, coming usually after a meal, or in the night, relieved by copious vomiting, sometimes of one or two quarts of some liquid containing undigested food. His appetite was good and he was more thirsty than usual. In spite of some excess of liquids taken, he passed only 800–900 cc. of urine daily. This is explained by the frequent vomiting and the lessened amount of liquids which were able to pass the pylorus and reach the bowel, where absorption chiefly occurs. He was much troubled by eructations of gas and distress of the stomach. He was habitually constipated. He had lost between 10 and 15 lb. in the last six months and weighed 126 lb. at his first visit.

Patient was well developed, rather thin and pale. Nothing abnormal found in any organ except the stomach. The history so strongly suggested gastric stasis that a Boas test supper (cold meat, bread and butter, large cup of tea) was ordered and the patient reported fasting next morning. Fifteen hours after the test supper 150 cc. of residue was found in the stomach, containing large particles of undigested food. Free HCl, 16. Total acidity, 22. No lactic acid. Microscopic examination showed very abundant actively growing sarcinæ and yeast cells.

The lower border of the stomach on inflation was 2 or 3 cm. below the navel. No splashing was heard over the fasting stomach and there was no visible peristalsis.

Examination of the stools for blood by means of the guaiac test gave negative results.

The diagnosis of benign pyloric obstruction was made and treatment was begun by means of appropriate diet and stomach washing. Lavage was performed daily at first, then two or three times a week. There promptly followed a marked lessening of distress and vomiting, and the patient gained 7 lb. in two weeks' time. The patient gained in strength, and the amount of urine increased to 1,000 cc. and the amount of residue in the fasting stomach was reduced to 60 cc. It was impossible, however, to get the stomach to entirely empty itself, even after the course of lavage and little setbacks, such as distress and vomiting occasionally occurring with slight indiscretions in diet, and as patient's circumstances made it difficult for him to carry out the treatment, and the medical treatment seemed likely to be very prolonged and the result incomplete, Dr. F. B. Lund was asked to see the patient. Operation was agreed upon, with a diagnosis of benign pyloric stenosis, and the expectation of performing a gastro-enterostomy for the relief of the mechanical obstruction.

The patient was operated upon Nov. 28, 1906, by Dr. Lund. A median epigastric incision showed marked dilatation of the stomach with hypertrophy of the pyloric group of glands on both the greater and lesser curvature, marked induration and thickening of the pylorus, apparently extending along the posterior wall as far as the beginning of the second portion of the duodenum. The condition had every appearance of carcinoma, and resection was decided upon, in spite of the extent of the duodenal involvement. The long clamps were placed so as to remove the pyloric third of the stomach, and after ligating the gastric and gastro-epiploic arteries, the gastro-hepatic and great omentum were divided, the stomach divided, the mucous membrane cauterized and the dissection carried on between the pylorus and the pancreas. The tumor was found firmly adherent here, and in separating the adhesions the portal vein was exposed and a small branch ligated close to it. In the first portion of the doudenum the common bile duct was found to have been divided, presenting as a thick muscular tube, with the bile coming from its end. It was divided behind the first portion of the duodenum. The duodenum was cut across at the junction of the first and second portions, the mucous membrane cauterized and the upper end inverted. A small slit was then made in the inner side of the duodenum. Three No. 1 catgut sutures with the needles in were tied into the end of the common duct, and the needles carried into the duodenum, through the opening made to puncture the wall at about one inch below the opening and one-quarter inch from one another. The threads were then drawn taut and tied, thus anchoring the duct in the duodenum. At the point of the entrance of the duct into the duodenum the former was sutured in the opening by four fine catgut sutures. Cholecystostomy was then performed, in order to relieve the junction of the flow of bile for a time. Posterior gastro-enterostomy was performed, uniting the first loop of the jejunum to the remainder of the stomach. A Murphy button was employed in order to save time. A gauze drain was carried down to the eroded surface of the pancreas, on account of slight oozing there, and the abdominal wound sutured. The patient bore the operation well and the next day was in fine condition. On removal of the gauze drain on the sixth day, there was a serious discharge, which persisted for several weeks. Examination showed the presence in it of neither gastric nor pancreatic ferments. The bile was discharged through the gall bladder for eight days. Then, on removal of the tube, the external discharge ceased almost immediately. At no time did bile disappear from the stools. The patient made a gradual recovery and left the hospital well on Jan. 18, 1907, weighing 136 lb. On Feb. 14, 1907, his weight was the same and his condition good.

The diagnosis, the results of medical treatment, the unusual operation, the simulation of malignancy at operation and the result are the features of interest in this case.

The diagnosis of gastric dilatation and stasis of food in the stomach was easy. The cause of the dilatation required further study. The story of the trouble was not the typical short history of cancer, with rapid loss of weight, and on the other hand, no history was obtained of a previous gastric ulcer, nor of inflammation about the gall bladder, which might cause adhesions. It is interesting to note how frequently the end results of gastric ulcer are found without any clear history of the original attack.

The presence of considerable free HCl in the fasting stomach showed that gastric secretion was good, though the amount of secretion resulting from irritation of the stagnating masses of food upon the gastric gland is often much greater in benign stenosis, giving a total acidity of 100 or over, due to HCl and acid products of fermentation. The presence of HCl in the fasting stomach and an acid fermentation due to yeast and sarcinæ is the rule in benign pyloric obstruction, due to ulcer scar adhesions and the like, and the exception in well developed gastric cancer. Out of 48 cases of gastric cancer seen by Dr. White, and in which careful records of stomach analysis were kept, there were 6 cases in which free HCl was found in the stomach contents, even after the disease was well developed. With one exception, these were proved to be cases in which the cancer developed upon an ulcer base. This observation that about one case in eight of well developed cancer of the stomach may have free HCl in the stomach contents agrees with the conclusions of Boas, Ewald and others, from a much greater experience.

In order to determine whether or not we were dealing with one of these exceptional cases of cancer, the stools were examined for traces of blood, after putting the patient for two days on a diet free from meat, fish and extracts. It has been shown that in well developed cancer of the stomach traces of blood are found with great constancy in the stools. Such examination of the stools should not be made until two days after the passage of a stomach tube to avoid confusing a spontaneous hemorrhage with a trace of blood possibly caused by intubation.

The diagnosis of benign pyloric obstruction was made, and since every case of gastric stasis represents a stomach in a stage of failing compensation, we attempted to restore this compensation by means of diet and lavage. The dietary treatment consisted in restricting liquids and giving five small meals a day to avoid distention of the stomach, and the use of brothy and pasty food, which could easily pass the pylorus, and rich in fat, so that it might contain sufficient calories. A good rule is to give food which will easily pass through a rather fine sieve (cream, butter, sweet oil, milk, gruels, raw egg, beef juice, meat, jellies, vegetables, purées, apple sauce, etc.).

Lavage of the fasting stomach was followed by the introduction of 100 cc. of warm sweet oil, which served the purpose of lessening pyloric spasm, of combating the hyperacidity and of increasing nutrition.

The good results of this treatment were seen promptly in a marked lessening of distress and vomiting, a gain in weight from 126 to 133 lb. within two weeks. The limitations of the treatment are also seen in the fact that it was not possible by means of it to get the stomach to empty itself completely. It is always desirable to faithfully carry out medical treatment in all cases of benign pyloric stenosis before resorting to operation, for two reasons. In some of the milder cases, especially those in which the elements of pyloric spasm is prominent, medical treatment may be all that is necessary. In the severer cases, it is often of great service in improving the general condition and thus preparing the patient for operation.

Simulation of malignancy in lesions or secondary glands may prove disturbing and subject the patient to a long, elaborate operation, when a shorter and simpler one would otherwise have been chosen. Examination of frozen section of doubtful tissue, by a pathologist, during the operation, may be of service, but even this is not always sure. This is the second case within a short time in this city, in the knowledge of the writers, when a benign condition of the stomach has been diagnosed and treated as malignant disease at operation. The immediate results in both cases were good, however.

II. The patient, a coachman, aged forty, was first seen by Dr. White, on Jan. 1, 1907. He has had stomach trouble for a year, which has become gradually worse. His family history is good and he remembers no previous illness, except measles in childhood. He has used beer and whiskey moderately and no tobacco. During the last year he was troubled with heartburn, epigastric distress or pain and nausea coming usually several hours after a meal and relieved by vomiting. The attacks of vomiting occurred at first at intervals of several weeks, became gradually more frequent and troublesome and now are of almost daily occurrence and often several times a day. The vomitus was described as watery and sour, sometimes containing lumps of food and recently as much as a quart in amount. Vomiting frequently occurred between 10 P.M. and morning, at a time when the stomach should normally be empty. He described his vomitus and stools as "black" on several occasions. He had much eructation of gas. His appetite was good at first, but recently poor and he was afraid to eat. His diet was formerly generous, but now consisted chiefly of milk, of which he took two quarts a day. He was very constipated, has lost much sleep and become very weak and short of breath. He had spent most of the time in bed for two weeks previous to seeing Dr. White. His weight a year previous was 145 lb. and on Jan. 1, 99 lb. He had sought medical advice several times in the last six months, but without improvement. He was referred to Dr. White as a case of cancer of the stomach, probably hopeless and too late for operation, and he certainly looked the part.

He was greatly emaciated, pale and weak. Nothing else abnormal was found outside the digestive tract. His teeth were good. The abdominal walls were very thin and lax. Splashing was obtained over a large area, extending two or three inches below the navel, and waves of peristalsis were seen passing over the greater part of the abdomen from left to right. On inflation the stomach was found to be greatly dilated and the lower border half way between the navel and pubes. The liver edge could be distinctly felt and was hard and slightly uneven.

The patient had eaten no breakfast on the morning of the first visit and only a very slight supper sixteen hours previous. A stomach tube was passed and 1,000 cc. of sour liquid, containing much food residue, was withdrawn, which foamed like beer and had the characteristic "sour bread" odor of the fermentation, due to sarcina and yeast. Free HCl, 40; total acidity, 89. Microscopic examination showed enormous quantities of sarcinæ and branching yeast plants.

The diagnosis of pyloric obstruction, probably of benign nature, was made and the treatment begun by appropriate diet and gastric lavage, with the object of cleaning up the stomach and improving the patient's condition before operation. Rectal enemata of water were given to relieve thirst. No great improvement was expected or obtained through medical treatment. The fasting stomach residue due to hypersecretion and stasis of food was never less than 600 cc. and was similar in character to that obtained on the first visit, always containing an abundance of free HCl and showing marked signs of fermentation. The guaiac test for blood was twice positive and twice negative in the stomach contents. The guaiac test for blood in the feces on a meat-free diet was once positive and three times negative.

Dr. F. B. Lund was asked to see the patient a week later and operation agreed upon. This was performed by Dr. Lund on Jan. 7. Through a right rectus incision a posterior gastro-enterostomy was done with the short loop according to Mayo's method. The pylorus and pyloric portion of the lesser curvature were greatly indurated and caught up to the under surface of the left lobe of the liver by adhesions exactly in the median line. The stomach was enormously dilated, and extended below the umbilicus on the left side of the body. Convalescence was complicated by a cough, and on the twelfth day after the removal of the stitches a loop of intestine was coughed out through the incision which required resuture.

The patient did not vomit after the operation, has gained steadily in weight and has practically no symptoms of digestive trouble.

The most interesting features of this case were the diagnosis and the result of operation.

The history of "black" vomitus and stools, the extreme emaciation and obvious pyloric obstruction suggested cancer of the stomach, but the invariable presence of plenty of HCl in the stomach contents made benign obstruction much more probable. The examination of the stomach contents and feces for blood were of much help in ruling out an exceptional cancer with good HCl secretion. The test was negative two out of four times in the stomach contents and three out of four times in the feces. These negative results are strong evidence against cancer, in which *constant* positive results are almost invariably found in a well developed case. *Occasional* positive results are not uncommon in marked cases of benign pyloric stenosis, as has been shown by Boas, Hartmann and White; the traces of blood are probably due to small erosions or capillary hemorrhages, resulting from stasis and irritation of the mucosa.

It seems unfortunate that this patient should have consulted a considerable number of physicians, without obtaining an accurate diagnosis of his condition. This was, perhaps, due to the fact that the stomach tube had never been used as an aid.

There is a close analogy between the stethoscope and the stomach tube. We may be able to make a diagnosis of chronic disease of the thoracic organs without a stethoscope, but it is always a help and often a necessity, and we should never neglect its use. I think the same may be said of the tube in connection with chronic diseases of the stomach. The diagnosis of the patient's condition in the earlier stage would have been very easy with the use of the tube and perhaps difficult without it.

This patient adds one more to the long list of cases in which no clear history of an attack of gastric ulcer was obtained and yet the end results of ulcer were found at operation. The immediate results of operation encourage us to advise a gastro-enterostomy, even in very severe and advanced cases of non-malignant pyloric obstruction, as an operation in which the mortality is very low and the permanent results very good.

CASE OF NEUROSIS OF ESOPHAGUS.

BY FRANKLIN W. WHITE, M.D.

The patient is a machinist, aged thirty-seven, who has had great difficulty in swallowing his food for the past month. The family history is good. His only previous illness was typhoid twelve years ago and chronic constipation, his bowels moving only once or twice a week. His present symptoms are intense pain or distress when he tries to swallow food, beginning when the food enters the esophagus and getting more intense till it passes the "end of the breast bone." This is caused by all kinds of food, both liquid and solid, but is somewhat less with liquids. He frequently regurgitates or vomits food immediately after swallowing it and thinks he has seen blood streaks in the vomitus in the past week. His appetite is good, but he is afraid to eat and has limited his diet to milk and gruels for the last two weeks, and even this liquid food can be taken only a teaspoonful at a time and swallowed with great difficulty and distress. He has had severe frontal headaches and become very anxious about himself and has been in bed for the past two weeks. There has been little loss of weight, however.

He is well developed and nourished, rather pale and nervous, reflexes lively, abdomen diffusely sensitive; general examination otherwise negative, including the pharynx. He was given a glass of water to drink, and after swallowing a mouthful he doubled up in great distress, and soon regurgitated the water back into his mouth. An ordinary soft rubber stomach tube was then passed; this caused practically no pain or distress, but at a distance of about 40 cm. from the teeth (a position corresponding to the cardia) a firm, elastic resistance was met, which gave way suddenly on using moderate pressure and the tube passed into the stomach. Ninety-five cubic centimeters of the stomach contents was withdrawn, which was perfectly normal in character.

Examination of the regurgitated fluid for blood by means of the extremely delicate benzidin test (which shows the presence of blood in a dilution of one part in 100,000) gave a negative result.

At a second visit the patient drank a few swallows of water colored with methyl blue. The tube was passed till the resistance of the spasm of the cardia was met and the blue water withdrawn by aspiration. Then the resistance was overcome by gentle pressure of the tube, which was pushed into the stomach, and uncolored normal stomach contents was obtained.

The patient was examined with the x-ray and fluoroscope, while swallowing a Riedel meal (gruel and bismuth subnitrate). No esophageal pouch or appreciable dilation was found. A diagnosis of hyperesthesia of the esophagus and mild spastic stenosis of the cardia was made and was borne out by the results of treatment.

The treatment consisted in passing the soft stomach tube several times at a few days' interval and in encouraging the patient. Bromides were given for a short time and one or two teaspoonfuls of olive oil before each meal. The diet consisted of liquids and soft solids at first.

Improvement was rapid. The distress on swallowing and the regurgitation of food almost entirely disappeared at the end of a week and the patient went back to work. At the end of two weeks he was eating everything and practically free from symptoms, save for slight epigastric distress after meals.

The diagnosis of a purely functional disturbance, hyperesthesia and mild spasm of the esophagus was not difficult in this case. It is a condition which occasionally occurs in nervous or overworked persons and may be accompanied by a gastric neurosis.

The fact that all foods were equally difficult to swallow and the intense distress on swallowing a little water in comparison with the ease of passage of a stomach tube strongly suggested a neurosis. The fact that water could be partly swallowed and that no resistance was met on passing the tube until the end was 40 cm. from the teeth showed that the spasm was in the deeper part of the esophagus at the cardia, the most common location. The elastic feeling of the stricture and its sudden giving way to pressure left little doubt of its nature. Absence of the two swallowing sounds on listening with a stethoscope over the cardiac opening of the stomach is not considered a reliable sign of stenosis.

As cardiac spasm frequently accompanies an organic lesion great care is needed, in making the diagnosis of a pure neurosis, not to overlook a possible organic cause. There was no history of a cause of true stricture, such as a chronic ulcer, or swallowing of corrosive substances, and although the severe, cramp-like pain behind the sternum, which was so striking when the patient tried to swallow even liquids, suggested ulcer or erosion, the absence of pain in passing the stomach tube and the absence of blood in the regurgitated fluids, with the slight loss of weight, seemed enough to rule out both this rare condition and incipient cancer.

The absence of a pouch or diverticulum was shown by our ability to push the tube directly into the stomach after aspirating the contents of the esophagus. The above test, with methyl blue water and stomach tube, is one of the simplest and best to distinguish between an esophageal pouch, or diverticulum, and a simple fusiform dilatation. In the first case, the tube cannot be pushed on into the stomach, and in the second it can.

The use of the x-ray after the patient has swallowed food containing bismuth is the most satisfactory means of determining the exact size and position of an esophageal pouch. The bismuth fills the pouch and outlines it with a clear shadow.

The duration of the trouble and the actual spasm of the esophagus were too mild in this case to cause more than a very slight widening of the esophagus above the spasm.

The good results of treatment were more prompt and lasting in this case than are usually to be expected in cases of esophageal neurosis, many of which are very stubborn and prolonged.

It is almost needless to say that the treatment of the patient's general condition by rest, hygiene, psychotherapy and narcotics is, if anything, more important than local treatment by tubes, bougies or dilators, and I have no doubt that the mental effect of the passage of a tube is fully as important in showing the patient that the passage into the stomach is easy and open, as the local effect in overcoming muscular spasm.

In a stubborn case the best treatment, in addition to the care of the mental and nervous condition, is the use of large bougies — size 58 or 60 French, or of Mixter's metal dilator, in which instrument metal beads of increasing size are pushed through the obstruction on a metal guide rod.

FRACTURED SKULL WITH EXTENSIVE DEFECT OF BONE.

BY J. BABST BLAKE, M.D.

A man, thirty-six years old, entered the hospital for treatment of external and internal hemorrhoids. Physical examination revealed the fact (which the patient did not mention) that an accident fifteen years ago had caused a compound comminuted fracture of the right side of the cranium, and that more than half the parietal bone and a part of the orbital plate of the frontal had been removed, leaving a non-tender, pulsating area, which is not noticeable on inspection, but obvious on palpation.

The City Hospital records, Sept. 15, 1891, state that the patient was brought in unconscious and covered with blood, an eight-pound pulley having fallen forty feet and struck him on the head. A large amount of bone was removed; the dura was torn; disorganized brain substance came away, and the hemorrhage was profuse. Bleeding points were ligated, the dura stretched loosely over the brain, the scalp sutured, and a dressing applied. He made an uninterrupted recovery, leaving the hospital in three weeks.

For three years afterward he was subject to epileptiform attacks of the following character: While walking, usually in the street, he would gradually become aware of a sensation of being followed by some one. This sensation increased, until he felt a desire to look backward over his right shoulder. The sensation became imperative, but the instant he turned his head and looked over his shoulder, he fell unconscious. The nature of the attacks seems to have been similar to those described in traumatic epilepsy.

At that time he was working, and doing active exercise in the gymnasium. It was suggested that such exercise might in some way favor the development of these attacks. He omitted the exercise, though continuing his work, and the attacks quickly disappeared, and have not returned. His only symptoms at present are dizziness if he bends forward, as in tying his shoe, a considerable limitation of the field of vision of the right eye, and a slight right-sided deafness.

This patient illustrates the reverse of the course of most cases of traumatic epilepsy. Usually the attacks continue after they are once established, and, as a rule, increase both in frequency and severity, unless, as occasionally happens, they are modified by treatment, operative or general in character. It is interesting to note that the large defect in the skull corresponds closely to the condition produced by the modern operation of decompression, and it is possible that the exceptional result is due, at least in part, to this fact.

I. CASE OF ANTHRAX OR MALIGNANT PUSTULE. II. TYPHOID FEVER WITH ACUTE CHOLECYSTITIS AND PERFORATION OF GALL BLADDER. III. FOREIGN BODY IN KNEE.

BY H. A. LOTHROP, M.D.

I. This man is forty-nine years of age; a teamster. He has much to do with the handling of leather, but otherwise there is nothing in his occupation which would expose him to this type of infection. His general health has always been good. On Dec. 1, he noticed what appeared to him to be a "pimple" on the right side of his neck. This gradually increased in size and became tender and painful. As a result he came to the hospital on Dec. 3.

Examination showed we had to deal with a man whose general health was good. He was complaining of moderate constitutional symptoms, such as would be consistent with the formation of a small abscess, which was causing some toxic absorption. An unusual factor, however, was the presence of excessive vomiting and thirst. Local examination showed on the right side of the neck a circular swelling, more or less circumscribed and about two inches in diameter. The surface was raised and its center was of a dark color. This darker center was surrounded by a zone of vesicles, most of which were intact. The portion of the induration toward the maxilla was sharply defined. The lower half presented no well-marked edge, but there extended down the neck in a broad zone, over the clavicle and on to the front of chest, a swollen, red and indurated area. The amount of tenderness was moderate. His pulse was about 110 and his temperature 102°. Infection from the bacillus anthracis was suspected at the outset. Cover slips were prepared from the darkened center of this inflamed area and the bacillus anthracis was demonstrated to be present. The skin in the vicinity was prepared in the usual way, with soap and water and 70% alcohol, up to the zone of vesicles. Great care was used not to break any of these, or to touch the darkened zone within this row of vesicles. The gauze used in the cleansing was allowed to touch the skin but once.

Operation. — An immediate operation was performed. A circular incision was made around this swelling, having a diameter of 2½ to 3 inches. No instrument was allowed to touch the central mass which was being excised except on its very periphery, and there were removed all tissues down to and including the deep cervical fascia, on which were discovered a few fibers of the sterno-cleido-mastoid muscle. The hemorrhage was only moderate. Ninety-five per cent carbolic acid was applied directly to the wounds and rubbed into the tissues and its application was followed by 70% alcohol. The wounded surface was then packed with iodoform gauze, over which a protective dressing was applied. The subsequent dressings were similar. Patient has made an uninterrupted convalescence. His temperature was normal in three days and has remained so. There has been no septic absorption. An examination of blood at time of operation was negative, so far as the presence of bacilli was concerned. Examination of the specimen showed numerous bacilli in the tissues and in the vesicle fluid, but very few were present in the tissue in the vicinity of the cut edge. The injected bacilli were fatal to guinea pigs.

II. This man of thirty-nine years, was admitted to a medical service of the hospital, suffering from typhoid fever. His case was a mild typhoid fever, without complication and he was convalescing. At the end of four and a half weeks, about 10 P. M., one evening, he had sudden pain in the right hypochondrium and also pain referred to right shoulder. There had been no previous complaints referred to this hypochondrium. An intestinal perforation was suspected. I saw him about 11 A.M. on the following morning. At that time his symptoms had largely subsided and he was comparatively confortable. His pulse was about 110 and his temperature 101°. The abdomen was not distended. There was moderate muscular spasm referred particularly to the right half of the abdomen, and the tenderness was more marked in the right lower quadrant. An intestinal perforation was suspected, but, in that his condition had improved so much in the last few hours, interference was deferred. In the course of the afternoon, however, he complained more of pain in right lower quadrant and the muscular spasm was more marked. His general appearance was less favorable. In view of his condition, an operation was decided upon.

Operation. — A median incision was made extending from the umbilicus to the pubes. On opening the abdomen, there appeared a slightly turbid fluid in considerable quantity, which was of a yellowish color, obviously stained with bile. The small intestine was examined rapidly, beginning at the lower end of the ileum. The indurated areas characteristic of typhoid ulcers were discovered in the lower end and there were patches of white exudate on the intestine, showing the presence of a moderate degree of peritonitis. No perforation of the intestine was discovered. The hand, passed through this wound to the right hypochondrium, showed the presence of adhesions about the gall bladder. It became obvious that the site of the trouble was here. The original incision was closed rapidly and a vertical incision through the right rectus muscle so as to expose the gall-bladder region was made. Without difficulty, a perforation, ⅓ of an inch in diameter, was discovered on the under side of the neck of the gall bladder, through which was escaping a thick, creamy pus. This perforation was closed and the edges inverted by means of Lembert sutures. The fundus of the gall bladder was then opened and a drainage tube inserted and sewed in place. The second abdominal incision was then closed, leaving sufficient room for drainage.

The shock following this operation was not excessive and his convalescence has been uninterrupted. As you will observe, the wounds are healed, except for a small opening which marks the site of drainage, from which escapes a very moderate amount of bile. Patient is now gaining weight rapidly and suffers no particular discomfort. The fistula will probably close very shortly. Looking back over the history of this case I feel convinced that a more careful consideration of his signs and symptoms, just prior to operation, would at least have given rise to the suspicion of the presence of an acute cholecystitis with perforation.

III. This patient is a boy of seven years, who entered the hospital about ten weeks ago. Examination showed an acute synovitis of the right knee. There was no particular history at time of entrance, which would suggest a cause for the inflammation. He had a temperature of 102°, which became normal in the course of two or three days. The moderate amount of fluid which had been present was gone by the end of a week. Two x-ray pictures were taken, but he was discharged from the hospital before these were obtained. He returned to the out-patient department still complaining of discomfort in the knee and a moderate amount of fluid had reappeared. Examination of the x-ray pictures showed a foreign body in the joint and it appeared to be a broken needle. It was then learned from the mother that the boy might have fallen on a pin, such as is used in connection with phonographs. The picture showed the foreign body situated on the inner side of the knee, about equidistant from the articular surfaces of the tibia and femur, in the immediate vicinity of the internal semilunar cartilage. It was well toward the center of the joint.

Operation. — A slightly curved incision was made, more or less parallel to the direction of the fibers of the vastus internus muscle, and the inner aspect of the capsule exposed. No tourniquet was used. By means of a curved incision just anterior to the internal lateral ligament of the joint the capsule was opened above the internal semilunar cartilage. A careful search in all parts which could be exposed by this incision failed to reveal the presence of any needle. A moderate amount of clear fluid escaped from the joint. The capsular incision was then prolonged moderately and the joint approached just below the internal semilunar cartilage. The needle was then discovered situated below this cartilage and about half buried in the center of the hyaline cartilage of the tibia. The cartilage was a little eroded, so that the needle was in a small cavity and one end projected into the joint so as to be rubbed by every movement at the knee. It was about ¼ inch long and undoubtedly was a fragment of a phonograph pin. The wound in the capsule and the skin incision were closed and the leg fixed by means of a splint. It is now three weeks since operation. Healing was by first intention and the convalescence was uninterrupted. He will wear fixation apparatus about one week longer and then will be allowed to move the joint carefully.

DIFFUSE PERITONITIS; DRAINAGE; INTESTINAL PARALYSIS, SECONDARY ENTEROSTOMY, WITH RELIEF OF SYMPTOMS.

BY DAVID CHEEVER, M.D.

Esther C., seven years of age, admitted to the Boston City Hospital, Dec. 8, 1906. No history of previous attacks of appendicitis. Present illness of two days' duration, pain at first in the epigastrium, later in the lower abdomen, constant vomiting, constipation.

Physical examination showed a little girl in fair general condition, with a moderately distended abdomen, extremely tender below the umbilicus and to the right. There was but little involuntary muscular spasm, no mass and but little, if any, demonstrable dullness in the flanks.

Laparotomy was immediately performed under ether anesthesia. Upon opening the peritoneum through the right rectus muscle free pus exuded from among the coils of reddened, congested intestines. The pus was wiped out as fast as it appeared. Cautious examination with the finger showed the entire absence of limiting adhesions. The appendix was found lying over the pelvic brim, the tip necrotic and perforated. The right lower quadrant and the pelvis were bathed in thin pus, which was sponged out as completely as possible. Careful exploration led to the conviction that the process did not extend far into the left lower quadrant or above the umbilicus. The pelvis and right iliac fossa were drained with rubber tubes, wrapped in gauze and rubber tissue.

After operation the temperature fell to normal, but the general condition failed to show corresponding improvement. Vomiting persisted and approached fecal in character, distention and tympany increased, and all measures to cause the passage of gas and feces failed. Exploration of the wound and removal of the wicks showed a satisfactory local condition and no mechanical error in the operative technique to account for the obstruction. There seemed practically no doubt that death would soon occur. Forty-eight hours after the operation, primary ether anesthesia was induced in the ward, the abdomen opened in the left linea semilunaris and a distended coil of ileum drawn out, secured to the skin by one suture and freely opened. The escape of a considerable amount of fecal matter and gas was materially aided by abdominal pressure. The patient's condition did not justify any attempt at exploration through the new incision, nor more elaborate suture of the intestine to the peritoneum, and the operation was undertaken solely for the relief of symptoms by making an artificial anus, rather than for the determination of the cause of the obstruction.

The patient has finally made a complete recovery so far as the peritonitis is concerned. For many days a free discharge of pus persisted through the original incision, from the region of the lower abdomen and pelvis, and there were several attacks of transient vomiting, with the presence of acetone in the urine. The incision is now completely closed. For ten days all fecal matter passed by the artificial anus; on the eleventh day gas and fecal matter passed in small amounts by rectum. At present there is a small amount of fecal discharge from the artificial anus and formed movements by rectum. There is no probability of the spontaneous closure of the fistula, as it is a muco-cutaneous one, but the good general condition of the patient justifies the hope that the restoration of the continuity of the intestine is merely a question of operative technique.

The writer believes that this is one of a class of cases which are sometimes erroneously reported as cases of general peritonitis. Such instances have come under his observation, and it seems improbable that the very much higher percentage of recoveries reported by some observers than is the experience of others should be entirely due to perfection of technique. When the opening of the peritoneum discloses free pus bathing the coils of presenting intestines, and the examining finger finds no limiting adhesions anywhere, it is easy to mistake a diffuse, spreading, but still localized, infection for a general one. There may exist a confusion in the definition of terms: a general peritonitis may be said to be one which involves the whole greater peritoneal cavity; anything of less extent may be called a diffuse process. It seems reasonable to exclude from the definition the lesser peritoneal cavity, since its involvement in any peritoneal inflammation is uncommon and when present is a negligible factor except in certain cases of direct infection, as by perforation of a gastric ulcer, or by a gunshot wound. The writer has not been so fortunate as to have under his personal observation any case of recovery from an actually demonstrated general peritonitis, but a considerable number of cases are reported and they will, doubtless, increase with improvement in technique.

Stoppage of the intestinal current is one of the most common and serious of the complications of peritonitis. Any of the mechanical causes of obstruction may be present, but there is a large class of cases where it can be ascribed only to a simple cessation of peristalsis, due to toxic paralysis, as in the case reported above, where the subsequent course of events ruled out with reasonable certainty any other cause. It is precisely in this kind of a case as other surgeons have pointed out, that the scale may be turned by a simple enterostomy, which lessens or prevents the exhaustion of vomiting, conserves the strength and perhaps permits of nutrition until the infection may be overcome.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

Thirty-second Annual Meeting, Held at Washington, D. C., May 7, 8 and 9, 1907, in Conjunction with the Congress of American Physicians and Surgeons.

(Concluded from No. 9, p. 300.)

THE COMPARATIVE ADVANTAGES OF CATGUT AND SILVER WIRE SUTURES FOR CLOSING THE FASCIA AFTER ABDOMINAL INCISIONS.

Dr. Hunter Robb, of Cleveland, Ohio, said the ideal suture material should be smooth, pliable, but not brittle, not too costly, easy to obtain on short notice, and above all readily rendered completely sterile. Catgut would be an almost ideal material, but when we sterilize it, short of rendering it brittle, and consequently useless, some few of the inner strands may not be absolutely aseptic; and, in fact, not a few cases of suppuration and even death have been directly traceable to the use of catgut ligatures. The cumol method probably gave the best results, but for the past few years he had had excellent results with the ordinary and chromicized catgut as prepared by Van Horn, of New York, especially when the smaller sizes were used. When, however, the larger sizes of chromicized catgut were employed, the sutures were not always absorbed, but frequently gradually worked their way to the surface of the wound and were then discharged. They were not always sterile. Bacteriological tests made in his service had shown that the knots and end of catgut sutures, even when the wound had healed by first intention, teemed with bacteria, and he felt sure that chromicized catgut was responsible for many of the skin infections encountered.

In one case of phlebitis following an amputation of the cervix in which chromicized catgut, was used, he was inclined to attribute this complication to the suture material.

He now preferred to use for the skin and peritoneum small sizes of sterilized catgut, but for the fascia he believed that silver wire offered advantages over the larger sizes of plain or chromicized catgut. These results had been deduced from recent experience and largely also from an analysis of two series of 100 cases each in which silver wire and chromicized catgut respectively were used in bringing together the deep fascia. This analysis showed that the relative incidence of infection in the deep fascia occurring after the use of catgut and silver wire respectively was as two to one. Moreover, it was noted that when suppuration occurred, it was always larger in amount and extent in the catgut cases than in the infections met with after the use of silver wire. The main objection against the use of silver wire for bringing the fascia together was, that one left in the wound a substance that might annoy the patient by sticking into the surrounding tissues. This trouble, however, could be readily averted if the suture was properly applied and the ends were turned over with a pair of thin-jawed hemostatic forceps, so that they form a ball-like end to the suture. This annoyance had to be remedied in only four out of four hundred of the silver wire sutures. Removal under cocaine was always easy and painless.

So far as the occurrence of hernia was concerned, *a priori*, this accident should be less likely to occur after the use of silver wire, as this material undoubtedly approximated the tissues for a greater length of time, and in his experience had given rise to suppuration less often. Hernia was not noted in a single case in either series, but the separation of the fascia and muscle often did not take place within the first few weeks after operation, and yet sometimes if these patients were examined some months or a year afterwards, a smaller or larger protrusion would sometimes be apparent. He had not infrequently noted such an occurrence in patients who had been operated upon by other men, and he had no doubt that others had met with the same thing in some of his cases. Consequently, so far as hernia was concerned, he did not believe that we should judge of the relative value of the suture material except in cases examined at an interval of six months or a year after operation.

Dr. Leroy Broun, of New York, said it was his custom, in closing a wound, to bring together the fascial edges with chromicized catgut. He did not rely on this entirely, but introduced, at the same time, some safety sutures of silkworm-gut at about an inch and a half apart, and he saw that these were kept in for at least two weeks, to guard against the opening of the wound by coughing, a sudden jar, or sneezing.

THE USE OF LAXATIVES IN THE AFTER-TREATMENT OF LAPAROTOMY.

Dr. Henry T. Byford, of Chicage, said that some laparotomies were of such a simple nature that the functions of the abdominal viscera were not materially disturbed thereby, and need not be disturbed afterwards by medicine. Exploratory peritoneal section, and the removal of non-adherent ovaries, were apt to be of this nature. But the majority of laparotomies represented a different problem. When there had been considerable trauma during the operation, with consequent soreness and inability to endure the pains, he applied an ice-bag to the abdomen rather than give opiates. The ice-bag and an enema containing 30 gr. of chloral would usually alleviate the pain and nervousness and sometimes the nausea, without inhibiting peristalsis. If his only object were to save life he should not bother the patients with the laxatives unless abraded or injured tissues had been left to form adhesions; but he confessed, at the risk of being considered meddlesome, that he gave laxatives in all but the simplest cases, because in those who did not really need them the bowels were more quickly relieved of the gas, and the patient then felt much better than when not so treated. Patients who had undergone a previous laparotomy generally remarked, without being asked, that they were having a much more comfortable convalescence than after the previous one in which they had either taken no laxatives, or had taken opiates for the pains.

CARE OF STOMACH AND BOWELS; POSITION AND REST IN BED.

Dr. Lapthorn Smith, of Montreal, did not allow anything whatever to go into the stomach of a patient during the first twenty-four hours. The bowels were moved by enema on the third day and every day after unless they moved naturally. If there was vomiting, calomel was used generally with bicarbonate of soda. Position depended on the severity of the cases. In hemorrhagic cases the foot of the bed was raised; or in septic cases, especially after appendicitis, the head was raised. Rest in bed for three weeks was the safest so as to improve digestion and nutrition. Twenty-one days after operation the patient was allowed to get up and to begin gentle exercise, so that by twenty-eight days she could walk about freely.

ESERINE SALICYLATE AS A PROPHYLACTIC AGAINST ATONY OF THE BOWELS.

Dr. Hiram N. Vineberg, of New York, referred to the use of this agent, saying it had a beneficial effect when given to a patient before coming out of anesthesia. It was given in doses of one-fortieth of a grain. It was the custom to give ¼ or ⅙ of a grain of morphine with one-fortieth of a grain of salicylate of eserine. He thought there was less distention of the abdomen after the use of eserine in this manner.

THE INCISION AND AFTER-TREATMENT.

Dr. W. Gill Wylie, of New York, said the location of the incision varied with the internal condition. The method of closure varied according to the site of the incision. Method also varied with the condition of the bowels due to preliminary preparation.

THE AFTER-CARE OF THE PATIENT.

Dr. Herman J. Boldt, of New York, said that mobility of the patients was begun as early as was consistent with the patient's general condition. The greater number of patients might be out of bed with advantage to them within three days. A large number, even those upon whom extensive and technically difficult operations had been done, might be out of bed and placed in a comfortable chair within from twenty-four to thirty-six hours after the operation. A properly adjusted plaster bandage, adhesive, was essential for the safety of the wound. Neither the stomach nor the bowels required any special consideration unless there was some particular indication for it.

THE AFTER-CARE OF THE PATIENT.

Dr. J. Montgomery Baldy, of Philadelphia, said that rest in bed, good hygiene, diet and nursing were the principal factors in the end results. Moderate early getting up after operations was all right for patients in good general condition, but it was bad for others. There was nothing to recommend getting up in twenty-four or forty-eight hours. There was nothing to be gained, but much to be lost. That prolonged stay in bed increased the frequency of embolism and thrombosis was not true. He would admit that a surgical case might be gotten out of bed and home in a week or ten days, but he denied that this was best for the patient, or that this meant that convalescence had been more rapid. The aim should not be to get patients home in the quickest possible time, but to give them the best amount of stored-up health and energy with which to successfully meet the future. One who had gotten out of bed with health fully restored was surely more competent to meet the necessities of every-day resistance than one who had been quickly put upon his feet with little regard to his general condition.

THE PROPHYLAXIS OF VENEREAL DISEASE FROM THE STANDPOINT OF THE GYNECOLOGIST.

The President, **Dr. Clement Cleveland**, of New York, selected this subject for his address. He said the position of the gynecologist regarding venereal disease was one of greater enlightenment than that of his brother of the general profession, because of his greater opportunity for observing it. His responsibility was, therefore, proportionately greater. From gynecology had come all the present day knowledge of the effects of gonorrhea in women, and the inspiration for all that was known of its lasting effects upon men. The responsibility of enlightening the public did not rest with the medical profession alone. It was not a medical or sanitary problem merely, as the causes were dependent upon social conditions beyond control of the physician. By constant study and agitation the best methods for reaching the people would be evolved. All medical schools should pay the greatest attention to instruction in venereal diseases and their consequences, and some were doing so. The student and physician could not be too often reminded of the responsibility that rested upon them, not only in the treatment of these diseases, but as regards prognosis, and sanction of marriage. Many thousands of young men with a gonorrhea uncured marry, and with the sanction of their physicians, who had not been as careful as they should have been in giving approval. For himself, he was positively convinced that the gynecologist should not play over the surface of the subject, but should get right down to the foundation of the matter and display it in all its ugliness. In this way only could there be any hope of making influence felt and expect to reach any moral advancement.

To overcome indifference and arouse an urgent public sentiment in favor of the movement, there was no more powerful argument than the fact that the greatest sufferers from these diseases were innocent women and children. Constant preaching of this one fact alone would gain more supporters for the cause than all others combined.

In closing, Dr. Cleveland thought it would be well to have a standing committee to report each year, to arrange for papers in symposium, to invite prominent men to read papers before the society, or in other ways to make prominent the vital interest that was felt. By so doing gynecologists would acquit themselves of any charge of inactivity, and at the same time have the satisfaction of feeling that they were doing their share in helping on the good work.

WORK OF HENRY GARRIGUES APPRECIATED.

Dr. Brooks H. Wells, of New York, delivered an oration on Dr. Garrigues in appreciation of his work in introducing asepsis into obstetric practice in America.

The Association held a joint session with the American Association of Genito-urinary Surgeons, at which there was discussed "The Surgery of the Kidney."

SURGERY OF THE KIDNEY.

Dr. George S. Huntington, of New York, pointed out by means of numerous lantern slides some of the congenital variations of the kidneys and ureters in reference to their development and surgical importance.

Dr. Lewis Gregory Cole, of New York, followed with remarks on the radiographic diagnosis of renal lesions. His talk was accompanied by the projection of numerous lantern slides on the screen.

Dr. Charles H. Chetwood, of New York, exhibited specimens, and presented illustrations of renal lithiasis, of pyonephrotic stone kidney, and of renal tuberculosis.

Dr. Francis S. Watson, of Boston, presented the subject of calculous anuria, with especial reference to bilateral renal calculus, and to the simultaneous performance of bilateral nephrolithotomy in those cases, and to calculous anuria occurring in patients having but one kidney.

Dr. Howard A. Kelly, of Baltimore, discussed the value and method of mensuration in vesical, ureteral, and renal work.

Dr. George E. Brewer, of New York, considered the pathology, diagnosis and treatment of acute unilateral septic infarcts of the kidney; while **Dr. George M. Edebohls**, of New York, pointed out some of the requirements of up-to-date nephrectomy.

The last session of the society was a joint one with the American Ophthalmological Society, at which the prophylactic and curative treatment of ophthalmia neonatorum was discussed.

THE PROPHYLACTIC AND CURATIVE TREATMENT OF OPHTHALMIA NEONATORUM.

Dr. Edwin B. Cragin, of New York, described some experiments and tests that had been made, and from these he said it was evident that in the solutions usually employed, argyrol had practically no bactericidal power over the streptococcus or staphylococcus, but with the gonococcus in strengths of 20% and 30% it was perfectly efficient. These tests also showed why the results with the 10% argyrol were not as good as with the 20% argyrol. So long as a 20% argyrol solution was efficiently bactericidal with the gonococcus in thirty seconds, so long as the gonococcus was the coccus most feared in the etiology of ophthalmia neonatorum, and so long as the clinical results were practically as good as with the use of 2% nitrate of silver, and better than with the 1% nitrate of silver, and this without the annoyance of silver irritation and staining, he felt justified in using and advocating the use of argyrol as a prophylactic against ophthalmia neonatorum.

In the curative treatment of ophthalmia neonatorum the writer had also found argyrol of great value. The absence of irritation in strong solutions, the fact that these solutions might be dropped into the eye at short intervals by the nurse without injury to the eye, and the fact that these solutions were bactericidal to the gonococcus — all these facts were in its favor, and the writer's present plan of treatment consisted of frequent irrigations of the eye with boric acid solution, every fifteen to twenty minutes during the stage of active purulent discharge, cold compresses, and the instillation of argyrol, 30% every two to four hours.

Since the completion of the bactericidal tests referred to, the writer felt that in spite of its many good qualities, argyrol left much to be desired in the treatment of ophthalmia when due to the streptococcus or staphylococcus. Some of the worst cases of ophthalmia were due to streptococcus infection, and it was hoped that in the near future a silver compound might be found which would possess the blandness of argyrol and be as germicidal to the streptococcus and the staphylococcus as was argyrol to the gonococcus. In the meantime, it seemed wise in severe cases of ophthalmia neonatorum, which resisted the treatment by argyrol, boric irrigations and cold compresses, to make occasional use of nitrate of silver, 1% to 2% solution.

Dr. Lucien Howe, of Buffalo, N. Y., favored the use of nitrate of silver in 2% solution in cases of ophthalmia neonatorum. He discussed the subject from three distinct standpoints, namely, as it affects the physician, midwives, and as it affects the public. He said the percentage of blindness from ophthalmia neonatorum was greater in the rural districts, and not in the cities, where one would expect to find it.

Dr. Lapthorn Smith, of Montreal, said that of over 1,500 obstetric cases he had had a little less than 10 instances of ophthalmia neonatorum. Whenever there was any sign of ophthalmia, he began with a 1% solution of nitrate of silver, and if in two days there was no improvement in the condition of the eyes, he increased to 2% two or three times a day. In one or two cases he had gone up to 5%.

Dr. Walter P. Manton, of Detroit, said they had been using nitrate of silver in the Detroit Woman's Hospital for many years, 2 % solution, and they rarely ever get any catarrh reaction. They had not obtained as good results as Dr. Cragin had reported, however, from the use of argyrol in 20% to 25% solution.

The paper of Dr. Cragin was further discussed by Drs. H. Park Lewis, Walter M. Green, Henry D. Fry, Alvin A. Hubbell, Seth C. Gordon, and the discussion closed by Dr. Cragin.

CYSTIC LYMPHANGIOMA OF THE GASTRO-COLIC OMENTUM.

Dr. W. Francis B. Wakefield, of San Francisco, reported the case of a four-year-old boy, who was brought to Dr. S. J. Hunkin, with an enormously distended abdomen. He presented no other symptoms. For at least two years the child's abdomen had been noticed to be progressively increasing in size. Laparotomy was advised. Dr. Wakefield was invited to operate, and saw the child for the first time on the operating table. Abdominal section disclosed a multiple cystoma larger than an adult head, which was broadly attached to the greater curvature of the stomach, spreading out over a small portion of the anterior and a greater portion of the posterior wall. Its attachment to the stomach was so firm that it could not be separated therefrom without danger of injury to that viscus, and it was therefore cut away as close as possible to the stomach wall. No gross pathologic change could be observed in the wall of the stomach, the cystoma having simply plastered itself over its surface. The leaf of the gastro-colic omentum, which passes from the stomach to the transverse colon, was absent, although the ordinary omental apron spread itself downward from the transverse colon over the small intestines. It seemed clear, then, after the tumor had been delivered through the abdominal incision, and the operator found himself able to look directly down upon the pancreas, that he was dealing with a cystic tumor originating in and displacing the upper reflection of the gastro-colic omentum, and that the tumor, early in its career, as it developed between the omental folds, had, by simple contiguity, spread itself over and become attached to a somewhat broad area of the stomach wall. A small cystic mass about the size of a hen's egg was found loosely attached to the head of the pancreas, and a still smaller one, about the size of an English walnut, was found attached to the serous coat of the stomach, some distance from the main tumor.

The tumor was larger than a man's head, and consisted of a number of various-sized, thin and clear-walled cyst chambers. The central portion of the neoplasm was occupied by a single cavity which made up the bulk of the cystic mass. Surrounding this central cavity on all sides were numerous smaller cystoid masses ranging in size from that of an orange to that of a pea. The walls of all the cyst chambers were thin, easily ruptured, smooth, shiny, and in general appearance resembled the omentum. The component layers of the cyst walls could not be separated. The inner walls of the cyst cavities were in many places covered by somewhat adherent, gelatinous masses, which to the feel were distinctly granular. The fluid contained within the cavities of the cystoma was clear, straw-colored, neutral in reaction to litmus, and coagulated into a solid mass on heating with a drop of acetic acid. In some of the chambers the fluid was mixed with fine crystals, oily to the touch, and microscopically identical with cholesterin. In others the presence of blood was indicated, macroscopically by imparting a dark color to the fluid, and microscopically by the presence of red cells. The cystic fluid everywhere contained leucocytes.

The author gave a detailed report of the histological examination of the walls of the cystoma.

ECTOPIC GESTATION WITH SPECIAL REFERENCE TO THE TREATMENT OF TUBAL RUPTURE.

Dr. Hunter Robb, of Cleveland, Ohio, gave a brief review of the course of an ectopic gestation, also of the opinions of various authorities as to the treatment to be adopted in emergencies due to tubal rupture; as the patient rarely died from the hemorrhage, but more often from shock, as a rule it was better not to operate until reaction had taken place. Records of several cases treated in this way and also of experimental hemorrhages produced by cutting the ovarian and uterine arteries in bitches were given.

INCISION OF THE ANTERIOR UTERINE WALL AS THE TREATMENT OF CHRONIC INVERSION OF THE UTERUS.

Dr. Reuben Peterson, of Ann Arbor, Mich., said that all efforts at reposition of a chronically inverted uterus must be directed towards dilating and incising the unyielding cervical ring. Pressure methods were relegated to the past. Proper treatment was operative from the start. The constricted cervical ring could be incised from above or below. The abdominal route was no easier and did not give as good results as the incision from below. The uterine wall might be incised anteriorly or posteriorly. The former was preferable. He cited a case of twelve years' standing which was successfully treated by this method, and described in detail the operative technique.

Dr. I. S. Stone, of Washington, D. C., presented a study of the utero-sacral ligaments from the standpoint of their utility as uterine supports.

POST-OPERATIVE INVERSION OF THE VAGINA; A PRESUMABLY NEW OPERATION FOR ITS CURE.

Dr. Philander A. Harris, of Paterson, N. J., said that access to the field of operation was made through a suprapubic median line abdominal incision. The round ligaments were sought and dissected from their imbedments. The vagina was well pushed upward with a staff. A small hole was cut in the vagina upon its right side, and another opposite upon its left. The mucous membrane of the fundus of the vagina between and about these penetrations was curretted. The right ligament was drawn through the apertures near the top of the vagina from right to left. The left ligament was then drawn through the apertures of the vagina from left to right. The distal end of each ligament was then drawn taut, and sewed as high as possible with catgut to the larger portion of its fellow. After sewing the distal portion of each ligament to the proximal portion of the other ligament, the through-and-through sewing was continued at the fundus of the vagina in such a manner as to repeatedly penetrate the ligaments which it covered.

OFFICERS.

The following officers were elected: President, Dr. J. Montgomery Baldy, of Philadelphia, Pa.; Vice-Presidents, Dr. I. S. Stone, of Washington, D. C., and Dr. Malcolm McLean, of New York; Treasurer, Dr. Chas. P. Noble, of Philadelphia, Pa.; Secretary, Dr. J. Riddle Goffe, of New York. Member of the Council, Dr. Clement Cleveland, of New York.

Philadelphia was selected as the place for holding the next annual meeting, in 1908.

Book Review.

Clinical Diagnosis. A textbook of clinical microscopy and clinical chemistry for medical students, laboratory workers and practitioners of medicine. By CHARLES PHILLIPS EMERSON, A.B., M.D., Resident Physician, the Johns Hopkins Hospital; Associate in Medicine, Johns Hopkins University. Philadelphia and London: J. B. Lippincott Co. 1906.

This volume furnishes abundant evidence, if evidence were needed, of the great amount of work that has been accomplished in the clinical laboratories of the Johns Hopkins Hospital. Here will be found collected and collated a great number of carefully observed facts. In addition to the author's personal experience he utilized in the preparation of this book the clinical records of the hospital since its opening in 1889. For a number of years Dr. Emerson was the director of the Clinical Laboratory and had charge of the systematic course in clinical microscopy which, since the foundation of the Johns Hopkins Medical School, has held an important place among the studies of the third year students. It was the first well-equipped clinical laboratory established for teaching purposes and providing ample accommodation for a large class of students. It was built near the wards and was independent of the laboratories of chemistry or pathology. Without doubt the conception of this laboratory originated with Dr. Osler. The first instructor to be placed in charge was Dr. Thomas B. Futcher, who as early as 1896-97 gave an excellent systematic course in laboratory methods of clinical application. To Dr. Futcher is due the credit of developing this new department in clinical teaching. His efficient work was extended and amplified by Dr. Emerson.

As the author states in the preface the subject is presented from the clinical rather than the laboratory point of view.

That data of great value have been collected can be readily understood when it is known that eighty microscopes in the hands of trained students were used in the examination of eighty specimens of a single patient's blood or sputum. The most interesting findings were drawn by an artist who was always within call.

There is an admirable introduction by Dr. Osler. We wish his wise words might sink into the minds of all clinical teachers. "In medical education the all-important problem is to give a man the knowledge he can use. In our modern system much of the training is rendered ineffective, as it has not been sufficiently prolonged to become part of a man's intellectual or bodily mechanism. A brief course of six weeks on any practical subject is almost useless and in some may be positively dangerous." In his closing paragraph he says, "But the aim of a training such as this book implies is to send out into practice men able to give patients the benefit of modern scientific methods in the diagnosis and treatment of disease — men who use the microscope, who examine sputum and who use the stethoscope, and who can do the routine urine and blood work with confidence."

The book contains a great deal of original material such as is usually published in monographs or journals. As examples may be cited a study of the excretion of sodium chloride in the urine of pneumonia patients, the sputum in chronic bronchitis, the accurate determination of hemoglobin in a large number of healthy persons, and many blood counts.

The first section deals with the sputum, and it is the best we have seen in any treatise on clinical diagnosis. As the author says, the proper examination of the sputum is fast becoming a lost art. To many a student of the present day it simply means a search for tubercle bacilli. He does not know "that our fathers who never saw a germ could still diagnose and follow cases with an acuity with which he usually does not credit them."

Over 200 pages are devoted to the urine. The chemical study as well as the microscopical is well presented. We are pleased to note that Arnold's modification of Volhard's (misspelled Volhardt) method for the quantitative determination of the chlorides is given. The procedure, although used by the leading clinical chemists, has not found its way into the standard textbooks. The section on the feces is less complete than that on the urine.

The portion of the book dealing with the blood is especially rich in original matter. The importance of accuracy in clinical hematology is emphasized. The Gowers, Dare, Sahli and other hemoglobinometers used in the hospital are standardized against a new Miescher, which is more accurate. The author hopes that the present reactions against the Tallqvist scale will lead practitioners to adopt some instrument requiring less guess work.

The text is illustrated by a large number of splendid original drawings that will be of great aid to students as the actual appearances of the specimen have been accurately reproduced.

We regret to say that the book is poorly written. The author is careless in his diction. He writes in too colloquial a style, and clearness of statement is often lacking. Some of the clinical methods are incorrectly described, and not a few other errors have been noted.

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PLAGUE IN INDIA.

The plague situation in India, to which each year the attention of the civilized world is directed, is of far reaching interest and importance. Since the beginning of England's rule over this eastern country one of the very greatest sanitary problems which it has had to face has been this destructive disease. That there is yet much work to be done before a final solution is reached is shown by the frightful yearly mortality.

Renewed interest has of late been excited in the matter through a letter which the King of England has addressed to the Viceroy of India showing his deep sympathy with the sufferings of the people and the need of the adoption of measures successfully to combat the disease. Our contemporaries, the *British Medical Journal* and the *Lancet,* both comment on this letter and discuss at considerable length editorially the present situation. Precisely what the measures of relief may be are apparently not yet definitely determined, but so far as outlined will probably consist in the organization of four or five administrative centers in places where plague is endemic. In these centers will be stationed a well equipped medical department, familiar with the conditions, and under its direction all methods at present known of combating the disease through fumigation, disinfection, destruction of rats and other vermin and a painstaking pathological and bacteriological study will be systematically carried out.

From the standpoint of epidemiology a study of the history of plague in India is a matter of the very greatest interest. The disease appears to have been prevalent in India for many years, but its official recognition under the present government took place on Sept. 23, 1896, when it visited Bombay. During the eleven years which have supervened between that time and this it is estimated that upwards of five and a half million people have died of it. It is not known how the fatal infection reached Bombay. It may have been conveyed from Hongkong or from disease centers in Persia or Arabia. That it has spread widely from Bombay is a fact of very recent history. Last June Mr. Morley informed the House of Commons that upwards of a million deaths occurred in each of the years 1904 and 1905. Last year the situation improved somewhat, the mortality sinking to only half a million, but this year again the situation was worse than ever before, inasmuch as 642,000 deaths occurred in the first four months, a record which has never been exceeded for the same period. This is certainly a remarkable showing in view of the fact, as Mr. Morley asserted, that the government of India has given most unflagging and energetic attention to measures for exterminating or mitigating the epidemic. It is, however, an interesting commentary that much of this effort was unavailing because an attempt to discover the true pathology and etiology of the disease was in great measure neglected. This mistake cannot again be repeated, and experimental methods of dealing with the scourge are fortunately becoming less and less necessary as knowledge of its etiology and modes of transmission advance. Haffkine's discovery of a method of plague inoculation, brought out in 1897, was appreciated by the Indian Government, but through an unfortunate misunderstanding his continued service has been hampered, it is to be hoped, however, only temporarily. In 1905, through the suggestion of the Lister Institute, systematic work was organized by Dr. C. J. Martin, its director. Since then a scientific commission has been at work in India directing its attention especially to the spread of plague among rats and of means of contagion. Through these researches it has been established that the bacillus of plague is carried from rat to rat by fleas, and that the rat flea may also be a parasite of man, and, in the second place, even when grossly contaminated that floors and walls do not long retain the infection. In 1905, also, the Royal College of Physicians of London presented a memorandum to the Secretary of State for India calling attention to the world-wide danger of such an epidemic as has existed in India since 1896. It was urged that a more liberal staff of investigators should be employed and that a special sanitary service should be established. Mr. Morley has also placed himself among those who believe that not so much has been done by the local government as might have been possible, and doubts "whether the last word of medical science and of administrative skill has really been said." The attitude of the medical profession has of late been one of considerable skepticism in this regard, and it has from time to time so expressed itself.

It is certainly to be hoped, with the appalling death-rate which this year has already brought forth, and with the increasing knowledge which the laboratory is providing, that more stringent measures than ever before will be taken to eradicate or markedly diminish the prevalence of a disease, the continued existence of which is rapidly becoming a reproach to modern medical science. We have no doubt, with the expresse dinterest of His Majesty and the formation of a more adequate medical staff, that before many years have elapsed plague in India will be as little known as cholera or yellow fever in this country. No efforts should be spared to hasten the day.

REPORT OF THE CARNEY HOSPITAL FOR 1906.

The Carney Hospital in South Boston ministers primarily to a large and populous section of the city, and has for many years been accomplishing a beneficent work in caring for the sick and at the same time developing its resources and methods in accordance with progressive ideas. This hospital is now the third largest in Boston, and, although under the direct charge of Roman Catholic Sisters of Charity, it is entirely nonsectarian in its reception and care of the sick. At present the hospital has about two hundred beds and receives patients from various parts of New England and the British provinces, the greater number of whom pay nothing for their care. About twenty-six hundred patients are treated in the wards yearly, and many times this number in the out-patient departments. This hospital has for years filled a particularly valuable function in that it receives persons suffering from chronic disease who are given no welcome elsewhere, except at the almshouse hospital on Long Island. The progressive policy which has marked the hospital for many years has brought it to a state of efficiency in which those primarily interested in its development must take a profound satisfaction. It is no doubt generally known that some years ago the system of graded services of visiting physicians and surgeons was adopted on the surgical side with Dr. John C. Munro as surgeon-in-chief. We have recently had occasion to call attention to the fact that this policy has also been adopted in the medical service of which Dr. Henry A. Christian has been appointed physician-in-chief. This method of conducting a hospital service has proved its usefulness elsewhere, and it is much to the credit of the Carney Hospital that it has overcome the conservatism of long usage in this community and adopted a method which on the whole must conduce to a closer study of the patients and to the furtherance of medical science.

It may not be generally known that it was at this hospital that the late Dr. John Homans first demonstrated to the medical profession in New England the possibility of operating upon ovarian tumors. Inasmuch as Dr. Homans was one of the first surgeons in the world to advocate this procedure which at that time seemed an extreme of radicalism, the Carney Hospital may well take to itself a certain credit for having offered its facilities to this pioneer work. Founded by Andrew Carney in 1863, the hospital began its career by treating fifty-three patients in that year. In 1906 twenty-five hundred patients were treated in the wards and fifty-six thousand in the out-patient department. With so creditable a past the future of the hospital seems equally assured. It is also not to be questioned that it will represent, even more than it has hitherto done, the progressive tendency in hospital management under the régime which has now been perfected by the appointment of a physician-in-chief having general oversight of all medical cases.

FINAL STATISTICS OF JULY FOURTH.

For five years past the *Journal of the American Medical Association* has made a valuable statistical inquiry into the injuries resulting from the celebration of July Fourth with special reference to tetanus. As a result of this inquiry, it appears that the total casualties occurring July Fourth this year were 164 killed and 4,249 injured, many of these latter permanently maimed. This showing, however, is not altogether discouraging when compared with 1906, particularly as regards tetanus. This year there were 73 tetanus cases as contrasted with 89 last year. In 1905 there were 31 more cases than this year; in 1904, 32, and in 1903, 342. It is evident, therefore, that the wide protest against tetanus-producing toys has resulted in a definite awakening of the public conscience. Tetanus, however, still continues to cause more deaths than any other single agency, but gunshot wounds, giant crackers, and explosions come high in the list. Perhaps the most deplorable fact in the entire situation is that 31 persons were burned to death through carelessness, most of them being young girls and children. The figures which the *Journal of the American Medical Association* collects each year, and we trust will continue to collect, are the strongest possible argument for a modification of present methods of celebration. The figures should be widely advertised.

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MEDICAL NOTES.

Yellow Fever in Havana. — It is reported that a case of yellow fever has appeared in Havana, being the first this summer.

Smallpox in Vienna. — The statement is made that within the ten days ending Aug. 28, 80 cases of smallpox have been reported in Vienna. Free vaccination stations have been established which are eagerly being sought by the people.

Plague in San Francisco. — It is reported that during the summer 9 cases of bubonic plague have been discovered in San Francisco and 7 deaths have occurred. No alarm is felt as to the spread of the disease, but incoming vessels are being carefully inspected.

A New Surgical Journal. — A new surgical journal with the title *Archives générales de Chirurgie*, has begun publication in Paris under the editorial supervision of Professors Lannelongue and le Dentu and Doctors Nové-Josserand, Picqué and Mauclaire. It is designed that this publication shall appear monthly, and that each number shall contain three original articles, abstracts of original papers on general surgery, gynecology, the surgery of infants, orthopedic and urinary surgery. There will in addition be book notices and a bibliographical index of surgical literature. This first number indicates a very carefully edited and comprehensive discussion of surgical matters and the journal no doubt will take a place of importance among periodicals devoted to surgery.

A Stimulus to Vaccination. — In view of the fact that smallpox prevails to an alarming extent in certain parts of the State of Illinois, the State Board of Health has had printed large posters which it requests shall be posted in conspicuous places. In addition to certain facts regarding smallpox, its nature, and its supposed means of contagion, five photographs are reproduced, four of them representing smallpox patients in various degrees of eruption, and another illustrative of smallpox contagion in the absence of vaccination. The pictures are unpleasant and should at least do something toward warning the people against exposing themselves unnecessarily to the disease through neglect of vaccination.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 4, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 33, scarlatina 23, typhoid fever 19, measles 12, tuberculosis 38, smallpox 0.

The death-rate of the reported deaths for the week ending Sept. 4, 1907, was 21.14.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Aug. 31, 1907, was 231, against 227 the corresponding week of last year, showing an increase of 4 deaths and making the death-rate for the week 19.77. Of this number 119 were males and 112 were females; 224 were white and 7 colored; 163 were born in the United States, 60 in foreign countries and 8 unknown; 53 were of American parentage, 149 of foreign parentage and 29 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 28 cases and 0 deaths; scarlatina, 20 cases and 0 deaths; typhoid fever, 18 cases and 1 death; measles, 20 cases and 2 deaths; tuberculosis, 40 cases and 15 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 8, whooping cough 1, heart disease 26, bronchitis 5 and marasmus 10. There were 14 deaths from violent causes. The number of children who died under one year was 88; the number under five years, 106. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 84.

There were 0 cases and 0 deaths reported from cerebrospinal meningitis during the week.

Dr. Robert W. Lovett, a Member of the Massachusetts State Board of Health. — Governor Guild has presented the name of Dr. Robert W. Lovett, of Boston, as a member of the Massachusetts State Board of Health, to fill a vacancy caused by the resignation of Dr. John W. Bartol. Dr. Lovett's work in orthopedic surgery, and particularly that which relates to the proper seating of school children and allied matters, should make him a particularly valuable member of the board.

NEW YORK.

CHILDREN'S HOSPITAL AT ROCKAWAY BEACH. — The New York Association for Improving the Condition of the Poor has completed plans for a children's hospital to be erected at Rockaway Beach, on a site, 1,000 feet in length, which the city has agreed to reserve for it on the new five-mile beach which it has acquired for a seaside park. The hospital is to consist of fourteen pavilions, three stories in height and surrounded by broad verandas. The two pavilions at either end of the series will be placed parallel with the ocean shore and the others at right angles to it, and each pavilion is to accommodate 60 patients.

INSPECTION OF WATER SHEDS. — At a meeting of the New Jersey State Water Supply Commission held on Aug. 27 it was decided to make a complete scientific inspection of the Rockaway, Pequannock and Passaic watersheds, and also of the sites of the proposed dams at Mountain View and Singac. It is by the construction of these two dams that it is proposed to form a large lake, the estimated cost of the entire undertaking being $7,000,000. This lake will flood several villages of Northern New Jersey and render necessary a change in the main line of the Delaware, Lackawanna & Western Railroad, as well as minor changes in the lines of three other railroads. The water thus stored up will be the property of the state, and is to be sold for drinking and manufacturing purposes. It is the design of the Water Commission to so conserve the present potable supply that great corporations may not impound water and sell it at exorbitant rates to municipalities.

SEATING OF SCHOOL CHILDREN. — It is stated that for the first time in a number of years the public school authorities will enter on the new school year with a fair prospect of providing, within a reasonable time, sittings for all the pupils entitled to attend school. When Mayor McClellan was elected he declared that this would be one of the great aims of his administration, and during the past year the progress in providing accommodations by the enlargement of old school buildings and the erection of new ones has been substantial, while the plans for the ensuing year will secure even better results. The total number of new sittings available when the schools open on Sept. 9 will be 50,185; 46,085 in the elementary schools and 4,100 in the high schools. Owing to the more rapid growth in population in Brooklyn, and also partly to the fact that it has not in the past received quite so much attention as it really was entitled to, that borough will get a slightly larger number of new sittings than Manhattan. These will amount to 17,700, as against 17,350 for Manhattan.

FIRE IN THRALL HOSPITAL. — A serious fire occurred on Aug. 24, in the lower portion of Thrall Hospital, at Middletown, N. Y., by which the lives of 26 patients were endangered. One of these, the wife of Horace Hall, of Ridgebury, had been operated on just before the fire broke out, and was still under the influence of ether when she was carried from the building by her husband. Arthur Thornley, an orderly, performed heroic service in the work of rescue, and was so severely burned that it was thought at first that his injuries would prove fatal. After the fire was over all the patients were moved back to the hospital, as the upper floors were not reached by the flames.

INTERNATIONAL ZOÖLOGICAL CONGRESS. — The members of the Seventh International Zoölogical Congress, recently in session in Boston, arrived in New York on Aug. 26 for a week's stay. On the 27th a dinner was given for them at the Majestic Hotel, and later they attended a reception and entertainment at the American Museum of Natural History as the guests of the trustees and officers of the museum and of the New York Academy of Sciences. During the evening they listened to a number of brief lectures at this institution, one of them being by Prof. Henry Fairfield Osborn, who has just returned from an expedition to Egypt in which the explorations in the Fayoum brought to light some remarkable bones of the eocene period. On Aug. 29 they were the guests of the New York Zoölogical Society at a novel luncheon served in the Lion House at the Zoölogical gardens in Bronx Park, with a gallery of lions, tigers and leopards as spectators. A long table, set for 250 persons, ran the full length of the building. On one side was an embankment of palms and on the other the row of cages, where the animals were pacing back and forth and from time to time gave out roars which completely drowned the music of the band hired for the occasion. In the evening the zoölogists attended a reception given in their honor at the New York Aquarium, at the Battery. The entertainments of the week also included an excursion to West Point and Garrisons, opposite, tendered by Professor Osborne, who has a beautiful country-seat at the latter place, situated on one of the loftiest points of the Hudson Highlands.

Mortality Statistics. — The condensed quarterly report of the Bureau of Records of the New York City Health Department for the three months ending June 30, 1907, shows that the mortality in the city during the quarter represented an annual death-rate of 17.93, as against 18.29 in the corresponding quarter of 1906. The corrected death-rate, excluding non-residents and infants under one week old, was 17.06 in 1906, and 16.74 in 1907. The number of deaths during the quarter was 19,146, as against an average of 18,436 for the corresponding quarters of the preceding five years, producing, with the estimated population, a death-rate of 18.95 per 1,000; a decrease of 1.02 points. Comparing the number of deaths from the principal causes with those of the preceding quinquennial averages of the corresponding quarters, corrected to correspond with the increase of population, the following decreases are found: malarial fevers, 12; smallpox, 29; measles, 82; diphtheria and croup, 126; tubercular diseases other than pulmonary tuberculosis, 51; cerebrospinal meningitis, 267; apoplexy and softening of the brain, 75; acute bronchitis, 183; lobar pneumonia, 307; diarrheal diseases under five years of age, 185; Bright's disease and acute nephritis, 184; accidental causes, 92; suicides, 69. Those showing increases were the following: typhoid fever, 37; scarlet fever, 16; whooping-cough, 9; influenza, 24; pulmonary tuberculosis, 33; cancer, 56; organic heart disease, 430; broncho-pneumonia, 218; sunstroke, 8; homicide, 17. It will then be seen that the only marked increases have been in broncho-pneumonia and organic diseases of the heart, while the decrease in deaths from lobar pneumonia, cerebrospinal meningitis, Bright's disease, and diphtheria is very gratifying. Another source of gratification is the decrease in mortality among infants and young children. The deaths under one year of age decreased 225, under five years, 797, and between five and sixty-five years, 379; while those at sixty-five years of age and over increased 92.

Obituary.

SENECA D. POWELL, M.D.

Dr. Seneca D. Powell, for many years a prominent surgeon in New York, died on Aug. 24 at Greenwich, Conn., to which place he had retired about three years ago on account of failing health. He was a native of Alabama, and was born on Jan. 5, 1848. At the outbreak of the Civil War he was a cadet in the University of Alabama, and, leaving that institution, he served as a volunteer in the Confederate Army until the close of the war. He then studied medicine, and was graduated in 1869 from the medical department of the University of Virginia and in 1870 from the New York University Medical School. In 1871, after serving as interne at Bellevue Hospital, he was appointed an assistant inspector in the New York Health Department, and shortly afterward clinical assistant to the chair of theory and practice of medicine in Bellevue Hospital Medical College. From 1879 to 1882 he was adjunct professor of surgery in the New York University Medical College. In the latter year he became connected with the New York Post-Graduate Medical School and Hospital as lecturer on surgical dressings, and since 1887 he had been professor of clinical surgery in that institution. He was visiting surgeon to St. Mark's Hospital, as well as to the Post-Graduate Hospital. He was vice-president of the Medical Society of the County of New York in 1891 and president in 1893. In 1895 he was vice-president of the Pan-American Medical Congress at Washington, and in 1898 president of the New York State Medical Society. Dr. Powell was well known as a writer, especially on brain surgery and the surgical uses of phenol. He devoted much time and attention to the toxicology of this drug, and his services in demonstrating the efficacy of alcohol as an antidote to it are deserving of lasting remembrance.

Current Literature.

Medical Record.

Aug. 10, 1907.

1. Bulkley, L. D. *Some Plain Truths about Syphilis.*
2. *Gaertner, F. *The Differentiation of Black Pigment Found in the Liver, Spleen and Kidneys from Coal Dust or Other Foreign Deposits.*
3. Thompson, J. B. *Prostatic Concretions with Special Reference to Etiology and Treatment.*
4. Edgar, J. C. *Ophthalmia of the Newly Born.*
5. Hagner, F. R., and Fuller, H. G. *Sterility in the Male, Its Causes and Surgical Treatment.*

2. Gaertner has studied extensively the black deposits found post-mortem in the lungs, bronchial glands, spleen, liver and kidneys, and their differentiation from pigment. The effects of dust in man depend on the kind of dust, amount, constancy of presence, susceptibility of the individual, rapidity of absorption, chemical reaction of the tissues, and amount of irritation present. Dust is at once driven into the alveoli, the smaller particles are absorbed, while the larger cut their way into the lung tissues. Hemorrhages, chronic bronchitis and pneumonia are produced. The author has proved by tests that this material consists of coal-dust, soot, etc. Absorption is favored by inspiration and the particles pass into the lymphatics, which communicate with the subpleural peribronchial and perivascular lymphatics. From these it is carried to the bronchial and tracheal glands. Lymphadenitis and periadenitis develop, and cicatricial tissue forms with contraction; or an acute process goes on with suppuration, and may

extend to the pleura, bronchi, veins, arteries, heart and pericardium. The gland may become calcified and be conveyed by perforation into the air passages and coughed up. The foreign substances may enter the blood stream and be carried to the other organs. In the spleen the pigment is found along the smaller arteries and in the marginal zones of the Malpighian bodies. In the liver it is in the periportal interacinous tissues. In kidneys it is rare. It may be differentiated from micrococci by lying mostly in the cells which germs do not do, and by staining differently. Hydrochloric acid distinguishes it from putrid products of the epithelium.

The New York Medical Journal.

Aug. 10, 1907.

1. *Edgar, J. C. *The Urine of Pregnancy.*
2. *Dana, C. L. *The Cerebral Localization of Aphasia and Its Classification on an Anatomical Basis.*
3. Loving, S. *Angioneurotic Oedema.*
4. Gordon, A. *Hysteria. Nature of the Malady.*
5. *Lucas, D. R. *Clinical Aspects of Recent Developments in the Physiology and Pharmacology of the Ureter.*
6. Felberbaum, D., and Fruchthandler, E. A. *Addison's Disease in Children with Report of a Case.*
7. Rugh, J. T. *An Unpleasant Experience with Ethyl Chloride.*
8. Bernart, W. F. *Mercuric Values in the Treatment of Syphilis.*

1. Edgar's article reports further investigations of the urine of pregnancy, largely confirming the results published in a previous article. He lays great stress upon the importance as a danger signal of increased ammonia and undetermined nitrogen percentages in the total nitrogen of the urine. Scanty amount of urine, albumin and casts are significant when they are present, but even though these are absent the patient may be on the verge of eclampsia. Cases are reported in which the excess of ammonia and of undetermined nitrogen was the earliest evidence of trouble which later developed.

2. Dana, by means of an ingenious form of graphic representation, describes the typical symptoms of the four chief types of aphasia: (1) the frontal or fronto-capsular characterized by aphemia, with retained ability to read, write and understand; (2) parieto-occipital aphasia, characterized by alexia, with ability to speak, write and understand, associated with hemianopsia; (3) temporal or temperoparietal aphasia, characterized by anomia, some mind deafness, paraphasia, much agraphia and alexia, without hemiplegia but with some astereognosis, anesthesia and ataxia; and (4) fronto-lenticular aphasia, the common mixed aphasia, characterized by aphemia with much agraphia, alexia, mind deafness and deafness with hemiplegia. The chart by which each case is represented includes twenty-two functions tested and recorded as "normal," "slightly impaired," "seriously impaired" or "absent." In conclusion, a short discussion of each of the more important of these functions is given with the anatomical locations and significance of impairment.

5. Lucas reports experiments dealing with the physiology, normal and pathological, of the ureters. It has previously been demonstrated that the ureters have peristaltic activity. Lucas observed that the peristaltic waves are markedly influenced by ether, still more by chloroform and to some extent by other drugs. Chloroform caused marked retardation of the peristalsis; caffein produced marked stimulation. Ligation of the ureter caused blocking of the peristalsis below the point of ligation and marked increase above it. The intra-ureteral pressure in the pelvic portion of the ureter is fairly constant; that in the lower portions is variable and may be in excess of that of the renal pelvis without a back flow of urine.

[F. W. P.]

The Journal of the American Medical Association.

Aug. 10, 1907.

1. Johnson, J. T. *The Influence of Gonorrhea as an Influence of Depopulation.*
2. Keyes, E. L. *Syphilis as a Cause of Depopulation and Race Deterioration.*
3. Hunsberger, J. N. *Artificial Childlessness and Race Suicide.*
4. *Adler, H. M. *A Clinical Method of Determining the Alkalinity of the Blood.*
5. Fordyce, J. A. *The Vessel Changes and Other Histologic Features of Cutaneous Syphilis.*
6. Ashford, B. K., and King, W. W. *Uncinariasis; Its Development, Course and Treatment.*
7. *Bunting, C. H. *Experimental Anemia.*
8. Wright, A. E. *Principles of Vaccine Therapy.* (To be continued.)
9. *Royster, H. A. *The Management of Dislocation of the Shoulder Joint Complicated by Fracture of the Neck of the Humerus.*
10. McDill, J. R. *Dysenteric Abscess of the Liver in the Philippine Islands.*

4. Adler discusses the desirability of a practical clinical method for determining the alkalinity of blood. He notes the two general methods by which the reaction of a fluid may be quantitatively measured: (1) titration to an end point, and (2) determination of the H and OH ionization. The former yields information concerning the amount of base or of acid present in a solution, but no direct evidence concerning the exactness of the equilibrium. The latter yields no direct information regarding the absolute amounts of base or of acid in the solution but gives evidence concerning the intensity of the alkalinity, the condition of the equilibrium. Heretofore only titration methods have been used on account of the difficulty of the technic and the want of an indicator to show the slight degree of the ionization met in the blood serum. Salm, however, has shown that rosolic acid and neutral red give sufficiently sharp indications at the degree of ionic concentration of the blood. Adler finds that rosolic acid with 1 cc. of rabbit's blood gives a pink color which can be compared with a standard. By excluding the corpuscles and working only with serum, confusion from the laking of blood and liberation of the color of the corpuscles can be avoided. A drop of serum from a capillary tube produces a strongly marked red color when allowed to fall on prepared rosolic acid test paper, which contrasts well with the delicate salmon pink of the unchanged parts of the paper. The red color indicates alkalinity. The serum in two cases of diabetic coma and in one case of meningitis with acetonuria did not produce this change in color, but the blood was alkaline in cases of meningitis without acetone in the urine.

7. Bunting by means of hemolytic poisons (ricin and saponin), intravenously injected into animals, has been able to produce experimental anemias closely simulating, both in blood picture and in changes of bone marrow, the primary anemia of human beings. Simple bleeding or slower administration of these poisons on the other hand merely produced an anemia of the so-called secondary type. Bunting considers that the results of this and of other work justify the conclusion that pernicious anemia is due to the absorption of hemolytic substances in such quantity that not only the blood but also the bone marrow is attacked, the typical blood picture being due to disturbance of the blood-forming function of the bone marrow. Secondary anemias, on the other hand, may be attributed to causes which act on the blood only, the bone marrow being unaffected. As to the origin of the hemolytic agent or agents assumed in this theory of pernicious anemia we have almost no knowledge, but there is much reason to suspect absorption from the alimentary tract or the oral cavity.

9. Royster discusses the subject of dislocation of the shoulder complicated by fracture of the neck of the humerus, with a report of 4 original cases and a review of the literature. The condition is probably more frequent than is recognized and its description in textbooks is generally inadequate. The diagnosis is difficult; in some cases even the x-ray may leave one in doubt. Experience long ago showed that leaving the dislocation unreduced until the fracture had united was almost certain to render reduction impossible. Immediate reduction of the dislocation is in most cases impossible. The most favorable results have followed operative treatment. The incision to be preferred extends from the acromial process directly downward through the fibers of the deltoid or between the

deltoid and the pectoralis major. In recent cases reduction is usually easy. In old cases there is often great difficulty; different operators have employed the gimlet, corkscrew or hook. The bone fragments are then adjusted and rarely require wiring. The arm should be put up in abduction, best retained by a pad in the axilla, a shoulder cap of plaster of Paris and a roller bandage. Fixation should not be kept up more than two weeks.

[F. W. P.]

British Medical Journal.

August 3, 1907.

1. Davy, H. *President's Address. Science in its Application to National Health.*
2. White, W. N. *Address in Medicine. A Plea for Accuracy of Thought in Medicine.*
3. *Butlin, H. T. *Address in Surgery. On the Contagion of Cancer in Human Beings. Auto-inoculation.* [See under *Lancet*, Aug. 3, 1907, No. 3.]

Aug. 10, 1907.

1. Taylor, F. *An Address on the Progress of the Medical Man.*
2. Clarke, F. H. *An Address on the Occurence of Epileptoid Attacks in Tachycardia and Bradycardia.*
3. Mott, F. W. *Bilateral Lesion of the Auditory Cortical Center. Complete Deafness and Aphasia.*
4. Caton, R. *The Prevention of Valvular Disease.*
5. *Franze, P. C. *Theory and Technique of Orthodiography.* [See Abstract No. 3, in the *Lancet* for Aug. 10, 1907.]
6. Newton, I. *A Case of Depression of the Parietal Bone in a Newly Born Infant: Trephining on the Twelfth Day: Recovery.*
7. Veitch, A. *Malnutrition in an Infant Due to Excessive Putrescence in the Alimentary Canal Successfully Treated by Lactic Acid Bacilli.*
8. Manwaring-White, R. *A Case of Intussusception.*

The Lancet.

Aug. 3, 1907.

1. Davy, H. *Presidential Address on Science in its Application to National Health.*
2. White, W. H. *Address in Medicine. A Plea for Accuracy of Thought in Medicine.*
3. *Butlin, H. T. *Address in Surgery on the Contagion of Cancer in Human Beings. Auto-inoculation.*
4. Bishop, E. S. *Movable Kidney with a Description of an Operation for Anterior Nephropexy.*
5. Pavy, F. W. *A Study of the Conditions Producing the Anomalous Reaction not Infrequently Met with on Testing Urine for Sugar with Fehling's Solution.* (Continued article.)
6. Maberly, J. *Iodine as an Antidote for Carbolic Acid Poisoning.*
7. Seheult, R. *Notes of a Case of Addison's Disease in a Negress.*
8. Hodgson, S. *Note on a Case of Tuberculous Cerebrospinal Meningitis.*

3. Butlin undertakes the study of auto-inoculation of cancer as preparatory to the study of the communicability of cancer from one human being to another. He points out the difficulties of animal inoculation. Even implantation is not easy, inasmuch as any sepsis will prevent inoculation. Most cancers having an exposed surface for contact are septic. These difficulties explain the rarity of the cases of auto-inoculation. He insists on three conditions: (1) both growths must be the same and communicable; (2) their identity must be proved microscopically; (3) the primary disease must be demonstrated. He reports 16 cases, of which 13 fulfill the requirements. Three cases were from one labia vulvæ to the other; 3 in the larynx; 1 from one lip to the other; 1 in the jaws; 2 from the kidney to lower down in the urinary tract; 2 cases of transference by rubbing with the hand; and 1 case from the uterus to the vagina. This last case is of special interest as the contact cancer was cylindrical carcinoma in the vagina, which is lined with squamous epithelium. He considers the possibility of implantation of cancer by "infected" instruments as a real danger in surgery.

[R. I. L.]

Aug. 10, 1907.

1. Hewitt, F. W. *General Surgical Anesthesia.*
2. Ehrlich, P. *Experimental Researches on Specific Therapeutics.*
3. *Gordon, W. *Bodily Posture and Cardiac Physical Signs.*
4. *Robertson, W. F., and Young, M. C. W. *Further Researches into the Etiology of Carcinoma: Note upon Certain Histological Features of Carcinomatous Tumors Revealed by an Improved Ammonio-silver Process.*
5. Pavy, F. W. *A Study of the Conditions Producing the Anomalous Reaction not Infrequently Met with on Testing Urine for Sugar with Fehling's Solution.* (Concluded.)
6. Watson, C. G. *A Method of Amputation at the Ankle-joint Which Leaves the Heel Intact.*
7. Pearson, J. S. *A Suggestion for the Radical Cure of Femoral Hernia.*
8. Sutcliffe, W. G., and Bayly, H. W. *A Case of Streptococcic Septicemia: Treatment by Wright's Method.*

3. Gordon emphasizes the necessity of the examination of the heart of all patients in both the erect and recumbent positions. Some of the variations noted are, that the recumbent position raises and narrows the cardiac dullness, the difference in width being about three quarters of an inch in normal cases, much more marked in enlargement; and that the recumbent position increases the second sounds, especially the accentuated pulmonic second.

Certain murmurs are heard in the erect but not in the recumbent position, and *vice versa.*

Gordon used the ordinary methods of auscultation and percussion. Another observer, Franze, in the current number of the *British Medical Journal*, has taken up the question of postural differences as found by the orthodiagraph. The orthodiagraph also finds the heart at a lower level on standing, but finds that the actual width of the heart is narrower on standing than on lying.

4. Robertson and Young, by the advantage of an improved histological technique, bring forward the new evidence of five cases in support of the contention that carcinomatous tumors are etiologically related to a special protozoan organism. In these 5 cases they find certain cyanide-fast bodies, which appear as spherical intranuclear threads, spirals and ameboid forms. Polynuclear leucocytes manifest a strong chemotaxis towards these bodies. [R. I. L.]

The Scottish Medical and Surgical Journal.

July, 1907.

1. Cathcart, C. W. *On the Use of Massage and Movement in the Treatment of Fractures.*
2. *Fraser, J. S., and Comrie, J. D. *The Naso-Pharynx as Infection Carrier in Epidemic Cerebrospinal Meningitis.*

2. Fraser and Comrie investigated the naso-pharynx in an epidemic of cerebrospinal meningitis in Leith. They isolated the meningococcus from the nasopharynx in 2 of 13 cases (15%), and from the nasopharynx of 10 out of 69 persons (14%), who did not have the disease, but who were in close contact with cases. They also isolated the meningococcus from the air of the engine room of a ship, where some of the fathers of these cases worked, although none of the fathers had the disease. [R. I. L.]

Münchener Medizinische Wochenschrift, No. 25.

June 18, 1907.

1. Sellheim, H. *A Means of Acquiring Skill in Removing the Placenta.*
2. *Hildebrandt, H. *The Pharmacological Properties of the Oxybenzyltannins.*
3. *Baumgarten, O. *The Use of Oxybenzyltannins in Practice.*
4. *Bach, L. *The Relations of the Medulla to the Pupillary Reactions.*
5. Schmidt, G. B. *Cederschrold's Massage by "Rhythmic Pressure," and its Use in the After-Treatment of Abdominal Operations.*

6. *Neurath, R. _Congenital Loss of Function in the Cranial Nerves._
7. Holzbach, E. _Observations on Scopolamin Heminarcosis in Obstetrics; the Effect of Scopolamin on the Child._
8. Schwardt. _Further Cases of Scleroderma Treated with Mesenteric Lymph Nodes._
9. Sicherer. _Inherited Strabismus._
10. Jöhne and Schmidt. _A Case of Cerebral Fat Embolism, Complicated with Tetanus._
11. Schumm, O. _A New Fermentation Tube for the Demonstration of Sugar in the Urine._
12. Cross, W. _A New Stomach Tube for Use in Rœntgenoscopy._
13. Penkert, M. _Does the Lumbar Injection of Stovain Influence the Motor Activity of the Viscera? (Remarks on Roith's Article in No. 19 of this Journal.)_
14. Spude, H. _Reply to B. Fischer's Criticism of My Article, "The Cause of Cancer and of Tumors in General."_
15. *Stadelmann, E., and Wolff-Eisner, A. _Typhoid and Colon Sepsis, and Typhoid Fever Considered as an Endotoxin Disease._ (Concluded.)

2. Hildebrandt has made synthetically a number of oxybenzyl derivatives of tannin, the graphical formulæ and properties of which are given in this article. The thymol derivative is recommended as a substitute for tannin itself over which it possesses the advantages that it is insoluble in acids, therefore does not irritate the stomach, and that it is tasteless. This drug, the trade name of which is tanno-thymal, possesses marked astringent power, and is not toxic or irritating.

3. Baumgarten recommends tannothymal, the new drug described in the foregoing article, as an astringent to control diarrhea. In 3 cases which resisted other forms of treatment good results were obtained.

4. Experimental work done with H. Meyer leads Bach to the assumption of an inhibition center in the medulla for the light reflex of the pupils. They have observed rigidity of the pupils and myosis after section of the medulla near the calamus scriptorius, and rigidity with pupils of medium width after laying bare the floor of the fourth ventricle. In the latter case the light reflex was immediately restored on cutting across the medulla in the _upper_ portion of the floor of the fourth ventricle, probably owing to cutting of the nerve fibers leading away from the inhibition center.

6. Neurath analyzes the literature of congenital defective function of the muscles supplied by the cranial nerves. Most frequently the eye muscles are involved, either alone, or with the face; sometimes there are deformities of the external ear, or other malformations. Usually the nuclei of the nerves supplying the affected muscles are found either aplastic or degenerated. In Neurath's case, however, the nuclei were found intact, and it seems probable that there was a congenital aplasia of the muscle itself.

15. Stadelmann and Wolff-Eisner report a case of "typhoid septicemia" in which none of the usual symptoms of typhoid were present except enlarged spleen and fever; the diagnosis was made only on the bacteriological findings. At the autopsy on the twenty-third day of the illness, only trivial lesions were present in the intestines, so that the post-mortem diagnosis of typhoid could be made only from the cultivation of typhoid bacilli from the bile. Such cases as this lead them to consider typhoid as a septicemia, the symptoms being due to the action of endotoxins. The latter produce in small doses a rise of temperature, in large doses a fall. This explains why in the guinea pig the experimental typhoid infection runs with subnormal temperature and rapidly leads to death or recovery; for the serum of this animal possesses greater bacteriolytic power than that of man, and the dose of endotoxin set free at any one time is therefore larger. A discussion of the pathogenicity of the colon bacillus, with the report of a case of sepsis due to it, ends the paper. [W. T.]

Deutsche Medizinische Wochenschrift. No. 26.

June 27, 1907.

1. *Strasburger, J. _Influence of the Elasticity of the Aorta upon the Relation of Pulse Tension to Systolic Heart Pressure._
2. *Ewald, C. A. _Idiopathic, Spindle-Shaped Dilatation of the Esophagus._
3. *Grünbaum, D. _Milk Secretion after Castration._
4. Joseph, M. _Treatment of Venereal Diseases._ (Concluded.)
5. *Hauschild. _"Euferrol."_
6. Groedel, T. _Discharge of Appendix through Rectum with a Septic Peritonitis._
7. Zuelzer, R. _An Orthopedic Chair Brace._

1. Strasburger's researches on the elasticity of the aorta in arteriosclerosis have shown that in this condition the distensibility is diminished. This he regards as a compensatory measure. These results are directly opposite to those obtained by Thoma, who, the author claims, worked by faulty methods. Since systolic heart pressure is dependent upon a constant expulsion time and also upon the elasticity of the artery walls, chiefly that of the aorta, it is evident that investigations of the volume changes of the aorta, with different pressures and at different ages, is very important. Strasburger thinks that the results of his estimations of the capacity of the aorta, when compared with blood pressure readings, prove many hitherto conjectural points about the circulation. The article is accompanied by charts.

2. Ewald reports a case of spindle-shaped dilatation of the esophagus, which he followed for three years and in which the diagnosis was made before death. The autopsy showed no adequate cause. There was no degeneration of the vagus nor was the microscopic condition of the esophageal muscle such as would occur if the vagus were degenerated. The specimen showed that the dilatation occurred in the lower two-thirds and the circular muscles were hypertrophied to 3 mm. in thickness. A spasm of the cardia and hypertrophy and subsequent dilatation of the muscle wall were probably the etiological factors.

3. Grünbaum reports 21 cases of complete castration for various reasons, in which the secretion of the mamma occurred in 14 after the operation. Age, climacteric, pathological condition of ovaries, whether a multipara or nullipara, apparently made no difference. In no case of removal of the uterus leaving part of the ovary did the milk secretion start up. The author concludes that secretion of the mamma is dependent upon influences exerted by the ovaries.

5. Hauschild recommends the use of "Euferrol," an iron preparation, each capsule containing 0.012 gr., iron in form of an oxide, and 0.00009 gr., arsenious acid.

[L. G. M.]

Annals of Surgery.

August, 1907.

1. *Pringle, J. H. _Avulsion of the Spine of the Tibia._
2. *Simmons, C. C. _Osteogenesis Imperfecta and Idiopathic Fragilitas Ossium._
3. *Buerger, L. _Traumatic Epithelial Cysts._
4. Ware, M. W. _Syphilis of the Bones and some Radiographic Findings._
5. *Freeman, L. _The Correction of Some Forms of "Saddle Nose."_
6. *Rushmore, J. D. _Intussusception._
7. Robinson, E. F. _Operation in Two Stages for Relief of Ileus of Jejunum._
8. *MacDonald, T. L. _An Enormous Cyst of the Urachus._
9. Stow, B. _Ureteritis Cystica Chronica._
10. *Russell, R. H. _Operation for Hypospadias._
11. Stone, J. S. _A Male Pseudo-Hermaphrodite._
12. Walker, G. _A New Retractor to be Used in Suprapubic Cystotomy._
13. Ashhurst, A. P. C. _Multiple Fractures with an Analysis of 240 Cases._
14. Thomas, T. T. _Fractures of the Head and Neck of the Radius._
15. Armstrong, G. E. _Isolated Fracture of the Great Trochanter._
16. Gibbon, J. H. _Post-Operative Treatment._

1. Pringle reports the case of a man, thirty-six years of age, who received a severe blow on the outer side of the knee, knocking it inwards. There was much effusion into

the joint cavity, but the only abnormal motion of the joint demonstrable was in abduction. This was so great that it suggested rupture of the internal lateral ligament. At operation the anterior crucial ligament was found torn from the tibia, taking the spine with it. This was sutured with success. Two years later the knee was functionally perfect, only the very slightest degree of abduction being present, with the knee in full extension. This case adds one more to the three already on record in the literature.

2. Simmons reports two cases: one, a girl thirteen years of age, the other, an infant of ten months. A careful report is given of both cases; the first by x-ray examination, the second by autopsy. The etiology of the condition is still obscure.

3. Buerger brings forward three cases in support of the theory of Garré concerning epithelial cysts. In the course of an injury such as a puncture, the introduction of a foreign body, or a lacerated wound, a portion of the surface epithelium is deposited in the subcutaneous tissues, where it continues to grow, and finally forms a cystic tumor. In the first two cases the cyst was situated on the palmar surface of the tip of the index finger, and followed trauma. In the third case the cyst lay under the skin of the breast near the axillary fold, and no history of trauma was obtainable. The contents of these cysts is of a white pultaceous character.

5. Freeman has devised the following operation for the correction of saddle-nose, by means of a plate: (1) transverse skin incision at the root of the nose. (2) Undermining of skin along bridge and down the sides, by means of a director. (3) Insertion of a stout darning needle from the tip to the root of the nose, to serve as a guide when the plate is pushed into position. The plate should be of celluloid, with carefully smoothed edges, and perforated by numerous holes.

6. Rushmore emphasizes the fact that intussusception being an internal strangulated hernia, operative treatment should be employed immediately. Mechanical agents, such as water or air, should not be used. The mortality in 1892 of 51.7% has been reduced to 12.5% at the present date.

8. MacDonald's patient was forty years of age, and gave a history of a slowly growing abdominal tumor, beginning in the region of the bladder and growing upward, with the gradual onset of pressure symptoms, especially difficult respiration, pain and impaired digestion. The sac was situated in front of the peritoneum, but was surrounded by very firm adhesions. These were broken up with great difficulty, and the cyst removed. In the wall of the cyst were a number of nodules, which proved to be papillomata. An interesting feature in the case was the failure of the peritoneum to absorb a large amount of normal salt solution with which the abdominal cavity had been filled. On the seventh day after the operation the patient presented symptoms of sepsis. The lower end of the wound was opened, allowing the escape of quarts of the salt solution, which had become purulent, and which presented the colon bacillus characteristics. Drainage was continued for a week, after which convalescence and return to health were satisfactory.

10. Russell describes a modification of his original method of operation for the treatment of hypospadias. This method consists of two operations. At the first operation the penis is released and straightened and the glandular portion of the urethra is formed, and lined with preputial skin. At the second operation the perineal and penile portions of the urethra are formed and closed, so as to complete the channel from the perineal opening to the glandular urethra. For this operation suprapubic drainage is employed. A year or more, he states, should be permitted to elapse between the two operations.

[W. C. Q.]

Electrical Excitability of the Motor Nerves. Chvostek (*Wien. klin. Wochenschr.*, No. 26) says that the Erb phenomenon is a constant symptom of tetany in all acute stages. It can always be found, as well as the mechanical irritability, along some motor nerve when sought for persistently and at different times. But often the electrical excitability cannot be obtained a short time after a cramp, or it may show a diminution independently of the other symptoms. The diagnosis of tetany cannot be made with certainty by a moderate grade of the Erb phenomenon, as it is present in healthy individuals in certain conditions. In difficult cases the faradic current in minimal strength may insure the diagnosis by causing an immediate outbreak of tetany.

Experimental Tuberculosis of the Skin in Monkeys. Kraus and Grosz (*Wien. klin. Wochenschr.*, No. 26) find that tubercle bacilli from human sources, as well as the bovine type, can produce typical tubercular skin lesions in monkeys. The lesions caused by the human varieties remain centered about the point of scarification, while those originating from the bovine bacillus show progressive infiltration, ulceration and destruction of tissue, often with extension to the internal organs and ultimate death. There is an inverse ratio between the severity of the skin lesion and the number of bacilli visible there in.

[L. G. M.]

Miscellany.

THE DOMESTIC FLY.

The following deserved editorial condemnation of the common fly, we quote from the New York *Medical Journal:* It is well known to members of the medical profession that the domestic fly is exceedingly active in the transmission of disease, but it is to be feared that the general public has as yet nothing like an adequate appreciation of the fly's pestiferous activity. We are glad, therefore, that at last the lay press has taken the matter up. Last Saturday the New York *Herald* gave its readers an excellent editorial article on the subject. "At no time of the year," says the *Herald*, "is the fly more of a nuisance and a danger than now, and a few mortals there are that may not be persuaded to be his sworn enemy anywhere, everywhere, and every time!"

It is doubtful if the fly is of the least use as a scavenger; he drops his load. Having imbrued his feet in tuberculous sputum or typhoid fever dejecta or some other noisome and revolting material, he makes haste to deposit a part of his spoils on your butter. He is an unclean creature and he spreads the seeds of pestilence. He is far more of a menace to human health than the mosquito, for he has no restricted repertoire. Filth of all sorts is his, and he distributes it industriously; and filth is apt to contain morbific matter. If he would only drown, it would be some consolation, but after prolonged submersion in milk, coffee, or the like he speedily revives and is ready to go at his nefarious work anew, having perhaps in the mean time poisoned the liquid which ought to have done him to death.

It is not alone as a distributor of pathogenic germs that the fly proves inimical to man's health, though doubtless in that capactiy he is the most malignant. By his interference with sleep in the early morning hours he unquestionably exerts a lowering effect on the vitality and renders the organism a readier prey to the germs of infectious disease, besides robbing us of that serenity which is essential to good digestion and to proper dealing with the affairs of life. So far as we can see, the fly is an unmitigated nuisance, and we are ready to join in the cry *delenda est musca*.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 24, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1600	765	Quincy	14	9
Chicago	—	—	Waltham	5	1
Philadelphia	—	—	Pittsfield	16	—
St. Louis	—	—	Gloucester	8	1
Baltimore	248	108	Brookline	4	2
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	9	6
Pittsburg	—	—	Northampton	4	2
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	6	—
Washington	—	—	Leominster	—	—
Providence	72	24	Hyde Park	5	—
Boston	243	100	Melrose	—	—
Worcester	43	16	Newburyport	—	—
Fall River	60	42	Woburn	4	—
Cambridge	32	18	Marlboro	2	1
Lowell	47	23	Westfield	7	5
Lynn	29	14	Peabody	—	—
New Bedford	30	17	Revere	7	3
Springfield	25	8	Attleboro	4	—
Lawrence	30	13	Clinton	—	—
Somerville	17	6	Adams	9	5
Holyoke	26	16	Gardner	—	—
Brockton	16	5	Milford	—	—
Malden	11	8	Watertown	1	1
Chelsea	8	4	Plymouth	—	—
Salem	12	6	Weymouth	—	—
Newton	11	4	Framingham	6	4
Haverhill	6	2	Southbridge	—	—
Fitchburg	11	2	Wakefield	—	—
Everett	14	10	Webster	—	—
Taunton	13	5			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED AUGUST 21, 1907.

WERTENBAKER, C. P., surgeon. Directed to proceed to Cape Charles Quarantine Station for temporary duty, upon completion of which to rejoin his station in Norfolk, Va.

CLARK, T., passed assistant surgeon. Granted leave of absence for fourteen days from August 26, 1907. August 21, 1907.

KING, W. W., passed assistant surgeon. Relieved from temporary duty at the Hygienic Laboratory, and directed to proceed to San Francisco, Cal., reporting to the medical officer in command, Angel Island Quarantine Station, for duty and assignment to quarters. August 21, 1907.

STANSFIELD, H. A., passed assistant surgeon. Directed to proceed to San Francisco, Cal., reporting to the medical officer in command for special temporary duty. August 17, 1907.

AMESSE, JOHN W., passed assistant surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Havana, Cuba, for duty in the office of the American consul-general. August 16, 1907.

COLLINS, G. L., assistant surgeon. Granted leave of absence for one day. August 17, 1907. August 16, 1907.

KRULISH, EMIL, assistant surgeon. Directed to proceed to Ellis Island, N. Y., reporting to the chief medical officer for duty. August 15, 1907.

ADAMSON, B. G., acting assistant surgeon. Granted ten days' extension annual leave, on account of sickness, from July 28, 1907. August 8, 1907.

BAILEY, C. W., acting assistant surgeon. Granted leave of absence for ten days from September 16, 1907. August 20, 1907.

HICKS, B. L., acting assistant surgeon. Leave of absence granted Acting Assistant-Surgeon B. L. Hicks for twelve days from August 4, 1907, revoked. August 15, 1907.

RANSOM, S. A., acting assistant surgeon. Transferred from Shanghai, China, to Kobe, Japan, for duty, vice Acting Assistant-Surgeon J. B. Fowler.

ROEHRIG, A. M., pharmacist. Detailed to represent the service at the fifty-fifth annual meeting of the American Pharmaceutical Association, to be held in New York City, September 2–7, 1907. August 20, 1907.

LA GRANGE, J. B., pharmacist. Detailed to represent the Service at the fifty-fifth annual meeting of the American Pharmaceutical Association, to be held in New York City, September 2–7, 1907. August 20, 1907.

ILTIS, G. W., pharmacist. Granted leave of absence for fourteen days from August 17, 1907. August 15, 1907.

BIERMAN, C. H., pharmacist. Granted leave of absence for thirty days from September 9, 1907. August 15, 1907.

RESIGNATIONS.

The resignation of Assistant-Surgeon E. T. Olsen was accepted by the president, effective October 12, 1907. August 15, 1907.

Acting Assistant-Surgeon Linton Turner resigned to take effect August 15, 1907. August 20, 1907.

Pharmacist A. G. Williams resigned to take effect August 31, 1907. August 20, 1907.

BOARDS CONVENED.

The Board convened to meet at Chicago, Ill., July 25, 1907, for the purpose of examining an Inspector of immigrants, amended: Passed Assistant-Surgeon B. S. Warren to act in place of Acting Assistant-Surgeon J. J. Gerkins. August 20, 1907.

A board of officers was convened to meet at Galveston, Tex., for the purpose of recommending a site for a national quarantine station. Detail for the Board: Capt. Percy W. Thompson, U. S. R. C. S., Surgeon J. H. White, P. H. and M. H. S., and Capt. J. C. Oakes, corps of engineers, U. S. A. (By authority of Secretary of War.) August 19, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING AUGUST 31, 1907.

B. H. **DORSEY**, assistant surgeon. Detached from duty at the Navy Recruiting Station, Des Moines, Iowa, and ordered to Washington, D. C., September 3, for examination for promotion, then to wait orders.

C. M. **OMAN**, passed assistant surgeon. Detached from the "Arkansas" and ordered to the "Illinois." September 9.

C. H. **DELANCY**, passed assistant surgeon. Detached from the "Florida" and ordered to the Navy Yard, New York, N. Y.

E. A. **VICKERY**, assistant surgeon. Detached from the "Illinois" and ordered to the Navy Yard, Boston, Mass.

J. C. **MARTIN**, pharmacist. Detached from the Naval Dispensary, Washington, D. C., and ordered to the United States Naval Medical School Hospital, Washington, D. C.

L. O. **SCHOTKY**, pharmacist. Detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Hospital, Washington, D. C.

C. E. **REYNOLDS**, pharmacist. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the Bureau of Medicine and Surgery, Navy Department.

A. McK. **JONES**, acting assistant surgeon. Sick leave revoked; ordered to the Naval Recruiting Station, Des Moines, Iowa.

RECENT DEATHS.

DR. JOSEPH A. WINKLER, of Jamaica Plain, died last week at the age of seventy-seven. He was born in Savannah, Ga., studied medicine in New York and for the greater part of his life was a practitioner in Jamaica Plain.

DR. WILLIAM E. JOHNSON, for many years a practising physician at Keyport, Monmouth County, N. J., died at his home in Ontario, Canada, August 27.

DR. EDWARD J. MESSEMER, of New York, while abroad for the summer, died at Marburgh, Germany, on August 5. He was sixty years of age, and was graduated from the medical department of the University of the City of New York in 1871. He devoted himself more particularly to neurology, and at the time of his death was one of the physicians to the out-patient department of Mount Sinai Hospital.

DR. GEORGE WALDRON, a prominent physician of Rochester, N. Y., was instantly killed on August 28 in an accident, at Hopewell, near Canandaigua, in which his automobile was struck by a trolley car. Three aged women to whom he was giving a fresh air outing in his large touring car were also killed by the collision. Dr. Waldron was sixty-two years of age and was graduated from the medical department of the University of Buffalo in 1881.

BOOKS AND PAMPHLETS RECEIVED.

Massage of the Prostate and Stripping the Seminal Vesicles. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

Education in Sexual Subjects. By Ferdinand C. Valentine, M.D. Reprint.

The Treatment of Gonorrheal Epididymitis. By Julius J. Valentine, M.D. Reprint.

Original Articles.

THE OPERATIVE TREATMENT OF VARICOSE VEINS OF THE LOWER EXTREMITY.*

BY JOHN T. BOTTOMLEY, M.D., BOSTON.

Not alone to the greater ills and affections that in themselves endanger human life should our professional care and attention be directed; the lesser ailments, rarely fatal but frequently disabling, call for relief and justly claim their due share of our notice. It is with this thought in mind that I bring to your attention in this paper the subject of varicose veins of the leg. I need make no apology, I trust, for my choice of topic. Recognized for centuries, widespread in its field, frequently crippling in its effects, attacking most often the wage-earning class,—this affection of the venous system is worthy of our best endeavors for its relief. Its treatment usually falls within the province of surgery, and it is through operative procedures alone that permanent and satisfactory results can be obtained in the very large majority of cases.

No lengthy discussion of the subject will be undertaken, but it may not be amiss to recall a few important facts with regard to the anatomy, etiology, symptoms and pathology of the affection before taking up the operative treatment.

There are two systems of veins in the lower extremity. In the leg each main artery has two accompanying veins which unite at the lower border of the popliteal space to form the popliteal vein; the latter in its turn becomes the femoral.

The internal and external saphenous veins with their branches form the superficial system. A detailed description is unnecessary. It is important to note that the internal saphenous has free communication with the deep system through the deep fascia. It also communicates freely with the external saphenous in the foot and leg. The external saphenous has but one important branch; it is given off just before the parent vein empties into the popliteal and, after turning around the inner border of the thigh, anastomoses with a large branch of the internal saphenous to form a well-marked connection between the two larger veins. It frequently shows a varicose condition.

The external saphenous has from six to twelve valves, and the internal from eight to twenty. This is a most important arrangement. Under normal conditions the blood pressure in the veins is distributed in such a way that at any given point of the vein wall the pressure is only that caused by the weight of the blood column between it and the next higher valve. With incompetent valves the story is quite different. Above Poupart's ligament there is no valve in the femoral, external iliac or inferior cava veins; hence there is nothing to prevent the pressure of the blood in these vessels from being communicated to the internal saphenous, and the latter must sustain the weight of the blood column between itself and the heart. This is a relatively serious matter, when the valves of the vein are for any reason incompetent.

The etiology of varicose veins is obscure. Most of the so-called causes are really neither primary nor originating; they are simply exciting or aggravating agents. Many cases, indeed, are seen in which are present none of the conditions ordinarily mentioned as causes. The affection, as seen in our out-patient clinics, is most common in patients in the third and fourth decades of life. It must be remembered, however, that these patients seek aid not at the first appearance of symptoms, not when the varicose condition is first noticed, but only when it becomes troublesome. Kennedy [1] in his report of 27 cases informs us that in no fewer than 6 the varicosity appeared at the age of ten or earlier, and that in 11 cases it was noticed between the tenth and the twentieth years. Such facts give credibility to the opinion of Bennett,[2] who calls attention to the frequent early appearance of the condition and maintains that the most probable cause is a congenital defect by reason of which the valves are not normally competent; this incompetency of the valves, says Schambacher,[3] exists because of congenital weakness of the vessel wall, due to their regular development and arrangement of its elastic and muscular elements. The probability of a congenital etiological factor is further increased by the fact that the condition may exist in both extremities at the same time or in either alone. Of 864 cases, including those of Bennett, Miller, Goerlich and the Carney Hospital series, both extremities were affected in 414, the left alone in 252, and the right alone in 198. Heredity, too, is said to have an etiological influence. There is, moreover, a relatively small group of cases — the "inflammatory" of Miller,[4] — in which a pretty definite relation can be established between the varicose condition and a preceding phlebitis, consequent upon pregnancy, typhoid, erysipelas, pneumonia, etc. Of Miller's 128 cases 40 are classified under this head. Trauma is unquestionably a frequent, exciting cause.

Little need be said of the pathology. As we see the cases, the gross pathology is usually evident. The fundamental pathology rests on the facts that, whatever the cause may be, there exists stasis in the veins of the lower extremity, that the valves are incompetent, and that the veins most often affected run in the subcutaneous fat where there is but little resistance offered to their dilatation. With the late pathology, the simple phlebitis, the organized phlebitis, the periphlebitis, the ulceration, the eczema, etc., we are all familiar.

The symptoms vary in severity. Some cases are subjectively symptomless; in many, on the other hand, the symptoms are so severe as to seriously cripple or even incapacitate the patient; the former seldom present themselves for treatment; of the latter, many examples are seen.

What does surgery of the present day offer in the way of radical treatment? How much hope of permanent cure can we promise these cases? Though numerous operative procedures have been

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* Read before The Massachusetts Medical Society, June 11, 1907.

proposed for its relief, those in use to-day have as their foundations one of the following methods: (1) The Trendelenburg, (2) the Schede, or (3) the Madelung. These operations, modified or combined, are conceded to be the most effective of all.

1. Trendelenburg[5] in 1890 published his method of division of the internal saphenous between ligatures close to the saphenous opening. This prevents the transmission of the weight of the blood column in the femoral, iliac and inferior cava veins down to the internal saphenous with its incompetent valves. The procedure has been modified, and now excision of about two inches of the vein is practised instead of simple ligation. While there can be no doubt that in many, especially the early, cases, his method gave good results, yet recurrences have been reported in percentages varying from 6% (Remedi)[6] to 15 % (Faiszt)[6] and even 22% (Perthes).[6] Miller,[4] from a study of reported cases and of the Johns Hopkins Hospital series, concludes that the cures average about 75%. The percentage of recurrences increases with the length of time after operation, rising in the Johns Hopkins Hospital series from 11% to 37% from the fourth to the eighth year.

2. In the Schede[7] operation all veins superficial to the fascia are divided between ligatures, through an incision encircling the leg in its upper third. Von Wenzel,[6] a former pupil of Trendelenburg, modified the procedure by making a similar incision at the junction of the middle and lower thirds of the thigh and dividing the superficial veins at that level. A " horse-shoe " incision has also been used in place of the complete encircling incision. These operations attempt to attain their objects by forcing the blood to get out of the leg into the femoral vein by the way of the deep venous channels lying under the fascia. In a small series of 9 cases at Johns Hopkins, 67% had recurred at the end of ten years.

3. Madelung,[8] through a long incision from which the skin is turned back a hand's breadth on either side, excises practically the entire internal saphenous vein and a portion of its branches. Many modifications of this method have been offered, the chief ones being subcutaneous extirpation of the vein or excision of small portions throughout its length. Ninety per cent of cures is claimed for it.

The Trendelenburg operation is easy of performance and practically free from danger. But often it does not fulfill the conditions necessary for a radical cure. Two factors militate against its success and, in a way, against that of the Schede method. (*a*) First, the internal saphenous vein has free communication with the deep system and also with the external saphenous. This communication may play an important part in the prevention of a cure; for Bennett believes that varicosity, stasis, and consequent increased pressure in the deep veins, often coexists with a like condition in the superficial. It is evident that frequently in the Trendelenburg operation no barrier is offered to the transmission of this increased pressure and its effects to the superficial veins. In fact, consequent to this operation, enlarged veins either appear or, if present at the time, increase in size. We have noted that, even after extensive extirpating operations, some of the venous branches which were not removed have later become enlarged; this enlargement could take place only because of back pressure from the deep circulation. (*b*) The second factor in recurrence is that restoration of the superficial venous circulation sometimes takes place after ligation. (Miller,[4] Ledderhose,[9] Goerlich.[10]) This may occur in three ways: (1) by anastomosis around the scar, (2) by formation of varices in the scar, or (3) by union of the ligated stumps with formation of an intact vein. This is an interesting phase of the subject, but we cannot discuss it in a paper of this length.

Occasionally, though rarely, gangrene of the foot may follow the Schede procedure. Much more common sequelæ are edema of the leg and either hyperesthesia or anesthesia (more frequent) below the scar because of section of the subcutaneous nerves. Von Wenzel[6] claims that his operation is followed by no such ill results. In 3 cases reported by Georgi,[6] no anesthesia appeared, despite the fact that in all 3 operations he saw and preserved just one nerve filament. We have had no experience with the method, but beyond the fact that it shuts off the superficial venous circulation at a higher level than does the Schede, it seems to have nothing to recommend it over the latter.

The unmodified Madelung operation is seldom if ever done now. The long disfiguring scar and the extensive subcutaneous area necessarily exposed to the chance of infection were potent factors against it. But its principle is still effective and we believe that this operation, as modified by C. H. Mayo,[11] is the best single operation of the present time for varicose veins. This does not mean that the modified operation can be applied successfully to every case. On the contrary, there are many cases in which mere extirpation of the internal saphenous vein will not give a perfect cure; but it is nevertheless true that such extirpation must be the essential part of any successful operation for the relief of the condition.

As a preliminary step to any operation that has for its object the transference of the venous circulation from the superficial to the deep veins, it must be definitely established that there is neither thrombosis of the deep veins nor any marked impediment to the return of the blood through them. A history of a severe preceding phlebitis should arouse our suspicions. Mayo has adopted the diagnostic expedient of having doubtful cases wear an elastic stocking, or a bandage from the toes to the knee for a week. If this gives comfort to the patient and relieves the symptoms, it is assumed that the deep veins are sufficiently patent and the following operation is usually done:

The leg is held in an elevated and extended position by means of an ankle-support which is attached to an ordinary, upright, gynecological standard. This position serves a double purpose; it checks hemorrhage and renders more accessible the field of operation. The internal saphenous is then divided between hemostats in the upper third of the thigh. The proximal end is ligated; the distal end is threaded into the ring of the enucleator and again grasped with a hemostat. The vein, put under moderate tension by a pull on the hemostat, is then extirpated subcutaneously by pushing the enucleator in the direction of the knee. When six to eight inches of the vein has thus been freed, the ring is pushed up against the skin from beneath, a short incision made down on to it, the vein grasped, the enucleator withdrawn, the freed length of vein pulled out through the short incision, rethreaded into the ring, and another length is then extirpated in a similar manner. This process is repeated until the vein has been removed down to a point four to six inches below the knee. The lateral branches are torn as met and usually do not bleed. Occasionally, however, there may be bothersome hemorrhage; this can be controlled by pressure with a gauze pad or by light tamponing of the incision from which it comes. If the main trunk breaks during the manipulation, pressure is applied over the point of rupture, a short incision is made lower down over the vein, the vessel divided between hemostats and extirpated from below upwards to the point of rupture. As a substitute for the enucleator, long forceps which form a ring at the end when closed are sometimes used. Occasionally torsion is employed for removing portions of veins, especially when we are dealing with branches. The external saphenous, when varicose, is also extirpated.

At the Carney Hospital my colleague, Dr. Munro, and I have operated on 57 cases of varicose veins in the last three and a half years. The method described above has been approximately the method used in the great majority of cases. Our experience has emphasized several features which, though unessential, are nevertheless worthy of note. We extirpate the internal saphenous to as low a level as possible. Mayo writes that his method is not always applicable, and that in about 10% of the cases either extirpation by the open method or subcutaneous extirpation by some other form of blunt dissection must be substituted for it. We have been led to the conclusion that such substitution must be made in considerably more than 10% of the cases. When the veins are brittle, when they are unusually thin, when the subject is very fat, when the veins are very large and thrombotic, when a considerable degree of periphlebitis is present, or when calcareous deposits have formed, the enucleator does not work well. However, we have yet to see the case in which at some stage of the operation the enucleator has not been of some service. In general, the instrument is more effective in the thigh than below the knee. In a considerable number of cases, especially when the veins are enlarged, thickened and thrombotic, the index finger has proved to be a very efficacious instrument for subcutaneous extirpation.

We have also found it wise, when a branch cannot be torn with the use of moderate force, to make a short incision down on to the enucleator at the point where the branch joins the main trunk, to unthread the latter and, after extirpating the branch as far as can be easily done, to ligate it and then to proceed with the removal of the main vessel. We make a point of ligating the main trunk very close to the saphenous opening and of tying any large branches entering the internal saphenous in the neighborhood.

Any mass of varicose veins, wherever in the lower extremity it may be located, is dissected free and removed. Usually such masses can be removed only through a moderately long incision. Portions of visibly enlarged veins in the leg other than the internal saphenous are also removed, even though at the time they may not show a varicose condition. If there are numerous visible venous channels coursing up the leg, even though the enlargement be only moderate, a partial Schede is done in addition to the usual operation; that is, a " horse-shoe " incision is made, extending perhaps half way around the leg in the upper third, and all superficial veins exposed by the incision are divided between ligatures. All this, of course, takes additional time, but we believe that it is time well spent. Following Mayo's advice, we avoid making incisions in and very close to the fold of the knee, because of the danger of keloid formation in that locality.

All incisions are closed by lock sutures of horsehair and covered with collodion dressings. It is our practice to close the incision through which the internal saphenous is first tied just as soon as the first length of vein has been extirpated. This lessens the chance of infection. Ulcers are either excised and skin grafted or thoroughly curetted and allowed to heal by granulation. Mayo[11] describes an ingenious way of dressing these ulcers and grafts so that their progress may be observed without disturbing the dressing of the whole limb. Eczematous areas are painted with compound tincture of benzoin. Superficial abrasions are wiped with tincture of iodine before proceeding with the operation. Finally, the lower extremity is wrapped in gauze, a bandage is applied from the toes to the groin and around the abdomen in the form of a spica; the patient is put to bed with the leg elevated on a pillow. The duration of the stay in bed averages about two weeks. After leaving the hospital the patient usually wears a bandage from toes to knee three to four months.

The gist of the whole matter is that, while removal of the major portion of the internal saphenous vein is the essential part of the operation, other procedures must be added suited to the conditions of each case.

Subcutaneous extirpation is by no means a recent operation. Narath[12] gives a most interesting historical account of the various operative procedures for the treatment of varicose veins. Subcutaneous extirpation was first described by Oribasius (325–403 A.D.). It is thus about fifteen hundred years old. It fell into disuse in the later

Middle Ages and was revived again after the advent of antisepsis.

The operation is not entirely without danger. Embolism, particularly of the lungs, has followed it several times. Goerlich[10] mentions 6 cases. Miller[4] describes a probable case occurring in the Johns Hopkins series, and mentions another reported by Sylvester. It has followed both simple and extensive operations, but fortunately is very rare. As yet, we have not met with it at the Carney. The other danger is sepsis. Some degree of it is difficult to avoid because of the presence of eczema or ulceration in many of the cases. We have once seen severe, post-operative erysipelatous inflammation of the leg. Fortunately it was not fatal, but the patient was seriously ill for some days.

In our series of 57 cases we have done the so-called Mayo operation 46 times. We know the present condition in 28 of these patients; 24 of them are perfectly well; in 3 the result is fair and can, I think, be made perfect by extirpation of some of the smaller veins which, though not particularly enlarged at the time of operation, have become so in the meantime. The fact that this post-operative enlargement has occurred in these smaller veins has caused us to become more and more radical in our primary operative procedures and to make them more extensive.

Our only really poor result is in a woman who now has a rather marked edema and more or less constant dull pain in both legs. We believe the failure in this case to be due to the fact that we operated before we were certain that there was no obstruction to the return of the blood in the deep veins; for there can be no doubt that in this case there was and is a partially obstructed deep venous circulation. With our present knowledge operation would not have been advised.

We have done the Trendelenburg operation, modified and unmodified, in 12 instances. Of the 6 patients whose present condition we know, 3 are well; 3 others showed recurrence, 2 of whom have been cured by the modified Mayo procedure.

We have done the Schede operation twice and excision of portions of the internal saphenous twice. The post-operative history of these cases is unknown to us.

As we have previously stated, recurrences are said to increase in number as the post-operative period lengthens in duration. This applied, however, only to the result of the Trendelenburg and Schede operations. With us so-called recurrences after the Mayo operation, when they have come at all, have appeared within the first six months of the post-operative period. Of course, our work has covered a period of only three and a half years, and it may be said that so short a lapse of time does not permit of our speaking of results with definite assurance; but we believe that after the operation as we now practise it a recurrence, as such, cannot take place. Some of the remaining branches may enlarge and, perhaps, even become varicose, but re-establishment of the superficial venous circulation is impossible. We feel that, in properly selected cases, both a subjective and an objective cure may be promised in practically all instances, and that examining surgeons for police and fire boards can now have no sound reason for rejecting as candidates, for either the police or fire departments, men who have undergone operation for varicose veins and remain well for a year thereafter.

To sum up in brief:

1. The important etiological factor is a congenital one; in a small proportion of cases it is inflammatory.

2. The operation that will give the best results must have as its essential feature extirpation of the internal saphenous vein; but to this such other procedures must be added as are suitable to each individual case.

3. Before operative measures are undertaken it must be demonstrated that the deep venous circulation of the lower extemity is not obstructed to any marked degree.

4. In properly selected cases it is believed that a permanent cure may be promised.

5. The operation is almost but not entirely free from danger.

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[8] Madelung: Verhandl. der deut. Gesellsch. für Chir., 1884 p. 114.

[9] Ledderhose: Deut. Zeitschr. für Chir., 1903–04, vol. 71, p. 401.

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[12] Narath: Deut. Zeitschr. für Chir., June, 1906, p. 104.

DISCUSSION.

Dr. G. H. Monks, of Boston: The subject has been so thoroughly presented by Dr. Bottomley that little remains to be added. The number of cases of varicose veins which come to operation is constantly increasing. Whereas years ago comparatively few cases were submitted to operation, at the present time cases of varicose veins form an appreciable proportion of the total number of operations in a general surgical clinic. This, of course, is for the reason that, by improved technique, including among other things a more extensive removal of the veins than was formerly practised, surgeons are getting better and better results and the cases where operation is contra-indicated are getting fewer and fewer.

I quite agree with Dr. Bottomley that the best single operation of the three of which he has spoken is the Madelung operation, or one of its modifications; it has been so satisfactory to me that I have used it exclusively in the 26 cases which I found after a rather hasty search through my records. The other two operations, the Trendelenburg and the Schede, do not appeal to me. I might think differently should I use them, but, to my mind, the Trendelenburg does not seem radical enough, and the Schede runs too much risk of being followed by unpleasant results caused by division of the veins.

I think it is well to emphasize the importance, on account of its probably lessening the danger of embolism, of working from above downwards rather than in the opposite direction. This method of procedure has also the advantage of enabling the operator to dissect the various branches most effectively.

Dr. Bottomley should be thanked for having brought to the notice of the profession this report which shows how much can be accomplished by means of the latest methods of operating.

Dr. J. B. Blake, of Boston: There are two aspects of the operation for varicose veins, which are worthy of a few words. Although the operation seems to be one of the simplest in surgery, its field being superficial to the deep fascia, it is nevertheless not without its dangers. Of these sepsis is the most important, and it may be so severe as not only to ruin the operative result, but also endanger the patient's life. Simple though the operation is, the patient's general condition must be considered just as thoroughly as the local lesion. Failure to include this element of risk was, I believe, the determining factor in the following case, the only fatal outcome of an operation for the relief of varicose veins that is recorded in Boston. The patient was an old, feeble woman, operated on by a young doctor who had recently finished the duties of surgical house officer in a Boston hospital. There was an open ulcer, as well as an extreme degree of varicosity, threatening rupture and hemorrhage. The operation was a local dissection. Immediate phlebitis supervened; the patient was sent to a hospital, where in spite of every effort, toxemia and death followed within a week. Aseptic precautions were taken at the time of operation as a matter of course, but the patient was operated on in her own home. A longer preparation, increased attention to improving her general condition, would undoubtedly have averted this disaster. It seems worth while drawing attention to this single case, as at present every one seems to be doing surgery, at all times, under all conditions and upon all sorts of surgical risks. Necessarily, some patients suffer, and from causes that are not legitimately essential to modern surgery.

The other aspect of the operation is the precise reverse of the foregoing: in patients whose general condition is satisfactory, but who have large and slowly healing chronic ulcers, it is not always necessary to postpone the operation until these ulcers heal, even though a considerable portion of the operative field lies in immediate proximity to the ulcer. If unusual care is taken in cleansing the skin, and the ulcer be entirely and permanently shut off from the rest of the leg by a special dressing, applied before the anesthetic is administered, and later covered by the sterile sheets, the operation may proceed to within one centimeter of this dressing with perfect safety. This is, of course, intended to apply only to patients in hospitals, or under ideal home conditions; but both Drs. Cotton and Blake have had several such cases in the past two years, in which the operative result was as good as if no ulcer was present. As a rule, the ulcer heals more rapidly after the operation.

RECTAL ANESTHESIA.

BY JOHN H. CUNNINGHAM, JR., M.D.,
Surgeon, Long Island Hospital, Boston, Mass.

The frequent inquiries regarding the method of rectal anesthesia since its demonstration at the meeting of The American Medical Association, June, 1906, leads to a further report upon the subject.

Since the first publication [1] the method has been more thoroughly tried, and while the general conclusions drawn at that time remain the same, experience has established certain new features. It is not my desire to give detailed reports of cases which have done well, but rather to refer to the technique, mention the cases of special significance and to refer to the work of other men whom I happen to know have used the method and to express their impressions. The following details of technique were published in the original article:

History. — The first mention of producing ether narcosis by the rectum appears in Pirogoff's book on etherization, published in 1847 in St. Petersburg. About the same time Roux [2] made experiments upon the subject, as did Vincente y' Yhedo and Marc Duprey, employing injections of ether pure and mixed with water. Their observations, although demonstrating the practicability of this method of producing complete anesthesia, excited little interest.

No mention of the practice appears again until 1884, when Molliere,[3] following the suggestion of Dr. Alex Yversen, of Copenhagen, employed the method at l'Hôtel Dieu de Lyon and established its merit. His experiments were made with a simple apparatus similar to that employed by the earlier investigators. It consisted of a large bottle almost filled with ether from which a tube conducted the vapor to the rectum. The bottle was placed in a water bath which had a temperature greater than the boiling point of ether. By this means the ether was made to boil, and by its own volatile expansion was carried over into the rectum. Molliere produced complete anesthesia in from ten to twenty minutes, and used only a small quantity of ether (10 gm.) in so doing. Unlike the results of Pirogoff's and Roux's experiments, those of Molliere created considerable interest, and several surgeons practised the method with variable results.

Hunter [4] reports six cases which he summarizes as follows: "The method in question promises, in my opinion, to effect a radical improvement in the method of administering ether. A striking feature is the small quantity of ether required, showing how large a quantity is commonly wasted. The absence of any unpleasant sensations on the part of the patient is a matter of no small importance. The rapidity with which anesthesia can be induced and the general absence of struggling and opposition by the patient give the rectal method a decided value, even if it should be used only as a preliminary step to the usual method." Hunter makes no reference to diarrhea or other ill effects being produced by the employment of this method.

Weir [5] mentions seven cases where rectal etherization was employed by Dr. William T. Bull with the result that nearly all had bloody or simple diarrhea following, and that one case became collapsed afterward. He also cites two cases of his own. One was a boy fourteen years of age who received rectal ether for fifteen minutes, and although he became sleepy and the breathing stertorous, sensibility was not completely lost and etherization in the ordinary way became necessary. His other case was a robust child of eight months, upon which he operated for hare lip. The child was fully anesthetized in three minutes and the operation completed successfully. The amount of ether used was in all less than two ounces. The child was "somewhat depressed" at the end of the operation, but rallied under stimulation and heat. During the night it had several bloody movements and died the following morning.

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[1] Bost. Med. and Surg. Jour., April 20, 1905.

[2] Jour. de l'Académie des Sciences, xviii, 47, p. 146.

[3] Lyon Med., 1884, xlv, p. 419.

[4] New York Med. Rec., 1884, xxv, p. 507.

[5] *Ibid.*, 1884, xxv, p. 508.

Wanscher[6] records twenty-two cases anesthetized by injecting ether vapor into the rectum after the method suggested by Pirogoff, and speaks in most favorable terms regarding his results. He mentions one especially noteworthy case which explains the occasional difficulty in producing narcosis by the rectal method. In this case he gave rectal ether for between thirty and forty-five minutes with no result. Knowing that the patient's bowels had not been properly cleaned out he postponed the operation, emptied the bowel and rectum of its contents and the following day repeated the etherization. The patient was completely etherized in thirteen minutes. There are several cases in our series that corroborate this observation, and it might be said that difficulties in rectal etherization arise only from failure to have the bowel clean.

Post,[7] reports three cases etherized at the Boston City Hospital by the rectal method. The first case was a man with cellulitis of the arm, with general toxic symptoms. He was completely anesthetized in thirteen and a half minutes. The ether was then discontinued and complete anesthesia continued for nearly a half hour. Several hours later he had two loose movements which contained much gas. A starch and opium enema was given and no further diarrhea resulted. The second case was one which came to the hospital after having eaten a hearty breakfast. The patient received rectal ether for thirty-four minutes, at which time she was completely anesthetized, one and three quarters ounces of ether being used. During the etherization the abdomen became slightly distended and the gas was expelled by abdominal pressure. The patient vomited about an ounce of fluid once, following the ether. There was a normal movement from the bowel about one hour later and subsequently two slightly loose movements, one of which was tinged with blood. The third case was one with hemorrhoids. Etherization was complete in fifteen minutes and a little less than two ounces of ether was used. There was no vomiting or diarrhea following the etherization.

Hewett, in his book, "Anesthetics and Their Uses," 1901, speaks of the early work of Alex Yversen and Molliere and the cases of Weir and Bull. He mentions Dr. Buxton's preference for rectal etherization in operations upon the upper extremity. He makes no statement that leads one to believe that he has had any personal experience with this method of ether administration.

Buxton, in his book on "Anesthetics," 1900, states that he has employed the method "pretty extensively," and strongly advocates its use in operations about the head and neck and for empyema.

Advantages. — It is obvious that a free and continuous access to the field of operation is a great advantage to the surgeon. In operations upon the head, face, mouth, nose, throat, ear, eye and neck the absence of the ether cone not only lessens the technical difficulties of the operation, but also minimizes the chances of sepsis and lessens considerably the time necessary to perform the operation.

Experience has shown that the patient passes under the influence of the drug rapidly and with no sense of suffocation; that less ether is used, not only in producing the narcosis, but also in maintaining it; that the stage of excitement is lessened or absent; that the ether recovery is more rapid, and that the disagreeable after-effects of inhalation ether narcosis are diminished or absent. It is also noteworthy that alcoholics pass through the stage of excitement with little, if any, resistance or struggling.

The employment of this method of etherization in diseases of the lungs, especially tuberculosis, abscess and pneumonia, immediately suggests itself. The same might also be said of empyema, mediastinal abscesses and new growths.

Although it is true that the greater part of the ether is eliminated through the lungs as in inhalation narcosis, the direct irritation of the concentrated vapor is overcome, and post-operative pneumonia should be lessened.

The absence of bronchial secretions in the cases has been a striking feature.

As has already been pointed out by Dr. Wanscher, the patients that have taken ether by inhalation and by rectum express a preference for the rectal method, the chief explanation being that the convalescence is easier.

Disadvantages. — To say that this method has no disadvantages in view of the fact that it has lain idle for a period of twenty years seems startling. By the old method of administration there were distinct disadvantages which warranted the discarding of this method of ether administration. These were rectal disturbances, and the inability to control the stages of narcosis.

It has been claimed by some that ether narcosis by rectum produces diarrhea and melena. This may be easily explained when we consider the old method of administration, which was to place a bottle of ether in a boiling water bath and allow the vapor to be carried over into the rectum by its own expansion. By this method there was no means of appreciating the amount of ether passing into the rectum, and the ether going over at a high temperature was condensed in the tube and rectum.

To overcome these two objectionable features, the illustrated apparatus has been employed. In my own series of cases there has been no diarrhea or bloody stools, the bowels being rather constipated than otherwise. In those patients who were properly prepared the bowels have moved for the first time on the third to the fifth day. It has been suggested that this absence of rectal irritation may be due to the better quality of ether now in use, as well as to our method of administration.

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[6] Cong. Internat. Med. Sciences, 1884, ii, p. 186, sect. 1.

[7] Bost. Med. and Surg. Jour., 1884, cx, p. 442.

Colicky pains and painful distention mentioned by Buxton as after-effects have been noted in a few cases. Pain has been so slight and has passed off in so short a time that it can hardly be considered a disadvantage. This pain has been noted more particularly in those cases not properly prepared.

It is not desirable to employ this method in abdominal cases on account of the distention, but there seems to be no reason why it should not be employed to produce narcosis preliminary to the administration of ether by mouth, especially if the patient is known to take ether badly.

Technique. — To obtain the best results it is essential that the bowels should be thoroughly cleaned out. It has been our custom to give two ounces of a saturated solution of magnesium sulphate on the evening before operation, and early the following morning a large suds enema. Just before going to the operating table another similar enema is given.

The ether breakfast has consisted of two ounces of beef tea.

Apparatus. — We began our experiments with a wash-bottle six inches in height and two and a half inches in diameter. Of the height four inches was used for ether space and two inches for vapor space. A simple straight glass tube led to the bottom of the bottle and was connected with the afferent tube. The efferent tube, leading to the rectum is connected with a glass tube, the proximal end of which was flush with the inner surface of the rubber stopper. This was a satisfactory apparatus except that the bottle did not hold enough ether without refilling during a long operation. Later, we tried an apparatus in which the wash-bottle was twelve inches in height and one and a half inches in diameter, allowing a nine-inch column of ether for the bubbles to ascend through. This was discarded as it was difficult to keep the apparatus right side up, and the small amount of ether used rapidly cut down the height of the column, owing to its small diameter.

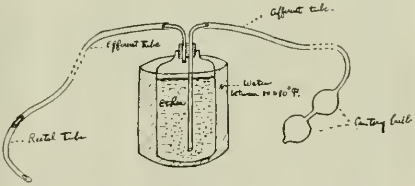
Later the Davidson apparatus, which is used to administer warm ether vapor through a hard rubber tube in the corner of the mouth, was tried, being attached to the rectal tube, and was discarded because of the foot pump and the stop-valve in the efferent tube, the foot-pump filling the bag which caused a constant flow of ether when the stop-valve was opened. In administering the anesthetic in this way it is impossible to appreciate as accurately the amount of ether being given as with the bulb method about to be described.

The apparatus which we have used on all our later cases and which has been the most satisfactory consists of a bottle, the body of which is seven and a half inches in height, five inches being used for ether space, two and a half inches and the neck for vapor space. The diameter is four inches and the capacity on the ether space twenty-nine ounces, so that a large amount of ether may be used without materially lowering the ether column. The afferent tube which leads to the bottom of the ether column ends in a bulb with several small perforations so that the air ascends in several small bubbles. The stopper and the connections should be tight.

The bottle is placed in a water bath at a temperature of between 80° and 90° F. Ether boils at 98.6° F. It is desirable to keep the temperature below this point. By keeping the ether as warm as possible without boiling, the air forced in by the bulb is more easily saturated. If the operation is a long one it may be desirable to renew the temperature of the bath. We have employed all makes of ether and the results have been the same. The inexpensive ether has been quite as satisfactory as the most expensive.

The efferent tube should be sufficiently long to allow moving the wash-bottle away in case the operator wishes to change his position from one side of the table to the other. We have tried efferent tubes of varying lengths and have noticed no difference in the results; ether in no case being condensed in the efferent tube.

The afferent tube should be of sufficient length to allow the etherizer to inspect the patient from head to foot still retaining the bulb in hand. We have not found it necessary to employ an "interseptor" as no ether is condensed in the tube.



We have tried rectal tubes with eyes placed at various intervals; but these have had no advantage over the stiff rectal tube with a single eye at the end, and do have the disadvantage of kinking more easily on account of the eyes weakening the tube.

Administration. — The patient lies upon the back with the legs held in slight flexion by a sandbag placed under the thigh. A stiff, large-sized catheter or rectal tube is inserted into the rectum for a distance of from ten to fourteen inches. When there is difficulty in placing the tube because of kinking a bougie is introduced into the tube and withdrawn after the tube is in place. The efferent tube is now connected with the rectal tube and the vapor forced in until considerable gas is pressed around the rectal tube. Keeping the forefinger in the rectum beside the tube, unless it causes the patient pain, hastens the expulsion of the rectal gases.

It is essential that the rectum be distended to the point of emptying itself around the tube, for we have learned that without first removing the gas normally in the bowel the patient absorbs the ether much more slowly, presumably because of the dilution of the ether gas by the gases normally in the gut. After this gas has been expelled the ether should be forced in by a few squeezes of the bulb every five or ten seconds, or until it is expelled about the tube. A little experience with the method will enable one to keep the proper amount of ether gas in the rectum without its being expelled around the tube.

At the first introduction of the rectal tube, or the first volume of ether, the patient may feel a natural discomfort and desire to defecate; but in a short time this sensation disappears. The breath becomes ether laden in from one to five minutes after the ether is started. The patient gradually becomes drowsy, the breathing stertorous and he then passes into complete surgical narcosis without any stage of excitement.

Narcosis being complete, the same signs regarding the patient's condition should guide the anesthetist as in administering ether by inhalation.

Care should be exercised after complete narcosis has taken place to see that the jaw does not drop down allowing the tongue to fall back over the larynx. In one of our early cases the patient became partially asphyxiated through neglecting this precaution. When the jaw was drawn forward the natural color returned to the face and the patient began to breathe normally.

After narcosis is complete two or three squeezes of the bulb a minute will usually suffice to keep it so. It is noteworthy that the patients may be "run light," as they usually respond rapidly to the injections after being once etherized.

If the patient becomes too profoundly anesthetized the efferent tube should be disconnected and such ether gas as is in the bowel forced out through the rectal tube by abdominal massage. An oxygen tank should be connected with the rectal tube and this gas made to distend the bowel. Artificial respiration and stimulation should be resorted to in the usual manner. When the operation is complete it has been our custom to expel as much of the gas ether as possible by massage of the abdomen with the rectal tube still in position.

POINTS OF INTEREST REGARDING THE METHOD.

Briefly summarized, the points of interest are as follows: There is comparatively little ether used. There is no stage of excitement. Vomiting seldom occurs. Bronchial secretions are absent. There is a comparatively quick ether recovery. The bowels are slightly constipated. Unless the bowel is free from feces it is difficult to produce narcosis.

Before considering these points in detail it is necessary to allude to the law of partial tension, upon which the physiology of ether narcosis is based.

The law of partial tension. — When ether or almost any other gas (excepting oxygen) is inhaled, it passes through the walls of the alveoli into the blood circulation until the blood circulation contains the same quantity of the gas as the air in the alveoli. When the percentage of the gas is decreased in the air of the alveoli by respiration, then the gas will pass back from the blood into the air in the alveoli until the air of the alveoli contains the same percentage of the gas as the blood.

The physiology of ether narcosis by rectal administration. — There is no reason to believe that the law of partial tension holds true when ether is administered by the rectum, nor is there any known scientific explanation of the phenomenon of ether narcosis produced by this method of administration.

A theory advanced by Dr. M. Vejux-Tyrode, of the Pharmacological Department of the Harvard Medical School, who was kind enough to study our cases, is briefly as follows:

First, a definite per cent of ether must be present in the entire circulation to produce complete surgical anesthesia. In human beings this amounts to a little under six volumes per cent. The rapidity with which complete narcosis results depends upon the rapidity with which the percentage of ether is brought up to nearly six volumes per cent. When ether is given by the lungs in the form of vapors it can only be administered in great dilution unless excretion be interfered with, and the percentage in the blood be raised above six volumes per cent, which would prove fatal by paralysis of the respiratory center in the medulla. On the other hand, when ether is administered by the rectum as a vapor, concentrated vapors may be given. Therefore, the chances for the rapidity of absorption and the raising of the required six volumes per cent will take place more rapidly while excretion may take place freely from the lungs.

This is an explanation for the rapidity with which certain of our cases have become anesthetized.

Fatality is less likely to result as the lung is free to eliminate ether as fast as it is absorbed from the rectum.

The fact that comparatively little ether is used in producing and maintaining anesthesia by the rectal method is evident when we realize that all the ether used is absorbed.

There is no stage of excitement, because of the rapidity with which the patient passes through the first stage of ether narcosis. We know, of course, that the absorption of ether at first depresses the co-ordination centers of the cerebrum, next the other parts of the cerebrum, consciousness and sensibility to pain, which takes place simultaneously with paralysis of the cord. This latter stage is that of surgical narcosis. The third stage, the undesirable one, is paralysis of the respiratory and vasomotor centers in the medulla. This does not seem to take place, probably because the lung acts as a safety-valve, preventing the raising of the amount of ether in the blood to six volumes per cent.

Vomiting has occurred in a few cases, but has been infrequent and has occurred chiefly in those cases who received ether by mouth preliminary to the rectal method. The patients who have vomited have done so but once or twice, and individuals who have had much vomiting following inhalation narcosis have vomited but once or twice or not at all.

There are two theories offered to explain the vomiting which usually follows ether narcosis. One, stimulation of the vomiting center, just as with apomorphine. The other, a reflex stimulation due to the local irritant action of the swallowed ether-laden saliva on the mucosa of the stomach.

Our experiments are rather in favor of the latter theory because we obviate to a considerable extent the swallowing of ether-laden saliva, and the cases etherized entirely by the rectal method failed in the great majority of cases to show vomiting as an after-effect. If the former theory were true there is no reason to expect any difference in the amount of vomiting between the two methods of administration, as the same amount of ether must necessarily reach the central nervous system.

The increased amount of *secretions* by inhalation narcosis takes place from local irritation to the upper respiratory air passages. In rectal anesthesia only the necessary ether for narcosis which is excreted by the lungs goes through the respiratory tract, a quantity probably much less than goes through the respiratory passages during inhalation narcosis.

The rapid ether recovery seems to the writer to depend upon two separate factors; first, all the ether in the gut is removed at the time when the anesthetic is discontinued, leaving only that ether which is in the blood circulation to be eliminated. There is no remaining excess as there is in the alveoli. Secondly, the lung has not been impaired in its excretory power as it must be by the tidal flow of concentrated ether vapor in inhalation narcosis.

The fact that *the bowel is inclined to be constipated* may be explained simply by the fact that the bowel has been thoroughly cleaned out before operation and that subsequently the patient has been kept on a light diet. It may be due, however, to over-distention of the gut whereby the smooth muscle fibers of the intestine are made atonic.

The difficulty in producing narcosis in those patients with fecal matter in the rectum is dependent upon two factors. First, absorption cannot take place readily; and secondly, the fecal matter repeatedly plugs the lumen of the tube.

CONSIDERATION OF THE IMPORTANT CASES.

In considering the cases which have been anesthetized by the rectal method, it has been the writer's desire to determine whether or not complications occur more frequently than by inhalation narcosis. An attempt has also been made to learn the experience of men who have employed the method in hopes of determining possible limitations of the method in the hands of those not especially familiar with the technique.

No mention will be made of any case which does not present significant features; and the consideration is here limited to the fatal cases, those presenting complications, and the cases presenting features which illustrate the value of this form of ether administration, in hopes of getting a correct prospective and placing the method in its proper place. I wish to express my thanks to the gentlemen who have helped to make this possible by kindly placing the records of their cases at my disposal.

In my own series of cases, there have been two deaths, one a blind boy six years old, with constitutional tuberculosis and on whom a prolonged operation was performed for extensive tuberculosis adenitis. No criticism could be made of the manner in which the ether was administered and no better narcosis could have been wished. During the latter part of the operation, the patient's condition became bad, the picture being that of surgical shock so commonly seen as a result of a prolonged and severe operation. The patient failed to rally under stimulants and died. It is only fair to state that, had the patient been etherized by inhalation, the operation would have been of even longer duration, and it is believed by those present that the ultimate result would have been the same.

The other fatal case was in a woman sixty-three years old, etherized for Dr. Peer P. Johnson, of Beverly, Mass., who performed an operation for cancer of the neck. The patient was under ether over two hours, and at the completion of the operation was in poor condition. The patient never rallied from the operation and died twenty-four hours later. Previous to death, she had several fecal and gaseous movements. While the first impulse would naturally be to blame the novel method of anesthesia, it will be readily admitted that it is not unusual to have an aged patient die, as did this one, by imposing too great a tax upon an aged individual by a severe and prolonged operation.

Another fatal case occurring after rectal anesthesia was a patient of Dr. J. B. Eagleson, of Seattle, Wash. Being in Seattle at the time, I learned the details of the case. The patient was a child about two years old who was operated upon a second time to perform a succeeding step in the repair of a harelip and a cleft palate. At the first operation, ether was administered by inhalation. Following the operation the child presented symptoms of acetonuria and nearly died. At the second operation, rectal ether was given. The narcosis was satisfactory in every way. The patient made a rapid ether recovery and was normal in every respect for two days following the operation. At this time the patient became drowsy, sank into coma, had convulsions and presented the typical picture of acetonuria, as following the previous operation. The patient died about twenty-four hours later, three days after operation. The nurse was the same one that cared for the child at the previous operation, and she could see no difference in the symptoms subsequent to each operation except that the symptoms came on earlier after the first operation. There were no bloody stools or diarrhea and the patient had been on the floor playing with the other children the day following the operation. While acetone was not sought for in the urine, the quick ether recovery and normal condition existing for forty-eight hours and the chain of symptoms following in one who had presented the same symptoms after a previous etherization, leave little doubt as to the real cause of death.

Dr. Freeman Allen, anesthetist to the Massachusetts General Hospital, has kindly placed at my disposal the records of thirteen cases anesthetized by him with this method.

Dr. Allen's first case was a patient with an enormous keloid growth obscuring the mouth as well as the rest of the face, operated upon by Dr. Arthur T. Cabot. Dr. Allen's remarks about this case are as follows: "The patient went under quickly." "Absolutely no inconvenience of any kind during operation." "No diarrhea or intestinal symptoms."

This patient underwent a second more extensive operation by Dr. C. A. Porter. Rectal anesthesia was employed and was highly satisfactory.

Dr. Allen's fourth case is of special importance. This patient was recovering from a lobar pneumonia when there developed a mastoiditis with resulting abscess of the neck. The patient's general condition was poor. At the Boston Eye and Ear Infirmary, the late Dr. Walter Lecompte operating, Dr. Allen administered rectal ether for an hour. Dr. Allen's remarks about the case are as follows: "The patient went under in a very striking manner, the odor being soon perceptible on the breath and being obviously intoxicated by ether in three or four minutes." "He remained in perfect control and in excellent condition during operation." The patient recovered. It is unnecessary to more than allude to the value of administering ether by rectum in cases with pneumonia, or other inflammatory conditions of the lungs.

Dr. Allen's seventh case was a patient sixty-five years of age, operated upon by Dr. G. W. W. Brewster for an extensive carcinomatous growth of the superior maxilla, which plugged the nose. The patient died. Dr. Allen's note is as follows: "Patient made a perfect ether recovery, but died about thirty-six hours later of shock."

Dr. Allen's thirteenth case was an elderly man, weighing 230 lb., who was operated upon by Dr. Samuel J. Mixter, for carcinoma of the lip and submaxillary region. This patient was given anesthol for three minutes and ether by inhalation for five minutes, when the rectal ether was begun and continued for forty minutes, seven ounces being used. The respiration was stertorous and bad throughout, the patient being cyanotic. At the end of operation, the pulse was 100 and of poor quality. There was no vomiting and the patient regained consciousness in about two hours, although the quality of the pulse remained bad. During the following four hours the patient had six or eight blood-colored watery movements, without pain or gas and without clotted blood. Dr. John M. Little, Jr., Dr. Mixter's assistant, cared for the patient until his death, twenty-four hours later. Dr. Little states that the patient's condition was not good at any time after the operation; that there was not enough blood in the stools to cause death, and it is his belief that the patient died of surgical shock.

Of Dr. Allen's cases, there were four not perfectly prepared for rectal anesthesia. One case, however, went satisfactorily, but in the other three, narcosis by inhalation had to be resorted to in order to get the patient under. Two of these unprepared cases had diarrhea. In one the movements were watery; in the other the discharge was bloody, without pain, tenesmus or any discomfort. It lasted three days. Vomiting occurred in five cases. Two cases vomited once only, one twice, another three times, all small amounts; but in another case the vomiting was considerable.

Dr. Frederick Coggeshall performed a trachelorrhaphy and perineorrhaphy followed by a laparotomy for resection of the ovaries, and a Gillian's operation for retroversion in a patient who had suffered severely from vomiting following three previous ether narcoses by inhalation. The frightful vomiting resulting from the previous etherization was the only reason for employing the rectal method. The presence of the rectal tube near the field of operation was objectionable, and when the abdomen was opened, the intestines were distended so that the intra-abdominal operation was made more difficult and inhalation narcosis was then substituted. Dr. Coggeshall's impression of the case is as follows:

"In this case the patient had taken ether several times before with great difficulty and great distress, and had suffered excessively in coming out of it. She was an extremely neurotic woman. Although during the latter part of the operation the rectal etherization was abandoned for the ordinary method on account of the distention of the bowel, most of it, if I remember rightly, was performed under rectal ether. Although this was a much more severe operation than any which she had previously undergone, and although her nervous condition was worse at the time than it had been at any time before, the patient stated afterwards that she was less uncomfortable, both in taking the ether and from its after-effects, than on either of the three previous occasions on which she had been operated upon. She vomited only once instead of doing so steadily for from twenty-four to forty-eight hours as she expected. The bowels moved of their own accord within twelve hours."

A second case performed by Dr. Coggeshall is also worthy of mention because, although the bowels were not properly prepared, the narcosis was satisfactory, and as it also illustrates that one not experienced with the method can employ it satisfactorily. Dr. Coggeshall's impressions regarding this case are as follows:

"The second case was the removal of extensive glands in the neck from a girl of fourteen, in which the ether was administered throughout by rectum, by Dr. David Townsend. The bowel had not been very thoroughly cleaned out before, nevertheless the patient went under without any great difficulty, and the method was highly satisfactory both from the etherizer's and the operator's point of view. The amount of ether used was 100 gm. can of Squibb's, and I think that this was not quite emptied. There was no vomiting afterwards; the bowels moved of their own accord within twelve hours."

"I should go even further, and be very much inclined to try it again, at least, for purposes of getting the patient under the anesthetic in abdominal operations where the patient had had previous experience of great discomfort on going under and coming out of ether administered in the usual way. I might add, as indicating the method is not a difficult one to carry out, that Dr. Townsend had never used it before, and his only practical knowledge of the method was derived from being present on the occasion that you gave it for me; nevertheless, he was able to use it without the least difficulty arising from its novelty to him."

Dr. William C. Peters, of Bangor, Me., states: "I gave ether by rectum to only three cases, all abdominal." "It proved an easy and to the patient a very satisfactory way to produce anesthesia." "There was no state of excitement." "The patients were a little disturbed at what seemed to them unusual methods, but reported no unpleasant sensations. In no case was it continued after the abdomen was opened on account of distention." "I have intended to try it again, selecting other than abdominal cases."

Dr. J. A. Stucky, of Lexington, Ky.,[8] reported four cases in which he had employed rectal anesthesia and speaks in favorable terms regarding it. In a letter to me Dr. Stucky states, "I find it hard to overcome professional prejudice against the method, but I am so pleased with it I propose to continue it."

In stating the unsatisfactory features where they have existed, it seems important to remark that these unpleasant occurrences are all that have come to light during the use of the method for the past three years.

The method has presented no dangers other than those common to any form of complete narcosis, except in Dr. Allen's fatal case, where the passage of blood by rectum resulted. Dr. Allen feels that the water bath was at a temperature higher than the boiling point of ether, and that ether itself was forced into the gut, to which fact he attributes the bloody stools.

The unfavorable cases cited show that the same dangers are present in administration of ether by rectum as by inhalation, but it is not evident that they occur in any greater frequency. The four cases of shock are consistent with the character of the patients and the nature of the operation; and the cases of acetonuria are no more unusual than the occasional existence of this condition after narcosis by the usual method.

There has been a surprisingly large number of cases in which the narcosis has been satisfactory, even when the bowels have not been prepared. All the cases, however, in which the method has failed have been those in which the bowel was not empty. Although many cases do well without preparation, the method cannot be expected to succeed under these circumstances, and if it is desirable to use rectal ether because of the nature of the case, it should be undertaken with little hope of success. Dr. Lumbar [9] states that the patient should be on a low diet for two or three days previous to operation, but I have not found this necessary. If the bowels can be emptied by the administration of magnesium sulphate the evening before operation and the lower bowel cleansed by a suds enema just before operation, this seems to be all that is necessary. In the recent cases, I have employed a "split" of Abelina water, which seems to empty the bowel satisfactorily without the griping so frequently associated with the use of magnesium sulphate.

I have had the opportunity of observing the amount of intestinal distention in four cases in which rectal ether has been administered. In each instance, the gas had passed the ileo-cecal valve and the small gut was inflated throughout its whole length. Dr. Peters has made the same observation in his cases.

It is possible that the odor of the ether upon the breath may be due to its extension along the gastro-intestinal tract and not to its elimination by the lung.

Dr. N. B. Leggett has employed the rectal method of producing anesthesia in twelve cases, on the services of Drs. Blake and Brewer at the Roosevelt Hospital, New York. The cases have been satisfactory in every way. Dr. Leggett has employed a Y glass tube for joining the efferent and rectal tubes together. By means of a small bit of rubber tubing fitted with a clamp and joined to the other arm of the Y tube, any excess of gas in the rectum may be allowed to escape.

Dr. Leggett has attempted to produce anesthesia with this method in dogs without success, unless anesthesia is first produced by inhalation. Leggett believes that the ether introduced through the rectum does not pass above the ileo-cecal valve, unless this structure has been relaxed by inhalation narcosis. He has given large doses of morphia in hopes of making inhalation narcosis unnecessary, but the results have not been satisfactory. After the dog is once under the influence of ether, rectal ether may continue the narcosis for any length of time. None of Dr. Leggett's dogs have died nor have they had any rectal disturbances.

The cases cited in which the method has been of special service speak for themselves.

At an exhibition of the method before the Clinical Surgical Society at the Boston City Hospital in 1905, the impression received was entirely bad, it being impossible to get the patient under. It was subsequently learned that the ether bottle contained a little ether and a large amount of salt solution. This practical joke, if it may be so called, justly influenced those present against the method. Some of these gentlemen have since seen the method demonstrated under more favorable circumstances.

[8] Jour. Am. Med. Asso., July 28, 1906.
[9] N. Y. Med. Rec., Dec. 1, 1906.

THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS FOR THE GENERAL PRACTITIONER.*

BY EDWARD O. OTIS, M.D., BOSTON,

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In the strict sense of the term an early diagnosis of pulmonary tuberculosis cannot be made, for the evidence does not permit of it. It is a fact of not uncommon observation that in autopsies of persons dying of some other disease, an old tuberculous cicatrix is found in the lungs, which had manifested no symptoms or produced no impairment of the ordinary health during life.

What we understand, however, by an early diagnosis is the earliest possible moment that we can detect the disease, either by physical signs or

* Read before the Ninth Annual School of Instruction for Health Officers of Vermont, at Burlington, June 19, 1907.)

constitutional symptoms, or both, or by bacteriological proof; and in order to do this, the tubercular process must have reached a certain minimum amount of involvement of tissue and produced a certain amount of change sufficient to interfere with normal resonance and respiration, or to produce an impairment of the general system indicated by the presence of various constitutional symptoms.

We have in the past been inclined to say that if our physical and bacteriological examination was negative, pulmonary tuberculosis did not exist, or, at least, that the evidence of it was not at hand, even if the general symptoms plainly indicate its existence, or made it highly probable that the disease was present.

We may regard an early diagnosis of the disease from two points of view. First, that dependent upon physical findings, which is rarely if ever a genuine early diagnosis; and, second, that dependent upon general symptoms and history, or determined by the tuberculin reaction, which more nearly approximates a genuine early diagnosis. Indeed, by the term "early diagnosis," we now mean that stage of the disease when the evidence is almost entirely from constitutional rather than local symptoms, when the examination of the sputum, if any exists, is so often negative, and when the physical signs are lacking or uncertain.

It is this latter early diagnosis which, I believe, the general practitioner should seek to make, and in which, in my opinion, he will be the more successful; for even if a few physical signs exist in the lungs, they are difficult of detection and not always easy of interpretation even to the most accustomed ear.

First of all, we will consider the early diagnosis of pulmonary tuberculosis from the standpoint of the early symptoms as the most important consideration of the subject, and see how nearly we can arrive at an approximate or probable diagnosis from such symptoms; and, secondly, some of the earliest physical signs discoverable will be considered.

Norris says[1] that "there are four easily ascertained and highly suggestive symptoms, the existence of which should always arouse our suspicion unless their presence can be definitely explained upon other grounds. They are (1) rapid pulse; (2) evening rise of temperature; (3) loss of weight; (4) cough." "The protracted existence of any two of these symptoms," he continues, "requires that good cause be shown why diagnosis of tuberculosis should not be made."

Cough, no matter from what alleged cause, if it is continued for six, eight or ten weeks, should always excite suspicion and demand careful investigation. Of course, we may have a lingering bronchial cough, particularly that resulting from an attack of influenza, but the burden of proof rests upon us that such a cough represents nothing more than the bronchitis.

It is an all too common experience that a patient comes to us with more or less advanced tuberculosis who has been told that the cough which has continued over many months was the result of bronchitis, and hence he was deluded by the false hope that it would disappear in time, and was not of serious import. Much less harm would result, in my opinion, if every cough of over eight or ten weeks' standing should be regarded as indicating tuberculosis and the patient treated for the disease if no other discoverable cause for the existence of the cough should be found.

A probable diagnosis of tuberculosis should be made, says Wilson, in a case in which a long persistent and otherwise unexplained cough is accompanied by either a sub-normal temperature or one that rises slightly during the afternoon.

We are all familiar with the short, hacking, hardly noticeable cough of tuberculosis. It is sometimes hardly more than a clearing of the throat, and even its existence may not be recognized by the patient unless a thorough investigation is made. Such cough is of very little consequence in the patient's estimation: it causes him little or no annoyance, and, in fact, may only occur in the morning. In proportion, however, as it is slight, but continuous over a long period of time, particularly if it occurs only in the morning and is accompanied with some expectoration, however slight it may be, it is to be regarded as evidence of probable tuberculosis, unless other evidence disproves it.

A rapid pulse, particularly when apparently of diminished tension, is another highly suggestive symptom of pulmonary tuberculosis, and should lead to the careful scrutiny of other symptoms. Brehmer, who first established the present universally accepted open-air method of treatment, and who was a keen observer, maintained that in tuberculous individuals the heart was disproportionately small to the size of the lungs, and others have held the same view. However one may regard this theory, it is a fact of common observation that a rapid and more or less weakened heart is not an uncommon symptom in early tuberculosis, and therefore should always lead to further inquiry in a suspected case. Dunham[2] considers the best symptomatic guide to be the condition of the pulse taken in the latter part of the day, and if, while resting, the pulse is found to be constantly 90° F., the probability of tuberculosis should be strongly suspected; and, further, if at the same time there is a slight rise of temperature, even of a few tenths of a degree, frequently occurring, these two symptoms, viz., rapid pulse and slight increase of temperature, should be sufficient to establish the diagnosis of tuberculosis, other causes being excluded.

An increase in temperature, even if slight, if it is persistent, is, as we know, a leading symptom unless otherwise accounted for, and when accompanied by other corroborative signs would lead us to make a highly probable diagnosis of pulmonary tuberculosis. One should, therefore, in any suspected case, take the temperature several times a day for a week, and this can be done either by the patient himself after a little instruction, or the patient can present himself at the doctor's office daily for the purpose.

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[1] "The Diagnosis of Incipient Pulmonary Tuberculosis," reprint from American Medicine, June, 1906.

[2] Personal communication.

Loss of weight, if more transitory, indicates that some chronic affection is disturbing metabolism and assimilation, and if accounted for by no other satisfactory cause is highly suggestive of tuberculosis, since this disease is so prevalent that it is more likely to produce this condition than any other.

In like manner is loss of strength, even if slight, an important danger signal pointing towards the direction of tuberculosis.

Again, a slight amount of breathlessness on exertion, like mounting stairs or a hill, is highly suggestive. When one becomes easily fatigued from insufficient cause, and when this is associated with even slight dyspnea on exertion, in the absence of cardiac lesions, it is strong evidence of probable tuberculosis.

Digestive disturbance and more or less anorexia are indications of an infection of some kind, and if other indications point towards tuberculosis, it is probable that the bacillary infection is causing this disturbance of metabolism and assimilation. Pryor, however, says that loss of appetite and indigestion are not noticeable to any great extent as a rule during the early manifestations of the disease. The entire attention of the patient may be directed to the digestive disturbances, and the tell-tale symptoms of loss of weight and strength, and the cough, may all be referred to a disturbed condition of the stomach, a natural mistake on the part of the patient, and an occasional and unfortunate one on the part of the physician.

Although, as we now know, pulmonary tuberculosis is not inherited, a lessened resistance to it, or at least a susceptibility, to it, is apparently a matter of inheritance, and therefore the family history is of importance; and when such history is positive it should render us very suspicious of all symptoms, however slight.

Hemoptysis is almost pathognomonic of pulmonary tuberculosis unless we can clearly prove that the hemorrhage is the result of mitral stenosis or from some other definite source; we can make it a rule, which has few exceptions, to regard such cases of hemoptysis as tuberculous.

"The three most important symptoms," says Pryor, "which may reliably guide us, are hemoptysis, fever and loss of weight when they cannot be otherwise explained." Indeed, it is fortunate if the first symptom that comes to our attention is hemoptysis, for then we have the diagnosis at once established and treatment can at once be instituted.

From considerable experience and observation, I am of the conviction that the majority of cases of pleurisy are of tuberculous origin, and hence in any case of pleurisy, particularly when accompanied with serous effusion, one must bear in mind a possible and probable pre-existing tubercular infection, and observe with great care the subsequent course of the pleurisy.

There are other symptoms of more or less importance which all have corroborative value in connection with those already mentioned. Such are dilatation of the subcutaneous vessels indicated by a prominent veinous network, the result probably of a vaso-motor disturbance due to the tubercular infection; a tendency to ready perspiration, even in cold weather; chilliness; paleness; more or less anemia; looseness of the bowels in some cases, or, more often, constipation; hoarseness and others.

One should also carefully inquire into the habits, the occupation, possible exposure to the disease, and the previous illnesses of the patient, and (which is important) give the patient an opportunity to tell his own story in his own way.

In many cases, the majority, Dunham thinks, the patient will declare that he has always been well, with the exception of some of the specific infectious diseases of childhood. And if the disease is well established or moderately advanced the patient will give a history of several attacks of "influenza," or having suffered from what was supposed to be "malaria." Sometimes, also, he will refer to typhoid fever as having occurred sometime previously. Not improbably, these were manifestations of active tubercular infection mistaken for these diseases.

Secondly, what are the earliest physical signs? I would repeat that, in the early diagnosis which we have been discussing, as a rule, there is no marked evidence of disease in the lungs. As Janeway says, there may be an absence of physical signs and yet a presence of the disease.

We may consider physical examination under three heads: inspection, percussion and auscultation. Of these three, *auscultation* renders the most valuable service and perhaps is generally the only means of determining any abnormal physical condition in the lungs, in early cases. In inspection (and the patient should always be stripped to the waist for a proper examination, whether man or woman), one observes the condition of the skin, subcutaneous veins, shape of the chest, evidence of loss of flesh, glandular enlargement, and readiness to perspire. In watching the patient's breathing, it is not infrequently noted that there is a retardation of the respiratory movement over the affected lung.

As a rule, in the very early stage when any physical signs are present, one learns nothing or but little from percussion, for at such a time percussion is practically normal, or there is so little deviation from the normal that it requires the most acute and highly trained ear to detect it.

It is upon auscultation that we must depend practically for the detection of changes in the lung tissue due to tuberculosis, and we may consider it almost an axiom that *anything* abnormal heard in the apices of the lungs is to be regarded as the strongest kind of evidence, almost amounting to proof, that tuberculosis exists. Such changes are revealed through auscultation, first, by the respiration; second, by the presence of adventitious sounds. The most important respiratory change is what the Germans call "rough breathing," and weak or slightly diminished breathing.

Next in importance, according to the National Association, is the presence of râles, which I would consider of the first importance, as they are the most constant and the most easily determined sign. Slight dullness and slight changes of respiration are uncertain of detection, and even the most skilled diagnosticians are often in doubt as to their real existence. Hence the difficulty of drawing any positive conclusions from these sounds. But localized râles are certain and, when found, prove almost conclusively the existence of pulmonary tuberculosis. It does not matter so much what name we give these râles or their exact character. In general, they are fine crackling râles, but we can call them clicks, crepitations, fine, moist râles, crepitant or subcrepitant râles, or whatever we please, if we only recognize them. They are generally found above the clavicle, or below it in the middle or outer third, or behind in the suprascapular fossa. They are heard most frequently after a single slight or genuine cough followed by a deep inspiration.

Turban mentions the incident of a patient who had been through many doctors' hands, and who decided the diagnostic ability of his adviser by whether or not he asked him to cough during examination.

I do not mean to say that changes in the respiratory murmur which I have mentioned, namely, the harsh breathing, weak or diminished, breathing, etc., are not of important diagnostic value when they can be surely made out, but one must confess that to most examiners their existence is often in doubt, and, consequently, they are uncertain symptoms.

"The great and predominant value of the localized râles," as Whitney[3] says, "in the diagnosis of incipient tuberculosis consists, first, in their almost constant presence at a time when other local signs are absent, or at most indefinite; second, in their practically unmistakable character, themselves differing widely from other signs which represent merely deviations from the normal; third, in the fact that when occurring at the apex they are almost pathognomonic, other conditions which might produce them being exceedingly rare."

While, therefore, other local signs are of great value, especially for the few experts who by long experience have learned their limitations and the frequent difficulty of interpretation, the presence of localized râles must ever remain the essential guide to early diagnosis from physical signs for the rank and file of the profession.

"The earliest physical sign," says Hector MacKenzie,[4] "which is really characteristic, is the presence of râles or crepitations."

Dr. Henry I. Bowditch, the elder Bowditch in "The Young Stethoscopist" 1848, many years ago pointed out a sign which I have not infrequently verified and which I believe of much value in early diagnosis. "Not infrequently," he says, "a sound like a simple whistle or sonorous râle is heard above the clavicle, while in the remainder of the chest there is a healthy vesicular murmur. This strongly indicates the existence of tubercular disease of the patient, if the patient is suffering from a chronic affection, especially if it be connected with any other morbid physical or rational sign."

As the disease advances, other plain and evident physical signs appear, the consideration of which does not come within the scope of this paper, and which are all familiar to you.

One other valuable aid to the early diagnosis I cannot, however, pass by, namely, the use of tuberculin. I have used it in a very considerable number of cases, and have never known it to produce any injurious results. I believe, with ordinary care, it is harmless, and will frequently enable us to establish beyond a doubt the existence of the disease. The technique of the procedure is simple and plain and within the skill of any practitioner. The dose, I believe, should be small, at least to begin with, from $\frac{1}{10}$ to $\frac{1}{2}$ mgm.; and if reaction does not occur, then 2 to 5 and even 10 mgm. should be used at intervals. I used Koch's old tuberculin, which can be very readily diluted so that the fractions of the milligram can be easily measured.

I will not take the time to consider the various signs and symptoms which constitute a reaction, for such are readily accessible in the abundant literature upon tuberculosis. I believe, however, that any practitioner who makes a trial of this test will be convinced of its value and harmlessness.

In the preceding I have merely discussed some of the points which, I believe, are of the most importance in making an early diagnosis. Many other secondary signs and symptoms have of necessity been omitted, but if one will confine himself to those which have been mentioned and become thoroughly familiar in their detection, I am sure that he will rarely fail to make either a definite or probable early diagnosis; and, as we know, if a direct diagnosis is made in the early stages, we can almost certainly bring about complete arrest of the tubercular process. And, as Knight says, we should not wait in all cases for a positive diagnosis before putting our patient with suspicious symptoms under the best possible conditions for recovery.

In all cases it is, of course, understood that the sputum, whenever it exists, should be examined for the tubercle bacillus; but in the majority of early cases, this evidence will not be obtained, and it cannot be too often repeated that to wait for the presence of the tubercle bacillus will in many cases mean, to wait until the disease is moderately or far advanced.

The following cases will illustrate my thesis, and were kindly selected for me by my colleague at the Massachusetts State Sanatorium, Dr. Dunham:

1. *5178 B.* Male, thirty-two, single, bricklayer Slight cough and expectoration over two months. Lost twenty pounds in two years; rather "bilious"

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[3] "The Predominant Value of Localized Râles as a Sign of Incipient Phthisis," reprint, May 18, 1905.

[4] Gibson's "Text Book of Medicine."

lately. Pulse 100 in the evenings and temperature 99–2°–4° at the same time. Tubercle bacilli not found in the sputum on three examinations (but found later). Small area of faint bronchial respiration in the left lung, just above and outside of the border of the heart. A *few scattered* râles in the upper part of the left lung.

II. *5036 B.* Male, nineteen, cigarmaker. Coughed three or four times a day for a month. Little or no expectoration. No bacilli. Temperature and pulse fairly good, but since found to be rather high. Loss of six pounds in weight during the month. Physical signs negative. Patient raised half a cup of blood three weeks ago, the only factor for making positive diagnosis.

III. *5084 B.* Male, married, forty years old, street car conductor. Had a little cough during the winter at times; raised very little at times. No loss in weight; general condition excellent. Slight shortness of breath on much exertion. Physical signs: the very faintest clicks heard above both clavicles. Temperature and pulse normal. Patient still at work. Tubercle bacilli found in trace of expectoration raised on that morning (morning of examination) and were found twice later. The only thing which brought the patient for an examination was a little streak of blood which he saw in what he always regarded as throat catarrh.

IV. *5124 B.* Widower, age forty-five, mason. Slight cough for six months. Little sputum. Lost ten pounds in weight; pulse and temperature normal. Very little to find in his chest on physical examination. Percussion note on both tops seems to be poor, and one or two slight clicks are heard in the left back. However, many tubercle bacilli were found repeatedly upon microscopic examination.

V. *4774 B.* Male, single, age twenty-five, priest. Very slight cough and expectoration. Considerable dyspnea on much exercise. Lost twelve pounds in three months. Pulse and temperature normal. Examination of the sputum by Board of Health negative. He had bronchitis three years ago and pleurisy seven or eight years ago. This might be looked upon as a case of bronchitis if it were not for the fact that there were dullness, râles and br. v. resp. in the right apex, front and back, and many tubercle bacilli constantly found in the expectoration (after the first negative report mentioned).

VI. *5070 B.* Male, single, age twenty-three, mechanic. Practically no cough or sputum. Physical signs very marked, however, in the right top, and pulse decidedly rapid, although there had been no loss of weight. Tubercle bacilli abundant in the trace of expectoration he was coaxed to give.

VII. *5214 B.* Male, single, student; pneumonia eight years ago. Little cough for three or four weeks. Raised a trifle only during the past two days. Eight pounds below normal weight. Difficult to find anything in the lungs except a *few* clicks in the left supraclavicular region; pulse, however, is 100 and a few tubercle bacilli have been found in his sputum.

VIII. *5012 B.* Male, single, nineteen, clerk. Slight cough for seven months. Loss of twenty pounds in the last three months. Almost nothing abnormal heard in the lungs, chest broad and well shaped, respiration good. History of spitting teaspoonful or two of blood on one occasion. Twelve examinations of the sputum negative after one positive. Tuberculin reaction positive.

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Medical Fees in Germany. — The High Court of Germany has decided that it is illegal for the physicians of any locality to band together and establish a definite code of fees for professional services. — *Medical Record.*

REPORT ON A PECULIAR DISEASE OF TROPICAL AFRICA CALLED "ONYALAI." *

BY F. CREIGHTON WELLMAN, M.D., BENGUELLA, WEST AFRICA.

During the three or four years that have elapsed since the writer first reported the existence of the disease called by the Umbundu-speaking natives of Angola "Onyalai," several workers have written concerning the same or a similar affection, and a *résumé* of these observations may be helpful. Since my first note I have studied several additional cases with the object of determining the cause of the various symptoms, and the data relating to these are here presented for the first time.

HISTORICAL NOTE.

1. The first mention of the disease was, I believe, my initial note published early in 1904. In this I stated that hemorrhagic bullæ are a feature of the trouble and added the following: [1] "Onyalai" is "a common and very treacherous disease, greatly feared by the natives, considered by them very fatal. I was once disposed to treat the native view very lightly, but after seeing cases die from it in a few hours from the beginning of an attack, I revised my notion. The bullæ may be small and affect only the surface of the body, or occur only on the tongue, soft palate or buccal mucous membrane. When large and involving the esophagus and pharynx they may cause trouble, but when they occur in the brain, its membranes, or even in the important abdominal viscera, death often results. The size of the bullæ varies markedly, ranging from that of a split pea to that of a half crown piece." Later [2] I repeated this note and added that "the disease is not pemphigus, *Dermatitis herpetiformis*, nor the affection known as *Epidermolysis bullosa*. The bullæ appear suddenly after an initial period of malaise. . . . The vesiculation is rather deep and, when occurring in the skin, always involves the corium. The bullous formations contain trabeculæ, the interstices of which are filled with partially coagulated blood, to which their dark colour is due. The disease generally disappears (if death does not occur) as suddenly as it came."

2. Massey [3] published, subsequent to my preliminary note, the record of three cases of "Onyalai" seen by him in Angola. These cases all had symptoms similar to those detailed by me and all recovered. Massey states (what coincides with my experience) that the blacks are very much afraid of the disease, regarding it as most fatal. He treated his cases with bicarbonate of soda and cod liver oil.

3. Feldman [4] has mentioned a disease among the natives of Bukoba in East Africa and called by them "Edjuo" which Mense [5] is inclined to connect with "Onyalai." Feldman noticed stomatitis and swelling of the parotid glands in connection with his cases.

4. Mense [6] observed during his stay on the Kongo a disease, called by the Unyamwezi people "Kafindo" which spread across equatorial Africa

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and which was marked by depression, malaise, headache, reddened conjunctivæ, numbness, swelling of the tongue, loss of appetite, and occasional bloody diarrhea, dyspnea, cardiac disturbances, etc., all of which symptoms I have seen in my cases of "Onyalai." Mense states, however, that the peculiar bullæ described by me were not noticed in his cases. He did not personally observe any cases that terminated fatally, but such were reported from East Africa. He differentiates "Kafindo" from dengue and other diseases and discusses its possible connection with poisoning with Euphorbiaceæ and other native plants. Mense in conclusion mentions the native treatment, which consists of scratching the tongue until bleeding occurs, and that of the missionaries (phosphorus, essence of bee venom) and recommends for the stomatitis astringent mouth washes.

It is not absolutely certain that these several observations all relate to the same disease, but it is very probable that they deal with identical or closely related affections. I know of no other literature on the subject.*

ETIOLOGY.

Obscure. Following are notes on some of the investigations I have made regarding this point. The results of my inquiry are largely negative and may be stated as follows:

1. "Onyalai" is not a manifestation of malaria. While the hemorrhagic and other symptoms of the affection under discussion are not unknown in malarial processes, yet I consider that I have excluded this infection as an etiologic factor. I base this statement on the following data: None of my first 8 cases had any enlargement of the spleen and but three of them showed rise of temperature. These 3 were examined for malarial parasites but none was found. None of my 5 recent cases showed enlargement of the spleen. Only one of them showed malarial parasites in the blood. In another case I found some pigmented leukocytes. This case, however, had just come from a very malarious district and I had administered to him large doses of quinine for some days. None of the other cases had had quinine. Twelve of the 13 cases were suddenly taken ill while in robust health. Also 12 out of my 13 cases were males. Two of Massey's cases were males. The sex of the third is not given. Nearly half of the cases had experienced the same trouble before. In two instances two members of a family were affected and in four instances more than one case came from the same house. All these facts suggest to my mind something very different from malarial infection which is almost universal among Africans while "Onyalai" is comparatively rare. While preparing my recent report to the *Società per gli Studi della Malaria*,[7] I examined microscopically the blood of over 500 natives and took the spleen index of as many more, and I find on comparison that my cases of "Onyalai" were rather freer from the signs of malaria than the average native of my district.

2. "Onyalai" is not accidental or purposed poisoning. I have had occasion to study the various substances included in the poison test[8] and those formerly used to poison arrows[9] as well as the medicinal plants employed by the blacks of this district[10] and the symptoms set up by poisoning with any of these are radically different from the clinical picture presented by a case of "Onyalai." A case of snake bite from the puff adder (*Clotho arietans*, Gray) which I reported some time ago[11] simulated some cases of "Onyalai" very closely, but my patients had none of them been bitten by snakes.

3. Trypanosomes and other organisms were searched for with no result. On two occasions I cauterized the surface of large bullæ and cut down on the inclosing clot, removing a piece of the same and dropping it into sterile broth. Such cultures remained sterile.

4. "Onyalai" is easily and sharply distinguished from Schönlein's disease by the absence of the multiple arthritis, eruption, etc., and from Henoch's purpura by its frequency in adults and acute course. It cannot be identified with *Purpura hemorrhagica* as it occurs oftenest in robust and adult males. It must be emphasized, too, that the superficial hemorrhagic bullæ are by no means to be considered the only nor indeed the chief factor in the disease, for, as will be shown later, I have seen two fatal cases of what I believe to be this ailment in whom no bullæ were visible, either on the skin or mucous membranes. In other cases they were so small and few in number as to be easily overlooked. There do not occur to me any other diseases for which "Onyalai" is likely to be mistaken.

To sum up: I am inclined to consider "Onyalai" a specific entity, in other words an acute infectious disease the cause of which is as yet undetermined.

CLINICAL FEATURES.

Most of my cases were attacked suddenly. Lassitude and a sort of dazed appearance was generally marked. In some cases the parotid glands were tender to the touch. The eyes appeared heavy and sometimes reddened. In most instances the tongue was swollen and painful. A slight temperature was noted in about a third of the cases. I have had patients complain of numbness and of pain in various parts of the body. One man who had bloody diarrhea suffered much from colicky pains. The appetite is usually poor. The bullæ may appear in the mouth, pharynx, esophagus, stomach and bowels. Vomiting of blood is not rare. The skin also usually shows lesions. The genito-urinary system was affected in 3 of my cases. Hematuria was a prominent symptom in all of these. When the process occurs in the cranial cavity various symptoms of profound central disturbance are set up. Three cases of this kind have come to my attention. One of these was a young woman in rude health. She was laughing and playing on the evening of her attack. Suddenly she complained of being tired, and in an hour or so bullæ appeared in her mouth. She steadily grew more depressed and died about eight o'clock the next morning with all the symptoms of cerebral hemorrhage, *i. e.*, loss of consciousness, inactive, dilated pupils, slow, noisy, stertorous breathing, etc. The pulse was very slow and increased in tension. Another fatal case in the same house, a strong young man being the victim, presented almost exactly the same symptoms. A third fatal case showed no vesicles, either in the mouth or in the skin. The feces and urine likewise contained no blood. Another case which I have also referred to this disease also showed no vesicles, but died from the effect of what I believe to be the same process in the liver, spleen and pancreas. (These last two cases were shown microscopically not to be pernicious malaria.) The superficial bullæ when present are characteristic. They range from the size of a split pea to several inches in diameter. The larger ones are irregular in outline and are often umbilicated. They are deep and involve the corium or submucous structure. There seems to take place an extensive histolysis, only the fibrous elements persisting. These appear as trabeculæ, the interstices of which are filled with partially coagulated and otherwise altered blood which shows dark under the skin or mucous membrane. The red corpuscles, however, are not all disintegrated, and may be seen under the microscope in the oozing from the blebs and also in the feces, urine, saliva, etc., according to the situation of the lesions. In one or two cases the bullæ were very small and not numerous, and had the patients not directed attention to them would probably have been overlooked.

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* Maxwell (*Journal of Tropical Medicine*, July 1, 1901, p. 211) has reported hemorrhagic bullæ of the mouth and pharynx seen by him in Changpo, South China. These, however, probably have no connection with "Onyalai" since, according to Maxwell, the bullæ are confined to the oral cavity and are accompanied by no systemic symptoms. The Chinese attribute the bullæ to the accidental introduction into the mouth of a certain kind of spider web.

PROGNOSIS AND TREATMENT.

My series of cases is yet too small to admit of general statements. As has been said, the natives consider "Onyalai" to be a very fatal disease and tell of instance after instance that have terminated in death. Of the 13 well authenticated cases studied by me 2 died. To these should probably be added the 2 cases previously mentioned which showed all the symptoms of the disease excepting the characteristic bullæ. The malignancy of the disease varies greatly, judging from native reports, some seasons and districts exhibiting many more fatal cases than others. It should be said that the trouble has a tendency to recur. I have seen one man who has suffered three attacks and another who has had two. The relapses seem to occur a few months apart.

As to treatment I am not prepared to be dogmatic. The natives employ various plants, prominent among which is *Geigera wellmani Hutch*, and a species of Albizzia (*A. anthelmintica* A. Brong.). I have personally tried quinine, various alkaline salts, oil of turpentine, acetate of lead, tannic acid, ergot and suprarenal extract with no perceptible results. I am inclined to think that arsenic in full doses has benefited some cases.

In conclusion I should be pleased to hear from any colleague who has met with the disease.

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Reports of Societies.

TRANSACTIONS OF THE TWENTY-NINTH ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

Held at Washington, D. C., May 7, 8 and 9, 1907, in Connection with the Seventh Triennial Congress of American Physicians and Surgeons.

First Day, Tuesday, May 7.

Session at 10 a.m.

President's address by Dr. A. W. de Roaldes, New Orleans, La.

The President thanked the Association for the honor it had conferred upon him and alluded to his own work in the establishment of the Hospital for Eye, Ear, Nose and Throat Diseases in his own city. He felt that it was the Association's duty to push the work of securing for the specialty a greater recognition than it yet enjoyed in the medical schools, and that a further need of the times was the establishment of more special hospitals for this class of diseases. This would not at all interfere with special departments in general institutions. He also announced his intention to establish a prize fund for the Association. This suggestion had been made many years ago by the Association's first president, the late Dr. Louis Elsberg. He referred to the deaths of Senor Manuel Garcia, Honorary Fellow, and of Dr. William Carr Glasgow, Active Fellow, both of whom died since the last meeting. He also referred to the celebration of Professor von Schroetter's seventieth birthday in Vienna, to the similar celebration in honor of Prof. Bernhard Fraenkel, in Berlin, the pleasure felt in welcoming Prof. Gustav Killian, of Freiburg, to the present Congress and the proposed Tuerck-Czermak Congress to be held next spring in Vienna to celebrate the semi-centennial of the establishment of systematic teaching in laryngology.

TUBERCULOSIS OF THE ACCESSORY SINUSES OF THE NOSE.

The scientific business of the congress was opened with a paper with the above title, read by Dr. J. W. Gleitsmann, of New York City. The paper, which closed with a bibliography of recorded cases, was in the main an analysis of these cases. The majority of instances of sinus tuberculosis are referable to extension from some adjoining focus. In 20 antral cases, tuberculosis of the bones of the nose or the upper maxilla was found 12 times. The majority had pulmonary disease, and only a few had the local disturbances of antral disease without constitutional symptoms, but at operation tubercle bacilli were found in the antral contents. In 8 the bacilli were found in the external discharge. Tubercle of other sinuses must be rare, as the author has found records of only 4 cases of frontal disease and one of combined ethmoidal and sphenoidal disease. Pathological changes are very much the same as in nasal tubercle. Empyema, exuberant granulations, caries, cheesy deposits, — all are found, while examination of the sinus lining has shown exfoliation of epithelium, extensive small-celled infiltration, penetrating the superficial as well as the deep layers of the mucosa, while the middle strata have revealed the fibrous structure of the connective tissue containing serous liquid and some leucocytes. Efferent glandular ducts and their lumina have been enlarged, giving rise to cystic spaces, and giant-cells have been found in the infiltrated tissue. Of the entire number only 3 cases showed confinement of the tuberculous process to the antrum, viz., the cases of Coakley, Gaudier and Keckwick. Dr. Gleitsmann gave summarized clinical histories of some of the more important cases. Prognosis must be regarded as unfavorable. Treatment is eminently surgical and does not differ from that generally adopted in severe cases of sinus disease. It naturally has to be more radical as not alone the soft parts but all diseased bone has to be removed. General health must be supported, drain on the system combated and the patient's mental condition encouraged. We have no positive knowledge up to the present time that tuberculin or any of its derivatives would make any impression on these sinus cases. Not much could naturally be expected from such remedies under the given conditions or from the opsonin plan, for all these are principally confined to the elimination of bacilli (found in only a minority of sinus cases) and they do not influence directly the conditions due to the extension of the pathological process. Dr. Gleitsmann finds no contra-indication, however, to their use and would be inclined to try them in view of the favorable results reached in uncomplicated nasal tuberculosis.

Dr. C. G. Coakley, New York, gave some additional facts as to his own patient whose case was referred to by Dr. Gleitsmann. This patient had been under observation for over two and a half years, and when last seen had no evidence of the disease in any other part of the body. Diagnosis was positive in this case as giant-cells containing tubercle bacilli had been found in the tissue removed from the antrum.

Prof. Gustav Killian, of Freiburg, a guest of the Association, stated that he had had a case of multiple tuberculosis of the bones with caries of the left frontal sinus. Operation was followed by recurrence of the sinus condition. There was tuberculosis of the maxillary bone and of part of the antral walls but no pus. Tubercles were found in the mucosa of the frontal sinus.

Dr. Harris P. Mosher, Boston, referred to a low grade of tuberculosis, a scleritis which has defied treatment and diagnosis as to cause. Finally, the use of tuberculin determined its nature. Dr. Mosher had recently been giving tuberculin in certain sinus cases but thus far had obtained no reaction. In the ordinary forms of tuberculosis in sinuses it was difficult to find bacilli. He would not consider tuberculin as of much value in these cases as compared with the usual methods of surgical intervention. The discussion was closed by Dr. Gleitsmann who referred to the work of Bartles who had endeavored to formulate the condition known as the tubercular state, declaring that before this period arrived there was a pre-tubercular epoch manifesting itself mainly in lymphoid infiltration, a hydremia of the parts involving the lymphoid tissue similar to the hydremia observed in septic cases before real septic symptoms manifested themselves.

MASSAGE OF THE PHARYNX.

A short paper on this topic was presented by Dr. Samuel W. Langmaid, of Boston, who exhibited an instrument which had been devised for the purpose named, by an eminent tragedian, the late Edwin Forrest. This instrument was a smooth wooden handle with curved ends which Forrest was accustomed to sweep around in his throat in order to "ream out the old trumpet," as he expressed it. It had been impossible for various reasons to discuss with the actor the latter's views as to the value of the manipulations referred to. Dr. Langmaid had long been accustomed to recommend to his patients massage of the throat by some such implement as the broad, rounded extremity of a toothbrush handle. It greatly reduced the irritability of the pharynx, removed enlarged follicles on the posterior wall and in general seemed to reduce hyperemia. Since writing his paper he had found that a century ago a certain British admiral, who wrote more as an osteopathist than as a masseur, recommended instrumental massage of the mouth and throat, not only as a prophylactic measure but as curative also for sore throat.

Dr. J. Solis-Cohen, of Philadelphia, stated that he had often used the so-called extension-finger of the dentists in pharyngeal manipulation so as to accustom patients to the handling of the epiglottis.

Dr. G. Hudson-Makuen, Philadelphia, believed that in these cases much could be done in showing the patient how to keep quiet during examinations by having him manipulate the pharynx with the handle of a toothbrush or similar instrument. The patient's attitude is too often one of self-protection rather than of co-operation, and he should be taught to give the physician intelligent assistance. Dr. Makuen could not agree with Dr. Langmaid's statement that singers and speakers have anemic pharynges.

Dr. Clarence C. Rice, New York, was inclined to agree on this point with Dr. Langmaid. In his experience noted singers and actors did not, as a rule, have much chronic pathological change in their throats. His own feeling was that the strong use of the voice and vibratory massage of the pharynx tended to atrophy and anemia rather than to congestion. If he found congestion in a singer's pharynx without any special nasal or post-nasal catarrh, he would ascribe it to tobacco or alcohol rather than voice use. In general, intelligent massage was a useful therapeutic measure

Discussion was closed by Dr. Langmaid who wished to emphasize the value of instrumental massage of the throat. Vessels were thereby reduced to their proper size by the flowing away of the excessive blood, and there ensued a tonic contraction of the tissues.

BILATERAL ABDUCTOR PARALYSIS OF THE LARYNX.

A case of this nature was reported by Dr. Charles H. Knight, of New York City, who notes that the lesion referred to is more common than authorities have led us to believe. It is often difficult to distinguish between abductor paralysis, adductor spasm and ankylosis of the crico-arytenoid articulation, and prolonged observation is often required in determining the actual condition in a given case. The author passed in review the differential features diagnostic in the conditions named and then reported the case of a middle-aged man of nervous temperament who in childhood had had chorea and had been subjected to severe nervous strain. Had been alcoholic for one year, some years before coming under notice. Six years ago had an attack of ptomaine poisoning. For the year following suffered increasingly from rapid heart action, dyspnea and vertigo. Later developed sciatica presumed to be the forerunner of tabes. Six years ago contracted syphilis and had the usual secondary symptoms but received thorough treatment. One year ago he was suddenly awakened one night struggling for breath. Later when running for a train he had his first attack of laryngeal spasm. During the last six months he has had some 12 or 14 repetitions of this spasm, all but one or two coming on during sleep. Sometimes the attacks have followed excitement or exertion. After exercise there is always inspiratory stridor. The laryngeal image was typical of bilateral paralysis of the abductors, with a moderate grade of catarrhal inflammation. A redundant uvula was excised, inhalations of metholized oil given, with strychnine and iodide of potash. Electricity seemed to aggravate the patient's symptoms. Under the foregoing régime there has been some improvement. The author referred to the following proposed measures in such cases: (1) intubation, (2) ablation of the soft parts lining the voice box, (3) division or resection of the inferior laryngeal nerve and (4) tracheotomy. His personal experience had been limited to the first and last. In this particular case one observer who had previously seen the patient urged immediate tracheotomy, but this was refused by the patient, who preferred death to wearing a tube. Dr. Knight thought that up to the present time at least the result seemed to have justified this decision. He considered that in such cases the ideal procedure, on theoretical grounds at least, was resection of one recurrent nerve whereby the corresponding vocal band would be placed in the cadaveric position and the voice would finally be regained through compensating action of the adductors of the opposite side. He had been unable, however, to find any successful record of such a case. Mere division of the nerve is useless, as it is possible that in some of these cases a portion of the innervation on the adductors is derived from the nerve of the opposite side and, in addition there may be more or less ankylosis of the crico-arytenoid joint. Tracheotomy will doubtless afford us the most satisfaction. It is best done under local anesthesia. The onset of dyspnea is often alarmingly sudden. Prognosis in such cases is less hopeless than is generally believed.

REMOVAL OF PAPILLOMATA OF THE LARYNX BY DIRECT INSTRUMENTATION WITH THE AID OF KILLIAN'S TUBES.

Dr. Cornelius G. Coakley presented a paper reporting 6 cases of this nature and discussing the general mechanical problems involved. He had tried the Kirstein method of examination years ago but had given it up; but observing at Killian's clinic the ease with which bronchoscope tubes were passed through the larynx it occurred to him that such a tube with a window on one side could be used for the removal of laryngeal papillomata. He had had opportunity to give the method a trial in six cases. In all a general anesthetic was used. Some time might be saved by cocoainizing the pharynx and larynx before the administration of the anesthetic. The patient should be placed on the back, the shoulders brought to the edge of the table and, supported by an assistant, allowed to hang over. The operator should sit on a low stool the height of which can be so adjusted that the eye was directly opposite the widely opened mouth. The tongue should be grasped with forceps and drawn out, thus raising the epiglottis and facilitating the introduction of the spatula beyond the tip of the epiglottis. The tongue is now allowed to fall back into the mouth and the spatula is easily passed directly into the supraglottic portion of the larynx. A good view of the cords is now readily obtained and any growth thereon can easily be removed by a straight forceps passed through the spatula. The Kirstein headlight has been the illuminating agent. It has been somewhat difficult to remove multiple neoplasms on account of obscuration of the field by blood and mucus in spite of frequent wiping away with cotton. Out of the six cases the result was satisfactory in 4. One proved to be malignant and required a thyrotomy, while in one the bulk of the growth appeared to be caught between the spatula and the anterior portion of the larynx.

Prof. Gustav Killian said that he had two cases under observation in which he had operated in the method described by Dr. Coakley. In such cases it is necessary to cocainize the larynx very thoroughly or it will contract from the contact of the tubes so that nothing can be seen. This method obviates laryngotomy and tracheotomy. If the patient can breathe sufficiently well to allow of general narcosis, the direct method of operating may be employed. In recurring cases arsenic should be given for a long time. Potassium iodide also seemed to have some power in preventing the recurrence of papillomata.

Dr. E. Fletcher Ingals, of Chicago, had had several successful cases by the direct method. In one case during operation the larynx began to close. The child could not breathe so he had to do a quick tracheotomy as he had no intubation tube. In general he was inclined to believe that tracheotomy was best in all cases in young children, though Dr. Coakley's experience had demonstrated the fact that it was not necessary.

Dr. J. Payson Clark, Boston, referred to a paper on this general subject presented by him to the Association some years ago and gave the later history of some of the cases therein referred to. He had used the direct method in removing the growths. He was still a partisan of tracheotomy as it gave the larynx perfect rest during which a papilloma was more likely to atrophy than when the child was using the larynx as a respiratory organ.

Dr. Emil Mayer, New York, spoke of some of the disadvantages of the tube with reference to the heat from the headlight. The attachment of the light to the handle of the spatula was a great improvement. His own experience as to recurrence had been the same as that of the preceding speakers.

The paper was further discussed by **Drs. H. L. Swain, Casselberry, Coolidge, Lincoln, Langmaid, Hubbard, Delavan** and **Ingersoll**. Discussion was closed by Dr. Coakley who stated his belief that cases of recurrence in children were cases in which new papillomatous areas occurred. Such would crop up in spite of all we could do. He certainly would not consider any cases as cured unless there was a freedom from return of the growth for several months. He believed, however, that if these cases were seen early it was often possible to avoid the deformity of an external operation, but one should not give an anesthetic without having a tracheotomy tube handy. He preferred to apply 10% cocaine before the general anesthetic was given, waiting sufficiently long for the cocaine to act. He was not sure of the efficacy of pure carbolic applications to the seat of the growths. It was at least harmless but he would not use it unless the patient was wearing a tube. He had used cocaine in connection with chloroform several times without bad results. He knew, however that such a combination was regarded by some as risky. A tracheotomy tube if worn some years would be likely to cause a certain amount of stricture though this might cause no trouble. Parents were naturally averse to having scars on their children's neck, especially with girls. On the other hand tracheotomy was distinctly of service in giving rest to the larynx.

OPHTHALMOLOGICAL MANIFESTATIONS OF LATENT DISEASE OF THE NOSE AND ITS ACCESSORY SINUSES.

Dr. Francis R. Packard reported a series of cases illustrating the relation between eye and nose conditions as suggested by the title of his paper. The examinations of the eyes had been made by Dr. W. C. Posey, of Philadelphia. Dr. Packard stated his belief that there should be more active correlation between the ophthalmologist and rhinologist in order to insure the recognition of this class of cases. Experience has shown that the ocular symptoms occurring as a result of sinus disease may variously affect the vision and visual field, orbit, lachrymal apparatus, lids, extraocular muscles, conjunctiva, cornea, pupil, uveal tract, and may lead to cataract, reflections, asthenopia and headaches and neuralgias. His series of nine cases reported bore out the foregoing statements. The truth of this theory of connection between the two organs was borne out by the results of treatment. Dr. Packard referred to various contributions on the subject by various authors.

Dr. J. H. Bryan, of Washington, D. C., had for some time been accustomed to have his sinus cases examined by an oculist and had seen external rectus paralysis from sphenoid disease, scotoma, narrowing of the visual field, etc.

Dr. G. A. Leland, Boston, stated that there were three cardinal symptoms of the eye condition that pointed directly to an intranasal origin,— astygmatism against the rule, ciliary reflex and narrowing of the color field. He gave the detailed history of one case of the nature described in Dr. Packard's paper.

Dr. L. A. Coffin, New York, said that the connection between eye and nose conditions was not yet sufficiently recognized even in special institutions. Patients operated on for sinus disease were often able to lay aside their glasses.

Dr. F. C. Cobb, Boston, said that in sinus disease conjunctivitis may arise from direct infection from nose to eye but with regard to astygmatic affections, there was little satisfactory evidence. There was a tremendous neurasthenic element in all these patients, and allowance ought to be made for this before we make positive statements as to the relations between the maladies of the two organs in question.

Dr. H. P. Mosher thought ptosis a rather unusual symptom of latent frontal sinus disease. He had, however, seen it once. He had come to the conclusion that the x-ray would clear up many cases of weakness of vision due to trouble in the sinuses or ethmoidal region. An ethmoidal condition might be revealed which had given no signs in the nose. Discussion was closed by Dr. Packard.

Second Day, Wednesday, May 8.

Session at 10 a.m.

SPASM OF THE ESOPHAGUS.

Dr. John W. Farlow, Boston, reported the case of a woman of fifty years who was subject to spasm of the esophagus and whose father and paternal uncle were subject to similar attacks. The patient herself had had a few attacks of discomfort of the throat while eating, and four years ago, while eating a piece of raw apple, became pale, looked distressed, put her hand to her throat and was evidently in great distress. Pain was felt in the lower part of the neck but did not extend to the back or arm. She was able to speak, and pulse and breathing were not affected. Was unable to swallow anything during the seizure. Hot applications to the neck gave comfort but did not relax the spasm. In about twenty minutes she felt relief from pain, raised some frothy mucus which had collected in her throat and the attack was over. Examination showed only a slight chronic pharyngitis and a moderate enlargement of the lingual tonsil. She went then for a year without a further seizure and the third attack did not come on for still another year. Massage of the neck was begun, cold compresses used and local treatment applied to the throat. She has now gone another year without an attack but the author admits that treatment may not have had any effect. He would ask, What is the nature of such attacks and how are they to be differentiated? Angina pectoris would cause great dyspnea, pain in chest radiating down the left arm and there would be changes in the pulse and breathing. These were all wanting in his patient. We consider esophageal spasm as more likely to occur in neurotic patients but this woman is not in the least neurotic. A further matter and the one of practical importance concerned measures of relief. The patient was unwilling to allow the use of any anesthetic which might have caused unconsciousness. A hypodermic of morphine might have relieved her, but in the two attacks in which Dr. Farlow saw her, she seemed hopeful that the spasm would soon relax and was loath to have morphine used. As she could not swallow and her mouth was full of saliva and mucus, he did not think that cocaine would have any effect. Emetine had been suggested in tablet form and the patient could carry the remedy with her, to be used at the onset of any further attack. Perhaps apomorphine in $\frac{1}{16}$ gr. hypodermic dose would be efficacious, but as it would require from five to twenty minutes to act, it might not really shorten the attack. Dr. Farlow asked for therapeutic suggestions from those present.

Dr. H. L. Swain, New Haven, had had a recent case of the kind referred to by Dr. Farlow. His patient referred the origin of his spasm to a point on the left side of the throat. There would be a sort of cramp with pain and then until the throat relaxed nothing could be swallowed, even water. The sigmoid sinus was cocainized and an instrument passed down to a level just below the cricoid. Then the man was able to swallow. By the esophagoscope a round swelling was discovered on the left side about 25 cm. down from the teeth. A mild silver nitrate solution was applied but the patient did not report again and his later history was unknown. The condition seemed to be a cramp of the esophagus.

Dr. W. E. Casselberry, Chicago, wished that Dr. Farlow had tried cocaine. He had had several cases himself similar to the one reported, as to symptoms at least, and in these cocaine had done good service. Even if we are not able to apply the remedy directly to the seat of spasm enough exudes through near to the place of spasm to affect the muscles in the neighborhood.

Dr. L. A. Coffin thought that some of these cases were instances of disordered reflexes. In one case cure had resulted by the removal of adenoids. There might be various peripheral points from which the stimulus would come, it being expended in each case on the esophagus.

Dr. E. Fletcher Ingals, of Chicago, had had under observation for some weeks a case similar to Dr. Farlow's. The passage of bougies of large size gave relief. Cocaine might be used before passage, though his patient preferred its omission. General tonics and bromides in these cases were an adjuvant to treatment.

Prof. Gustav Killian said it was necessary to exclude changes in other organs before making a diagnosis of local spasm. The latter might be primary or secondary. In one case it came from a diseased stomach. In other cases the patient eats too rapidly and does not masticate sufficiently. He had devised an instrument to illustrate to the patient the effects of insufficient mastication. Such a demonstration had more effect on the patient's mind than any amount of general advice.

The president, Dr. A. W. de Roaldes, wished to call attention to the fact that some of these spasms might be secondary to disease of the nervous system. He had seen the condition in tabes. It might come on not only late in this malady in which clonic attacks were often noted but also in the early stages. In one of his patients the esophageal symptom was the initial evidence of tabes.

Dr. G. Hudson Makuen believed in the existence in many of these cases of a nervous or psychical element. The patients could not swallow because they thought they could not or were afraid they could not. They always did better while under a condition of mental exhilaration. This might arise from the constitutional effect of cocaine when applied rather than to the latter effect on the spasmodic factor. In one of his own patients there seemed to be a unilateral paresis of the pharyngeal muscles.

Dr. Farlow closed the discussion stating that while all that had been said was interesting no one had offered him any suggestions as to treatment of his own case. Exhilaration was not a factor in his own case nor was improper eating. If cocaine was applied when the mouth was full of saliva, it would probably fail to act. In his own patient he would feel loath to pass an instrument of any size down the esophagus, especially when the patient was gasping for breath. Methods of treatment which could be used in dispensary patients with frequent attacks could not be used with patients who went a long time between attacks and were in perfectly good health in the meantime. It was worthy of note that the father and uncle of his own patient were affected in the same way, also an aunt and a sister. In this instance there seemed to be some family peculiarity.

SOME CONSIDERATIONS RELATIVE TO SYSTEMIC INFECTION THROUGH THE TONSILLAR RING.

Paper by Dr. J. L. Goodale, of Boston, Mass.: Dr. Goodale referred to his paper on this topic read before the congress of 1906, and stated that during the past year he had continued his work along the same line. He called special attention to the part played by the system in resisting the invasion by micro-organisms. A series of cases had come under observation illustrating the possibility of the entrance of rheumatic poison through the tonsils. Removal of the latter had generally been followed by improvement, but in one case a continuation of joint symptoms was observed in association with throat symptoms. A detailed history was given of the case. The faucial tonsils are, of all points in the tonsillar ring, the vulnerable point, but after they are removed infection may occur through the lymphoid structures of the posterior pharyngeal wall. Tuberculous infection may occur through normal mucous membrane without leaving any trace discoverable either by the naked eye or by manipulation. In some of the obstinate cases in which infection seems to follow with as great frequency after operation as before it, it seems probable that the cause of frequent bacterial invasion is not attributable as much to a faulty distribution of lymphoid elements as to a predisposition to such infection on the part of the patient himself. Finally we must further study the part played by the host in such cases. When we are called to such a case as has been considered, we must consider not alone the alterations in the tonsils but evidences of lymphoid change in the vicinity. Even if the tissues appear normal we are not able to say that they may not have been in time past channels of entrance for micro-organisms. If the individual in his previous attacks of systemic disease has had coincident disturbances in the throat this fact becomes of great importance. If it is possible to test the opsonic index of the individual with reference to the germs suspected of etiological relation which have been recovered from the throat, confirmatory evidence would thereby be obtained.

Dr. W. E. Casselberry called attention to the chain of lymphatic follicles behind the posterior faucial pillars, the so-called pharyngitis lateralis. This participated in the usual inflammations of the pharyngeal lymphoid tissues. In his opinion it was responsible for some of the systemic infections, as rheumatism, endocarditis, etc. Such glands might be destroyed by the cautery. They often kept up trouble after the tonsils proper had been removed. It was often necessary to extend the cauterization up beyond the level of the velum palati and down into the pharynx.

Dr. Robert C. Myles, of New York, said that the tonsil projecting into the throat was the one to which most attention had been paid, but there were other kinds which were just as dangerous. The crpyts went down deep and there the chief sepsis occurred on account of the moderate amount of epithelium. By properly examining the cervical glands one could tell the pathology of the tonsils without looking at the throat. If the tonsil affection is very definite the glands would be hard. In proportion to their softness, the infection was likely to disappear. Twenty per cent of tonsillar affections were of this variety while 80% were of the palatal tonsil. Some of these tonsils to which he referred were incapable of extirpation, which was a serious matter. Such tonsils might extend three quarters of an inch into the palate. There was danger in operating of setting up cellulitis of the neck. The best course was to clean such a tonsil out and involute it. A certain amount of cervical adenitis might result from the salpingeal folds and they should not be overlooked. Adenoids might cause swelling of the glands in the post-cervical region. No consideration of any tonsil case was complete which ignored the amount of adenitis present. It was difficult to say how often such glands were tuberculous.

Dr. George L. Richards, Fall River, Mass., gave the history of one obstinate case. He had seen cases with periodical attacks of tonsillitis in which it was difficult in the intervals to note any excess of lymphoid tissue, even on separating the palatal folds. In regard to the nature of the glandular inflammation he had found it at times tuberculous, at other times not. Often a tonsillectomy should be followed by enucleation of the cervical glands.

Dr. Francke H. Bosworth, of New York, said that it was our duty to remove diseased lymphatics. Enlarged lymphatics did not necessarily call for removal. If we removed the mechanical condition in the pharynx, destroying the focus that entangled the germs, we did all we were called on to do. It was not our duty to dig out all the lymphoid tissue but to remove the pockets which were the source of the mischief. Invagination of the tonsil was a diseased condition, but unless there were pockets, the condition was not one of disease. The so-called palatal tonsil he did not believe to be an organ of the normal body. A large rounded tonsil projecting into the throat without any follicles did no harm.

Dr. F. C. Cobb said that the logical retention by pockets or anything else tending to obstruct flow from the tonsils would cause more disturbance than a mere inflammation of the tonsil or of the lymphoid tissue. The latter might be a normal protective. At times it was overcome by the invading organisms which gained access to the general circulation. It was a mistake to obliterate normal tissue simply on the evidence that through it pathological germs occasionally gained access to the system. There was very little sepsis in acute tonsillitis. The tonsil took care of an enormous number of bacteria.

Dr. Emil Mayer called attention to a recent article by Jacobi, taking an entirely different standpoint from that of the theory that there was a direct infection beginning with the lymphatics of the throat.

Dr. Reginald H. Fitz, Boston, president of the Triennial Congress, was invited to participate in the discussion, and said that rheumatism was the disease which most interested the general practitioner so far as the present topic was concerned. Whatever the tonsil might do in some infections, it did not do the same in all. Certain peculiarities of one micro-organism might allow it to pass through the tonsil but perhaps this was not true of all micro-organisms. He did not know whether the result of tonsil extirpation had been determined with regard to its bearing on cases of multiple arthritis. Infections occurring after removal of the tonsils should be investigated in relation to those occurring before operation.

Dr. Myles said that he did not advocate removal of lymphatics when they were protective, but only when they were suppurating.

Dr. J. N. Mackenzie, of Baltimore, referred to some of the former theories as to the function of the tonsil. The lust for tonsil operations had now reached its zenith. The laity had become infected with the zeal for removal. He thought that the matter of infection through the tonsils had been very much exaggerated. Dr. Goodale had beautifully pointed out the bacteriological side of the question but there was another side — the clinical. He was inclined to think that the modern total tonsillectomy was absolutely unnecessary and sometimes harmful. One should be guided in each case coming under observation by safe and sane conservatism and common sense.

Dr. Bosworth referred to his statement made in London, twenty-seven years ago, that there were no tonsils in a healthy throat, and believed that the truth of this statement would soon be accepted by all practitioners. The tonsil described by anatomists represented a disease-process.

Dr. Goodale closed the discussion.

Prof. Gustav Killian gave a demonstration of various new instruments devised by him for use in bronchoscopy and esophagoscopy, and a general discussion ensued on these operations.

Dr. H. P. Mosher was delighted to have had the opportunity of seeing these new devices. He preferred to have the light on the end of the tube so as to get it as near the foreign body as possible. He had noted that Professor Killian had had to put the suction tube inside the main tube so as to remove the mucus. With the plain, straight solid tube with a light at the end and a smaller tube set into the side of this tube to remove mucus, it was not necessary to introduce a special tube for this purpose. It was of great importance to know how many cases required an emergency tracheotomy tube after the manipulation of passing the tubes through the cords. Such a thing had been called for in this country and he would like to know of the experience in this respect in Germany.

Dr. E. Fletcher Ingals thought that in his practice he found it better to have the light at whichever end would give the most satisfaction. The light at the distal end did not always work well, no matter how bright it was. He preferred a suction tube, one that could be introduced through the main tube, as we needed all the room we could get; the larger the tube the better the lighting.

Dr. Emil Mayer said that very frequently blood would show itself in the mirror obstructing the view when the light was at the distal end. The holding of the light in the hand in the instrument shown was a great advantage. He thought it useless to practice on the cadaver. It was much better to work on the living dog. An injection of morphine kept the animal quiet. One then had conditions approaching clinical practice — the hot air in the face, the mucus and the little blood.

Professor Killian, in closing the discussion, said that the diameter of an electric lamp must be at least 3 mm., and that the mirror in the tubes would in such cases obstruct most of them. He had found records of 116 cases of tracheotomy after bronchoscopy. In these cases the extraction was difficult and it was necessary to have the tube in position a long time. Personally he had never had such a case. If it was not possible to remove the foreign body through the larynx, we had to do a tracheotomy and also a lower bronchoscopy.

(To be continued.)

Book Reviews.

Outlines of Practical Sanitation, for students, physicians, and sanitarians, by Dr. Harvey B. Bashore, Inspector for Pennsylvania Department of Health, etc. Pp. 208. New York: John Wiley & Sons. 1906.

This little book is exactly what it purports to be — an outline and not a treatise. It covers in a most sensible and satisfactory manner the chief topics which interest the sanitarian and also, as the preface states, the taxpayer and the citizen. It is wholly unpretentious and will serve to inspire the reader who is not an expert with a desire to go deeper into the subject of practical sanitation by further study.

Text-Book of Comparative General Pathology. For Practitioners and Students of Veterinary Medicine. By Prof. Dr. Th. Kitt, of Munich. Authorized translation by Dr. W. W. Cadbury. Edited with notes and additional illustrations by Dr. A. J. Smith. Chicago: W. T. Keener & Co. 1906.

This translation of Kitt's authoritative work will form a valuable addition to the libraries of veterinary students. It contains much of interest to the student of human medicine. The morphological aspects of the subject are well presented, but special attention is given to disturbances of functions and to the etiology of disease. The author draws attention to the fact that "many of the discoveries of value to human medicine have been made from experimental studies upon animals, and the principles of general pathology particularly have been fundamentally proven by comparative study of the anatomy and physiology of animals, both branches of medicine, therefore drawing from the same sources and having a common field of work." The book is well illustrated and attractively bound.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital. Fourth edition, revised and enlarged. Philadelphia and London: W. B. Saunders Co. 1906.

We are glad to welcome another edition of this excellent medical dictionary. In connection with the editions which have preceded this we have taken occasion to comment on the excellence of form and arrangement of this dictionary, which, from the standpoint of practicability, is one of the very best we have had occasion to use. Since the previous edition was published the text has been generally revised; new words have been added to the number of over 2,000; the text has been altered and improved, and the tables have been amplified. Particularly noticeable is the increase of illustrations through the addition of six colored plates, illustrating the subjects of appendicitis, diphtheria, gallstones, Leischman-Donovan bodies, measles and nephritis. We take pleasure in recommending this book, as we have before, to practitioners of medicine and others desirous of keeping abreast of the constantly changing terminology of the medical sciences.

Tics and their Treatment. By Henry Meige and E. Feindel. With a preface by Professor Brissaud. Translated and edited, with a critical appendix, by S. A. K. Wilson, M. A., M.B., B.Sc. 8vo, pp. xxii, 386. New York: William Wood and Co. 1907.

The work of Meige and Feindel appeared in French in 1902, and it has ever since been recognized by neurologists as one of the most important contributions to our knowledge of a class of somewhat obscure phenomena that has been published.. To the authors we owe the extension of the term "tic" to a large class of semi-purposive movements and the distinction of these movements from the different forms of muscular spasm. To them, too, we are indebted for emphasizing more strongly the relation between the various forms of tic and mental instability. In this connection the confessions of a *tiqueur* which begin the volume will be found of the greatest interest. In addition to their work in demonstrating so clearly and so elaborately the nature of the tics and their great frequency, we are indebted to them still more for having devised a method of treatment in the nature of muscular re-education, which has in many instances effected a cure of a condition which was once regarded as incurable. The present translation reads smoothly and is in one way superior to the original French edition in that it adds various paragraphs from Meige's later monograph, *Les Tics*.

Practical Gynecology. A Comprehensive Textbook for Physicians and Students. By E. E. Montgomery, M.D., LL.D., Professor of Gynecology, Jefferson Medical College; Gynecologist to the Jefferson Medical College and St. Joseph's Hospitals; Consulting Gynecologist to the Philadelphia Lying-In Charity and the Kensington Hospital for Women. Third revised edition. 970 pages, 574 illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

This edition of Dr. Montgomery's textbook contains 81 pages more than the second edition and 151 more than the first edition. The table of contents occupies 14 pages and amounts to an index in its fullness, perhaps because of the peculiar classification. Here are the twenty chief headings: Introduction, Etiology, Diagnosis, Pelvic Examination, Animal Parasites, Abdominal Examination, Therapeutics, Medical Treatment, Local Therapeutics, Electricity, Embryology and Anatomy of the Genito-Urinary Organs of the Woman, Physiology, Malformations, Traumatisms, Inflammations, Inflammation of the Cervix and Body of the Uterus, Displacements of the Pelvic Organs, Genito-Urinary Hemorrhage, Extra-Uterine Pregnancy, Genital Tumors.

It is difficult to account for the position of the heading Animal Parasites, especially as under it comes a lengthy description of blood examination and exploration of the urethra, bladder and ureters. Under Therapeutics comes first the description of the technique of abdominal operations. The student would soon be lost if it were not for this lengthy table of contents and a very good index. There are some new illustrations in this edition. Most of these plates are worn and are much less distinct than in the first edition, especially those depicting microscopic specimens. We are glad to see a correct illustration of the Sims position, seldom found in textbooks on gynecology. A little embryology has been added to the chapter on the anatomy of the female genito-urinary organs and changes in the illustrations are to be noted here. Vesico-vaginal fistula was removed from the chapter on malformations and put among the traumatisms in the second edition. The figures as a whole are not arranged so as to help the reader as much as they were in the first edition. For instance, those illustrating the relative zones of dullness and resonance in ascites and in ovarian tumors, instead of being on pages facing each other where they may be compared, are back to back. The same confusing multiplicity of operations for the repair of lacerations of the perineum observed in the first edition is to be found in this. The Gilliam-Ferguson operation for shortening the round ligaments with Montgomery's modification is introduced into the chapter on retroversion; this in the way of improvement and bringing the book up to date. On the other hand, many archaic operations, such as the Stolz pursestring operation on the anterior wall of the vagina and the Sims operation for anteversion still find a place in the book.

The portions of this book that mirror the author's extensive experience are of great value to the student and practitioner, but the complications and the illustrations, to say nothing of the classification, leave much to be desired when compared with other recent works of a similar character.

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THE ALARMIST PHYSICIAN.

The attitude of the physician toward his patients is no doubt usually determined by his personality and general attitude toward his professional work. It is difficult, if not impossible, to lay down any laws by which a physician should be governed in the treatment of his patients outside of the prescription of drugs and remedial agents. No doubt, human nature is much the same now as it always has been, but considerable recent discussion has again called attention to the relation of the physician to his patient, and it is, perhaps, worth while to reconsider the matter from the standpoint of various recent observations.

A type of physician which still exists, but which on the whole we are inclined to think is becoming rarer, is the alarmist,— a man whose training and attitude of mind are such that he looks with natural pessimism on conditions of illness, however vague his special knowledge on the subject may be. We are still continually being brought in contact with men who give a bad prognosis, not so much from a careful weighing of all the facts in the case as from a general disposition of mind which is so impressed with the grewsomeness of life that it finds it almost impossible to look upon the bright side. It is quite astonishing at times to meet with physicians who calmly and conscientiously condemn their patients to lives of invalidism or premature death on grounds which to another man would permit of no such gloomy outlook. This attitude of mind, we are convinced, is far too prevalent. It requires no wide experience to meet with patients continually who are cast down with discouragement because of a hopeless prognosis which has been made of their condition, often by men of high standing in the profession.

We are, no doubt, too prone to forget the deep significance which patients are disposed to attach to the statements of their physicians and the manifold neurotic conditions which may arise in consequence of such statements. It is therefore altogether desirable that we should know clearly whereof we speak before we make any dogmatic assertions of a depressing sort to our over-solicitous and sensitive patients. The harm which is done through carelessness in this regard is not to be lightly estimated. Cases, no doubt, will suggest themselves to any physician of wide practice in which an inadvertent, or possibly a considered, statement on the part of a physician has led to most distressing results for the peace of mind of the patient.

There are certain matters which seem sufficiently apparent in the present state of our knowledge to permit of dogmatic statement. The first is that in any individual case we know extremely little about prognosis, and certainly have no right to be dogmatic as to the duration of life. No more striking example of this could be adduced than the change which has come over the medical profession, and secondarily over the laity, in regard to the outcome of tuberculosis. The horror of inevitable and more or less speedy death has been replaced by a feeling of hopefulness which now permeates every element of society and has practically robbed the disease of its terror. The same is true in lesser degree of many other diseases. The prognosis of various affections has absolutely changed in the lifetime of many physicians now living. In view of these facts, it is rather the part of ignorance than of knowledge to condemn a person to death, even if suffering from a disease which is ordinarily regarded as fatal. As a practical policy it is well always to give the patient the benefit of the doubt.

In the second place, even if we think we are practically sure of our knowledge regarding the prognosis of any affection, it is manifestly unwise in a great majority of cases to express that opinion to our patients. The world is sufficiently full of misery without adding any more which can possibly be avoided. Our honesty and the good of the community will not suffer thereby. Dr. F. C. Shattuck has recently admirably summed up the situation in an address before the graduating class in medicine of the Yale Medical School. He says in part: "What is truth? In matters medical we are dealing with x, y and z, and we must never forget that our opinion does not necessarily represent the truth. The truth as we see it may not be the truth itself. In telling the truth as the truth, we should be very sure that it is the truth, especially if in so doing we condemn the patient to an incurable and painful malady. There is generally a near friend or relative to whom we can speak frankly if we like, expressing our fears, from which we should not be too ready to take counsel. But, apart from our liability to error, it seems to me that every practitioner now and then meets a case in which neither silence nor skillful evasion avail, and in which telling the truth is sheer cruelty. . . . Doubtless, ordinarily, the truth, which may be stated with brutal frankness or with delicate consideration, is best for all concerned, especially if it be served with the saving grace of 'as I see it,' or its equivalent."

As a guide to conduct we need hardly go further than this, nor can the most captious critic maintain that our morals will suffer thereby.

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POLIOMYELITIS IN NEW YORK.

At present nearly one hunderd cases of poliomyelitis are being treated at the Hospital for Ruptured and Crippled, and in view of the prevalence in the city of this disease, so disastrous in its permanent results, and also of the fact that outbreaks of the affection have recently occurred in several localities within a radius of two hundred miles of New York, a systematic campaign against the disease has been undertaken. The plan of this has been mapped out by Dr. J. F. Terriberry, neurologist to the hospital mentioned above. Taking it as a highly probable point that the disease is due to a specific germ, a circular has been prepared, to be sent out to physicians generally, in which the request is made for such reports as would do much toward establishing at least the usual surroundings in which the disease occurs most frequently, and thus afford some idea of the conditions favorable to the development and growth of the supposed morbific organisms. Among the conditions, which it is suggested should be reported upon, are the following: Temperature, humidity and analogous conditions; natural peculiarities of the region, whether urban or rural, and with especial emphasis as to sunlight; whether epidemics of other diseases were occurring at the same time; the amount of area covered by the outbreak; the source of the water supply. The query in reference to other epidemics was occasioned by a recent report from Ridgway, Penn., to the effect that simultaneously with the infantile paralysis, typhoid fever and epidemic cerebrospinal meningitis were prevalent. In addition to the cases now under treatment at the Hospital for Ruptured and Crippled a large number are being treated at the New York Orthopedic Dispensary and Hospital and other institutions in Manhattan and Brooklyn. A great handicap in the way of successful treatment is that the cases are not brought to the hospital in the acute stage. It is only when the febrile condition has run its course, and the characteristic phenomenon, the muscular paralysis, has developed that the patients are brought, and permanent disability is very liable to result.

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BLINDNESS FROM BIRTH.

The recent meeting in Boston of the American Association of Workers for the Blind was productive of the dissemination of much knowledge regarding this unfortunate class which is not generally known. One of the statements made was that nearly 70% of the existing cases of blindness might have been prevented, since the blindness was due to an ophthalmia at birth which naturally is avoidable in the great majority of cases. Could the infants be cared for at this early stage and the proper remedy supplied, there is no doubt that more than half the blindness in the world might be entirely obviated. From a theoretical standpoint this is an easy statement to make, but to educate the people and to put laws in operation which would control this disease of early life, are matters somewhat difficult of accomplishment. In Prussia it is said a law exists providing that every case of ophthalmia or conjunctivitis during the first two weeks of life must be reported in the same way as other contagious diseases. Could such a law be enforced, no doubt its results would be far reaching in their benefit, and there seems to be no inherent reason why it should not be, provided both the laity and physicians could be educated up to a recognition of its necessity. As in all other classes of human defects, the state is ultimately burdened with the support of many of the blind. For practical reasons, therefore, quite apart from humanitarian motives, it is altogether desirable that definite and immediate action be taken to minimize this largely preventable evil.

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MEDICAL NOTES.

Cholera in St. Petersburg. — Cholera is reported as epidemic in St. Petersburg.

Sleeping Sickness. — Favorable reports come from South Africa relating to Professor Koch's investigations on sleeping sickness. Excellent results are said to have followed the treatment which Koch and his assistants have instituted, and he is being well received by the native population.

Canadian Journal of Medicine and Surgery. — The current number of the *Canadian Journal of Medicine and Surgery* is this year published in connection with the meeting in Montreal of the Canadian Medical Association. It is an elaborate number, with many illustrations, which are particularly interesting from the fact that they picture various hospitals, sanatoria and various institutions in Canada, as well as some of the most striking scenery within its confines.

Plague in San Francisco. — Owing to the continuance of plague in San Francisco, it is stated that the Public Health and Marine-Hospital Service has been given charge of measures to stamp out the disease. This step has been taken on the initiative of the mayor of San Francisco. It has been recommended that a hospital in which there has been a number of plague cases should be burned. A spread of the disease is not anticipated.

Transmission of Cancer..— The subject of the infection of houses with cancer has again come up for discussion in Paris. A census is said to be in progress to investigate houses in which persons have died of cancer. For many years the possibility of infection of dwelling places has been entertained, and, in fact, was one of the matters which led to the theory of the infectiousness of the disease by means of micro-organisms.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 11, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 15, scarlatina 26, typhoid fever 28, measles 14, tuberculosis 41, smallpox 0.

The death-rate of the reported deaths for the week ending Sept. 11, 1907, was 19.62.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 7, 1907, was 232, against 228 the corresponding week of last year, showing an increase of 4 deaths and making the death-rate for the week 19.85. Of this number 122 were males and 110 were females; 223 were white and 9 colored; 160 were born in the United States, 66 in foreign countries and 6 unknown; 52 were of American parentage, 157 of foreign parentage and 23 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 29 cases and 2 deaths; scarlatina, 29 cases and 0 deaths; typhoid fever, 21 cases and 1 death; measles, 7 cases and 0 deaths; tuberculosis, 38 cases and 23 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 11, whooping cough 0, heart disease 15, bronchitis 2 and marasmus 12. There were 7 deaths from violent causes. The number of children who died under one year was 93; the number under five years, 106. The number of persons who died over sixty years of age was 34. The deaths in public institutions were 89.

There was 1 case and 1 death reported from cerebrospinal diseases during the week.

Addition to St. Elizabeth's Hospital. — The St. Elizabeth's Hospital Corporation, of Boston, has secured property adjoining the hospital which will be improved for purposes of the institution.

Bequests to Hospitals. — By the will of the late Mrs. Margaret E. Langdell, of Cambridge, Mass., the Cambridge Hospital receives $10,000 for the establishment of two free beds, and the Holy Ghost Hospital for Incurables, also in Cambridge, receives $10,000 without specification as to its use.

Fine for Neglect of Quarantine Regulations. — On Thursday, Aug. 22, 1907, in the Municipal Court of Boston, the captain of the fishing vessel, *Flora S. Nickerson,* was fined twenty-five dollars for violation of quarantine regulations of the port of Boston adopted by the local Board of Health. His offence consisted in bringing a case of smallpox into port without anchoring for inspection at the quarantine station.

State Commission on Consumption. — Dr. Arthur T. Cabot has been appointed chairman of the new Massachusetts State Commission on Consumption, the functions of which are to attend to the building of hospitals and to disseminate information in regard to methods of overcoming the disease. It will be remembered that when Dr. Cabot was president of The Massachusetts Medical Society he took a particularly active interest in the matter of tuberculosis and did much pioneer work toward devising means of combating the disease.

Surgical Appliances for Factories and Shops. — In compliance with an Act of the Massachusetts Legislature the Boston Board of Health requires the following medical and surgical appliances to be kept and maintained by factories and shops in Boston: 2 elastic tourniquets (minimum, 24 inches); 2 rolls ½-inch zinc oxide adhesive plaster; 2 rolls 2-inch adhesive plaster; 4 dozen gauze bandages, assorted sizes, from 1 to 4 inches; 1 lb. absorbent cotton; 1 yard sterile gauze; 1 dozen emergency slings; 5 yards Canton flannel (used with carron oil for burns); 1 pair scissors, straight (2½-inch blade); 500 tablets 1¾-gr. corrosive sublimate and citric acid; 6 whitewood strips, 40 x 4 x 3-16; 2 pillows; 1 package of pins; 3 dozen safety pins; 8 oz. spirits ammonia, aromatic (rubber stopple): 1 gallon carron oil; 1 pint brandy: 1 basin.

Physical Training, Boston Public Schools. — Dr. Thomas F. Harrington, formerly of Lowell and now of Boston, has been appointed director of athletics and physical training in the Boston public schools. Dr. Margaret E. Carley has been appointed supervisor of nurses, with twenty assistants. The School Board has for some time been preparing to reorganize the department of physical training, and it is fortunate in having secured Dr. Harrington to undertake this work. Dr. Harrington is to have charge of this reorganization with such assistants as he may require. He is also to have charge of the vacation schools and the playgrounds, which were not included in the duties of his predecessor. Dr. Harrington is a graduate of the Harvard Medical School and was the author of the recently published history of the school.

Opening of Out-Patient Department, Boston Consumptives' Hospital. — The trustees of the Boston Consumptives' Hospital on Sept. 11 opened an out-patient department for the treatment of pulmonary tuberculosis at 13 Burroughs Place, Boston. For the present this out-patient department will be opened for the examination and treatment of patients on Mondays, Wednesdays and Fridays at 10 a.m. It is intended later to open the department during the evening. Persons who have any reason to believe that they are threatened with consumption are urged to present themselves at the out-patient department for examination, and physicians are requested to send such patients as they deem need attention. Persons desiring admission to the consumptives' wards at the Holy Ghost Hospital, Carney Hospital and St. Monica's Home should present themselves at the out-patient department on Mondays, Wednesdays and Fridays at 11 a.m.

NEW YORK.

Boiling of City Water. — On account of the lowness in the reservoirs, due to the lack of rain during the past summer, which naturally tends to the concentration of impurities, President Darlington of the Health Department has advised that for the present the city water should be boiled before drinking. The mortality from diarrheal diseases continues considerably higher than at the same season last year.

A Case of Simulation. — Justice Brady of the New York Supreme Court has affirmed the sentence of Alpheus S. Frank, an attorney, who was recently convicted of subornation of perjury by a jury in the Westchester County Court, and sentenced by Judge Platt to a term of three years in Sing Sing prison. Frank, who was formerly a chief clerk for the claim department of the New York City Railway Company, was found guilty of preparing a fake trolley suit brought by one Mae Herbert, of New York, against that company for damages for personal injuries. On the trial it was shown that Miss Herbert had sued under a false name, as she was in reality the wife of Abbott Woods, who was conductor of the car from which she claimed to have fallen. It was also shown that the woman was formerly a circus tumbler and contortionist, which enabled her to leap from cars at full speed without hurting herself. She had an old injury, received by falling from a trapeze, which she exhibited for the purpose of proving her case; and it is said that she had figured in several successful suits of the kind before her identity was discovered.

Contamination of Hudson River Water. — Pursuant to an order issued by Governor Hughes on Aug. 10, a commission of sanitary engineers has been making an investigation of the waters of the upper Hudson, and its report, together with the findings observed in the State Hygienic Laboratory at Albany, which was communicated to the State Health Department on Sept. 1, shows that pollution of these waters is so extensive as to constitute a nuisance. The investigation covered the counties of Washington, Warren and Saratoga, and it was found that the upper Hudson River and its tributaries were polluted by the industrial waste from thirty-five pulp and paper mills, ten knitting mills, eight woollen mills, seven wall-paper mills, and three cotton-print mills, in the states of New York, Vermont and Massachusetts, and by the domestic sewage of a population of some 79,000 people. The total pollution from industrial waste is reported to amount to about 1,460,000 pounds daily.

Meeting of American Pharmaceutical Association. — The fifty-fifth annual meeting of the American Pharmaceutical Association was held at the Hotel Astor during the first week of September, this being the first time for forty years that the society had met in New York. On Monday, the opening day, addresses were made by the president, Leo Eliel, of South Bend, Ind., and a number of others. Among those who spoke were: Dr. S. Solis Cohen, of Philadelphia, who presented the greetings of the American Medical Association; Dr. Harvey W. Wiley, of the Bureau of Chemistry, United States Department of Agriculture, who stated that the Pure Food and Drug Law was passed because it had the power of the great organizations behind it; Prof. José Diaz, of Havana; Paul J. Waldner, of the Naval Laboratory, Brooklyn; Prof. W. M. Searby, of the San Francisco College of Pharmacy, and Dr. William C. Alpus. The latter said that during the last year over $200,000 worth of pharmaceutical supplies had been exported and imported by the United States. On Sept. 3, the following officers were elected: President, William M. Searby, California; first vice-president, Oscar Oldberg, Chicago; second vice-president, Prof. Henry H. Rusly, New York College of Pharmacy, Columbia University; third vice-president, Charles Holzhauer, Newark, N. J.; general secretary, Prof. Charles Gaspari, Jr., Baltimore College of Pharmacy, University of Maryland; treasurer, S. A. D. Sheppard, Boston. Hot Springs, Ark., was chosen as the next place of meeting.

Current Literature.

Medical Record.
August 17, 1907.

1. *Schmeiden, V. *The Treatment of Surgical Tuberculosis by Hyperemia (Bier).*
2. Posey, W. C. *The Ophthalmological Phase of Diseases of the Accessory Sinuses of the Nose.*
3. Cutler, C. W. *Relations of Eye to Nose, with Certain General Conditions.*
4. Wright, J. *Evolution of Life from the Lifeless.*
5. Ferris, A. W. *The Manifestations of Paranoia.*
6. Bradshaw, J. H. *Acute Intussusception. With a Report of a Case of Successful Resection of a Portion of the Ileum for Gangrenous Intussusception.*
7. Mulot, O. L. *Reflections on Methods of Teaching Medicine.*

1. Schmeiden describes Bier's treatment of tuberculosis of the joints by hyperemia, as used by himself. His method depends on the recognition that inflammatory reaction in the infected parts is an effort of the system to protect itself against the bacilli, and that there is benefit in increasing artificially redness, swelling, and heat of the part. For this purpose he uses the blood by increasing hyperemia and at the same time decreasing the flow of blood to the joint. The hyperemia is produced by a broad rubber bandage, applying it evenly about the limb proximally and not too close to the joint. The bandage must not cause pain at the point of constriction or in the joint, and the extremity must remain warm and the pulse unchanged. The bandage is applied for a few hours per day with intermissions. The joint must not be kept in fixation, while violent motion is not allowable. The object is to obtain anatomical healing, with mobility of the joint. Pain and inflammatory contractures disappear, active and passive motions become possible, swelling subsides, large fungous masses are absorbed, and fistulæ close. That cold abscesses form is no contra-indication to treatment; this is only the attempt of nature to throw off the dead tissues. This treatment is so simple that it may be applied by the patient himself, and he may attend clinics. Resection is usually unnecessary. The best results are obtained in the shoulder, elbow, wrist and small joints. The hip and knee cannot be successfully treated. Exudative inflammation is not treated by hyperemia. Cupping glasses are used for the breast, for gland and fistulæ.

New York Medical Journal.
August 17, 1907.

1. Blackburn, I. W. *Hypernephroma.*
2. *Boston, L. N. *A Valuable Sign in Exophthalmic Goitre.*
3. Williams, L. R. *The Physical Reconstruction of School Children by Means of Fresh Air.*
4. Bierhoff, F. *Police Methods for the Sanitary Control of Prostitution.*
5. Jackson, C. *Ligation of the External Carotid in Rhinology and Plaryngology.*
6. Braddock, C. S. *Some Notes on Malarial Fever as Seen in the Jungle.*
7. Fuller, A. L. *Two Cases of Profound Mental Disturbance Due to Pelvic Disease Cured by Operation.*
8. Kinch, C. A. *Eczema in the Second Year of Life.*

2. In fifteen cases of Graves's disease Boston found spasm of the upper lid, when the patient attempted to rotate the eye from above downward.

The Journal of the American Medical Association.
August 17, 1907.

1. Welch, W. H. *The Relation of the Hospital to Medical Education and Research.*
2. Da Costa, J. C. *The Old Jefferson Hospital.*
3. Shambaugh, G. E. *The Preparation of the Specialist, a Problem in Medical Education.*
4. Shamberg, J. F. *The Present Status of Phototherapy.*
5. Kessler, J. B. *Blastomycosis in an Infant.*
6. Allaren, J. E. *Intestinal Perforation in Typhoid Fever. Its Diagnosis and Surgical Treatment.*
7. Clarke, J. F. *A Case of Infantile Myxedema.*
8. *Meyer, W. *Bier's Treatment ("Stauungs-hyperemie") in Chronic and Acute Surgical Infectious Diseases.*
9. *Wright, A. E. *Principles of Vaccine Therapy.* (Concluded.)
10. Harvey, P. F. *Evolution of Medical Education in the Army.*

8. Meyer has used Bier's method of hyperemia in many conditions. He finds it especially satisfactory in bone and joint tuberculosis. Its advantages are the rapid alleviation of pain, the excellent ultimate functional results, and the possibility of home treatment, or even while at work. It has been found that the shorter and firmer application of the constricting bandage, *i. e.*, one hour in the morning and one to two hours at night, is even more efficacious than the prolonged use, *i. e.*, for six to twelve hours continuously. The disadvantages are the necessity of care in the details of application and the long time required, at least several months, for cures.

Meyer has secured gratifying results in a multitude of acute surgical infections. He uses glass cups on boils and carbuncles and proposes to treat meningitis by a band constricting the neck.

9. Wright gives a summary of the principles of his so-called vaccine treatment. He discusses the theory of opsonins and the action of vaccines. He reiterates the advantages of this treatment in localized infections, recording two cures in a series of six cases of streptococcal septicemia. [R. I. L.]

Bulletin of the Johns Hopkins Hospital.
June–July, 1907.

1. *Barker, L. F. *The Organization of the Laboratories in the Medical Clinic of the Johns Hopkins Hospital.*
2. *Morris, R. S. *Note on the Occurrence of Howell's Nuclear Particles in Experimental Anæmia of the Rabbit and in Human Blood.*
3. *Morris, R. S. *Blood Formation in the Liver and Spleen in Experimental Anæmia.*
4. *Hinman, F., and Sladen, F. J. *Measurement of the Coagulation Time of the Blood and its Application.*
5. Strouse, S. *On Wright's Method of Measuring the Alkalinity of the Blood.*
6. *Cole, R. I., and Meakins, J. C. *The Treatment of Gonorrhœal Arthritis by Vaccines.*
7. *Jeans, P. C., and Sellards, A. W. *The Tuberculo-Opsonic Index and Treatment by Tuberculin.*
8. *Moss, W. L. *Studies on Opsonins.*
9. Klein, H. *The Opsonins in Typhoid Immunity.*
10. Russell, F. F. *Studies on the Specificity of Opsonins in Normal and Immune Serum.*
11. *Meakins, J. C. *The Method of "Fixation of the Complement" in the Diagnosis of Meningococcus and Gonococcus Infections.*
12. Meakins, J. C. *"Diversion of the Complement" in Hæmolysis.*
13. Cole, R. I. *Note on the Production of an Agglutinating Serum for Blood Platelets.*
14. *Hirschfelder, A. D. *Some Observations upon Blood Pressure and Pulse Form.*
15. Hirschfelder, A. D. *Some Variations in the Form of the Venous Pulse.*
16. Hirschfelder, A. D. *The Rapid Formation of Endocarditic "Vegetations."*
17. *Barker, L. F., and Voegtlin, C. *The Calcium, Magnesium, Phosphorus and Nitrogen Metabolism and the Organic Acidity of the Urine in a Case of So-called "Phosphatic Diabetes" with Comments upon an Interesting Form of Acidosis.*
18. King, J. H. *A Study of the Metabolism in a Case of So-called "Arthritis Deformans."*
19. Harris, N. MacL. *A Method of Preparing the Romanowsky Stain.*
20. *Baer, W. S. *The Operative Treatment of Subdeltoid Bursitis.*

1. Barker's article is a concise description of the laboratories of the Johns Hopkins Hospital, their organization and development. The value of clinical and also of research laboratories in close connection with the medical clinic is clearly set forth. This number of the *Bulletin* publishes the reports of work done in these laboratories for the past year.

2. Morris reports his observations upon nuclear bodies, first described by Howell, as occurring in the blood of cats after severe hemorrhage. Morris has seen these bodies in experimental anemia of rabbits, in a case of pernicious anemia in man, in the blood of a human embryo and in human blood in other conditions in which nucleated red blood corpuscles were present. It is thought possible that they result either from atrophy of the nucleus or as products of the nucleus.

3. In a second paper Morris demonstrates that the liver and spleen in severe anemias may resume their embryonic rôle as blood-forming organs. This it is probably to be regarded as an effort to increase blood production to compensate an abnormal blood destruction.

4. Hinman and Sladen publish a critical description of methods which have been used to determine the time of coagulation of blood. Least liable to objections they find the Brodie-Russell method as modified by Boggs and an original simple modification of Milian's slide method. This latter method, from its simplicity and accuracy, deserves wide recognition. It is performed by simply touching a drop of blood from the ear with the under side of a glass slide held horizontally so that a drop 4 to 5 mm. in diameter shall adhere to the slide and observing the time from the instant that the drop has begun to flow from the ear until changing the slide from horizontal to vertical position no longer causes a change in contour of the drop. The diameter of the drop on the slide is important, since the average normal coagulation time for a drop of 4 mm. is about 6 minutes and for a drop of 5 mm. is about 9 minutes. The readings agree in general with those made in the same cases by the Boggs Brodie-Russell instrument. Coagulation tests were made in a number of pathological cases, the greatest delay in coagulation time noted being in jaundice, due to malignant disease. Experiments were made as to the influence of calcium salts in reducing the coagulation time. These were found to have marked effect in increasing the coagulability for three to five days, when given in doses of 15 gr. of the lactate, in syrup or in capsules, four times a day. When this dose had ceased to have effect, increasing the dose every three to five days maintained the low coagulation time for a longer period. Sodium citrate, on the other hand, seemed to increase coagulation time.

6 and 7. The articles of Cole and Meakins and of Jeans record observations in the treatment of gonorrheal arthritis and of tuberculous infections by bacterial vaccines and tuberculin (TR) respectively, controlled by the opsonic index. The results of treatment in both instances are considered sufficiently favorable to warrant further investigation. The value of the opsonic index as a means of control is thought to be open to question.

8. Moss reports the results of experiments with rabbits to determine the effect of injections of bacterial vaccines and of living bacteria upon the opsonic content of the blood. He determined the opsonic index by Wright's method and the phagocytic index advocated by other investigators; he also investigated the action of the sera obtained in different degrees of dilution. The opsonic index seemed to give the most reliable results, but throughout the work so many inconsistencies of results and so many sources of error as yet not overcome were encountered, that it is concluded that none of the present methods of estimating the opsonic content of the blood are sufficiently accurate to be of practical value. Furthermore, in spite of necessary inexactness of the tests, it is clear that no high degree of opsonic immunity, such as is possible in antitoxic and bactericidal immunity, can be produced in rabbits by ordinary inoculation procedures with staphylococcus aureus.

11. Meakins has applied the procedure of testing for "fixation of the complement" to meningococcus and gonococcus infections with positive results in all of six cases except one (possibly a misprint in the table). The test is performed by mixing (1) the patient's serum, in various dilutions, inactivated by heat; (2) bacterial emulsion, and (3) normal serum containing complement, and incubating the mixture for half an hour. In positive cases the complement is bound to the bacteria receptors by the antibodies of the patient's serum, and on the addition of red blood corpuscles and inactivated hemolytic serum the complement necessary to hemolysis being "fixed" in this union, no hemolysis can occur. In the control cases, on the other hand, the same process results in hemolysis. The technic is too complicated for use in routine diagnosis, but in the study of special cases the procedure is believed to be of value.

14. Hirschfelder describes various methods of estimating minimal blood pressure. That of Erlanger is by far the most accurate, but the bulk and expense of the apparatus preclude its general use. Other methods are less reliable. That of Strasburger, widely employed in Germany, is worthy of some attention. According to this, the pressure on the upper arm is measured up to which the volume of the radial pulse is maximal. In skilled hands Hirschfelder admits that the results of this method are accurate. To insure uniform palpation it is well to rest the tips of the finger against the radius and to feel the artery with the ball of the finger. The average of not less than six readings should be taken for the final result. For maximal

pressures the Riva-Rocci instrument with the broad band may be used; readings with this average 5 mm. lower than with the Erlanger apparatus. The practical importance of these readings lies in the fact that the maximal pressure is a measure of the intraventricular pressure of the heart, and the minimal pressure is a measure of the resistance in the vessels. The dicrotic pulse of typhoid is to be attributed to peripheral dilatation with somewhat increased heart action.

17. Barker and Voegtlin report results of an investigation of the metabolism of a case of so-called phosphatic diabetes. The phosphorus excreted was found to be in excess, especially the organic phosphorus. The nitrogen excretion was extremely high. Calcium was excreted in excessive amounts, whereas the magnesium metabolism was normal. The acidity of the urine was variable, but at times very high, especially from organic acids which could not be identified. No acetone, diacetic or lactic acids were present. Tests for alimentary glycosuria were negative.

20. Baer calls attention to the fact, demonstrated by Finney, Codman and others, that causes of limited motion of the shoulder joint are not necessarily in the joint proper, but may lie in changes in the subdeltoid bursa. In acute inflammation of this bursa the treatment is that of any bursitis plus putting the arm at rest. In chronic cases, in which the bursa has become a mass of fibrous tissue, simple breaking up of adhesions under an anesthetic is not considered sufficient. Baer advocates incision and complete removal of the remains of the bursa. He reports four successful cases of this operation. [F. W. P.]

British Medical Journal.

August 17, 1907.

1. Williams, P. W. *Remarks on the Effects of Respiration on the Circulation, and the Pulsus Inspiratione Intermittens vel Pulsus Paradoxus.*
2. Goodall, E. W. *Clinical Observations of the Prodromal Period of Some of the Acute Infectious Diseases.*
3. Robinson, W. *On Bottle-maker's Cataract.*
4. Emanuel, J. G. *A Case of Congenital Obliteration of the Bile Ducts in which there was Fibrosis of the Pancreas and of the Spleen.*
5. Abraham, P. S. *The Ring-worm Question in Elementary Schools.*
6. Armugam, T. V. *Transplantation of the Ureters.*
7. Campbell, H. *Diuretic Action of Theosine Sodium Acetate.*
8. Nixon, J. A. *Acquired Syphilis in an Infant, with Transmission to the Mother.*

The Lancet.

August 17, 1907.

1. Wright, A. E. *A Lecture on the Principles of Vaccine Therapy.* (To be continued.)
2. Byers, J. W. *An Address on Medical Science and School Hygiene.*
3. *Abram, J. H. *Cleido-cranial Dysostosis.*
4. Kerrawalla, M. P. *Notes on a Case of Carcinoma of Both Ovaries.*
5. *Moynihan, B. G. A. *On the Continuous Administration of Fluids by the Rectum in the Treatment of Acute General Peritonitis.*
6. Barwell, H. S. *A Note on Hypopharyngoscopy.*
7. Sutcliffe, W. G. *Note on a Case of Thyroid Tumour.*
8. Kelynack, T. N. *Tuberculosis among School Children.*

3. There are some 28 cases of this disease on record. The leading features are: (1) aplasia of clavicles; (2) exaggerated development of the transverse diameter of the cranium; (3) delay in ossification of the fontanelles; and (4) hereditary transmission. In other words, a hereditary general bony defect with predominance on a certain bone group. Abram's case had complete absence of any bony tissue in the clavicle, open fontanelles, and typical head. There was no hereditary element traced. His case was a boy of sixteen years, four feet and a half tall, generally stunted. Yet he was muscularly strong and intelligent.

5. Moynihan gives his enthusiastic approval to the continuous administration of salt solution by rectum, not only in acute peritonitis, but also after surgery on the stomach. He allows the fluid to flow at the rate of one pint an hour. He has given as much as sixteen pints in twenty-four hours, and twenty-nine pints during a period of three days. He considers that this method is safe and easily borne by patients, that it effects a remarkable change in their appearance and prospects for recovery after serious abdominal operations, and that the retention of such large quantities of fluid does not throw too much of a strain on the kidneys. [R. I. L.]

Zeitschrift für Klinische Medizin. Bd. 62. Festschrift zu Leopold Ritter Schrötter v. Kristelli.

1. *Baümler, C. *Form and Function Adaptation of the Body with Congenital and Acquired Pulmonary Defects.*
2. *Bouchard, C. *The Blenorrhagic Nature of Vertebral Rheumatism.*
3. *Weichselbaum, A. *The Anatomy, Etiology and Epidemiology of Sweating Sickness (Febris Miliaria).*
4. *Hochenegg, J. *The Diagnosis and Clinical Significance of Symptomatic Varicocele in Malignant Renal Tumors.*
5. Kobert, R. *Some Pyrazolon Derivatives.*
6. Chiari, O. *The Author's Operation for Cancer of the Larynx.*
7. *Burger, H. *The Relation of Laryngeal Tuberculosis to the Treatment of Pulmonary Tuberculosis.*
8. Pieniazek. *Respiratory Movement and Respiratory Distress in Diseased Conditions of the Organism.*
9. *Lublinski. *Glandular Fever.*
10. *Grossmann, M. *Bronchospasm.*
11. Katzenstein, J. *The Thoracic and Falsetto Voice.* (To be continued.)

1. Baümler reports two cases in each of which there was congenital agenesia of one lung, without any deformity of the thorax and no interference with the normal development of the body. This illustrates the power of the organs of the body to adapt themselves to abnormal conditions, and yet preserve their function. It seems to show that the bony thorax has a considerable inherent power of development, independent of the organs within. In most acquired pulmonary conditions this is hindered by the development and subsequent contraction of fibrous adhesions. That this is not always the case, however, is illustrated by a third case of fibroid phthisis of twenty-five years' duration, in a woman of thirty-five, in whom there was no deformity of the thorax.

2. Bouchard emphasizes the importance of gonorrhea as an etiologic factor in many cases of spinal arthritis, especially the milder types, affecting the cervical and dorsal vertebræ. It may develop coincident with the urethritis or long after. In the latter cases often there has been a persistence of gonococci in the genital adnexa, without local symptoms.

3. Weichselbaum has studied three epidemics of febris miliaris (Schweissfriesel or sweating fever). This disease suddenly appears in epidemic form, localized to a small region. Its duration is short. It affects largely adults between twenty and fifty and females in very large proportion. It usually appears in damp, warm weather. Its chief characteristics are fever, sweating and a papulo-vesicular exanthem. Weichselbaum considers it a disease *sui generis*. The subcutaneous emphysema, which so often appears post-mortem in these cases, is due to the Bacillus aërogenes capsulatus (Welch), but Weichselbaum does not think there is any proved etiological relation between this organism and the disease. The skin lesions are inflammatory in nature, not the result of sweat retention. The mortality in these three epidemics was 5.9%, 32.3% and 16%, respectively. Weichselbaum autopsied four cases. The lesions were those common to acute infectious diseases. The disease is contagious in only a very limited degree. Its etiology remains unknown.

4. Hochenegg calls attention to the occurrence of varicocele as a diagnostic sign of malignant tumor of the kidney in the male. It occurs on the same side as the tumor and differs from idiopathic varicocele in appearing rapidly at a more advanced age, in being less painful and in not disappearing in the prone position. It is due to tumor growth in the spermatic vein, pressure from metas-

tases about it, direct compression of the vein by the renal tumor, or a kink in it, due to displacement of the kidney. If caused in the last two ways, the varicocele subsides in the knee-elbow position, or when the tumor mass is normally moved. If due to the first two causes, it does not subside in these positions and this is a contra-indication to operation, since it indicates wide extension of the tumor.

7. The seriousness of tuberculous laryngitis as a complication of pulmonary tuberculosis is known to all who deal with the tuberculosis problem. Burger insists on the importance of local treatment of the throat, by surgical methods, if necessary. Without this, general sanatorium treatment not infrequently ameliorates the pulmonary condition, while the throat grows worse. The results of local treatment of the throat are really quite good and under these conditions there is a much better chance of the patient's ultimate recovery.

9. Lublinski does not regard "glandular fever" as a distinct disease entity; rather it is a septicopyemic condition secondary to various conditions, but very often accompanying an acute inflammation of the pharyngeal tonsil. The streptococcus is most frequently the causal organism, though other bacteria may be associated.

10. The sudden appearance and disappearance of certain forms of dyspnea early gave rise to the assumption of bronchial spasm as the cause. Especially has it been assumed that a spasmodic contraction of the bronchial muscle coat caused asthmatic attacks. The existence of smooth muscle in the bronchi is almost the only fact in support of this view. Some experimental work would seem to lend probability to the theory, but Grossmann, in a long, critical review of this, decides that experimental work does not accord with this theory, but rather favors disturbances in the pulmonary circulation as the cause. [H. A. C.]

Berliner Klinische Wochenschrift. No. 24.
June 17, 1907.

1. Borchardt, M. *Memoir of Ernst von Bergmann.*
2. Plehn, A. *Pernicious Anemia.* (To be continued.)
3. Bail, O. *Progress in Researches on Aggressins.*
4. Kisch, E. H. *The Constitutional Forms of Lipomatosis.*
5. Aronsohn, E. *On Heat Production in Fever.*

No. 25. June 24, 1907.

1. Kraus, F., and Nicolai, C. F. *The Electro-Cardiogram in Normal and Pathologic Conditions.* (Continued article.)
2. Veit, J. *The Abdominal Extirpation of the Carcinomatous Uterus.*
3. *Eichler, J. F. *Experimental Contributions to the Diagnosis of Pancreas Disease — Cummidge's "Pancreas Reaction" in the Urine.*
4. Hirschfeld, H. *Acute Myelogenous Leuceemia.*
5. Leuftleben. *The Origin of Heat Stroke.* (Continued article.)
6. Plehn, A. *Pernicious Anœmia.* (Concluded.)
7. Hildebrandt. *The Surgical Treatment of Gastric Ulcer.*

3. Eichler says that the diagnosis of pancreas disease is always difficult and often impossible, and that it is not made in more than 50% of the cases. Despite the amount of work, which has lately been done on the resorption of proteids, carbohydrates and fats in diseased conditions of the pancreas, nothing of great moment in the diagnosis of these conditions has resulted. Sahli's "glutoid reaction" has been a step in advance, and a prompt reaction is now regarded as proof that the pancreas is not diseased; but a delayed reaction cannot be taken as proof of disease. Schmidt's new test, depending on the fact that the pancreatic juice dissolves the nuclei of meat — is also useful only in a negative way. The best-known change in the urine in diseases of the pancreas is the appearance of sugar; still this is not constant and in many cases absent. Often albumin, rarely fat, and extremely rarely maltose are found in the urine. A few years ago Cummidge described a new and complicated method of urine examination in cases of suspected pancreas disease and claimed that his method was of great diagnostic importance. The author carried out this procedure on the urines of three dogs, in each of which pancreatic lesions had been induced, and found Cummidge's test positive in all three. Several theories have been advanced as to the reason of this reaction in the urine, none of which seem satisfactory. The whole subject needs more careful attention and needs to be worked out more thoroughly. The important fact remains, however, that a positive reaction with Cummidge's test seems to point directly towards a pathological condition in the pancreas. [R. D.]

Deutsche Medizinische Wochenschrift. No. 27.
July 4, 1907.

1. *Jurasz, A. *Treatment of Tuberculosis of the Larynx.*
2. *Lesser, E. *Treatment of Syphilis in the Light of the New Discoveries.*
3. Westphal, A. *Pupil Phenomena in a Case of Katatonic Stupor with Remarks on the Pupil Reflex in Hysteria.*
4. *Grawitz, E. *Cure of Addison's Disease and its Pathogenesis.*
5. Schlesinger, H. *Pemphigus Eruptions in Affections of the Central Nervous System.*
6. *Einhorn, M. *A New Blood Test.*
7. Schossberger, A. *Leukemic Blood Changes in Congenital Syphilis and Sepsis.*
8. Bosse, B. *Lumbar Anaesthesia in its Modern Form.* (Concluded.)

1. Jurasz states that, while tuberculosis of the larynx is a very obstinate and resistant affection, it can be cured by energetic local and general measures. The treatment of the pulmonary condition must, of course, go hand in hand with that of the larynx. Vocal rest is of the first importance, the so-called "silence cure." Cough should be controlled by narcotics. Local treatment varies, from painting with astringents in mild cases to curetting or cauterizing and applying lactic acid in full strength. These procedures should be repeated again and again. Great patience and perseverance are required, and local measures are indispensable. No such case should be sent to a sanatorium unless proper throat treatment can be given. Palliative surgical measures are often a great relief. Tracheotomy often causes much improvement through rest to the larynx. Direct sunlight, reflected for hours at a time into the larynx by means of mirrors, is more beneficial than the Röntgen rays. Passive congestion produced by constricting the neck by rubber bands does much good, by relieving both pain and cough.

2. Lesser discusses syphilis in the light of the discoveries of the past year, claiming that great advances have been made in its rational treatment. The ability to detect the spirocheta pallida makes it possible to excise the primary lesion before the appearance of the secondary eruption, and to start the treatment early. This early treatment consists of mercury inunctions supplemented by local injections of corrosive sublimate, 0.5 cc. of a 1% solution, directly into the chancre, with or without the application of a mercuric salve. As a rule, no further manifestations of syphilis develop, but if they are observed they follow much sooner than usual, within six to twelve weeks, and when they appear are much less pronounced and fewer than usual. It is too early to tell surely whether this prompt treatment cures completely or not, and efforts are being made everywhere to discover new remedies. The most important of these is the sodium anilin-arsenate (atoxyl). In Lesser's experience it has a powerful action on the infectious agent, but is toxic to a high degree, and symptoms of intolerance are observed after a variable number of injections. These symptoms include gastro-intestinal pain, nausea, vomiting, general malaise, fainting, chilliness and albuminuria. The drug has a cumulative action, so the effect can be kept up with reducing doses. Its action is especially striking in malignant and ulcerating forms. The ordinary secondary associated lesions seem to be less influenced, but can be cured if the drug be given long enough. Owing to its toxic properties it probably will never take the place of mercury, but will aid us greatly in combating certain forms of the disease, and in those cases which show a marked idiosyncrasy to mercuric preparations.

4. Grawitz reports a case of Addison's disease, which he has been following for three years, which shows typical bronzing of the skin and great muscular weakness.

Gastro-intestinal symptoms were pronounced and there was complete absence of HCl in the stomach. Under prolonged dietetic treatment and lavage, with the administration of HCl by mouth, the patient has gradually improved until now he is almost of normal weight, and the bronzing and pigment patches in the mouth have almost disappeared. Severe gastro-intestinal disorders are a very common accompaniment of Addison's disease and, as in certain types of pernicious anemia, they probably play an etiological rôle. The pigment formation in Vagabond's Disease is not due solely to the parasites, but to the bad condition of the nutrition as well. It is also certain that there can be quite extensive disease of the suprarenal glands without pigmentation of the skin. It is probable that in certain of these cases, toxins arising in the intestine exert a harmful influence on the "chromaffin" tissue of the body, thereby causing bronzing and cachexia. When these toxins are eliminated the chromaffin system is given a chance to regenerate and a cure of the disease may take place.

6. Einhorn has simplified the Adler blood test. He prepared an aloin paper and a benzidin paper. Aloin paper was made by saturating ordinary filter paper with a solution of aloin in 70% alcohol; the benzidin paper by moistening filter paper with a saturated solution of benzidin and glacial acetic acid and drying it. In preparing the paper as well as making the test, it is of importance to avoid contact with the fingers. It is best to use an ivory tipped forceps, or protect the hand by means of a towel. A piece of benzidin paper is immersed in the solution to be examined and a few drops of hydrogen peroxide are added. The paper is placed on a piece of white porcelain and is examined for the development of a blue color. In the presence of blood a green or blue color arises in a few seconds or a minute. Regarding the sensitiveness of the reaction, it is greater if we allow more time for its occurrence. In dilutions of 1 part blood to 500 parts water a distinct reaction occurs in from thirty to sixty seconds. In dilutions of 1 to 2,000 a trace of blue occurs one to two minutes later. To wait longer for the reaction does not seem advisable, as after thirteen minutes the benzidin paper with hydrogen peroxide alone will yield a blue color. For practical purposes it will be best to wait but one minute for the occurrence of the reaction. In examining for blood in stomach contents too great a sensitiveness is not important, but rather a certainty that the test will indicate only blood. The longer we wait for the reaction the more substances besides blood may cause it. Benzidin paper may be used for testing for blood in stomach contents, urine and feces.

[L. G. M.]

Münchener Medizinische Wochenschrift. No. 26.
June 25, 1907.

1. *Ehrhardt, O. *Progressive Skin Phlegmon of Diphtheritic Origin.*
2. Schubert, G. *Clinical Observations on the Action of Secacornin in Obstetrical Practice.*
3. Kausch, W. *Successful Employment of the Sauerbruch Chamber (Negative Pressure).*
4. Oppenheim, M. *Phosphaturia in Gonorrhea.*
5. *Rosenberg, E. *Experiments on the Therapeutic Uses of Human Gastric Juice.*
6. Heile. *Some New Methods of Artificially Hastening the Healing of Certain Pathologic Processes.*
7. Kretschmann, F. *The After-Treatment of the Antrum in Chronic Sinusitis.*
8. Merkel, H. *A Case of Angina at the End of Pregnancy, Followed by a Fatal Streptococcus Septicemia.*
9. Seufferheld. *A Case of Pleuritis Interlobaris Serosa.*
10. V. Crippa, J. F. *A Case of Fatal Mercury Poisoning*
11. Markus, H. *An Aseptic Catheterizator.*
12. Engel, H. *A Simple Method of Estimating Sugar in the Urine.*
13. Mirtl, C. *Treatment of Frostbite by Artificial Hyperemia.*
14. Moritz, F. *Remarks on the Physician's Point of View.*

1. Ehrhardt reports four cases of progressive skin phlegmon due to diphtheria bacillus. The condition occurred in weak, badly nourished children, having a poor resistance. The point of entry of the bacillus was always a small excoriation and the infection showed none of the characteristics of wound diphtheria. It descends to the deeper layers of the cutis and subcutis and spreads out into the surrounding tissue by means of the lymph channels. In some cases the patient had a coexistent diphtheritic process in the throat, in others none was demonstrable. The infection sets in with symptoms of a sharp febrile attack; locally, an infiltration of the subcutaneous tissue is seen, which rapidly spreads, the skin soon becoming loosed from the subcutaneous fascia, is bright red, injected, soft and edematous. Palpation reveals a hard infiltration in the deeper structures. Frank abscesses never occur. The pus is always thin and watery. On incision the skin is seen to be raised from the subcutaneous tissues, with pocket formation between the fascia and subcutis. This undermining of the skin goes forward rapidly, but has no tendency to burrow deeper. Widespread gangrene of the skin soon develops. The diagnosis is made by isolating the diphtheria bacillus from the pus, either by cover glass preparation or culture. The general appearance at first is that of a severe erysipelas. The prognosis is bad. Recovery is slow and healing results in extensive scar formation. The treatment should be antidiphtheritic combined with wide incisions and draining.

5. During the last ten years the gastric juice of pig and dog have been tried in the treatment of certain diseases of the stomach, for these animal gastric secretions are known to contain a very high percentage of free HCl. Rosenberg points out that the same result may be obtained by using the gastric juice of patients suffering from continuous or intermittent gastric hypersecretion. The gastric juice of such patients contains as a rule a much higher percentage of acid than normal, and in certain cases had an acidity equal to that of the dog. In a series of eight cases of hypoacidity from different causes, the author used the filtered gastric secretion from a patient with Reichmann's disease, in whom no trace of syphilis or tuberculosis could be found. This gastric juice had an average HCl content of 90, a high proteolytic power, and a pepsin content of 3.8. One teaspoonful of this was given four times a day, before food, during a period of six weeks. Weekly examinations of stomach contents showed no change in motility or digestive power, and no increase in the amount of free HCl. The filtrates showed no increase in intensity of the Biuret reaction. A few of the patients regained their appetites, a few gained weight, a few found their gastric distress bettered. The author points out that even with this gastric juice having so high an acid content, not enough can be given to really affect the acidification of proteids in the stomach and concludes that human gastric juice, as well as animal, is no more than a good stomachic, and in no way more valuable therapeutically than the old HCl treatment.

[R. D.]

Archiv für Klinische Chirurgie.
Bd. 82, Heft 1.

1. *Rovsing, T. *The Curability of Tuberculosis of the Bladder.*
2. *Busch, M. *A Study of the Antitoxin Treatment of Tetanus.*
3. *Röpke. *Myositis Ossificans Traumatica.*
4. *Wolf, L. P. *The Results of Treatment with Thiosinamin.*
5. *Pincus, W. *The Surgery of the Naso-Pharynx.*
6. Lilienfeld. *The Classical Fracture of the Radius.*
7. Kotzenberg. *Two Cases of False-joint from Fracture of the Neck of the Femur in Youth.*
8. Hartmann, O. *Complete Absence of the Neck and Head of the Femur in a Case of Congenital Dislocation of the Hip.*
9. Bornhaupt, L. *Acute Pancreatitis.*
10. *Wedensky, A. *The Rôle of the Accessory Apparatus in Cases of Injury to the Extensors of the Knee Joint.*
11. Bayer, C. *Slipping of the Tendon of the Gluteus Maximus Accompanied by a Murmur.*
12. Tilmann. *The Explanation of Muscle Wounds of Bullets.*
13. Müller, E. *Decapsulation of the Kidney.*
14. Hashimoto and Tokuoka. *The Treatment of Bullet Wounds of Nerves by Freeing and Dislocation of the Nerve between Muscle Layers.*

1. Rovsing, in a very interesting paper, reports his experience in fifty-six cases of tubercular infection of the bladder. Fifty-six and four-tenths per cent of the cases of renal tuberculosis he finds complicated by a like infection of the bladder. Thus the infection is usually primary in one or both kidneys, exceptionally primary in the genital tract and very rarely primary in the bladder itself. It is hopeless to attempt to heal a tubercular bladder in the presence of the primary focus. The condition of the kidneys must be carefully studied by means of ureteral catheterization and bacteriological examination of the urine. If on catheterization turbid urine is collected from each side it does not necessarily follow that both kidneys are tubercular, for cases of the author have shown that tuberculosis from the bladder can ascend a healthy ureter. In such cases, as also in those cases where catheterization cannot be accomplished because of ulcerations, strictures, etc., an explorative incision in each lumbar region, with ureterostomy will give evidence for correct future treatment. After excision of the kidney primarily affected, it is not rare to see a beginning bladder tuberculosis heal spontaneously. If this does not occur, Rovsing injects a 6% solution of carbolic acid. The pain of such an injection may be combated by previous instillation of a 2% cocaine solution. This treatment, persisted in for from one to six months, has resulted in cure in thirteen of the author's cases.

2. Only 3 cases out of a total of 4,313 treated in Körte's clinic at Berlin developed tetanus during the years from 1890 to 1905. Busch, therefore, concludes that prophylactic injections of anti-tetanic serum are not advisable in that community, for the ordinary sort of wounds. He advises its employment, however, in cases of gangrene from frostbites, wounds by firearms, or when the wound has become contaminated by street dirt or garden soil.

3. Röpke reports two cases of bone formation in the abdominal muscles, the one five months, the other a year, after laparotomy. Neither wound was drained. After reviewing cases from the literature, and calling attention to the experiments of Liek, which demonstrated bone formation in the rabbit's kidney following ligation of its vessels, Röpke advances the following explanation for the occurrence of bone in muscle after trauma: such deposits are usually found near the muscular insertion and occur in cases where the trauma has been so severe that there ensues marked necrosis. The damaged tissue, in such close proximity to bone, quickly absorbs lime, whereby the new connective tissue becomes ossified.

4. Wolf calls attention to the absolute uselessness of injections of thiosinamin when used in an attempt to remove scar tissue in internal organs. Its use is not without danger, for if there be any latent focus of an inflammatory nature anywhere in the body, this is very apt to be made worse. He feels that the drug may be of value in the treatment of keloid or Dupuytren's contracture, if combined with massage, passive motion, etc. [Observations of its action on three cases of keloid made by Dr. M. Boehm and Dr. Quinby at the Massachusetts General Hospital in the winter of 1905 proved the uselessness of the drug, even in superficial scars.]

5. Pincus reports eighteen cases of tumors occurring in the naso-pharynx at v. Bergmann's clinic. The various operative procedures adopted are given in detail.

10. Wedensky calls attention to the part played by the external and internal vastus and the tensor of the fascia lata in aiding extension at the knee-joint. Their action becomes of especial importance when the patella has become broken or its ligament ruptured. [W. C. Q.]

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Miscellany.

A CANCER EXHIBITION.

In connection with the general meeting of the International Surgical Society in Brussels, in September, 1908, at which a discussion on cancer will take place, it is proposed to arrange a cancer exhibition, and a circular has been issued inviting contributions, not only from members of the society, but also from others. All objects connected with cancerous disease will be received, but the following classes are enumerated: (1) Macroscopic or microscopic specimens, either instructive from a surgical standpoint or of special interest on account of their localization or method of dissemination; (2) topographical anatomical specimens or drawings illustrating individual operations for cancer; (3) topographical anatomical preparations of the lymphatic vessels and glands of particular regions; (4) statistical wall charts illustrating the duration of the treatment of cancerous diseases; (5) statistical wall charts illustrating the frequency of primary cancer and its metastases in particular organs, based upon clinical or pathological experience; (6) statistical charts dealing with the spread of cancer in different countries, exact plans of so-called cancer foci, and family trees of families in which cancer has existed for several generations; plans of cancer institutions and hospitals, their reports of work done, and financial statements; (8) reports of movements to encourage the early treatment of cancerous diseases, appeals to the public, and proposals as to the means by which a knowledge of the importance of the early diagnosis of cancer may be brought home to the public without exciting panic. Communications should be addressed to Prof. A. Depage, 75 Avenue Louise, Brussels, who will take charge of the specimens, arrange them for exhibition, and return them at the close of the meeting. Exhibitors will have an opportunity of demonstrating their specimens to members during the meeting. — *British Medical Journal.*

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Correspondence.

HEMORRHAGIC INFARCT OF THE INTESTNE.

Boston, Sept. 10, 1907.

Mr. Editor: Kindly permit me to call your attention to an editorial which appeared in the Journal of Aug. 29, entitled "Hemorrhagic Infarct of the Intestine." From statements there made one is led to conclusions in regard to the condition which I am sure are erroneous. The subject is a much larger and more complicated one than the writer seems to recognize. For instance, he makes no account of infarcts due to arterial embolism, but speaks only of those due to venous thrombosis. He does not mention that, though diarrhea is the rule, about a fifth of the cases show obstipation. One is led to expect the presence of a palpable tumor, when in reality this is quite rare. The diagnosis is *not* easy; on the contrary, all writers admit it to be exceedingly difficult. At operation, end-to-end suture should *never* be employed; the second method mentioned by the writer, that of sewing the cut ends of the gut into the wound, being the only safe procedure. Up to 1904 there had been 5 complete cures by operation, so undoubtedly at the present date the number is still larger. Finally, though the condition is rare, it certainly cannot be said to be "most infrequent." These remarks are based on an analysis of 214 cases made in 1904 which appeared under the title of "Mesenteric Embolism and Thrombosis," Jackson, Porter, Quinby, in the *Journal of the American Medical Association* for that year.

Very truly yours,

Wm. C. Quinby.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUG. 31, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1472	685	Quincy	11	6
Chicago	—	—	Waltham	5	3
Philadelphia . . .	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	10	4
Baltimore	214	89	Brookline	4	1
Cleveland	—	—	North Adams . .	11	5
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton . .	7	0
Cincinnati	—	—	Medford	4	2
Milwaukee	—	—	Beverly	3	1
Washington . . .	—	—	Leominster . . .	7	1
Providence . . .	65	21	Hyde Park . . .	-	2
Boston	231	106	Melrose	3	1
Worcester	57	31	Newburyport . .	—	—
Fall River	58	43	Woburn	7	7
Cambridge	27	14	Marlboro	6	2
Lowell	39	18	Westfield	6	2
Lynn	25	8	Peabody	—	—
New Bedford . .	46	23	Revere	8	2
Springfield	17	7	Attleboro	6	4
Lawrence	32	19	Clinton	—	—
Somerville	15	7	Adams	9	8
Holyoke	23	13	Gardner	5	3
Brockton	15	1	Milford	—	—
Malden	10	6	Watertown . . .	1	1
Chelsea	14	9	Plymouth	—	—
Salem	9	6	Weymouth . . .	7	4
Newton	6	3	Framingham . .	2	—
Haverhill	12	5	Southbridge . . .	10	5
Fitchburg	—	—	Wakefield	—	—
Everett	9	3	Webster	—	—
Taunton	24	7			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 7, 1907.

E. J. GROW, surgeon. Detached from duty at the Naval Hospital, Washington, D. C., and ordered to the Bureau of Medicine and Surgery, Navy Department.

W. G. FARWELL, medical director, retired. Detached from duty at the Navy Recruiting Station, Philadelphia, Penn., and ordered home.

H. BUTTS, assistant surgeon. Detached from the "Maryland" and ordered to the Naval Station, Cavite, P. I.

T. H. STREETS, medical director. Ordered to additional duty as a member of the Naval Retiring Board, Washington, D. C.

W. A. MCCLURG, medical director. Detached from the Marine Barracks, Washington, D. C., and ordered to duty as president of the Naval Examining and Medical Examining Boards, Washington, D. C.

C. D. LANGHORNE, surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the Marine Barracks, Washington, D. C.

C. J. DECKER, surgeon. Having been examined by a retiring board and found incapacitated for active service on account of disability incident thereto, is retired from active service from Aug. 31, 1907, under the provisions of Section 1453, Revised Statutes.

C. G. ALDERMAN, assistant surgeon. Detached from the Naval Hospital, Puget Sound, Wash., Sept. 15, and ordered to the Naval Medical School, Washington, D. C., Oct. 1, for instruction.

F. X. KOLTES, assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., Sept. 15, and ordered to the Naval Medical School, Washington, D. C., Oct. 1, for instruction.

EXAMINATION.

ANATOMIST (MALE). ARMY MEDICAL MUSEUM. — The United States Civil Service Commission announces an examination on Oct. 23. 21, 1907, to secure eligibles from which to make certification to fill a vacancy in the position of anatomist (male), at $1,600 per annum, in the Army Medical Museum, office of the surgeon-general, and other similar vacancies as they may occur there.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners for application Form 1312. No application will be accepted unless properly executed, including the medical certificate, and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

RECENT DEATHS.

DR. GAYLORD PARSONS CLARK, dean of the faculty of the College of Medicine, Syracuse University, died suddenly from cardiac disease at his home in Syracuse, N. Y., on Sept. 1. He was fifty years of age, and was graduated from the medical school in which he held office, in 1880.

DR. LANSING B. WINNE, a well-known physician of Albany, N. Y., who is stated to have been suffering from mental trouble for some time past, committed suicide on Sept. 2. His body was found several hours after death in the chapel adjoining Holy Innocents Episcopal Church, of which Dr. Winne was a vestryman. There was a bullet wound over the right temple, and a revolver was in his hand.

BOOKS AND PAMPHLETS RECEIVED.

The Prevention of Venereal Diseases. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

The Venereal Peril in Its Relation to the State. By Ferd. C. Valentine, M.D. Reprint.

The Emergency Dilatation of Urethral Stricture. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

500 Surgical Suggestions. Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D., and Eli Moschcowitz, A.B., M.D. Second Series. New York: Surgery Publishing Co. 1907.

The American Illustrated Medical Dictionary. By W. A. Newman Dorland, A.M., M.D. Fourth edition, revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Co. 1906.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson, B.A., M.D., LL.D. (Yalen.). Fifth edition, revised and enlarged. Illustrated. New York and Philadelphia: Lea Brothers & Co. 1907.

Treasury Department Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory, Bulletin No. 38. The Influence of Antitoxin upon Post-Diphtheritic Paralysis. Bulletin No. 36. Studies upon Hypersusceptibility and Immunity. By M. J. Rosenau and John F. Anderson, Washington. 1907.

Urethral Hemorrhage. By Ferd. C. Valentine, M.D., and Terry M. Townsend, M.D. Reprint.

Anatomy of the Brain and Spinal Cord, with Special Reference to Mechanism and Function. For Students and Practitioners. By Harris E. Santee, M.D., Ph.D. Fourth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

A Text-Book of Physiological Chemistry. For Students of Medicine and Physicians. By Charles E. Simon, B.A., M.D. Third edition, thoroughly revised. Philadelphia and New York: Lea Brothers & Co. 1907.

A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. For Students, Hospital Physicians and Practitioners. By Charles E. Simon, B.A., M.D. Sixth edition, thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

A Text-Book of Physiology. For Medical Students and Physicians. By William H. Howell, Ph.D., M.D., LL.D. Second edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Pharmacology and Therapeutics. By Reynold Webb Wilcox, M.A., M.D., LL.D. Seventh edition, revised. Philadelphia: P. Blakiston's Son & Co. 1907.

Third Annual Report of the Phipps Institute for the Study, Treatment, and Prevention of Tuberculosis. Feb. 1, 1905, to Feb. 1, 1906. Philadelphia. 1907.

Report of Cases of Brain Abscess. By F. E. Kittredge, M.D. Reprint.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XII. Washington. 1907.

A Text-Book of Clinical Anatomy. For Students and Practitioners. By Daniel N. Eisendrath, A.B., M.D. Second edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Original Articles.

A SUPPURATING SUPERNUMERARY URETER OPENING INTO THE PROSTATIC URETHRA.

BY ARTHUR L. CHUTE, M.D., BOSTON.

The following case illustrates a rare anomaly of the ureter, of which I have been able to find few similar instances.

The patient, a man of forty-two, was first seen at the Boston Dispensary in the fall of 1905 in the service of my colleague, Dr. C. M. Whitney. His history was that of a urethral discharge that was followed by an epididymitis eleven years before. Since this urethritis he had had a great deal of backache, as well as suprapubic pain and pain in his groins and perineum. He noted in 1900 that his urine was turbid and thinks that it may have been even before this time. Since 1900 he had had to get up three or four times at night, but micturition had been practically painless. He had had bladder irrigations for some two years and also had been treated for vesiculitis and prostatitis, but without effect.

Examination showed a very turbid urine containing pus, small round cells and bacteria in abundance. Neither kidney was palpable nor tender. His prostate, vesicles and testes were normal. Cystoscopy showed a bladder that was unusually tolerant, allowing easily a distention of from 12 to 16 oz. There was a slight cystitis of the lower part of the bladder and a puckering high up on the posterior wall that I supposed was due to a former ulceration. The right ureter was normal and emitted very frequent jets of what appeared to be clear urine. The left ureter was "slipper" shaped with the bladder moderately distended, while with a fully distended bladder it gaped widely and a little turbid fluid could be seen issuing from it at irregular intervals. A catheter passed into the left ureter gave very little urine, but when passed to the kidney pelvis it evacuated 2 oz. of turbid fluid in a short time. This fluid contained a trace of albumin, 0.50% urea, blood, pus, round cells and bacteria. Neither slide preparations nor a guinea pig inoculation showed tubercle bacilli. A specimen from the right kidney showed a very actively secreting organ. The urine was transparent; it contained a very slight trace of albumin, and 2.27% of urea. The sediment which was very slight showed a single cast, some epithelial cells and a little normal blood, the last probably due to slight injury by the catheter.

Several examinations gave practically this same result. Washing out his left kidney pelvis would lessen for a time the turbidity of his urine and his frequency of micturition but gave only temporary relief. He was advised that drainage of his left kidney, or possibly its removal, was the only thing that would permanently benefit him. He was unwilling to undergo operation and ceased to attend the clinic.[1]

After an absence of eight months, this man reappeared in August, 1906, with the story that up to a few weeks before he had been as when last seen. For a few weeks he had been having frequent and painful micturition, he had lost appetite and weight and had had occasional chills. His urine was turbid, of an orange color and with a peculiarly offensive odor. On standing in a cylindrical glass it deposited a sediment that was nearly one half the height of the column of urine. This sediment showed pus, epithelium, a little blood, and immense numbers of a staphylococcus of some sort. The kidneys could not be felt; there was no tenderness in either loin. There was pain to the left of the bladder and just behind it and there was tenderness at these points, as well as over the lower part of the left ureter. His bladder washed clean very easily but was less tolerant than formerly. The ureters were as at the previous examination, but the lower part of the bladder showed a greater degree of cystitis. Behind and to the outside of the left ureter there was a localized patch of cystitis as there was also on the posterior wall rather nearer the left than the right side. At these points the mucous membrane was very dark red and thrown into folds, which in some places were surmounted and in others bordered by reddish vesicles.

Catheter specimens were taken from the lower part of both ureters. That from the right now contained a good many casts, some with blood and epithelial cells adherent. Stained specimens of the sediment, however, gave no bacteria, showing that the condition was toxic rather than infectious. The urine from the left ureter was very small in amount and was as at the previous examination.

When after the cystoscopy this patient came to empty his bladder it was noticed that the fluid was followed by several drops of pure pus, and that by straining with his bladder empty he could express pus in little jets. Pressure behind and to the left of the bladder increased the amount of pus he could express. His prostate was neither tender nor enlarged. It was found that he was running an evening temperature of from 101° to 103°.

On several occasions a large catheter was placed in his bladder and during the time it was in position the bladder urine contained much less pus. After leaving the catheter in place for a few hours his pain would increase and his temperature go up. On removing the catheter an unusual amount of pus would be discharged with relief to his pain. This and the area of edema bullosum led me to believe that he had a collection of pus behind and to the left of his bladder that connected with the prostatic urethra either through the prostate or a seminal duct. The fact that with the catheter in place the bladder urine was much less turbid, made it seem probable that the left kidney was not, at least, the immediate cause of his acute symptoms.

A perineal section that I did early in September, 1906, showed a point on the left lateral wall of the prostatic urethra, about half an inch in front of the bladder sphincter, from which pus was oozing and from which more could be forced by pressure above the bladder. This opening was dilated, a tube inserted, and a catheter fixed in the bladder. Drainage from the tube was free and his temperature came down, but not to normal. As the perineal wound closed the temperature went up again and there was a tenderness over the whole course of the left ureter and left kidney, though no distinct mass could be felt.

At a second operation, some weeks after the first, a left-sided extra-peritoneal incision was made in order to explore the lower portion of the ureter and the region behind and to the left of the bladder. A normal looking ureter was found in its usual position; this was followed to the bladder and showed no abnormality. The region to the left of the bladder showed nothing more than brittle, friable fat, that had evidently suffered inflammatory attacks. Behind the bladder, to the inside of the normal ureter, and very closely bound to it by adhesions at the point where the normal ureter joined the bladder, there was a thick walled tube which was nearly the size and appearance of a bit of small intestine that was without a peritoneal coat. This tube extended to the right along the back of the bladder a short distance, then becoming much convoluted it rose out of the pelvis and extended upward parallel to the normal ureter and to the inside of it. It was found to lose itself above in a big flabby sac, evidently a dilated kidney pelvis. After freeing this tube it was tapped and found to contain very foul pus. The patient's condition was too poor to allow of a nephrectomy or kidney resection, so the abnormal ureter was cut close behind the bladder and a large drainage tube sewed into its stump. After removing a section of the tortuous ureter, and passing a tube through it into the dilated kidney pelvis, its upper end was brought out at the superior angle of the incision and fixed to the skin. Nothing was done with the normal ureter. The muscles and skin were sutured between the two tubes.

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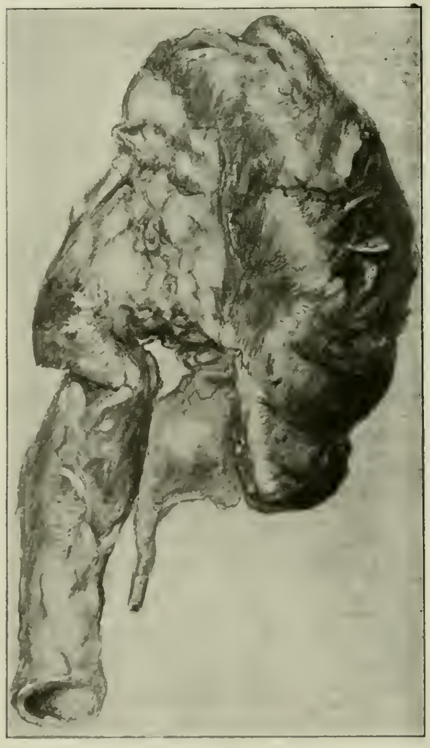
[1] The history of the case to this point has been reported as an illustration of the fact that a renal suppuration does not necessarily give symptoms distinctly referable to the kidney; that it may in fact point more to bladder involvement. Also as an illustration of the fact that palpation may not reveal a tender or enlarged kidney in some suppurations of the renal pelvis. "Some Cases Illustrating Cystoscopic Diagnosis." Bost. Med. and Surg. Jour., 1906, vol. 154, p. 309, Case IV.



There was for several days after operation a moderate sepsis due to soiling of the denuded surfaces during operation. The wound did not, however, break down at any point, and after a few days the temperature reached normal. The dilated kidney pelvis did not drain satisfactorily and had to be irrigated. At first it would hold 4 oz. of fluid without giving discomfort, later it contracted a little. There was at no time any discharge from this ureter that in the least resembled urine. Before the tube that had been sewed into the lower end of the abnormal ureter was removed it was found that fluid syringed into it escaped into the urethra.

When convalescent, this patient's bladder was again examined and it was found that the two areas of localized cystitis with edema bullosum had entirely cleared up. The ureters were catheterized simultaneously — the right discharged rhythmically an abundance of normal looking urine, while the left gave at first a continuous drop-by-drop stream of suspiciously pale fluid that later came rhythmically. As I suspected from the color of the fluid that the left ureter was dilated and was allowing fluid from the bladder to flow up the ureter, and that the rhythmical discharge was really due to bladder contractions, I injected methylene blue into the bladder through a third catheter. The blue made its appearance in the left catheter at once.

The left kidney was removed through a lumbar incision four weeks after the second operation. It was adherent everywhere and had an artery entering both the upper and the lower pole. The ureter that emptied into the bladder arose from the lower pole and was cut a few inches below the kidney. The pyo-ureter was dissected out with a small margin where it had adhered to the skin. The wound was closed in layers with drainage. The patient's convalescence was interrupted on the fifth day by an attack that seemed like a thrombosis somewhere in his left loin. It was attended with great pain, rapid pulse and respiration and diminished excretion of urine; other than this temporary upset his convalescence was normal and he left the hospital about the middle of December with all his wounds solidly healed and passing a nearly transparent urine, the first portion of which contained a few shreds presumably from the stump of the abnormal ureter.

The kidney prepared for me by Dr. Leary, showed on section two pelves that did not communicate with each other. The upper pelvis, the one drained by the pyo-ureter, was much larger than the one that connected with the bladder. It would hold about 4 oz. of fluid. There was no vestige of secreting tissue but there were several depressions, evidently the remains of calices. There was an apron or septum that partly occluded the opening of the pelvis into the ureter, while the ureter just below the pelvis showed an "S" shaped curve that was not unlike a plumber's trap. The walls of the ureter were much thickened. The appearance of the cavity was not that of a congenital cyst but more that of a kidney whose secreting tissue had been completely destroyed by suppuration. That portion of the kidney that emptied into the bladder was limited to the lower pole and was much the smaller of the two. There was at one point a little crescent of what looked like secreting tissue but with this exception there was no suggestion of renal substance. There were several depressions in the lesser pelvis that were probably the remains of dilated calices. Though at my first examination I had gotten 2 oz. of residual urine from this pelvis, it had contracted so that it would hold only about 1 oz. There were two renal arteries that entered, one near either pole.

The examination left no question but that we had to do with a congenitally malformed kidney having two pelves and ureters. The appearance of the larger cavity indicated that most of the secreting tissue had opened into it. The ureter from this section of the kindey, through a fault of development, opened into the prostatic urethra instead of into the bladder. Its lower end was apparently surrounded by prostatic tissue.

Whether the infection was an ascending one, due in the first instance to a gonorrheal urethritis, as seems most probable, or whether it was descending, due to a hematogenous infection of a badly drained kidney pelvis, is something concerning which one can only speculate. Everything pointed to the probability that the infection had been present for a very considerable time and that the onset of the more acute symptoms early in the summer did not by any means mark the beginning of the process. The true nature of the condition was not recognized until the time of the second operation.

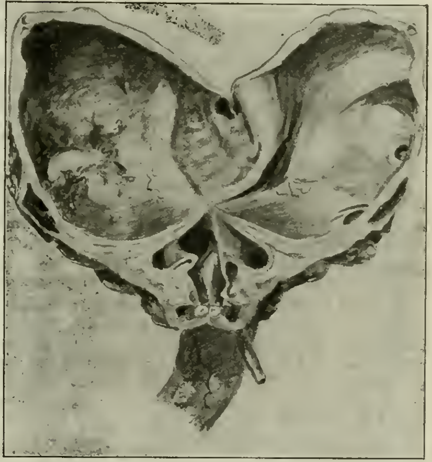
This case presents in reality two abnormalities: that of a double ureter, and that of an abnormal opening of the lower end of a ureter. Though these two deformities were combined in this instance, and are in a large proportion of such cases, they are not necessarily so; there are numerous instances of double ureters entering the bladder in a practically normal manner as well as instances where the lower end of a single ureter has opened abnormally. Of 9 cases of ureters opening into the prostatic urethra collected by Schwarz, duplication was present in 7, while in 2 the ureter was a single one.

Unilateral duplication of the ureter is a fairly common anomaly, the frequency of which has been variously estimated by different writers; thus Lessing places it at from 1% to 4%; Zondek at 3% to 4%, and Robinson at about 4%. The duplication is due to the fact that the Wolffian duct gives off at an early stage of intra-uterine life two ureteral buds instead of one, both of which develop into a ureter usually connected with its own separate renal pelvis. When double ureters enter the bladder approximately normally as they may often do, they give rise to no symptoms. This was the case in a patient whom I recently cystoscoped for another condition and on whose right side I found two ureteric openings, from which swirls of urine could be plainly seen. With rare exceptions duplication of the ureter is of clinical interest only when one or both ureters show an opening that is abnormal, either as to its caliber or its location.

An abnormal opening of the lower end of the ureter is rarer than mere duplication and of more surgical interest. Certain types, such for instance as where a ureter opens into the vagina, occur not very infrequently and invariably give rise to very annoying symptoms demanding surgical treatment. Other types, such as that seen in the reported case, are much rarer and demand surgical treatment less frequently.

The various types of abnormal ending of the ureter depend upon developmental errors. In some this error is relatively slight, as for instance when a ureter enters the bladder by an abnormally small orifice, or when it ends in a cystic dilatation just under the mucous membrane of the bladder. These are instances where there has been a relatively slight arrest in development, a failure either to perforate the bladder membrane or to make a sufficiently large opening. Cases of this type, though they represent a relatively slight developmental error may give rise to serious trouble as is evident from a perusal of the cases of this sort collected in the papers of Grosglik and Cohn.

The more marked abnormalities of the lower end of the ureter, particularly those that are attended with a considerable change in its location, are brought about in the very complicated shifting that takes place at the time that the Wolffian duct and the developing ureter cease to enter the allantois by a common opening. At this time the Wolffian duct, and the non-developed Müllerian duct in the male, separate from the urinary tract and go to form the seminal tract. During this change the Wolffian duct closes its original opening into the allantois, while the ureter prolongs downward its original lateral opening into the Wolffian duct, until it opens into the bladder. Certain abnormalities, such as the opening of a ureter into a seminal vesicle or any part of the seminal tract are due to a failure on the part of the developing ureter to separate from the Wolffian duct, while that organ, after closing its opening into the fetal bladder goes on with its normal plan of development. Other changes are apparently due to a displacement of the lower end of the developing ureter, that seems best explained by a pulling or crowding of the ureter of the embryo by the Wolffian duct, which is very active at this time and changes its position very materially. A relatively small displacement of the ureter at this early stage of intra-uterine life may result in a considerable deviation from the normal at full term. A slight displacement forward suffices to bring the fetal ureter into contact with the tissues that are to form the deep urethra, and this probably accounts for anomalies of the type seen in the reported case. The instances where a ureter opens into the urethra in women are probably brought about in the same way. In the cases where a ureter courses through the prostate it is probable that the ureter does not pierce, so to speak, the developing prostate, but that the prostate which is an outgrowth from the deep urethra develops about the already abnormally placed ureter. It is improbable that abnormal ureters that open



into the prostatic urethra *at the veru montanum* take their origin from an abnormal connection between the ureter and a Müllerian duct.

While the lesser abnormalities of the lower end of the ureter, such, for instance, as an abnormally small opening into the bladder, or a cystic ending under its mucous membrane, are due to slight arrests in development, the more marked changes in the location of the ureteric orifice must, in the male at least, be attributed to the disturbing influences which the Wolffian duct, under certain unknown conditions, exerts upon its off-shoot, the developing ureter. In the female we have to take into account beside the distortions due to the Wolffian duct, which would account for ureters opening into the urethra, the influence of the Müllerian duct. An abnormal communication between this organ and the ureter probably accounts for ureters that open into the vagina. The explanation of the exact mechanism by which some of these changes take place is at present quite impossible since the whole subject is too imperfectly understood.

A study of the recorded cases of the particular type of the one reported brings out several points of interest, both as regards double ureters and ureters opening into the prostatic urethra. In instances where there are two ureteral openings there will almost invariably be two non-communicating pelves, each with its own area of secreting tissue and often with its separate afferent blood supply as well. The ureter with the lower and more external opening will almost, without exception, lead from the upper pelvis. This has been called Weigert's rule and may be of use in planning a kidney resection should it be indicated.

When a ureter opens into the prostatic urethra there is no incontinence of urine. So long as the ureter remains uninfected there will usually be no symptoms. The rarity with which ureters opening into the prostatic urethra have been noted is probably in part explained by the fact that such cases unless infected are symptomless and are therefore unrecognized. The history of the reported case, as well as some others, makes it evident that in cases when a ureter opens into the prostatic urethra, the urethra gets accustomed to the presence of urine and allows it to pour back into the bladder without causing the reflex desire to empty the bladder that is supposed to take its origin from the entrance of a few drops of urine into the prostatic urethra. Meslay has suggested that a ureter opening into the prostatic urethra will be particularly liable to become infected at the time of puberty, due to the fact that the enlargement of the prostate that takes place at that time will have a tendency to press upon the ureter and interfere with its emptying itself.

As symptoms arise only in cases where there is infection, and as infection of a badly drained ureter speedily gives rise to a renal involvement, the signs will in general be those of a kidney infection. If on cystoscopic examination no ureteric orifice was found on the side giving evidence of kidney involvement this would be suggestive. This could occur only in cases where there was no duplication of the ureter. A sign that would be more suggestive of a renal suppuration of this origin is the ability to force out little jets of pus or turbid urine, immediately after the bladder has been completely emptied by a catheter. This in itself would not distinguish the condition from any other collection of pus opening into the deep urethra, but with other collections of pus a mass or induration would be found, which is not the case in this condition. Though in the reported case the ureter passed through the substance of the prostate, repeated rectal examinations failed to show any mass or tenderness. In most cases a definite diagnosis will not be made before the kidney or course of the ureters has been exposed.

Since attention will rarely be called to this condition until infection has taken place, the treatment of these cases in which a ureter opens in the prostatic urethra, will be nephrectomy in perhaps most instances, whether the kidney has one ureter or two. In some cases presenting a duplication of the ureter, resection of the diseased part of the kidney and the diseased ureter may be possible, as was done in a case reported by Albarran. One can conceive of cases in which the disease process had not extended so far, but that it might be possible to transplant the lower end of the ureter into the bladder and by draining the kidney preserve some secreting tissue. This would be particularly desirable to try in cases in which an only ureter opened into the prostatic urethra, or where the kidney of the other side was somewhat damaged.

A review of the literature of this subject warrants one in considering this condition a rare one. If one takes into account the cases in which a ureter has opened into the urethra in women, which are probably due to an analogous developmental error, the number of reported cases would be considerably increased. Schwarz in his article written in 1896 brought the general subject of abnormal endings of the lower end of the ureter down to that time. He collected from the literature but nine instances in which a ureter had opened into the prostatic urethra. All of his cases were autopsy reports. While I have in all probability overlooked some instances I have found recorded since the date of Schwarz's article but 4 additional cases. Of these 4, but 1 case, that of Albarran, was operated upon.

A synopsis of these cases follows.

Meslay. — A man who died of a cerebral lesion presented bilateral duplication of the ureter. The supernumerary ureter on the left opened into the prostatic urethra; that on the right ended in the prostate itself. Though it was known that this man's urine had been turbid for some months before death, his parents were unaware that he had complained of any urinary trouble.

Obici. — The autopsy of a man of fifty-five who died of pneumonia showed two ureters on his right, both of which traversed the muscular wall of the bladder just under the mucous membrane and opened "some millimeters from the neck." The context implies that the ureters opened into the prostatic urethra since it was stated that there was no incontinence. No other symptoms were given.

Nicolich. — In 1904 Nicolich demonstrated before the French Urological Association a specimen taken at autopsy from a man of forty, who died of pneumonia. There was no account of his urinary symptoms. On the right there was what Nicolich took to be a persistent Müllerian duct. Below it opened by a small orifice into the prostatic urethra; above it ended in a "sac superimposed on the superior pole of the kidney."

After examining the specimen Albarran expressed the opinion that it was really a double kidney, one ureter of which opened into the prostatic urethra.

Albarran.— Before the same meeting and as analogous to the above case reported by Nicolich, Albarran described the case of a young man of twenty-six, who came to him with a fistula that had followed a nephrotomy done for a pyonephrosis. At the operation to close the fistula, Albarran found what he termed "two kidneys separated only by a furrow." The upper one he resected with a considerable length of its ureter. He assumed that this ureter opened into the prostatic urethra, though he was unable to demonstrate this fact. He had, however, been able to demonstrate by cystoscopy that the ureter did not open into the bladder. It may be assuming too much to include this case with the others.

The condition is undoubtedly a rare one, but probably not so rare as one would be led to suppose from the literature. It should be considered as a possibility when one is dealing with atypical urinary suppurations.

I am indebted to Mr. Walter Manton for the cuts that accompany this article.

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RECENT ADVANCES IN THE KNOWLEDGE OF TUBERCULOSIS IN EARLY LIFE.*

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The literature produced in the last few years on the subject of tuberculosis in early life is so enormous and the number of new observations, experiments, facts and theories contained therein so great, that it is exceedingly difficult to summarize the recent advances in the knowledge of this disease. Moreover, the views brought forward are so divergent, yet are all supported by such masses of carefully obtained and compiled evidence, that it is still more difficult to choose among them, or to form any satisfactory conclusions. The subject is still under discussion, and is now more than ever full of open questions, to which the final answers must still be awaited.

In this paper I shall endeavor to summarize some of the results of all this work. I shall present as facts those points which are admittedly established, and shall give my personal opinion on the preponderance of the evidence in the points under discussion, in which an exhaustive study of the literature has enabled me to form an opinion. The remaining points will be presented as theories, or as open questions.

INCIDENCE OF TUBERCULOSIS IN EARLY LIFE.

Important conclusions, based on an immense number of autopsies, have been drawn as to the frequency of tuberculosis in early life. It has for some time been known that this disease is exceedingly common in childhood, more so than has been generally supposed. But the most striking fact brought out in the autopsy statistics is that the frequency of occurrence of tuberculosis increases regularly with the age. It is rare in the first three months of life, and increases steadily throughout childhood, not only from year to year, but also, in the first two years, from month to month. According to the statistics of various observers, it is as follows:

First three months,	0– 2%
Second three months,	16–17%
Second six months,	22–26%
1–2 years,	42–44%
2–10 years,	67%
10–15 years,	64–77%

This fact is of great significance in connection with the question of source and mode of infection, to be discussed later.

The same statistics show that tuberculosis as the cause of death in those cases in which it was found at autopsy decreased with advancing age. Hamburger and Slicka, whose figures are based on 2,557 autopsies on children under fifteen years, found that in all these cases in which tuberculosis was found in children under six months, it was the direct cause of death, but that in children, in the second six months, it was the direct cause in 75%. Over two years, it is much more infrequently the direct cause of death.

They also found absolutely no evidence of any tendency toward healing in the first two years of life.

It should be mentioned here that Salge concludes from careful researches that autopsy findings are not an absolute indication of the prevalence of tuberculosis in early life, but represent only a minimum, as virulent bacilli may be present without producing demonstrable lesions.

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* Read in the Section of Tuberculosis in Children, of the National Association for the Study and Prevention of Tuberculosis, at the Third Annual Meeting, Washington, D. C., May, 1907.

NATURE OF THE TUBERCULAR PROCESS IN EARLY LIFE.

Recent studies also have emphasized the great difference in the pathology of tuberculosis in early life from that of adult life. Tuberculosis in infancy and childhood is essentially a disease of the lymph nodes. Tubercular adenitis represents the chronic tuberculosis of childhood, as phthisis represents the chronic tuberculosis of the adult. The autopsy statistics quoted above showed tubercular involvement of the bronchial lymph nodes in 98%; the mesenteric lymph nodes in 36%; the cervical lymph nodes in 30%.

Leaving aside for the present the questions of the source of the tubercular infection, and its point of entrance into the body, we know that in children the bacilli do not usually cause demonstrable primary lesions of the skin or mucous membranes, but localize themselves in the lymph nodes. Here they set up a chronic process, which authorities agree to be a reaction of defence, directed toward the prevention of a further extension of the virus. In proportion to the completeness of this protective reaction, the bacilli are either prevented from multiplying, and thus may remain indefinitely latent, or they multiply, though prevented from spreading. In the former case, there are no clinical manifestations; in the latter, there are faulty nutrition, loss of weight, and occasionally fever.

There is at times a further extension of chronic tuberculosis. This occurs when virulent bacilli, escaping into the circulation, localize themselves in such a tissue that the tissue reaction again succeeds in limiting their further spread. This is, in fact, a true metastasis. Examples are, the tuberculosis of the bones, and the solitary tubercles sometimes found in the brain or liver.

This metastasis of chronic tuberculosis is, however, not the usual method in which further spreading takes place. The usual method is the acute tuberculosis of early life. When the resistance of the human organism is lowered by some cause, such as an intercurrent infection, notable among which are measles, and pertussis, or some indeterminable cause, the bacilli invade the general circulation and produce an acute general or localized miliary tuberculosis. It was formerly supposed that miliary tuberculosis occurred only when a large number of bacilli suddenly escaped into the blood stream. The weight of modern opinion does not believe this, but rather that a few, possibly only one, escape, the main point being that a vascular lesion is formed, from which as a nidus further extension occurs. Thus, for example, in tubercular meningitis one bacillus may cause a tubercle in the lymph spaces of the pia, from which as a source the infection spreads along the course of the vessels, through the vascular channels throughout the tissue. General miliary tuberculosis is due to a tubercular vascular thrombus, which forms a similar nidus.

Although tubercular meningitis and acute miliary tuberculosis are the commonest acute manifestations of tuberculosis in early life, and are responsible for the greater part of the mortality, other acute or subacute forms occur, such as tubercular bronchopneumonia and tubercular peritonitis. In the latter, the infection reaches the peritoneum through the lymphatics, and a tubercle is formed which forms the nidus from which the general involvement of the membrane takes place. Whether in tubercular bronchopneumonia the invasion occurs through the pulmonary lymphatics, or from a fresh aërogenous infection, is one of the questions which still remain unsettled.

SOURCES OF INFECTION.

For a long time after Koch's discovery it was believed that tubercle bacilli, like the pyogenic cocci, were generally distributed, were everywhere, in the air, in the dust of the streets, in houses and in food. Under such circumstances every one was constantly exposed to tuberculosis, and infection occurred when resistance was sufficiently lowered to give the omnipresent germs a start. This view has been proved to be untrue. It is now generally recognized that the only source of tubercular infection is the tuberculous man or animal.

Four theories have been held as to the source of the infection. First, the congenital theory, advanced by Baumgarten, that tuberculosis is always intra-uterine in origin, due to placental infection. While there is evidence that tubercular infection can, in very rare cases, occur in this way, there is absolutely no evidence that it plays any important part. Second, that infection takes place from the inhalation of dried tubercular sputum. Cornet, who advanced this view, supported it by many ingenious inhalation experiments on animals, from which he concluded that it represented the only source of infection. The experiments are highly artificial, and the weight of modern opinion does not accept in full Cornet's conclusions, though admitting that the dust from dried sputum is in fact a source of infection of great importance, and that Cornet has conferred great benefit on the progress of study by calling attention to its dangers. The third view is that supported by Flügge, that the source of infection is the fine moist drops expelled in coughing. This also is a possible, but by no means exclusive, method of acquiring the disease. Its chief benefit was in calling attention to the danger of the tuberculous individual. The fourth view is that the source of tubercular infection is the milk of tuberculous animals. The most extreme supporter of this view is, or was, Behring, who asserted that tuberculosis is always primarily a disease of infancy, and that at whatever age and in whatever form it manifested itself clinically, it was always due to a milk infection occurring in infancy. The phthisis of adults, he said, is only the concluding chord of the infant's cradle-song. This view naturally was of intense interest to pediatrists, and aroused a controversy which, has ever since been raging in the scientific journals. In its support are the results of much painstaking study on human and bovine tubercle bacilli. We know now that the bovine type can produce tuberculosis in man. Behring based his view chiefly on the fact that his animal experiments showed that it was practically impossible to infect young animals in any way except by the food, and on the frequency of latent tuberculosis in childhood.

Against it there is much to be said. One cannot reason too closely from young animals to young babies. Also, Behring's view implies the absolute identity of human and bovine bacilli, which, though a common species, we now know to be two distinct types or races, which can be mutually recognized. The bovine type is not most commonly found at autopsy. Also, studies on tuberculosis in cattle have shown that even there infection takes place most commonly by inhalation. Finally, in Japan, where there are no cattle, and where milk is never used as an infant food, tuberculosis is just as common, in just the same forms, as in milk-drinking countries.

The whole history of tuberculosis in early life is against the idea of any one exclusive source of infection. That infected food is an important source, possibly of special significance in early life, cannot be denied. Nevertheless, autopsy statistics show that the more an infant comes in contact with his surroundings the greater the liability to tuberculosis. This fact points us to the chief factor in tubercular infection, the surroundings of the infant. While in the cradle in his earliest months, he is comparatively protected, but as he gets older, is more carried about and handled, or when he creeps on the floor, coming in contact with soiled handkerchiefs and all sorts of other objects, putting everything he finds into his mouth, or inhaling contaminated dust, then the opportunities for infection multiply. This view of house infection, of infection from surroundings, as the chief source, is now generally held by the best authorities. Even Behring has recently modified his views to include it, and there is experimental evidence in its favor, as young guinea pigs, placed in tubercular families, contract the disease.

THE PORTALS OF ENTRY FOR TUBERCULAR INFECTION.

The main difference of opinion still remains, not so much as to the source of the infection, but as to its portal of entry into the body in early life. So high an authority as Schlossmann believes that Behring's theory of tuberculosis being always acquired through the intestine in infancy is the most important step in the progress of knowledge of this disease since Koch's discovery of the bacillus. Many other authorities believe to-day that tuberculosis is practically always acquired through the intestine.

The supporters of this view now admit the importance of house contagion, in which the child carries the bacillus to its mouth. They even admit that tubercle bacilli can enter with the air stream, in which case they believe the organisms become entangled in the secretions of the nose or pharynx, and are swallowed. In any case they reach the intestine, where the lymphatic apparatus is specially adapted to their penetration. The fact that the bronchial lymph nodes are more frequently involved than the mesenteric, is explained on the ground that the latter form insufficient filters against the penetrating power of the bacilli, which consequently enter the general circulation *via* the thoracic duct, and localize themselves in the points of least resistance, which are the bronchial lymph nodes.

This view is supported mainly by the results of experiements on animals which have lymph node tuberculosis resembling that of infancy, in which the lesions of the bronchial lymph nodes are due to ingestion of the virus, it being very difficult to produce tuberculosis by inhalation. Another argument is based on the infrequency with which the lungs and larynx are affected in infancy, and that the first lesion is always vascular. Moreover, a violent reaction of the lung is caused in infancy when by inhalation even the smallest foreign bodies enter the smaller bronchioles and alveoli, but no reaction of the lymph nodes. Also, all other infections entering by inhalation involve the bronchi or alveoli, not the lymph nodes, and hence tuberculosis is obviously hematogenous or lymphogenous.

The chief argument against this view is that it is unwise to draw such important and far-reaching conclusions as to children from laboratory experiments on animals. If it is true that the tubercle bacillus can pass through the mucosa of the intestine without producing a lesion, the same is true of the mucosa of the lung, and if the lungs and larynx are infrequently affected, the same is true of the intestine. Inhalation does not imply the entrance of a number of bacilli, and hence no violent reaction is necessary. All analogy points to the lymph nodes lying nearest to the point of entrance as the ones primarily affected, which means that the more frequent point of entry is in the lungs. The behavior of dust particles is a strong argument in favor of the aërogenous origin of lymph node tuberculosis. And Theobald Smith has shown that even in cattle tuberculosis enters more often through the lung than through the intestine.

It is probable that in infancy the commonest portals of entry are the lungs, the tonsils and nasopharynx and the intestine. Corresponding with these three portals of entry, we find primary involvement of the bronchial, cervical, and mesenteric lymph nodes.

SOME THEORETICAL CONSIDERATIONS.

I must call attention to some theoretical views recently advanced by Dr. Theobald Smith. Taking up the subject of the parasitism of the tubercle bacillus from the point of view of the parasite, he points out that a stable parasitism results from a selective adaptation, the result of the interaction of two organisms. It is necessary for the continued existence of such a parasitism that the parasite shall provide itself with a mode of exit from as well as entry into the host. From this necessity follows a lowered virulence, or invasive power, the bacillus attacks the skin or mucous membrane, and phthisis is the commonest form. Other forms, as lymph node tuberculosis, are aberrant, as the parasite must die without exit. Such forms are commoner in childhood, because the bacillus, being keyed, as it were, to adult life, is more invasive in childhood.

As a result of the study of the peculiarities of tubercle bacilli in cultures, and of the reactions to tuberculins and vaccines, Smith has formulated an interesting theory. The tissue reaction in tuberculosis is a mechanism of mutual defence on the part of the host and parasite, and is stimulated by something given off by living bacilli only. He believes the bacilli are provided with a protecting envelope, with neutral chemotaxis, which must first be removed by the body fluids, the blood, which can be compared to an opsonin, although Smith does not agree with Wright that phagocytosis and the leucocytes play much part in the defence against tuberculosis. The envelope being removed, the bacilli multiply, and stimulate cell proliferation, which checks multiplication. Some bacilli are destroyed, while the rest, protected by caseation, remain latent, provide themselves with a new protecting envelope, and, if discharged, are ready to infect again. Thus when bacilli are latent, it is because the opsonic or capsule-removing power of the blood is too low, and the body, while apparently immune, is really in a state of hypersusceptibility. When the capsule-dissolving or opsonic power rises, multiplication begins.

Without entering upon any discussion of the very technical evidence upon which this theory is based, I will say that I think it is specially attractive in connection with the peculiarities of tuberculosis in early life, namely, the great frequency of latent tuberculosis, and the frequency, extreme severity, and fatality of the acute manifestations. The child's blood is low in capsule-removing power, hence tuberculosis is latent, but the child is nevertheless hypersusceptible, hence the little resistance and slight tendency toward healing.

THE DIAGNOSIS OF TUBERCULOSIS IN EARLY LIFE.

As to the diagnosis of tuberculosis in early life, much work has been done with a view to determining the exact diagnostic value of the tuberculin reaction. It is admittedly certain in animals, but has frequently failed in adults. The conditions are believed to be more favorable in children, where the reaction is considered a very valuable diagnostic sign. Schick, basing his conclusions on exhaustive experimental work, believes that a local reaction is less apt to fail than the general constitutional reaction. He concludes that no known case where tuberculosis has been excluded with certainty has given a local reaction, and that this reaction is often the only positive sign.

As to serum diagnosis, much work has been done, but final conclusions as to its value cannot yet be drawn. Many observers believe the agglutination test to be an absolute and very early sign, while others deny its value, and have found agglutinating power in the serum of apparently healthy persons.

On the difficult subject of the clinical diagnosis of chronic tuberculosis in early life, there has been much painstaking observation, and a few new points have been brought out. D'Espine believes he has found a reliable method of diagnosticating enlargement of the bronchial lymph nodes by auscultating the voice. In a normal child the tracheal tone stops abruptly at the seventh cervical spine, but with a pathologic process in the lymph nodes it extends further downward. In the first stage auscultation on the child's crying or pronouncing the resonant words "*trois cents trois*," reveals a whispering tone superadded to the voice, which in a more advanced stage becomes bronchophony. Dullness on percussion of the seventh cervical or first dorsal spines is a later sign, as are intrascapular dullness and the bronchial souffle. Gibson has called attention to venous dilatation over the chest, neck or shoulder, tending to converge above the sternum, as a valuable sign. The most important diagnostic method, however, which we now have at our disposal, is due to the recent perfection of radioscopic diagnosis.

There has been much discussion recently as to the possibility of recovery from tubercular meningitis. In the literature of the last twelve years, I found only three cases of recovery where the diagnosis was satisfactorily established.

THE PROBLEM OF IMMUNITY.

Ever since Koch's discovery of the tubercle bacillus, for those who have busied themselves with the study of tuberculosis from the scientific standpoint, the central problem has been the conferring of artificial immunity. The problem, like most problems in immunity, is so complicated, that, as far as human beings are concerned, but little of positive and practical value has been accomplished. Nevertheless, an enormous amount of work has been done, with the result of at least clearing the ground and preparing the way for what will follow in the future.

Three methods of producing immunity have been tried. First, mithridatisation, producing active immunity by the frequent introduction of increasing doses of poison. Second, jennerisation, producing active immunity by infecting with weakened cultures. Third, serum therapy, producing passive immunity by introducing an immune serum. The third method has given no favorable results at all. The first was the method chosen by Koch, with the old tuberculin. Though useful in animals, it has failed in human beings, and it has been shown that it confers immunity only against poison, not against living bacilli. The attention of the scientific world is now focused upon the second method,—the conferring of immunity by means of vaccines.

There are many preparations of tubercle bacilli now in use as vaccines, and their value as immunizing agents is not yet settled. The question is still in its infancy, yet some progress has been made. It has at least been determined that the immunizing power of a vaccine is distinct from its toxic action; and the most modern investigators are working with vaccine and doses which cause no general constitutional reaction.

The ingenious theory of the opsonin brought out by Wright has been applied to tuberculosis. I assume you are familiar with the general theory. As you know, he takes the opsonic index as a guiding factor in giving the tubercular vaccine. It is extremely ingenious. The chief objection is that there is no evidence that phagocytosis is at all an important factor in the protecting mechanism against tuberculosis. Granting then that the opsonic index rises after an injection of tubercular vaccine, and that a permanently raised opsonic power may be produced in the blood by repeated injections made at the proper time, nevertheless, there would be no reason to expect an increased power of resistance against the organism.

Nevertheless, other substances, true antibodies, may increase in parallel with the opsonin, which are of protective use, so that one cannot yet condemn this method. Such antibodies may be the substances which dissolve the protective envelope, as suggested by Smith.

Smith believes that the hypersusceptibility produced by an attack of tuberculosis is in reality a partial immunity, that immunity, being dependent on the tissue reaction, is of necessity focal, and though some general immunity is produced, it is not sufficient to prevent a second, a severer attack. This, though insufficient, carries with it the germ of the possibility of immunization to such a degree as to wholly prevent a second attack. The chief stumbling-block to producing immunity in tuberculosis is that the immunizing substance is toxic, and immunity requires exposure of the whole body to a toxic immunizing substance. Nevertheless, the human being is undoubtedly in a fairly good state of natural resistance toward tuberculosis, and there is much hope that a method will be devised by which by the creation of local foci under the control of the observer, general immunity may be attained.

THE REPORT OF AN UNUSUAL CASE OF ULCER OF THE STOMACH.[*]

BY J. M. T. FINNEY, M.D.,
Associate Professor of Surgery, Johns Hopkins University, Baltimore,
AND
JULIUS FRIEDENWALD, M.D.,
Professor of Diseases of the Stomach, College of Physicians and Surgeons, Baltimore.

The diagnosis of ulcer of the stomach is not always a simple matter. If the important symptoms of this disease are present, such as pain appearing soon after meals accompanied by nausea and vomiting, together with hematemesis and a localized painful area in the epigastrium, there is no difficulty in establishing the diagnosis; but frequently one or more of these symptoms are absent, and great difficulty may be experienced in arriving at a correct diagnosis. Leube recognized this difficulty when he advised his rest treatment in all doubtful cases of gastric ulcer in order to verify by the result of the treatment the correctness of the diagnosis; unfortunately, even this method cannot always be relied upon.

The difficulty which is sometimes met with in arriving at a correct diagnosis of ulcer is occasionally experienced, even after an abdominal incision has been made, *i. e.*, even under direct inspection of the ulcer. The case which we are about to report presents conditions of this kind.

The patient, W. H. K., age thirty-eight years, married, first presented herself for treatment on Oct. 22, 1906. Her family history was negative; her mother died of tuberculosis of the throat; with this exception her family history was good. The patient had had the diseases of childhood, including scarlet fever and diphtheria. She has complained much of shortness of breath, and during the past five or six years she has been troubled with gastric disturbances. She has had much nausea and vomiting, beginning some hours after eating. The vomited matter is very acid and contains some food remains, but never blood; accompanying the nausea and vomiting there is pain in the left hypochondrium, back, and also in the lower abdomen; this pain is sometimes intense; it comes on in paroxysmal attacks lasting from one half to two hours, and is mainly experienced between 2 A.M. and 5 A.M. Eructations are almost constantly present and at times of acid. The patient believes that she is quite sallow following these gastric attacks, though she has never been jaundiced. The stools are sometimes light colored; the bowels are regular, the urine is high-colored and causes a burning pain on micturition and there is increased frequency in voiding. The patient has severe menstrual pain with decreased flow and pain in the lower abdomen, with a soreness on both sides extending around the back and down the legs, which is increased on walking or riding. She has become very nervous recently and complains frequently of sick headaches; she has lost considerable flesh and the appetite has been diminished. On examination the patient was found to be a fairly healthy looking woman with a fair amount of flesh; the tongue is clean, the mucous membrane of a rather good color; the skin is sallow and covered with some acne pustules, especially on the back. The chest wall is well formed, the movements are good; the heart and lungs are normal.

Inspection. — The abdomen is full; there is considerable subcutaneous fat; the left side of the abdomen is a little fuller than the right.

Palpation. — The abdomen is tender everywhere; there is considerable muscular resistance in the left hypochrondrium; this area is exquisitely tender to pressure; the tenderness extends along the left costal margin, running from the axillary line 8 cm. toward the median line; no mass can be detected. There is also considerable tenderness in the lower abdomen, which is about equal on both sides. The liver is not palpable; the upper border extends to the fifth intercostal space; the right kidney is freely movable (2°); the left kidney slightly palpable; there are no glandular enlargements.

Percussion. — On auscultatory percussion the stomach is found in normal position and not dilated, the lower curvature reaching one finger's breath above the umbilicus. On inflation of the stomach a similar result was obtained.

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[*] Read at the Annual Meeting of the American Gastro-Enterological Association, Atlantic City, June 4, 1907.

Gastric contents. — One hour after an Ewald test breakfast 40 cc. of gastric contents were obtained of a cloudy appearance, but well digested, containing no remains of a heavy meal taken the evening before. The total acidity is 40; free HCl, 0.141%; pepsin and rennet normal. A second examination revealed similar results. The patient was placed on a liquid diet, the gastric disturbance was lessened, while the lower abdominal pains became so intense that the patient consulted Dr. W. W. Russell for relief of this condition. On examination, Dr. Russell could not detect any pelvic disorder, but finding a "suspicious" condition, ordered the patient to the Union Protestant Infirmary for examination under ether. The patient entered the hospital on Nov. 27, 1906. The following day she was placed under ether anesthesia, and inasmuch as the pelvic condition still remained obscure, an abdominal incision was made for exploratory purposes. The pelvic organs were found normal; the appendix and the gall bladder were also normal.

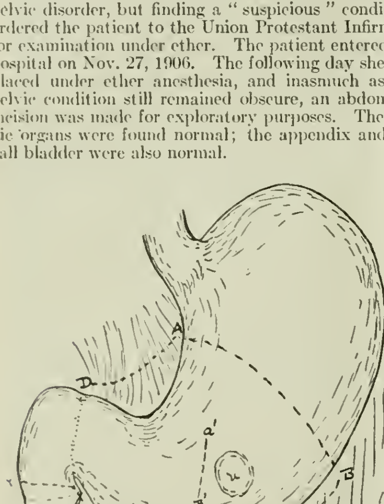

Fig. 1. D, A, B, C, Y, X, line of excision. A′ B′ exploratory incision. U, ulcer.

The stomach presented a mass on its anterior surface 1 cm. from the greater curvature and about one third of the distance between the pylorus and cardiac extremity. The mass was about 3.5 cm. in diameter, convex externally and concave on its inner surface. There were a number of hard shot-like glands above the lesser curvature of the stomach and below the greater curvature. A longitudinal incision 4.5 cm. in length was made along the pyloric side of the mass, the mass everted and then inspected. This was found to be an ulcerating mass with a firm fibrous indurated base, concave, and sharply circumscribed with elevated edges. Inasmuch as the base of the mass was indurated and thickened, and inasmuch as there were present a number of enlarged glands in the fat of both the lesser and greater curvatures, the question of malignancy could not then be definitely determined. It was therefore decided to perform a radical operation and remove the entire mass with its neighboring tissue.

Accordingly, after freeing the duodenum and stomach and carefully packing off the peritoneal cavity, clamps were placed and the stomach incised between them along the line AB, BC, DA (Fig. 1), care being taken to remove as many glands as possible with the mass without, however, interfering with the bile ducts; the duodenum was then cut between the clamps along the line *xy;* the excised portion of the stomach was removed; the upper end of the duodenum was then closed, which was followed by the closing of the open end of the stomach, after the second method of Billroth. A posterior gastro-enterostomy was then made. The duration of the operation was two hours and twenty minutes. The patient recovered slowly from the ether and awakened with considerable nausea; she vomited a small amount of bloody matter; salt solution enemata were administered every four hours. On the following day the temperature of the patient was 99°, pulse 76 and strong, and she was found in splendid condition; the nausea gradually disappeared, and on Dec. 1 the patient was very comfortable, had no nausea and was able to take small quantities of water by the mouth, and on Dec. 4 as much as half an ounce of any liquid. The patient gradually gained her strength, and her subsequent history was uneventful until Dec. 10, when a rise of temperature (100°) began to reveal itself with pain and muscle spasm in the left inguinal region; on the following day the pain extended down the inner side of the left thigh and was followed by a numbness in the leg. A phlebitis of only moderate severity manifested itself, which detained the patient in bed until Dec. 30, 1906, on which day she was able to be up in a chair. Coincidently with the phlebitis there was a dry pleuritic friction rub present in the right lower chest at about the center of the axillary line; this subsided within three days. The patient was able to walk and to leave the hospital on Jan. 12, 1907; her left leg was still somewhat swollen; her appetite and digestion were good. On April 10, 1907, a Ewald test breakfast was given; 44 cc. of contents were removed at the end of one hour, with a total acidity of 49, free hydrochloric acid 0.10%. The patient complains but little of any digestive disturbance and can eat a fairly good meal without discomfort, although she realizes that she cannot take a large quantity of food at one time. The specimen removed was carefully studied by Dr. J. C. Bloodgood, to whom we beg leave to acknowledge our thanks, both for his careful study of the specimen as well as for this report. The following is his report:

"*Pathology, gross.* — Excavated ulcer with elevated edges; glands enlarged with areas suspicious of metastases.

"*Microscopic.* — Ulcer, vascular, cellular granulation tissue; glands chronic lymphadenitis.

"*Gross pathology.* — The piece of stomach removed measures 11 cm. in length. It has been divided at the junction of the pylorus with the duodenum, and removed with a considerable mesentery of fat on its greater and lesser curvature. There is a palpable tumor 1.5 cm. from the greater curvature, 2.5 cm. from the lesser and about 3 cm. of healthy stomach on the cardiac side and 6 cm. on the pyloric side. There has been an exploratory cut in the anterior wall of the stomach to the pyloric side of the tumor. The peritoneum over the palpable mass looks perhaps less vascular than the peritoneum in other parts. It is distinctly fixed, however, over an area of about 1 cm., while the palpable mass is about 2 cm. If one places the finger within the stomach it passes over an elevated ridge, then into a superficial excavated area; with the index finger of the right hand in this cavity and the finger of the left hand on the peritoneum, one can feel between the fingers a narrow zone of dense tissue, thicker and firmer than the adjacent stomach, well, but distinctly more elastic and not as hard as cancer. When the two palpating fingers approach the borders of this mass, it has a smooth, round edge and is distinctly circumscribed.

"When the stomach is turned inside out, the mucous membrane everywhere looks normal except in the region of the palpable tumor. We have here an elevated area, the borders of which are covered with mucous membrane. This area measures roughly 3.5 cm. At the top of the elevation the mucous membrane dips down in crescent folds and ends abruptly. The surface of this excavated area is smooth; it does not look like mucous membrane; it is pale, with some red areas. It has the surface appearance of a simple ulcer, and not that of a carcinomatous ulcer. It has the anemic appearance of a very chronic ulcer. When a section is made for a block, we find an appearance similar to the simple ulcer described by Bloodgood.[1] There is, first, on the surface a narrow zone of tissue less than a millimeter in thickness, which looks like a red line; then there is a zone of white, firm, translucent tissue 5 mm. in thickness; no epithelial alveoli can be seen in this. Then there is a zone 2 mm. in thickness with white fibrous tissue mixed with red muscle tissue. Then comes the peritoneum; here and there a streak of fibrous tissue reaches the peritoneum."

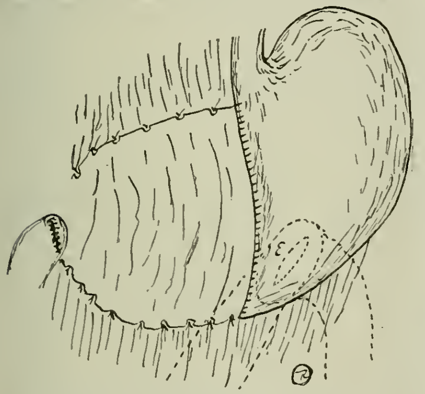

Fig. 2. Appearance of stomach after gastrectomy. E, position of gastro-enterostomy.

"The tumor corresponds very closely to the case mentioned above and described by Bloodgood. In this case the ulcer is not as round, and there is less elevation of the mucous membrane around the ulcer, but the surface of the ulcer and the appearance of the tissue beneath correspond exactly to those in Bloodgood's case."

"When I first cut into the tumor, it was so firm that I hurriedly dictated cancer. It was slightly gritty, but not as much as is usually felt in cancer; the surface of the ulcer was too smooth, and in the rather edematous fibrous tissue there were no granular epithelial alveoli. The gross diagnosis of inflammatory tissue is confirmed by the frozen section. Between bands of fibrous tissue staining with eosin there are large areas of young connective tissue, quite edematous; at first sight one might say syphilitic ulcer, but the lymphoid-type cell does not predominate."

"One block was taken through the entire thickness of the ulcer for frozen, aceton and Zenker sections. One gland from the greater curvature and one from the lesser curvature. The gland in the greater has a white area exactly like metastatic carcinoma, but the white area cannot be expressed, as is usually seen in cancer. If I had cut into this gland at the operation, I would have made a diagnosis of metastatic carcinoma, yet from the finding so far we must look upon it as inflammatory. A large gland in the lesser curvature has a smaller white area, more of the appearance of a chronic inflammatory gland."

"This case illustrates the difficulty, at least with our present knowledge and experience, of making a correct differential diagnosis in doubtful cases at the operation. Even in the laboratory it required considerable time and careful inspection to come to the conclusion that the indurated area was an ulcer and not a schirrus carcinoma in an ulcer. When cutting into the gland in the laboratory it resembled a metastatic gland so closely that, were it not for the ulcer and the frozen section which are before me, I might look upon the gland as carcinoma. For this reason all doubtful indurated tumors which are operable should be treated as cancer when situated in the stomach, and I am of the opinion that in this case the functional result of the gastrectomy will be better than a regional resection of the indurated tumor. In the case just mentioned as reported by Bloodgood, a clinical diagnosis of ulcer was made. At the operation, on account of the indurated tumor and its infiltration of the fat in the lesser curvature, a diagnosis of cancer was made; in the laboratory a gross diagnosis of ulcer, which was later confirmed by the microscope."

This case is interesting from the fact that, notwithstanding the existence of a markedly indurated ulcer in the stomach, the symptoms which were present were by no means distinctive of this condition, and that even upon direct inspection the simple ulcer could not be differentiated from a carcinoma. It is also evident, as Bloodgood points out, that all doubtful indurated ulcerations situated in the stomach should be treated as carcinomata, inasmuch as it is impossible in many of these cases to differentiate ulcer from carcinoma by simple inspection, and again because in a certain number of these cases a carcinoma is apt to develop upon the indurated border of an old ulcer.

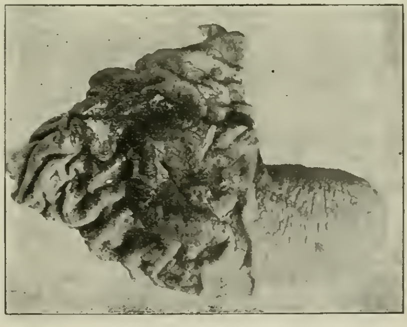

Fig. 3. Ulcer of stomach.

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[1] Johns Hopkins Hospital Bulletin, vol. xv, November, 1904.

Clinical Department.

TWO CASES OF BRAIN ABSCESS.[*]

BY F. E. KITTREDGE, M.D., NASHUA, N. H.

Case I. John J. Nine years of age. A full-blooded Micmac Indian.

Entered hospital Aug. 24, 1906. Gave a history of long continued suppuration of right ear and frequent attacks of pain. At date of entrance to hospital there was marked edema and tenderness back of and just above the ear. I did a simple mastoid operation, finding the bone rather dense for a child and but very few cells. The mastoid antrum contained pus and necrotic tissue. In curetting the antrum, broke through the roof and exposed an epidural abscess, evacuating about a teaspoonful of pus. The dura was covered with granulations. Enlarged my opening on all sides until I came to what appeared to be healthy membrane, carrying it forward, somewhat over the ear.

The little fellow's symptoms all subsided, temperature became nearly normal and apparently made a good recovery. He left the hospital in about three weeks' time.

Sept. 22, I was called to his house and found him having at intervals very severe frontal headaches, accompanied by violent attacks of vomiting, slightly subnormal temperature and a pulse of about 60.

After watching him a day or two, I diagnosed brain abscess and urged his folks to return him to hospital for operation. At that time they refused, but a few days later, finding that his condition was growing worse, consented and I moved him there and operated Sept. 27. Temperature at the time of operation was 96.4 and pulse 58 to 60. There was no tenderness upon pressure anywhere on that side of the head.

I reopened my original incision and found the dura, which had been originally covered with unhealthy granulations, in a healthy condition, but somewhat bulging. I laid open the membrane, and went in about one inch with a needle but secured nothing. Then got a longer needle and going in fully one and a half inches or more, drew out a few drops of pus.

I then cut the brain tissue from below up, and evacuated over 1 oz. of pus. Carrying my finger in as far as I could reach, I found a well walled off cavity. Noticing a little pus posterior to my opening, probed and found another pocket. Upon opening this, I should think a half ounce of fluid was found and evacuated. The first pocket went directly in toward the center of the head and slightly upward. The second went almost directly backward, just above the ridge of the sinus. I drained both cavities with gauze, changing it once in twenty-four hours.

At the time of operation enough bone was removed so that I had an opening about two inches in diameter. After a few days he had a pronounced hernia and it was extremely difficult to keep it well drained. This gradually broke down and required considerable curettement. I hardly dare to say how much necrotic tissue was cut and curetted away, but finally secured a large and fairly clean cavity directly up to what appeared to be the wall of the ventricle, and extending backward, about as far as I could carry my forefinger. There was no loss of motion or function and the little fellow was very bright mentally.

He seemed to be doing well until about Oct. 15, when he developed meningeal symptoms which gradually grew worse. Just previous to this, when everything was apparently doing well, he was seen by Dr. Philip Hammond, of Boston, and we thought there was every prospect of a rapid recovery. The meningeal symptoms continued to grow worse, the head was drawn back, bowels markedly retracted, obstinate constipation, difficult urination and marked pain upon any movement of the body.

These symptoms continued for several days, and finding that my cavity had markedly decreased in size with bulging of its walls, I made a thorough examination with finger. The finger seemed to break into the wall of the lateral ventricle and, upon its withdrawal, was followed by a gush of water mixed with considerable pus. I then carried packing very deep, in same direction from which the water came.

Soon after this his meningeal symptoms seemed to subside, and general condition grew better. After some trouble, a movement of bowels was secured, and he was able to pass urine without difficulty.

Upon Oct. 25, when he seemed fully as well, he was suddenly taken with convulsive movements and these were immediately followed by absolute loss of power over limbs of left side of body. The face was apparently paralyzed upon that side, the mouth being drawn back very markedly to the right, there was grinding of the teeth, the eyes were rolled up in the head and wide open. There were involuntary movements of the bowels and urination, together with absolute unconsciousness. I again carried finger in and opened one of the original sinuses which had become closed. This was followed by a slight discharge of fluid.

He remained in above condition for about forty-eight hours, when there was a slight return of consciousness and he took some nourishment. There seemed to be a slight return of power in arm and leg, manifested by resistance upon moving them, a spastic form of paralysis. This slight improvement lasted only for a short time however, for he soon lapsed into absolute unconsciousness and died the following day.

This patient had a marked septic temperature from the time of operation until death, varying from 99° to 104°. Pulse varied from 70 to 125, averaging 100 to 110.

This was an extremely interesting case to watch, as it did not seem possible to me, with my limited experience, that one could lose so much cerebral tissue and have no motor or mental disturbance. I will not undertake to say how large a cavity there was, but when seen by Dr. Hammond, he estimated that about one third of the hemisphere had disappeared. I do not think that is at all overstated.

From an anatomical point of view, just what part of the different lobes of the brain were involved, I cannot say, except that the first large cavity lay in the tempero-sphenoidal region, a little above the floor, and extended well upward and inward. The smaller cavity extended directly backward toward the occipital region. Later, my small posterior cavity seemed to become obliterated, and I had one large cavity extending directly inward, its upper wall was high up toward the top of the head, and its posterior part, somewhat in the shape of a funnel, extending far back and toward the center.

Previous to the operation Dr. C. H. Nutter attempted an examination of the patient's eyes, but the boy was considerably frightened, and he could not do so satisfactorily.

Case II. Luther S. Thirty years of age.

Entered the hospital Oct. 9, 1906. Temperature 101°, which quickly advanced to 104°. Had all symptoms of acute mastoiditis, including tenderness over mastoid region and just above left ear.

History of having had trouble with that ear since a boy, with slight discharge at times, also marked pain through that side of head at intervals.

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[*] Read before the New England Otological and Laryngological Society, Nov. 16, 1906.

Had appearance of being a very sick man, and it was thought best to delay interference and watch him for a time. The acute symptoms gradually subsided, temperature became lower and he felt considerably better, all but the tenderness upon pressure, over and back of ear, which remained about the same. His general condition being very much better, Oct. 11, I operated, doing a simple mastoid. The bone being very much sclerosed, found it a very difficult operation. About one third of an inch under the surface, opened up a cell which was filled with very dirty looking and bad smelling pus. A very small sinus connected that cell with the antrum, which also was filled with pus of the same character, and necrotic tissue. Everything was cleaned out as thoroughly as possible.

Patient rallied well, temperature became normal and remained so. He had every appearance of making a rapid recovery. There was just one symptom that caused me any uneasiness, and that was, now and then, pain at top and side of head, but after four or five days, that seemed to subside and he was allowed to sit up and move about. Upon the morning of Oct. 17, he felt so much better he was considering when he should leave the hospital.

Early that afternoon, one of the nurses noticed that he did not answer readily when spoken to, and very shortly after, had a severe convulsion following the cry which usually precedes that of epilepsy. The head was drawn back, mouth turned to right and eyes rolled up in head. The breathing was heavy and hard. One convulsion followed another for the next two or three hours, and were only controlled by frequent inhalations of chloroform. Patient was very drowsy during the remainder of the day. Following convulsion he had three or four attacks of vomiting. Next morning felt better, temperature was 99° and a fraction, pulse about 60. Calomel was given to act upon bowels and after several free evacuations he brightened up and declared he felt about as well as before the attack.

That night, his temperature going to 103° and pulse beating very slowly, I decided upon immediate operation for brain abscess. I trephined about one inch above the zygomatic ridge, directly in line with the mastoid, and had immediate bulging of dura through the lower part of my opening. Needle was entered immediately under the dura, no pus found, then was carried about one-half inch into the brain tissue, where it entered a pocket of pus.

Bone was then cut away with rongeur forceps, down to the original mastoid opening, dura was opened up, and with a knife cut into the brain until the pocket was reached. I found the cavity filled with very foul pus, should think about half an ounce in all. Depth of cavity was possibly one and a half inches from outer surface of brain. I cut away the roof of the mastoid, also roof of the tympanum, securing good drainage. For the first two days I used, as drainage, iodoform gauze packed in strips. Following that used a cigarette drain with plain gauze.

The discharge was very dirty and bad smelling for ten or twelve days, and he seemed a little dull mentally for about the same period. His temperature ranged from 98.5° to 99.5°. Pulse was very slow, most of the time from 50 to 56, until Oct. 29, when it was only 40. The following day, upon removal of dressing, much more pus was found than usual. My forefinger was very carefully carried into the cavity and the tip entered another pocket at the extreme end of and anterior to the original one. His pulse, soon after, began to improve both in character and rapidity of beat, going into the 60's, at times even above 70. This patient left the hospital Nov. 8.

There was marked pulsation of the walls of the cavity as far in as I could see with a reflected light. An interesting thing to observe upon examination was, that if the patient hawked or coughed ever so slightly, it was immediately followed by a wave of the walls of the cavity, and a quick bulging, due, I suppose, to a rapid hyperemia in the brain.

Oct. 25, Dr. Nutter examined the patient's eyes and gave the following report:

Fundus of right eye normal.

Left eye, a slight neuro-retinitis, involving about one third of the outer border of the optic nerve.

No hemorrhage or change in blood vessels noted.

GENERAL LYMPHO-SARCOMA ACCENTUATED IN THE PHARYNX.*

BY F. P. EMERSON, M.D., BOSTON.

April 30, 1901. Mr. A. C. W. was sent to me with the following history: He was forty-seven years of age, an American, born in Boston, and a merchant by occupation. His father died at the age of seventy-five from cardiac disease. His mother died at the age of seventy-four from carcinoma. One brother died of phthisis; one sister died of scarlet fever. The patient gave a history of having had typhoid and, at the age of eight, an attack of rheumatic fever, which recurred annually six or eight times.

In 1898, an intestinal hemorrhage was followed by fainting. There was epigastric tenderness and a consulting physician diagnosed duodenal ulcer.

In 1899, a fainting attack was preceded by hematemesis, and following this hemorrhage there first developed difficulty with articulation which grew progressively worse and was accompanied by hoarseness. At this time, examination showed a spare man, poorly nourished, with marked pallor and swollen upper lids, having the general appearance of pernicious anemia. There were no scars on the skin or mucous membranes. Glands were found in the groin and neck, but the spleen and mesenteric glands were not palpable. There was marked cardiac hypertrophy with a systolic murmur at the base. The rhythm, however, was regular and the compensation good. There was slight dyspnea. The uvula was club shaped and the size of one's thumb. A new growth, which seemed to be an extension of the posterior palatine folds, was seen in the lateral walls of the pharynx, with a central mass between. This mass protruded forward at the lower third of the pharynx, was resistant to the finger and of a grayish color.

The larynx was not involved.

The nares were obstructed completely, apparently from collateral edema which gave a tense and waterlogged appearance to the mucous membrane. This did not shrink under cocaine sufficiently to afford a view of the pharyngeal vault.

The upper lids were puffy, especially at the outer third, where they formed a curtain over the eyeball. Eversion of the lower lids showed them to be thickly studded with granular elevations. There were nodules in the cheeks and to each side of the frenum of the tongue. The bridge of the nose was broadened. There was no history of pain, headache or sensitiveness of the scalp.

The patient denied syphilis and alcohol.

His weight had dropped from 158 to 130 lb., and later it fell to 126½ lb.

He had had so-called bilious attacks frequently, and such attacks always preceded tarry stools.

His temperature was normal and the pulse 80. There was loss of appetite with fullness of the epigastrium and muscular weakness. Pallor and depression were marked. His station and gait were normal. A provisional diagnosis was made of syphilis of the uvula, posterior pillars of the palate and pharynx, and he was put upon mixed treatment.

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* Read before the New England Otological and Laryngological Society, Nov. 16, 1906.

Oct. 22, 1901. The patient had gained 2½ lb. During an attack of rheumatism, lasting two weeks, his physician reported that the hoarseness with difficulty in swallowing, and swelling of the eyelids, improved decidedly, but returned with convalescence.

Nov. 7, 1901. — His weight had increased to 132½ lb.

Nov. 15, 133½ lb.

Nov. 26, 134 lb.

Dec. 15. There was a slight hemorrhage-from the stomach and bowels. At 12:45 and 1:45 there was loss of blood from the stomach. This was followed by improvement in the swelling of the eyelids and throat.

Jan. 23, 1902. The patient had another hemorrhage. Three days previous to this, he had had yellow, watery stools without epigastric tenderness. At this time, he had sharp stinging pains in the cartilage of the left ear. The nares were now open and he ate better, but was pale and weak.

March 4, 1902. The pharynx was more swollen laterally and at the lower third, and the patient had great difficulty in swallowing.

The lymphatics in the neck, cheek and eyelids were worse. The uvula was two thirds its former size and the nares clear. His pulse intermitted one beat in seven and he felt weak. The treatment had been stopped three times from acute attacks of influenza which he shared with other members of the family. This interrupted treatment so that it was difficult to estimate its value.

May, 1, 1902. Examination showed the urine and sputum to be negative. Examination of the blood gave hemoglobin 75%, whites 6,800, reds, 3,568,000. There was no increase in the lymphocytes.

A microscopical examination had been made May 17, 1901, by Dr. H. C. Low, of the Boston City Hospital, from a snipping from the posterior wall of the pharynx. He reported as follows: Gross appearance of a spreading growth on the posterior wall of the pharynx, growing down on two sides in ridges as large as the little finger. Piece taken from the growing edge lower down.

Microscopical description. — A round cell growth very much resembling lymphoid tissue, showing very few mitotic figures and of evident slow formation. It has for the most part a definite capsule, but in places is infiltrating the muscle tissue. The clinical history must be relied upon to determine its malignancy. A large definite tumor growth would suggest sarcoma. This section was afterwards seen by two other pathologists, and pronounced undoubtedly lympho-sarcoma. At this time, the treatment was changed to arsenic and he was put upon Fowler's solution which was gradually increased to 15 minims t. i. d. This was continued for a year, then omitted for a year and then resumed for two weeks, and then again omitted. It was twelve months before there was any decided change. The throat was then better, but he was thin and weak and had given up his business interests.

Examination, Sept. 25, 1905. Three years later the patient showed no spleen, and his general physical condition was negative, except for the old heart lesion which was not giving symptoms. Locally, the nasopharynx was entirely clear. The bridge of the nose remained broad, and the eyes, which for the last twelve months had been entirely normal, had just begun to be puffy again. It was for this that he again consulted me. He had had no hemorrhage for four years. There were no glands, pallor or muscular weakness. His appetite was good. His weight was 154 lb., which was normal. The blood showed no abnormal cells and the leucocytes were not increased. On account of the returning puffiness of the lids the arsenic was resumed.

Oct. 25, 1905. There was a hemorrhage from the left naris, which saturated two handkerchiefs. This relieved the previous blocking of the left naris but not on the opposite side. A few weeks of the arsenic treatment was followed by normal conditions.

Nov. 17, 1906. The patient was shown at a meeting of the N. E. Laryngological and Otological Society, and the members concurred in the probable diagnosis, although there was then no clinical evidence of the local process.

May, 1, 1906. For the past year, Mr. W. had been better than for five years. He had been of normal weight, good color, bright mentally and had been able to take active interest in his surroundings, although he had retired from business.

April 13, 1906. While in his carriage house with his son, the suspended shafts of the carriage fell, knocking off his hat and grazing the left side of his nose from which a drop or two of discolored serum exuded. It was not enough to attract his attention until noticed by his son. On Sunday, the skin became red and edematous accompanied by a chill and a temperature of 102.5°. Monday this area became circumscribed and as it fluctuated, it was opened under ether by his family physician, and pus evacuated. One week later, after some pain of the joints, thick pus was again evacuated.

April 27, 1906. The patient complained of a fullness of the throat. This was followed by a profuse discharge and evidence of collapse. In the afternoon, there was more discharge so abundant that his physician thought that he would choke to death, and which was described as a frothy mucus which appeared as fast as it could be wiped from the mouth.

May 7, 1906. I saw him in consultation. At this time, his temperature was 100°, P. 96, R. 28. His pupils were contracted. He was delirious but spoke intelligently on being aroused. Examination did not reveal anything abnormal in the naso-pharynx or throat.

May 10, 1906. I saw him again and his condition was one of coma from which he could not be aroused. Death followed about noon, apparently from toxemia.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Meeting held at the Boston City Hospital,
Nov. 16, 1906.

The President, Dr. F. L. Jack, in the chair.

Dr. F. E. Kittredge, of Nashua, N. H., read a paper on

TWO CASES OF BRAIN ABSCESS.[1]

DISCUSSION.

Dr. F. B. Lund: It seems to me that these cases which have been presented are very brilliant ones. The majority, as we know, arise from ear disease, and the fact that they have had a suppurating ear is very important in making the diagnosis. But now and again cases occur where, if the ear is not suppurating, it is difficult to tell where the brain abscess started. The symptoms are very like those of brain tumor; many have no temperature, the only symptom you are sure of is very bad headache and usually vertigo, and about 35% have optic neuritis. The patient usually has slow cerebration. In fact, many of the symptoms may be absent, making the diagnosis difficult.

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[1] See page 396.

Now, as we know, Virchow has pointed out that brain abscess is frequently secondary to disease in the lungs and pleural cavity. I have specimens of two cases, removed at autopsy, which came into this hospital on the surgical side only two days before they died. The cerebellar abscess was a sailor who had been sick seven or eight days in a typhoidal condition; he had headache, a certain amount of dizziness and one night fell out of bed. Our examination was negative. An abscess was found in his cerebellum, which is there on the table. No lesions were found in his body except in the pleural cavity; from adhesions there he may have had an old abscess.

Another case, a little girl, with abscess of the white matter of the temporal lobe, came to the hospital two days before she died. She had been sick four and a half months with symptoms of some disease in the left temporal lobe. The only thing that was known to indicate that she had lung disease was that she had once expectorated blood in large amount. Dr. Bullard made a diagnosis of cerebral tumor. She had no temperature, but she died after being here two days and at the autopsy disclosed this abscess in the white matter and a pin imbedded in the lung. The cerebral abscess was secondary to an abscess in the lung, undoubtedly.

Now the question of drainage. I have operated personally on but two abscesses: one was secondary to compound fracture, and died, and the other to ear disease, and although the abscess was in the temporal lobe it was a very acute affair, and he died three days after the drainage was put in. I think that other things being equal, a case of long standing, a chronic case, is more apt to recover because the bacteria are less active than in the early acute ones. The question of drainage of the brain is a very difficult one. As Dr. Kittredge has said, the brain falls in and shuts off the drainage tube, and if you pack it with gauze it does not drain well. In a case I have recently had I drained with a roll of rubber tissue, but it was not successful. The cause of death was meningitis, which spread down the spine from the membranes of the brain.

The director that Dr. Leland put in nine different directions in the brain I do not think is a very good instrument. I do not like it because the hole in it gets plugged; a little thick pus will plug a hole like that. I think if you use a grooved director and pass it with another director and follow along the curve, then separate them a little, you get a very good instrument to locate pus. But the question of drainage I hope to get some light on, and I think it one of the most difficult questions that we have to meet, how to drain a cavity in the brain tissue.

Dr. P. C. Knapp: Dr. Lund said very justly that the diagnosis of brain abscess is an extremely difficult thing, and that is especially true with latent abscesses. The symptoms, with the exception of the fever and of the chills, which are by no means constant, are often very similar to those of brain tumor, excepting that an optic neuritis is not quite as common.

In the otitic abscess we have considerable help in the diagnosis by discovering the existence of a suppurating ear, and especially if the suppurating ear is only on one side, but in the cases where both ears suppurate the diagnosis of the abscess is often much more difficult. In those cases I think the local pain and local tenderness are a very distinct help, although by no means infallible. Again we are helped a good deal by knowing that as a rule the otitic abscess occurs in the temporal lobe, or in the cerebellum, and it is often possible after operating on the ear and following up the suppuration to follow directly up to the abscess. Unfortunately in many of these cases the diagnosis becomes difficult from the fact that, on the right side in particular, the lesion of the temporal lobe is apt to cause no definite localizing symptoms; the same is true of abscess in the cerebellum, and therefore we must depend largely upon the location of the pain and tenderness, and possibly upon the symptoms from disturbances of adjacent parts. In one or two of the cases reported to-night the existence of a localized convulsion beginning in the face would, of course, be an indication of an abscess in the temporal lobe. On the other hand, a partial hemiplegia, I think, is more apt to occur with cerebellar abscess than with abscess of the temporal lobe. Any indication of a cerebellar ataxia is, of course, another help, but it is rather by the occurrence of a number of symptoms pointing either to the temporal lobe or the cerebellum that we are helped the most.

There is rather a curious feature about these very brilliant successes in brain surgery that have been reported here to-night, namely, the very great destruction of the temporal lobe without serious consequences. I do not see how there could have been very much left of the temporal lobe, and it was the left temporal lobe besides, in Dr. Leland's case, and yet he assures me that there is no intellectual disturbance and no speech disturbance. In the other cases which have been reported, in spite of the destruction of a considerable portion of the temporal lobe by abscess, as in Dr. Jack's, with a temporary aphasia, there has been no permanent loss of speech function. In cases of tumor of the temporal lobe it has been my experience that, even when on the right side, the disturbance of the intellectual function has been very great, as great if not greater than in tumors of the frontal lobe. Such cases as this of Dr. Leland's particularly seem to afford some corroborative evidence of the very heretical stand which Marie has taken on the subject of aphasia, that there is no such thing as aphasia; it is not a true loss of speech, but is simply a condition of mental failure due to the lesions.

Dr. F. L. Jack: In August, 1901, a patient was brought to the Eye and Ear Infirmary, moribund, having been in this condition for several hours. Diagnosis of brain abscess was made from the history and symptoms. He was put on the operating table, and the floor of the middle fossa, for a half inch in width, was removed as far as the tegmen of the antrum. A small spot of discoloration was found on the dura, and through this a very thin bladed knife was thrust, opening a very large abscess cavity in the temporo-sphenoidal lobe. When the pus was evacuated the pulse and breathing apparently stopped. Patient revived, however, but was not in a condition to have a radical operation performed.

There are one or two interesting things in connection with this case. He exhibited amnesic aphasia, which persisted for several months, gradually disappearing. His occupation is that of a newspaper reporter. He had also another complication, viz., epileptic seizures, or rather seizures of epileptic form. Dr. Knapp takes exception, I think, to calling this epilepsy. The patient is to-day perfectly well. For perforating the bone, the old trephine is still largely used, but we find at the hospital that the Krause bone-cutter is better.

Dr. Philip Hammond: The amount of brain tissue that must have been removed in the case of the small Indian boy was really astonishing. I have myself made various holes in the head and know that a certain portion of the brain may be removed with impunity, but, as I say, it was perfectly amazing to see the size of the hole in this little chap's head; I think I could easily have placed one of my fists in it could I have got my hand through the opening.

Dr. Kittredge: I think my little Indian boy had had an abscess there for some time. His pulse was very slow, down to 60 a good deal of the time, and he had an attack of vomiting that I laid to some indiscretion of the diet, but as I look back on it I think he had an abscess in the brain at that time. There was no odor to the pus in his case.

About the drainage,— in the second case I had a small-sized cigarette drain at the opening, and then I carried a piece of gauze right above the cigarette, so I practically had double drainage there.

Dr. Francis P. Emerson, of Boston, read a paper on

GENERAL LYMPHO-SARCOMA ACCENTUATED IN THE PHARYNX.[2]

DISCUSSION.

Dr. S. B. Wolbach: The original sections present all the characteristics of a malignant lymphoma, that is, a malignant tumor composed of cells resembling active lymphoid cells, such as are found normally in the germinal centers of lymph follicles. In this case the sections show invasion of the muscles and mucous glands of the soft palate.

At the autopsy nothing remarkable was found. There was no trace of a new growth. Two small nodules were found in the aryteno-epiglottic folds, and microscopically these consisted of hyperplastic lymphoid tissue without suggestion of malignancy. Nothing was found to explain the symptoms which appeared a few days before death. The brain was negative. The source of the intestinal hemorrhages was not discovered. The abdominal cavity was filled with embalming liquid and escaped intestinal contents. The viscera were full of perforations made by the undertakers so that we were greatly handicapped in making the autopsy.

The lymphomata have recently been grouped under the heading of lymphocytoma. This term includes tumors arising from lymphoid structures and from the bone marrow. The literature is very voluminous and the terminology employed by the different authors very confusing. Of the various names proposed for tumors similar to the case of Dr. Emerson, I think lympho-sarcoma is the preferable one.

A number of cases of spontaneous cure of lympho-sarcoma have been reported while many have been reported as cured after treatment with arsenic. Some cases which were apparently cured with arsenic have recurred and ended fatally after several years. This case with the presence of enlarged glands might possibly be called a case of Hodgkin's disease. The term lympho-sarcoma is a better one, especially as a number of pathologists reserve the name of Hodgkin's disease for tumors with special histological features.

The age in this case is unusual. In a list of 58 cases, only 4 occurred between the ages of forty and fifty, while 27 occurred between the ages of ten and thirty.

Dr. J. P. Clark: I should like to ask if the case did not improve under specific treatment at first, and if so, could syphilis be ruled out?

Dr. G. L. Richards: I recently had a case where a diagnosis was made of syphilis and of tuberculosis. The patient has improved under arsenic treatment very steadily. Clinically, I think this was sarcoma.

Dr. Emerson: In my own mind I was very much dissatisfied with the result of the specific treatment, for the reason that just as the patient would begin to gain he would come down apparently with an acute infection. That this infection was due to influenza seemed probable as his wife and son were simultaneously affected. This necessitated the calling in of his general practitioner and the interruption of specific treatment so that it was not followed as continuously as it should have been.

Dr. Emerson presented a paper on

SARCOMA OF TONSIL TREATED WITH COLEY'S TOXINS.[3]

Dr. E. W. Holmes showed a case illustrating

A SPECIAL SKIN FLAP.

This case was operated on two years ago last February for a simple mastoid, and made slow recovery. On the 5th of September, this year, he was returned to the hospital, and his condition was such that it was thought best that he be operated on again at once. I showed him, to illustrate, a special kind of skin flap that I had been making. I did not think it could be done in this case because there had been an operation and there were adhesions, but I was able to make the flap and adjust the same and he was able to leave the hospital in two weeks, and now he has a perfectly dry ear, with perfect epidermization.

I have done this operation in 31 cases, and I hope to be able to show many of them. It saves considerable time in convalescence and in only one or two cases has the skin sloughed. The usual semilunar post-aural incision is made but through the skin only, care being taken not to injure the underlying periosteum. The anterior skin flap is now dissected from the periosteum and posterior and superior cartilaginous wall of external auditory canal is incised. The whole auricle is carried forward exposing the bony auricular canal. An incision is now carried from junction of superior and anterior canal wall down to annulus, then just outside and parallel to annulus to junction of inferior and posterior quadrant of canal, and then extended outward to outer rim of bony canal. An incision is now made from this point over mastoid toward tip, and another from the anterior superior starting point along linea temporalis. We have now to elevate and have a flap made up of all of the periosteum covering mastoid bone and the skin and periosteum covering superior and posterior walls of auditory canal. This is rolled back and protracted with gauze in normal salt solution during the operation upon the bone. After this is completed the flap is carried forward and adjusted in middle ear. The cartilaginous canal attached to auricle is slit so as to produce a large canal for subsequent treatment of ear and the post-auricular wound is closed with sutures.

TRANSACTIONS OF THE TWENTY-NINTH ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

Held at Washington, D. C., May 7, 8 and 9, 1907, in Connection with the Seventh Triennial Congress of American Physicians and Surgeons.

(Continued from No. 11, p. 372.)

Second Day (continued).

MODERN PROCEDURES IN EXCISION OF INTRINSIC MALIGNANT GROWTHS OF THE LARYNX.

Dr. J. Solis-Cohen, of Philadelphia, presented this paper. He said that modern procedures virtually exclude all endo-laryngeal methods. This procedure comprises a central division of the thyroid cartilage and sometimes of the crico-thyroid membrane, cricoid cartilage, or even of the trachea, as may be requisite to fully expose the morbid mass and its immediate surroundings when the wings of the thyroid cartilage are separated with retractors or with stout loop ligatures. He regards preliminary tracheotomy as not requisite except where strong indication existed for precautional use of a tube after operation. The whole may be done under either local or general anesthesia, choice being dependent in great measure on the location and apparent extent of the neoplasm and in part on the predilection of the operator. The author then described in detail the steps of the modern operation. He prefers to follow his own method of beginning with an ordinary tracheotomy, and after introduction of the canula to incise the skin only so far as to uncover the larynx, thus leaving a broad bridge of skin above the canula. This lessens considerably the dimensions of the external wound and favors reunion in the sequence. The bridge can be sacrificed if necessary. In his own practice no stitches are taken in the skin wound. Instead, a longitudinal strip of perforated plaster is placed along each side of the neck an inch from the line of incision, and then this plaster is sutured in several places along the line of thyrotomic incision through the perforations and tied only so tight as to bring the severed edges of skin to gentle apposition and leave the wound free for easy and immediate inspection. No threads are passed over the line of tracheal incision which is left bare to favor expulsion of matters from the air passages. A pad of gauze is moistened in bichloride solution while a broad strip of antiseptic gauze is doubled over a narrow strip of adhesive plaster and secured to the next so that the gauze hangs down over the dressing upon the seat of the wound. Post-operative treatment is most important and a skilled assistant should be on hand for the first twenty-four hours. Should it become necessary to re-introduce the canula in the trachea for any length of time, the atmosphere near the head of the bed must be moistened so as to prevent desiccation of secretion. The author paid a generous tribute to the recent work of Semon and Butlin. Dr. Cohen's chief points of variance from the usual methods are the retention of the skin-bridge above referred to, the removal of the growth *en masse* upon a plate of excised perichondrium and superjacent tissue, dressing with compound tincture of benzoin, avoidance of sutures in the cartilage and skin and the special method of loosely approximating the edges of the incisions. The tincture of benzoin is mopped thoroughly on the raw surface left after removal.

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[2] See page 397.

[3] Laryngoscope. See March, 1907.

NON-RECURRENT CARCINOMA OF THE LARYNX, REMOVED THROUGH THE NATURAL PASSAGES.

The report of this case was made by Dr. E. Fletcher Ingals, of Chicago. The patient was a man of forty-four years, laborer, who came under observation in January, 1906, complaining of hoarseness of six years' duration. For the last three weeks he had felt some pain in the region of the left half of the hyoid bone, none previously. Had had also a recent catarrhal cold. There was no dyspnea but he could not talk as a rule much above a whisper. Had formerly been a mild smoker. Had lost a pound or two and had a slight hacking cough. A pinkish gray tumor involved the anterior $\frac{5}{6}$ of the left vocal cord filling the ventricular opening and considerably obstructing the glottis, crowding outward into the ventricular band. The growth had the appearance of malignancy, but owing to its long duration the author hoped it was only papillomatous. The greater part of it was removed at the first sitting. Three days later more fragments were removed and there was considerable pain felt by the patient in the larynx in the subsequent days. The patient was not seen again for a week, and in the meantime the microscopist had reported that the neoplasm was a slowly growing carcinoma with growth toward the surface and considerable kerato-hyaline transformation of the epithelial cells. At this time Dr. Ingals found a growth at the anterior end of the left cord larger than at the last visit, and this was thoroughly removed with a Mackenzie forceps. After removal of this a growth of about the same size was seen just below the cord and it was also removed. When the patient returned four days later he was very hoarse. Sedative measures were instituted and continued for several months. The patient's condition gradually improved and in two months it was noted that the voice was much clearer. The patient was again seen over a year after the operation, and for the last three or four months his voice had been perfectly normal. A slight thickening of the cords was noted but was referred to a recent cold. Dr. Ingals stated that although interference with malignant laryngeal growths is likely to stimulate their increase, it appeared to him that when there was doubt as to exact nature and when conditions were such that we had a hope of removing the neoplasm thoroughly by the endolaryngeal method, this latter should be selected. If the examination revealed malignancy and the tumor speedily returned, laryngotomy or laryngectomy should at once be advised if there was reason to believe that a thorough removal could be effected.

EPITHELIOMA OF THE LARYNX; REMOVAL BY THYROTOMY; NO RECURRENCE AFTER THREE AND ONE-HALF YEARS.

Dr. Henry L. Swain reported this case, his patient being a clergyman of forty-seven years who came under observation in March, 1903, with increasing hoarseness dating back several months. The larynx was slightly congested throughout and much swollen on the entire left side so that no clear view of the true cord could be had. Subsidence of the swelling later revealed a white papillomatous mass growing from the upper aspect of the cord and apparently coming out of the laryngeal ventricle. Nearly the entire cord was covered by the growth. After some training of the patient the entire visible mass was removed in small pieces as it proved very friable. Microscopical evidence was negative. Some two months later the mass returned and was again removed. This was done five times in the next two months. Six months after the first appearance of the patient it was decided that something more radical must be done. Up to this time no positive evidence of malignancy was manifest under the microscope. Thyrotomy and exsection were then done after the usual modern methods. Recovery was rather slow but satisfactory. At the present time the patient speaks in a perfectly audible but rather husky voice. A fairly good presentment of a vocal band has been produced in the shape of a dense white band where the true cord should be. The false cord is flatter than usual and the ventricle has been obliterated. The reporter laid emphasis on the following points: 1, the ever present difficulty in coming to a diagnosis. 2, the wisdom, even when in doubt, of operating so as to insure complete removal. 3, the repeated observation of the surprising difference in the appearance of the growth when the larynx is opened. 4, the impossibility of being sure everything malignant has been removed; hence the value of using the Paquelin cautery. 5, the possibility, when the larynx is roomy, of shutting up the whole wound instead of leaving the tracheotomy tube in place. 6, the unquestioned advantage of the absolutely recumbent position with the feet raised. 7, the small amount of suffering in an intelligent, brave and tractable patient as compared to the mercy of a complete cure.

The papers of Drs. Cohen, Ingals and Swain were discussed together. Dr. Ingals saw no reason why cocaine and adrenalin should not be used together so as to obviate so much mopping. He had had many disagreeable symptoms following cocaine. The adrenalin might prevent the absorption of the cocoine and thus prevent constitutional effects. An excess of gum benzoin, say 2 dr. to the ounce, was an advantage as it made a firmer film over the tissues.

Dr. Thomas Hubbard had observed that in etherized patients adrenalin did not produce ischemia, at least in the nose. He did not know any reason for this. He had not made the same observation with reference to chloroform.

Dr. J. Payson Clark gave the history of a case of laryngeal cancer operated on ten years ago. The patient was still living at seventy and was in good health with a very firm, strong voice. A similar case history was given by Dr. Gordon King, of New Orleans, his patient being alive and well two years after operation, and with good voice.

Dr. R. C. Myles believed that there was something individual in these cases. The cancer might be of the superficial type and a good result follow operation, but he did not believe that cancer of the deeply penetrating type could be cured.

Dr. D. Bryson Delavan, of New York, gave the history of a case illustrating the fact that the picture as seen in the mirror gave a very misleading idea as to the extent of laryngeal involvement. His patient had been operated on ten years ago and was still in fair condition. Some of the surgeons of the present day were coming to the conclusion that cancer did not admit of cure. The time limit was not to be relied on. When we place it at three years we are in error as experience frequently shows. Under the method as presented by Dr. Cohen we were likely to secure the best results. He thought, however, that all methods were hopeless and in the main disappointing. We should continue our investigations in the hope of discovering some cure which would put surgery out of the field entirely.

Dr. J. Payson Clark stated that an operation which would prolong life was often justified even if it eventually proved fatal. He related the history of one case.

Dr. Cohen closed the discusssion.

Case reports by **Dr. Clement F. Theisen**, Albany, N. Y.

EPITHELIOMA OF THE LARYNX; TOTAL LARYNGECTOMY INCLUDING REMOVAL OF A PART OF THE TRACHEA; DEATH FROM PNEUMONIA ON THE THIRTEENTH DAY.

Case I emphasized the necessity of early diagnosis and also the fact that microscopical examination is often difficult and that the laryngologist may lose valuable time owing to the pathologist's uncertainty. The patient was a man of fifty-seven years with a husky voice for some months. A flat, nodular, firm growth was seen involving about two thirds of the left cord. Surrounding parts were reddened. Examination of small fragments suggested that the condition was merely inflammatory. The reporter's original diagnosis, naked eye, had been carcinoma. Under palliative treatment there was temporary improvement, but some weeks later it was noted that the whole of the left cord had become involved and there were evidences of encroachment on the right cord also. The diagnosis was now positive and the dyspnea had become so great that a tracheotomy was done under local anesthesia.

After some delay on the patient's part he consented to a radical operation. A total laryngectomy (Gluck) was done three weeks later. Pneumonia proved fatal on the thirteenth day. The microscope showed typical epithelioma. It is worthy of note that the marginal epithelium of the growth was found in a normal condition, but its transformation into malignancy could be definitely seen in the sections. The growth itself was entirely of epithelial origin, and irregular columns of spheres of epithelial cells could be seen growing into the underlying tissue in all directions. In the centers of these areas there was manifest a tendency to rapid degeneration for the cells were in many places replaced by detritus. The interstitial connective tissue was thickly infiltrated with small mononuclear leucocytes and plasma cells and in some areas there was proliferation of the small capillaries.

Case II. *Sarcoma of the pharynx.* — The patient was a girl of eight years with a history of dyspnea for several months. A large mass was seen in the throat, including the soft palate and pushing it forward. The growth extended almost to the epiglottis and apparently involved the naso-pharynx. Glands were enlarged on the left side of the neck. It was decided that the case was inoperable and the mixed toxin injections were given. Microscopical examination of a piece of the growth was not decisive. Clinically there was no doubt as to malignancy. Injections directly into the mass were begun and after some time constitutional reaction was noted. Adrenalin injections were not used as the method was too slow to effect any result in this case. The iodides were also without result. Nothing seemed to make any impression whatever on the growth. Death came from increasing dyspnea about two months after the patient came under observation. The microscope showed spindle-celled sarcoma with hyperplasia of adjacent lymph nodes. The reporter referred to similar cases recently recorded in the literature of sarcoma.

Third Day, Thursday, May 9.

Session at 10 a.m.

THE PROBLEM OF ASEPSIS IN THE ROUTINE OFFICE WORK OF THE LARYNGOLOGIST.

A paper on this subject was read by **Dr. Thomas Hubbard**, of Toledo, Ohio. He made a plea for the same aseptic precautions in office work as in major surgery, and believed that in future more of the minor work now done in the office would be transferred to special hospitals. Most of our office work is now done under conditions which do not measure up to the requirements of modern aseptic and antiseptic surgery. All operators have experienced anxiety over cases having symptoms of sepsis, and cases of delayed healing arise which cannot be accounted for by defective operation. He then presented detailed features of office routine which he considered essential, dwelling on disinfection of instruments, sterile solutions, napkins, care of instruments to prevent rusting, etc., sterilization of the area to be operated on, avoidance of too firm packing, quality of air used in atomizers and air tanks, etc. A little trouble taken in all these respects would remove practically all the possibly injurious factors which exist in the routine of the office as ordinarily carried on. The surgeon in whatever special field or working environment must bear in mind that only by high ideals in the refinement of cleanliness, in both theory and practice, can he expect to stimulate his assistants and associates as to the proper discharge of their part of the work. The aim of every operator should be to develop a thoroughly consistent system of approximately surgical cleanliness.

Dr. Gordon King presented a device for sterilizing sprays in office practice. He had been very much interested in Dr. Hubbard's statements in regard to the sterilization of instruments and of the air. Filters placed over the ends of sprays showed conclusively that as ordinarily used the spray must project many micro-organisms over the operative field. Dental napkins were of much service in office work but paper napkins could be used instead and they were practically sterile.

Dr. W. F. Chappell, New York, spoke of the danger of infecting the doctor from the sputa of patient. He himself had had a septic dermatitis of the face, eyes and neck during the past winter from the expectoration into his face by a patient of pus from an old pharyngeal abscess.

Dr. George L. Richards suggested the use in such cases of ordinary automobile goggles which could be made to hold a gauze mask.

Dr. R. C. Myles was accustomed to cover his patient and himself with a special kind of oiled silk. He frequently had a nurse hold a pane of glass before his face during operations. Such a device was more convenient than a glass shield suspended from the ceiling. Instruments must be boiled frequently. Asbestos-packed syringes were the only ones meeting all requirements. It was true that we had no definite knowledge of the occurrence of much sepsis occurring in office practice, but it was possible that there were some forms of septic conditions not localized in their manifestations.

Dr. Hubbard closed the discussion, stating that where there was a chance of doing an aseptic operation we should sterilize our hands and wear rubber gloves.

A REVIEW OF THE METHODS IN USE FOR THE REMOVAL OF ADENOIDS WITH A DESCRIPTION OF A METHOD WHICH IS THOROUGH, RAPID AND SAFE.

This review was presented by Dr. George L. Richards, of Fall River, Mass., who exhibited a large collection of the various instruments employed for the purpose. He thought that undue stress had been laid on the necessity of cleaning out the fossa of Rosenmueller on account of its effect on the ear. His own preference is for the adenotome of Schuetz which had been presented to the Association some years ago by Dr. Farlow. It finds its best employment in young adults without anesthesia. The operator should have three sizes as there were but few pharynges in which one size or the other would not answer every requirement. In case of young children under anesthesia, and held in the arms of the nurse, a palate hook should be used so as to gain a good idea of the size and exact location of the mass to be removed. A little side dissection of the growth with the finger toward the center aids in getting it within the fenestrum. The instrument is then pushed firmly back against the naso-pharynx and as the knife cuts through the growth comes out in one piece. Instruments of different sizes may be used in the same case if necessary to remove small fragments left after the main cut. The adenotome is a slender instrument and the knife may occasionally break. The instrument should be carefully examined before each use and care is also required in taking it apart and putting it together again.

Dr. John W. Farlow recalled a previous meeting of the Association at which he had presented the adenotome advocated by Dr. Richards. The disadvantage of the instrument was that we could not well see into the naso-pharynx and determine just how large an instrument should be used. Hence he did not prefer the adenotome for very young children. In proper cases, however, the guillotine seemed to him to be the ideal instrument.

Dr. D. Bryson Delavan said that his experience with this particular instrument had not been fortunate as he had had one break leaving a portion of the metal in an adenoid mass. Fortunately, it was removed without untoward incident. One objection was that the pharynx has to fit the instrument whereas the latter should fit the pharynx. His own preference was for the Frothingham modification of the Gottstein knife. Hard rubber palate retractors were preferable to those of metal. He believed that it was absolutely necessary to thoroughly clear out the fossa of Rosenmueller in order to obtain relief from ear symptoms.

Dr. W. K. Simpson, New York, was also an advocate of the Frothingham curette. The Concannon forceps he thought to be the best model of this class of instrument. It had a guard which enabled the adenoid to be removed in one mass.

Dr. L. A. Coffin believed that the success of any instrument depended largely on the "man behind the gun" and his experience. There were very many poor models on the market of good instruments which had been changed by the makers from the original models.

Dr. Henry L. Swain was also a partisan of the adenotome. If, however, we had in the naso-pharynx a central mass on two sides we were liable to miss with this instrument the side strings from the main masses. The adenotome ought to be followed up with a blade-curette.

Dr. W. E. Casselberry had used the adenotome for a long time but was not satisfied with it. There was a liability to leave small pieces of tissue behind the posterior nasal openings. Some sort of supplemental operation was therefore necessary. This was a limitation of the efficiency of every adenotome he had ever seen. The adenotome would answer if used with the curette.

Dr. G. A. Leland said that unless the fossa of Rosenmueller was cleared out, there would be recurrent earache. Smaller instruments than we generally use would suffice for the purpose of cleaning out the fossa.

Dr. R. C. Myles said that the finger ought always to be introduced into the naso-pharynx in order to guide the intelligent application of any cutting instrument. The axis of the instrument should be kept in line with the axis of the head. Unless this was done, parts would be damaged. The fossa of Rosenmueller ought always to be cleaned out.

Dr. G. Hudson Makuen exhibited a modified Gottstein instrument which he had found of great service.

Dr. Richards closed the discussion.

(To be continued.)

Book Reviews.

On Treatment. By Harry Campbell, M.D. B.S., F.R.C.P. Pp. 421. New York: William Wood & Co. 1907.

This is a volume of 421 pages which seeks to discuss medical treatment from a somewhat psychological and, therefore, unusual standpoint. Such topics as the following, for example, are taken up: the education of the physician; the physician's mental personality (the word "mental" might well have been omitted); the co-operation of the patient; instinct and reason in relation to treatment; rationalism and empiricism. The latter part of the volume discusses certain general matters of hygiene, such as the therapeutics of fresh air, clothing, rest, diet, together with three chapters on psycho-therapeutics. It is increasingly evident that this latter subject will soon not fail to find a place in all discussions of treatment. In general, the book represents a personal standpoint, and in this fact lies its suggestiveness. We have no hesitation in commending it, particularly to those physicians who look upon their professional work from a philosophical as well as from a practical standpoint.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. V. Pp. 536. Illustrated. Edinburgh and London: William Green & Sons. 1907.

The fifth volume of this encyclopedia carries the subject matter from " Inulin " to " Lumbar Puncture," and contains 908 headings. It also marks the publication of one half the entire work. The same principles which have been apparent in the earlier volumes are continued in this, namely, brief articles which are more comprehensive than are to be found in an ordinary dictionary, together with others which although hardly approaching the dignity of monographs, constitute admirable discussions of various topics. For example, the subject of labor occupies 150 pages, and really serves as a brief compendium of obstetrical procedure. The larynx, life insurance and the liver and kidney also receive a very considerable amount of space. In the section on joints, which is also fairly complete, we miss illustrations which would do much, if properly selected, to clarify this general subject.

A Treatise on Surgery. By George Ryerson Fowler, M.D., Brooklyn — New York City — Examiner in Surgery, Board Medical Examiners of the Regents of the University of New York; Emeritus Professor of Surgery in the New York Polyclinic; Surgeon to the Methodist-Episcopal Hospital; Surgeon-in-Chief to the Brooklyn Hospital; Surgeon to the German Hospital. Vol. II. Containing 888 text-illustrations and 4 colored plates, all original. Philadelphia and London: W. B. Saunders Company. 1907.

Our attention has recently been called to the second volume of this noted work of the late Dr. George R. Fowler, a handsome book of 714 pages, excellently well illustrated. In this volume, the final volume of the set, the subject of regional surgery is completed. It is in some respects more fully presented than is usual in books of this class, and is classified in chapters devoted to the Surgery of the Dorsal and Lumbar Vertebræ; Abdominal and Pelvic Organs, including Genito-Urinary Surgery in the Male; Female Pelvic Organs; Upper Extremity; and finally the Lower Extremity.

The arrangement of the text is such that the important facts and headings of subjects are printed in heavy type so as to form an abridged classification or summary of the subject which is incorporated in the body of the work. In general, in presenting a subject the traumatic lesions are presented first, then the different acute and chronic pathological conditions, concluding with the neoplasms. Afterwards diagnosis, prognosis and treatment are considered. At times the description of the lesion or disease under consideration is full and complete. At times it is concise; essentially a mere summary. Frequently the authority for the statement made is given by quoting simply the originator's name. The chapter on peritonitis, while brief, is one of the interesting chapters, and presents the most advanced view of the subject. As one would expect from the author's interest in this lesion, the chapter on appendicitis is a full one, eight or more pages being devoted to the operative treatment which is extensively illustrated. Hernia is another subject which has been treated by an extended description. This includes the unusual varieties such as obturator, lumbar, diaphragmatic, sciatic, perineal and internal herniæ; lesions which are rarely or only briefly described except in reports of special cases or monographs.

Again in the chapters on the male and female genito-urinary organs the author has treated the subject much more fully than is usual in a work on general surgery. Specific disease of the urethra, congenital defects, surgery of the prostate and minor gynecological operations are all included in this part of the volume.

In the section devoted to the upper extremity fractures, dislocations and other injuries, such as stabs, gunshot wounds, etc., are first presented. Next the different inflammations, acute and chronic, other pathological processes and neoplasms. Finally, the operative procedures indicated are given with the treatment. Each part of the upper extremity from the shoulder to the fingers is treated on this plan. The operative treatment includes the ligation of the arteries of the special region under discussion, also the amputation, resection of joints, operations on nerves, etc.

In the chapters on the lower extremity some attention is paid to orthopedic surgery. For reduction of hip dislocation Dr. Fowler has selected the " Allis " and " Stimpson " method; for amputations the " mixed method" with either lateral or antero-posterior flaps or the " Teale " operation; for the foot and ankle the operations of Lisfrans, Chopart, Piragoff, with modifications. Wladimiroff-Mikulicz, Syme and Heuter are described.

The book is a very valuable one; it is well arranged, clearly, concisely written, the subject is as a whole fully presented, it is profusely illustrated with well-chosen " cuts." Special subjects are easily found by the aid of the table of contents, the method of paragraphing of the text, the heavy type for important words and subject headings, and finally by a full general index. To write such a book an author must have a thorough knowledge of his subject, a knowledge not only theoretical but also practical, obtained only by great clinical experience. Dr. Fowler has combined both, for as a student of medicine he was conversant with medical literature; as a surgeon he acquired actual knowledge tested by great clinical opportunities; as a teacher he learned how to impart his knowledge to others. Hence his treatise on Surgery is a work which is universally spoken of as a task well done.

H. W. C.

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PHYSICAL CONDITION OF PUBLIC SCHOOL CHILDREN.

A body of prominent educators, made up of the Commission on Physical Welfare of School Children, has just made a report through its chairman, Charles C. Burlingham, formerly president of the New York Board of Education, in which it is stated that about one third of all the public school children in the United States are probably the subjects of physical defects which keep them behind their proper grades, and yet which should be remediable with proper care. Based on the physical defects and home conditions of 1,400 school children of New York City, says the report, it is estimated that 12,000,000 of the children have physical defects, more or less serious, which should receive attention from parents and physicians. If the percentages recorded by the Board of Health in New York should be maintained throughout the country (and it seems likely that they would be, since adenoids and impaired vision, malnutrition and defective breathing are found in rural as well as urban schools), there must be 1,440,000 ill-nourished children, 5,615,000 with enlarged glands, and 6,925,000 with defective breathing, in the United States. The defects indicated are easily remedied, and many could be prevented by proper care, though except in the case of defective vision the causes are not always readily determined. Among the 1,400 children studied, only a trifle more than 10% are reported to be suffering from malnutrition, and of these, fewer than 14% come from families whose income is less than $10 weekly. Only 7.8% of the children were artificially fed from birth, and while more than 50% are reported as having only tea or coffee and bread for breakfast, fewer than 3% are said to have no meat or eggs during the day. In spite of unfavorable housing conditions, only 19% of the children born in 1,400 families died, and 53% of the families have lost no children. The Italian and Hebrew families have the largest average number of children, and also the highest mortality. Comprehensive plans for dealing with physical defects are outlined in the report. These include a thorough physical examination of all children, notification to parents, and the enforcement of existing laws. Where proper authority is now lacking it is planned to compel parents to take necessary measures in behalf of their children's health. Enforcement of health, tenement house and child labor laws and the establishment, in connection with boards of education, of departments of school hygiene are recommended, the duties of which shall be to see that school buildings are so constructed and so conducted as not themselves to produce or aggravate physical defects. It is also suggested that the school curriculum should be so devised and carried out as not to favor such defects, that there should be a study of the effect of school environment upon the child, and that hygiene should be so taught that the children themselves will cultivate habits of health and see clearly the relation of good health and vitality to present and future efficiency and happiness.

Dr. Luther H. Gulick, director of physical training in the public schools of New York, has been doing most excellent work in improving the condition of the pupils, yet when the budget of $31,641,324 was approved recently by the executive committee of the Board of Education, one member objected to the proposed increase of Dr. Gulick's salary from $4,000 to $5,000. A striking commentary on such a pennywise policy is afforded by the following statement by Stratton D. Brooks, superintendent of Public Schools of Boston, quoted the other day in a dispatch to a New York newspaper: "I recently estimated that the City of Boston has been annually spending about $100,000 on pupils who, because of physical defects, did not derive full benefits from their work. I recommended that such a sum would better be spent on a department which would try to eradicate physical troubles."

In an address to the principals of the public schools of New York, made in the hall of the Board of Education on Sept. 10, Superintendent Maxwell impressed upon them strongly the necessity of more vigilant attention to the physical welfare of the children under their care.

He maintained that it was their duty and that of the teachers under them to make personal investigation of the condition of the children, and to urge upon parents the need of medical attention where physical defects were discovered. In speaking of the medical inspection of school children he said that every assistance should be given to the officers of the Board of Health in their work. Special attention should be given to four classes of pupils: To overaged children, to determine whether their intellectual development has been retarded by physical defects; to children who are very evidently suffering from physical defects; to incorrigible children, who have a tendency toward idleness and mischievousness; and, finally, to the persistent truant. "Last year," Mr. Maxwell went on to say, "I tried to have every boy examined by a physician before committing him to the truant school. My attention was called to the necessity for this by an investigation I conducted in the truant school. I had all the pupils examined by a physician of the Health Department; and there was not one who was not suffering from some physical defect. There can be no higher duty incumbent upon the principals of this city than to see that these afflicted children, who are backward or incorrigible because of some physical defect, should receive some help. It is the duty of the principal and the teacher to see that the defect is discovered and remedied. Of course, you know that when the defect is discovered you have no means of remedy; but give no peace to the parents of the child until the defect is remedied."

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TREATMENT OF INEBRIETY.

WITHIN the past year renewed attention has been directed to the treatment of alcoholic inebriety through the publicity which has been given to the Foxboro, Mass., institution for dipsomania and allied conditions. It will be remembered that last winter and spring a committee of the Governor's Council, of which Lieutenant-Governor Draper was chairman, investigated the affairs of the Foxboro state hospital on the basis of certain complaints which had been made by inmates. It was a gratification to the public to learn, after a painstaking investigation, that many of the charges were entirely unfounded, but it was also determined that the methods which had been employed were not such as to commend themselves to modern theories of treatment of the class of persons for whom the hospital was designed. The hospital idea had apparently been lost sight of, and the institution had become rather a house of restraint.

In view of all the facts, and recognizing fully the conscientious service rendered by the previous board of trustees, Governor Guild has, nevertheless, seen fit to request the resignation of this board and to appoint another composed in part, at least, of persons who have given the subject of inebriety special study from a sociological as well as medical standpoint. The board, the composition of which is given in another column, is in fact made up of men who have had training in social science, penology, business, medicine and the law, and as such must be regarded as exceptionally well fitted to cope with the difficult problem before it. The choice of Mr. Robert A. Woods as the chairman of the new board is a particularly happy one. Since his graduation from Amherst College in 1886, Mr. Woods has devoted himself to the study of social conditions, not only in this country but abroad. He is the author of an admirable book on "English Social Conditions," published in 1891, and since its opening in 1892, he has been in charge of the South End House in Boston, an institution which has flourished financially as well as a social venture under his administration. Mr. Woods' associates on the board are all men of wide experience in various walks of life, and there can be no question that the problem of inebriety and the possibility of its treatment will be approached in a judicial spirit and from many sides.

It is certainly in accord with modern tendencies to consider the abuse of alcohol as a disease rather than a crime. The difficulty of distinguishing between a natural human weakness, for which a man must be held responsible, and an abnormal physical and mental state over which he has no control is naturally one of the utmost delicacy and one which involves many considerations which extend quite beyond the individual. The experiment, if such it may be called, which is about to be inaugurated at Foxboro, will be watched with great interest by penologists and physicians as well as by the great bulk of the people who regard social movements purely from a utilitarian standpoint.

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MEDICAL NOTES.

DEATHS IN THE ALPS. — The number of victims by accident in the Alps is said to be greater this year than ever before. Eighty persons have been killed and 22 injured in 90 accidents, whereas, 76 were killed last year in 71 accidents. It is interesting to note that of the 80 persons killed 38 were guides.

President International Dermatological Association. — At the Sixth International Dermatological Congress, held at the Academy of Medicine, New York City, Sept. 9–14, 1907, Prof. Thomas De Amicis, of Naples, Italy, was elected president of the next congress which is to be held in Rome, in 1910.

Death of Dr. Gaylord Parsons Clark. — Gaylord Parsons Clark, A.M., M.D., Dean of the College of Medicine of Syracuse University and Professor of Physiology, died at his home in Syracuse, Sept. 1, 1907. On the day after registration, at the opening of the college, a meeting of students and faculty will be held, at which recognition of Dean Clark's long and efficient service will be made by the chancellor and others.

Award of the Kingsley Medal. — The Liverpool School for the Study of Tropical Diseases has awarded the Mary Kingsley medal to Dr. Charles Finlay, chief sanitary officer of Cuba, the discoverer of the transmission of yellow fever by the mosquito; to Col. W. C. Gorgas who, in 1902, as chief sanitary officer at Havana, made practically useful the discoveries of Dr. Finlay; and to Dr. Theobald Smith, professor of comparative pathology in Harvard University, for his investigations on the blood parasite of the so-called Texas cattle fever.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 18, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 25, scarlatina 37, typhoid fever 24, measles 10, tuberculosis 61, smallpox 0.

The death-rate of the reported deaths for the week ending Sept. 18, 1907, was 17.29.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 14, 1907, was 201, against 219 the corresponding week of last year, showing a decrease of 18 deaths and making the death-rate for the week 17.20. Of this number 107 were males and 94 were females; 197 were white and 4 colored; 134 were born in the United States, 64 in foreign countries and 3 unknown; 40 were of American parentage, 143 of foreign parentage and 18 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 16 cases and 2 deaths; scarlatina, 28 cases and 0 deaths; typhoid fever, 32 cases and 2 deaths; measles, 13 cases and 2 deaths; tuberculosis, 48 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 12, whooping cough 0, heart disease 18, bronchitis 2 and marasmus 13. There were 14 deaths from violent causes. The number of children who died under one year was 70; the number under five years, 83. The number of persons who died over sixty years of age was 26. The deaths in public institutions were 75.

There was 2 cases and 1 death reported from cerebrospinal meningitis during the week.

Typhoid Fever in a Gypsy Camp. — It is reported that the Boston Board of Health has ordered a camp of gypsies who have been in Dedham, Mass., for the past month to move, since typhoid has appeared among them. The camp numbers 150 men, women and children, and up to this time one death has occurred.

American Electro-Therapeutic Association. — The seventeenth annual meeting of the American Electro-Therapeutic Association is being held in Boston this week. The object of this association is to discuss the therapeutic bearings of electricity and to advance the general cause of rational electro-therapeutics.

Closing of the Boston Floating Hospital Season. — The Boston Floating Hospital concluded its work for the summer on Sept. 14, the boat having been in commission for seventy-five days. During the summer 366 babies have been treated in the permanent wards; in the day wards 555 have been received. The award of diplomas to the nurses and other suitable exercises closed a profitable season.

Out-Door Camp for Treatmtnt of Tuberculosis. — An excellent report is given of the patients who have been treated at the day camp for tuberculosis in Mattapan. One hundred and fifty-seven patients have been enrolled during the summer, and of these three fifths have gained, one fifth have lost ground, and the other fifth did not remain long enough under observation to determine results. In general, the plan of treatment by means of a day camp has again proved a decided success.

Vaccination in Rockland, Mass. — The school authorities in Rockland are finding difficulty in enforcing the vaccination law in the schools. Opposition is being made by parents of pupils, and the objections have become so definite that a test case will probably be made in the case of a pupil refusing vaccination who was dismissed by the teacher, but declined to leave school. It appears that certificates have been issued to various pupils by a certain physician of Boston who takes the ground that no child is a fit subject for vaccination. Refusal to accept these evidently biased certificates is one of the chief reasons for the existing difficulty.

Death from Chloroform. — A recent suit against a physician of Plymouth, N. H., for alleged malpractice in causing the death of a patient through the use of chloroform has resulted in a verdict for the plaintiff. The circumstances under which the chloroform was administered was a surgical emergency in the case of a young boy, a practice which it was maintained by the defendant's attorney was entirely legitimate. In spite of an able argument, supported by expert testimony, a verdict was returned against the physician. It would be interesting to know what the judgment of a jury would have been in England under the same conditions, where chloroform is the anesthetic usually employed.

Board of Trustees of Foxboro, Mass., Hospital. — The following men have been appointed trustees of the Foxboro Hospital for Dipsomaniacs: Robert A. Woods, of Boston, chairman, head of the South End House in Boston, and an active worker for the betterment of social conditions; Frank L. Locke, of Malden, Mass., president of the Young Men's Christian Union of Boston, and formerly inspector-general on the late Governor Wolcott's Staff; Edwin Mulready, of Rockland, Mass., probation officer of the Superior Court for the counties of Norfolk and Plymouth; Dr. T. J. Foley, of Worcester, a practising physician for upwards of ten years; Dr. William H. Prescott, of Boston, who has from time to time held various positions in the Harvard Medical School and in connection with city institutions; James H. Perkins, of Boston, vice-president of the American Trust Company, and W. Rodman Peabody, of Cambridge and Boston, a lawyer of distinction.

NEW YORK.

Selling of Cocaine, a Felony. — Among the bills passed by the recent Legislature and signed by the Governor, which went into effect on Sept. 1, was one making it a felony to sell cocaine, or any preparation containing it, except upon the written prescription of a duly registered physician, and another making it a felony for any druggist to sell a substitute when a special article is called for.

Precautions against Cholera. — Dr. Doty, Health Officer of the Port, is taking special precautions with vessels arriving from Russia, owing to reports of the presence of Asiatic cholera in the vicinity of Libau. The Russian liner *Lituania*, which came in on Sept. 13, from Libau and Rotterdam, was detained at quarantine for twenty-four hours, and a thorough inspection made of all her passengers and crew.

International Dermatological Congress.— The Sixth International Dermatological Congress was very successful, and the daily sessions, held in Hosack Hall, at the New York Academy of Medicine, which was tastefully draped with the flags of different nations, were well attended. During the week a number of entertainments were given in honor of the members. Large evening receptions were held by Dr. James C. White, the president, and by Dr. and Mrs. L. Duncan Bulkley, and on the night before the congress adjourned there was a dinner at the Waldorf-Astoria.

Unexplained Outbreak of Typhoid Fever at Gouverneur Hospital. — An unexplained outbreak of typhoid fever has occurred among the nurses and attendants at Gouverneur Hospital. Seven of the nurses were attacked almost simultaneously with the disease, and besides them the housekeeper and a woman clerk who took their meals at the same table as the nurses, while none of the patients in the hospital contracted it. Dr. Armstrong, the superintendent of Bellevue, and the others of the system of public hospitals to which the Gouverneur belongs, at once requested Dr. Charles Norris, director of the hospital laboratory, to make an investigation to discover, if possible, the source of infection. Before this was undertaken, however, Dr. Armstrong himself made a thorough examination of the buildings and found that there were no sanitary defects to account for the outbreak, a conclusion which was concurred in by the inspectors of the Health Department. Dr. Norris has as yet been unable to trace the cause of the trouble, but regards it as probable that, since only persons eating at the nurses' table were attacked, those affected got the typhoid germs from some uncooked vegetable such as lettuce or radishes. All the nine patients are reported to be progressing favorably, and the places of the sick nurses have been supplied from the training school on Blackwell's Island.

Mortality in August. — The weekly reports of the Health Department show that during the month of August the mortality in the city represented an annual death-rate of 20.12, as against 18.71 in July and 18.79 in August, 1906. Among the diseases in which there was a decline in fatality were the following: The weekly average of deaths from measles decreased from 27.75 in July to 15 in August; the weekly average from scarlet fever, from 17.75 to 4.25; from diphtheria and croup, from 32.25 to 21.75; from pulmonary tuberculosis, from 150.25 to 148; from organic heart diseases, from 117.5 to 114; and from cirrhosis of the liver, from 23.5 to 17.5. Among the diseases which showed an augmented mortality were the following: The weekly average of deaths from malarial fevers increased from 1.75 to 2.5; from typhoid fever, from 10.5 to 16; from whooping-cough, from 7.25 to 16.25; from pneumonia, from 43.75 to 52; from bronchopneumonia, from 77.25 to 89.25; from diarrheal diseases, from 323.75 to 410; from diarrheals under five years of age, from 313.75 to 383.25; and from cancer, from 58.5 to 64.75. The increased death-rate, as compared with that in August, 1906, is largely due to the increase in diarrheal diseases in infants and young children; but as the past summer has been for the most part a cool one, it is somewhat difficult to account for this increased diarrheal mortality, especially as all the agencies for the saving of infant life have been in operation perhaps more comprehensively than in any previous season. The high point for the year in the deaths from diarrheal diseases in children under five years of age occurred in the week ending Aug. 3, when these amounted to 548, while in the corresponding week of last year there were only 342 deaths from this cause. For the first time in any month of the present year no deaths from influenza were reported during August.

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Obituary.

FRANCIS HARTMAN MARKOE, M.D.

Dr. Francis Hartman Markoe, one of the prominent surgeons of New York, died after an extended illness, on Sept. 13, in the fifty-second year of his age. He was a son of the late Dr. Thomas Markoe, for many years professor of surgery in the College of Physicians and Surgeons, and a distinguished practitioner in this department of medicine. He was born in New York on March 20, 1856, and was graduated from Princeton University in 1876. Three years later he received the degree of M.D. from the College of Physicians and Surgeons, New York. From 1880 to 1884 he served as assistant demonstrator in anatomy in this school, and in the three following years as demonstrator. He was then made clinical lecturer in surgery, and from 1900 had been professor of clinical surgery. Dr. Markoe was attending surgeon to the New York and St. Luke's hospitals and consulting surgeon to the New York Orthopedic Dispensary and Hospital. He was more particularly identified with St. Luke's, with which he had been connected since 1889, and at the time of his death he was dean of the surgical staff of that hospital. He was also a surgeon of the New York Fire Department, and was held in the highest esteem by the officials of that department, as well as beloved by the rank and file, for the skill and devoted attention with which he cared for injured men. Not the least of Dr. Markoe's many fine qualities were his modesty and genial sociability. He was a member of many societies and clubs, and a charter member of the Medical Association of the Greater City of New York. His only brother is Dr. James W. Markoe, the obstetrician, who is the leading surgeon of the New York Lying-In Hospital.

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Current Literature.

Medical Record.

Aug. 24, 1907.

1. Robinson, B. *Landmarks in the Biliary and Pancreatic Ducts: Physiological, Anatomical and Pathological.*
2. Barlow, W. J. *Report on Two Hundred Charity Cases of Pulmonary Tuberculosis under Sanatorium Treatment at Los Angeles from 1903 to 1907.*
3. Bell, R. *Local Treatment of Cancer.*
4. Roth, H. *Perforating Gunshot Wounds of the Pleura and Lung.*
5. Ware, M. W. *The Modern Therapy of Cystitis.*
6. *Bardes, A. *Tuberculosis of the Middle Ear.*
7. Graves, W. W. *The Differential Diagnosis between Chorea Minor and Tic.*

6. Bardes says that tuberculosis of the middle ear is quite frequent, both in children and in adults. It is easily mistaken for an ordinary suppuration. In fully 65% of the children who have running ears the disease is tuberculous. Extensive destruction goes on without much pain and with few symptoms. The drum becomes ruptured and the cavity is thus drained. Often there is a fistulous opening behind the ear. The wound is unhealthy, sluggish and slow to heal. The infection occurs generally through the Eustachian tube and not by way of the external ear. It occurs when the fat pad over the mouth of the tube has been absorbed by the tuberculous process, and blowing the nose has allowed pus to be forced into the ear. Tubercle bacilli are not easily found in the discharge, being masked by the pus. Aural polyps and large granulations are rarely seen. The disease comes on insidiously, with loss of hearing and fullness in the head. In adults it is always secondary to tuberculosis in some other location. The drumhead is of a cheesy color, with numerous perforations. Much bone may be denuded. Treatment consists in general hygienic measures and stimulation of the tissues, with as little irrigation as possible.

New York Medical Journal.

Aug. 24, 1907.

1. Kerley, C. G. *The Questionable Influence of So-Called Diatetic Conditions in Diseases of Throat and Nose in Children.*
2. Gant, S. G. *The Future of the Proctologist.*
3. Diefendorf, A. R. *Differential Diagnosis of Imbecility and Dementia Præcox.*
4. Robinson, B. *The Two Forms of Gastro-Duodenal Dilatation.*
5. *Friedenwald, J., and Rosenthal, L. J. *Absence and Marked Diminution of the Hydrochloric Acid of the Gastric Contents in Cancer Involving Organs Other than the Stomach.*
6. Beardsley, J. G. *The Art of Percussion.*
7. Barach, J. H. *Blood Pressure Studies in Typhoid Fever.*
8. Bierhoff, F. *Police Methods for the Sanitary Control of Prostitution.*

5. Friedenwald and Rosenthal, using a Ewald test meal, examined the gastric contents of twenty-nine cases of cancer elsewhere than of the stomach. They found free HCl either absent or diminished in nineteen cases. In the other ten free HCl was in normal amount.

The Journal of the American Medical Association.

Aug. 24, 1907.

1. Rotch, T. M., and Floyd, C. *The Opsonic Index and the Tuberculin Test in Diagnosis and Treatment of Early Tuberculosis in Children.*
2. *Cabot, R. C. *The Diagnosis of Anemia.*
3. *Meltzer, S. J. *The Treatment of Anemia.*
4. Baldauf, L. K. *An Investigation of the Nature of Proteid-Soap Compounds and of the Staining of Pure Fats and Lipoids by Scharlach R. and Sudan III.*
5. *Steele, J. D. *The Method of Determining the Total Amount of the Fecal Bacteria by Weight and Its Clinical Significance.*
6. Christian, H. A. *Diffuse Carcinoma of the Stomach, Esophagus and Duodenum.*
7. *Osborne, O. T. *The Diagnosis of Kidney Insufficiency and the Treatment of Uremia.*
8. Munger, E. E. *The Physician and the Newspaper.*
9. Paterson, H. J. *The Operation of Gastrojejunostomy and Its Physiologic Effects.*
10. Brophy, T. W. *Anatomy of the Palate, Normal and Cleft.*
11. Newton, R. C. *What Should Be the Attitude of the Profession toward the Hygiene of School Life?*
12. Bracken, H. M. *The State Control of Inland Waters.*
13. Goodnough, X. G. *Stream Pollution and Its Prevention.*
14. Moore, G. T. *Sewerage Purification by Septic Tank and Chemical Precipitation.*
15. Bergey, D. H. *Factors in the Production of Coagulation Necrosis.*
16. Reik, H. O. *The Pathology of Middle Ear Suppuration.*

2. Cabot classifies the important types of anemia as follows: (1) Chlorosis; (2) pernicious anemia; (3) secondary anemia, under which come (*a*) parasitic types; (*b*) other types, such as cancer, nephritis, etc.; (4) myelophthisic anemia, a name given to anemias resulting from leukemic overgrowth of white cells in the bone marrow and causing pressure atrophy of the red cell-forming tissue of the marrow; (5) aplastic anemia, which is very rare, occurring in young girls and accompanied by purpura. The blood is like pernicious anemia, except the red cells are smaller and rarely contain nuclei. Autopsies show yellow bone marrow.

Cabot thinks that no type of anemia can be positively diagnosed by the blood examination alone. Pernicious anemia, however, can be thus recognized occasionally. The most important single fact in the blood examination of this disease is the great reduction of red corpuscles, with a relative increase in the amount of hemoglobin. It is the large cell type of anemia. The other forms of anemia belong to the small cell type and are distinguished only by etiologic factors.

3. Meltzer finds recent advance in the treatment of anemia along three lines: 1. The direct transfusion method of Crile, which is so successful in experimental acute hemorrhages and is being used with good results clinically. 2. The development of the treatment of pernicious anemia, based on the possibility that this disease is caused by an anaërobic bacillus of the intestine. Herter, who discovered the presence of this bacillus in pernicious anemia, recommends colon irrigations. 3. Inorganic iron is just as capable of being absorbed and assimilated as are the organic iron compounds of the food.

5. Steele finds that diet is the most important factor in determining the amount of bacteria in feces. Foods that are easily digested and well absorbed leave little residue and nearly always have a low bacterial count. In uncomplicated constipation, usually spoken of as atonic, fecal bacteria are decreased. This decrease of bacteria may be the causal agent. In other cases of constipation, and in cases where there is excessive bacterial growth in the stomach, bacteria in the feces are increased. In normal persons it is found that only two so-called intestinal antiseptics, salicylic acid and bismuth salicylate, apparently diminish the fecal bacteria. The other so-called intestinal antiseptics seem to increase the intestinal flora.

7. Osborne advocates the treatment of uremia by: 1. Absolute muscle rest. 2. The withholding of all food, even milk; administering very little water by mouth, even if there is no edema, as the ability of the kidneys to excrete even water is often abolished. 3. Frequent colon irrigations of hot water, leaving some in the colon for absorption if the blood pressure is low and there is no edema. 4. The administration of thyroid. 5. Hot sponging of the skin. 6. Venesection in most cases, repeated if necessary, as it has been shown that an ounce of blood removes more toxins than eight or nine times that of fluid feces or than quarts of perspiration. 7. Nitroglycerin, if the pulse tension is high. [R. I. L.]

The Edinburgh Medical Journal.

July, 1907.

1. Gibson, G. A. *The Cause of the Heart Beat.*
2. Thomson, A. *The Differentiation of Partial from Total Transverse Lesions of the Spinal Cord.*
3. Guy, W. *On the Administration of Gas and Ethyl-Chloride.*
4. Wilson, H. D. *Signs and Symptoms of Mucous Colitis.*
5. Gordon, G. A. *Observations on the Effect of Prolonged and Severe Exertion on the Blood Pressure in Healthy Athletes.*
6. Monsarrat, K. W. *Two Cases of Renal Sarcoma in Children, with Some Remarks on the Pathology and the Recent Results of the Surgical Treatment.*

The Lancet.

Aug. 24, 1907.

1. *Wright, A. E. *A Lecture on the Principles of Vaccine Therapy.* (Concluded.)
2. *Battle, W. H. *A Clinical Lecture on Stricture and Traumatism of the Vermiform Appendix. With a Note on Foreign Bodies in the Appendix.*
3. Morison, A. *An Address on the Nature and Management of Hypertrophy of the Heart.*
4. Robson, A. W. M., and Cammidge, P. J. *Pancreatis Due to Direct Extension of a Malignant Growth of the Gall Bladder along the Common Bile and Pancreatic Ducts.*
5. Barry, D. T. *Calculi in the Appendix.*
6. Barnet, W. H., and Macfie, J. W. S. *A Case of Appendicitis Excited by a Clove, the Appendix Being the Sole Viscus in a Hernial Sac.*
7. Dukes, C. *A Record of the Physical Examination of One Thousand Boys at their Entrance on Public School Life.*
8. Muirhead, W. *A Case of Typhoid Fever: A Note on the Bacteriological Examination of the Blood.*

1. See abstract of *Journal of the American Medical Association*, Aug. 10 and 17, 1907.

2. Battle maintains that there has been a real increase in appendicitis. He endeavors to find a cause. Grain now is generally ground between iron or steel rollers. Hence he suggests the possibility that small particles of

iron from these rollers may be the predisposing and sometimes the exciting cause of appendicitis. Concretions are often formed about such small particles. He relates numerous cases of small metallic bodies in the appendix. [R. I. L.]

Die Therapie der Gegenwart, No. 7.
July, 1907.

1. Posner, C. *The Treatment of Nervous Impotence.*
2. *Mendel, F. *The Practical Uses of Venesection.*
3. Lewandowski, A. *Notes on Constipation.*
4. *Meissner, P. *Treatment of Mercurial Stomatitis.*
5. Hulis, E. *The Therapeutic Value of Histosan in Diseases of the Lungs.*

2. Mendel shows that venesection, once so much abused, has been neglected for many years, and says that there are many conditions where it is of great value. The indications for using venesection are as follows: I. Disturbances in the corpuscles of the blood: (1) Poisoning by illuminating gas. It removes the poisonous compounds formed by the gas in the blood, which do not allow the CO_2 to be thrown off and lead to asphyxiation. (2) In uremia and eclampsia it gets rid of products of the toxic metabolism which are circulating in the blood. (3) In gout, during the acute attack, the author has used blood-letting with excellent results, the patients often remaining free from attacks for long periods after the blood-letting. The single attack always clears up more quickly with venesection than without. (4) In chloroses Mendel does not agree with certain other authors that venesection is of value. II. Disturbances of circulation: (1) In cerebral apoplexy the author recommends venesection in all cases, whether the blood pressure is high or not. He has used it in cerebral hemorrhage with good effect. (2) The author strongly recommends bleeding in all cases where the right heart is overloaded and dilated, as in valvular disease and myocarditis with broken compensation and acute dilatation; also in pneumonia where the right heart is overloaded.

4. Meissner reviews the routine methods of treatment in mercurial stomatitis and says that he has had moderate success with them. Of late he has used a new preparation, formamint, with great success. It is a combination of one molecule of lactose with five molecules of formaldehyde. Five or ten of these tablets are to be dissolved in the mouth during the day. He found it not only extremely efficacious in the cure of stomatitis, but also that patients who used these tablets from the start of the mercurial treatment never showed any tendency to contract a stomatitis.

[R. D.]

Münchener Medizinische Wochenschrift, No. 27.
July 2, 1907.

1. Fehling, H. *Infections with the Colon Bacillus in Obstetrical Practice.*
2. Einhorn, A. *An Inhalation Useful in Asthma.*
3. Sudeck, P. *The Blood Supply of the Rectum and Its Relation to Gangrene Following Operation.*
4. *Best, F. A. *Consideration of Gastric Ulcer, with Special Reference to Spasm of the Pylorus and Hypersecretion.*
5. *Ziegler, O. *The Early Diagnosis of Tuberculosis of the Lungs by Means of Koch's Old Tuberculin.*
6. Isserlin, M. *The Diagnostic Importance of the Association of Ideas in Certain Psychopathic Conditions.*
7. Potpeschnig, K. *Experiments on Infant Feeding with Sterilized Human Milk.*
8. Sauer, T. *Fracture of the Spinous Processes by Muscle-Pull.*
9. Kleinberger, C. *Infection of the Urinary Tract by the Bacillus Pyocyaneus.*
10. Radman. *Therapeutic Experiments in Cerebrospinal Meningitis.*
11. Merkel, F. *Therapeutic Notes.*
12. Weekard. *Causes of Ptomaine Poisoning.*
13. Durnig. *Obituary. Theodor von Jürgensen.*

4. Best enumerates the manifold symptoms of gastric ulcer, the only sure one being hemorrhage. The pain is always an uncertain factor, ranging from the slightest sensation of irritation in the stomach to paroxysms of intense pain. Tenderness on pressure, too, may be absent or entirely misleading. Many ulcers heal without symptoms or with the lightest manifestations, depending on the situation and depth of the ulcer. The slowest ulcer to heal and that most liable to give rise to symptoms is the pyloric, for the constant opening and closing of the pylorus during digestion gives little chance for healing. After partial or complete healing of an ulcer, a new set of disturbances may arise. At each irritation of the partially healed surface a spasm of the pylorus is set up. The stagnant food in the stomach further irritates the ulcer, causing a hypersecretion. These two factors in ever-increasing quantities cause the stomach to stretch, and may call forth fresh bleeding from the ulcer. This condition may clear up, spontaneously or under treatment, or it may stay latent for weeks or months. The stomach contents are colorless, cloudy, bile or blood-stained, usually containing small particles of carbohydrate food. The percentage of free HCl is usually increased, but may be below normal. A considerable tumor is often palpable over such a pylorus and may lead to error in diagnosis. Motor insufficiency and dilatation are the end results of this condition. Medical treatment often improves the condition but never results in a permanent cure, whereas the results of surgery in uncomplicated cases of pyloric stenosis and spasm of the pylorus have been most satisfactory. About half the author's cases of spasm of the pylorus were air swallowers, which makes treatment, both medical and surgical, much less likely to succeed.

5. In order that the early diagnosis of tuberculosis of the lungs by the tuberculin test be successful, every step in the routine should be most carefully carried out. The presence of fever is a contra-indication, and the test should not be applied in case of recent hemorrhage until four weeks after the bleeding. The patient must be put to bed and the temperature taken at two-hourly intervals, beginning at 6 A.M. the day before the injection is given. Ziegler recommends the rectal temperature. When sputum is present, the twenty-four-hour amount should be measured. A careful record of the condition of lungs, larynx, abdomen and urine should be made before the injection. The next day, at 9 A.M., 0.1 mgm. of Koch's old tuberculin is injected. If a rise of 0.5° C. in temperature is noted, the reaction is considered as positive. To confirm this a second injection of 0.1 mgm. tuberculin is given forty-eight hours later. If no reaction is noted, 0.4 mgm. is injected forty-eight hours after the first dose. The lungs should be watched for the appearance or increase in number of râles; the larynx for pain; the abdomen for tenderness on pressure over the kidneys or ileocecal region. This abdominal tenderness, however, may not be due to a tuberculous process. Pain and tenderness over the sternum are fairly common in a positive reaction, due, the author thinks, to local reaction in the intrathoracic lymph glands. Palpitation of the heart has been seen, due to local reaction in the glands of the neck, causing swelling and pressure on the vagus. Occasionally there occur extremely high temperatures, or the febrile period may be protracted four or five days. The usual length of the reaction period is twelve to twenty-four hours. The local reactions in lungs and elsewhere usually last from four to seven days. The author appends an account of his technique of preparing tuberculin for injection.

[R. D.]

No. 28. July 9, 1907.

1. Schultze, F. *The Diagnosis and Operative Treatment of Meningeal Tumors of the Spinal Cord.*
2. *Schüffner, W. *The Spirocheta Pertennis and the Clinical Picture of Frambesia Tropica.*
3. Henkel, M. *The Indications for and the Technic of Pubiotomy.*
4. Brezina, E. *Studies on the Combination of the Antibody.*
5. Soctbur, F. *The Excretion of "Endogenous" Uric Acid in Gout.*
6. Schaeffer, F. *Remarks on Dr. A. Eichorn's Inhalation Remedy in Asthma.*
7. Längemark. *The Treatment of Dupuytren's Contraction with Thiosinamin.*

8. Wichman, P. *Experiments on the Action on the Deeper Tissues of the Skin of the Finsen Ray and the Quartz Lamp.*
9. Schleger. *Treatment of Seasickness by Bier's Hyperemia.*
10. Hippel, E., and Pagenstecher, H. *The Influence of Cholin and the Rœntgen Ray on Pregnancy.*
11. Trendelenburg, W., and Bumke, O. *The Relation between the Medulla and the Pupil.*
12. Roesle, E. *A Statistical Survey of the Health Conditions in the German Colonies.*

2. Schüffner, while in Sumatra, had opportunity to observe 129 cases of frambesia occurring in natives. In 81% of the cases he was able to confirm Castellani's observations, by finding the spirocheta pertennis in both smears from the skin lesions and in sections. The spirochetæ of syphilis and frambesia are very similar, but slight differences exist. The spirocheta pertennis is found in the rete Malpighi, in the necrotic tissue of miliary abscesses and along the lymph spaces; whereas the spirocheta pallida lies mostly along the course of the blood vessels in the perivascular tissues. The spirals numbered from 8 to 16. That the spirocheta pertennis is the etiological factor of frambesia the author thinks is undoubted, arguing from the likeness between syphilis and frambesia, which is very marked. Frambesia, though very closely allied to syphilis, is, however, a distinct condition. It is an infectious disease, beginning with a primary lesion, usually in a wound or excoriation. From four to twelve weeks later there comes a general papular eruption, the papules looking like raspberries when cleared of the surrounding crusts. Only rarely is a roseola present. The mucous membranes are never affected. Chronic periostitis is very common, especially in children. The treatment is anti-syphilitic, under which the condition rapidly clears up. [R. D.]

Deutsche Medizinische Wochenschrift, No. 28.

July 11, 1907.

1. *Goldscheider. *Very Light (Schwellenswert) Percussion of the Heart.*
2. *Friedlander, J., and v. Meyer, E. *A Contribution to Rose's Head-Tetanus.*
3. Karewski, F. *Rupture of the Quadriceps Femoris.*
4. Böcker, W. *Paralytic Luxations of the Hip Joint.* (Continued.)
5. Keimer. *Acute Osteomyelitis of the Flat Bones of the Skull.*
6. *Neuhäuser, H. *Hemorrhage after Nephrolithotomy.*
7. *Scherber, G. *Etiology of Necrotic Forms of Stomatitis with Cases.*
8. Bosse, B. *The Present View of Lumbar Anesthesia.* (Concluded.)

1. Goldscheider thinks his method of light percussion gives extremely accurate information as to the heart borders. It has been proved by different observers to give borders in accordance with the x-ray pictures. He claims that the credit of applying this method to the heart belongs to him and not to Ewald, who used it on air-containing organs. If, instead of the finger as a pleximeter, a short glass cylinder with the end covered with rubber is used, greater sharpness in tone is obtained and more accurate borders can be outlined. Great care must be used to have the pleximeter parallel to the organ whose borders are being demonstrated.

2. Friedlander and v. Meyer describe a case in which, following a wound on the head, the tetanus involved only the muscles of the face on the side of the injury, with paralysis of the facial nerve on that side. Nineteen days after the injury the patient died, after developing spasm of the muscles of deglutition. There was at no time any involvement of the muscles of the extremities or back and only the slightest in those of the neck. The occurrence of local tetanus is explained with difficulty. Perhaps the tetanus toxin is carried to the spinal cord along the nerves which are adjacent to the point of infection, and there sets up at first an irritation only of those cells of the anterior horn, which are nearest the point of entrance of the poison. In human beings, however, especially in fatal cases, the poison appears usually to diffuse so rapidly that, as a rule, not local but general tetanus is a result. This case is interesting in the contrast between the intensity of the infection and its limited extension, involving only a few muscles, yet causing death in nineteen days.

6. Neuhauser reports that in Israel's clinic in Berlin, among 131 cases of nephrolithotomy, a threatening hemorrhage occurred 12 times or in 9%. The onset and course of these hemorrhages divide them into two types. First, those in which the bleeding begins with the operation and persists days and even weeks without being extreme, so that the patient gradually becomes exsanguinated. The second type is that of late bleeding. During an apparently uninterrupted recovery, suddenly an acute hemorrhage occurs from the operated kidney. Constitutional diatheses, as hemophilia, are the chief causes of the first type, while the origin of the second is often hard to find; dislodged thrombi in the renal vessels may, perhaps, explain some cases. Adrenalin, gelatin, ergotin, etc., alone are not of much use. In severe cases packing is the only treatment of avail.

7. Scherber concludes that all necrotic forms of stomatitis, however different their clinical picture, develop as bacterial infections upon some injury to the mucous membrane of the mouth. This diminishes the natural protective substances in the secretions, so that extensive and deep ulcerating and necrotic processes are formed. Painting with strong hydrogen peroxide, with a dilute mouth wash of the same, is the best treatment, its action being especially strong against the anaërobic bacteria. [L. G. M.]

Berliner Klinische Wochenschrift, No. 26.

July 1, 1907.

1. Burck, C. *The Biologic Differences between Races of Apes and of Men, as Shown by Specific Blood Reactions.*
2. *Spielmeyer. *Atoxyl in Paralyses.*
3. Morse, M. *A Study of Certain Cases of Pernicious Anemia.*
4. Schütze, A. *A Broader Application of the Method of Complement Fixation.*
5. *Selig, A. *Clinical Observations on the Use of the Electric Vibrator in the Treatment of Heart Disease.*
6. *Goldschmidt. *The Use of Morphine in Asthma.*
7. *Leuftleben. *The Origin of Heat Stroke.* (Concluded.)
8. Kraus, F., and Nicolai, G. F. *The Electro-cardiogram in Pathologic and Normal Conditions.* (Concluded.)
9. Beitzke, H. *A Review of Wright's Opsonin Theory.*

2. It is claimed that atoxyl is a powerful agent in the treatment of para-syphilitic conditions. Spielmeyer has given the drug a careful trial in sixteen cases of marked late syphilis and para-syphilitic conditions, without either improvement or arrest of the process. Given early, atoxyl might succeed in warding off such conditions. When the process is under way it is apparently useless.

5. Selig has tried the effect of the electric vibrator in many cases, cardiac and otherwise. In cases without cardiac lesion no diminution in the heart area was demonstrable. In all cases of heart disease with broken compensation, the orthodiagram showed a greater or lesser diminution in the size of the heart, with a slowing of the pulse and great relief of symptoms, due probably to stronger contractions of the heart muscle under the stimulus of the vibration. It is applied over the precordia or between the shoulder blades for between five and ten minutes daily. The author concludes that this method is a valuable adjunct to the treatment of organic disease of the heart.

6. Goldschmidt divides all asthma cases into three classes: (1) Acute or typical attack coming periodically and lasting a few hours. (2) Asthma chronica, wherein the patient has a series of recurrent attacks for three or four months at a time, followed by a period of absence of attacks. (3) Asthma permanens, wherein the patients have the asthmatic type of breathing for years without actual paroxysms, but are always very uncomfortable. In the first class the use of morphine subcutaneously is to be recommended, without danger of forming a habit. In the second and third kinds of cases morphine is of great value, and when rightly used causes no harmful results. It is to be administered in very small doses subcutaneously,

i. e., 2 to 5 mgm. ($\frac{1}{30}$ to $\frac{1}{12}$ gr.). Such small doses generally suffice to allay distress and are perfectly safe as long as no symptoms of morphinism appear. When, however, the original dose does not suffice to produce the desired effect, morphinism is present and the use of the drug must be abandoned.

7. Leuftleben has made many observations on a large series of cases of heat stroke, both mild and severe, at the maneuvers of the German army. These cases occur in healthy and strong young soldiers in whom all other diseases are ruled out by medical examination. They are, therefore, cases of uncomplicated heat stroke. The author found that the red cells of the blood showed a great loss of hemoglobin. Most of the protoplasm of the leucocytes was destroyed, the nuclei only being left in the stained specimen. The blood serum was always tinged yellow. Autopsies on the fatal cases showed an overloading of the venous circulation, especially heart, lungs and brain, with here and there ecchymoses of the serous surfaces. The blood is dark red and thrombi are found in the right heart and in the capillaries of the lungs and brain. The suddenness of these attacks and the conditions constant in the blood and at autopsy point to a rapid, severe intoxication. Experiments have shown that sudden removal of large amounts of blood from the tissues of animals causes a loss of the hemoglobin from the red cells. The hemoglobin circulating in the blood breaks up the leucocytes, setting free the fibrin ferment, leading to a clotting of blood in the capillaries and a damming of the blood into the venous circulation. The author carried out a series of experiments on rabbits by injections of fresh extracts of hemoglobin. The symptoms and post-mortem findings, as well as the blood conditions, corresponded almost exactly with those in heat stroke. After a comparison of these findings he concludes that heat stroke is an auto-intoxication due to a sudden pouring out of hemoglobin into the blood stream. In prophylaxis the author lays stress on the regular drinking of water by those who are taking violent exercise in the hot sun. Treatment of heat stroke should be subcutaneous injection of salt solution preceded by free bleeding, which should save lives except in the most marked cases. [R. D.]

Deutsche Zeitschrift für Chirurgie, Band 88, Hft. 1–3.

May, 1907.

1. *König, F. *The Use of Prostheses after Exarticulation and Resection of the Lower Jaw.*
2. Holland, J. F. *Tuberculous Tumor of the Sigmoid Flexure.*
3. *Vorschütz. *Hyperalgetic Zones in Cases of Injury of Skull and Brain.*
4. *Wolff. *Statistics of Lung Complications following Surgical Operations.*
5. Schlagintweit. *Subcutaneous Dislocation of the Ankle.*
6. *Draudt. *Resection of the Vena Cava in a Case of Mixed Tumor of the Renal Capsule.*
7. Frangenheim. *Gummous Ostitis with Spontaneous Fracture.*
8. *Kudlek. *A Contribution to the Pathology and Physiology of the Patella.*
9. *Iselin. *Injury of the Diaphragm and Diaphragmatic Hernia.*
10. *Offergeld. *Ligation of the Large Vessels of the Lower Abdomen.*
11. Lexer. *Chondromata of Joints.*
12. Eichel. *Dislocation of the Scaphoid Bone of the Foot.*
13. Blecher. *Dislocation of All Three Cuneiform Bones.*

1. König discusses the various methods of preserving the shape and function of the lower jaw after removal of a portion of it. A temporary prosthetic apparatus is used, followed later, when the wound has healed, by a permanent one. The aid of a good dentist in adjusting the appliances is imperative. The experience of many of the German and Austrian clinics in this matter is given, the weight of opinions being in favor of the immediate India-rubber apparatus of Martin or the "inclined plane" contrivance of Sauer, followed later by a definite splint which can be removed and cleaned daily.

3. Vorschütz reports twelve cases in which areas of hyperesthesia of the scalp and neck accompanied injury to skull and brain. The presence of such zones indicates injury to the cranial contents. They are known to persist occasionally for two to three years after the injury and are thus of importance in forming an opinion for accident insurance companies. Such hyperalgetic areas are not usually present in cases of skull fracture with concussion, but are most often found in cases of gross cerebral contusion.

4. The results of four years' experience with anesthesia, in 3,082 operations at the clinic of Lexer, are reported. Ether, used in 1,806 operations, caused lung complications in 3.2%. Ether and chloroform (Billroth's mixture, etc.) used 744 times caused complications in 4.6%. Chloroform, used 532 times, gave the best figures, namely, 1.9%. Both local and lumbar anesthesia are also occasionally followed by lung complications.

6. During the removal of a large mixed tumor of the kidney capsule, Lexer was compelled to ligate and resect the inferior vena cava. Recovery took place without disturbance of the circulation, the child dying a half year later of recurrence. Draudt has found six similar cases in the literature. From these and from several series of experiments, it is shown that ligation of the cava, if it be done below the entrance of the renal veins, is seldom followed by any pathological disturbance other than transient edema of the extremities. Ligature above these veins is usually followed by death from renal disturbance through insufficient venous anastomoses.

8. Kudlek reports a case of giant-celled sarcoma of the patella which necessitated the removal of this bone. Two years later there were no signs of recurrence and the function of the joint was perfect.

9. Iselin reviews diaphragmatic wounds and herniæ. In every case of incised wound of the lower thoracic region one must consider the possibility of injury to the diaphragm. Prolapse of omentum through the wound confirms the diagnosis. Such wounds should always be sutured after access has been gained, either by enlarging the original opening or by resection of ribs. The resulting pneumothorax usually disappears in about eight days. Inflammatory lung complications are rare, and the pleural cavity can be closed without drainage in simple cases. If the reposition of prolapsed abdominal contents is difficult, the rent in the diaphragm should be enlarged. Through this opening the abdominal organs should be carefully inspected, and if found injured a laparotomy should also be done. Rupture of the diaphragm is about as frequent as are incised wounds. It occurs as a result of compression, either of thorax or abdomen, of a severity sufficient to alter the shape of the thorax or to increase the intra-abdominal pressure suddenly. Since liver, spleen, and kidney are frequently injured at the same time, approach by the abdominal route is the best. The diagnosis of a chronic hernia of the diaphragm containing stomach is usually possible. The x-ray is of great aid in this connection. The presence of large intestine in the hernia cannot be made out, as a rule, till laparotomy is done for intestinal obstruction.

10. The successful ligation of any of the large vessels of the lower half of the body is primarily dependent on the ability of the heart to overcome the sudden increase in blood pressure. Ligation of the aorta increases the pressure so greatly that, as a rule, the cardiac power is insufficient, and death ensues. Bilateral ligature of the common iliacs causes the same phenomena as that of the aorta. Unilateral ligature is only slightly dangerous, however, the blood pressure in the femoral returning to nearly normal in twenty-four hours. Bilateral closure of the internal iliacs, as also of the external iliacs extraperitoneally, is without danger. Ligation of the femoral artery is followed by gangrene of the leg in 60% of the cases. Closure of the femoral and of the external and internal iliac veins is harmless, as is also ligation of the cava below the renal veins. [W. C. Q.]

Experimental Cirrhosis of the Liver with a Tubercular Basis. Stoerk (*Wien. klin. Wochenschr., No. 28*) finds that in guinea pigs infected with tuberculosis the liver shows very constantly cirrhotic changes which in morphology resemble exactly the histological picture of human liver cirrhosis. The primary specific lesion starts in the acini in the portal vein ramifications, and from here extends into the neighboring peripheral parts of the parenchyma. Destructive and proliferative processes occurring side by side are very characteristic, *i. e.*, destruction of liver cells synchronously with the formation of young connective tissue and regeneration in the biliary passages. Bartel, in an article in the same issue, finds results analogous to Stoerk's, viz., chronic inflammatory processes in other organs in the course of tubercular infections, which are characterized by a combination of regressive and progressive tissue changes. These changes are found most marked in the lymph glands and in the lungs. Jagic also, in the same number, reports a case of chronic tuberculosis of the left pleura and peritoneum in a woman forty-five years old, with macroscopic and microscopic beginning liver cirrhosis. This patient was not a drinker and was never jaundiced. [L. G. M.]

Miscellany.

TYPHOID FEVER EPIDEMIC AT NEW JERSEY STATE HOSPITAL.

The following official statement has been made of the recent epidemic of typhoid fever at the state hospital, at Trenton, to the New Jersey State Board of Health:

Twenty-eight days have now elapsed since a new case of typhoid fever has been reported from the State Hospital, Trenton, and we may therefore conclude that the epidemic which recently prevailed in that institution has finally ceased.

To review briefly the important facts having relation to this outbreak it may be stated that the first case occurred April 8, 1907, in the person of an inmate of the hospital, located in the west wing of the building, who probably contracted the disease in the city of Trenton. Subsequent cases occurred in the same wing, and up to Aug. 13, 80 cases had appeared in the hospital with 16 deaths. All of these cases were located in the main building of the institution and no cases occurred in the Annex, notwithstanding that more than 400 of the inmates of the institution are cared for in that building. Twenty-three employees and other residents in dwellings on the hospital premises were affected with the disease. Investigations concerning the food supply, including milk and water, were negative, except that colon bacilli were found in the water of the spring from which a portion of the water provided for the hospital premises was obtained. Suspicion was at first directed to the water of this spring as the medium through which the infection was spread, but in the light of later developments it now appears improbable that the spring water had any influence whatever in conveying the infection, and we are led to the final conclusion that the disease was transmitted directly from patient to patient and through the agency of utensils and food infected within the building.

This conclusion is justified for the following reasons:

(1) The disease first appeared in the west wing of the main building and spread to other inmates in this wing, and as facilities were not provided for the isolation of convalescents the infection was communicable by them to other susceptible inmates.

(2) The spoons, forks, cups, etc., used in the dining rooms were washed by the insane inmates without boiling, and in the course of the epidemic every utensil in the building probably became infected, thereby exposing the food which entered the building to infection as soon as it was received.

(3) The filthy habits of many of the insane inmates of the hospital probably caused infected discharges to be generally distributed in the bathroom, upon the furniture, door knobs and other surfaces touched by the hands of the infected persons.

(4) From the west wing the infection was carried to other portions of the main building, but, as above stated, not a single case occurred in the Annex, indicating that the infection was not conveyed by milk or water, for the supply of both of these articles was from the same sources for both buildings. The water supply for all of the buildings on the hospital premises was taken from the same piping system, and in the standpipe, located near the Annex, the water which was pumped into the mains from the spring and from the wells was undoubtedly often thoroughly mixed before distribution to the various branches and service lines.

(5) Inquiry has shown that communication between the infected kitchens of the main building and the dwellings of employees, where cases of typhoid fever occurred, was frequent.

Correspondence.

LETTER FROM PARIS.

Calmette's Ophthalmo-Reaction to Tuberculin.

[*From our Special Correspondent.*]

Paris, Aug. 30, 1907.

Mr. Editor: During the past three months the vexed question of the value of tuberculin, as a means of *diagnosis* at least, appears to have taken a decided step in advance, — and this by the very simple process of the method's having been reduced from a general one, that affected the entire economy by the introduction of toxins into the blood circulation, to a purely *local* application without vascular effraction, by depositing the virus on a convenient and visible mucous membrane, the conjunctiva. It will be seen that the modification was not a very complicated one, — *mais encore, fallait-il y penser?*

The merit of this improvement is due to Calmette, of the Pasteur Institute of Lille, who has demonstrated that when one drop of a weak solution of tuberculin is introduced into the eye of a patient suffering from any tubercular process, medical or surgical, the conjunctiva reacts in such a characteristic way that the diagnosis of tuberculosis can be safely made, even when nothing of the sort had been suspected in the patient. You will observe at a glance that if his contention proves to be accurate, this is a step in advance in medicine of no minor importance. He calls it the *ophthalmo-reaction to tuberculin.*

I said that the tuberculin question "appears" to have made a great stride forward. For in matters of tuberculosis one can hardly be too circumspect: the subject is of such vast importance to the civilized races, to whom the tubercular processes are *the* enemy, and our hopes in this field have now been raised so many times by the laboratory men, their promises ultimately vanishing and leaving nothing but thin smoke and ashes behind them.

At the present moment, as regards this new test, we are in the first heyday of our enthusiasm, and everything is *couleur de rose;* the dark side, which appears inevitable in every tableau, has not yet begun to show up. It is a French discovery, so the French have naturally taken it up vigorously and are investigating it on a large scale and as quickly as feasible. Its sponsors are first rate men, who leave nothing to be desired as regards reliability: Calmette, Letulle, Comby, Bazy, and others; and all of their accounts agree so far, so that in writing to you about it I hope that the reasons are adequate to warrant my suggesting that you should in your turn verify these results.

I need not take up the knotty question of tuberculin in general. It has been before the medical world for over fifteen years, has been the object of an almost incalculable amount of work and experimentation on the part of the very best of men; and yet it has so far resulted in what can fairly be claimed as little better than chaos, and a species of chaos that is particularly trying, a condition of affairs in which the seeker after guidance is utterly staggered by seeing good men, in whom he has equal confidence, asserting that a thing is at the same time both black and white, which cannot be.

Leaving all this uncertainty and disappointment aside, it will be seen that Calmette's idea is of a different order. He has taken one limited portion of the tuberculin question and made a definite assertion about it; it is one that can be readily tested by everybody, and we shall soon know beyond peradventure whether he is right or wrong.

Von Pirket, of Vienna, took the first step in bringing the use of tuberculin as a means of diagnosis down from a general to a local method, by proposing that instead of using it hypodermically it should be applied to a small scarified wound on the skin, when, if the patient were tubercular, the inoculation would be followed by marked local inflammatory reaction with the formation of a vesicopustula, whereas if the patient were sound no reaction whatever would occur.

The veterinary surgeons Vallée and Arloing next observed that von Pirket's method holds equally good with animals.

This mode of procedure certainly seems preferable to the hypodermic one; but still, there is vascular effraction even here. Some of the tuberculin must be absorbed, and might give rise to disasters such as occurred with the original Koch's injection. Calmette's improvement, which is as follows, is evidently superior to von Pirket's, and would appear to be, so far as we now know, above criticism.

In order to avoid the irritating action of glycerin on the conjunctiva, Calmette uses only dry tuberculin precipitated by alcohol (95%), sterilized by moist heat (not exceeding 105°), and dissolved in sterilized distilled water. The solution imployed is .01, freshly prepared, and strictly sterile. A good method is to prepare it extemporaneously by dissolving 5 mgm. of dry precipitated tuberculin in 10 drops of warm boiled water. With each patient, then, one drop is let fall into the inner angle of one eye, the lids being held apart to guard against any involuntary wink, which would eject the instillation at once. Patients must be cautioned not to rub the eye treated; and naturally the method must not be used in any eye already the seat of some disorder. This mode of procedure always suffices to produce the reaction in suitable conditions.

Five hours after the instillation, sometimes even in three, every tubercular patient shows very evident congestion of the palpebral conjunctiva, which becomes bright red, with more or less intense edema. The caruncula swells, reddens and is observed to be covered with a light fibrinous exudate.

This vascular injection increases progressively and is attended with epiphora. In six hours the fibrinous secretion has become more abundant, and collects in filaments in the lower conjunctival *cul-de-sac.*

The reaction attains its maximum in from six to ten hours. The patients feel no pain, only a little discomfort, with slight sensation of burning, and of deranged vision owing to the abundance of the exudate. There is no chemosis. Rectal temperature is not influenced. The patient's general condition and appetite remain excellent. The tubercular lesions are not modified in any way, the entire process being confined to the local area. It is easy to estimate the intensity of the reaction by comparison with the other eye.

The signs of congestion lessen and then disappear in eighteen hours with children, and in from twenty-four to thirty-six hours with adults. In no case has the instillation left any ill effects after it in the eye treated. When the test is to be repeated a second time, the other eye should be used, or else the original eye, but with a week's respite.

With healthy persons, and with persons suffering from non-tubercular complaints, this instillation of tuberculin between the lids produces no reaction, or at the most a slight redness at the end of one and a half to three hours, which soon disappears and is accompanied neither by fibrinous secretion nor by epiphora.

In some few cases the appearance of the reaction is retarded; it then begins in from twelve to twenty-four hours, and terminates in about seventy-two.

There appears to be no relation whatever between the intensity of the reaction and the gravity of the tubercular lesions. A discrete case of tubercular glands may give a more marked result than an extensive and advanced case of pulmonary trouble. The very few tubercular cases that have failed to react to this test have been patients on the point of death with whom all power of reaction was exhausted.

Comby has found that with children the .01 solution may produce an excessive reaction; he therefore advises in preference a solution of 1. to 200.

Such then are the details, as so far worked out, of this new and interesting test. Among them the following appear to be the most salient.

The simplicity of the method is all that could possibly be desired; it seems to be well within the powers of every practitioner, requiring no laboratory help of any kind. Furthermore its results are rapid; twenty-four hours suffice for a diagnosis. Its certainty, again, is claimed to be absolute. As regards this point, however, it will be well to remain on a prudent reserve; the idea of *certainty* seems rather to clash when used in relation to things medical.

Its innocuity has so far been found to be complete, as well in the case of children as with adults; neither in a general nor in a local sense has it produced any ill effects, although it has now been used in over 1,000 cases, and that is a figure that begins to count.

The fact must always be borne in mind that this test only acts when there are lesions *in process of evolution,* when some active focus exists; if then a patient fails to react, this does not mean that he never *has been* tubercular. One of its great services should be to show that a tubercular lesion is definitely cured.

But when the method will triumph will be in the *obscure* cases, and, above all, as a help toward an *early diagnosis!* and therein lies the key to success with these patients, as I need not tell *you!* If the method holds its promises, and enables the practitioner, struggling with a subjective diagnosis of incipient phthisis before objective disturbance is discernible, to affirm at the end of twenty-four hours and without possible risk of harm, "This is tuberculosis; the patient must resign present occupations and take to the hills," it seems difficult to overestimate the practical value of what will then prove to have been Calmette's idea of genius.

"Spectator."

"THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS FOR THE GENERAL PRACTITIONER."[1]

New York, Sept. 13, 1907.

Mr. Editor: I should have been more completely satisfied with Dr. Edward O. Otis's very instructive article if he had said even a few words in regard to the condition of the larynx in the earlier days of pulmonary tuberculosis.

Hyperesthesia, anemia, impaired movement of the vocal cords, tumefaction, and even ulceration of the larynx, will sometimes fix a diagnosis of pulmonary tuberculosis when physical signs in the lungs are negative, or doubtful. I take it that every general practitioner should know these facts.

Beverley Robinson, M.D

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[1] Bost. Med. & Surg. Jour., Sept. 12, 1907, p. 361.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 7, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	14	8
Chicago	—	—	Waltham	8	2
Philadelphia	—	—	Pittsfield	5	3
St. Louis	—	—	Gloucester	8	4
Baltimore	220	102	Brookline	3	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	—	Chicopee	9	5
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	10	3
Milwaukee	—	—	Beverly	—	—
Washington	—	—	Leominster	5	2
Providence	71	20	Hyde Park	2	—
Boston	232	106	Melrose	7	0
Worcester	27	60	Newburyport	—	—
Fall River	67	44	Woburn	6	3
Cambridge	26	13	Marlboro	5	1
Lowell	32	16	Westfield	5	2
Lynn	20	7	Peabody	—	—
New Bedford	48	23	Revere	6	4
Springfield	22	8	Attleboro	3	2
Lawrence	27	17	Clinton	5	2
Somerville	13	3	Adams	6	6
Holyoke	19	9	Gardner	—	—
Brockton	13	4	Milford	—	—
Malden	10	4	Watertown	1	1
Chelsea	11	6	Plymouth	—	—
Salem	21	9	Weymouth	4	1
Newton	6	—	Framingham	4	2
Haverhill	8	1	Southbridge	3	2
Fitchburg	—	—	Wakefield	—	—
Everett	7	5	Webster	—	—
Taunton	15	5			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED SEPT. 4, 1907.

WHITE, J. H., surgeon. Granted leave of absence for one month from Aug. 29, 1907. Sept. 4, 1907.

SWEET, E. A., assistant surgeon. Directed to proceed to El Paso, Tex., for special temporary duty, on completion of which to rejoin his station at Fort Stanton, N. Mex. Aug. 28, 1907.

ASHFORD, F. A., assistant surgeon. Granted leave of absence for seven days from Sept. 6, 1907. Sept. 4, 1907.

TAPPAN, J. W., acting assistant surgeon. Directed to proceed along Mexican border from Brownsville, Tex., to Nogales, Ariz., upon special temporary duty, upon completion of which to rejoin his station at El Paso, Tex. Aug. 28, 1907.

SEIDELL, A., technical assistant. Detailed to represent the Service at the fifty-fifth annual meeting of the American Pharmaceutical Association in New York City, Sept. 2-7, 1907. Aug. 30, 1907.

GOODMAN, F. S., pharmacist. Excused from duty for a period of ten days from Sept. 3, 1907, without pay. Aug. 31, 1907.

SCOTT, E. R., pharmacist. Relieved from duty at Norfolk, Va., and directed to report at the Bureau, Washington, D. C., for temporary duty. Aug. 31, 1907.

MEGAW, H., pharmacist. Directed to proceed to Vineyard Haven, Mass., for temporary duty, upon completion of which to rejoin station at Boston, Mass. Aug. 30, 1907.

CASUALTY.

Acting Assistant Surgeon A. C. Blain died at Brunswick, Ga., Aug. 28, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 14, 1907.

A. F. PRICE, medical director. Detached from duty as member of the Naval Retiring Board, Washington, D. C., and ordered to continue other duties.

F. M. GUNNELL, medical director. Retired, detached from duty as senior member of the Naval Examining and Medical Examining Boards, Washington, D. C., and ordered home.

T. D. MYERS, passed assistant surgeon. Retired, detached from duty in connection with the Naval Medical School, Washington, D. C., and ordered home.

A. M. FAUNTLEROY, passed assistant surgeon. Detached from the Naval Station, Tutuila, Samoa, and ordered to the Naval Hospital, Mare Island, Cal.

P. S. ROSSITER, passed assistant surgeon. Detached from the Naval Academy, and ordered to the Naval Station, Tutuila, Samoa.

F. P. W. HOUGH, acting assistant surgeon. Detached from the Naval Hospital, Annapolis, Md., and ordered to Washington, D. C., Sept. 16, 1907, for examination for appointment as assistant surgeon in the Navy, and then to wait orders.

J. C. CLAYTON, acting assistant surgeon. Appointed acting assistant surgeon from Sept. 5, 1907.

E. E. CURTIS, assistant surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the "Culgoa."

H. WELLS, medical director. Detached from command of the Naval Hospital, Boston, Mass., and granted sick leave for three months.

R. J. STRAETEN, assistant surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to instruction at the Naval Medical School, Washington, D. C., Sept. 30.

F. H. STIBBENS, assistant surgeon. Detached from the Naval Training Station, Newport, R. I., Sept. 22, and ordered to instruction at the Naval Medical School, Washington, D. C., Sept. 30.

APPOINTMENTS.

FRANK P. KNOWLTON, A.M., M.D., at present Associate Professor of Physiology in the College of Medicine, Syracuse University, has been advanced to the head of the Department of Physiology. A competent laboratory assistant to the Chair of Physiology will be selected at the earliest possible moment.

HAROLD DICKENSON SENIOR, M.B., F.R.C.S., at present an Associate in Anatomy at the Wistar Institute of Anatomy, Philadelphia, has been elected to the Chair of Anatomy and as Director of the Anatomical Laboratory at Syracuse University, to take the place formerly held by Dr. George M. Price. Dr. Senior was educated in England at Durham University. He was first Assistant Demonstrator of Anatomy at Durham University, then Junior Demonstrator of Anatomy at Charing Cross Hospital Medical School, London.

GUSTAVE M. MEYER, B.S., Sc.D., for four years Assistant to the Chair of Physiological Chemistry at Columbia University, New York, has been elected to the Chair of Physiological Chemistry in the Medical College of Syracuse University. Dr. Meyer received his degree of Sc.D., at the University of Geneva, Switzerland.

RECENT DEATHS.

CHARLES FRANKLIN BRAUCH, M.D., M.M.S.S., died in Amherst, Aug. 27, 1907, aged sixty-one years.

DR. LESTER S. HILL, of Providence, R. I., died recently as the result of an accident at the age of sixty-four. Dr. Hill was graduated from the Medical Department of New York University in 1872. At the time of his death he was assistant surgeon-general of the Rhode Island National Guard. His interest in military matters dated from the Civil War in which he had a brilliant record, finally being mustered out with the rank of colonel.

DR. SAMUEL LEWENGOOD, of New York, died suddenly on Sept. 10, at the age of forty-five years. He was graduated from Bellevue Hospital Medical College in 1882, and had spent all his professional life in New York City.

DR. JOHN H. SWASEY, of New York, died on Sept. 12, while visiting in Portland, Me., where his family came from. He was graduated from the College of Physicians and Surgeons, New York, in 1875, and devoted his attention largely to pathological studies.

DR. A. WARNER SHEPARD, of Brooklyn, N. Y., died suddenly from cardiac disease on Sept. 7, at his summer residence at Fort Hamilton, on the Narrows. He was seventy-five years of age, and was graduated from the Long Island College Hospital in 1886. For many years he was county physician of Kings County, and it is stated that he had the record of having performed more autopsies than any other physician in the State of New York. He was a native of Nashua, N. H.

Address.

PULMONARY TUBERCULOSIS AND THE RÖNTGEN RAYS.*

BY PERCY BROWN, M.D., BOSTON,
Instructor in Rœntgenology, Graduate Department of Harvard Medical School.

Who of us, after hearing Dr. Alleyne Adams's stimulating discourse before The Massachusetts Medical Society, a few weeks ago, did not leave his seat with a renewed and deepened sense of his responsibilities as a practitioner of medicine? That these responsibilities are imminent and immediate we felt intuitively, and they are devolved upon us as combatants in the great war which, as Dr. Adams said, is now before us.

In the midst of rumblings of internal strife in eastern Europe and the sight of thunderheads rising over the Pacific, our attention must not be diverted from this silent war — a war of far greater importance than any international contention, a war making wholly for good, a war in which lives are not to be lost, but saved. We are engaged in the strife, not as volunteers, but as conscripts drafted into service by the demands of progressive medicine, and he who fails to perform his share of duty must suffer from the stingings of conscience if not from open dishonor at the hands of his compeers.

The success of an army is dependent naturally upon the efficiency of its armament, and we fail of our purpose if we do not employ, of our own initiative, the arms given us to use. A powerful weapon Doctor Adams has described, to wit, the segregation of consumptives, and it is your duty, as clinicians, to make good use of it. Laennec and Koch are but two among many armorers who have contributed to our accoutrements, and it is to describe the use of the weapon furnished by another of these, Röntgen, that he who addresses you appears before you to-day.

The application of the Röntgen rays in the diagnosis of pulmonary conditions cannot be described as new, for as early as the year immediately following Röntgen's announcement, practical use of them was made for this purpose. Among European observers, Bouchard,[1] Bergonié,[2] Beclere,[3] Oudin;[4] and Fernet,[5] Levy-Dorn,[6] Loewenthal,[7] Grunmach,[8] and Holzknecht [9] published accounts of their work in 1897 or prior thereto. Above all, either in this country or Europe, stands the work of Williams,[10] of Boston, which possesses such accuracy in executive detail and such soundness of drawn conclusions that it will ever be a classic in the röntgenological field. Later, valuable additions were made by Claude [11] in France, by von Ziemssen and Rieder [12] in Germany, and by Pfahler [13] and Hickey [14] in this country. Rieder,[15] by introducing new refinements in technic, proved the skiagraphic record of diseased lungs a possibility. This possibility attained the dignity of a routine method through the efforts of Pfahler, of Philadelphia, with the augmentation of Hickey's later work on the apices.

The medical world, and to a certain extent the lay world, now understand that the optical action of the x-rays on physical substances results merely in a series of shadows, of varying density according to the resistance offered to the passage of the x-rays by the substance productive of the shadow. In no anatomical region is this shadow-complex more clearly depicted than in the thorax and its contents. Shadow impressions of many qualities are produced by the bony structures, the musculature of the heart and diaphragm, the great vessels and the lungs. The lungs themselves are penetrated by the x-rays with relative ease, and therefore they appear brilliantly illuminated — the brilliancy depending on the degree of inspiration, the thickness of the peripulmonic envelope, and certain natural characteristics of the individual in hand.

Mental impressions of two kinds are produced by observing these phenomena in a proper manner and may be described as two types: one type is an impression of the moving picture of respiration and its phenomena, or any abnormality connected with them; the other type is the impression produced by abnormal shadows of varying density, implying an inability on the part of the tissue in question to produce normal shadows. Upon these two types of impressions is based the matter of the recognition of intrathoracic disease by the x-rays.

An examination of the pulmonary region, properly pursued, may be divided into two procedures. One procedure consists in the visual perception of the shadow-complex as cast upon the fluorescent screen; on this screen we have portrayed, as in a *camera obscura*, not only the intrathoracic structures and their relations, but also their rhythmic movements: the expansion and contraction of the heart muscle, the bellying out and the shrinking in of the lung tissue and the rise and fall of the diaphragmatic dome. The other procedure results in the production of a permanent record by means of a process akin to photography, which may be termed röntgenography, of the intrathoracic viscera at the time the exposure to x-rays is made; this record is permanent, can be examined repeatedly at the pleasure of the observer, and can be compared with other records made at earlier or later periods in the course of the malady. Even such superficial mention of these two diagnostic procedures conjointly leads one naturally into an analytical comparison of them. Such comparison has been made by many authors, and an abridged repetitive statement at this time of the advantages possessed by both may be excused, perhaps, on the ground that the comparison may be used as a source from which to draw conclusions.

The value of fluoroscopic observations of normal physiologic movements has long been established by Cannon,[16] Hulst [17] and others in connection with the function of peristalsis. The stomach, particularly, has been watched, after the introduction of food, and has been found to undergo typical movements and to assume typical positions at various moments. Is it not, then, natural to expect, as Williams did actually show, that fluoroscopy will reveal in the thorax also the physiologic undulations as concomitants of the function of respiration? It is thus easy to standardize normal chest movements, to form a basis upon which to judge abnormality. It has been found, for example, that the normal excursion of the diaphragm, as judged by the movements of its shadow on the fluorescent screen, is within certain constant limitations, depending, of course, upon the force and extent of respiration, and differing slightly on the right and left sides. The expansion of the lungs themselves may be carefully observed. As the lung becomes more and more inflated, it becomes less resistant to the passage of x-rays, and this fact alone plays an important part in one's power to recognize, not only an area already diseased, but a tendency to disease through deficient expansion. It is just as easy to standardize the position and movements of the heart in this way, as well as to discern any unusual appearance in connection with it, as is so often seen in pulmonary cases.

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* Address before the Worcester North District Medical Society, July 23, 1907.

The remaining diagnostic agent of the Röntgen method is the photographic plate. What advantage has this, if any, over the screen, or does fluoroscopy, in its turn, have advantages not possessed by the plate? Williams said in 1901: "When instantaneous photography can be carried out in the lungs, a better opportunity will be offered for obtaining evidence of beginning pulmonary tuberculosis by the photograph than has hitherto been given." Our answer to this must be that we doubt that such time will ever come. Why? *Because there is no such thing as instantaneous photography*, and that there will be is the remotest sort of a possibility. Nevertheless, to the central idea of Doctor Williams's remark (to wit, that when we can obtain photographic results by exposures short enough to catch the lungs at rest, the plate method will become valuable), we are prepared definitely to answer. The routine exposure to x-rays necessary to obtain an impression of the adult thorax now is, or should be, sufficiently brief to be made easily while the patient holds his breath, either at inspiration, expiration or between the two.

It is partly on this account that examinations by röntgenography become valuable. They are valuable, also, from the fact that they furnish permanent records, to be examined at one's leisure, of existing abnormalities, and thus it becomes a simple matter to recognize a lesion which may have escaped the eye on the screen. The röntgenographic method furnishes, also, the possibility of making permanent records at various intervals in the progress of an individual's condition.

Many of my colleagues to the contrary notwithstanding, I am convinced that this method of examining a tuberculous chest cannot, to-day, supplant fluoroscopy for the following reasons:

(1) The diagnostic plate cannot show moving structures. In attempting to make a diagnosis of pulmonary tuberculosis from the degree of respiratory embarrassment, the essential is, not to observe the shadow of the diaphragm at the moment of the acme of its rise, or yet the profundity of its fall, but, rather, its rise and fall *in statu actionis*. The same is true of the pulmonary expansion; we can easily, in these days, make a röntgenograph at full inspiration, full expiration or at any *one* point in the respiratory excursion, but how, in this way, can we watch the *process* of respiration, or compare the right and left chests in motion?

(2) The diagnostic plate cannot offer another advantage which is presented by fluoroscopy — that by which the operator is empowered to increase or lessen, at his own pleasure, the penetrating strength of the Röntgen rays at his command, in the course of a single exposure. In the microscopy of urinary sediments, we are familiar with the fact that certain delicate and diaphanous tube-casts are best observed when the light from the reflector is diminished or tempered. Can you not conceive that the same necessity for holding the penetrating power of the Röntgen rays in abeyance may arise when a delicate infiltration of an apex, for instance, is to be demonstrated?

(3) The diagnostic plate can show but one aspect of the patient — any changes in position mean additional exposures. This is a difficult matter to overcome, as when the additional exposures are eventually made, many conditions, especially the degree of penetration of the x-rays, may have changed.

In order to look at the question with the greatest breadth of mind, we must consider certain qualifications of the röntgenograph not possessed by the screen:

(1) The screen cannot present its image permanently, and its images are of no value for purposes of record except as they form the bases for tracings, a matter later to be considered.

(2) The screen cannot so plainly convey its complete image on to the mind of the observer, although the deficiency may lie with the observer, no doubt. It is often hard for even a röntgenologist of experience to grasp, in the time usually occupied by a screen examination, all the points to be observed and noted. Subsequent examinations of the *same* shadow-complex are necessary, and Opportunity, in this as in other matters, knocks but once. On the other hand, the plate, produced at the time, forever repeats its story.

In the above disjointed manner, therefore, an attempt has been made to lay before you the *pros* and *cons* concerning the two great classifications of the Röntgen method of thoracic diagnosis. That these arguments for and against have many refinements and elaborations it seems hardly necessary to say. If one adheres too closely to the earlier method of fluoroscopy, he lays himself open to the criticism of being behind the times in Röntgen procedure; if, on the other hand, he be too quick to seize upon the röntgenographic method with its powers for brilliant results, he may be charged with erratic desertion of the old for the new. To all medical men who will give the matter sober thought, it must appear evident that each method has so many good points that it cannot be shaken from its place by the other.

The fluoroscopic method offers, to the trained observer at least, a greater chance for mental balancing and judgment. The röntgenographic method, on the other hand, appeals more to the clever technician as an opportunity to produce the brilliant results of his handiwork.

The fact is, gentlemen, we must accept both. We must accept the screen, because by that means we obtain a moving picture of living things obtainable in no other way. We must accept the plate also, just as, although we can feel the pulse at the radial artery, we are glad to accept a sphygmographic tracing of that pulse, or, although we can see the comet in the field of the telescope, we are glad to accept a detailed photograph of that comet and the surrounding solar system. Thus we find that the weapon we have received from Röntgen to use in this war on pulmonary tuberculosis is a double-edged sword. Although each edge cuts well, the weapon is most efficient when both are used.

It is necessary for us now to determine how much of an addition this weapon is to our armament, formidable though it seems to be. In other words, is the Röntgen method of diagnosis in pulmonary tuberculosis of value to us in the *early* cases? By early cases is here meant those cases which present no physical signs except, possibly, slight malaise with evening rise of temperature, a little loss of flesh, anemia and diminished appetite for food. It is in these cases that the most carefully conducted procedures of auscultation and percussion may offer little or no evidence. Without expectoration, it is most difficult to obtain the bacilli, and a Röntgen examination by means of the skiagraph offers no more satisfactory results than does the stethoscope. These are the cases pre-eminently for fluoroscopy. What such cases present on the screen has been so well described by Williams and others who have given the matter unbiased judgment, that repetition is not necessary. Suffice it to say that this fluoroscopic evidence is often characterized by a lessened rise and fall of the diaphragm, and a diminished expansion of the thoracic walls, even if we do not perceive, with the intensity of our x-rays under control, the unmistakable picture of a slight modification of the usual brilliancy of the lung area at one apex. A little practice will enable one keenly to observe these deficiencies, and even to measure the abnormality in centimeters.

Such cases may present to the trained ear the suspicion, for example, of prolonged transpiration on one side, or to the sensitive finger the slightest sense of resistance at one apex. This is undoubtedly true; but how often have cases been recorded where no such impressions have been conveyed to the most skilled finger or acute ear, and in which there has been found on the fluoroscopic screen the pulmonary expansion and the diaphragmatic excursion very nearly, but not quite, as full upon one side as upon the other?

When a positive diagnosis in an early case is somewhat doubtful, one would never question the convincing proof established by the presence of the bacillus tuberculosis in the sputum; nevertheless, we know that there does exist a prebacillary stage of the malady when to obtain the microorganism is a most difficult matter. There are also instances, as has been mentioned, where it is no small task to elicit signs by the stethoscope. In the face of such facts as these, it would be absurd, indeed, to claim infallibility for the Röntgen method, or for any other. All methods are useful when chosen carefully, and it is only when one is carried to extremes that the others are lost sight of.

In well-marked or late cases, where signs and symptoms are all too clearly evident by any mode of diagnosis, Röntgen examinations are valuable, chiefly as confirmatory evidence, in direct proportion to the value of any other one method. They are also directly useful in determining the *extent* of well-established disease, and the character of suspected lesions, such as cavity or calcified tubercle. In this way it is not usually more useful than other methods.

While it is my desire to avoid mention of technic as being outside the scope of this address, I wish merely to speak of one technical point. It is often desirable and advantageous to obtain tracings or outlines of fluoroscopic appearances as a means of rapid record or for teaching. This can be done by following the shadows on the screen with a pencil or other marker on celluloid or some transparent substance, in front of the screen. It is essentially desirable that the tracing apparatus be so arranged that the source of x-rays, which is behind the patient, may move with each movement of the pencil, in any direction. Thus it will be seen that the most direct x-rays will be always in a straight line from the pencil, and the element of distortion of shadow will necessarily be reduced to a minimum. This is the principle of so-called *orthodiagraphy*, which has been used, especially by the Germans, for some years. By thus outlining the application of tracings, I desire to correct the erroneous impression, created, possibly, by a previous remark, that no record can be obtained by fluoroscopy.

What is to be the future of this science, as applied to examinations of the chest? This is a question which we may well hesitate to answer, for who, in 1896, could have imagined that a permanent record of the thoracic contents on a photographic plate would eventually be made while the patient holds his breath? It is possible to conceive that our most radical advances may be exemplified by a combination of the röntgenograph and the cinematograph, or some other moving-picture device. Indeed, this has already been thought of seriously, and in a manner described. Only render it practicable, and the day will arrive when we may enjoy the altogether novel sensation of gazing at the enlarged images of our pulsating hearts and our expanding lungs projected through the stereopticon! As to the future none can say; the accomplishments of the past are marvels enough in themselves.

Conclusions which may be drawn reasonably from these observations are:

(1) That the Röntgen rays, through the media

of the screen and the photographic plate, are of distinct value in the diagnosis of pulmonary tuberculosis.

(2) That by virtue of the power given us by the Röntgen rays visually to perceive subtle changes in the thorax, we are often able to recognize the invasion of a pulmonary tuberculous process in an *earlier stage* of progress than it is to-day possible to do by the sense of hearing or touch.

(3) That to depend, however, upon the Röntgen method to the exclusion of others, namely, auscultation and percussion, the tuberculin test, or the staining fluids and the microscope, we do little else than proclaim ourselves bigots.

(4) That, if we recognize this new diagnostic agent, and make wise use of it, together with others already given us, employing *all* energetically for the benefit of the patient, while he is yet in a condition to be cured, we need never reproach ourselves with failure.

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Original Articles.

THE CHANNELS OF INFECTION IN TUBERCULOSIS, TOGETHER WITH SOME REMARKS ON THE OUTLOOK CONCERNING A SPECIFIC THERAPY.*

BY THEOBALD SMITH, M.D., BOSTON.

In choosing this somewhat well-worn subject in answer to an invitation to speak on some aspect of the problem of tuberculosis, I was led by the present rather unusual activity in the study of the digestive tract as a portal of entry. This bustling activity is due in the first place to the somewhat morbid tendency of research to seek out the new, rare and unusual, and magnify and illuminate them so that to our dazzled eyes all the laboriously reared truths of the past become invisible for the time being. It is furthermore due to the dicta of two prominent men, one of whom proclaimed that bovine tuberculosis was of no consequence as a source of the human disease, and the other that all tuberculosis originates in infancy and that much of it was due to cow's milk.

The widespread movements tending towards the education of the public concerning the nature of tuberculosis and the modes of diffusion and transmission of the bacillus had brought to the foreground the older theories that tuberculosis is largely an inhalation disease and that the chief source of infection is the coughing consumptive. While all agree that the sputum is the vehicle in which bacilli leave the body, that there is, in fact, no other mode of excretion of the bacilli in man, which can be seriously entertained, there has developed a marked disagreement, or at least an attitude of assumed ignorance, as to the chief portal of entry. While inhalation has been and is still looked upon as the most frequently used mode of entry by some, others have gone so far as to deny the aërogenic infection of the lungs completely, and they trace pulmonary disease through the avenues of the intestinal mucosa and the associated lymph nodes, or the tonsils and cervical lymph nodes. In other words, the tendency on the part of a certain group headed by von Behring has been to cut out entirely the direct introduction of tubercle bacilli into the lungs through the respiratory tract and replace it with certain more circuitous routes, dealing with ingestion rather than inhalation.

Associated with and largely responsible for this change of view as to the significance of ingestion tuberculosis is cow's milk. Were it not for cow's milk as an occasional carrier of bovine tubercle bacilli we should probably have heard little of ingestion tuberculosis.

INGESTION AND INHALATION TUBERCULOSIS.

We have thus two main questions before us: 1. Is the path of the tubercle bacillus to the lungs chiefly by way of the digestive tract? 2. To what extent is bovine tuberculosis responsible for the human disease?

The difficulty encountered in taking a definite position on the question of the paths of the tubercle bacillus, both without and within the body, is due to the fact that almost anything we may say concerning the tubercle bacillus has a grain of truth in it, and may be realized at one time or another by observation and experiment. The goal towards which we should strive, however, is to discover the ordinary, common paths, and not the merely possible or extraordinary ones. Even in the experimental disease produced by tubercle bacilli in the lower animals we occasionally encounter peculiar localizations. The cryptogenetic tuberculosis of the bones, the kidneys and other organs, wholly outside of the usual paths of the tubercle bacillus in the body, shows well the occasionally irresponsible activities of this organism.

The character of the disease started by the tubercle bacillus like that of other infectious diseases, is dependent upon a number of variable factors. Among the most important are: the virulence of the infecting organism, the age of the patient, the inherited susceptibility or predisposition, a previous infection, accidents which convert a latent or healing local into a generalized disease, and finally the mode of entry.

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* Read before The Massachusetts Medical Society, June 11, 1907.

As regards the virulence of the infecting organism, I must admit that our methods are not perfect enough to disclose minor differences. Until the facilities of the average laboratory extend to the breeding and rearing of our experimental animals, our tests upon animals can only be relied upon to distinguish such gross differences in virulence as exist between the bovine and the human type. There are, however, differences between cultures of the human type which impress themselves upon the investigator as more or less constant, although it would be difficult to define them readily. We may safely assume that a considerable number of slightly varying races of human tubercle bacilli exists, and it is probably not a matter of indifference to the patient which of them is at work.

Age is a most important factor, as all statistics and experimental inquiries show. In this respect tubercle bacilli do not differ materially from other infectious agents which find their easiest prey among the young. Statistics prove that tuberculosis becomes rapidly generalized in infancy and that it is a highly fatal disease. The conception of latency which has been introduced into the subject in recent years by von Behring does not at all tally with such statistical and pathological researches. That a bacillus which is especially virulent for the young should lie fallow in some organ or tissue of the body without multiplying is, to say at least, revolutionary to our current conceptions. Experimenters have been for years familiar with this conception of latency, or persistence,. of infectious agents in the body of those who are relatively immune, and of those who have recovered from a disease, but not with the idea that bacilli can be latent in the highly susceptible young. It is possible that such bacilli may be very feebly infectious, and that subsequent disease is not due to them, but to later infection with more virulent types. It is furthermore possible that certain antibodies may be transmitted from mother to child, and that these are slowly excreted and disappear after three or four months unless the mother's milk continues to supply them. Under such conditions it is conceivable that, in the earliest months of life, or even longer, during the period of lactation, bacilli may be restrained and then multiply subsequently.[1] In any case I doubt that such latency could be prolonged over a year at the longest. The subject is a difficult one at best. How we can tell in any case that there has been no fresh infection where we suppose the disease to have been latent, I do not see. The possibility of fresh infection with, perhaps, more virulent material must always be reckoned with.

The influence of inherited predisposition, though an unknown quantity, cannot be given up at present, and I believe it plays an important part in the fight with tuberculosis. The capacity for producing antibodies, for phagocytosis and the other protective factors probably varies from individual to individual, and has its definite, prescribed limits.

The influence of one attack of tuberculosis, provided structures have not been seriously damaged, must be considered a distinct asset, since we now know that immunization of cattle with human tubercle bacilli is possible.

The influence of accidents, such as trauma, intercurrent diseases, secondary infections in favoring dissemination of the disease, is so well known that I merely mention them.

With all these factors at work and influencing the process, it is obvious that our inferences and conclusions as regards portals of entry, dissemination and the results of different kinds of treatment must be cautiously made, for they cannot safely rest on a few in part faulty experiments, which may strain and largely overpower the physiological protective mechanisms, and which may fail to reproduce the usual conditions present during spontaneous infection, but they must also take into consideration the work of pathological anatomy and histology, and utilize the results of statistics collected at the autopsy table.

Coming to the first controverted question, whether all tuberculosis is chiefly or exclusively alimentary in origin as maintained by some to-day we find that two different lines of research are involved in it:

1. The anatomical and physiological problem of the absorption of tubercle bacilli, soot, etc., by the mucous membrane of the intestines and their conveyance to the lungs and thoracic lymph nodes without being stopped by the mesenteric nodes.

2. The behavior of the organism in the presence of tubercle bacilli in any of its tissues under the influence of different degrees of a specific resistance or immunity.

As regards the passage of bacilli through the mucosa of the intestine it may be said that some twenty years ago the opinion was quite general among pathologists that the tubercle bacillus produces a lesion at the point of entry. With the more exact and detailed study of tuberculosis in infants and children, and the disease in cattle, this position had to be gradually abandoned. To-day most authorities will admit that the tubercle bacillus may pass through mucous membranes without leaving any pathological traces of its passage, to settle down in the nearest lymph nodes.

How the bacilli gain an entrance into the lymph vessels of the mucosa, whether by the aid of normal, physiological processes, or through minute lesions, is not determined. Their next station would be the mesenteric lymph nodes. The original claim held by many to-day is that in the mesenteric lymph nodes the tubercle bacilli come to rest and multiply, producing distinct lesions. If they escape it is only after leaving the well known traces of their passage behind.

Within the past four or five years a further modification of the original position has been adopted by some, namely, that tubercle bacilli may not only pass through mucous membranes, but also through the related lymph nodes and settle down and produce disease at a point quite distant from the point of entry, without leaving any intermediate traces of their passage. It is obvious that if they escape through the mesenteric lymph nodes their next stopping place would be the capillaries of the lungs and, as a result, we would have a primary tuberculosis of the lungs due to swallowing tubercle bacilli. That this is possible few pathologists will deny; but is it probable and is its occurrence of sufficient frequency and importance to permit the overthrow of the aërogenic infection in phthisis? Two lines of experiments have been made to prove this. Dogs have been fed tubercle bacilli in milk or other fatty foods, and the tubercle bacilli found in the thoracic duct some hours later. Cattle have been fed with tubercle bacilli with stomach tube and slight tuberculosis of the lungs produced. Animals have been fed with various finely divided powders, either with or without stomach tube, and the pigments found in the lungs. These various experiments, though plausible on the surface, do not, in my mind, prove the contention. The large number of bacilli introduced may have overpowered the usual protective agencies, there may have been aspiration into the air tubes following withdrawal of the stomach tube, and finally other investigators claim that if pigments are fed in the usual way and kept wet they are not found in the lungs subsequently.

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[1] In a former paper I advanced another hypothesis to explain such latency of tubercle bacilli: The Parasitism of the Tubercle Bacillus, etc. Jour. Amer. Med. Asso., 1906.

Perhaps the most opposition has been aroused by the attempts to trace pulmonary anthracosis to the ingestion, rather than the inhalation of soot, a process firmly established by the exhaustive experiments of J. Arnold over twenty years ago. Without delaying over the experimental data, let me call attention to the fact that large amounts of fine particles are taken into the digestive tract by our domestic animals daily in their food, and if any absorption takes place it would be detected. The mesenteric and meso-colic lymph nodes of the omnivorous dirt-eating pig are free from pigment. In the ox, the mesenteric lymph nodes of the young are quite free from any pigment, but when the milk diet has been replaced by the usual diet of grass, hay and grain, these nodes become heavily pigmented, not with soot, etc., but with pigment particles derived from the blood. When we turn to the thoracic lymph nodes in the same species draining the lungs, another picture presents itself. At first these nodes are unpigmented, but as the animal grows older a faint subcortical line of pigment shows itself which grows heavier and denser with age. This consists of black particles and translucent fragments. In the horse similar conditions prevail. A delicate black tracery of the subpleural lymphatics in old animals indicates a frequent deposit in the lungs as well.

It is of interest, furthermore, to note that in cows the primary foci of tuberculosis are situated in the thoracic lymph nodes among the pigment, suggesting most convincingly the aërogenic source of both. If this pigment in these nodes comes from the intestines, why does not some of it remain in the mesenteric nodes? Why do these, instead, retain in large numbers, chiefly in phagocytes, the blood pigment, and why is this not passed on? Possibly it may be answered that a special chemotactic affinity exists between the phagocytes on the one hand, and the blood pigment on the other, which does not exist between phagocytes and soot, etc. But if this answer is true, we surely cannot pass over the still more important chemotactic affinity between tubercle bacilli and the cells of the mesenteric lymph nodes.

A careful reading of the recent literature shows that the promoters of the theory that tubercle bacilli may readily pass from the intestines to the lungs without stopping to multiply, and thereby produce disturbances on the way, have not taken sufficiently into account the fact that tubercle bacilli are not like grains of lampblack, but living organisms which arouse a more or less prompt reaction on the part of the invading tissues, and which cannot travel about the body at will without being recognized and held.

The varying conditions of immunity and predisposition have much to do with the localization of tubercle bacilli and the shaping of the disease process. It is evident that the different stages in life do not react alike towards tuberculosis.

What may be true in earliest infancy is not absolutely so in childhood. Even puberty, middle life and old age have their respective types of tuberculosis from which, it is true, there are deviations, owing to the variable factors already mentioned, but there is as a rule a clearly defined growing immunity with age. There is even a varying immunity of the different organs of the same body towards the tubercle bacillus, and this may not be the same at different ages.

The lungs may be said to be the *locus minoris resistentiæ* for tuberculosis, not only for man, but for the higher mammals as well. Disease starting elsewhere, if not checked by death or recovery, sooner or later leads up to the lungs. In my second paper on bovine and human bacilli, published nine years ago, this behavior of tubercle bacilli was fully appreciated. It is there stated: "The question of phthisis as secondary to infection by way of the digestive organs is, however, one needing more attention. . . . In all mammals the lungs are evidently the most favored place of tubercle bacilli, and wherever the latter may be deposited, they sooner or later, unless the disease is checked, reach those organs, where the process spreads more rapidly than elsewhere."

In the attempt to establish the alimentary origin of tuberculosis, some have based their arguments on the fact that inoculation into different parts of the body, even into the tail, may lead to the pulmonary disease. This fact has been known for a long time, and has been mentioned by various observers. The question before us is not whether the lungs can be made diseased secondarily. That this is possible, and occurs frequently, as in miliary tuberculosis, is well known. The real question is whether the usual types of pulmonary tuberculosis appearing at some one point in the lungs start from the intestines without leaving any signs of their passage or whether they are the result of inhalation. That is to say, Is the pathologist wholly powerless to trace the paths of the tubercle bacillus in the body? I think not. With the aid of our knowledge concerning immunity, the following general laws may be laid down:

In infants, the entry of tubercle bacilli is easier through all portals, and a generalized tuberculosis results from the rapid multiplication of bacilli and their diffusion through the feebly resistant tissues and vessels. With increasing age this indiscriminate passage of bacilli is checked, and the bacilli are held back by the reacting tissues in the nearest lymph nodes, the so called regional nodes. This gives us the common types of tuberculosis of childhood. It is also the type of the disease in young cattle. With increasing resistance, as at puberty and later, we have certain portals of entry, such as throat and intestines completely closed under ordinary conditions, and an inhalation disease appearing almost exclusively because the lungs, the most vulnerable organs, are still accessible through the respiratory passages.

COW'S MILK AND TUBERCULOSIS.

Closely interwoven with this new or revived doctrine of the alimentary origin of pulmonary tuberculosis is the widespread belief or assumption that milk infected with bovine bacilli plays a large part in the etiology of human tuberculosis. The history of this belief is of interest in showing the to-and-fro swing of medical doctrines. Following the epoch-making study of Koch in 1882, the assumed identity of bovine and human tuberculosis, as formulated by him, provided a basis for the world-wide movement against bovine tuberculosis as a source of the human disease. Excessive zeal in this direction was, however, kept in check by the scarcity of alimentary tuberculosis and the universally accepted doctrine that pulmonary phthisis was an inhalation disease.

In 1896 and 1898 I demonstrated the existence of two types of tubercle bacilli, the bovine and the human; emphasized the inadequacy of the evidence on which the transmissibility of bovine tuberculosis to man was founded, and pointed out that with the aid of these two types we could now build up more satisfactory statistics. In 1901 Koch, who had meanwhile studied the same subject, in a now memorable address, claimed that owing to the difference between human and bovine bacilli, bovine tuberculosis was a negligible factor in the human disease. As a result of this address, commissions were appointed in different countries to investigate Koch's claims. The German Commission reaffirmed the existence of the bovine and the human type, as representing distinct races of tubercle bacilli. The same has been done by the English Commission in their recent report. But the latter claim that these two types are simply extremes of an intermediate series of transition forms and admit, with considerable reserve, however, that there is some evidence of mutation, and that perhaps the bovine type may be converted into the human type by a sufficiently prolonged sojourn in the human body.

Coincident with this study of the relation of bovine and human tubercle bacilli to one another, nearly all observers who have studied series of cases of the human disease have found, in certain cases of tuberculosis, bacilli of the bovine type. The labors of Ravenel, the author, the German and English Commissions, Rabinowitsch, Fibiger and Jensen, and others have collected between 40 and 50 cases of the bovine type in infants and children. Some cases were fatal, others not. In practically all these cases the disease started either in the tonsils and related cervical lymph nodes, or in the mesenteric lymph nodes. So far as I know only one bovine culture has thus far been isolated from sputum, and this by the English Commission. Together with two other types it was isolated from a calf fed with large amounts of mixed sputum.

The cases from which these bovine bacilli were isolated are all selected cases, and we have at present no way of determining what percentage of progressive fatal tuberculosis is due to them. The statistics of alimentary tuberculosis vary from place to place, and even these cases are largely associated with the human bacillus. The only way to gain some adequate insight into the amount of damage done by bovine bacilli would be to take a series of consecutive cases both in sanatoria for adults, and in children's and infants' hospitals, and study the bacilli of every case for a given period. I venture the statement that probably not more than 1% of all cases will show bovine bacilli, and that in individuals over twelve years they will be found only very rarely. However, this is a mere guess and it should not take the place of actual figures.

The methods of isolating and identifying tubercle bacilli of the two types is now so far advanced that the clinical laboratories should take up this study. A series of cases carefully studied clinically as well as bacteriologically may lead to some means of clinical diagnosis between the two types of disease, since the bacteriological diagnosis under ordinary circumstances compels us to wait at least three months before a decision can be made. It is also highly desirable that any aberrant or peculiar type of tuberculosis be studied bacteriologically in order to determinine the nature of the invading bacilli.

The issue then would appear to be clear-cut and it would seem as if the whole question might be solved bacteriologically. But those who insist on the old doctrine of indiscriminate transmissibility of the two types of bacilli, and who are fortifying themselves by attempting to establish the doctrine of the general alimentary origin of tuberculosis, go a step farther, and assume that the bovine type may gradually change into the human type in the body, so that the adult phthisical patient would discharge the human type in his sputum, whereas he may have absorbed the bovine type earlier in life through the digestive tract. This is, perhaps, a plainer and franker statement of the hypothesis than its adherents have been willing to make, but there can be no harm in viewing its bald outlines. The possibility of such a transformation I took into account as far back as 1898, and stated it as one of the theses to be investigated, although I did not then, nor do I now, believe in its realization.

The only way in which such an hypothesis could be tested would be to find a species of mammal in which the human type is always found, perhaps some race of monkey, and pass the bovine bacillus through a series of individuals. But the possibility of latent foci in such animals might at any moment imperil the accuracy of the experiment, by bringing into our cultures a human type from outside sources.

That the tubercle bacillus possesses a certain plasticity has been brought out by various investigations. Cultures from domestic animals other than bovines, but evidently derived from the latter, I have found slightly different as regards virulence from parallel bovine cultures. But that the bovine type should be converted into the human type has no analogy in the domain of bacteriology, and as long as it is not clearly proved to occur, it cannot be accepted on mere speculation. Again, if the bovine and the human cultures are indiscriminately transmissible to either species, why should two types have arisen? These must have been developed from some parent stock in obedience to the demands of the respective host harboring them.

Bacterial species producing specific invasive diseases in man and animals have their congeries of characters well fixed. Degeneration of such characters may occur, but the transformation of one into another, even closely related, race of variety has not been accomplished. Nocard claimed to have transformed mammalian into avian tubercle bacilli, but this solitary experiment should be repeated and tested with the aid of our present knowledge of the tubercle bacillus before it can be fully accepted.

The transmission of infectious animal plagues to man occurs in the case of glanders, anthrax, rabies and bubonic plague. In these infections which are due to bacteria, only one type of microbe is known, not two. The transmission of glanders to man occurs rarely when we consider the large number of glanders-infected horses in our midst, and the opportunity for infection. Man is predisposed only to a limited degree, and the transmission of infection requires, without doubt, certain specially favoring conditions, as seems to be the case in man when exposed to the bovine tubercle bacillus. If, as is claimed by some, the bovine and human types of tubercle bacilli simply represent a connected series, and if there is no sharp distinction, it is rather strange that adult man should harbor the least virulent type. Usually, the older the attacked individual the more virulent the attacking organism, for it is the old that infect the young.

To look towards another species for the main source of contagion in a human disease which has its own bacillus and machinery of transmission is a bacteriological anomaly, which has no parallel at present, not even in the bubonic plague. The anomaly is in fact so great that no experienced bacteriologist who has studied pathogenic species over any period of time is found to favor it. At the same time, I believe that we should not stop in our investigations, but work out the problem in every direction. If an anomaly is really discovered and proved, we must accept it. But I believe it wholly premature to base upon it far-reaching practical measures, whose cost to the community might destroy the opportunity of saving many times more lives than are injured or destroyed by bovine virus. In short, the entire field of bacteriology may be hunted over without avail to find a precedent for the assumption that two distinct races of bacilli adapted to two widely separated hosts, such as the ox and man, are indiscriminately transmissible. All that we can say is that in certain receptive stages in life, characterized by a low degree of resistance, such transmission may occur, and it does occur under circumstances not yet fully known. I am, therefore, of the opinion that man has only a limited susceptibility to bovine tuberculosis depending on certain still unknown factors. It is from this standpoint that I shall discuss very briefly the practical side of the subject.

The recent attempts to prove all tuberculosis of alimentary origin, if seriously entertained and if finally proved, would lead to a certain readjustment in our sanitary measures. The tuberculous patient would not only be dangerous near us, but at any distance, provided he came into any relations with us. Those who prepare our foods could infect us at any moment. The bread and pastry we buy, the milk we drink if handled by a tuberculous patient, even the clothes we wear would bring an element of danger. Every act of coughing would be dangerous, even if the sputum were carefully destroyed, because the spray might settle down and infect our food.

It seems to me that before placing an additional ban on the tuberculous we should patiently wait for satisfactory proof, and not be stamped from one position into another before we have inquired into the qualifications of the innovators, and the accuracy, if not reasonableness, of their statements. The problem of bovine tuberculosis should be dealt with in a similar temperate manner. We have learned during the past nine years that there is a bovine and a human type of the bacillus which all reliable bacteriologists have recognized. We have furthermore learned that in a selected number of cases of alimentary tuberculosis the bovine bacillus has been found. This is all we know and all the rest is uncertain and speculative.

As regards the source of the bacillus, we know that it may come from the udder or from the feces, when sufficient cleanliness is not observed. The udder becomes tuberculous through metastasis in, perhaps, 1% of tuberculous cows, roughly speaking. The parenchyma or secreting structures become the seat of tubercles, and the milk may contain in certain cases large numbers of bacilli. When children are fed with such milk, they are overpowered by the many bacilli, and where a few might pass through, of the large numbers daily ingested, some invade the body. When udder tuberculosis exists in a herd samples of the mixed milk may prove infectious for guinea pigs, because the large numbers shed by one animal are disseminated through the entire mass, and enough may be present to make all the milk infectious for guinea pigs by inoculation.

There has been a vigorous discussion whether cows which simply react to tuberculin and which show no clinical signs of tuberculosis do or do not shed bacilli in the milk. Some observers contend that they may do so. Others deny the contention. My own experience coincides with the latter. Ostertag, who made a careful study of this subject for the Prussian government and who found no tubercle bacilli in the milk of reacting animals, pointed out that the discrepancies between observers may perhaps be explained by the soiling of the udder with feces. In cows with a discharging focus in the lungs, the swallowed sputum would maintain a slight infection of the feces. He drew the milk himself, and carefully cleansed the udder. In one case in which the feces were infectious, the udder when left uncleaned yielded milk which produced tuberculosis in guinea pigs. After due cleansing it failed to do so.

If Ostertag's interpretation is correct, and I am inclined to believe it is, a careful periodical inspection of dairies by competent and conscientious veterinarians, followed by the removal of clinically tuberculous animals, and all that had any suspicious abnormality of the udder, and the enforcing of cleanliness would eliminate practically all danger. Some chances for slight infection of the milk may still remain, as is equally true of typhoid fever, diphtheria and other infections in the dairy; but the amount of infection would be greatly reduced if not entirely eliminated, and in tuberculosis more than in any other disease, I believe that the number of bacteria plays a very important part in the final infection of the human subject.

THE RESTRICTION OF BOVINE TUBERCULOSIS.

In view of the relatively small percentage of cases of transmitted bovine tuberculosis, and the very slight chances for the infection of the milk of cows in the early stages of the disease, the question, what policy designed for the protection of the public will do the greatest good, is a perplexing one.

It seems to me that competent dairy inspection, the removal of all animals which show evidence of udder disease and which from a clinical examination can be pronounced tuberculous, and the enforcement of strict cleanliness are what should be insisted on.

This supervision, as I pointed out over ten years ago, not only greatly reduces the chances of tubercle bacilli in the milk, but it also restricts and suppresses two other factors which injure or destroy probably a hundred times more children than the bovine bacillus. These factors are miscellaneous putrefactive and fecal bacteria from filth, and the germs of specific human diseases accidentally introduced by those concerned in the production and distribution of milk.

About ten years ago the hope was entertained in some quarters that bovine tuberculosis might be completely exterminated by some concerted and persistent effort. While the attempt was in istelf laudable, it overlooked certain obvious facts, and it was planned on such a scale that it was bound to fail. It was based on the methods of procedure of the National Government in its fight against bovine pleuropneumonia and foot-and-mouth disease. The nature of these two diseases, their relation to other species, the character of the virus and its diffusion over a limited well-defined territory made the task of suppression a reasonably certain one, even though the cost was great. But bovine tuberculosis differs widely from these infectious diseases in almost every one of the details which have made the others manageable. To suppress bovine tuberculosis it will be necessary to have the co-operation, either compulsory or voluntary, of those who produce milk, and to establish, so to speak, islands or centers of tuberculosis-free animals, and slowly increase such territories. To look to our state and national governments for paternalistic aid to control a disease with which the farmers are now well acquainted will not work even if it were just to the rest of the population. The only way to make any progress is for the consumers to insist on milk from inspected herds and pay the price necessary to keep them free from disease.

In our own state, the Board of Health inspects dairy herds and the Cattle Bureau removes, pays for and slaughters clinically diseased animals. It also tests all animals coming in from other states at the public expense. What is the cattle owner doing in response to this paternal assistance to restrict tuberculosis? If we examine the annual reports of the Chief of the Cattle Bureau, Dr. Austin Peters, we find that in 1900 there were condemned, killed and paid for by the state 1,423 head of manifestly tuberculous cattle; in 1901, 1,341 head; in 1902, 1,001 head; in 1903, 1,172 head; in 1904, 1,658 head; in 1905, 1,625 head, and in 1906, 1,202 head.

In other words, the state can buy as many clinically diseased cattle as it cares to appropriate money for. The cattle owner raises his tuberculous crop each year to be shouldered and paid for by public taxation. The only way to make any progress after these many years of patient compensation for diseased animals is for the state to take them without compensation, and for the public to patronize milk from tested herds. It has been amply shown that tuberculosis can be restricted if a little thought be given to the subject. Our national government distributes tuberculin and suitable directions for its administration, free of charge. Surely the means for individual initiative are not lacking, excepting one, and that is a little judiciously applied coercion. A law to remove the item of compensation after a definite number of years would probably bring about the desired reform.

There can be no doubt that the public is in a difficult situation with reference to the milk supply. The congested population of our large cities must draw its stock from a very large territory, and few can trace to the herd the milk that is daily delivered, owing to the multiplication of middle men necessarily engaged in its distribution and the distance from which it is brought. The adjustment of this difficulty is a delicate one and is an interstate question. In the meantime, the helpless and distracted public may protect infants and young children from the occasional chances for infection by pasteurizing the milk. It should be stated in this connection that the lowest temperature which destroys tubercle bacilli is 140° F., and at this temperature the shortest allowable time is twenty minutes. The heating must be done in closed vessels to prevent the formation of a scum or film in which tubercle bacilli may survive the heat.

I wish finally to mention a possible source of infection to which no attention has been given. It is one which I mentioned as worthy of consideration in 1898. If the milk of tuberculous cows may infect children, may not the dust and dirt of cow stables affect adults working in them?

I have already stated that only one not very clear case of bovine bacilli in sputum has been reported. It seems to me that the study of a series of cases of tuberculosis among those working in cow stables is desirable at the present time, and I am prepared to make such a study if the sputum is sent to me fairly fresh and a carefully prepared record of the history and present condition of the patient forwarded with it.

The conclusions which I think are warranted by the investigations upon human and bovine tuberculosis up to the present may be stated as follows:

1. The coughing consumptive is the chief source of infection.

2. The digestive tract is not the exclusive or even predominating portal of entry for pulmonary phthisis. It is highly probable that most cases are due to inhalation or aspiration.

3. In infants the bacilli probably gain entrance through all portals more easily than later in life, and the disease becomes more easily generalized. There are no rational grounds for believing that latency in infancy plays any appreciable rôle in the disease of later decades, but ingestion probably does play a much more important part in infantile tuberculosis, owing to habits and susceptibility of this period of life, than has been granted heretofore.

4. Bovine tubercle bacilli are found associated with a certain, at present not fully calculable, proportion of cases of abdominal and cervical lymph-node tuberculosis in infants and children.

5. There is at present no evidence that bovine bacilli may be transformed and assume the human type in the human body.

6. The discharge of tubercle bacilli into the milk of cows may take place abundantly in udder tuberculosis. In a small proportion of manifestly tuberculous cows without evidence of udder disease, it may take place at times in very small numbers.

7. A reasonable restriction of bovine tuberculosis below the danger limit to man is possible with the aid of tuberculin and segregation, and the removal of clinical cases and of udder disease. An eventually complete elimination can be brought about in this way in any herd, provided other domestic animals, such as pigs, cats and dogs, are kept under control as possible reintroducers of the infection.

8. The complete elimination of bovine tuberculosis may be hoped for in the distant future. An active co-operation of individuals with municipal, state and national forces, by exerting a steady pressure and diffusing more knowledge among farmers as to the nature of tuberculosis and the use of tuberculin, may lead to its final disappearance.

9. The factor of bovine tuberculosis in the human malady is not of such importance that it should be permitted to imperil the proper execution of measures designed to relieve and cure the strictly human disease, or divert attention from it as the chief evil.

THE OUTLOOK CONCERNING A SPECIFIC THERAPY IN TUBERCULOSIS, AS VIEWED FROM THE EXPERIMENTAL AND COMPARATIVE STANDPOINT.

Having been asked to say a few words upon the present status and promise of serum therapy and vaccine in tuberculosis, I do so somewhat reluctantly, and I place myself distinctly upon the experimental standpoint for two reasons. In the first place I have had no personal experience with the use of serums or vaccines as applied to cases of the disease. In the second place I believe that our fundamental data must come from experiments on animals.

Since the various kinds of treatment of tuberculosis may all be classed either as passive or active I shall group my discussion under these heads. It is now pretty generally understood that serum therapy is a method of transmitting one or more antibodies, produced in some animal artificially, to the patient in order temporarily to fill a gap, to provide a substance which is wanting but essential in the struggle against the disease. This want is filled by the serum until the body has sufficiently recovered to manufacture for itself the antibody. The use of serums is most successful in rapid toxic diseases in which there is only toxin to be disposed of, but no bacteria. When we come to the slower invasive diseases, like tuberculosis, the injection of a therapeutic serum would have to be made over long periods of time because its need would be continuous. But even then it is a question whether the serum would be of any permanent benefit, because to throw off the disease the body must finally make its own antibodies. The serum is like a crutch which must sooner or later be given up when the patient is strong enough to try walking alone.

Approaching the subject from the practical side we know that no serums have proved to be of any generally recognized value in the treatment of invasive diseases. The immunization of large animals is slow and difficult, and it can be carried only to a certain point. Such sera would in any event be very expensive and hardly within the reach of the average patient. Then, again, the repeated injection of foreign serum over a long period is not to be looked upon lightly.

From both the experimental and the practical standpoint the outlook for serum therapy is not encouraging, though I should not wish to say that it is hopeless. In some one form or another, unknown to us at present, there may be built up from the fragments of the present passive and active forms of treatment a successful method accessible to all patients.

Owing to the difficulties, both theoretical and practical, surrounding the use of a curative serum, investigators have again turned to the method of inducing active immunity. This consists in stimulating and rousing the latent activities of the diseased body to produce its own antibodies. Begun with the introduction of the old tuberculin by Koch in 1891 it has had various fortunes, but it seems again fairly well established to-day. All the methods are based upon the introduction into the body of the products of tubercle bacilli. The fundamental underlying principle appears to be a reliance upon the diseased body itself with the understanding that it possesses sufficient forces to establish its own cure if these forces are properly husbanded and properly called forth. These forces are limited in amount at any given moment, and perhaps in time exhaustible. They should not be wasted because we know that the organism reacts with a very lavish production of antibodies. In the treated horse, for example, diphtheria antitoxin present in the blood can neutralize thousands of times the amount of toxin which is injected at any given time.

The presence of tuberculosis indicates that these antibodies are below normal, or have been so at some time in the past. These considerations suggest the use of very small doses of the stimuli and only at the proper time. Sir A. E. Wright maintains that in the antibodies known as the opsonins we have such a guide, and the index of this guide is phagocytosis. Some are inclined to neglect this guide, and utilize clinical symptoms in the treatment.

It follows from the theory of action of these stimulating substances that they are not called for in active, febrile stages, when the body is apparently fully roused and needs no stimulus from without. Under such conditions an antitoxic serum might be helpful to neutralize the over-abundance of toxins until the system had recovered itself.

It is furthermore evident that the application of these substances may bring into action various tissues of the body beside the immediate focus of disease. The whole body may thus be laid under contribution artificially to relieve a limited area, which is unable to protect itself.

In the practical development of this mode of treatment by gradual cautious stimulation, many substances have been used, all of them derived from the tubercle bacillus. The old tuberculin comes first in the order of time; next the new tuberculin, representing ground-up bacilli; then there are the watery extracts of tubercle bacilli used by Maragliano, the filtrates of the culture fluids as used by Denys, and lastly the mystical tulase of Behring. Whatever may be the perfection to which these methods of active immunization may be carried in the future, there still remains the unknown quantity of the capacity of the individual patient to produce the necessary antibodies and bactericidal forces. If these are lacking therapy is powerless to check the disease.

This discussion, brief though it be, has led up to three propositions:

1. Serum therapy is at best a temporary palliative method in infectious diseases which are long drawn out, and which must finally be met by the specific resources of the body itself.
2. The need of discriminating power on the part of the practising physician between individual and individual in the application of remedies which stimulate the production of antibodies. He is evidently not going to be eliminated by an advance in medical science. In fact, he must be better trained than ever, especially in the fundamental principles of immunity — a subject quite new but already rich in acquisitions, which may be called the physiology of the infectious diseases.
3. To each human being are given certain talents to husband and develop and not to squander, for therapy cannot add to them. It falls to the lot of the physician to discover during disease the size of those hidden talents, if he can, and to utilize and manipulate them in the best interests of his patient.

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SEPARATE NURSING AND ISOLATION IN TYPHOID FEVER.

BY ELLIOTT P. JOSLIN, M.D.,
AND
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In 1888 Dr. R. H. Fitz[1] demonstrated that typhoid fever was occasionally contracted in this vicinity by patients during their stay in a large hospital, as well as by nurses and other attendants, and he appended a list of directions for the prevention of future contagion, which received universal adoption. Yet cases of typhoid fever thus acquired continue to occur, and it is pertinent to inquire if there are not other practical, preventive measures which might advantageously be employed.

Exposure of patients. — Most private hospitals in this vicinity refuse to accept typhoid patients at all, while others do so only on the condition that the typhoid patient shall have one or more special nurses. So far as we are aware there is no private hospital in Boston which allows a nurse to attend both typhoid and non-typhoid patients at the same time. Some physicians and more surgeons refuse absolutely to send their cases to a private hospital which receives those ill with typhoid fever, and others prefer that hospital which refuses to treat the disease. Yet all of us — physicians and surgeons alike — have urged patients to enter the large public hospitals, where we knew they would be placed in close contact with typhoid cases in open wards, and cared for by nurses who also had typhoid patients under their charge. Is it justifiable to expose a patient in a large public hospital to typhoid fever any more than in a small private institution? McCrae,[2] in his excellent monograph on typhoid fever, quotes Schuder in the statement that 3.3% of all cases are due to hospital infection. Statistics upon such a point are difficult to obtain, because the average stay of patients in hospitals is so short that the disease does not usually develop until after discharge. We have therefore made no attempt to pursue this aspect of the question. Two striking instances of infection are, however, well known to the writers.

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[1] Fitz: Bost. Med. and Surg. Jour., 1888 vol. lxviii, p. 513.

Exposure of nurses. Frequently nurses are exposed unnecessarily to typhoid fever in large hospitals. It is not uncommon for each of the nurses in a ward to have charge of one or more typhoid patients along with other cases. Thus, on one day recently in one of our larger institutions, twenty-three female nurses, fifteen male nurses and thirteen physicians shared in the care of twenty-eight typhoid patients. These same patients could easily have been gathered into two small wards. Nine nurses and three ward tenders would then have been amply sufficient for their care, and thus the exposure of fourteen nurses and twelve ward tenders would have been avoided. Is this not worth while? If all the typhoid cases in a ward were given to one or more nurses and the non-typhoid cases to the remaining nurses, even then the exposure of the nursing staff would be greatly reduced.

There is little more additional exposure in caring for four typhoid patients than in caring for one. The knowledge that she was a "typhoid nurse" would lead a nurse to redouble the precautions for her own self-protection. The question would not be constantly arising, Is this a typhoid patient? for all would be typhoids and precautions would be the rule of the day and not the readily forgotten exception.

A hospital nurse in Massachusetts is about eight times as liable to contract typhoid fever as the ordinary citizen.[3] During the years 1902–1906 inclusive, we have found that twenty-six nurses contracted typhoid while working in six hospitals. The average number of nurses employed each year in these hospitals was 322 and the total number of cases under their charge, 2,988. In other words, for each 114 cases of typhoid fever treated, one nurse came down with the disease. The typhoid morbidity rate for the nurses in these same hospitals was 161 per 10,000 living instead of 20 per 10,000 living, which is approximately the typhoid morbidity rate for the whole population of the state.

When one considers the danger which nurses now run, it is perfectly plain that, under no circumstances, should a "probationer" ever come in contact with a typhoid case. Further, typhoid nurses should never be overworked, and the greatest pains should be paid to the health of the night attendants.

Ward tenders are particularly prone to typhoid fever for several reasons. Their general education is often not as good as that of nurses, and less attention is paid to their medical training. Of a yearly average of ninety-four ward tenders in five hospitals, twelve contracted typhoid, making the incidence for the five years 252 per 10,000 living; or, in other words, they are nearly thirteen times as subject to the disease as the average citizen.

It cannot be raised as an argument against this plan of concentrated nursing of typhoid patients that the nurses will get insufficient training. That might hold for some hospitals in Germany, where there are few typhoid entries in a year, but not for hospitals in the State of Massachusetts, in which during 1905, 2,794 cases of typhoid fever were reported to the Board of Health. Nor is it in any respect harder to care for several typhoid cases at one time, than for both typhoid and non-typhoid cases. On the contrary, it is far simpler to do strictly typhoid or non-typhoid nursing. The typhoid utensils will all be found in one place, supplies will be made and procured in bulk, and thus many duplicate steps saved. The concentration plan of typhoid nursing for typhoid patients should easily lessen by one-half the number of days of a nurse's exposure to typhoid fever. In the hospital above mentioned it would reduce the exposure by two thirds.

Separate nursing for typhoid patients removes the chief danger to which the other patients are exposed. The "go betweens" are eliminated.

But all such measures are only a make-shift, if the typhoid patients remain scattered about the ward. They should be grouped in neighboring beds. It is true, as Edsall has pointed out, that one typhoid case may harm a fellow typhoid case, but the danger is far less than that of giving the disease to a neighbor weakened by some other disease. Of course, such separation will naturally lead to the giving up of one side or one end of a ward to typhoid cases, and eventually of the whole ward. The isolation of typhoid patients in hospitals, as well as in private houses, was made compulsory in Germany two years ago and the day is not far distant when the unnecessary exposure of patients and nurses to typhoid fever in the United States must cease.

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[2] McCrae: Osler's "Modern Medicine," 1907, vol. ii, p. 83.

[3] At the meeting of the Association of American Physicians in Washington, May, 1907, Dr. D. L. Edsall read an instructive paper, not yet published, on typhoid contagion in hospital wards. In general, our data are similar to those he obtained for hospitals in Philadelphia.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

There is hardly a day goes by that the daily papers do not give a detailed account of some crime arising from jealousy, and it would appear natural to suppose that on a question so frequently brought up, public opinion and penal science should have arrived at a solution no longer to be disputed. Such, however, is not the case, and there are few subjects in penal law which have been so frequently discussed and will continue to be.

In most cases of so-called "justifiable homicide," the jury will render a verdict of not guilty, and it is quite certain that they cannot be blamed. We have endeavored to discover the reason for this condition of affairs and also problems that "justifiable homicide" brings up. There are three prinicipal ones which deserve attention, the first two belonging to the responsibility of the criminal from passion, the third being the question of the application of the law. Firstly, as to responsibility; should one consider an individual, carried away by his passion, possessed of his mental faculties to their full extent? At the present time we no longer possess the beautiful serenity of our ancestors who divided man into healthy beings and lunatics, the first possessing all their intellectual faculties, especially a stronger will and a mind never clouded; the others, without will, simple machines, always depending upon the physician and never on the magistrate.

The progress of medicine and psychology has taught us that a perfect moral health in man is quite as rare as his perfect physical health. Even outside the realms of characterized pathologic conditions, it is very certain that the will is quite susceptible of a plus or a minus state; man's condition of health, and his nervous system in particular, has a sure influence over his degree of volition, as well as his force of will. If this fact is considered in relation to the other upheld by Gall, who says that in every passion is to be found the starting point of a monomania, one can readily understand how the problem of responsibility is to be put for the criminal from passion. A weak man may become dominated by a passion to such a point that it completely absorbs him and he merely lives for it. In the blindness that his jealousy causes, he wakes up one day to find all things "red," and he strikes.

Should the law take into consideration this intoxication from passion, this instantaneous insanity? The psychologic problem becomes complicated by a moral problem. If passion may thus deprive an individual of his will power to such an extent that he commits a crime, is it not the fault of this man? There was a time when passion had not taken complete possession and when the subject should have struggled against it, he did not on account of presumption and self-confidence. Like Faust, he was desirous of knowing a dangerous unknown, and should he not, like Goethe's hero, pay the price of the future? Should the law be held to appreciate this particular form of responsibility? — a responsibility rather more of a social than a moral one, and consequently quite distinct from that of other criminals. It can be readily understood how complicated the question may become as soon as there is the slightest doubt of the mental condition of the accused, as, for example,— the occurrence is extremely frequent, — when insanity is found in the antecedents of the subject. We here merely indicate the problem.

Another question which comes up, relative to the responsibility of a criminal from passion, is the following: if a person is animated by rage and hatred to such a point as to wish the death of the being that he formerly loved so dearly, the unfortunate outcome is not always entirely due to the criminal, nor to the loved one, but occasionally also to defects in legislation which insufficiently protect humanity. For example, a man having seduced a young girl renders her a mother, and, as soon as he learns of this unfortunate paternity, the seducer abandons his mistress. This is a frequent occurrence, and only too often it has as a consequence to force the unfortunate girl to crime, namely, abortion, suicide, or the murder of her seducer. Beside the responsibility of this woman who murders, which we do not dispute at all, a certain portion of the responsibility is incumbent upon the victim, but is not the law itself at fault for having done nothing, or nearly nothing, to protect this young girl? Is it right that one of the two guilty ones alone should support the consequences of a common fault? Such, nevertheless, is the present condition of our law of man, and in the laudable end to protect the family, it has in reality become the protector of seduction. Certainly one cannot consider justifiable homicide as legitimate, and no one has ever tried to do so, at least of late years, although this opinion has been upheld in former times.

In condemning the accused it seems only reasonable to weigh all the various responsibilities and to diminish that which properly belongs to the accused, that which is incumbent upon society as well as that which is incumbent upon the victim. Admitting the necessity of punishing the perpetrators of crimes from passion one should take into consideration the punishment to be inflicted. This should have a double end to attain; firstly, to frighten future criminals, secondly, to repair the morality of the condemned and to give him back to society in the condition of an honest man. Now, if one rightly understands the effect of intimidation of the sentence relative to crimes from passion, its effect on moralization is hardly understood. In point of fact, it is quite certain that the accused is not, under the circumstances, tempted to commit a second crime, like a robber who recommences his exploits as soon as the occasion offers; and, on the other hand, being a perfectly honest citizen, as far as other points of morality are concerned, prison is for him more dangerous than useful. It would consequently seem that a punishment of a particular kind should be inflicted which should be purely one of intimidation, without any pretention to correct or to moralize. Consequently, the punishment should be similar in its end and execution to a political punishment.

From this it will be seen that we believe in lessening the legal punishment inflicted on criminals from passion, but we would repeat that we do not wish to convey the idea that we consider "justifiable homicide" as either right or excusable. But on account of the admiration that these crimes have given rise to in the romantic school, as well as the excessive severity of modern theorists, who consider crimes from passion as the most dangerous and the most antisocial of all, should not the attention, as well as pity, be drawn to the particular character of these murderers? The present epoch, which is more skeptic, has lost its taste for drama, and Stendhal would say that we have lost energy, when in reality we have merely become possessed of more good sense.

The punishment is not directed against an abstract crime, but a criminal; that is to say, a being having had his past, his honor and his weaknesses; when the crime is an accidental one, its perpetrator should be separated from the army of vice, which populates the prisons. Criminals for a day, they are the victims of one of the most violent passions which afflict human beings. In our eyes they certainly do not merit impunity, but rather a régime appropriate to their past, and especially to their future. In point of fact, at the present time, this class of criminal usually escapes unpunished, but in law they are murderers like any other.

That crimes from passion can never be made to disappear, no matter what measures may be employed, is evident, because an irresistible desire of cruelty slumbers at the bottom of all love. If, since the origin of the theater, if, from Euripides to Racine, from Shakespeare to the Romantics, murder from love has been the subject of the drama, it is because it responds to the sentiments, to the pain and hatred that all may feel and which are quite as imperishable as the human race.

Before proceeding, it might perhaps be well to ask, What is a crime from passion? An eminent magistrate of Paris replied, when asked this question: "There is no crime from passion, and they are merely called such in cases where the jury acquit the criminal., Or, rather, all crimes are from passion, because all are produced by our passions, such as cupidity, or love, ambition or cruelty." That this reply is sound is evident, because when one reflects it will be seen that there is not a single crime committed when all types of passion are lacking.

The expression, "crime from passion" understood and employed currently, is evidently inexact. Crimes from passion are certainly inspired by passion, but they are like all others as far as this is concerned, because some passion is nearly always the cause of a criminal act.

Public opinion, through the voice of the jury, was the first to make notice of and place apart these crimes, and from this very reason, it is readily understood that this term is neither precise nor scientific. The origin of this term is easily understood when one takes into consideration the current acceptation in ordinary conversation of the word "passion." When one speaks of a passion felt by a man, without defining the nature of the passion, it is always attributed to love. Thus understanding the word passion, one would naturally understand that a crime from passion is a crime of love. This, however, is not entirely so, because one should add that in ordinary crimes, passion is in conformity with personal interests, while here it is the contrary; the robber, counterfeiter, or assassin has a passion for money, for gambling or luxury, but when sifted down, the end attained by his crime is to give him some personal profit, a material benefit posterior to the crime committed.

Quite another affair is the cause which animates the criminal from passion. He is essentially disinterested; forced by the violence of his love or of his hatred, after a struggle of more or less duration, he commits his murder, but the crime once accomplished all is finished as far as he is concerned. He has no future benefit to look forward to; the final end that he proposes is the crime itself, and this may be carried to such a point that frequently, his object accomplished, he takes his own life, or gives himself up to justice. Under these circumstances passion plays a much greater part than in ordinary crimes, and becoming in reality an impulse it would seem that it itself committed the crime. From this truth, which at least seems apparent, public opinion had a vague and confused consciousness, in reality quite just, by giving to these crimes the name of crimes from passion. To sum up, and as much as a popular term can be precise, we will consider under the head of crimes from passion those caused by love, which have an entirely disinterested character, and where the violence of the passion alone urged on a normally honest man to commit a crime.

We have just pointed out that a crime from passion was one produced under certain conditions by love. But it may be questioned how love, which is the principle of life and the preservation of the race, can be a cause of death and how a form of affection may result in hatred. To this it may be said that love is an eminently exclusive sentiment and any division is for it a horror. Jealousy is so much the essence of love that the males of wild animals, even of the kindest types, fight among themselves at the time of fecundation. Civilization has not greatly modified these sentiments in man, and Paul Bourget has said: "*Tous les autres appétits, dit un psychologue contemporain, sont plus ou moins contenus dans les barrières sociales; nous nous battons bien pour le pain, comme nos ancêtres des forêts séculaires se battirent pour un morceau de viande crue, mais c'est sous l'œil des gendarmes, et d'après les conditions fixes du Code. L'amour seul est le demeure irréductible comme la mort aux conventions humaines.*"

Vengeance from jealousy is not always a crime; according to the person who is jealous, his social rank and his nationality, his vengeance will take on such and such a form. It is sometimes calumny, sometimes a subtle address in creating enemies against the loved and hated person. Or to enter into the domain of jurisprudence, it will often be a denunciation, true or calumnious, perjury and so forth, and the list would never end if one were to enumerate all the forms under which hatred and vengeance appear. In 1903 a witness cruelly charged an accused, and when the presiding judge interrupted, saying, " What you are saying is extremely serious for the accused. Have you no motive for wishing to do so? " He received for a reply from the witness: " Your Honor, I was her lover! " — a sentence which had far more import than he realized.

One of the most tragic vengeances which was executed under the form of a denunciation was certainly that of Eyraud, the assassin. Having taken refuge in the United States, he had completely escaped all the investigations of the police and appeared to be forever under cover until his mistress left him. He wrote to the head of the police department in Paris to denounce them both, and in order to bring his mistress to her loss, he himself brought his head to the scaffold.

Occasionally jealousy manifests itself in its violent and primitive loss by murder. A jealous man becomes brutal and agitated; he cannot suffer the presence of any one near the one he loves. From a quiet and good dispositioned person, the becomes easily angered. Never certain of the fidelity of the one he loves, always doubting and always reassured, he makes her unhappy by his reproaches and becomes odious to her by his love. Finally, a day comes when he can no longer contain himself; he gives himself up to his passion and, if he is weak, he seeks justice by an assassination. Whether or not he has resisted the impulse of his jealousy for a short or long time, no argument can be made against him by saying that he might have continued to resist. This would be quite just if the passion was invariable, but such is not the case. Jealousy always increases or may even undergo sudden attacks of violence. After a time this obsession of jealousy produces a dissolving effect on the will of the subject. An honest man may have the temptation to commit some offence; physicians and moralists are fully in accord on this point, but the habit of an honest life in this man has such a power over him, the disproportion between his entire life and this single idea is so great, that there is not even any struggle on his part. As soon as the idea is conceived it vanishes. On the contrary, what makes the temptation to avenge so dangerous in a jealous man is the permanence of his passion.

Jealousy is a continuous pain, or rather one that returns without cessation; it is not a single one, but is multiple; it takes on the most varied forms, coming to the mind for things which are the most foreign to it. It makes the reasoning false by representing murder as an act of justice. It is not merely a mental deviation, it is more especially a moral pain, or even a physical agony.

The idea of vengeance, born from jealousy, thus little by little increases in intensity on account of the persistency of a state that has been quite aptly called by Moreau de Tours a " dislocation of the will." The condition becomes more irresistible from the fact of its duration, just as a body falling to the ground becomes more rapid in its descent the greater the distance is. Thus may be explained the acts of certain individuals who are quiet and good tempered, who on a certain day show an unheard-of ferocity. The death of their victim does not put an end to their anger and they mutilate the cadaver with blows and cuts. We do not think it reasonable to admit that this rage and cruelty changes the nature of the crime, because the fury is merely a proof of the loss of mental control of the murderer much more than the ferocity of his nature.

Upon other occasions the crime is committed after a long period of " chronic jealousy," and then again, on the contrary, a fury ending in a murder arises suddenly. This jealousy and the crime are, under these circumstances, so rapid in development that the murderer is incapable of explaining his act. As examples, I would mention the following instances: A Parisian paper, *L'Evènement*, Dec. 14, 1876, states that a fearful drama took place two days before. Two friends, X and Z, dined together in company with the wife of the former. After the dinner the two men went to play dominoes at a café. After a short time Z said: " I feel tired; I am going to bed early." X let him go without saying anything, but he felt extremely jealous, fearing that his friend had gone to rejoin his wife. He waited a quarter of an hour and then went home, letting himself in rapidly and surprised Z with his wife. Anger got the best of him, and seizing an axe he rushed upon the seducer. " Stop! " cried his wife, throwing herself in front of her lover. In doing this she received the blow from the axe on the shoulder and fell. She was carried to the hospital and died. The accused in this case was acquitted, although premeditation was fully proven at the trial. The well-known murder of Keyes by Gen. Dan Sickles is also similar; Sickles was acquitted on the ground of " justifiable homicide."

Here, on the other hand, is another case which is an example of pure, spontaneous jealousy. A peasant by the name of Dinan was brought to trial for murder. He had been vaguely jealous of his wife, and in a half joking way had said that " any one found in his wife's bed would meet misfortune." On a certain night he went home and found a man with his wife. Insane with anger he threw himself upon him and beat him to such a point that the man died in the night. In this case also the accused was acquitted.

The following case of murder is a still better example of a sudden attack of jealousy. A butcher boy was the lover of his employer, and it had been understood that he should soon marry her. She was a widow and had a son twenty years of age. She asked her lover to wait a year before the marriage, so that her son could learn a trade in order to support a family. The woman, as may be seen, was most practical and knew how to conciliate the pleasures of love with the duties of maternity, but, before taking another master, she was desirous of profiting by her liberty and found another lover. One day, when she was returning from the country with the latter, she met her fiancé, who at once took in the situation. He immediately asked her to give him an explanation, but she laughingly replied that she was still free and had no accounts of herself to give to any body. Unfortunately a large butcher's knife was there and her fiancé fell upon her, stabbing her several times; then turning his fury upon himself he endeavored to commit suicide by stabbing himself thirteen times. Taken to the hospital in a serious condition he finally recovered. At the trial the accused was found guilty with extenuating circumstances and was condemned to five years' imprisonment.

It should be pointed out that, in this case, the murderer of a mistress by her lover, of a rival by a lover, or the murder of a husband by his wife, are instances which can ordinarily be proven to be accomplished from jealousy alone. These, however, are not the only crimes from jealousy, but when it is a case of murder of the wife by her husband, of a seducer by his victim, there is another sentiment which becomes combined with jealousy, namely, vengeance of an outraged honor, occasionally defence or vengeance for the children, or even a fear of being ridiculed or one of interest.

Beside these crimes, double suicide from passion should also be considered, because, in the first place, jealousy plays the principal part in these cases, and also especially because between the crime and the double suicide there exist a large number of links which unite them and oblige one to examine them together. At the present time suicide is not punished by law but suicide executed by a third party, that is to say, the murder of an individual who consents to be killed, is punished like an ordinary murder, and these instances frequently give rise to trials. In these suicides it ordinarily happens that one of the parties executes the two murders, and usually it is the man who, in the first place, kills his mistress and then himself afterwards. Now, it may happen that when the murder has been accomplished, the sight of the victim troubles the murderer. The mortal blow was well given in the first case, but when it comes to taking his own life, his hand trembles and he cannot give himself the mortal blow. Then again the blood, the cadaver of his victim and the thought of an approaching end calms the mental exaltation, during which he had conceived the project of committing suicide and he hesitates, is seized with fright and does not kill himself. But he is obliged to appear before justice and give an account of his crime.

What is the motive which may force two beings, who love, to their death and who seem to have every possible reason for wishing to live? This motive can be readily understood when some obstacle opposes the union of the two lovers. Frequently this obstacle is to be found in the opposition of parents who refuse to give their consent to the marriage of their son or daughter, on account of the disproportion of fortune or social rank. Young people who cannot thus be united like better to die together than to live separately. They threaten their parents that they will kill themselves, but the former, having passed the age of great passion and romantic ideas, merely shrug their shoulders and only come out of their incredulity after the death of their children.

On the 31st of August, 1897, a young man and a young woman committed suicide in Paris. When dying the young girl wrote as follows to her parents: "Since I have no hope of marrying him I prefer to die with him. Death will unite us forever. I shall be happy. Above all things do not let any one touch my wedding ring."

On the contrary, it may happen that the parents of the young man will not give their consent, as is shown by the following case, which also took place in Paris. In order to prevent the marriage of their son, which they disapproved of, they made calumnious statements relative to the young woman, and when this came to the girl's knowledge she wrote his parents before dying: "To prove to you that I am not a woman belonging to all men, I am going to die with my Léon, because I love him and cannot live without him."

In this last case it would appear quite evident that the suicide had been wished for by the young woman in the first place, but that by jealousy she forced her lover to kill himself. This supposition was confirmed by a letter in which the young man took particular care to defend the memory of his fiancée from this accusation.

(To be continued.)

Clinical Department.

REPORT OF A CASE OF FRACTURE INTO ACETABULUM WITH SEPARATION AT SACRO-ILIAC SYNCHONDROSIS WITHOUT CLINICAL SYMPTOMS.

BY JOHN D. ADAMS, M.D., BOSTON.

This case is interesting through the inconsistency of its clinical aspects to the x-ray findings.

A girl, nineteen years old, was struck and knocked down by an automobile going fifteen miles an hour. She was pulled out from under the car and carried into a neighboring store. She was seen ten minutes after presenting the following picture:

Conscious, pulse 120, complaining of pain in left side from hip down to foot.

Examination. — Abrasions on left side with contusion of left hip; motions of left leg somewhat painful; no muscular spasm; no evidence of fracture or dislocation. Walked with limp but with ability to use leg; no limitation of motion in joint; reflexes normal. Acute retention for twenty-four hours. Hyperesthesia over area supplied by lower sacral nerves.

Forty-eight hours later, after rest in bed, was able to get out of bed and suffered no inconvenience in walking except from general muscular soreness; no limitation of motion at hip-joint; area of hyperesthesia entirely cleared up. Kept in bed.

Five days after the accident the accompanying x-rays were taken by Dr. A. W. George showing a fracture into acetabulum with separation at sacro-iliac synchondrosis.

Plaster jacket applied to pelvis and kept quiet for ten days, at the end of which time jacket removed and examination showed absolutely no disability as evidenced by limitation of motion, spasm or limp.

Four months after accident examination showed absolutely nothing abnormal.

This case demonstrates very clearly the importance of x-ray in diagnosis as, without doubt, this fracture would have gone unrecognized without x-ray as the case presented no clinical symptoms indicative of its existence.

Reports of Societies.

TRANSACTIONS OF THE TWENTY-NINTH ANNUAL CONGRESS OF THE AMERICAN LARYNGOLOGICAL ASSOCIATION.

Held at Washington, D. C., May 7, 8 and 9, 1907, in Connection with the Seventh Triennial Congress of American Physicians and Surgeons.

(Concluded from No. 12, p. 403.)

Third Day (continued).

STRAIGHTENING THE NASAL SEPTUM.

Dr. A. W. Watson, of Philadelphia, Pa., discussed this question with special reference to the operation devised by him several years ago. It was his view that when a septum could be put in proper place without resection, the patient was better off than if the septal framework had been removed. The methods of his operation for which he claimed originality were the overlap and the beveled, incision. This procedure was applicable to the vast majority of cases. In every case the two conditions to be met and overcome are resiliency and redundancy of tissue. The author thus described his operation: incision on convex side of septum from behind forward just beneath the angle of deflection, following the angle to its anterior extremity and then curving upward for a short distance. This cut should be beveled, and by preference is *not* carried through the mucosa of the concave side. The upper part of the septum is then pushed over the lower portion into the opposite side, thus overlapping the lower portion. If the angle is perpendicular the incision is then made behind the angle, the bevel being from behind forward. An incision is also made at the base forward from the first incision forming a triangular flap. The posterior edge of the anterior portion is then pushed over the posterior portion. If as is frequent, both horizontal and perpendicular angles exist, both incisions are made meeting at the base. The anterior fragment is first made to overlap the posterior, and then the upper portion including the anterior portion is made to overlap the basal portion. This forms a double locking. If the deflection extends into the bony septum the bony deflection is easily broken and replaced with forceps. If the septum is thickened below the horizontal angle the thickened base which protrudes into the formerly obstructed naris should be dealt with as are spurs, etc. If the septum is thin in the lower part and projects unduly into the naris it may be broken into a perpendicular position in line with the upper portion, thus increasing the overlap and making the septum more firm, the bony base soon uniting by bony union. The author passes into the formerly obstructed side a folded piece of antiseptic gauze long enough to extend the length of the former deflection and about one third to half an inch wide, thick enough to pass easily. This should be changed every three or four days until healing is complete, — about four weeks. The instruments used are a straight knife like a tenatome and the same with a blade at an obtuse angle. These suffice for the horizontal incision. For the perpendicular incision a knife with a small blade bent on the flat almost to a right angle and sharp on both edges. The forceps are a modified Adams, the fenestrum being lengthened to an inch and a quarter so as to reach any part of the bony septum.

Dr. A. A. Bliss, Philadelphia, had had much satisfaction with the Watson operation. Sub-mucous resection was being overdone. For the angular deflections the Watson operation was preferable.

Dr. Emil Mayer would also commend the Watson operation for angular deflections. He would like to lay stress on the matter of freshening the edges of the floor on the concave side after having performed the operation on the convex side. This gives a double opportunity for holding the part pushed over into the concavity. He preferred hard rubber tubes to gauze for packing. No one operation sufficed for every case.

Dr. W. E. Casselberry asked if it was not possible to obviate the second operation sometimes called for, namely, the removal, as we would take off a spur, of the thickening along the long part of the horizontal cut protruding into the naris of the convex side after healing. The Watson operation could be done quickly, efficiently and without difficulty. He preferred to operate under general anesthesia.

Dr. Watson stated that by preference he went through the mucosa of one side only but this restriction was not always possible.

Dr. L. Ballenger, Chicago, thought that if we could save the framework of the septum it was most advisable to do so. He had one sinking in of the nose after a sub-mucous operation, not having made due allowance for the chondritis undoubtedly following the injury.

Dr. R. C. Myles referred to the various operations devised during the last few years. Submucous operations were not free from danger, as he knew of two cases resulting fatally. The deeper the operation on the bony septum, the greater the element of danger. He thought the perpendicular plate of the ethmoid a very difficult thing to handle.

Dr. J. Solis-Cohen made comparisons between the mechanical principles involved in the Watson and in the Gleason operations. He had seen serious cerebral effects follow the latter.

Discussion was closed by Dr. Watson.

LARGE TUMOR OF THE LARYNGO-PHARYNX REMOVED BY SUBHYOID PHARYNGOTOMY.

Dr. W. F. Chappell, of New York City, reported the case of a large tumor of the pharynx occurring in a woman of fifty-one years, who at her thirty-sixth year had a grippal attack leaving her hoarse. At the forty-fifth year the breathing became labored, being much worse at night. Two years later she began to choke on particles of food, to have increased dyspnea, difficulty in sleeping, severe headache and vertigo. In her fifty-first year she came under the reporter's observation. A large mass was found to completely fill the laryngo-pharynx, pressing the epiglottis forward against the root of the tongue and laterally touching the pharyngeal wall. Posteriorly it extended downward some distance and it was difficult to see how the patient could breathe or nourish herself. The laryngeal interior could not be seen. The surface of the mass was covered with large tortuous vessels. A low tracheotomy was done under cocaine. Later an effort was made to remove the growth with a cold wire snare but adhesions prevented. The solid nature of the tumor was determined by introduction of a curved scalpel. A subhyoid pharyngotomy was then done. The pedicle was found close to the left ary-epiglottic fold and was tied off with a silk ligature. The circumference of the mass was four and one-half inches, and it was found to consist of fibrous tissue very moderately supplied with nuclei and round cells. The patient made a good recovery. Difficulty in nutrition caused some scorbutic symptoms but these were promptly relieved by fruit acids. The reporter had found records of eleven similar growths.

PLEA FOR LOCAL ANESTHESIA IN OPERATIONS ON THE MAXILLARY SINUS.

A paper with this title was read by **Dr. Gordon King**, of New Orleans. He took the position that we ought to minimize the dangers of anesthetics as much as possible and that we ought consequently to employ local instead of general anesthesia whenever and wherever possible. In operations around the mouth and pharynx, general anesthesia caused annoyance and delay from nausea and vomiting, inhalation of blood secretions into the larynx and frequent interference with the administration of the anesthetic. The author was led to employ local anesthesia in antrum operations two years and had used them only since that time. He is a loyal adherent of the Caldwell-Luc operation and has been able to finish it in less than twenty minutes. He swabs the mucosa briskly with a 10% cocaine solution, and when the area has become insensible to the needle point, he injects a solution of 2% strength with 1-2000 adrenalin along the line of incision, at first superficially into the submucous tissue and later into or under the periosteum. This done, incision is made down to the bone and the periosteum elevated until the exact situation of the infra-orbital foramen can be made out when, to insure perfect and widespread anesthesia, a few drops of the solution are injected into or around the trunk of the infra-orbital nerve at its point of exit. He finds it prudent not to lay bare the nerve itself as this may lead to post-operative neuralgia or neuritis. The bone being sufficiently exposed to allow of easy access to the antral cavity, the latter is opened with a chisel or electric burr when several drops of 10% cocaine and some adrenalin are introduced into the cavity which is then swabbed by means of a cotton carrier. A few minutes must be allowed at this point for absorption of the solution, and the time may be utilized by applying a pledget of cotton saturated with the solution under the inferior turbinate where the counter-opening is to be made into the nose. The antrum is then curetted, the counter-opening made and the buccal wound sutured. Adrenalin lessens the blood flow and prolongs the effect of the cocaine while offsetting the toxic tendency of the latter. The author has followed the foregoing plan in some 15 cases and with most satisfactory results. In two instances he has performed the radical operation on the frontal sinus under local anesthesia, but here the results have not been so satisfactory, as this region is more sensitive and less susceptible to thorough cocainization.

Dr. R. C. Myles stated that he had operated on 200 antral cases during the last fifteen or twenty years, but that during the last eight or ten years not more than 2% of the operations were done under general anesthesia. He had gradually diminished the strength of the cocaine solution until now he rarely used more than ⅕%. The operation was practically painless unless we got near some dental nerve. Water, by its pressure on the nerves, sometimes gave as good anesthesia as did cocaine. Of late years he had preferred the nasal route, introducing a light platinum needle under the inferior turbinate and then introducing the cocaine and adrenalin through the opening thus made, for the most of the pain was in the antral mucosa. He did not believe in putting the cocaine on a region on which he did not intend to operate and therefore considered it unwise to spray it indefinitely. He knew of several deaths from general anesthesia. They were more than published reports would lead us to believe.

Dr. W. E. Casselberry could also commend the use of local anesthesia for these operations. He had not been able, however, to operate as quickly as had Dr. King. The injection of some of the solution into the region of the infra-orbital nerve, as had been suggested by Dr. King would doubtless be a very useful addition to the procedure.

In closing the discussion Dr. King said that local anesthesia facilitated the operation. It avoided all the objections which arise from the use of a general anesthetic in operations about the mouth. After an opening was made into the antrum, a 10% solution could be injected and by the time the antrum was thoroughly opened it was insensitive to pain. A still stronger solution could be swabbed on the interior surface of the cavity.

MYXO-FIBROMA OF THE NASO-PHARYNX.

After some general observations on tumors of this nature occurring in the naso-pharynx, **Dr. D. Braden Kyle** presented a specimen removed from a man of twenty-four years who complained of inability to breathe and of almost continuous pain or aching in the region of the frontal sinus or over the bridge of the nose. On the right side a mass almost protruded from the naris. The mirror outlined a mass in the naso-pharynx but it did not extend below the margin of the soft palate. There was considerable catarrhal discharge but no evidences of sinus or ear trouble. A distinct swelling was evident at the inner corner of the right eye. The left naris was occluded owing to pressure of the tumor on the septum. The mass was removed without difficulty, and six weeks later the patient was in good condition with both nares of practically the same size. The interesting points in the case were the site of origin, at the posterior end of and under the superior turbinate, the symptoms of nasal occlusion by septal pressure, the fact that the growth did not follow the path of least resistance, the practical absence of hemorrhage, the pedunculated nature of the mass removed, the absence of ear and sinus involvement. The bony septum seemed to have been softened by the pressure and inflammatory process. It was easily forced back into the median line by the nasal dilator and remained in position without the aid of splints.

Dr. John W. Farlow stated that one symptom in a patient of his and not present in that of Dr. Kyle was a change in the voice. The growth was larger even than in Dr. Kyle's case. The character of the voice changed immediately after the tumor was removed. His patient had formerly pronounced the letter *m* as *b* but as soon as the growth was removed the *m* came out very clearly.

Dr. A. W. Watson had had a similar case in which the circumference of the growth was about six inches. It had involved both sides of the septum and extended into one antrum producing some facial protrusion on that side. The large mass filling the naso-pharynx was removed with the snare. The entire vault of the pharynx was covered, however, with similar material and was reproduced as fast as it was cleared away, but under the influence of electric needles it began to diminish and finally ceased growing.

Dr. Gordon King had recently removed a myxo-fibroma as large as a hen's egg and found the site of attachment to be the ala of the nose.

Dr. William Lincoln, Cleveland, said that not all cases were so favorable as was that of Dr. Kyle in regard to distribution of blood vessels. In a recent case of his own, snares and forceps were useless and he was obliged to remove the nose on one side, lay it over on the face and so gain free access to the tumor. Adhesions were separated with the spatula and the cautery used. In removing the nose he had cut in on the sound side so that the inevitable suppuration was discharged not through the wound but into the pharynx. The mass projected into the naso-pharynx and needles were used here, as explained by Dr. Watson.

Dr. J. N. Mackenzie gave the history of a case illustrating the occasional impossibility of removing these tumors through the internal passages. They might become rooted in many places. In one instance he had been compelled to turn the patient over to the general surgeon who did a modified Langenbeck operation dissecting out the growth in that way. Severe hemorrhage accompanied the procedure.

Dr. W. E. Casselberry said that the tumor mentioned by the last speaker was probably a fibroma, while Dr. Kyle had spoken of myxo-fibroma which was quite another form of neoplasm. The two conditions should not be confused because the treatment of one was entirely different from that of the other.

Dr. Kyle, in closing the discussion, said that it was difficult to see why such soft growths should cause so much bony displacement.

EPITHELIOMA OF THE TONGUE; EARLY DIAGNOSIS; OPERATION; RECOVERY.

The history of the case was presented by Dr. Robert C. Myles, of New York, whose patient was a man of sixty-four years, who had been annoyed for a few weeks before coming under observation by a sensitive spot on the left side of the tongue, a little in front of the insertion of the palato-glossus muscle. At this site there was a small, hard and roughened area suggesting malignancy. Iodides were tried without avail and operation was decided on. This was done by Dr. J. A. Bodine who thoroughly dissected out all the superficial and deep cervical glands and also the submaxillary, salivary and sublingual glands and much of the connective tissue along the jugular vein and carotid artery in order that many of the small undetectable lymphatics might be removed. Then, with heavy scissors, section was made of the affected area in healthy tissue at a distance of from one half to three quarters of an inch from the margin of the growth. It was necessary to sever the left palato-glossus muscle and parts of the genio-hyo-glossus, stylo-glossus, hyo-glossus and lingualis. This caused the tongue to curl upward at the tip and to fall back on the epiglottis at the left base. The patient made a good recovery from the operation which was done six months ago. The microscopist reported that the growth removed was a squamous-celled carcinoma. The glands removed were somewhat inflamed but showed no metastases.

Dr. J. H. Bryan, Washington, was very much interested in the subject of cancer of the tongue, and related the histories of two personal cases under his recent care. The fate of the patient depended on the early recognition of the disease. The cases should be recognized in the pre-cancerous stage. Recurrence sometimes occurred on the side opposite to that of the original disease because of the richness of the tongue in lymphatics, the circulation of which the raphe was not able to shut off. The glands ought to be excised on both sides.

Dr. J. N. Mackenzie said that the Baltimore surgeons believed that the whole floor of the mouth ought to be excised.

Dr. George E. Shambaugh, Chicago, said that he had had a recent case of cancer of the neck which seemed to him to be rather unusual. He thought that the development of the tongue explained it. The anterior part of the tongue developed in halves while the back part developed as a central piece.

Dr. Myles closed the discussion.

At the closing executive session it was announced that the retiring President, Dr. de Roaldes, had offered the Association five hundred dollars for the establishment of a prize fund. This offer was gratefully accepted and it was voted to attach to the fund the name of the donor.

The following gentlemen were elected to membership: For Honorary Fellow, Prof. Leopold Von Schroetter, of Vienna (transferred from the list of Corresponding Fellows). Active Fellows: Dr. Joseph S. Gibb, Philadelphia, Pa., proposed by Drs. Lincoln and Packard. Thesis, "Is there an Ideal Operation for the Correction of Deviations of the Nasal Septum?" Dr. Christian R. Holmes, Cincinnati, Ohio, proposed by Drs. Kyle and Mayer. Thesis, "Pyogenic Diseases of the Accessory Sinuses of the Nose and the Etiology of Facial Erysipelas, Including Secondary Effects upon the Eyes." Dr. Chevalier Jackson, Pittsburg, Pa., proposed by Drs. Freer and Harris. Thesis, "Ligation of the External Carotid Artery from the Pharyngo-rhinologic View Point; Report of Cases." Dr. George E. Shambaugh, Chicago, Ill., proposed by Drs. Rhodes and Casselberry. Thesis, "The Architecture of the Ethmoid Labyrinth." The election of officers for the coming year resulted as follows: President, Dr. Herbert S. Birkett, Montreal; First Vice-President, Dr. J. Payson Clark, Boston, Mass.; Second Vice-President, Dr. J. Edwin Rhodes, Chicago, Ill.; Secretary and Treasurer, Dr. James E. Newcomb, 118 West 69th Street, New York City; Librarian, Dr. Joseph H. Bryan, Washington, D. C.; Member of Council to serve for four years, Dr. A. W. de Roaldes, New Orleans, La. The determination of date and place for the next Congress will be decided by the Council. The meeting was the largest in the history of the Association.

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Book Reviews.

Surgical Instruments in Greek and Roman Times. By John Stewart Milne, M.A., M.D., Aberdeen; Keith Gold Medalist in Clinical Surgery. With illustrations. Oxford: at the Clarendon Press. 1907.

This is a gem of a book, in refreshing contrast to many of the commercial productions with which the publishers are flooding the medical-book market. It is original, sincere and thorough. The author, a young man and a recent graduate in medicine, has devoted six years to the collection of his material and gives us this monograph as the thesis which formed part of the examination for the degree of M.D. of the University of Aberdeen. It was successful in gaining "Highest Honors." One must believe the writer to be an accomplished linguist, with a familiarity with languages ancient and modern far greater than we see in the average medical graduate. He has read searchingly, and in the original, the works of Hippocrates, Celsus, Aretæus, Galen, Oribasius, Soranus, Aëtius, Paul of Egina and dozens of others, — Greek, Latin, Arabic and medieval writers, while he acknowledges modestly his deep obligation to the distinguished English scholar, Francis Adams. The writing is so thorough and convincing that one feels we have among us again an English-speaking medical historian of the first rank. And Milne is evidently not only an historian but an accomplished physician.

The author divides his book into eleven chapters and two appendices, with a satisfactory index — English, Latin and Greek. He recalls for us, first, the famous surgeons of antiquity, glancing hastily at some of their contributions to our art and describing the instruments which they enumerate. It is an interesting fact that recent excavations and discoveries have now put into our hands material for such a book as this, for Milne explains that Adams, writing sixty years ago, was unable to account satisfactorily for many of the instruments he describes, because sixty years ago the actual instruments had not been discovered to illustrate and make definite such writing. Truly, as the author states, comparatively little attention has been given to this department of archeology. Whatever literature we have is entirely continental and consists of a series of reports of different finds, with attempts to indicate the uses of the instruments described.

Every chapter of Milne's book bristles with novel and refreshing information. One learns with keen interest how both the Greeks and Romans made their instruments of finely tempered steel as well as of the more common bronze. Unfortunately, while the bronze has survived, most of the steel has been oxidized and has disappeared. The ancients used ores of a high quality, and we are told of the heaps of scoriæ left in the Forest of Dean by the Roman founders, — refuse which contains so large a percentage of iron still remaining that the scoriæ were melted over again in later times and occupied more than twenty furnaces for two hundred years.

The ancients used bronze — a mixture of copper and tin — for many instruments, especially for instrument handles, for ornamentation and for instrument and medicine cases; and they employed other metals as well as horn, wood and stone for appropriate utensils.

The most prolific sources of finds are the excavations at Herculaneum and Pompeii, but there are numerous others of less richness throughout Italy, France, Greece, and even Germany, for we learn that so lately as 1893 important excavations in the Roman military hospital at Baden resulted in an extensive find.

Space does not allow a detailed description of the ancient instruments, but one notes especially the character of the operating knives with blades of steel and handles of bronze, the nearer end of the handle ornamented with a leaf-shaped spatula to act as a blunt dissector much like the useful knife which J. Collins Warren recently has popularized. Knives were of all shapes and varieties from the long amputating blade to the delicate instrument used for plastics of the eyelid. There were shears and scissors also; and there were probes and specula, especially of the tri-valve type as Milne shows in his interesting illustrations. (Recently this reviewer saw a model of a Pompeiian trivalve speculum in the possession of Roswell Park.) The specula, probes and knives with their uses are graphically described by the author, though the modern surgeon shrinks at a rehearsal of elaborate operations performed without anesthesia or asepsis upon such organs as the brain and intestines. Few books bring before us so clearly the details and terrors of that ancient surgery. We read also of the needles and bodkins of Hippocrates, of uterine sounds and dilators, of blunt dissectors and curved hooks, and of forceps of great variety. One is interested to learn that the common form *Vulsellum* finds no authority in classical usage, for the Romans wrote *Vulsella*, — *æ* feminine. Bleeding cups and clysters have less interest for modern readers, though the custom of cupping is mentioned in the Hindoo Vedas; but we read of the syringe, commonly constructed of a leather bag, armed with a metallic tube, a form which held its own until the early part of the nineteenth century. Cauteries were in common use and were made of iron, *ferrum candens* being the familiar term. There were elaborate bone and tooth instruments, rongeurs, chisels, gouges, drills, saws, trephines, heavy bone-forceps, files, scoups and numerous other instruments, coarse and fine. Milne devotes an interesting chapter to the gynecological instruments of the ancients. There is no evidence that they used obstetric forceps, but they had instruments for destructive operations upon the child, and they employed uterine sounds, curettes and pessaries. Hippocrates and Antyllus describe methods of disinfecting with steam the uterus and vagina in septic cases. The ancients used sea sponges fresh, with the smell of the sea upon them, and dipped in wine. Galen tells how he has checked hemorrhage by applying a sponge dipped in asphalt to a bleeding wound and setting fire to it, leaving the unburned part to cover the wound. The Greeks and Romans employed sutures commonly, made usually of flax or wool, sometimes of human hair. They used also metal clasps and bands to unite broken bones and severed soft parts.

Such are the subjects with which the author deals, and he tells his story pleasantly and lucidly, illuminating his text with many pictures. Our Journal readers should turn aside and devote an evening to this delightful book.

Manual of Anatomy, Systematic and Practical, Including Embryology. By A. M. Buchanan, M.A., M.D., C.M., F.F.P.S. Glas., Professor of Anatomy in Anderson's College, Glasgow, Examiner in anatomy for the triple qualification of the Scottish licensing bodies, etc. Vol. II. Pp. 1539. Illustrated. Chicago: W. T. Keener & Co. 1907.

In our issue of Dec. 6, 1906, we reviewed the first volume of this work on anatomy. The second volume has now appeared, including a discussion of the abdomen, thorax, head and neck, nervous system, organs of special sense, together with an appendix containing the Basle nomenclature and a glossary. Naturally the method of presentation adopted in the first volume has been continued in this, the most notable feature of this arrangement being that the development of organs and structures is considered with the general descriptive anatomy. The book is amply illustrated, as was its predecessor, and colors are freely used. The paper is good and the type clear. We again call attention to the flexible buckram covers, which, if soiled during use, may be cleaned with a moist sponge. From a practical and esthetic standpoint this should appeal especially to the student who continuously uses the book in the course of dissection. In general the book will take its place among others of high rank in the science of which it treats.

Foods and Their Adulteration. Origin, Manufacture, and Composition of Food Products; Description of Common Adulterations, Food Standards and National Food Laws and Regulations. By Harvey W. Wiley, M.D., Ph.D. With eleven colored plates and 86 other illustrations. Pp. 625. Philadelphia: P. Blakiston's Son & Co. 1907.

In this work, the author, who is chief of the Bureau of Chemistry, of the United States Department of Agriculture, and who has been humorously described in the secular press as the "janitor of the people's insides," has brought together a mass of interesting information concerning the many articles of food of mankind, and has illuminated it with sidelights from his own very interesting personality. Although in his introduction he says: "The American public is now so well educated that any average citizen is fully capable of understanding scientific problems if presented to him in a non-technical garb," he appears to deem it necessary to inform his readers that "soups are generally used at the beginning of a meal, usually at dinner time"; that "lard has come to be looked upon as a necessity in every kitchen, even of the humblest citizen"; that "both hens and roosters are used for food purposes, but especially the young roosters are devoted to food purposes, while the young hens are often [yes, very often] kept for the production of eggs"; that "for food purposes the chicken is eaten at various ages"; that "the principal domesticated fowls which are used for human food are chickens, turkeys, ducks and guinea hens," and that "lard is sometimes [!] employed for the purpose of cooking by the process of frying"; furthermore, to this well educated public he takes pains to make clear the difference between veal and beef, lamb and mutton, pig and pork, and to explain that the "eggs which are principally used for food" are those of the domesticated fowl, chiefly "chickens, ducks and geese." When told that "fish are known chiefly by their common names," the irreverent might truly ask by what other name than those could they be chiefly known. We doubt that but for this work it would have been known that "the size of the fish usually depends upon the magnitude of the body of water in which the species grow," and cannot but feel grateful for the citation of at least one exception — "The size of the whitefish in the Great Lakes is not so great as the extent of water would indicate." One may be moved to inquire why whitebait, smelts and flounders, which are indigenous to the Atlantic, are so much smaller than whitefish from Lake Superior, which in its magnitude is so vastly inferior to the ocean. But now we know, at least, why brook trout do not approach in size the sturgeon and horse mackerel and why shiners are unequal to halibut,— the magnitude of the bodies of water in which they grow is inadequate.

The author's principal obsessions appear to be the use of artificial colors and misbranding. All colors, however innocent their nature, and notwithstanding the sanction of long usage, should be barred. The coloring of winter butter is "reprehensible"; the coloring of factory cheese is "reprehensible"; all coloring is fraudulent and "reprehensible." Misbranding is even worse. What can be more wicked than calling herring, boxed on the coast of Maine and sold at a few cents per box, "sardines"? What punishment can fit the crime of making a cheese in Ohio and labelling it so as to convey the impression that it was produced in New York? These are far from harmless frauds. Lima beans should come exclusively from Peru and Brussels sprouts from Belgium!

In the kitchen our author is especially refulgent. Clam soup is made of clams, milk, cream, flour, and condiments; put in more clams and some potatoes and we have clam chowder.! That sort of chowder may pass in Kent County, Ind., but not in the habitat of the clam.

Throughout the work appears constantly a plea for Federal inspection — "municipal, state and Federal inspection" — by experts, and especially Federal experts, of which the author is the acknowledged chief.

The book is copiously illustrated — 11 colored plates and 86 figures, taken mostly from Farmer's Bulletins and other documents distributed during the past fifteen or more years by the Department of Agriculture. Of the 11 colored plates, 7 are "reproduced by courtesy of Armour & Co., Chicago." Apart from the impropriety of the director of the Federal inspection force placing himself under any obligation whatever to a concern whose methods were for a time a stench in the public nostrils and whose canned products as sold in Massachusetts were shown by the State authorities, a year ago, to need that " municipal, state and Federal " inspection which the author advocates so warmly, it is to be wondered why these plates were introduced, for although the author says, " By comparing the appearance of the beef bought in all markets with these plates it is possible to form a sound judgment of their suitability for consumption," they teach nothing whatever of the sort and serve no purpose other than padding; and this may be said also of a large proportion of the illustrations in general, including the 7 out of nearly 100 contributed by the author and not borrowed from other works.

Although credit has been freely given for the illustrations, it is otherwise regarding tables and facts, and the author appears to be guilty, too, of more or less " faking," an example of which is giving Storch's figures for a buttermilk standard, although without credit, and filling in the space for acidity, which Storch fills with an interrogation mark, with a figure from a similar table by Vieth. On the whole, in spite of its blemishes, the book will serve to some extent a useful purpose.

The Eye and the Nervous System: their Diagnostic Relations. By various authors, edited by Wm. Campbell Posey, A.B., M.D., and William G. Spiller, M.D. 8vo, pp. xii, 988. With 239 illustrations and 13 plates, 8 of which are colored. Philadelphia and London: J. B. Lippincott Co. 1906.

Oppenheim's dictum, that he who cannot use the ophthalmoscope is no neurologist, although not yet fully recognized, is only a part of the truth. The neurologist needs a far wider knowledge of the eye and its functions than can be obtained solely by the ophthalmoscope, but, unfortunately, such knowledge is only too often lacking and our medical curricula fail to insist upon it as a preliminary to the study of neurology. It is equally true that the ophthalmologist should have an accurate knowledge of the functions and diseases of the nervous system. Any work, therefore, which tends to bring together these two branches of medicine is welcome. In the plan of such a work two principles may be adopted: the plan may be based upon the eye itself, studying its functions and noting the significance of their alteration in diseases of the nervous system, or it may be based upon the nervous system, studying the individual diseases and noting the eye symptoms occurring in them. The former plan is certainly to be preferred. Optic neuritis, abducens paralysis, or an Argyll-Robertson pupil is a natural starting point for inquiry, whereas paralysis agitans, cerebral hemorrhage or trigeminal neuralgia rarely is attended with ocular symptoms worthy of note. The editors of the present work, however, have adopted neither of these nor any definite plan, but have divided the book into various chapters which do not form part of one consistent whole but seem rather designed to hold an even balance between the neurological and ophthalmological contributors. The result is that, like most of the composite works that are forced on us by zealous publishers, the book is without plan, and contains much that is irrelevant. Some contributors give a good account of certain nervous disorders, with perhaps an incidental mention of the ocular symptoms; others limit themselves closely to an exhaustive consideration of the ocular symptoms, and the ocular symptoms only, that occur in the diseases treated. The book contains no diagram showing the relations of the optic fibers in connection with hemianopsia, yet it contains elaborate chapters on the wholly irrelevant questions of nerve anastomosis in facial paralysis, the Gasserian ganglion operation for tic douloureux, tremors, reflexes and gaits. The great question of the etiological importance of eye-strain is left almost wholly to ophthalmologists, who take a somewhat extreme view of the subject, although they do not endorse wholly the teachings of Ranney and Gould. It is a great pity that the question was not more fully discussed from the neurological standpoint. Nevertheless the book, despite its lack of plan and its poor arrangement, despite too the uneven merit of all composite works, contains some chapters of extreme value, some that are merely commonplace, but on the whole very much that both the neurologist and ophthalmologist will find indispensable, although the inevitable comparison with the great work of Wilbrand and Saenger is decidedly against the volume before us. The index is very unsatisfactory.

Space is lacking to consider each contribution separately, but we will add the list of contributors, with their respective subjects. W. G. Spiller writes on the anatomy of the cranial nerves; W. N. Souter on the structure and optical properties of the eye; C. K. Mills on the psychology of the visual act and the focal diseases of the visual cortex; C. A. Wood on the external examination of the eye; Alexander Duane on the extra-ocular muscles; J. E. Weeks on the intra-ocular muscles; Edward Jackson on affections of the fifth, seventh and cervical sympathetic nerves; H. V. Würdemann on diseases of the retina and optic nerve; W. G. Spiller on tumors of the brain; E. W. Taylor on bulbar and pseudo-bulbar diseases; Wm. Hirsch on arteriosclerosis, multiple sclerosis, Friedreich's disease and paralysis agitans; F. X. Dercum on parasyphilitic diseases, insanities and toxic encephalopathies; B. Sachs on amaurotic idiocy and cerebral infantile paralysis; C. W. Burr on acromegaly, abnormalities and hemiatrophy; T. H. Weisenburg on diseases of the spinal cord and nerves; G. E. DeSchweinitz on hysteria and other neuroses; J. H. Lloyd on ingrains, epilepsy and tetanus; S. D. Risley and H. F. Hansell on eye-strain; W. C. Posey on exophthalmic goitre and the psychological effects of operations on the eye; C. H. Frazier on the surgical treatment of intracranial lesions causing disturbances of vision; Joseph Sailer on tremors, reflexes and gaits; and G. L. Walton on degeneracy.

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DEATH OF DR. JAMES CARROLL.

The death of Dr. James Carroll should not be allowed to pass with merely a perfunctory notice of his career. He belonged to that small class of men who are willing to undertake a most serious personal risk in order to demonstrate the truth or falsity of a theory. To permit himself calmly and with full knowledge of possible consequences to be bitten by a fever-infected mosquito was a simple act of heroism which we shall do well to honor. Although Dr. Carroll, after undergoing a severe attack of yellow fever, recovered from the disease, it left its traces behind in the form of an affection of the heart which undoubtedly ultimately resulted in his death, which occurred on Sept. 16, in Washington.

Dr. Carroll, at the time of his death major and surgeon in the United States army, was born in Woolwich, England, June 5, 1854. He enlisted in the United States army in 1874, serving as private, corporal and sergeant in two infantry regiments. From 1883 to 1898 he served as hospital steward, employing his time during the latter part of this service in the study of medicine. He was finally graduated in 1891 from the Medical Department of the University of Maryland, and thereafter prosecuted his studies further in the Johns Hopkins Hospital. He early showed a special interest in laboratory investigations, and, therefore, it was not a surprise that he was chosen in 1897, together with Dr. Walter Reed, Dr. James W. Lazear and Dr. A. Agramonte, to serve as a member of a commission to investigate yellow fever in the United States. Experiments made at that time quickly demonstrated the probability of the spread of the disease by mosquitoes, and a human subject seemed essential for the demonstration of the correctness of this supposition. Dr. Carroll was the first to offer himself for the purposes of this vitally important experiment, with the results which are now generally known and which have been emphasized by the circumstances of his death. In somewhat broken health Dr. Carroll maintained his interest in matters of bacteriology and pathology, and in 1899 received a commission in the medical department of the army. In 1907, although too enfeebled in health to take an active part in further investigation, he received the commission of major and surgeon, retaining his position as curator of the Army Medical Museum. Dr. Carroll held a wide society membership, and was an instructor in bacteriology and allied sciences in the Army Medical School as well as professor of bacteriology and pathology in the George Washington University.

Dr. Carroll was an earnest student and an enthusiastic investigator on the subject of infection, but his chief claim to perpetuity will undoubtedly lie in the spirit of self-sacrifice which led him to accept a very real danger in the hope that by his example and in a measure through his instrumentality a unique and far-reaching doctrine might be substantiated. Many others followed Dr. Carroll in offering themselves as subjects for experimentation, fortunately with no deaths, but this does not in the least detract from the honor due Dr. Carroll in being the first to receive the inoculation. It is a somewhat pathetic fact, and possibly a commentary on the hard and self-sacrificing work of our scientific investigators, that but one of this now famous commission appointed to investigate yellow fever is living. None of these men had reached the acme of his usefulness, but the accomplishment of each was quite sufficient to give him a high place among the real benefactors of the human race.

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IMPROVED HEALTH OF SCHOOL AND COLLEGE STUDENTS.

In the many articles appearing nowadays on the diseases incident to school life and the generally injurious effect of grade and high school conditions, the brighter side seems to have been quite overlooked. This is, that the scholars who graduate from our high schools to-day are taller, heavier and stronger for the same age than they were a generation ago. This statement holds both for the boys and girls.

In 1899 Dr. Paul C. Phillips, now in charge of the Department of Hygiene and Physical Education at Amherst College, prepared some statistics for a periodical which was attempting to answer the question, Shall we become a race of giants? These figures were amplified and published in the *Physical Education Review*, June, 1904, under the title, "Is the Physique of the American College Man and Woman Degenerating?" They showed beyond a peradventure that the boy who goes to college to-day is taller and heavier and the girl taller, heavier and of greater chest girth than the boy and girl of the same age from forty to fifty years ago.

Mr. J. H. Vines had in 1899 found the same facts to be true in England, the boys in Marlborough and Rugby schools, ranging from twelve to eighteen years of age, being both taller and heavier at the same age than their fathers had been a quarter of a century before.

Of the girls examined at Smith College in 1900–03, those at seventeen years showed a superiority of a half inch in height, three pounds in weight and two thirds of an inch in chest girth over those at the same age 1883–88. At eighteen years the superiority amounted to three-fifths inch in height, nearly three pounds in weight and a half inch in height. These were, in general, corroborated by figures from Wellesley, Oberlin, Chicago and Mt. Holyoke colleges.

The Amherst College figures are from thousands of students and very reliable. They show the average heights and weights of students seventeen to twenty years of age to be as follows in three different periods:

Height of Amherst College Students.

Age.	1860–84.	1884–94.	1900–03.
17 years	66.8 in.	68.0 in.	68.2 in.
18 ,,	67.0 ,,	68.1 ,,	68.4 ,,
19 ,,	67.1 ,,	68.2 ,,	67.7 ,,
20 ,,	67.5 ,,	68.3 ,,	68.3 ,,

Weight of Amherst College Students.

17 years	128.7 lb.	130.8 lb.	129.9 lb.
18 ,,	131.1 ,,	133.6 ,,	134.5 ,,
19 ,,	133.1 ,,	136.4 ,,	135.6 ,,
20 ,,	135.0 ,,	138.0 ,,	138.2 ,,

The statistics for 1900–03 would probably show the superiority more clearly were they as numerous as those for the preceding periods. The measurements of freshmen for the years since 1903 show the class averages even higher in height, weight and strength than they were in the years 1900–03, although the average age is somewhat less.

It is not claimed from these statistics that we will be a race of giants in 1950; thousands of years have changed stature but little, as Prof. Carl Pearson has shown; neither is it assumed that because height and weight increase, morbidity decreases. Educators and militarists are of the opinion, however, that an increase in the height and weight of the race would be desirable as indicating more complete growth and development. These two factors in racial improvement physically are certainly increasing.

There is evidence to show also that health, in our colleges at least, is improving. The president of one of our New England colleges, a man of unquestioned good judgment, in his report to the trustees in 1854 stated, "The waning of the physical energies in the midway of the college course is almost the rule rather than the exception among us, and cases of complete breaking down are painfully numerous." Such statements sound strange in our ears to-day. The health of students is generally better at graduation than on entering college, and the same might probably be said of our high schools, except in so far as health is modified by the pubertal period. While, therefore, much still remains to be accomplished in the field of school hygiene, we may encourage ourselves by the thought that we are physically not worse than our fathers and mothers.

COCAINE AND THE NEGRO.

Political history has perhaps never presented a graver problem than that which centers in the American negro. Centuries ago some among this unhappy people were taken from their native soil, brought hither and compelled to slavery. Recognizing that it is the white race which has primarily been responsible, the most humane among our fellow-citizens in the South, and its profoundest statesmen, are giving earnest and anxious thought to this problem; yet there is not one of them who is able to give a satisfactory solution of it.

This much is, however, becoming recognized: that to-day this question is taking on a phase which has not heretofore characterized it. The "before-the-war" negro was a genial and harmless creature. His loyalty was proverbial; the Southerner at the front did not hesitate to intrust wife, family and home to his care, and this at a time when he could easily have indulged evil propensities had any such existed. His greatest fault was alcoholism. But a drunken negro, though he might be noisy and a little contentious, was easily managed; he was even then neither vindictive nor savage in his tendencies. Although the malign influences of the carpetbagger and of the reconstruction period should have tended much to alter the character of the negro, it has, nevertheless, up to recent years remained decent, amiable and law-abiding.

But now an entirely new phase of the situation is manifest to those who are willing to accept facts. Many negroes are now guilty of most insensate crimes, such as are inexplicable upon any natural basis. Nor are these crimes committed in unsophisticated rural districts, no matter how dense may be the negro population in them; they are done especially in cities, or near mining, lumber, railroad and like camps, where industrial operations on a large scale are in progress. Nor are these crimes, as is so often held, only or even mainly against the sanctity of womanhood. Infants and venerable woman are attacked; " the wanton murders and deadly assaults committed with steadily increasing frequency under circumstances of absolutely fiendish savagery; the abandoned recklessness of consequences and the astounding indifference to the sufferings of either themselves or their victims "[1] — it is such things as these which now require to be considered. And so frightful have they become, transcending, as we have noted, all previous experience of the negro race, that many cannot credit the accounts of them. Yet the facts are abundantly testified to by men experienced in observing the negro working in gangs, and in pursuits other than agricultural.

A possible explanation of these phenomena lies in cocainism, particularly when combined with alcoholism. We know that gentle, cultivated and ordinarily well-poised individuals of the more highly organized white race are stimulated by cocaine to acts of violence due to the hallucinations induced by its use. How, then, can we expect otherwise than that an illiterate negro, living in a semi-barbarous environment, and unaccustomed to social discipline, will, when excited by this drug, become even more uncontrolled? There is good reason to suppose that cocaine is furnished the negro in such industrial settlements as we have mentioned. " An official of one of the largest drug houses south of New York says that his firm ships enormous quantities of the drug to all parts of this section of the country. The orders come from contractors and operators of the most extensive kind, and these say that they could not keep their working forces together for so much as a week if the men were unable to procure cocaine in the immediate vicinity."[2]

The National Association of Negro Physicians, Dentists and Pharmacists met recently in Baltimore. Its membership is made up of about three hundred among the two thousand negroes who are practising in this country; and every member holds a degree from some reputable medical college — Harvard, Yale, Columbia, the University of Pennsylvania and the like. These man are making a fight (though one most unfairly put upon them) for the eradication of cocainism, with its attendant evils—alcoholism, syphilis, and tuberculosis—from among their unhappy fellows; and it is for the profession at large to hold up their hands.

MEDICAL NOTES.

Health in the Canal Zone. — It is reported from Washington that very great improvement has taken place in the sanitary conditions in the Canal Zone, with a corresponding reduction of illness among the canal workmen. With ten thousand more men at work, there are fewer sick this year than there were last. From the statements made it appears that the authorities have in hand the problems of sanitation, which at first appeared a menace to the successful prosecution of the work.

Pneumonia in Chicago. — According to the *Bulletin of the Chicago Department of Health,* for the first eight months of the year, the records of the Bureau of Vital Statistics show an increase in the reported deaths from pneumonia of one third (33.6%) over the number reported during the corresponding period of 1906. The increase of August, 1907, over August, 1906, is 43.1%, while the increase of the week of Aug. 31, 1907, over the number of the corresponding week of last year is nearly double (96.3%), that is, 27 in the 1906 week, and 53 in the 1907 week.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Sept. 25, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 46, scarlatina 47, typhoid fever 40, measles 68, tuberculosis 69, smallpox 1.

The death-rate of the reported deaths for the week ending Sept. 25, 1907, was 18.91.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 21, 1907, was 217, against 235 the corresponding week of last year, showing a decrease of 18 deaths and making the death-rate for the week 18.57. Of this number 115 were males and 102 were females; 210 were white and 7 colored; 128 were born in the United States, 84 in foreign countries and 5 unknown; 40 were of American parentage, 145 of foreign parentage and 32 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 33 cases and 4 deaths; scarlatina, 36 cases and 0 deaths; typhoid fever, 45 cases and 1 death; measles, 9 cases and 0 deaths; tuberculosis, 62 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 14, whooping cough 1, heart disease 20, bronchitis 1 and marasmus 12. There were 20 deaths from violent causes. The number of children who died under one year was 60; the number under five years, 76. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 77.

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[1] New York Sun, June 27, 1907.

[2] *Ibid.*

There was 3 cases and 0 death reported from cerebrospinal meningitis during the week.

President of the American Electro-Therapeutic Association. — Dr. Herbert F. Pitcher, of Haverhill, Mass., has been elected president of the American Electro-Therapeutic Association, which has recently been holding its annual meeting in Boston.

New Hampshire Memorial Hospital. — The tenth annual meeting of the New Hampshire Memorial Hospital in Concord, N. H., was held Sept. 11. This hospital was built to the memory of Dr. Julia Wallace Russell, and is devoted to the care of women and children. During the ten years of its existence it has ministered to a large number of persons unable to pay for medical attendance. Changes have been made in the hospital to meet the increasing demands upon it.

Diphtheria at Apponaug, R. I. — Many cases of diphtheria have recently appeared in the village of Apponaug, R. I. It is an interesting fact that most of the cases have developed in the neighborhood of a trench running through the center of the village which received much waste during the recent rains. It is furthermore interesting that most of the cases are adults.

Work of the Nurses in the Public Schools. — The newly appointed nurses for public school inspection have already demonstrated their usefulness by reporting various affections which need dispensary or hospital care. The question has arisen whether it is wise to make these reports public in the newspapers, thereby possibly exciting unnecessary alarm.

NEW YORK.

Physical Condition of Public School Children. — As a result of the recent agitation concerning the physical condition of public school children, the Board of Education is contemplating the establishment of a separate department of school hygiene, the province of which will be to act in an advisory capacity on all matters relating to the health of the pupils and to recommend safeguards for the protection of their physical welfare. Notwithstanding the work that is now being done by the Health Department in connection with the public schools, the estimated cost of putting the proposed new department in operation is at least $30,000, but the school commissioners feel that the results obtained would amply justify such outlay and also that the expenditure would be generally approved by the taxpayers.

Dust as a Carrier of Disease among School Children. — In his recent annual report, Lyman A. Best, president of the Brooklyn Teachers' Association, gives the result of an exhaustive investigation which he has made as to the agency of dust as a carrier of disease among school children, and furthermore shows that the use of the feather duster is largely responsible for the prevalence of the various contagious diseases. An examination was made of the records of the Health Department from 1898, when the Greater City of New York was formed, to July 1, 1907, as regards the ordinary contagious diseases of childhood, such as measles, scarlet fever and diphtheria. This revealed the fact that an abrupt rise in the number of cases of these affections occurs in the autumn, after school opens and the windows are closed, while just as abrupt a drop occurs in the spring, when the windows are opened again. The decrease continues to a minimum in September, the maximum occurring six months later, in March. "What is the cause?" continues the report. "Dirt! schoolroom dust! Any one who has watched a janitor moving in a cloud of dust as he passes through the halls and schoolrooms after school, and who will note the layer of dust that settles over the floors, furniture and side walls after he has finished sweeping, will not wonder any further how the germs get mixed and distributed." Mr. Best then compares conditions in New York with those in Worcester, Mass., where sanitary methods of cleaning schoolrooms have been adopted. During the period from Jan. 1, 1898, to July 1, 1907, there have been reported 2,834 cases of measles in Worcester. The number of cases in New York for the same period, population reduced to the Worcester standard, was 6,432, or more than twice as many. In the case of scarlet fever and diphtheria the proportion of cases in New York in excess of the cases in Worcester was about 25%. Among the remedies suggested are the following: All feather dusters should be destroyed and their further use prohibited. Before any sweeping is done, wet sawdust should be scattered over the floor. Dusting should be done with dampened cloths. Every schoolhouse to be erected in the future should be provided with a complete vacuum outfit, with proper connections in every room of the building. "If, through the adoption of proper methods in cleaning," the report goes on to say, "the death-rate should be decreased by 1% for measles, scarlet fever and diphtheria, and if but one half the cases of these diseases are among school children, there would be a saving of life in New York of 85 school children a year who now die from measles, 53 from scarlet fever and 71 from diphtheria; 209 school children in all, and a total for the city of 418. Had the mortality rate in New York City for the three diseases discussed in this report been the same as in Worcester for the nine and a half years under consideration, the saving of lives in New York from these three diseases for that time would have been: 482 from measles, 2,760 from scarlet fever and 7,884 from diphtheria and croup, a total of 11,126, giving an average of 1,171 a year, or more than three lives a day."

Clean Milk. — The New York City Health Department having formulated certain regulations to insure the production of clean milk at the dairy, and having announced that unless these are complied with within a specified time no producer thus failing to remedy the conditions of his premises will be permitted to send his milk to the city, some of the farmers in certain parts of the state have raised a protest against the exaction of the rules as being too stringent. As a matter of fact, however, what the Health Department demands, as has been well said, is simply what an intelligent, up-to-date dairyman, eager to conduct his business in the best manner and to make the most of it, would do of his own accord in order to increase the returns on his capital and labor. Indeed, it is what the up-to-date dairyman has already done without any compulsion and he has had his reward in the shape of healthy herds and higher prices for his products.

A Death from Fright. — A death from fright, incident to an unusually loud clap of thunder, is reported from Mount Vernon, Westchester County. The patient was an old lady, seventy-five years of age, and her death was instantaneous. The predisposing cause is not given.

Epidemic Poliomyelitis. — Epidemic poliomyelitis continues prevalent, and it is stated that more than four hundred cases have been brought to the Hospital for Ruptured and Crippled for treatment. Dr. A. B. Judson, the well-known orthopedist, is authority for the statement that, as the result of observations at the out-patient department of the New York Hospital, it is believed that the deformity and lameness which follow an attack of this disease may be largely prevented by keeping the patient, after the fever has subsided, in a recumbent posture (or at all events off his feet) for eighteen months. This is not an easy thing to do when the child should naturally be learning to walk, especially as it is the common belief that exercise is more important for such a case than anything else. The reason, he says, is found in the fact that there is a spontaneous diminution of the paralysis for several months, and to make the muscles of the lower extremities do the work of carrying the body prevents them from sharing in the recovery which goes on without interference in the arms and hands, which are exempt from effort and strain. It has been noticed that the permanent paralysis and deformity are common in the lower and almost entirely absent from the upper extremities. The customary treatment for paralyzed limbs may be continued while the patient is recumbent.

Current Literature.

Medical Record.

Aug. 31, 1907.

1. *Whitman, R. *A Consideration of the Causes and Characteristics of the Weak Foot.*
2. Wolfe, E. P. *A Preliminary Report of Research Work on the Effects of Tropical Climate on the White Race.*
3. Waugh, W. F. *Fecal Toxemia.*
4. Clark, L. P., and Atwood, C. E. *Longevity of Idiots.*
5. Rosenbeck, C. *The Early Recognition of Tabes Dorsalis.*

1. Whitman brings forward a theory of the causation of weak foot, which will account for the discomfort without deformity that is often found in this condition and a treatment that is applicable to the prevention of the condition

before advanced distortion has occurred. There are two contrasting postures of the foot,— that of activity and that of inactivity. In activity the foot is incurved at the inner border and the arch is accentuated. In inactivity the foot is everted and the weight is directed toward the inner side of the sole. The abnormal persistence of the attitude of inactivity during exercise produces deformity. Abduction is caused by inward rotation of the leg upon the foot, and the astragalus supporting the leg sinks downward and inward upon the os calcis. Acquired flat foot and weak foot are an abnormal persistence of the attitude of abduction. The primary factor is the abduction, the secondary is the lowering of the arch. The symptoms are due to overstrain and injury to which disordered function has exposed the foot. Predisposing causes are insufficient support, due to congenital or acquired weakness of structure, weakness of muscles, overweight or strain and improper attitudes. Improper attitudes include toeing out, the most important bad attitude. Improper shoes are often worn. Rachitis is a cause of weakness of structure. Symptoms include bad attitude, weakness, pain in feet, knees and even back, and deformity with muscular spasm. Preventive treatment includes proper shoes and proper attitudes for children. Shoes should turn in. The brace used is made on an accurate plaster model made with the foot resting upon the outer border, slightly plantarflexed and perpendicular to the table. The brace is of sheet steel extending from the bearing surface of the heel to the metatarsal bone. It is placed in the shoe, and the inner flange is pressed against the arch in positions of strain. It should hold the foot in place without discomfort. The inner side of the shoe is raised. Deformity may need to be corrected with or without anesthesia.

New York Medical Journal.

Aug. 31, 1907.

1. Ricketts, B. M. *Villous Papillomata of the Rectum.*
2. Buchanan, M. *Glaucoma.*
3. *Solis-Cohen, M. *Bacteriological Examination of the Feces as a Means of Early Diagnosis in Tuberculosis.*
4. Weinstein, H. *Treatment of Chronic Indigestion.*
5. Von Tiling, J. H. M. A. *Some Recent Ideas on Local Inflammation ond Its Treatment.*
6. Brown, E. L. G. *Children's Calculations.*
7. Bierhoff, F. *Police Methods for Sanitary Control of Prostitution.* (Continued.)

3. Solis-Cohen reports six cases, all obscure, in which the diagnosis was only possible by finding tubercle bacilli in the feces. The technique is essentially that employed in sputum examination. None of these cases presented the typical picture of intestinal tuberculosis. In the one case which came to autopsy, a case of miliary tuberculosis, there were no lesions of the intestinal mucosa. There were pulmonary signs in five, but in none were tubercle bacilli present in the sputum. The writer urges the value of the examination of feces for tubercle bacilli in obscure cases and in early pulmonary tuberculosis when the sputum is either absent or negative. The necessity of the disinfection of feces in all cases of tuberculosis is obvious.

[R. I. L.]

The Journal of the American Medical Association.

Aug. 31, 1907.

1. Sollmann, T. *A Review of Recent Work on the Mechanism of Urine Formation.*
2. *Park, W. H. *The Importance of Ice in the Production of Typhoid Fever.*
3. Kassabian, M. K. *Rœntgen Ray Technique in Dermatology.*
4. Boggs, R. H. *Treatment of Acne and Chronic Eczema.*
5. McGowan, G. *The Therapeutics of Tuberculosis of the Skin.*
6. Engman, M. F., and Mook, W. H. *Two Seborrheids of the Face: I. Acne Rubra Seborrheicum. II. Pityriasiform Seborrheid of the Face.*
7. Porter, M. F. *The Technique of Operations for Carcinoma of the Breast.*
8. Stern, W. G., and Rosenberg, E. *Plastic Radiography. A Preliminary Communication.*
9. Good, R. H. *A Simple and Safe Operation on the Frontal by the Intranasal Route.*
10. *Pratt, J. H. *The Class Method of Treating Consumption in the Homes of the Poor.*
11. Daland, J. *Observations on Plague in India.*
12. Johnson, W. S. *The Quality of Public Water Supplies.*
13. Clark, H. W. *Filtration of Public Water Supplies.*
14. *Goldthwaite, J. E. *The Pelvic Articulations.*
15. *White, W. C. *Spirochetes in Hodgkin's Disease.*
16. Drake, F. I. *Vaginal Hemorrhage in the New-Born.*
17. Harding, M. C. *Simple Method of Retaining Anesthetic Mask in Place.*

2. Park considers that the danger of typhoid infection from ice is at best very slight and is quite negligible after the ice has been kept for six months.

10. Pratt gives the history of the first tuberculosis class of Emmanuel Church, Boston, the plan and methods of which were thoroughly described by Drs. Hawes and Floyd. Excluding present members of the class, there have been 37 members; 13 of these were far advanced cases, but 3 of these patients recovered. Of the remaining 24, 15 were moderately advanced cases, and in 9 of these the disease had been arrested. The remaining 9 were incipient cases, and of these 7 were apparently cured, and in the other 2 the disease was arrested. The expenses up to May 1, 1907, were about $2,000. The chief factors in the success of the class are given as follows: (1) The patients have spent the nights as well as the days out of doors; (2) they have been kept at rest in the recumbent position, not only until their temperature is normal, but until the symptoms of active disease have disappeared; (3) the system of daily records devised by Dr. C. L. Minor; (4) the weekly meeting. Implicit obedience of rules and regulations is required. Pratt gives details of the methods employed and illustrates the tents and other appliances for rest with open-air treatment.

14. The pelvic articulations are true joints and undergo definite motions, irrespective of sex. In women, during menstruation and more particularly during pregnancy, there is relaxation of these articulations. As joints, the pelvic articulations are liable to the same disturbances as other joints. Inasmuch as their stability depends on the tone and character of the muscles and ligaments, these articulations, more especially the sacro-iliac joints, are liable to strains and partial luxations. Lesions of the sacro-iliac joints are often complicated by lesions of a similar character in the spine. The common symptoms are limitation of motion and pain, usually in the sacral region, and often referred to leg or thigh, due to strain or irritation of the nerve trunks. Swelling is uncommon. The most characteristic sign is the fact that when the patient lies on his back, the hip motions are free as long as the knee is flexed. If the knee be straightened and thigh flexion attempted, then there is limitation and often pain referred to the sacro-iliac joint. This is due to the fact that the hamstrings, being stretched, pull on the ischium and cause motion of the joint. The treatment, depending on the character of the lesion, is usually by various supports, exercises, etc.

15. White has found numerous spirochetes closely resembling the spirocheta pallida in the glands of two apparently undoubted cases of Hodgkin's disease.

[R. I. L.]

The Lancet.

Aug. 31, 1907.

1. *An Address to Students.*
2. *The Students' Guide,* 1907-1908.
3. *Regulations of Medical Examining Bodies.*
4. *Reports of Hospitals and Medical Schools.*

Sept. 7, 1907.

1. *Berry, J. *Remarks on Peritonitis and Its Treatment.*
2. *Campbell-Horsfall, C. E. *Acute Yellow Atrophy of the Liver Following Operation for Intestinal Obstruction.*
3. Bidwell, L. A. *Intussusception Caused by an Inverted Meckel's Diverticulum; Excision and End-to-End Anastomosis.*
4. *Dudgeon, L. S., and Adams, J. E. *A Case of Pyemia Due to the Influenza Bacillus, with Multiple Arthritis and Meningitis.*

5. *Charteris, F. J. *Record of Changes Observed in the Blood Count and in Opsonic Power of a Man Undergoing a Prolonged Fast.*
6. Wright, W. *Some Considerations on Epidemic Cerebrospinal Fever.*
7. Drage, L. *The Treatment of Cancer.*
8. Vernon, H. M. *The Solubility of Air in Fats and Its Relation to Caisson Disease.*
9. Thomson, A. B. M. *A Case of Self-Induced (?)Abortion.*

1. Berry divides all cases of peritonitis into four classes for purposes of treatment: (1) A simple, beginning peritonitis with no perforation of any viscus in which he believes in free purgation and salines by rectum, subcutaneously or intravenously; (2) where there has been a recent perforation, in which case immediate operation is necessary to close the perforation; (3) a later stage, in which there is considerable peritonitis with tendency to localize more or less in one region. In many of these cases Berry thinks an immediate operation does a great deal of harm. Purgatives, food by mouth or large enemata should not be given, and operation should be withheld until the condition is as well localized as possible. (4) Cases in which there is a general diffuse peritonitis over all or a large part of the abdomen. For all but the very worst cases he advises the Ochsner method; for the worst cases he considers the method advocated by Murphy the best, *i. e.*, a small wound, closing the perforation, a large drainage tube to the pelvis and the patient propped up in bed at an angle of 35° or more.

2. Campbell-Horsfall reports in detail a case of acute yellow atrophy of the liver with a table of eleven other cases reported up to date.

4. The writers give this case in full, as they have been unable to find a record of a similar instance of infection due to the influenza bacillus. Their patient was a girl ten months old. The infection was first localized in the right elbow and then the right hip-joint. Meningitis then supervened and death followed. Film preparations and cultures from blood and pus showed a pure culture of the influenza bacillus.

5. Charteris summarizes his observations on a man who fasted for fourteen days, as follows: The pulse slowed gradually as the fast proceeded; arterial pressure sank to 25% of the normal; the hemoglobin remained steady at first, but later changed rapidly; the red corpuscles did not vary except that at the end a few nucleated reds were found. There was a slight leucocytosis. The opsonic power showed no alteration.

British Medical Journal.

Aug. 24, 1907.

1. *Helme, A. T. *The Unborn Child: Its Care and Its Rights.*
2. Tweedy, E. H. *Puerperal Morbidity.*
3. Jardine, R., and Others. *A Discussion on the Justification for Artificial Dilatation of the Cervix to Hasten Delivery at Full Term, and the Most Appropriate Method of Procuring this Dilatation.*
4. *Spencer, H. S., and Others. *A Discussion on Measures to be Recommended to Secure the Earlier Recognition of Uterine Cancer.*
5. Swayne, W. C. *Chorion-Epithelioma.*
6. Lockyer, C. *The Operative Treatment of Carcinoma of the Cervix.*
7. Kerr, J. M. M. *A Case of Complete Rupture of the Uterus, with Escape of the Fetus into the Peritoneal Cavity. Panhysterectomy. Recovery.*
8. Strassmann, P. *The Indications for Operations on Uterine Fibroids and the Methods of Performing Them.*
9. Edge, F. *A Note on the Technique of Abdominal Hysterectomy for Fibroids.*
10. Cameron, S. J. *Fibroids and Fibro-myomatous Tumors in Unusual Sites.*
11. Parsons, J. I. *Notes on a Series of One Hundred Consecutive Abdominal Sections in Hospital Practice.*

1. Helme considers the important subject of the care and rights of the unborn child in a thorough, careful and scientific way. The agencies of late years being brought to bear to prevent infant mortality are not used soon enough, but should be brought into play before the child is born. He considers briefly the subjects of fetal mortality and morbidity; the value of fetal life; diminution of birth-rate and its causes; and certain factors affecting the unborn child, such as food, its quality and quantity, especially the latter, stating that in his experience pregnant mothers eat far too much. Drugs, alcohol, mode of life and work are all considered.

4. Spencer, in order that uterine cancer may be earlier recognized, advises the diffusion of knowledge among women of twenty-five years and over as to its first signs and symptoms, and that all practitioners should make a careful examination, microscopic if possible, of all growths and tumors of that region. Frank speaking was urged in every case of trouble in the pelvis which might be malignant.

Aug. 31, 1907.

1. Lockwood, C. B. *Clinical Pathology in its Relation to Diagnosis and Treatment.*
2. *Rennie, G. E. *The Open-Air Treatment of Acute Pneumonia.*
3. *Acland, T. D. *The Need for the Inspection of All Residential Secondary Schools in Matters Relating to Sanitation and Hygiene.*
4. Cox, A. *The Transformation of the British Medical Association. Naval and Military Section.*
5. Porter, J. *Preventive Medicine in the Navy and Army.*
6. Gaskell, A. *Treatment of Wounded in Fleet Actions.*
7. Davies, A. M. *Enteric Fever: its Spread by Personal Infection, and Preventive Measures in Active Service.*
8. *Bassett-Smith, P. W. *The Frequency of Aneurysms in the Royal Navy.*
9. Bushe, C. K. *The Treatment of Syphilis Afloat.*
10. Norris, H. L. *Wireless Telegraphy and Hospital Ships.*
11. Caldwell, R. *On Enteric Fever during Active Service.*
12. Giles, P. B. *The Position of the Volunteer Stretcher-Bearer.*
13. Giles, P. B. *The Disposal of Excreta in Camp and upon the Line of March.*
14. Faichnie, N. *Water Supply in Camps, on the Line of March, and in Battle.*
15. Wilson, E. M. *The Necessity for Trained Male Personnel in the Medical Services on Mobilization for War.*
16. Blackham, R. J. *The Teaching of Hygiene in the Army.*
17. Sutcliffe, D. T. *The Treatment of Burns and Scalds Afloat.*

2. In twenty cases of pneumonia Rennie has used outdoor treatment. There were but two deaths. He believes that this treatment has a distinctly beneficial effect on all the symptoms, especially on the pulse. Sleep is easier to obtain and cyanosis greatly decreased.

3. Acland thinks that far too little attention is paid to sanitation and hygiene by school authorities and inspectors. The doctor in attendance treats the sick child but neglects the causes underlying its illness. Bad food, too little sleep, too much study, are all large factors in preventing healthy development of growing boys. Various examples of deplorable conditions are given and remedies suggested. The remarks only apply to conditions in England.

8. Bassett-Smith believes that aneurysms are especially frequent in the navy. During seven years at the Haslar Hospital there have been 47 cases, of which 37 were thoracic, while 10 were abdominal. The majority were found in men who worked in the engine-room. He has been unable to find evidence that in this series either syphilis or alcohol played a very large part.

Deutsche Medizinische Wochenschrift, No. 29.

July 18, 1907.

1. *Bier, A. *The Influence on Malignant Tumors of the Injection of the Blood of a Different Species.*
2. Franke, F. *The Diagnosis and Treatment of Chronic Joint Diseases.* (Continued.)
3. Citron, J. *Investigations of Complement Binding in Infectious and Post-infectious Diseases.*

4. *Strauss, H., and Leva, J. *A New Test of the Motility of the Stomach.*
5. Marcus. *Two Cases of Gout.*
6. Caro, L. *Banti's Disease Cured by Removal of the Spleen.*
7. Vörner, H. *A Case of Oedema Cutis Factitium.*
8. *Böcker, W. *Paralytic Luxation of the Hip-Joint.* (Concluded.)

1. In a previous communication, summarized in these columns (*Deut. med. Wochenschr.*, No. 23), von Leyden showed the specific action of fresh liver ferment upon carcinoma. Bier, in the present article, reports a similar action, when the blood of a different species is injected in the neighborhood of the cancer. If 10 to 20 cm. of defibrinated swine's blood be injected subcutaneously under aseptic precautions, a very striking local reaction is set up, with fever and often chills. This subsides after three or four days and by repeating in greater or less amounts, the severity of the reaction can be more or less controlled. He asserts that a large carcinoma of the face, after four injections, became converted into a firm scar through the intense inflammatory infiltration and connective tissue growth. Another cancer of the neck under the influence of the enzyme broke down in rapid necrosis and subsequently healed. Other cases were apparently influenced. He also used these injections in 3 cases of benign hypertrophy of the prostate with retention of urine, with apparently beneficial results. That we shall ever be able to control the growth of malignant tumors by this or similar methods, Bier thinks is extremely doubtful, but the subject is full of interest and needs thorough investigation.

4. Since the use of fat in test meals for the determination of motility was first proposed by Matthieu in 1896, it has been open to many objections. Strauss thinks he has overcome these by employing, as the fat-containing agent, a cracker made up in pieces of 50 gm. each, having a fat content of 10.6% butter and 5.3% milk fat. This has an agreeable taste, keeps a long time and has a constant fat content. He gives it with 400 cc. of tea and one hour after ingestion removes the contents in three parts: (1) the expressed contents, (2) the washing after the introduction of 100 cc. of water, and (3) after washing with several liters. For the determination of fat the authors prefer the refractrometric method of Wollny instead of the more complex Gerber's butyrometric method, as it gives equally exact results, and the necessary refractrometer is an instrument which should be in every laboratory. Experience with this method has already shown that stomach disturbances are decidedly more complicated than has hitherto been imagined. By it, one can decide whether an increase in the amount of the expressed contents points to an hypersecretion or to a motor disturbance, and discriminate more exactly than before between hypersecretion and hypo-acidity, since the volume of secretion as well as the acidity of the pure gastric juice can be calculated.

8. Böcker concludes that the spinal paralyses of children often go on to a paralytic luxation of the hip-joint, and that as a cause the antagonistic muscle theory of Seeligmuller holds good to-day. The x-ray shows backward displacement more often than is commonly supposed, while luxation forwards, as shown by typical abduction, contractures and palpation of the head of the femur under the horizontal part of the pubic bone, is often a subluxation. True luxation proved by the x-ray is comparatively rare. Prophylactic treatment to prevent contractures is of the greatest importance. If contractures have occurred, tenotomy in early cases, operation and cutting of contracted muscles, forcible replacement and holding position with plaster bandages, give the best results.

July 25, 1907.

1. *Bickel, A. *The Pathology and Treatment of Hyperchlorhydria.*
2. Bassenge and Krause, M. *Protective Substances Obtained from Pathogenic Bacteria.*
3. *Muhlens, P. *Contribution to the Experimental Infection of the Rabbit's Skin with Syphilis.*
4. *Plehn, A. *The Unity of Malarial Parasites.*
5. Franke, F. *Diagnosis and Treatment of Chronic Joint Diseases.* (Continued.)
6. Kettner. *Automobile Injuries.*
7. Heller, J. *Skin Changes in Diabetes Bronzé.*
8. Axmann, H. *Treatment of Lupus by Means of the Uviol Lamp.*
9. Citron, H. *A Saccharometer for Simultaneous Quantitations of Sugar in a Number of Specimens of Urine.*

1. The importance of a normal standard in the diagnosis of conditions depending upon anomalies in the secretion of the gastric juice is evident. The author was able to observe the character of the stomach secretion in a young girl, who suffered from a fistula following a benign stricture of the esophagus. His results are similar, in the main, to those of Pawlow, who used dogs with artificially induced esophageal fistulæ. He states that pure, normal gastric contents (a mixture of pure gastric juice, food saliva, and alkaline mucus) contains two or three times as much HCl as is usually supposed, being 0.4 to 0.55%. This acid content remains remarkably constant during a secretion period. As a classification is necessary for intelligent treatment the author divides cases of supersecretion. according as it is confined to the digestive period or is continuous. He finds with Pawlow that psychic, chemical, and mechanical stimuli are of the utmost importance in increasing the flow of the gastric juice, and in any treatment of hyperchlorhydria these should be strictly eliminated. Drugs are of little use. Alkalies and mineral waters may be used freely. The alkalies available for this purpose are the carbonates of sodium, calcium, and magnesium. The chief reason for selecting one or the other of these remedies is their effect upon the intestine, the magnesium salts being laxative, and the soda having no effect. They all tend to diminish the secretion of acid, while proteid food, especially meat, tends to increase it. Therefore they should be given on an empty stomach.

3. Muhlens has experimented by rubbing into the skin of rabbits the expressed juice from lungs, suprarenals, and liver of a one and one-half-hour old child, dying of congenital lues. With this fresh juice, in which the spirocheta pallida was proven present, he was able to produce a keratitis parenchymatosa of syphilitic origin.

4. Plehn describes a case in which, four weeks after the cure of a Blackwater fever, contracted in West Africa and showing typical malarial organisms, a benign tertian infection developed while the patient was in Germany. He claims this is an illustration of how one form of the malarial parasite may change into another through change of climate. [L. G. M.]

Berliner Klinische Wochenschrift, No. 27.

July 8, 1907.

1. *Aufrecht. *Modern Ideas on the Question of the Track of Infection in Apical Tuberculosis.*
2. Rothschild, D. *Some Changes in the Chest, Mechanically Affecting the Condition of the Apices in Phthisis.*
3. Hart, C. *Refutation of the Theory Set Forth in No. 2.*
4. V. Hanseman. *Remarks on the Sclerosis of the Costal Cartilages in Relation to Phthisis.*
5. Lissauer, M. *The Condition of the Fibrous Joint between Manubrium and Body of Sternum in Relation to Tuberculosis of the Lungs.*
6. Bence, J. *Communication on Experimental Renal Dropsy.*
7. Mayer, A. *The Presence of Bile Acids in Human Milk.*
8. *Mohr, L. *Pathology and Treatment of Certain Forms of Emphysema of the Lungs.*

1. Aufrecht has shown that the earliest tuberculous changes at the apices do not arise from the infection in the small bronchi, but the primary tubercles are always in close relation with the small arteries and the capillaries. It is possible, as has been shown by serial sections, for tubercle bacilli to pass through the walls of these small vessels into the surrounding tissues. The portal of entry for the bacilli which is by far the most common is the tonsils; then the glands of the neck or the mediastinum becomes infected, and from these seats of infection, the blood vessels carry the bacilli to the apices of the lungs. The author thinks infection through the lymph channels is very rare. He considers the theory of infection by inhalation as untenable.

8. Mohr says that besides ordinary emphysema of the lungs due to increased difficulty in inspiration or expiration (chronic bronchitis, bronchial asthma, etc.) there is

a group of cases, due primarily to fixation of the ribs by stiffening or actual calcification of the costal cartilages. He has noted numerous cases, and also refers to Freund's series. In these cases there is but little movement possible during breathing, and the expiratory contraction does not exist. In a few cases resection of small portions of the calcified costal cartilages has been followed by a return of the movement during respiration. with a marked improvement in dyspnea, and disappearance of cough and bronchitis. [R. D.]

Münchener Medizinische Wochenschrift, No. 29.
July 16, 1907.

1. Pfaundler, M. *The Treatment of Congenital Lack of Resistance.* (Continued article.)
2. *Magnus, R. *The Constipating Action of Morphin.*
3. *Jollasse. *The Present Position of X-ray Examinations in the Diagnosis of Stamoch and Intestinal Disease.*
4. Kienböck, R., Selig, A., and Beck, R. *Comparative Observations on Swimmers.* (Continued article.)
5. *Mandelbaum, M. *The Action of Taurocholate of Sodium and of Animal Bile on the Pneumococcus, Streptococcus, Mucosus and Other Streptococci.*
6. Schwab, M. *The Successful Use of the Pessary in Gynecologic Practice.*
7. Sittler, P. *Therapeutic Researches in Rachitis.*
8. Kämmerer, H. *A Case of Tabes and Pseuda-combined Sclerosis of the Cord.*
9. Maier, F. *Remarks on the Treatment of Sepsis.*
10. Grosskopff, W. *A Modification of Killian's Nasal Canula.*
11. Beitzke, H., and Rosenthal, O. *Communication on the Differential Diagnosis between Different Forms of Streptococci.*

2. Magnus demonstrated Nothnagel's theory that morphin exerted its action on the intestine through the sympathetic system to be mistaken. Having cut the sympathetic nerves carefully, after the recovery of the animals, large doses of morphin worked as well as in normal animals. In a series of experiments on cats and dogs who had been given large doses of bismuth mixed with food and then observed with the fluoroscope, Magnus found that after doses of morphin food remained in the stomach from three and one half to eight hours, and that owing to a constant contraction of the sphincter antri, came only very slowly into the pyloric portion of the stomach. The peristalsis was unchanged. On dogs, with duodenal fistulæ, it was found that the food passing from stomach into intestine, under the influence of morphin, was very much more finely divided than normal. These observations point to a lengthening of the period of gastric digestion under morphin, and also to an increase in the digestion of the food in the stomach. The time for the food to pass the small intestine was also much prolonged, but in no way could it be demonstrated that the large intestine was affected by the drug.

3. Very valuable data can be obtained by the x-ray examination of the stomach and intestines, after the administration of a "bismuth meal." The size, shape and position can be more accurately judged in this way than in any other. The question of motility is easily settled by timing the disappearance of the shadow from the stomach. Any shadow remaining after three hours may be considered as abnormal. The secretory functions of the stomach may also be judged in this way. A small dose of bismuth is put up in a capsule of goldbeater's skin, which is digested in a longer or shorter time by the gastric juice. The bismuth which at first appeared as a small round shadow is liberated and appears as an irregular cloud. The time taken for this reaction will give an idea as to the condition; *i. e.*, one and one-half hours when hyperacidity is present, two and one-half hours under normal conditions and five hours or more for anacidity. Chemical controls have shown the above method to be trustworthy. In ulcer of the stomach, the ulcerated area may be located by the bismuth which adheres to its surface. This is by no means a constant occurrence. In regard to intestinal diagnosis, this method tells little about the condition of the small intestine. Useful data as to the position of the large intestine (ptosis, etc.) may be obtained and, in favorable cases, stenosis may be localized. In conjunction with other methods of diagnosis the author recommends this procedure very highly as many valuable points may be gained thereby.

5. Mandelbaum treated twenty-four-hour bouillon cultures of pneumococcus, streptococcus, mucosus and other streptococci with 2 cc. of 10% solution of sodium taurocholate. After shaking the mixtures, he found that cultures of pneumococcus, streptococcus and mucosus were clear, bright and transparent, the other streptococci cultures were still cloudy. Cultures from all the above were sterile. In hanging drop preparations, not a trace of pneumococcus or streptococcus mucosus was to be seen, but when these preparations were stained with methylene blue and examined with the oil immersion fairly numerous involution and degenerative forms were to be seen. The same result as the above was obtained by using oxgall instead of sodium taurocholate. The latter is hard to obtain, must be freshly made, and is expensive. [R. D.]

Revue de Chirurgie.
July, 1907.

1. Poirier, P., and Picqué, R. *Surgical Anatomy of the Hyo-thyro-epiglottic Region.*
2. *Jeanbrau, É., and Anglada, J. *Trauma and Appendicitis; a Pathological and Medico-Legal Study.*
3. *Corbellini. E. J. *The Radical Cure of Inguinal Hernia.*
4. *Quénu, E. *Separation of the Inferior Tibio-Fibular Joint.*
5. Guibé, M. *Volvulus of the Small Intestine and of the First Part of the Large Intestine.*
6. Baumgartner, A., and Huguier, A. *Sub-astragaloid Dislocation of the Foot.* (Continued article.)

2. As a result of an interesting study which the authors have made concerning the rôle which trauma may play in causing appendicitis, the following facts are brought out: (1) In an individual whose appendix is healthy and contains no foreign body, a blow on the abdomen or a violent effort cannot call forth appendicitis. (2) In a person having had attacks of appendicitis, or in one suffering from latent appendicitis, such a blow, even though it be a considerable distance away from the ileo-cecal region, can light up the chronic inflammation and cause an acute attack, with perforation, and even death. (3) In one suffering from latent appendicitis an effort such as a fall on to the feet, by rupture of adhesions, can bring about the same result. (4) If pain and signs of peritonitis do not occur till after forty-eight hours from the time of the accident, this cannot be held responsible for the attack. (5) If the patient, having recovered from the attack caused by the trauma, has still further attacks, these cannot be imputed to the original trauma. The application of these facts in accordance with the law of 1898 regarding accidents to working men (Employers' Liability) is considered.

3. Corbellini considers it wrong to operate on all inguinal herniæ according to a single method. He divides herniæ of moderate size into (*a*) retro-inguinal and (*b*) intra-inguinal. In the first he advises repair of the posterior wall, leaving intact the anterior wall, and internal ring. In the second he repairs only the anterior wall, narrowing the canal and the external ring.

4. Quénu states that separation of the inferior tibio-fibular articulation is not peculiar to any one form of fracture. It can occur in conjunction with (*a*) fracture of the fibula in its upper quarter; (*b*) with Dupuytren's fracture (practically the same as Pott's fracture); (*c*) with a fracture of the extreme lower end of the fibula; (*d*) with a fracture of the internal malleolus; (*e*) with an oblique fracture of the lower quarter of the tibia; or, (*f*) perhaps, even when fracture is absent. It most often accompanies Dupuytren's fracture. The mechanism by which it is caused is an abduction of the toe with internal rotation of the sole of the foot. The prognosis of a fracture complicated by such separation should be a guarded one. In all fractures of the lower quarter of the tibia or fibula such separation should be looked for in the x-ray plates, and proper means taken for its immediate reduction, as the function of the ankle is considerably impaired if the condition is allowed to persist.

RECORD OF MORTALITY

For the Week ending Saturday, Sept. 14, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1329	534	Quincy	7	2
Chicago	—	—	Waltham	9	3
Philadelphia	—	—	Pittsfield	4	—
St. Louis	—	—	Gloucester	9	2
Baltimore	193	77	Brookline	3	—
Cleveland	—	—	North Adams	6	2
Buffalo	—	—	Chicopee	7	6
Pittsburg	—	—	Northampton	6	1
Cincinnati	—	—	Medford	5	2
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	6	1
Providence	59	26	Hyde Park	2	0
Boston	201	83	Melrose	3	0
Worcester	41	17	Newburyport	—	—
Fall River	46	31	Woburn	8	1
Cambridge	23	10	Marlboro	—	—
Lowell	41	11	Westfield	2	1
Lynn	30	13	Peabody	—	—
New Bedford	34	20	Revere	3	—
Springfield	23	4	Attleboro	5	4
Lawrence	31	17	Clinton	2	0
Somerville	13	1	Adams	7	5
Holyoke	15	9	Gardner	1	—
Brockton	15	5	Milford	—	—
Malden	9	4	Watertown	0	—
Chelsea	15	7	Plymouth	—	—
Salem	15	10	Weymouth	3	0
Newton	16	6	Framingham	5	4
Haverhill	8	2	Southbridge	—	—
Fitchburg	16	7	Wakefield	—	—
Everett	13	10	Webster	—	—
Taunton	17	6			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 21, 1907.

F. E. Campbell, passed assistant surgeon. Detached from the "Washington," ordered home, resignation accepted to take effect Oct. 1, 1907.

A. B. Clifford, assistant surgeon. Orders of June 17 revoked; detached from the "Maryland," and ordered to the Naval Hospital, Mare Island, Cal.

D. C. Cather, assistant surgeon. Detached from the "Pennsylvania," and ordered to the Naval Training Station, San Francisco, Cal.

F. L. Pleadwell, surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department.

K. Ohnesorg, passed assistant surgeon. Detached from the "Wabash" and ordered to the Naval Hospital, Philadelphia, Pa.

J. L. Belknap, assistant surgeon. Detached from duty with the Marine detachment, Camp Harrington, Va., and ordered to the "Wabash."

E. A. Vickery, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass.

J. Cowan, pharmacist retired. Detached from the Naval Recruiting Station, New York, N. Y., and ordered home.

W. S. Hoen, passed assistant surgeon. Ordered to additional duty with Recruiting Party, No. 1.

H. E. Ames, medical inspector. Detached from duty on board the "Connecticut" as fleet surgeon of the Atlantic Fleet, and ordered to command the Naval Hospital, Boston, Mass.

N. T. McLean, assistant surgeon. Detached from the Naval Hospital, Washington, D. C., and ordered to the Naval Station, New Orleans, La., Sept. 25.

C. T. Grayson, assistant surgeon. Detached from the Bureau of Medicine and Surgery, Navy Department, and ordered to the Navy Yard, Washington, D. C.

The following assistant surgeons and acting assistant surgeons have been ordered to report for course of instruction at the Naval Medical School, Washington, D. C., Sept. 30, 1907: Assistant Surgeons, M. E. Rose, W. H. Short, H. L. Kelly, M. A. Stuart; Acting Assistant Surgeons, S. Bacon, C. W. O. Bunker, C. J. Holeman.

RECENT DEATHS.

Dr. Felix Nordemann, one of the best known foreign practitioners in New York, died of cardiac disease on Sept. 15. He was born in Berne, Switzerland, in 1828, and received the degree of M.D. from the University of Berne in 1853. He was one of the founders, in 1860, of the German Medical Society of New York, which is now one of the largest and most flourishing societies in the city. Dr. Nordemann was an esteemed adviser in the early days of the municipal hospitals, and during his entire practice he devoted much attention to the welfare of the poor children of the East Side.

Dr. George Newby, a retired physician of New York, died at Sanford Hall, a private sanatorium at Flushing, Borough of Queens, on Sept. 19. He was a native of England, and eighty-seven years of age, and was graduated from the Royal College of Surgeons, London, in 1846. He took much interest in civic affairs, and is especially remembered for good service during early cholera epidemics. For some years he was one of the directors of the Metropolitan Museum of Art.

Dr. Charles Burr Bridgham, M.M.S.S., died in Cohasset, Sept. 17, 1907, aged sixty-six. He was graduated from Bowdoin Medical College and later served in the Civil War. He was entrusted with the delivery to his wife of personal effects of Col. Robert G. Shaw who was killed while leading a charge of colored troops at Fort Wagner. Since the war Dr. Bridgham has been a well known physician in towns along the South Shore of Massachusetts Bay.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D. Fourth edition, enlarged and thoroughly revised. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

The Climatic Treatment of Children. By Frederick L. Wachenheim, M.D. New York: Rebman Co. 1907.

The Principles and Practice of Modern Surgery. By Roswell Park, A.M., M.D., LL.D. (Yale). Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Insanity and Allied Neuroses. A Practical and Clinical Manual. By George H. Savage, M.D., F.R.C.P., with the assistance of Edwin Goodall, M.D. (Lond.), B.S., F.R.C.P. New and enlarged edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

Tracheo-Bronchoscopy, Esophagoscopy and Gastroscopy. By Chevalier Jackson, M.D. Illustrated. St. Louis: The Laryngoscope Co. 1907.

International Clinics. Edited by W. T. Longcope, M.D. Vol. III, Seventeenth series. Philadelphia and London: J. B. Lippincott Co. 1907.

Human Anatomy, Including Structure and Development and Practical Considerations. By Thomas Dwight, M.D., LL.D., J. Playfair McMurrich, Ph.D., Carl A. Hamann, M.D., George A. Piersol, M.D., Sc.D., and J. William White, M.D., Ph.D., LL.D. Edited by George A. Piersol. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1907.

Does the Opacity of Incipient Cataract Ever Regain Transparency? By Laertus Connor, A.B., M.D. Reprint.

Register of Food. By P. W. Goldsbury, M.D. Boston: Whitcomb & Barrows. 1907.

The Status Medicus, a Statement and a Proposition. By James Krauss, M.D. Reprint.

Original Articles.

THE TREATMENT OF TYPHOID FEVER WITH SPECIFIC SERA, FILTRATES AND RESIDUES (VAUGHAN).*

BY MARK W. RICHARDSON, M.D., BOSTON.

It is now eight years since the writer first took up the study of immunity in typhoid fever with the avowed purpose of developing, if possible, an effective, specific method of treatment for the disease.

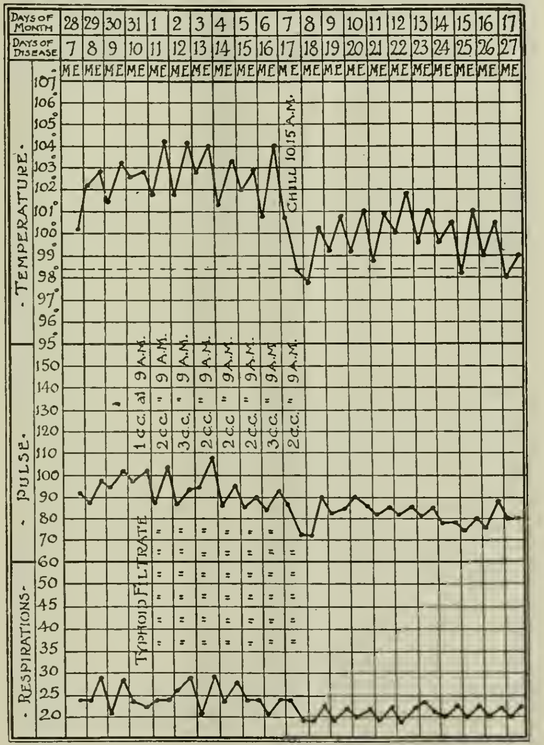

Chart 1.

Financially, the study has been supported by two grants of the Dalton Scholarship at the Massachusetts General Hospital.

For clinical material I am indebted for all but two cases to members of the Medical Staff at the same institution, and especially to Drs. Shattuck, Cutler and Minot. One case was referred to me by Dr. Arthur Broughton, of Jamaica Plain, and another by Dr. H. V. Reynolds, of Dorchester.

Invaluable aid in the production of a specific serum was furnished by the State Board of Health, which put at my disposal its stable for the care and inoculation of horses. Finally, to Prof. Theobald Smith I desire to express my deep appreciation of his continued interest and encouragement.

From unavoidable circumstances the work has been carried on spasmodically, and is in many ways incomplete. It has been pursued along the broadest of lines. The finer problems of immunity have been left untouched. Briefly expressed, the effort has been made, first, by inoculating the horse with typhoid material, to produce a serum which should be of assistance in human typhoid infection; and in the second place by inoculation of the typhoid patient himself with small doses of typhoid material to hasten his own immunity and cure. The latter method is, of course, similar to that of specific inoculation introduced recently by Sir A. E. Wright for staphylococcus and other bacterial infections. Thus far no attempt has been made to control treatment by observation of the so-called "opsonic index" of the blood.

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* Read at the Annual Meeting of The Massachusetts Medical Society, June 11, 1907.

This study covers observations upon 130 cases of typhoid fever, treated (in addition to the routine hospital treatment) with the following specific fluids: Antityphoid serum was used in 35 cases, and was produced by inoculating horses over a period of one to two years with gradually increasing doses of dead typhoid bouillon cultures. The serum of the horses was then given to typhoid patients (*a*) subcutaneously (5 cases in daily doses of 10 to 100 cc.); (*b*) by mouth or rectum or both (18 cases — dose, 100 to 1,000 cc. daily); (*c*) in pill form with special enteric coating (7 cases); (*d*) 5 cases subcutaneously with equal amounts of normal serum (15 cc. of each daily), to secure assistance of any complements which might be present in the normal serum. It was hoped that serum given thus in unusual method and dose might produce better results than had been previously obtained.

In a second series, 71 in number, a typhoid filtrate was used, always subcutaneously. This filtrate was obtained by passing living bouillon cultures through porcelain filters. The age of the cultures varied from two days to six weeks. The results obtained seemed to be the same, whatever the age of the culture. The dose averaged 3 cc. daily.

In a third series 21 cases were treated with "nontoxic residue" of the typhoid bacillus as prepared by Prof. Victor C. Vaughan, of Ann Arbor, and kindly sent to me by him (daily subcutaneous dose, 2 to 10 cc.). This residue, though nonpoisonous, contains all the essential immunizing portions of the typhoid organism.

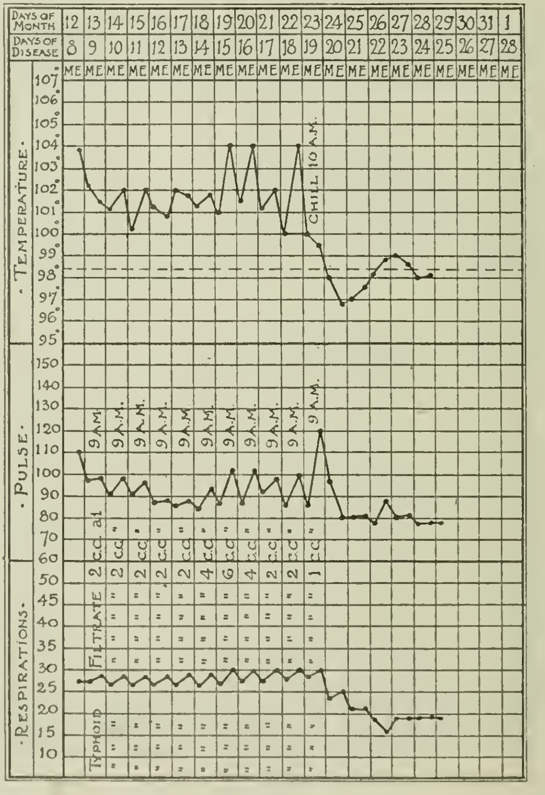

Chart 2.

Finally, in a series of 28 cases (6 of which are already included in series 3) it was attempted to prevent relapses in typhoid fever by the continued inoculation of the nontoxic residue at increasing intervals during convalescence.

Now, in any consideration of specific therapy in typhoid fever it is important to bear in mind that we have to do with a problem involving not the simple neutralization of a toxin by an antitoxin, as in diphtheria, but having for its object the increased destruction of the invading germ. This destruction follows the interaction of factors much more complex than those seen in diphtheritic infection, and, furthermore, means the setting free of whatever intracellular toxin those germs contain. Treatment along these lines, therefore, would not be appropriate for patients already severely intoxicated, but should, on the contrary, be inaugurated at the earliest possible stage of the disease.

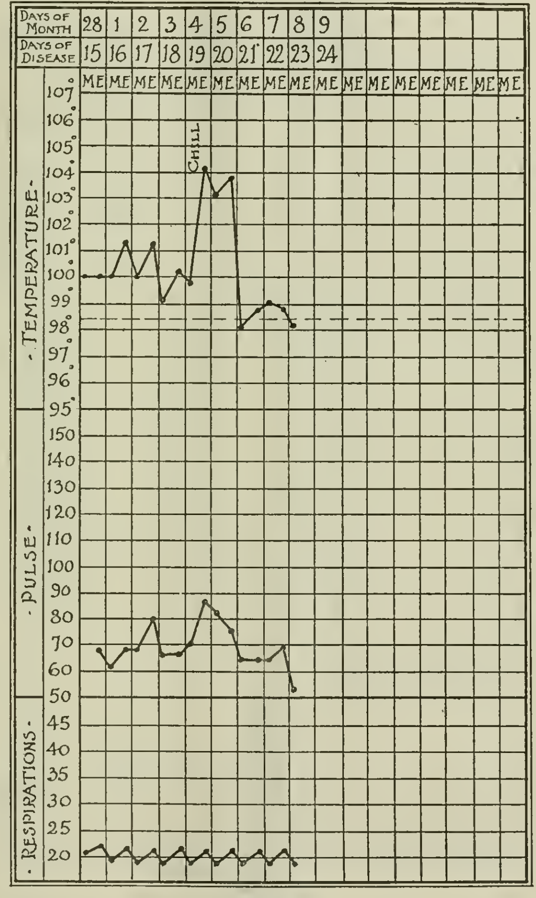

Chart 3.

With our serum, then, we have tried to introduce into the patient's body specific substances destructive to the typhoid bacillus, substances produced by inoculation in the blood and tissues of the horse. In other words, any immunity induced by this treatment is of the passive variety. With the filtrates and residues our object has been to stimulate the patient's own blood and tissues to greater production of specific antibodies, and the consequent shortening of his disease. That is to say, we have tried to hasten and strengthen the active immunity natural to the disease by the introduction into the body of additional small doses of specific infectious material.

That these inoculations, therefore, should be effective and advisable from a therapeutic standpoint it is essential, first, that the patient be not so sick that he cannot react with greater efforts towards destruction of invading germs and, second, that he can stand the temporary increased intoxication due to that destruction.

A comparative study of 130 cases of typhoid fever appears in the following tables, which offer many points of interest, but which must be scanned very critically lest they convey false impressions.

In the first place the percentage of children in any typhoid series is important because, as is well

TABLE I.

	Routine series.	Serum series.	Filtrate series.	Residue series.
No. of cases treated,	74	35	74	21
Cases 15 years of age or younger,	19	6	16	6
Average day of disease on entrance,	12.05	10.4	10.21	11.4
Average day of beginning treatment,	12.05	15.6	13.83	13.05
Treatment delayed, lack of diagnosis,	(20)	8	9	5
Average necessary delay,	(6)	4.25	8.88	5
Average length of fever in original disease,	67 cases 27.35	33 cases 30.3	63 cases 27.45	19 cases 32.5
No. of days in hospital,	67 cases 31.77	33 cases 45.75	63 cases 41.57	19 cases 42.42

TABLE II.

	Day of beginning treatment.	Routine treatment series.	Serum series.	Filtrate series.	Residue series.
Average length of fever subsequent to the beginning of treatment,	1–10 day	38 cases 16.55 days	9 cases 15.8 days	19 cases 11.15 days	8 cases 19.37 days
	11–20 day	22 cases 17.26 days	17 cases 16.1 days	34 cases 13.64 days	8 cases 20.75 days
	21–30 day	7 cases 12 days	4 cases 10.5 days	5 cases 18.6 days	2 cases 9 days
	31–40 day	0 0	2 cases 9 days	1 case 12 days	0 0
	41–50 day	0 0	2 cases 7 days	1 case 17 days	0 0

TABLE III.

	Routine series, 74 cases.	Serum series, 35 cases.	Filtrate series, 74 cases.	Residue series, 21 cases.
Relapses, true,	6= 8 %	8=22 %	9=12.1 %	3=14.2 %
Relapses, intercurrent,	4= 5+%	3= 8.5 %	4= 5.4 %	1= 4.7 %
Otitis media,	4= 5 %	2= 5.7 %	1= 1.3 %	0= 0 %
Pneumonia,	1= 1.3 %	0= 0 %	2= 2.7 %	0= 0 %
Empyema,	0= 0 %	1= 2.8 %	0= 0 %	0= 0 %
Phlebitis,	3= 4 %	1= 2.8 %	3= 4 %	1= 4.7 %
Pulmonary embolism,	1= 1.3 %	0= 0 %	1= 1.3 %	0= 0 %
Periostitis,	0= 0 %	0= 0 %	1= 1.3 %	1= 4.7 %
Furunculosis,	0= 0 %	6=17+%	6= 8 %	3=14.2 %
Bed sores,	1= 1.3 %	1= 2.8 %	2= 2.7 %	0= 0 %
Abscess parotid,	1= 1.3 %	0= 0 %	0= 0 %	0= 0 %
Empyema gall bladder,	1= 1.3 %	0= 0 %	0= 0 %	0= 0 %
Diarrhea,	33=44 %	20=57 %	22=29 %	5=23 %
Tympanites,	15=20 %	11=31 %	18=24 %	2= 9 %
Hemorrhage,	6= 8.7 %	7=20 %	9=12.1 %	3=14 %
Perforation,	2= 2.7 %	1= 2.8 %	3= 4 %	0= 0 %
Delirium,	16=21 %	11=31 %	15=20 %	6=20 %
Severe renal disturbance,	9=12.1 %	8=22 %	7= 9 %	2= 9 %

TABLE IV.

	No. of cases.	No of deaths.	Per cent. of deaths.	Cause of deaths.	Remarks.
Routine treatment series,	74	7	9.4	Toxemia.	
				Toxemia.	
				Toxemia.	
				Hemorrhage.	
				Hemorrhage and perforation.	
				Toxemia.	
				Toxemia.	Embolism and pneumonia.
Serum series,	35	2	5.7	Toxemia.	
				Hemorrhage and perforation.	Operation.
Filtrate series,	74	11	14.8	Pulmonary embolism.	
				Hemorrhage.	
				Pneumonia.	Otitis media.
				Perforated appendix.	
				Toxemia.	
				Toxemia.	
				Toxemia.	
				Hemorrhage.	
				Perforation.	Operation.
				Hemorrhage.	
				Perforation.	Inflammation of both maxillary joints.
Residue series,	21	2	9.5	Hemorrhage	Mixed infection with staphylococcus aureus.
				Hemorrhage.	

known, the disease in children is apt to be mild in type under natural conditions.

(2) Typhoid patients rarely come under any form of treatment until the disease has been in progress several days. Hospital experience, as shown by 204 cases, makes the average day of entrance the eleventh day. This early period, moreover, most important for the inauguration of any specific treatment, is still further lengthened by the fact that, even at this stage, a positive diagnosis is often impossible.

(3) In 204 cases specific treatment could not have been begun immediately in 42 instances, and the average increased delay from that cause would have been five days. Until, therefore, earlier diagnosis becomes available, specific treatment must be severely handicapped. Table II would seem to bear out this contention, for in spite of delayed diagnosis and treatment, there was in the early cases an apparent shortening of the original fever in the serum and filtrate series.

In the residue series, however, the subsequent fever was apparently lengthened, and statistics thus strengthen what was my strong impression while the cases were under observation, namely, that these cases were drawn out, but on the other hand seemed unusually mild in character. The coincidence of increased length with increased mildness may be only apparent, but further experience may give it great importance. As to the average stay in the hospital, the cases under specific treatment stayed considerably longer, — due undoubtedly to the large percentage in those cases of relapses. One serum case, for instance, went through five relapses and was in the hospital 116 days.

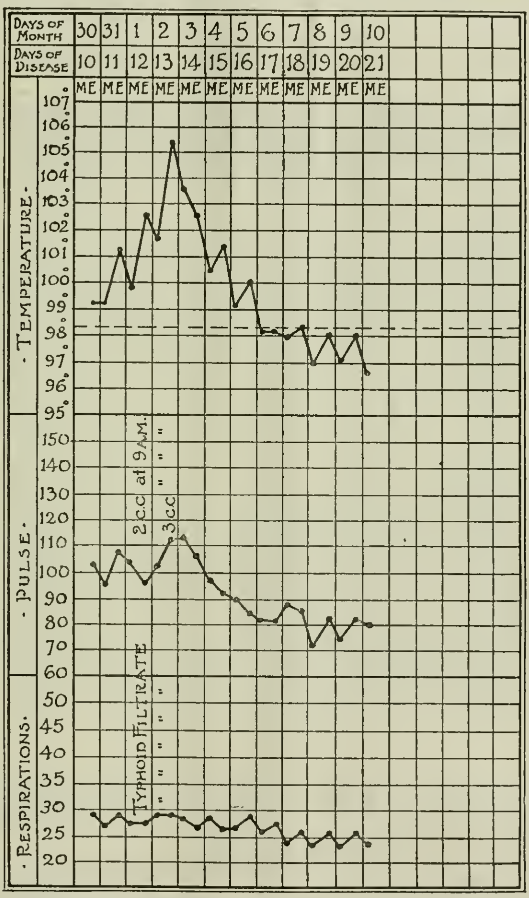

Chart 4.

The comparative frequency of complications appears in Table III.

Taken with the great reserve with which all such tables must be observed, we see that the impression of mildness in the residue series is further borne out.

The high percentage of diarrhea in the serum cases was due undoubtedly to the rectal administration of the remedy, and consequent irritability of the lower bowel.

The frequency of hemorrhage was largest (4) in the cases treated with combined normal and typhoid serum subcutaneously. In one case only was it of serious import, being followed later by perforation and death. This high percentage was probably simply a coincidence.

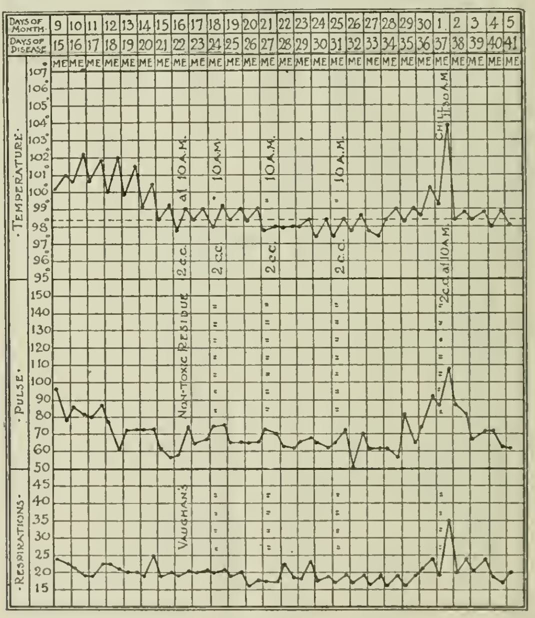

Chart 5.

Under the head of severe renal disturbance was included all cases showing more albumin and a greater number of casts than could be expected from ordinary febrile conditions. The serum series shows apparently a very high percentage of kidney involvement, but close scrutiny shows that 4 of the 8 cases had this urinary condition before specific treatment was begun.

In studying the table of mortality (Table IV) one is struck immediately, of course, by the large mortality in the series of 74 filtrate cases as compared with 71 routine cases. This very unfavorable showing is very misleading, for in the first place the death from embolism occurred without warning nine days after inoculation had ceased, and when the patient was apparently becoming rapidly convalescent. There was a similar case of embolism in the untreated series.

The case which died of pneumonia had practically finished a mild typhoid infection when double otitis media required etherization. Pneumonia and death supervened in four days.

A perforated appendix claimed a third case. Treatment was not begun till the thirty-second day. This case had been very severe with hemorrhage on the twenty-fifth day. The case was doing well when perforation demanded immediate operation. A case of perforation in the routine series, on the other hand, came to operation and recovered, a fact fortunate for the individual, but very disturbing in a consideration of mortality statistics.

Finally, it is very important to know that all fatal cases, with one exception (second perforation), were severely sick when they came under treatment, and the outlook in such cases, as we have seen, is not encouraging.

In the residue series the first fatal case, as proven during life and autopsy, was a mixed infection with the staphylococcus aureus. With our present knowledge this case would have received a mixed treatment of typhoid and staphylococcus vaccines, and might possibly have been saved.

Hemorrhage in typhoid, which claims so many victims, seems to be due, in part, at least, to a faulty coagulability of the blood. It is not probable that antityphoid measures alone can materially affect mortality from this cause.

In this investigation certain phenomena have been observed which deserve mention.

In the serum series 1 case alone was marked by an unusual manifestation. A woman, moderately sick, had received subcutaneously for six days 100 cc. of antityphoid serum. On the seventh day, coincident with a very marked urticaria, the temperature fell suddenly, and her pulse became very weak. She was in a dangerous condition for twenty-four hours. The circulation then rapidly improved, in fact the clinical condition was better than before the occurrence. I ascribe it either to a sudden destruction of many typhoid bacilli with resulting hyperintoxication, or to some internal manifestation allied to the urticaria, and due to the same cause, namely, large amount of horse serum.

In the filtrate series, 29 cases were remarkable through the occurrence of quite characteristic reactions, namely, a chill coming almost always one hour after inoculation, and accompanied by a sharp rise in temperature, pulse and respiration. This increase in symptoms was followed in many instances by a marked decrease in the temperature and the pulse, and considerable improvement in the general condition of the patient. (See Chart 1.) After a short interval the temperature in most cases went up again, but in a few instances the temperature remained at normal permanently. (See Chart 2.)

This phenomenon, though rarely, is seen in the natural course of typhoid. (See Chart 3.) Tentatively I would explain it by supposing that ordinarily the destruction of typhoid bacilli with resulting toxin production takes place quite continuously, and sudden fluctuations in the intoxication are rare. Occasionally, however, under natural conditions, and especially under filtrate inoculation, destructive agencies are brought into sudden and excessive action with the resulting temporary increase in symptoms. This excess of action, as I take it, might well be followed temporarily by no action at all, and that would explain the fall in temperature and pulse. After a short interval the destructive apparatus would again take up its work, and the intoxication would go on (Chart 1) unless all the germs had been killed. In this case the temperature would remain normal, there being no further bacilli to furnish intracellular toxin. (Chart 2.) It may be possible to prove the truth or falsity of this theory by observation on the opsonic index before and after chill.

Another filtrate case was interesting because it shows very probably what might be accomplished in a majority of typhoid cases if they could but receive specific treatment very early in the disease. (See Chart 4.) This patient came in very mildly sick on the tenth day of the disease. Two inoculations with filtrates produced temporarily a marked increase in his symptoms, but this was followed immediately by a rapid and permanent convalescence. That these filtrates, furthermore, are anything but indifferent fluids I demonstrated on myself by a subcutaneous inoculation of 2 cc. For twenty-four hours I had fever, headache, backache, increased pulse-rate; in fact, all the common symptoms of an acute infection. Moreover, in three weeks my blood developed a faint but perfectly distinct typhoid reaction.

Finally, I have to record a series of 28 cases in which it was attempted to prevent relapses in typhoid. To accomplish this the patients were inoculated at increasing intervals during the convalescence with small doses (generally 2 cc.) of Vaughan's nontoxic residue.

In 28 cases there was one relapse. The incidence of relapse among the untreated cases during the same epidemic was 25 in 113 cases. That is to say, the percentage of relapses was reduced apparently from 22.1% to 3.57%. My strong impression that this gratifying result is real is reinforced by the behavior of some of the cases under inoculation.

For instance, in Chart 5, it is seen that four inoculations had been given during the convalescence without clinical manifestations. Five days after the last inoculation, however, the temperature began to go up in a very suspicious manner. An inoculation exactly similar to the previous ones now produced a very sharp reaction with a chill. The next morning, however, the temperature returned to normal and remained there. I believe this case would have relapsed if the beginning re-infection had not been nipped in the bud by the inoculation.

SUMMARY.

The study of specific therapy in 130 cases of typhoid fever has brought out the following facts:

(1) That specific therapy, confined to the original disease, increases, apparently, the tendency of the disease to relapse.

(2) That by therapeutic inoculation, however (Vaughan's nontoxic residue), continued into convalescence, the relapse in typhoid fever can be largely eliminated. This claim is made with much assurance, but is, of course, subject to confirmation by observation upon a much larger series of cases. If relapses can be prevented then it follows almost certainly that mild typhoid infections can be aborted. This study would show, furthermore,

(3) That to get the best results cases must be seen as early as possible in the infection, but

(4) That an early diagnosis in typhoid is oftentimes impossible, and that, for this reason, specific therapy suffers under a severe handicap.

(5) That antityphoid serum was no more effective than filtrates and residues and was infinitely more expensive.

(6) That typhoid filtrates may exert a powerful effect upon the clinical course of the typhoid process, their use being followed in many instances by chills, or rise in temperature and pulse, these being followed in their turn, oftentimes, by marked fall in temperature, pulse and respiration, and a general improvement in the clinical picture. The nature of these reactions is still unknown. It is hoped that further study, especially that of the

opsonic index, in connection with these reactions, may give valuable information concerning their nature.

(7) That the nontoxic residue of the typhoid bacillus as prepared by Professor Vaughan seems to make the typhoid process longer, but milder. As stated above, it is apparently very effective in the prevention of relapses.

MODERN OPERATIONS FOR COMPLETE REMOVAL OF THE PROSTATE.

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At the present time two methods of complete prostatectomy are being urged by earnest advocates: one is the suprapubic method and the other the perineal; both of these methods usually permit of thorough removal of the prostate. The choice between them should be based on the relative mortality of the operation, the quickness of recovery, and upon the degree of restoration of function obtained by each.

In order to decide these points and make a wise selection between these operations, it is, therefore, important to assemble statistics which shall give us reliable data, both as to mortality and as to after condition. Something is also to be said in regard to the technical difficulties which surround each operation.

I operated first by the suprapubic route, because it was an easy method of approach to the gland, requiring but little dissection. Since, however, I began to use the perineal operation I have gradually used it more and more, and I now find that I regard it as the method of choice, and I apply it to every case in which the removal of the prostate is the prime object of the operation. This change of practice has come about because I have found that although it takes a somewhat longer dissection to reach the prostate by the perineal route, the opportunity for accurate inspection and exact operative procedure is so much better as to wholly outweigh the added difficulties of the dissection. Some operators consider it of no consequence whether the prostatic urethra is torn much or little during the operation. The fact that good results are obtained when all of the urethra within the prostate is torn out with the gland leads many to think that it matters little what happens to the prostatic urethra, anyway. I cannot share this view, for I believe that when the prostatic urethra is for the most part preserved in its proper relations, not only is the healing and restoration of the parts more speedy but the chance of satisfactory restoration of function is more sure. Young has cited facts to show the retention of sexual power when the utricle and seminal ducts are spared. I believe that the restoration of satisfactory urination is more sure when the prostatic urethra has not been seriously torn.

One cause for lack of success in complete prostatectomy has been from the formation of flaps of mucous membrane which have afterwards acted as valves to hinder urination. These flaps form in two places: at the vesical outlet and at the apex of the prostate where it joins the membranous urethra. If the prostate is enucleated from above, the mucous membrane is broken through with the finger at the vesical outlet and through this opening the gland is stripped out. Working from above downwards, it must not infrequently happen that a portion of the urethra towards the apex of the prostate is left, while the portion of the urethra towards the bladder is thoroughly removed. This part of the urethra which is left projects back into the cavity from which the prostate has been shelled out. It forms, as it were, a cuff. It may be readily seen that with the current of urine flowing down from above, this cuff of mucous membrane, by folding from side to side, may readily close the opening of the urethra from an obstructing valve. Operating through the perineum with a wide incision, which allows the parts to be brought into view, the various steps of the operation are under the guidance of the eye, and the difficulties above described are easily avoided. The enucleating finger, entering at the apex of the prostate, separates the gland from its outer capsule, then from the vesical side, and lastly strips it off from the urethra. This separation of the gland from the urethra is done from within outwards, can be assisted by the scissors and blunt dissector and preserves the urethral wall for the most part.

Up to this stage of the operation the only damage done to the urethra has been the opening through which the tractor was introduced, and usually some tearing of its floor. The roof of the urethra is left intact. There is no cuff of mucous membrane which can roll in and form a valve. In a difficult case when the urethral wall is torn more than is usual the rent is so disposed that any flap that is formed is attached about the orifice of the bladder so that the urine as it flows out does not double it up in front of the stream but rather washes it out flat and escapes by it. If now there is a third lobe which has a broad base, it can be readily removed through the cavity left by the removal of the lateral lobes. If a very prominent third lobe is peeled out without removing the mucous membrane covering it a large loose flap is left which may act as a valve and obstruct the vesical orifice just as the third lobe itself did. When there is a pedunculated third lobe I prefer, therefore, to pull it out from the urethra and to cut it off with the thermocautery, removing its mucous membrane with it. In some cases there are several projections into the bladder, all of which can be dealt with in the same manner. By cutting off these pedunculated outgrowths *in toto* we avoid the formation of flaps of mucous membrane, which may afterwards act as valves. The vesical opening left after the removal of the lateral lobes is ample for the handling of a good-sized third lobe. I have found the lithotomy scoop a useful instrument in pulling down these projecting growths and have never been seriously hampered by want of room to properly deal with them.

Three times in the past three years I have encountered small obstructing prostates which could not be enucleated. One of these I approached from above, and finding a bar at the neck of the bladder I cut and cauterized it as deeply as seemed safe with so small a prostate. This operation was followed by but little improvement. The other two cases I treated by perineal prostatectomy. Finding that the glands would not peel out I cut them out piecemeal with rongeur forceps and then with a finger as a guide in the bladder I cut away the bar, bit by bit, till nothing was left but soft mucous membrane. In both of these cases the restoration of urination was thoroughly good.

My personal experience then has been that the restoration of function is more complete and lasting after the perineal than after the suprapubic operation. The control of hemorrhage I have found distinctly easier by the perineal route. A strip of gauze can be snugly packed into the prostatic capsule and then the end can be brought down through the outer wound which it should not fill tightly, for too much pressure against the rectal wall may produce sloughing and lead to a fistula. In the suprapubic operation it is difficult to apply packing so that it will stay in place and continue to exert pressure against the bleeding surface without so filling the base of the bladder as to exert injurious pressure on the ureters and to cause great discomfort to the patient. In one case of suprapubic prostatectomy I had great difficulty in controlling the hemorrhage, and lost my patient owing, as I thought, to the interference with the kidneys caused by the tight packing. Convalescence after perineal prostatectomy is much quicker and more comfortable than after the suprapubic operation. The tubes can be removed on the third to the fifth day, and after this the patient soon passes his own water with little or no involuntary leakage. At first the larger part of the water comes through the perineal wound and serves the good purpose of keeping this thoroughly washed out. Occasionally, for a few days, the urine comes away involuntarily through the perineal wound. This soon ceases, however, and usually, by the end of a fortnight, the greater part of the urine is passed *per urethram* with little or no escape through the perineum. It has happened in one or two of my cases that after taking out the tubes the patient has been unable to void the urine. In these cases the catheter is easily introduced through the urethra and drainage kept up for a few days in this manner, at the end of which time the power of voluntary urination has been invariably restored. In some few cases the patients preferred to have the catheter retained till the tenth or twelfth day on account of the comfort of keeping the dressings dry. The in-lying catheter does not interfere with getting the patients out of bed, and it is our practice to get them up as soon as possible, for they seem to do better when moving about.

Mortality. — In the past four years I have operated on thirty-five cases by perineal prostatectomy. Two cases have died; one three days after operation, the other at the end of a month.

The histories of these two fatal cases are as follows:

Case 14. E. F. S., aged seventy-seven, entered the hospital March 26, 1905, with a history that he had been for ten years troubled with frequent urination.

Four weeks before entrance he began to feel as if he did not empty the bladder.

Three weeks ago the urine stopped. He then resorted to the catheter, which has been used ever since.

Two days ago he began to have difficulty in using the catheter and he has now gone fourteen hours without having any urine drawn.

The greatly distended bladder was emptied and constant drainage was instituted.

At the time of entrance the urine was 1,027 specific gravity and showed a trace of sugar. Quantity of urine was only 19 oz. in the first twenty-four hours; the next twenty-four hours it rose to 35 oz.; and six days after entrance it rose in twenty-four hours to 85 oz., falling back, however, to 55 and 42 on the following days.

The patient was troubled with bronchitis of a chronic nature. Operation was put off in the hopes of somewhat improving this condition. However, his condition was so uncomfortable and manifestly getting worse that operation was undertaken on April 11.

In cutting into the prostate, considerable pus escaped and was pressed out during the subsequent enucleation.

The patient made a good recovery from ether, but on the following day the temperature rose to 101° and at night reached 103°. The quantity of urine in that twenty-four hours was 20 oz. and the specific gravity 1,018.

On the 13th of April, the temperature remaining up, the patient showed cyanosis, and râles were found at the base. The quantity of urine in this twenty-four hours rose to 40 oz. and contained 1.3% sugar.

On the 14th the patient became unconscious. The quantity of urine rose to 90 oz., with 3% sugar, and having a specific gravity of 1,028.

The patient died in the afternoon, and unfortunately an autopsy could not be obtained.

Case 15. P. P., aged sixty-one, entered the hospital April 10, 1905.

At time of entrance the patient was stupid and urine was tinged with blood. Patient said that he had always urinated well till five weeks ago, when he was seized with acute retention and catheterized. Since that time he has dribbled his urine in small quantities, with an occasional catheterization.

At the time of entrance the bladder extended above the umbilicus and the catheter introduced drew 40 oz. without emptying the bladder. Three hours later 20 oz. were drawn and in the evening of that day he was placed on constant drainage.

Two days after entrance the quantity of urine was 100 oz. in the twenty-four hours, specific gravity being 1,010.

On April 20 perineal prostatectomy was done, following which he passed 100 oz. of urine, with a specific gravity of 1,017.

After this the quantity of urine fell till, on April 24, it was 50 oz. in twenty-four hours, with a specific gravity of 1,018.

He now became flighty in his mind, pulled out his tube, and had a catheter introduced through the urethra. He was gotten out of bed, thinking that this might improve his condition, but, although the quantity of urine became fairly good, he gradually became more and more feeble and died on May 18, one month after operation.

No.	Age.	Name.	Residence.	Duration.	Amt. of Obstruction.
1	64	E.	Medford, Mass. Hospital case.	3 years.	Catheterized himself every 4 hours.
2	73	C.	Everett, Mass. Hospital case.	3 weeks.	Depends entirely on catheter since first attack.
3	56	S.	Amesbury, Mass. Hospital case.	7 years.	Depends on catheter entirely. Litholapaxy 3 days before operation.
4	54	N.	Dover, Mass. Hospital case.	7 years.	For 2 years urine dribbled. Bladder distended to umbilicus.
5	65	M.	Boston, Mass. Private case.	1 year.	Residual, 8 oz. in 1903. Later depended wholly on catheter.
6	68	C.	Haverhill, Mass. Hospital case.	2 years.	2 years ago frequency every 3 hours, now every 10 or 15 minutes.
7	71	H.	Milford, N. H. Private case.	3 years.	Frequency 21 times in 24 hours. Bladder distended above umbilicus.
8	72	L.	Cambridge, Mass. Hospital case.	Few weeks.	April 23 abdomen distended to umbilicus; 83 oz. drawn by catheter. Constant drainage.
9	53	V.	Cambridge, Mass. Hospital case.	11 years.	For 6 months used catheter once a day. Residual, 15½ oz.
10	71	R.	Haverhill, Mass. Hospital case.	12 years.	Urinates every hour or less in day, 1 to 3 hours at night.
11	57	F.	Haverhill, Mass. Hospital case.	2 months.	11 days ago stoppage. Since, catheter twice a day.
12	65	G.	Hospital case.	8 years.	Glycosuric. Past month dependent on catheter. Ten days ago could not introduce catheter. Constant drainage.
13	60	G.	East Dedham, Mass. Hospital case.	10 years.	Occasion use of catheter for retention. Entirely last two months.
14	77	S.	Hyannisport, Mass. Hospital case.	10 years.	Dependent on catheter for past 3 weeks.
15	61	P.	Roxbury, Mass. Hospital case.	5 weeks.	5 weeks ago acute retention. Catheter several times since. Abdomen much distended.
16	64	C.	Cambridgeport, Mass. Hospital case.	5–6 years.	Uses catheter 3 times daily.
17	78	H.	Haverhill, Mass. Hospital case.	10 years.	Suprapubic operation in 1897. Has used catheter for two years.
18	64	C.	Boston, Mass. Private case.	16 years.	Occasional use of catheter. Residual, 1⅙ oz.
19	62	P.	Hudson, N. H. Private case.	15 years.	For year used catheter 1–3 times at night, once in day.
20	69	M.	Rockland, Mass. Private case.	10 years.	Residual, 3 oz.
21	61	C.	Harwich, Mass. Hospital case.	7–8 years.	Acute retention 2 days ago. Bladder distended from umbilicus to pubes.
22		S.	Boston, Mass. Private case.	Many years.	Stream always sluggish. Recently almost stopped: after recovery, residual, 8 oz.
23	66	A.	Dorchester, Mass. Private case.	6 years.	Residual, 3½ oz. Urinates once an hour in day, only twice at night
24	60	S.	Cambridge, Mass. Hospital case.	1 year.	April 13 stoppage; 50 oz. by catheter. Catheter most of time since. Residual, 8 oz.
25		F.	Peabody, Mass. Private case.	2 years.	Increasing frequency and difficulty in urination. Worse past 6 weeks, requiring catheter.
26	61	W.	Waltham, Mass. Private case.	3 years.	Residual, 3 oz. Frequency, every hour or two during day.

Date of Op.	Result.	Pathology.	Condition after Recovery.
Feb., 1904.	Recovered.	Glandular hypertrophy.	Six months later urinates every 3–4 hours. "Feels a new man." No residual. March, 1905, same report.
Feb., 1904.	Recovered.	Glandular hypertrophy.	March, 1905, all urine per urethra. Residual, 2 dr.
Feb., 1904.	Recovered.	Hypertrophy of glands.	March, 1905, no residual. Better than for 20 years. Perfect control.
March, 1904.	Recovered.	Glandular hypertrophy.	One month later no residual.
March, 1904.	Recovered.	Diffuse hypertrophy. Small prostate.	In 1907, good health. Passes all urine naturally. Residual in 1906, 2 dr.
April, 1904.	Recovered.	Glandular hypertrophy.	May, 1905, very well since operation.
May, 1904.	Recovered.	Glandular hypertrophy with cystic dilatation.	Four months later residual 2–2½ oz.
May, 1904.	Recovered.	Glandular and cystic hyperplasia.	Urination restored. At first residual, 17 oz.; one month later fell to 5 oz. At that time used catheter once a day.
May, 1904.	Recovered.	Simple hypertrophy.	One month later passing urine with very little pain. Residual, 4–6 oz.
May, 1904.	Recovered.	Glandular hypertrophy.	Last of July better than for years. No residual. June, 1905, much improved. Perfect control.
June, 1904.	Recovered.	Glandular hypertrophy.	Seen in September. Very well. Urination normal. June, 1905, symptoms all relieved.
Feb., 1905.	Recovered.	Chronic glandular hypertrophy.	April, 1906, well since operation. Urinates every 4 hours, once at night. Residual, 2½ oz. Sugar intermittent, now quite 1%.
Feb., 1905.	Recovered.	Glandular hypertrophy.	Calculi removed. March, 1906. No difficulty. "Never felt better." M. G. H.
April, 1905.	Died.	Glandular hypertrophy.	Sugar found in small amount. Passes 90 oz. urine. No autopsy. M. G. H.
April, 1905.	Died.	Glandular hypertrophy.	Died one month later of pneumonia. M. G. H.
June, 1905.	Recovered.	Adenoma.	Jan., 1907, died of heart failure. "Had no trouble with urination since operation." M. G. H.
Oct., 1905.	Recovered.	Cystic adenoma.	M. G. H.
Nov., 1905.	Recovered.	Glandular hypertrophy with retention cysts.	Jan., 1906, felt well. Urinates every 1½–2½ hours. Residual, ½ oz.
Dec., 1905.	Recovered.	Adenoma.	July 30, 1905, ½ oz. "Feels 100% better since operation."
Jan., 1906.	Recovered.	Adeno-fibroma with cystic formation.	No residual.
April, 1906.	Recovered.	Cystic adenoma.	One month after operation residual, ½ oz.
April, 1906.	Recovered.	Glandular hypertrophy.	Urination normal. No residual.
April, 1906.	Recovered.	Glandular hypertrophy.	June 23. No residual.
May, 1906.	Recovered.		
June, 1906.	Recovered.	Glandular hypertrophy.	June, 1907. Urinates 4 times in day, once at night. "Feels like a boy."
Nov., 1906.	Recovered.	Cysto-adenoma.	No residual. Reported in June, feeling very well, with no discomfort whatever about urination.

No.	Age.	Name.	Residence.	Duration.	Amt. of Obstruction.
27		P.	Brighton, Mass. Private case.	3 years.	Residual, 2 oz. Urinates with difficulty every 2 hours. Several attacks of inflammation with great discomfort.
28	70	L.	Brighton, Mass. Private case.		For 20 years slowness of stream. Of late worse, and required catheter twice a day. Residual, 30 oz.
29	75	O.	Neponset, Mass. Private case.	4 years.	Wears a catheter all the time.
30		W.	Peabody, Mass. Private case.		One year plus; frequency every hour. Residual, 15 oz.
31		F.	Westboro, Mass. Private case.	5 years.	Residual, 2–4 oz. Used catheter occasionally.
32	72	H.	Maine. Private case.	15 years.	For past 2 years used catheter chiefly. Residual, 12 oz.
33	65	W.	Wellesley Farms, Mass. Private case.	10 years.	Suprapubic in 1899. Difficulty returned until dependent on catheter, using 8 times in 24 hours.
34	65	C.	Brookline, Mass. Private case.	6 years.	Bladder difficulty, catarrh, etc. Catheter twice a day.
35		W.	Tyngsboro, Mass. Private case.	About 2 years.	Increasing difficulty and occasional retention, requiring catheter.
36		F.	Worcester, Mass. Private case.	4 years.	Gradually increasing slowness of stream. Never pain or frequency. Lately catheter twice a day. Residual, 25 oz.

The symptoms in this case were somewhat difficult to understand, and a neurologist who saw him in consultation thought that his condition indicated a previous apoplectic seizure, which had left some mental deterioration.

Case 14. The first of these patients with chronic bronchitis and glycosuria well illustrates the condition of broken health in which many of these patients come to the surgeon.

Case 15 did not die as an immediate effect of the operation but from some toxemia, as I thought, originally, due to the obstruction in the prostate with its secondary effects on the kidneys. In both cases, however, the operation failed to keep them alive and they should be rated in the mortality risk.

They give a death-rate of 5.5% in this small series of cases. This is somewhat higher than the mortality rate in the statistics of some operators, and higher, I believe, than the normal risk of the operation. I have now had 21 successive recoveries due in part, doubtless, to increased skill in operation and to experience in after-treatment.

Young reports 60 successive cases without a death. In no one of the 33 cases that recovered was there a failure to restore the power of voluntary urination, and in no case was there incontinence. In one case (case 8) the bladder was distended by 83 oz. of urine when he came under treatment. At first, after operation, the residual urine was 17 oz., it had fallen to 5 oz. one month later. He was then lost sight of. He had been freed from the constant thraldom of the catheter, but found its occasional use of advantage in keeping the bladder clean. Case 9 had a residuum of 15½ oz. before operation, and one month after operation was passing urine with a little discomfort and had a residual urine of from 4 to 6 oz.; he was then lost sight of. It is to be remembered that in many cases of prostatectomy the full measure of improvement is not reached for several months.

From these cases and from others I have received the impression that a certain proportion of these patients, whose bladders have been long distended, lose the expulsive force to such a degree that they are afterwards unable to completely void the urine even when the obstruction is wholly removed. This is due not only to the induced atony of the walls but also to the sacculation which forces portions of the mucous membrane out between the muscular bundles so that the sacculi have no contractile tissue in their walls and so are unable to empty themselves when the bladder closes down.

It remains to speak of my experience with rectal injury, which is constantly urged as an opprobrium of the perineal operation. In case 5 the vigorous traction of a retractor tore a rent about an inch long, transversely, across the rectal wall. It was closed with a double row of chromic gut stitches and healed by first intention without causing any trouble. Since that experience I have always covered the rectum with the end of a gauze sponge and have found this a perfect protection. In case 17, an old and broken man of seventy-eight, who had had a partial prostatectomy by the suprapubic route eight years before,

Date of Op.	Result.	Pathology.	Condition after Recovery.
Nov., 1906.	Recovered.	Glandular hyperplasia with retention cysts.	Seen in June, 1907. Was perfectly well. Passing water normally. Regarded himself as greatly benefited by operation.
Nov., 1906.	Recovered.	Glandular hyperplasia with retention cysts.	In excellent health. Free and comfortable urination, 5 or 6 times in 24 hours.
Dec., 1906.	Recovered.	Glandular hypertrophy.	June, 1907. Urination easy and comfortable, 5 times in day, 3 at night. Has gained weight; in good health.
Jan., 1907.	Recovered.	Glandular hyperplasia with cystic dilatation.	In good health.
Jan., 1907.	Recovered.	Glandular hyperplasia.	
Feb., 1907.	Recovered.	Glandular hypertrophy.	April. Holds urine 6 hours. Feels better than for years.
March, 1907.	Recovered.	Glandular and fibrous hypertrophy.	April. Residual, 3½ oz. Urination every 2 hours in day, twice at night.
March, 1907.	Recovered.	Glandular and fibrous hypertrophy.	April. Residual, 3 oz.
March, 1907.	Recovered.	Glandular hypertrophy.	June, 1907. No difficulty in urination. No frequency in day, once in night.
June, 1907.	Recovered.	Glandular hypertrophy.	

was greatly troubled by a persistent suprapubic fistula. For six years he passed water unsatisfactorily by the natural efforts, but for two years he had returned to the use of the catheter. In the hope of relief from his fistula he decided upon further operation. The effect of the former operation seemed to have been to fix the prostate rather high in the pelvis so that it was more than usually difficult to reach from the perineum. The hemorrhage was no more than it often is, but the already feeble condition of the patient caused apprehension on this score, and after he was in bed an extra gauze was packed into the outer wound. The pressure of this led to a slough in the rectal wall which caused a fistula that was slow to heal and greatly prolonged the convalescence. Voluntary urination was re-established and the suprapubic fistula closed, but there continued to be a considerable leakage into the rectum. In both of these cases the injury to the rectum was due to lack of experience on my part and in both cases the difficulty was preventable.

Preparatory treatment. — It often happens that these patients reach the surgeon in a condition very unfavorable for operation. The two fatal cases illustrate this. Other cases which seemed equally unfavorable were so improved by preparatory treatment as to bear the operation perfectly. Case 25 was an example of a severe cystitis with probably pyelonephritis and certainly uremia, who required one month of preparation before operation could be safely undertaken.

Case 25. Mr. F., sixty-three years of age. Seen by me May 11, 1906. For two years he had had increasing frequency and difficulty in urination. Six weeks before I saw him the difficulty of urination had greatly increased and required the constant use of a catheter. For several days he had had fever and nausea. He was of feeble muscular development though he had had but little illness during his life. Examination showed him to be mentally confused, with a feeble, irregular pulse, a dry, brown tongue, anorexia and persistent nausea. The bladder could be felt moderately distended and the prostate was smoothly and evenly enlarged. The catheter passed easily and drew about a pint of very cloudy urine and at the end about 2 oz. of pus flowed out. The catheter was fastened in for constant drainage. Liquid diet with as much water as he could comfortably take. First twenty-four hours. 60 oz. of urine, much clearer than had been drawn at entrance. Specific gravity 1,008, albumin trace, urea 19 gm. The urine quickly increased in amount up to 120 oz., and his power of taking food improved, but slight occasional nausea with a dry tongue persisted for a long time. Finally, at the end of a month, during most of which time the amount of urine had remained above 100 oz., the tongue cleared off, the pulse became steady at about 70 and perineal prostatectomy was done.

Pathological report: Glandular hypertrophy with retention cysts.

Convalescence was slow but steady. This patient was up in five days but the wound healed very slowly. Reported in November: "Passes water four times in day, once in ngiht." "Feels like a boy." Case 12 was an instance of glycosuria which was so improved by treatment that a prostatectomy was well borne.

The accompanying table gives the essential details of this series of cases.

THE REACTION OF SOME MILK MODIFICATIONS TO RENNET.

BY H. ILLOWAY, M.D., NEW YORK.

In the course of the examination of the gastric chemical processes, the examination for pepsin or pepsinogen and for rennet or labzymogen has become with me part of the regular routine.

The method employed for rennet is that of Leo, namely, the addition of a few drops of gastric filtrate to a certain quantity of milk.

On one occasion, on a Sunday, being anxious to complete the examination for a patient who was about to depart, and not having any liquid milk at hand, and being unable to obtain any (the stores being already closed), I took some fresh condensed milk (unsweetened)[1] which was in the house, and making a solution of what I deemed the proper strength, made use of that. Apparently no reaction followed. The fluid remained fluid, even after standing in the thermostat at a temperature of 40° C. a much longer time than is ordinarily required with fluid milk.[2]

No result having been obtained, I was uncertain whether this was because of the character of the milk or because the gastric filtrate had spoiled. However, a retrial of the latter the next morning demonstrated that it was in good condition and the rennet therein very active, a proper rennet cake (Labkuchen) being promptly formed.

The fault lay therefore in the milk.

I repeated the experiment with the solution of condensed milk several times, but always with the same result, — no reaction apparently, the fluid remaining (as shown by a jarring of the thermostat) fluid.

Without any further inquiry into the matter I concluded that for some reason, to me then unknown, this form of milk was not adapted to this special purpose, to wit, testing for rennet, and I did not use it so again.

Last year, 1906, a rather striking incident occurred in the course of practice that recalled my former experiences with condensed milk, and thereupon I concluded to make a careful investigation of the action of rennet upon this form of milk modification.

The method employed was that of Leo, but with the extensions thereof made by myself, as described in the article already referred to.[3]

The gastric filtrates used in these investigations were all tried by preceding control tests, and only those found normally active[4] were employed.

A. CONDENSED MILK (unsweetened).

The first three examinations are of a series made at longer intervals and not *seriatim* as regards the quantity of gastric filtrate used.

No. I. One Teaspoonful of Condensed Milk to 4 Oz. of Water.

(*a*) 20 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 5 cc. of gastric filtrate.

Result:

(*b*) In eight minutes coagulation of the casein in very fine, minute flocculi. On removing the glass from the thermostat and letting the mixture stand a little while longer, the flocculi sink to the bottom, forming a rather granular looking layer, and the serum floats on top. Shaken, they mix again and well with the serum.

(*a*) In twenty minutes there was coagulation of the casein in fine, minute flocculi, but not separated from the serum. After standing for some time, the flocculi began to settle at the bottom, but on the whole the separation was not so complete as in *b*.

No. II. One Teaspoonful of Condensed Milk to 6 Teaspoonfuls of Water.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.

Result: The process was slow.[5]

(*a*) In about forty minutes.
(*b*) In seventy-five minutes.

The reaction was the same as obtained in No. I, to wit, a coagulation of the casein in very fine, minute flocculi which remained in the serum, and only after quite a time tended to settle at the bottom.

No. III. Same Solution.

(*a*) 10 cc. of milk + ½ cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.

Result: In thirty minutes the reaction occurred in both, coagulation of the casein in very fine, minute flocculi. Allowed to remain in the thermostat for a further half hour, the mixture showed no change.

The following three tests, a retrial to verify the results obtained in the first series, were made at brief intervals and *seriatim* as to the quantity of gastric filtrate used.

No. IV. Same Solution.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.

Result:

(*a*) In forty-five minutes coagulation of the casein in very fine, minute flocculi.

(*b*) In one hour, the same result.

After standing some time the mixture separated into layers, floccular at the bottom, serum on the top.

No. V. Same Solution.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.

Result: In forty-five minutes, in both, coagulation of the casein in very fine, minute flocculi, as in No. IV.

No. VI. Same Solution.

20 cc. of milk + 5 cc. of gastric filtrate.

Result: In twenty-five minutes a coagulation of the casein in fine, minute flocculi, as in all the preceding tests.

The results of these various tests demonstrate that in this form of milk the addition thereto of rennet produces the same form of casein coagulation as obtains in the human mother's milk.

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[1] Such as is delivered every morning in small glass jars.

[2] Archiv für Verdauungskrankh., Bd. 11. Illoway: "Einfache Methoden zur quantitativen Bestimmung der vom Magen ausgeschiedenen Enzyme."

[3] *Loc. cit.*

[4] *Loc. cit.*

[5] *Ibid.*

This was the reason why I failed to obtain the characteristic reaction resulting in ordinary milk to which I had become accustomed.

The question now arose, Would the *sweetened* condensed milk react in the same way?

B. CONDENSED MILK (sweetened, in tin cans).[6]

No. I. One Teaspoonful of Milk to 6 Teaspoonfuls of Water.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result: The process was slow.
(*a*) In one hour coagulation of the casein in fine flocculi,
(*b*) In about one hour and three quarters.

The flocculi, though very small, were, nevertheless, somewhat larger than those resulting in the unsweetened milk.

After being placed in the thermostat, the whole became a little thicker (more syrupy) than the unsweetened milk.

No. II. Same Solution.

(*a*) 10 cc. of milk + ½ cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result: Same as in No. III, Series A, the only difference being that the flocculi resulting were slightly larger, as already recorded with No. I of this series.

Repetition of tests for verification.

No. III. Same Solution.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In forty-five minutes coagulation in fine flocculi.
(*b*) In one hour coagulation in fine flocculi, the flocculi slightly larger than those obtained in No. IV, Series A.

No. IV. Same Solution.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result: In thirty-five minutes coagulation of the casein in fine flocculi, as already described.

No. V. Same Solution.

20 cc. of milk + 5 cc. of gastric filtrate.
Result: In fifteen minutes coagulation of the casein in fine flocculi.

From the foregoing it is evident that the same result was obtained with the sweetened as with the unsweetened condensed milk, namely, an even coagulation of the casein in fine, very small flocculi which do not precipitate from the serum very readily, but are held intermixed with it for a comparatively long time.

The only difference between these two forms of condensed milk, so far as we are here concerned, is this, that the flocculi are slightly larger in the sweetened than in the unsweetened milk.

Having gone thus far, it interested me to know how some other milk modifications would be affected, and a series of similar tests was undertaken with these.

C. MODIFIED MILK (commercial).

No. I. Modified Milk for an Infant Two Months Old.[7]

(*a*) 10cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result: In both, coagulation in fine flocculi, like those described as occurring in Series B.

No. II. Modified Milk, 4.6.1.50.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In fifteen minutes.
(*b*) In twenty-five minutes.

A regular rennet cake (Labkuchen) formed, though not of such firm texture as in ordinary milk.

No. III. Modified Milk, 4.7.2.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In ten minutes.
(*b*) In twenty-five minutes; rennet cake as described in No. II above.
(*a*) 10 cc. of milk + 5 drops of gastric filtrate.
(*b*) 20 cc. of milk + 5 drops of gastric filtrate.
Result:
(*a*) In twelve minutes.
(*b*) In twenty-five minutes; rennet cake as described.

The reason for the repetition: In the first test a mixed gastric filtrate was used, in the second test a single gastric filtrate. In both No. II and No. III the rennet cake (Labkuchen) had not the smooth, solid texture seen in that formed in ordinary milk, but presented a more loose, a *meshed* appearance.

No. IV. Modified Milk, 4.7.2.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.
(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.
Result:
(*a*) In twenty-two minutes thickened; in thirty minutes rennet cake.
(*b*) In thirty minutes thickened; in forty-five minutes rennet cake well formed; in one hour serum separating in both.

No. V. Modified Milk, 4.7.2.

20 cc. of milk + 1 cc. of gastric filtrate.
Result: In twenty minutes the rennet cake was seen at the bottom of the glass and the serum that had separated, above it. In twenty-five minutes rennet cake of fair firmness.

No. VI. Modified Milk, 4.7.2.

20 cc. of milk + 5 cc. of gastric filtrate.
Result: Coagulation of casein set in almost immediately. The mixture being put into the ther-

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[6] Eagle brand was used.

[7] I had asked for modified milk for this age, and the tag attached to the bottle bore this inscription.

mostat. at the end of ten minutes rennet cake seemed formed and serum separating from it.

The rennet cake was of very loose texture, more an aggregation of large flocculi, and segments could be separated easily by a light shaking of the glass.

No. VII. Modified Milk, 3.6.2.

(*a*) 20 cc. of milk + ½ cc. of gastric filtrate.

Result: After forty minutes coagulation in large flocculi floating loose in serum.

(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.

Result: In thirty minutes rennet cake formed, but of loose texture, *meshed*, as it were.

D. HOME-MADE MILK MIXTURES.

Fluid milk (from a trustworthy source) ℥ij; lime water, ℥ ss; distilled water, ℥ ss.

No. I.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.

(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.

Result:

(*a*) In fifteen minutes rennet cake; not so firm as in undiluted milk; breaks up rather easily.

(*b*) In fifty minutes small masses of coagula seen floating around in the serum.

No. II. Same Mixture.

20 cc. of milk + 5 cc. of gastric filtrate.

Result: In twenty-five minutes a loose looking rennet cake, as if made up of separate masses of coagula; much looser than in undiluted milk, or better, a *meshed* rennet cake.

No. I. Milk, ℥ ij; Distilled Water, ℥ j.

(*a*) 10 cc. of milk + 5 drops of gastric filtrate.

(*b*) 20 cc. of milk + 5 drops of gastric filtrate.

Result:

(*a*) In fifteen minutes coagulation; removed from thermostat and allowed to stand for one-half hour; serum beginning to separate, rennet cake firm as in undiluted milk.

(*b*) In forty-five minutes rennet cake, as described above.

No. II. Same Mixture.

(*a*) 10 cc. of milk + 1 cc. of gastric filtrate.

(*b*) 20 cc. of milk + 1 cc. of gastric filtrate.

Result:

(*a*) In eight minutes, coagulation, rennet cake.

(*b*) In twenty-five minutes; in twenty minutes, serum separating.

No. III. Same Solution.

20 cc. of milk + 5 cc. of gastric filtrate.

Result: At the end of fifty-five minutes well-formed rennet cake and serum separated from it, firmer in texture than that resulting in the milk mixture containing lime water, and almost as firm in texture (in appearance) as that produced in undiluted milk.

As to any slight discrepancies in the time of reaction, these must be laid to the account, *firstly*, of the variation in the amount of the casein contained in the different modifications and solutions, and, *secondly*, to that of different gastric filtrates. As I have shown in the article on the quantitative determination of the gastric enzymes. already referred to, the *normal time limit* in which the *normal* reaction is produced in the ordinary liquid milk by gastric filtrates derived from different individuals is not a hard and fixed one, but has a certain range, as there set forth.

The reason for making tests with three different quantities of gastric filtrates was this: the first, the smallest, quantity, to show the character of the reaction, and the two others, the larger quantities, to show how it would be in the stomach, where much larger quantities of the enzyme come in contact with the milk.

It was for this reason mainly, namely, to make the condition as nearly as possible to what it would be in the stomach, that I refrained from neutralizing the larger quantities of gastric filtrate, as is advised by some authors. Moreover, as I have already shown in the article referred to and as can be seen from the tests in the *group D, milk diluted one third with distilled water*, such neutralization is not necessary in so far as the proportions here and there employed are concerned.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Continued from No. 13, p. 432.)

It is to be noted that in these double suicides, often one of the two lovers has motives for killing himself, but jaded by jealousy he persuades the other to imitate him. If life no longer has charms for one of the two, the other without treason will not be able to find it later. Then to this posthumous jealousy becomes joined the egotistical desire for the beloved one to share misfortunes as well as the joys. Here love is not only egotistical, but is also a sacrifice, and the other lover will willingly make the greatest gift that he could offer, that of his life, in order to prove his passion. A young woman of a very quiet character learned that the parents of her lover refused consent to their marriage. When she saw him next time she pointed out to him the great grief of living apart, and then covering him with a thousand caresses she begged him to kill himself as she was to do, saying, "I have decided to die rather than to leave you; give me this proof of love." A large open fire was burning in which they both expired in each other's arms.

In other cases it is the man who, forced to suicide by debts or by some dishonorable action, persuades his mistress to imitate him before killing himself. In one case one of them wrote: "Resolved to finish with life, the wild idea of not dying alone comes to me." The man alone had the motive for killing himself; he persuaded his mistress to imitate him from the fear that after his death she would belong to another. This is a crime by suggestion.

If one believes the explanation upheld by the defense in the case of the double suicide of Chambige and his mistress, it was caused by the desire that the former had not to outlive his dishonesty.

According to this version, which is probably the true one, it was Mrs. N. who had the idea of suicide and imposed it upon Chambige as a condition of their love. We will briefly relate this affair to which we will frequently make allusion.

In the vicinity of Constantine, in a quiet village belonging to an honorable family, pistol shots were heard on a certain day. Upon this the doors were broken open and a young woman was found lying on her bed dead, undressed, her head showing a pistol wound. Beside her lay a young man slightly wounded in the head. The woman belonged to an excellent family, mother of several children, possessing not only a good reputation, but even one of austerity. The man was a young student by the name of Chambige with a restless mind, rendered so by bad literature and friends. Three explanations were at least given for this crime. Chambige gave the following one: Mrs. N. would not outlive her mistake, and imposed as the price of her fall the double suicide. According to one of the explanations proposed by the prosecuting attorney, there was simply rape committed followed by murder; Chambige got his victim into a trap and, after having abused her, killed her. According to still another explanation, Chambige was depraved and mentally low; he was a kind of sadist who wished to procure for himself the sensations of an assassin, according to a statement made by him and which weighed heavily on the minds of the jury.

Occasionally the only motive for a double suicide is jealousy on the part of one of the lovers. Thus the lover of a young married woman, tortured by jealousy that he had for her husband, resolved to kill his mistress and himself. In order to accomplish his end, he described his sufferings to her in such a way that she consented to die with him. She even signed a letter in which they both announced their intention of committing suicide, after which they went out to find the necessary weapon. But, when once in the street, the young woman, regaining her possession, changed her mind and rushed into her house in order to escape her lover. He pursued her, and finding the door locked he climbed in and running up the stairs, rejoined his mistress and shot her, after which he killed himself. One may successively follow all the transitions existing between double suicide and murder. In the last case mentioned, it was not one of double suicide but murder, and another celebrated example will show a still greater separation from voluntary double suicide. In 1889 G. S. fired two shots at his mistress B. G. and then tried to kill himself. The girl died, the assassin lived. It was shown at the trial that for a long time he had endeavored to persuade the girl to kill herself with him, but all in vain. Then, rather than killing himself he did not take into account her refusal and killed her. In this case, S. had tried in the first place to obtain the consent of his victim, but other murderers have not even tried to obtain this consent. Decided to commit suicide they begin by killing the one they love. In a house near Naples there lived a young man, H. A., nineteen years of age, and a young woman with her father. The two young people loved each other, but the father of the girl declared that marriage was impossible. In despair H. A. resolved to kill himself, but before putting an end to his days, he killed the girl. He then fled, took a large dose of arsenic and threw himself out of the window. He died a few days later.

It may happen that the man, after killing the one of whom he is jealous, renounces the idea of killing himself and thus we come back to murder from jealousy, of which we have already spoken.

In a very interesting book by Sighele entitled "Le Crime à Deux," this progression from suicide to crime is made very clear by an excellent table. In consulting this table double suicide wished for and desired by both parties comes first; then after, and already approaching murder, comes suicide, where one of the parties alone has motives for killing himself, the execution of the crime being generally performed by him, in other words, a murderer by persuasion. Then the despairing one begs his companion to commit suicide, but being refused he kills her. In the next class no demand is made, but the crime is committed, and lastly the act is committed from jealousy, but the perpetrator does not kill himself, in which case we have murder, properly speaking.

Jealousy is not the only cause of suicide from love and the motive is often difficult to discover. It is the attraction that death produces over lovers, a kind of "moral vertigo" which seizes them and causes them to express the egotistical desire to die together. The human heart is an unexplored region, and as yet it is impossible to say whether it belongs to the alienist or the psychologist. This need of destruction, in order to better love, seems to have taken possession of the minds of the greatest geniuses; Goethe, Byron, Musset, Vigny, Beaudelaire, were tortured by this thought, and beside poets, no lesser men than Balzac and Renan were also afflicted. These authors have frequently been reproached for expressing these ideas, but in reality one should be more astonished that they had them than otherwise. It is a peculiar disease of the imagination when the thing that man hates the most, namely, death, becomes the object of his desire.

What is the cause of this incomprehensible union of love and death? It is that little by little passion corrodes and finally, when it has invaded everything, it has destroyed all. These unfortunates have no longer anything outside of their love, and this love itself is frequently made a hell of by them; they can no longer live without it, nor with it. They finally renounce life, hoping to find in death an eternal marriage.

Jealousy is not the only sentiment which arms two lovers against each other, and it is often for other reasons that the effects of love more closely resemble those of hatred than those of friendship. In the first place there is the desire of avenging one's honor, the withered honor of a deceived husband, the lost honor of the young girl seduced and abandoned. It is to be understood that this desire of avenging one's honor does not exclude jealousy, and it is nearly always jealousy of those who have betrayed them, as in the case of the deceived husband or the abandoned girl. But the determining motive which pushes them to crime, that they openly confess to and which is usually true, is the obsession of avenging their honor.

The story of the seduced girl is common and nearly always the same. Generally one is dealing with a coquettish girl, her parents having given her tastes which are disproportionate to her condition, she is more refined than the men of her social class, and she dreams of better things. On the other hand, since her infancy, she has been spoken to of love; it has been laid before her in prose, verse and music, and it finally appears to her that it is the only end in life. Friends, sisters, the parents themselves sometimes, after these dreams, have permitted her to understand the realities. Finally, a man appears upon the scene; he is loved beforehand, he speaks, presses his suit and demands; the fall is soon consummated. He comes to the girl with the egotism of man and his experience. For him love is mere play, and since he is a past master in it he soon comes out conqueror, sometimes astonished by the great ease of his victory and the inexperience of his weak adversary. The illusion, however, is of short duration.

The man promises marriage to his mistress, and for that matter he has promised her most everything else. Then pregnancy occurs. The mistake is forever public, and not only the lover no longer wishes to marry his mistress, but he immediately disappears in order to escape the duties of paternity. What is still worse, it is often to marry another that this man goes away, a cruel injury because it is merited, for the simple reason that the mistress has remained a true woman. The abandonment sums up all the sufferings of the woman, of the mistress and the mother; disdain of her beauty, dishonor, public humiliation, rendered still more painful by the joy of her rival, the loss of the loved one, and, lastly, the fear of approaching misery with a child in her arms. Such are the reasons which have forced seduced girls to avenge themselves, and juries acquit them. Examples are unfortunately far too numerous. "When I heard of the marriage of my lover to another young girl," said a young woman who was being tried for murder, "my exasperation was so great that I formed a project to kill him. I loaded my pistol, disguised myself as a man, and hid myself at a spot where I knew he had to pass. As soon as he came I discharged my pistol at him."

Quite recently, in the month of January, 1903, a young girl, M. C., appeared before the correctional court of the Seine, she having shot her brother-in-law, M. S. He had seduced her at the very beginning of his marriage when she was only sixteen years old. In the month of November, 1902, S. left his home to live with his sister-in-law, but she being on the point of becoming a mother he abandoned her. On the twelfth day of December M. C. went to find him at his home. A discussion commenced, during which S. pretended that he was not the father of the child, and immediately the young girl drew a revolver which she had hidden in her muff and fired at her lover, hitting him in the mouth. At the trial the girl declared that she had no intention of killing her lover. The Court, taking into consideration the circumstances of the case and the motive which had caused the accused to act, merely gave her two months' imprisonment. All this proves that the jury represents faithfully public opinion by acquitting, since magistrates themselves, when the occasion is presented, decide in the same way.

Another dramatic adventure took place at Marseilles a few years ago. An officer of rank in the army, without fortune, had the imprudence to give a taste of luxury to his daughter, whom he adored, and had given her the education of a princess. He had a married brother, a rich business man at Nice, but without children. The latter came to see his brother, the officer, and proposed taking his daughter with him to Nice. The father consented and the uncle started with his niece. She was pretty, vivacious and gay. His wife was no longer either pretty, or young. It was not long before he felt the charms of youth and beauty and he fell desperately in love with the girl. She, being very much spoiled by her uncle, who satisfied her luxurious tastes, and very sensible to the affection with which he surrounded her, the nature of which she did not understand, did not know how to defend herself against the plot of which she was the object. Her uncle, abusing her confidence and innocence, finally overcame her last scruples by promising her that her honor would be perfectly safe in the eyes of the world. However, pregnancy occurred and along with it her dishonor.

Upon learning this news her father died brokenhearted, and soon after this the mother killed herself. When the child was born the uncle wished to separate himself from his niece; after having wished to marry her he turned her out announcing his intention of placing the child in a foundling hospital. This project exasperated the girl. She bought a revolver; her lover allowed her to do so hoping that she would commit suicide, but this hoped-for event did not occur; she came to her uncle and reproached him for his dishonor, but the uncle merely shrugged his shoulders, saying that he did not like romance and that she was playing comedy. This reply was too much, and seizing her revolver she fired on her seducer and continued pouring bullets into him. Then, suddenly, her anger fell and love reappeared. She threw herself tenderly upon him and sponging away the blood covered him with kisses. The uncle died from his wounds and the young girl was acquitted by the jury.

In this case the existence of the child held a prominent place beside that of jealousy in the motive of the crime, and we will mention other cases where the future of the child was the cause of the crime committed by a woman on her lover, her husband, or her husband's mistress.

In 1880 Countess de T. appeared before the jury, having supported with resignation and patience her husband's infidelities. He had as a mistress a young dressmaker, M. M., who did everything that was in her power to make herself odious to his legitimate wife. One of her favorite pastimes was to have herself called Countess, the title of her lover's wife. Countess de T. would, without a doubt, have continued her martyrdom in silence had she not learned of her husband's intention of marrying M. M. as soon as he was a widower or divorced. The thought that this girl would take her place and become the mother of her children made her absolutely beside herself, and she ended by disfiguring her by throwing vitriol in her face. To the jury she said: "I wished to disfigure this woman, not because she was my husband's mistress, nor because she covered my family name with dishonor, but for the reason that when I was dead she would become the mother of my children. . . . In a second the souvenir of all that I had suffered came upon me, the perspective of all the humiliation that was awaiting my poor children — all this made me crazy." The jury rendered a verdict of not guilty and she was acquitted.

This drama, which greatly worked up public opinion twenty-five years ago, shared the attention with quite another as celebrated, namely, the tentative at murder of her lover committed by Marie Bière. Here again we are dealing with a case of murder caused by maternal love and not by jealousy, with this difference, nevertheless, that Countess de T. wished to defend her children, while Marie Bière wished to revenge hers. Marie Bière was a young actress, and at the time she met M. G. she had already had several *liaisons*. He was a rich, skeptical .Parisian. He was desirous of merely exchanging fantasies, so to speak. Soon afterwards they separated in a friendly way without any disagreement or scandal, as is the custom in a certain society, where one knows how to amuse oneself. M. G., however, was not aware of the exalted nature of the woman, and this little romance was the most serious event in her life. As soon as M. G. discovered this passion, he wished to break off all relations, because he was a well balanced man and feared scandal above all things.

On the contrary, Marie became more and more exalted and the birth of a child finally complicated the situation. For a time she had thought of having an abortion performed, but renounced the idea. After its birth the baby was sent to the country to be cared for upon the advice of M. G. The baby died from poor care, and then the idea of vengeance began to develop in the unbalanced mind of Marie. She decided to avenge her child because it died on account of the father's fault, and according to her own expression, she condemned G. to death and wrote this condemnation on the back of his photograph which she had in her possession. She met M. G., however, several times, but did not dare to execute her project, and it was only several days later, Jan. 7, 1880, that she executed her vengeance that she had planned more than a year previously.

Dr. Blanche, who examined the mental condition of the woman, concluded as follows: "When the accused fired at M. G. she knew what she did, but she was at the time under the influence of such passion and morbid excitement that it was very difficult for her to resist those sentiments which dominated her and obliterated her moral sense."

In both of the two foregoing crimes it would seem that the thought of the child was the determining motive, but it is quite certain that jealousy played an important part, especially in the last case.

Husbands will act, not only from jealousy, but also from the desire of avenging their honor. Without trying to justify this idea it should be pointed out that public opinion considers a deceived husband as dishonored. We do not wish to uphold a husband who kills his wife for adultery, His act is a crime, and although one may pity him, he should be condemned. Legislators have seemed to uphold the murder of the wife, for adultery, by her husband as excusable when the latter discovers her in the act. This excuse may perhaps be attributed to the idea that the legislator allows the husband to avenge his honor, because if it was a case of jealousy, one could not readily understand why this excuse should be reserved to the husbaand and not for the wife as well. A few years ago a husband killed his wife's lover and the trial showed that a short time before he had used threatening words which explained the motive of his crime: "I will take his life or mine; I must kill him, he dishonored me."

It sometimes happens that a husband obeys a less noble motive: he is afraid of being ridiculed and prefers to kill two beings in cold blood rather than to be joked about. This latter case assuredly can never claim the same indulgence as a crime from passion, but it is most evident that it would often be very difficult for a jury to recognize the two motives which caused the crime to be committed.

(To be continued.)

Reports of Societies.

AMERICAN PEDIATRIC SOCIETY.

Nineteenth Annual Meeting, Washington, D. C., May 7, 8 and 9, 1907.

First Day's Session.

THE USE IN PRACTICE OF THE THEORETICAL RESOURCES PROVIDED BY PERCENTAGE FEEDING.

Dr. Charles Hunter Dunn, Boston, said the chief step in advance had been the chemical recognition of the component elements of milk and the attempts to imitate nature as exactly as possible; the second great step was the recognition of the individual idiosyncrasies of each baby. The fact remained, however, that the subject of percentage feeding still presented difficulties to the general profession. The failure of modified milk feeding must be due either to limitations in the value of the resources or their improper application, and the writer suggested that it was due to the latter, and presented a plea for more careful use of the methods already in our possession. He thought the difficulties due to two factors: the inherent unsuitability of cow's milk to the digestion of the infant, and the variability of the digestive powers of different infants. Too much stress had been laid upon the first and too little upon the second; we were too apt to attribute the chief rôle to the unsuitability of cow's milk. He referred particularly to the use of the so-called split proteid feeding, and thought that by using whey a very close conformity to human milk could be had. The cereal diluents, he said, contained starch, which was not indicated by nature as desirable for the infant, and in practice the giving of these diluents was often protested against by nature, although, of course, in many the starch would be digested. When the starch digestion function had been developed, of course they could be used. The same arguments as those against the indiscriminate use of cereal diluents were applicable to the widely advocated use of the alkalies, lime water, sodium bicarbonate, stearate, etc. Any of these artificial methods might have a place in certain individual cases, but must be due to the individual idiosyncrasies of digestion.

SOME CONCLUSIONS FROM OUR KNOWLEDGE OF THE PROTEIDS OF MILK.

Dr. Thomas S. Southworth, New York, spoke of the early misconceptions concerning the proteids of milk and the gradual steps of enlightenment which began only with chemical analysis. The endeavor was made to imitate breast milk closely by the so-called modified milk, but it was soon found that many infants were not able to digest the modified milk except when modified to each individual case. There were many difficulties in the way of knowing the composition of breast milk and therefore of comparing it with cow's milk, and our chief knowledge of cow's milk was derived from commercial, not medical, investigation. The writer referred to the close analogy between cheese making and human digestion of milk; the important compounds formed with casein by ferments, alkalies and acids, and the necessity for the recognition of these compounds, both as chemical entities and of the part they play in facilitating the digestion of cow's milk. The real difficulty in infant feeding was not with the digestion of casein, but of para-casein. Lactate of casein was readily digestible, as shown by the use of buttermilk, which had had less vogue in this country than abroad. Decalcified casein was easier of digestion, and sodium citrate made milk more digestible by decalcifying it. The writer thought a new departure was necessary if students were to learn to feed intelligently and be enabled to overcome the difficulties they met with in practice. An understanding was necessary of the physiological and the pathological digestion of the elements of cow's milk if empiricism was to give way to intelligent scientific methods in infant feeding.

CANE SUGAR FEEDING IN ITS RELATION TO SOME OF THE DISORDERS OF CHILDHOOD.

Dr. Charles G. Kerley, New York: This study was undertaken as the result of an impression the writer had received by the observation of many children that cane sugar was not without harm to many. There was a class of cases defined as sugar susceptibles, usually children of rheumatic or gouty ancestry, with one characteristic peculiar to all, — a tendency to recurrence and to chronicity. He included those who had recurrent persistent colds, asthma, urticaria, eczema, rheumatism and recurrent vomiting. Seventy-eight cases comprised the cases, 15 from his own patients, whom he had cared for from infancy. Recurrent vomiting in 8; eczema, 7; asthma, 4; frequent colds, 17; chorea, 11; rheumatism, 4; rheumatism and endocarditis, 6; urticaria, 2; recurrent bronchitis, 6. More sugar was taken than was for the best interest of the individual cases because of the craving of child life for sweets and because the sugar-eating habit is so easily acquired. In the majority there was sugar incapacity. When a child was presented for treatment, cane sugar was excluded from the diet and a small quantity of saccharine substituted. They very soon adapted themselves to the deprivation of sugars from cereals, and it did not appear to influence their well being or growth. In those suffering from rheumatism, recurrent vomiting, eczema and asthma there was also interrupted medication. The most satisfactory results were obtained in the affections of the upper respiratory tract. Absence from free sugar in the diet broke up the tendency to recurrent colds in children in whom the removal of the tonsils and adenoids had been without benefit. The writer concluded that free sugar was sufficiently toxic in certain individual infants to produce perversion of function, and in some to allow bacterial invasion, as in acute articular rheumatism and endocarditis.

Dr. Thomas Morgan Rotch, Boston, thought these investigations of Dr. Southworth's of great importance as tending to put the subject of percentage feeding on a proper basis.

Dr. Freeman, Boston, considered the use of whey fluid one of the most valuable aids in difficult cases, and thought it should be ordered from the laboratories where that was possible. It was important that it had been shown that these recurrent colds in children might be due to indigestion and not to exposure.

Dr. L. Emmett Holt, New York, had been following out Dr. Dunn's suggestions with reference to the routine use of whey mixtures for very young infants, and had been surprised to see how it relieved chronic constipation. The proteids could be raised gradually, the fats being kept low, with relief of indigestion and avoidance of troublesome symptoms. He agreed with Dr. Freeman that the mixtures should be ordered from the laboratories. He agreed with Dr. Kerley as to the ill effects of free sugar in the diet of many infants.

Dr. Charles G. Kerley had used the whey mixtures extensively for two years and felt that while it was a very useful measure, applicable in a considerable number of cases, it was by no means a solution of the infant feeding problem, its chief fault being that children did not gain on it. He thought it could not always be relied upon.

Dr. J. P. Crozer Griffith called attention to the recent studies upon the difficulty of digesting foreign albumins, and said the albumins of the cow were necessarily not the same and not so digestible as those of the mother; there were certain principles in the mother's milk necessary to the digestion of many children and they could not get along without it.

Dr. F. S. Churchill, Chicago, did not see how any one who had used the split proteids or whey mixtures could help being enthusiastic believers, because the majority of babies so fed invariably do well. Whey mixture was such a simple food that few babies could fail to digest it.

Dr. Walter Lester Carr, New York, said Dr. Kerley's statement was borne out by his own experience, that whey had a decided place in the feeding of premature infants and congenitally weak children, but that after using it for a time it seemed impossible to get a gain of weight. In eliminating the sugar it must be borne in mind that faulty oxidation might be one of the features.

Dr. Eaton deprecated the habit prevalent in some parts of the country of feeding babies according to a set of tables without regard to the individual idiosyncrasies. He had used the whey mixtures with great satisfaction.

Dr. Saunders had used the whey mixture for many years with great satisfaction. One of the mixtures with which he had had most rapid gain was that of whey and condensed milk.

Dr. Crandall's experience bore out what Dr. Kerley had said as to the use of the whey mixture.

Dr. Dunn, in closing, called attention to the fact that some of the cases that seemed to do well on condensed milk had done even better when fed on a laboratory prescription of the same composition.

Dr. Southworth added his testimony to the value of the split proteid feeding; he had had excellent results with it.

A CASE OF HEMATHORAX. ASPIRATION. RECOVERY.

Dr. W. P. Northrup, New York, reported this case, the patient having been seen three times by a well-known member of the society, who pronounced it bronchitis. He saw the case after the child had been ill two months. A poorly developed child of five months, pale, respirations 80 a minute; left chest flat; heart displaced to the right; no fever. Taking the infant on a pillow on its back nothing happened as long as it lay quiet, but when turned toward the right the child had an attack suggesting the cessation of all vital functions. X-ray showed the chest filled with an opaque fluid. Two ounces of a black fluid was aspirated, when the pulse improved and the heart returned to its normal position. The fluid was blood, which coagulated quickly in the bottle. A year after the aspiration the patient is doing well, the only cause for anxiety being rapid respiration.

ANOREXIA NERVOSA IN CHILDREN.

Dr. F. Forchheimer, Cincinnati, presented this paper, which referred to the several previously reported cases under somewhat different names, the condition having been usually looked upon as one of the manifestations of hysteria. According to the present state of our knowledge, we were justified in calling it a neurosis. As a rule, the children who have the disease have grown up without discipline, being allowed to choose their own diet.

Female, seven years, mother and father both neurotic; child always had its own way; at the age of six made up her mind that she would not eat but certain articles, practically nothing but cheese; none of the stigmata of hysteria were present; she was intelligent and consistent in her responses. Under proper treatment she soon recovered.

Female, aged twelve, mother and father neurotic; child brought up on artificial food; would eat only pickles and olives; if they tried to get her to eat anything else she vomited. Was very much run down, irritable and cross, backward in studies, cried easily and slept badly. Under proper treatment she gained fifteen pounds in a few weeks.

Male infant, one year of age, mother and father neurotic; father had had syphilis. Child had never been ill in any way; breast fed. From the ninth month attempts made to feed artificially. The child would not take any food. Was taken to the hospital and for four days nothing given by the mouth; then feeding began, but in vain; child would take water, but nothing else. Gavage used for two weeks, when the child recovered.

Boy three years old, only child of parents married late in life. Neither of the parents believed in disciplining the child. For some time the boy had been cutting off articles of diet until he would touch nothing for several days, except a piece of fried bacon or a piece of banana. Had a degree of emaciation that the writer had rarely seen surpassed. Three weeks later the child died from starvation. The writer believes all these cases could be cured by proper treatment and discipline, especial stress being laid upon discipline. Gavage should be held out as a last resource.

Dr. Charles G. Kerley, New York, had had a case of a four-year-old girl who always vomited food even at the table, but who, when allowed to eat in the kitchen, never had these attacks. The child was finally cured by removal to the house of her aunt and association with other children.

Dr. Putnam, Boston, had often succeeded in the milder forms of this disease by having the parents desist from saying anything about food or trying to force the child to eat.

Dr. J. P. Crozer Griffith referred to a case, a child of a physician, some months over a year of age, who could not be weaned and in which gavage had to be used, and now at the age of four they still had difficulty in getting the child to take food.

(*a*) THREE CASES ILLUSTRATING TYPHOID FEVER IN THE FIRST YEAR OF LIFE. (*b*) A CASE OF ARTICULAR RHEUMATISM IN AN INFANT. (*c*) A CASE OF CONGENITAL BILIARY CIRRHOSIS.

Dr. J. P. Crozer Griffith, Philadelphia, presented these cases: three cases of typhoid fever, one of five months and the other two of nine months. In the first case there was an excellent opportunity of studying the beginning of the temperature record, and death occurred from intestinal hemorrhage. There was absence of the step-like rise characteristic of the adult's chart. There was positive Widal, rose spots and enlarged spleen. In the second case, nine months, there was nothing unusual except the instance of relapse with the opportunity of studying the temperature from the beginning to the end of the relapse. It had been the custom of the mother when putting the baby in the tub to cleanse the mouth with the spigot water. Typical spots and enlarged spleen. Third case, nine months; ordinary course; rose spots and enlarged spleen; the history suggested the possibility of persistent house infection. The child was fed partly by breast and partly by unboiled cow's milk; the bottles had been boiled, but the nipples kept in unboiled cold water.

The case of articular rheumatism was a baby five months old, with rheumatism of hands and ankles. Treated with orange juice to exclude scurvy, without effect; under the use of salicylates it gradually recovered.

The case of biliary cirrhosis, five months old; jaundice said to have been present from birth; child lost weight steadily. After being brought to the hospital there was intense jaundice; liver much enlarged; everything possible done to make it gain in weight, but in vain. Black material passed from the bowel, which appeared to be decomposed blood. Child became steadily worse and died; autopsy showed typical cirrhotic liver with the duct of the gall bladder entirely obliterated.

Second Day's Session.

THE PRESIDENT'S ADDRESS: PSEUDO-MASTURBATION IN INFANCY.

Dr. B. K. Rachford, Cincinnati, read this paper, the detailed cases upon which it was founded containing the writer's own cases and a number reported to him by members of the society in response to letters addressed to them. In the discussion of the disease the writer considered age the most important etiological factor, and nearly all of the cases occurred in female children. The anatomical and physiological condition of the organs of generation of the infant was considered in detail. The external genital organs were well developed in physiological function from birth, although the internal organs were not. For this reason there could be a syndrome complex closely resembling the sexual feeling. True masturbation occurred after the age of ten. True masturbation occurred oftener in males; pseudo-masturbation oftener in females. This might be due to the fact that the toilet of the female child was not as carefully looked after as that of the male, and the greater exposure of the external genital organs of the female. Later it could be classed among the habit neuroses. Environment was of the greatest importance in keeping up the habit. Heredity played a large part in establishing the predisposition, and gouty inheritance might be one of the predisposing causes. Acid condition of the urine had been found to be a frequent cause, as was also constipation. Of 52 cases presented, 25 were cured, and in only 2 was treatment of no avail. The writer was convinced that pseudo-masturbation occurring in children under two would in time get well under almost any form of treatment; the tendency was to spontaneous recovery. There was no connection between pseudo-masturbation in infancy and true masturbation in later life, though the former might tend to develop the latter. There was no connection between pseudo-masturbation and epilepsy, and the writer had never seen these two neuroses co-exist.

Dr. Jacobi, New York, did not agree with the essayist that masturbation in infancy and childhood was not the same as the masturbation of adult life; he believed it should be classified with masturbation of more mature life. It showed itself by the same excitement, interrupted respiration, redness, staring eyes, large immobile pupils, perspiration and convulsive twitchings, as in the adult, and he looked upon it as the same condition.

Dr. L. Emmett Holt, New York, referred to the frequency of the habit in mentally defective children, and considered it the rule with them rather than the exception. He thought the mental defect the cause rather than the result in these cases. He had not seen any case where the mental defect was traceable to the habit. He did not look with favor upon the appliances for mechanical restraint in these cases, nor upon the methods of stripping back the preputial hood. His cases had been nearly all in females.

Dr. Henry Koplik, New York, did not believe that true masturbation could exist in the infant because it presupposed intention and a resulting nervous explosion. He had found, as the other speakers had, that the great majority of cases were in females. He considered that the neurotic tendency was the chief factor.

Dr. C. G. Kerley, New York, was in accord with the views expressed in the paper, except that he thought that in cases over four years of age the prognosis was not so favorable. The cases were often discouraging and treatment had to be carried out for a long time. He exhibited an appliance for mechanical restraint that he had found useful.

Dr. Maynard Ladd, Boston, showed a device for mechanical restraint similar to that employed by Dr. Kerley, consisting of a long section with two cross bars, which kept the thighs about one and a half inches apart, while allowing free movement of the legs.

KERNIG'S SIGN IN INFANCY. A STUDY OF TWO THOUSAND CASES.

Dr. John Lovett Morse, Boston, presented this paper, in which he concludes that Kernig's sign is almost never found in infancy except in meningitis. That its presence in an acute disease justifies, so far as one sign can, the diagnosis of meningitis. That it occurs with equal frequency in all stages of the disease and has no connection with the degree of intracranial pressure. It has no value in diagnosticating between cerebrospinal and tubercular forms of meningitis.

Dr. Henry Koplik, New York, agreed with Dr. Morse that Kernig's sign as a diagnostic element in forms of meningitis in infants under two years of age is of very little clinical value. He said the sign should not be confused with a condition of myotonic contraction.

BACTERIOLOGY OF MENINGITIS.

Dr. F. S. Churchill, Chicago, read this paper. Only the known bacterial cases were reviewed. Six cases showed meningococcus; one case pneumococcus; one case pneumococcus in the spinal fluid; one case primary tubercle bacilli; one, Klebs-Loeffler bacillus; one case syphilitic; four undetermined cocci; four no organisms in the spinal fluid. The meninges, like other parts of the body, might be attacked by a variety of organisms; 80% of the trouble due to meningococcus. Next to the meningococcus, pneumococcus was the most frequent cause. Mode of access to the meninges through the throat and nose. Diagnosis between the different types could not be made from the clinical picture, but only from spinal puncture. Mixed infections were infrequent. The organism could be found in the nose and throat of healthy individuals living in close proximity to patients ill with meningitis, and these patients should be isolated. The meningococcic cases should always be quarantined and probably the pneumococcic ones.

GRIP MENINGITIS.

Dr. Samuel S. Adams, Washington, reported this case. The child when first seen, being supposed to have an attack of indigestion, had a temperature of 106°, pulse 140, and the writer made the diagnosis of grip, which was confirmed by several eminent consultants. Complained of headache and of being tired. Blood examination showed nothing of importance. An otologist excluded any disease of the middle ear. Then Kernig's sign developed; symptoms of meningitis; lumbar puncture performed; two ounces of fluid withdrawn, which showed the presence of influenza bacillus. This was the first case reported by an American in which the diagnosis had been confirmed by finding the organism in the fluid of lumbar puncture.

Dr. Henry Koplik, New York, said he had before mentioned a case similar to this of Dr. Adams's and had since had another case.

Dr. L. E. LaFetra, New York, reported a case of tubercular meningitis with a terminal infection of pneumococcus; also a case in which at autopsy the influenza bacillus was recovered in the pus.

Dr. L. Lovett Morse, Boston, disagreed with Dr. Churchill as to the necessity of isolating meningitis cases; he did not believe the danger of contagion was very great.

Dr. Hamill, Boston, reported a case in which the tubercle bacilli was isolated from the spinal fluid, with recovery of the patient. He agreed with Dr. Churchill as to the necessity of isolating these cases.

Dr. Jacobi, New York, agreed with Dr. Morse that it was not practicable to isolate these cases.

CONGENITAL STENOSIS OF THE DUODENUM. REPORT OF CASE.

Dr. H. L. K. Shaw and Dr. Leon Baldauf, Albany, presented this case of congenital stenosis of the duodenum, exhibiting photographs of the condition and the specimen. Child born after normal labor; twelve hours after birth passed miconium; placed at breast and vomited small amount of greenish fluid sometime later. During next two days vomited greenish fluid a number of times; seemed hungry and cried as if in severe pain; nursing discontinued and barley water and whey substituted; miconium and some brownish fluid passed. Operative procedure postponed in the hope that the condition might be spastic. Ten days after birth had lost 2¼ lb. Died thirteenth day after birth. There was stenosis of the bowel below the opening of the bile duct.

Third Day's Session.

THE CALORIC VALUE OF MODIFIED MILK IN ITS RELATION TO INFANT FEEDING.

Dr. Maynard Ladd, Boston, read this paper, which consisted of a series of cases studied by the writer in which the rate of growth in relation to the number of calories taken had been estimated. The series comprised twenty cases and tables were shown exhibiting the weight development. Great variation was noted between the calories taken and the gain in weight, and the writer concluded that the calories in the food of the infant in the first year of life could not be furnished by fats and proteids vicariously; that a given number of calories did not necessarily cause the same rate of growth, even when of the same age and development; that the caloric value of the food is not the most important consideration in determining the quality of the infant's food. Neither the number of calories nor the energy quotient, could be determined accurately.

Dr. L. Lovett Morse, Boston, considered the American method of feeding better than the German, but thought the good points should be taken from both. He estimated the food in calories from time to time chiefly to make sure sure in cases of difficult feeding that he did not get the total amount too low.

Dr. Henry Koplik, New York, called attention to the amount of waste in the gut, which he said was absolutely undeterminable. He thought that the percentage method was not the only way of feeding a baby successfully; in buttermilk feeding, even though the percentage food contained more calories, the waste in the gut in liberating the food was such that the baby might do better on buttermilk.

Dr. Freeman, New York, deprecated the tendency to feed the babies on proteids of less than 1%, and thought that if attention were paid to the matter of caloric values better standards would be obtained.

Dr. L. E. LaFetra, New York, emphasized the points made by Dr. Morse and Dr. Freeman and thought it would be enlightening if we could determine the lower limits of caloric value to be supplied by the proteids; the upper limits could be determined by the digestive capacity of the infant.

Dr. Thomas Morgan Rotch, Boston, protested against the habit of speaking of any method as an ideal method. Cases should not be treated with any on method alone. What should be insisted upon was that the method used should be exact.

A CASE OF MYXEDEMA.

Dr. George N. Acker, Washington, presented this case, which was a child healthy until eighteen months of age, when he presented it to the society in Raleigh in 1903; it was then a typical case of myxedema. It had been upon thyroid since and was now a well-developed child and in good condition. Gained seven inches during the first year; height now forty-one inches.

THE SYMPTOMS OF STATUS LYMPHATICUS IN INFANTS AND YOUNG CHILDREN.

Dr. John Howland, New York, had observed over twenty-five cases during the last year. No gland weighing less than 10 gm. was considered pathological, the average weight of the gland during the first two years being 6 gm. To be on the safe side he had included none weighing less than 15 gm. All the tissues of the body were hyperplastic, including tonsils and adenoids. The changes consisted of a hyperplasia of tissue normally present. Symptoms were, sudden death at beginning of anesthesia, administration of antitoxin, or the child might die suddenly in bed; another group, the characteristic symptoms were, with or without some indisposition the child becomes suddenly ill, rapid, gasping respiration, with cyanosis, attacks of convulsions, temperature in majority very high, 104.7°. The dyspnea not an obstructive dyspnea, but toxic in character. These cases were usually called acute congestive bronchopneumonia. A rarer form were those cases associated with purpura.

Dr. Blackader, Montreal, had had a very painful experience with one of these obscure cases, in which death had been attributed to change of nurses; autopsy showed a greatly enlarged thymus, 18 or 20 gm.

Dr. Thomas Morgan Rotch, Boston, said this was a subject the knowledge of which should be more widespread as the cases were often not recognized.

Dr. S. M. Hamill, Boston, was glad to hear the writer take the view that these cases were of toxic origin. There was great similarity between the condition and the infections — in the character of the dyspnea, its irregular nature, and in the cyanosis and convulsive seizures.

Dr. Howland, in closing, said he had not observed a case that had recovered, except the one in which the thymus acted as a foreign body, obstructing respiration.

A STUDY OF THE EARLY CONDITIONS OF OSTEOMYELITIS IN YOUNG CHILDREN BY THE ROENTGEN RAY.

Dr. Thomas Morgan Rotch, Boston, had been making a study of this condition by means of the x-ray, for he had concluded that delay in diagnosis, as in appendicitis, might mean death, or deformity that could not be remedied. To accomplish this early diagnosis the x-ray was of inestimable value, and in a number of cases it could only be diagnosed by that means. The x-ray should be used at once with the earliest appearance of the symptoms. Photographs illustrating the writer's remarks were shown, and he enunciated the importance of remembering that cases of osteomyelitis were not so rare, and that in most cases early operation was what would save the limb from deformity and, in many cases, save the child's life.

Dr. Samuel Adams, Washington, thought that in most cases the physician was more capable of making a correct diagnosis in these cases than the surgeon, and deprecated the habit of turning the cases over to the surgeon until every means of clinical diagnosis, including the x-ray had been utilized.

Dr. F. S. Churchill, Chicago, agreed with Dr. Adams as to the attitude of the physician towards the surgeon in these cases, and reported a case occurring in a girl of eight years, involving both tibia, both radii and the forehead, following in the wake of a severe typhoid. Typhoid bacilli recovered from the pus at operation.

Dr. L. E. LaFetra, New York, emphasized the fact that these cases are not infrequent; he had seen ten in in the last five years. Early treatment in these cases would save the limb.

Dr. Thomas Morgan Rotch, Boston, thought the expert opinion of both surgeon and laboratory man was of the greatest importance, and he had a very strong faith in the surgeon. It was only by a combination of all these opinions that the best results could be obtained.

A CASE OF CHYLOTHORAX.

Dr. C. G. Jennings, Cincinnati, reported this case: a child, nine years of age, presented himself with dyspnea. An acute catarrhal affection some weeks before and following that persistent fever and symptoms that pointed to pneumonia. There were physical signs of pleural exudate, and it was thought to be a case of empyema. Aspiration revealed, instead of pus, chyle; first aspiration, 12 oz. Chest aspirated thirteen times and peritoneal cavity once. The child presented practically no symptoms when the fluid was not present. Tuberculin used without reaction. The fluid had all the chemical qualities of chyle and the microscopic picture was that of chyle.

THE NEED OF GREATER ACCURACY IN PRESCRIBING STARCH IN INFANT FEEDING.

Dr. Maynard Ladd, Boston, read this paper, which was designed to bring out one point,—the great indefiniteness of physicians in the use of the cereals. The paper presented a plea for more accurate methods of prescribing starches in percentages as with fats and proteids. In the barley water mixtures there was great variation in the amount of starch contained, and the inaccuracy due to this was responsible for many of the cases in which the child was not supposed to be able to digest starches at all. Formulæ varied from .64% to 6%. Using the minimum or maximum solutions as diluents the amount of starch varied from .51% to 4.8%. The rational thing to do was to give the minimum starch solution in the early months and gradually increase with the age. The Walker-Gordon Laboratories were now prepared to fill prescriptions in this way.

Book Reviews.

The Practice of Obstetrics by American Authors. Edited by Charles Jewett, M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. Third edition, revised and enlarged. Illustrated with 481 engavings, 46 of which are in colors, and 36 colored plates. New York and Philadelphia: Lea Brothers & Co. 1907.

This third edition of Dr. Jewett's "Practice of Obstetrics" by 17 American contributors comes to us with several additions and improvements. The five chapters contributed by William S. Stone, of New York, have been rewritten. Each has an ample bibliography of the recent literature. A bibliography is to be found also with Vineberg's chapter on abortion and Williams's chapter on puerperal infection; the latter a lengthy and exhaustive treatise of some 47 pages. The portion on symphysiotomy has been revised and is now in most satisfactory shape, both as to matter and illustrations. Sections on vaginal Cesarean section and hebotomy have been added. The chapter on immediate repair of vaginal and vulvar lacerations is hardly specific enough as to operative details; intermediate repair is slighted and immediate closure of cervical tears is advocated in a not too judicial tone.

The book contains a good chapter on puerperal insanity by Allan McLane Hamilton. The hand of the accomplished editor is seen in many parts of the work so that it has more homogeneity than a majority of the "system books."

As to the bookmaking, a deleterious waste of space is to be noted For instance, the table of contents, instead of being printed in very large type and spread over five pages would be easier of reference if printed in smaller type on two pages; the 8 full-page plates, showing different forms of monstrosities placed between pages 336 and 337 might do for a monograph, but are out of place in a textbook. They add to the bulk and weight of the volume, already too great, and by separating the reading matter distract the reader's attention. Plate XX, a very badly colored representation of a vesicular mole, adds nothing to the engraving of the same subject on the following page, and should be left out.

Aside from such minor defects the book is a good one and should maintain its previous popularity.

Surgery of the Rectum. By Fred C. Wallis, B.A., M.D., B.C., Cantab., F.R.C.S., Surgeon to Charing Cross Hospital, St. Mark's Hospital and the Grosvenor Hospital for Women and Children. New York: William Wood and Co. 1907.

Wallis has written a little book of 165 pages, which contains first and last a good deal of information, — some of it new. The author appears to have discovered the rectum. As he says in his preface, "the first five chapters contain my original views." That is the note of egotism which so permeates the book that the unsuspecting reader is tempted hastily to drop it among the coals. But in spite of errors in taste and a few errors in form the book contains much that is instructive. Wallis seems to have invented the term *ano-rectal ulceration*, a condition which he finds to lie at the bottom of *pruritis ani*, abscesses, fistulæ and other similar conditions. His artist supplies us with wondrous illustrations of the crypts of Morgagni, the common seat of these ulcerations. Five chapters are concerned with ano-rectal ulcerations, and incidentally the reader is informed that he should attend certain clinics at the Charing Cross and St. Mark's hospitals. Those first five chapters comprise the important part of the book, while the remaining nine chapters deal in a superficial but perfectly coherent and intelligent fashion with such important topics as hemorrhoids, stricture of the rectum, malignant disease of the rectum, etc.

The book is certainly useful and probably is worth the $2.00 which the purchaser must pay for it.

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THE DEVELOPMENT OF GRADUATE TEACHING.

An interesting phase of medical education at this time is the way in which it is extending its domain into the social and to some extent into the political fields. The function of a medical school is rapidly coming to be much more than the education of the individual student for the practice of his profession; in fact, there seems at times to be danger that this primary object may be lost sight of in the expansion which is now everywhere apparent. We have on various occasions commented on the significant part medicine is destined to take in the solution of some of our most knotty social problems, and also of the wide influence it is coming to have in shaping legislation; and it is to the medical schools of the country that we must look for the proper direction of these new and responsible activities.

Another field in which we may properly look for much development in the immediate future is the continued education of physicians in active practice by the medical schools. No one will venture to say that a man's education is complete who has successfully passed through a medical school, and much less will it be asserted that he can by any possibility keep intelligently informed of the progress of medicine, unless he devotes a certain time to the perfecting of his knowledge by other means than the experience of routine practice. To meet this demand within the ranks of the profession itself, graduate courses have been instituted and are in successful operation at many of our best medical schools. These courses are conducted not only during the winter months, but also in the summer, so that the needs of graduate students may be met practically at any time during the calendar year. The perfecting of these courses is one of the highly important functions of the modern medical school, only secondary to the adequate instruction of undergraduates for whom the medical school primarily exists. That there is room for improvement in this graduate teaching is evident, and this may be said entirely without disparagement to the excellent progress which has already been made. The practical branches of medicine are particularly well represented in the graduate schools. Clinical courses are abundant and excellent and serve a most useful purpose; but it is altogether unfortunate that physicians engaged in practice should not have an opportunity to learn what is being done in those branches which do not have so immediate a bearing upon practice, but which are nevertheless of fundamental importance to an understanding of the real problems of medicine. This problem is one of the most important and also one of the most difficult which graduate teaching has to meet. It is apparent that practitioners and many undergraduate students have neither the time and often not the ability to prosecute individual researches in the more theoretical departments of medicine; but it is regrettable that they should be cut off from the possibility of learning at first hand the results of others' investigation, and its bearing on the general problems of clinical medicine. Courses should therefore be given under the auspices of the fundamental branches of medicine, — physiology, anatomy, pathology, pharmacology and chemistry,—which will demonstrate the modern methods of investigation and bring into closer relationship the laboratory and the clinic. Such courses if sufficiently known among practitioners and advanced students and if given at convenient hours would certainly meet with response. The type of course, to which we refer is illustrated by one to be offered this winter at the Harvard Medical School, by Dr. W. T. Porter, professor of comparative physiology, on the "Circulation of the Blood," with demonstrations, open to graduates and such others as may care to attend. The aim of this course is to present in graphic form the result of recent research on this subject with such experiments as are necessary to demonstrate the principles at issue. Such a course as this forms a connecting link between the research laboratory and the working clinic, and should do its part towards filling the gap which exists in far too great a degree between the laboratory and the practical branches. There is no question that a series of courses on the various laboratory subjects, the object of which is not original research on the part of students, but a demonstration of methods used, and their bearing on the clinical side of medicine, would do much toward a fuller education of physicians and toward a broader conception of the function of graduate teaching in general.

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FUTURE POSSIBILITIES OF EXPERT TESTIMONY.

The present widespread feeling of dissatisfaction with medical expert testimony lends an added interest to Prof. Hugo Münsterberg's suggestions for a possible means of reform. In the September and October numbers of *McClure's Magazine*, Professor Münsterberg contributes articles on the possibility of applying psychological tests in the determination of the credibility of witnesses, and thereby relieving in a measure the present unfortunate state of contradictory evidence. We question whether the means propounded of accomplishing this desirable end will meet with the approval of the legal profession, and whether the time-honored method of cross examination in open court, before a jury, whose main attribute must be common sense in the estimation of testimony, whether of fact or opinion, will forthwith give place to the subtle analysis of the psychologist; nevertheless, such papers as these of Münsterberg are highly suggestive and should not lightly be passed by. The hope expressed in these articles is that the capacity of witnesses for correct observation and similar essential qualities of mind may be determined by psychological experiment, to the manifest advantage of a fair trial.

To substantiate the contention that witnesses of equal honesty may see and in general observe things in a very different way, Münsterberg instituted a series of experiments with his students at Harvard College, which certainly go far toward clearing up many inconsistencies which every trial brings out, and which are often put down to deliberate falsifying on the part of witnesses. In general, it appears from this final series of experiments that the important matter to determine is whether a given witness is capable of correctly recording his sense impressions or, to put the matter in plain language, to what degree he has the power of correct observation, evidently a matter of prime importance in the determination of many matters upon which a jury is finally required to pass judgment. The various inconsistencies of apparently equally honest witnesses are shown to be a natural consequence of varying powers of correct observation. It would therefore further the cause of justice, according to Münsterberg, if through tests at the hands of an expert psychologist, the credibility of a witness could be determined before he appears on the witness stand, to the end that his statements when under oath might then be taken at their true worth. Such a plan is chimerical at the present time, but it is not to be questioned that if the object of a trial is to reach the truth, as far as humanly possible, it becomes evident that no legitimate means which may conduce to that end should be disregarded. Münsterberg believes that experimental psychology has finally reached a stage of development where it may take an active part in the practical affairs of life.

In the second article to which we have referred, entitled "The Third Degree," Münsterberg propounds an ingenious method of getting at the inner life of criminals, and thereby inducing confessions and determining veracity by means of the association of ideas and reaction time. Examples are given which go far toward showing that the secrets of the human mind may be revealed by a comparatively simple method of testing the reaction time of various associations. A case of particular interest is that of a now notorious, self-confessed murderer, who recently figured as the chief witness in a widely advertised western trial, and whose testimony was discredited by the jury, leading to the acquittal of the defendant. By the tests which Münsterberg was permitted to use on this person, he arrived at the definite conclusion that the witness was telling the truth, an opinion which unfortunately found its way into the newspapers before the termination of the trial. Here was a case of great moment in which the common sense of a jury was entirely at variance with the results of scientific tests: naturally, the opinion of the jury prevailed, leading to the discharge of the prisoner.

It is evident that the question involved in this matter is one which must be fairly met. It is essential that our courts of law in their treatment of expert opinion do not depart from precedents long established, except for most sufficient reasons. On the other hand none can observe the present state of affairs, without wishing most cordially for a simple and more definite method of arriving at facts than we now have. It is certainly not impossible that experimental psychology may take a hand in the reform which is demanded on every side. These articles of Professor Münsterberg should be read and pondered.

MEDICAL NOTES.

Cholera in Japan. — Cholera has appeared in Japan, and 1,500 cases were reported up to Sept. 25.

Cholera in Russia. — It is reported that an epidemic of cholera which broke out along the Volga in Russia is spreading and already affects twelve provinces. The deaths are said to reach into the thousands with the greatest mortality in the more thickly populated regions.

Plague in San Francisco. — Dr. Rupert Blue, of the Marine-Hospital Service, and President William Oppuls, of the City Board of Health, are reported to have issued the following statement regarding the plague situation in San Francisco:

"From our knowledge of plague, the prevention of a sudden outbreak in epidemic form can be predicted with assurance; but a certain number of cases will continue to occur for a considerable period in spite of all preventive measures."

Up to the present time there have been upwards of 25 deaths and more than 40 identified cases.

Report of Henry Phipps Institute. — The third annual report of the Henry Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, including Work Done during the Year from Feb. 1, 1905, to Feb. 1, 1906, has been published. The volume is 410 pages in length and enters into much clinical and pathological detail concerning the problems of tuberculosis. This report forms a valuable epitome not only of what has been accomplished by this institute in the investigation of tuberculosis, but also illustrates the possibilities of research in the great field of this one disease.

The Death of Prof. W. O. Atwater. — In the death of Prof. W. O. Atwater, of Wesleyan University, which occurred recently, this country loses a man who has made for himself an enviable reputation in popularizing science. He was sixty-three years old at the time of his death, and for many years had been associated with Wesleyan University. He early became interested in chemistry, particularly in its relation to agriculture, and later took up the study of foods and nutrition, with which much of his later work is identified. He held many public posts, and showed extraordinary ingenuity in carrying out his experimental researches. Perhaps his best known work is that relating to the food value of alcohol. In spite of the extraordinary opposition which his view met at the hands of certain religious organizations and temperance societies, he continued to maintain that alcohol had a certain food value. He was much beloved by those with whom he was brought in contact.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 2, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 28, scarlatina 39, typhoid fever 26, measles 10, tuberculosis 60, smallpox 1.

The death-rate of the reported deaths for the week ending Oct. 2, 1907, was 16.94.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Sept. 28, 1907, was 200, against 187 the corresponding week of last year, showing an increase of 13 deaths and making the death-rate for the week 17.11. Of this number 101 were males and 99 were females; 196 were white and 4 colored; 135 were born in the United States, 62 in foreign countries and 3 unknown; 41 were of American parentage, 137 of foreign parentage and 22 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 40 cases and 1 death; scarlatina, 51 cases and 1 death; typhoid fever, 23 cases and 1 death; measles, 12 cases and 0 deaths; tuberculosis, 69 cases and 18 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 19, whooping cough 0, heart disease 10, bronchitis 4 and marasmus 11. There were 14 deaths from violent causes. The number of children who died under one year was 60; the number under five years, 71. The number of persons who died over sixty years of age was 39. The deaths in public institutions were 61.

There were 3 cases and 1 death reported from cerebrospinal meningitis during the week.

Tuberculosis at the Long Island Hospital. — For many years the almshouse hospital at Long Island, Boston Harbor, has been overcrowded with tuberculous patients to the detriment of those suffering from other diseases. This matter has again come up for discussion, and it is to be hoped that unless separate buildings are provided for this class of cases at Long Island, the Consumptives' Hospital's trustees will take as early measures as possible to relieve the present congestion at Long Island.

NEW YORK.

DR. A. W. FERRIS APPOINTED STATE COMMISSIONER IN LUNACY. — Governor Hughes has appointed Dr. Albert Warren Ferris, of New York, President of the State Commission in Lunacy, in the place of Dr. Charles W. Pilgrim, resigned.

STADIUM AT SYRACUSE UNIVERSITY. — During the coming month Syracuse University is to have the formal opening of its great new stadium which has been in the course of erection for the past two years and which represents an outlay of $600,000. The aim of the university authorities is to have the most complete athletic plant in the world, and with this end in view a gymnasium costing $400,000 will be built at the east end of the stadium. This large expenditure for the promotion of athletics has been rendered possible by the generous gifts of John D. Archbold.

OPENING OF COLUMBIA UNIVERSITY. — The opening exercises of the one hundred and fifty-fourth year of Columbia University were held on Sept. 25, when Prof. James Rignall Wheeler delivered the annual address, on "The Idea of the College and the University." At the opening of the medical department, the College of Physicians and Surgeons, on the following day, Dr. George S. Huntington, professor of anatomy, made an address upon "Methods and Scope of Natural Object Teaching in the Medical Course."

SEPTICEMIA WRONGLY ATTRIBUTED TO VACCINATION. — Walter Brown, seven years old, a boy in Brooklyn, died from blood poisoning on Sept. 23, about two weeks after he had been vaccinated in order that he might be allowed to attend public school, and Dr. George D. Barney, his physician, who seems to have reasoned "*post hoc, propter hoc*," refused to sign a death certificate, claiming that the septicemia was due either to impure virus or lack of precautions in performing the vaccination. The Health Department, at whose office the boy was vaccinated, at once investigated the matter, and as the result the chief medical inspector in Brooklyn stated that the death was undoubtedly due to outside infection, for blood poisoning would have developed within three days had it been contracted at vaccination. It was surprising, he said, that, considering the carelessness of parents and children, so few accidents occurred. As many as seventy children were vaccinated from the same bottle as Brown, and hundreds from the vaccine from which this was taken. The virus used by the Health Department is prepared with great care in the department's own laboratory, and in each case of vaccination a new needle and a fresh orangewood stick are employed.

STRAUSS PASTEURIZATION PLANT FOR BRUSSELS. — Nathan Strauss, of New York, who has been attending and taking part in the International Milk Congress at Brussels, has donated a complete pasteurization plant to the city of Brussels. On Sept. 15 the fifteenth summer season of the Strauss pasteurized milk depots in New York was closed. This year there were seventeen of these in operation, the city authorities having co-operated with Mr. Strauss to the extent of furnishing some of the booths from which the milk was dispensed. All the milk stations in public parks and on the recreation piers have now been discontinued for the season, but six of the stations, as has been customary of late, will be maintained throughout the year. These are situated at various points in the most crowded tenement districts of the city.

A HOSPITAL FOR CHINATOWN. — Chinatown is to have a hospital of its own, where the Chinese patients will have Chinese nurses and Chinese physicians to attend them, under the supervision of an American physician. The building is to cost $25,000, and a committee of Chinese merchants will secure the funds. For the last three years the Chinese merchants of the city have been supporting a hospital on Park Street, without the necessary authorization from the state, and recently John S. Cooper and Champe S. Andrews, legal representatives of the Medical Society of the County of New York, paid the hospital a visit. They were politely received by the superintendent, who informed them that there were fifteen physicians on the staff of the institution, all of whom had received certificates from the Chinese consul. Mr. Cooper has authorized the following statement, giving the results of this visit: The consul was, according to his own belief, acting within his rights when he gave out these certificates to the fifteen Chinese doctors. Everything in the matter has been done in the most amicable manner. The consul has recalled all the certificates, and the doctors, who are not ignoramuses by any means, will go before the Medical Board to pass their examinations in the orthodox manner. At present the Park Street Hospital, which is a substantial four-story building, is being remodelled and will be used until a suitable site can be found for the new hospital. The institution is supported by the Chinese merchants living in Chinatown; they are doing their best to fight the opium habit, and they are the only people in this country who can do it. The whole question has been put before the State Board of Charities, the authorities in Washington, and the district attorney here, and they have all decided to leave the matter in the hands of the County Medical Society to see that the hospital is conducted on established lines for the health of the city. There are now two or three qualified Chinese physicians in New York who can carry on the work until the other men receive their certificates from the board. The whole thing has been very creditable to the charity of the Chinese merchants to the poor of their race, who receive everything free in the hospital.

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Obituary.

JOEL W. HYDE, M.D.

Dr. Joel W. Hyde, a prominent gynecologist of Brooklyn, N. Y., died on Sept. 22. He was born in Westbrook, Conn., in 1839, and was graduated from the Yale Medical School in 1861. In the Civil War he served on the staff of Major-Gen. Rufus Saxton and was afterwards surgeon of the 29th Connecticut Regiment, in which capacity he was present at the surrender of Richmond. After settling in Brooklyn he was appointed Brigade Surgeon of the National Guard of New York. For a number of years he was surgeon to the Brooklyn Orphan Asylum and chief medical adviser of the Ætna Life Insurance Company of Hartford and the National Life Insurance Company of Vermont. He was also gynecologist to St. Mary's Hospital, and in 1901 was elected president of the Brooklyn Gynecological Society. At the time of his death he was consulting obstetrician to the Long Island College Hospital and consulting gynecologist to the Bushwick Central Hospital. One of his sons is Dr. Clarence Reginald Hyde, of Brooklyn, also a well-known gynecologist.

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Current Literature.

Medical Record.
Sept. 7, 1907.

1. Mackenty, J. E. *Congenital Occlusion of the Choanæ.*
2. Van Baggen, N. J. *The Misuse of the Voice and Its Cure.*
3. Raudnitz, R. W. *The Attitude of Public Health Authorities Regarding the Preservation of Milk by Heat.*
4. *Von Ruck, K. *Sixteen Years' Experience with Tuberculin and with Other Products of the Tubercle Bacillus in the Treatment of Pulmonary Tuberculosis.*
5. Adler, L. H. *Impaction of Feces.*
6. Pederson, V. C. *Instructions to Those Having Syphilis.*
7. Jackson, A. H. *The Determination of Sex: Is it Subject to the Law of the Survival of the Fittest?*

4. Von Ruck summarized the results of sixteen years' treatment of tuberculosis with tuberculin. He has for many years observed no bad effects from the treatment, but rather great benefit. The products of the tubercle bacillus act in a truly specific way by inducing antibacterial or anti-toxic immunity. The limitations of the treament arise from degeneration of tubercular tissues and associated exudative and productive inflammations. The specific treatment will arrest the action of the bacilli and prevent further degenerative changes, but it will not restore advanced changes or remove necrotic tissue or inflammatory products. It cannot remove the bacterial bodies from caseous tissue, or prevent softening and exfoliation. The author tabulates his cases, of which he has treated 1,893 in the past sixteen years, and compares them with a series of cases treated by private physicians. As to the permanency of his results, in the first stage 91.4% have not relapsed. Of the second stage cases, 80.4% have had lasting results. Of the third stage cases, 37.4% are still living in good health.

New York Medical Journal.
Sept. 7, 1907.

1. Clark, L. P. *Remarks on the Medico-legal Aspects of Imbecility.*
2. Atwood, C. E. *The School Training of Backwood Children in the New York City Public Schools.*
3. Knott, J. *"Normal" Ovariotomy, "Female" Circumcision, Clitoridectomy, and Infibulation.*
4. Scheppegrell, W. *The Prevention of Deafness.*
5. Hallock, F. K. *The Neurasthenic Neuralgias.*
6. Elmer, W. G. *The First Five Years of the Graduate.*
7. Bierhoff, F. *Police Methods for Sanitary Control of Prostitution.* (Concluded.)

The Journal of the American Medical Association.
Sept. 7, 1907.

1. Jacobi, A. *Smoke in Relation to Health.*
2. Farrand, L. *Educational Methods in the Campaign against Tuberculosis.*
3. Otis, E. O. *Public Provision for Advanced Cases of Tuberculosis.*
4. *Halstead, A. E. *Glycosuria in Surgical Relations.*
5. Babler, E. A. *The Treatment of Traumatic Rupture of the Kidney.*
6. Pusey, B. *Involvement of the Cornea and Bulbar Conjunctiva in the Secondary Stage of Syphilis.*
7. Heidingsfeld, M. L. *Lupus Erythematosus.*
8. Lennander, K. G. *Abdominal Pain. Especially Pain in Connection with Ileus.*
9. *Cannon, W. B., and Murphy, F. T. *Physiologic Observations on Experimentally Produced Ileus.*
10. Roberts, J. B. *The Symptoms and Diagnosis of Strangulation of the Intestine.*
11. *Pratt, J. H., Peabody, F. W., and Long, A. D. *The Occurrence of Typhoid Bacilli in the Stools of Typhoid Patients.*
12. Weir-Mitchell, S. *The Literary Side of a Physician's Life. Ronald Ross as a Poet.*
13. Pitzman, M. *A Simple Proof of the Cessation of Respiration.*

4. Halstead found a transitory glycosuria in 6 out of 44 simple fractures. The amount of sugar was never over 1% and did not seem to affect union. In six cases of fracture of the vertebræ he found glycosuria in three. A transitory glycosuria is not uncommon after infections with the ordinary pus micro-organisms, as carbuncle and erysipelas, especially when associated with gangrene. This glycosuria clears up under proper drainage, etc. Major operations with general anesthesia are contra-indicated while there is sugar in the urine. He advises a restricted diet. The prognosis is not affected by the glycosuria. In operations on diabetics, coma is the great danger. This is much more frequent after general anesthesia, so local anesthesia is always to be preferred. Spinal cocainization he prefers for leg amputations for diabetic gangrene. If possible a thorough course of medical treatment is desirable before an operation. The presence of acetone and the ammonia compounds is of more importance than the amount of

sugar. One case is on record of a fatal coma coming on after operation, in a patient who had been sugar free for two years.

9. Cannon and Murphy take up experimentally dynamic ileus, *i. e.*, ileus with the syndrome of occlusion of the bowel, without, however, closure of the lumen, as opposed to mechanical ileus, in which there is an actual occlusion of the bowel. The method employed was to observe the passage of food mixed with bismuth along the intestine by means of the x-ray. The animals used were cats. They crushed testicles or ovaries in their animals and found marked retardation of discharge of food from the stomach and sluggish movement of food through the small intestine. However, if the splanchnic nerves are cut, and then the testicles crushed, peristalsis is normal. Hence they conclude that ileus paralyticus can be produced without changes in or about the intestinal wall and that the condition is one of inhibition conveyed by the splanchnic nerves. They manipulated the stomach and intestines of animals and found a similar sluggishness. Cutting the splanchnic nerves before manipulation had no effect. Hence they assume that ileus paralyticus is not necessarily the consequence of reflex inhibition, but can be entirely explained as due to disturbances of the local mechanisms in the wall of the gut. They found that aloes mixed with the food produced no change in the ileus due to local manipulation. Physostigmine seemed to cause a very marked but only temporary increase of peristalsis in animals whose intestines were paralyzed by reflex inhibition, *i. e.*, whose testicles were crushed.

11. Contradictory to the usual belief that the intestinal contents in typhoid fever are swarming with typhoid bacilli, Pratt, Peabody and Long, using improved methods, were able to isolate typhoid bacilli from the stools in only 17 out of 100 cases of undoubted typhoid fever, or 17%. [R. I. L.]

The Lancet.

Sept. 14, 1907.

1. Trevelyan, E. F. *The Co-ordination of Post-Mortem Work with Clinical Observation.*
2. Foxwell. *An Address on Inhalation.*
3. *Iwai, T. *A Statistical Study on the Polymastia of the Japanese.*
4. Lediard, H. A. *Spontaneous Aneurysm of the Popliteal Artery Treated by Extirpation.*
5. *Short, A. R. *Actinomycosis of the Appendix.*
6. Wilson, T. S., and Miller, J. *Two Cases of Acute Tuberculous Cerebrospinal Meningitis.*
7. Bonsfield, L. *Observations from the Soudan.*
8. Peters, O. H. *Irregularity of the Pulse in Diphtheria.*
9. Spencer, W. G. *Results in Appendicitis treated by the Immediate and Complete Operation.*

3. Iwai has made a careful and complete statistical study of polymastia among the Japanese. He gives an exhaustive bibliography, and concludes that among the Japanese, unlike western people, polymastia is generally found above the normal breasts, and most commonly on the anterior wall of the axilla; in many cases, especially in males, the areolæ are pigmented. The frequency of polymastia is about 1.68% in males and 5.19% in females. It occurs on the left more than on the right. It is inherited and in most cases transmitted by mothers. In perfect specimens the secretory process begins at the time of parturition and sometimes continues for six months. Six is the largest number of glands yet found on one person.

5. Short reports in detail 5 cases of actinomycosis of the appendix. About one hundred and fifty cases up to date have been reported. As regards etiology, a farming life or one having to do with corn, seems to play a part. There may be extensive ulceration of the mucous membrane with or without thickening and usually ending in perforation. Before perforation has occurred diagnosis can only be made by finding granules in the stools. If in a patient over fourteen years of age there is a history resembling appendicitis and a large, very hard mass adherent to the deep structures, with only slight fever and pain and little or no vomiting, actinomycosis should be strongly suspected. If in addition the skin is thickened, edematous, shiny and of a purple tint, the probabilities are very great. Abscess and sinus formations are very characteristic. The prognosis is very grave. Operation should be as complete as possible. [J. B. H.]

British Medical Journal.

Sept. 7, 1907.

Educational Number.

1. *The Profession of Medicine.*
2. *The Portals of the Profession.*
3. *Regulations of the General Medicine Council.*

Sept. 14, 1907.

1. Simon, R. N. *The Empirical and Experimental Methods in Medicine.*
2. *Boyce, R. *The Treatment of Sleeping Sickness and Other Trypanosomiases by the Atoxyl and Mercury Method.*
3. Aldred, W. A. *Two Cases of Poisoning by Weed-Killer.*
4. Brown, W. L. *A Case of Myelopathic Albumosuria.*
5. Thomson, H. W. *The Eye-Sight of the Poorer City Children.*
6. Beaumont, W. M. *Synergic Movements of the Eyelids and Mouth.*
7. Leduc, S. *Ionic Medication.*
8. Davidson, J. M., Shenton, W. H., Riddell, J. R., and Bruce, W. I. *Papers Dealing with the X-Ray in Diagnosis.*
9. Sequeira, J. H., Pirie, A. H., Tomkinson, J. G., Taylor, J., and Harris, J. D. *Papers Dealing with the Use of the X-Ray in Treatment.*
10. *Salomonson, K. A. W., Jones, H. L., Morton, E. R., Humphries, F. H., and Somerville, W. F. *Papers Dealing with Electro-Therapeutics and the Action of Electric Currents.*
11. *Reid, A. D. *The Use of the Cryptoscope in Operations for Renal Calculi.*
12. Walsham, H., and Dally, J. F. H. *The Orthodiograph.*
13. Pearson, E. *The Use of the X-Ray, from the Point of View of the General Practitioner.*
14. Newsholme, A. *A Discussion on the Co-ordination of the Public Medical Services.*
15. Gilchrist, A. W. *On the Necessity of Increasing the Degree of Immunity against Smallpox.*
16. Horder, T. G. *The New Vaccination Order.*
17. Kenwood, H., and Routley, E. W. *A Discussion on Infant Mortality and the Milk Supply.*
18. Starkey, T. A. *The Economical Purification of Sewage in Rural Districts.*
19. McWalter, J. C. *The Prevention of Post-Mortem Putrefaction.*

2. Boyce reviews the work leading up to the use of atoxyl and mercury in treating sleeping sickness. Inorganic arsenic produced no permanent cures, the patient dying either of the protozoan infection or of too much arsenic. Atoxyl alone, while a tremendous improvement, was not satisfactory in many instances. Atoxyl combined with mercury, however, destroys both forms which occur in the life cycle of the trypanosome.

10. Somerville believes that high-frequency currents have a very considerable effect on the urinary system. He gives the details of several cases where the total twenty-four-hour amount of urine has increased under this treatment. He thinks that such currents improve the metabolism, and that the good results obtained from their use are not merely due to mental effect.

11. The cryptoscope is an ingenious apparatus by which a kidney exposed at operation can be thoroughly searched by means of the x-ray, and the smallest fragment of a stone discovered. This can then be removed by a small incision, instead of the large exploratory incision of the past. [J. B. H.]

The Practitioner.

August, 1907.

1. Copeman, S. M. *Some Recent Research Work on Cancer.*
2. Cheatle, G. L. *The Spread of Cancer in the Upper Lip, and Its Influence on Treatment.*

3. *Grünbaum, O. *The Diagnosis of Addison's Disease.*
4. Smith, G. B. *Backward Displacements of the Uterus.*
5. *Moorhead, T. G. *Movable Spleen.*
6. Ormond, A. W. *Notes on Two Cases of Leprosy Affecting the Eyes.*
7. Lund, K. F. *An Inquiry into the Cause of Sea-Sickness.*
8. Rigby, H. M. *A Review of Recent Literature on Hernia.*
9. Upcott, H. *A Review of Recent Work in Abdominal Surgery.*
10. Stevens, B. C. *The Treatment of Ulcers.*
11. Turner, J. G. *Review of Dental Surgery.*

3. Grünbaum goes over the leading signs and symptoms of Addison's disease, and urges an earlier diagnosis. The pigmentation must be differentiated from that of (1) pregnancy, (2) chronic tuberculosis, (3) Vagabond's disease, (4) Von Recklinghausen's disease, (5) hemochromatosis, (6) exophthalmic goiter, (7) arsenic, (8) argyria, (9) the effects of heat, and (10) of workers in certain chemicals. The asthenia is very typical, and with an ergograph is easily demonstrated; blood pressure is invariably low; the blood itself shows few changes, but by means of the opsonic index some additional information may be gained.

5. Movable spleens are rare. The conditions leading to this anomaly are, in general, (1) enlargement, (2) relaxation of the splenic ligaments due to congenital or acquired defects, (3) trauma. It is more common in women who have a relaxed abdminal wall. Moorhead reports a case in which the diagnosis was only made at operation. Twisting of the pedicle may cause great variations in the size of the tumor. Opinions are about equally divided as to methods of treatment between splenectomy and splenopexy. [J. B. H.]

September, 1907.

1. *Barker, A. E. *Notes on Removal of Thyroid Tumors.*
2. Carr, W. J. *The Diagnosis of Chronic Valvular Disease of the Heart.*
3. Rawling, L. B. *On Displacement of the Internal Semilunar Cartilage of the Knee-joint.*
4. *Clogg, H. S. *Some Remarks on Inguinal Hernia in Children: Based on an Experience of 126 Cases Submitted to Operation.*
5. Blumfeld, J. *Some Recent Contributions to the Study of Anesthetics.*
6. Barton, G. A. H. *The C. E. — Ethyl Chloride — Chloroform Sequence.*
7. Turtle, G. de B. *Extra-uterine Gestation.*
8. Nash, J. T. C. *Disinfection and Disinfectants.*
9. Gompertz, R. H. C. *Case of "Hour-Glass Stomach."*

1. Barker advises the use of light local anesthesia in removing thyroid tumors. He uses β-Eucaine, .2%, to which is added some adrenalin chloride. The injection should be into the skin, not under it. It is a mistake to operate before at least a half hour has elapsed after the last injection. Morphia before operation is of value. He gives the details of his operation, with plates, and reports 22 cases.

4. Clogg believes that the hernial sac in children is congenital in every case and never acquired. It is difficult to believe that cure can be obtained in any other way than by removing the sac. Trusses and other appliances do not cure. The earlier operation is done the better. This should be, in breast-fed babies, immediately after weaning, and in bottle-fed, if healthy, at two months. His operation differs in no way from that done on adults. Cases of hernia of cecum and appendix, hernia of the bladder, hydrocele in relation to hernia, inguinal hernia in the female child, tuberculosis of the sac and strangulation are also reported. [J. B. H.]

The Edinburgh Medical Journal.
August, 1907.

1. Lennander, K. G. *Abdominal Pain; Especially Pain in Connection with "Ileus."*
2. Littlejohn, H., and Drinkwater, T. W. *Three Cases of Fatal Strychnine Poisoning.*
3. *Beadles, C. F. *A Case of Aneurysmal Disease.*
4. Niles, A. *A Case of Rupture of Herniated Bowel by Sudden Contraction of Abdominal Muscles.*
5. Coupland, W. H. *Thomas Sydenham, the English Hippocrates.*

3. Beadles gives detailed clinical and post-mortem observations on a case bearing multiple, small, aneurysmal dilatations of the larger arteries at the base of the brain. Syphilitic endarteritis, syphilitic deposits and softenings in both cerebral hemispheres and symmetrical aneurysms at the bifurcation of both common carotid arteries were also found. The clinical symptoms were those of general paralysis. He reports other published cases of this condition, and reviews the opinions of other writers on the subject. [J. B. H.]

September, 1907.

1. *Duckworth, D. *The Alcohol Question and Temperance.*
2. Thomson, A. *A Résumé of Kocher's Work in Abdominal Surgery.*
3. Kynoch, J. A. C. *A Series of Five Cases of Cæsarian Section for Contracted Pelvis.*
4. *Poynton, F. J. *Observations upon Arthritis in Young Children.*
5. Gibson, G. A. *Death and Sleep.*
6. Littlejohn, H. *A Case of Fatal Poisoning with Bichromate of Potassium.*
7. Turner, A. L. *A Case of Lupus of the Larynx Successfully Treated by the External Application of the X-Ray.*

1. Duckworth believes that so-called temperance parties and workers are misnamed; that they are not striving for a temperate, moderate use of alcoholic beverages, but for a total abstinence. The moderate drinker has, until recently, been held in disrepute by extremists of both kinds. While, undoubtedly, there is a class of people who are totally unfit to use alcohol in any form, there is left a vast majority in which a moderate use of alcohol does no harm. He thinks that it is by a broad education along common-sense lines that the most good can be done.

4. Poynton describes the various forms of arthritis in early life. Gonococcal arthritis, though rare, sometimes occurs in marasmic children from a gonorrheal ophthalmia. It is much more serious than in adults. Septic arthritis may occur as in adults. Meningococcal arthritis is not rare during epidemics of cerebrospinal meningitis. There is also a rare form of acute tubercular arthritis. He also briefly describes Still's disease, and the arthritides associated with syphilis and hemophilia.

Deutsche Medizinische Wochenschrift. No. 31.
Aug. 1, 1907.

1. Sommer. *Diagnosis and Therapy of Psychic and Nervous Diseases.*
2. *Monckeberg, J. G. *Arteriosclerosis of the Lung Arteries.*
3. Kroemer, P. *Clinical Observations on the Etiology and Therapy of Epithelioma of the Chorion.* (Continued article.)
4. *Leutert. *Bier Treatment in Otology.*
5. *Hirschfeld, H., and Kothe, R. *Abnormally High Leucocytosis in Severe Infectious Diseases.*
6. Mühsam, R. *Fatal Bleeding from a Duodenal Ulcer after an Appendix Operation.*
7. Franke, F. *Diagnosis and Treatment of Chronic Joint Diseases.* (Continued article.)
8. Sommer and Dannemann. *History of the Medical Faculty of the University of Giessen.*

2. A moderate grade of sclerosis in the smaller arteries of the lung not infrequently occurs in mitral stenosis and pulmonary tuberculosis, but causes practically no symptoms. Primary sclerosis of severe grade in the smaller pulmonary arteries is extremely rare. Only two such cases have been reported: one by Romberg, the other by Aust. The authors report two cases, with pathological examinations; the first being an extensive and severe sclerosis, affecting the arteries of the pulmonary circulation only, with narrowing of their lumen and consequent increase of blood pressure, and hypertrophy and dilatation of right side

of the heart, causing dyspnea, great cyanosis, pulsation in veins and liver, edema, and finally death. The second case was a thrombus formation with partial organization on the site of sclerotic changes in the pulmonary artery. Both these cases, as well as the two previously reported, occurred in young individuals, the oldest being thirty-three years. It is probable that the degenerative changes in these cases were brought about by some congenital defect in the arterial walls of the pulmonary circulation, as there was no evidence of sclerosis elsewhere.

4. Leutert concludes that the congestion treatment is useless in chronic middle ear diseases. In acute suppurations after scarlet fever and measles it may be of benefit when employed after operation.

5. Hirschfeld and Kothe report nine cases of severe infections, mostly appendicitis or peritonitis, in which the leucocyte count rose to between 60,000 and 92,000. Of these six died. Eight were of the female sex. Myelocytes were present to about 7% in all the cases. The morphological condition of the blood and blood-forming organs in cases of abnormally high leucocytosis in severe infectious diseases needs much further study. The authors think these high counts are much more common than is usually supposed. [L. G. M.]

No. 32. Aug. 8, 1907.

1. Heine, B. *Suppurating Diseases of the Labyrinth.*
2. *Halberstaedter and Prowazek. *Etiology of Trachoma.*
3. *Wassermann, M., and Meier, G. *Clinical Worth of the Serum Diagnosis in Syphilis.*
4. *Nagelschmidt, F. *Indications for Treatment with the High-Frequency Current.*
5. Franke, F. *Diagnosis and Treatment of Chronic Joint Diseases.* (Concluded.)
6. Kroemer, P. *Clinical Observations on the Etiology and Treatment of Epithelioma of the Chorion.* (Concluded.)
7. Schindler, C. *An Improvement of the Neisser Suspensory.*

2. Halberstaedter and Prowazek describe further the cell inclusions which they have seen in cells taken from the conjunctiva of cases of trachoma. These inclusions the authors believe to be micro-organisms, because they have a distinct, characteristic and constant appearance. They have been able to produce the disease experimentally in orang-outangs. In the case of other animals, such as guinea pigs, rabbits, and other apes, the experiments were negative.

3. The authors review what has been accomplished with the hemolytic blood test for syphilis, and give their experience in 39 cases, of which 27 were positive and 12 negative. Much further experience is necessary to determine its clinical value, but they believe the test may lead to a better comprehension of the pathogenesis of tabes and paralysis, although negative findings are not conclusive evidence against the presence of syphilis.

4. Nagelschmidt thinks the high frequency currents of great value in local conditions, such as warts and epitheliomata, which can often be cured by a single application of a prolonged shower of sparks. Local applications are also made for psoriasis, eczema, neuralgia, neuritis, sciatica, sprains, inflammations, colitis, etc. Constitutional conditions, as rheumatism, gout, diabetes and arteriosclerosis are among those which have yielded in a marvelous manner to this treatment in the authors' practice. [L. G. M.]

No. 33. Aug. 15, 1907.

1. Weber, L. W. *Progress in Diagnosis of Nervous Diseases.* (Continued article.)
2. Krause, P. *Bilateral Nephrolithiasis.*
3. Doebbelin. *Sequestrated Abscess of the Spleen.*
4. Kroemer, P. *Etiology and Treatment of Epithelioma of the Chorion.* (Concluded.)
5. *Ogata, M., and Ishiwara, K. *Tsutsugamushi Disease*
6. Muller, G. J. *Status of Actinotherapy.* (Continued article.)
7. *Lissauer, A. *Tuberculin Suppositories.*

5. Ogata and Ishiwara, in a communication from the hygienic institute of Tokio, give the results of their investigations of Tsutsugamushi disease. This affection is also known as the inundation fever of Baelz. The authors isolated a protozoan organism from the ulcers which are so frequently met with in this disease, which they describe fully. The organism has been cultivated, and the disease transmitted to animals by inoculation.

7. Since early in 1906, Lissauer has made use of tuberculin suppositories, in the treatment of 40 cases of tuberculosis at all stages of the disease. The prognosis for a cure was unfavorable in most of the cases. The tuberculin was placed inside of hollow suppositories, in doses varying from 0.5 mg. to 25 cg. These were given sometimes daily, and sometimes at intervals of one or more days. The results obtained were equal to those following the use of tuberculin by mouth. No local reaction was caused by the suppositories, except occasionally a little itching which was easily controlled. The author administered tuberculin by mouth in gelatin capsules in two cases of advanced phthisis, but could see no beneficial result. [L. G. M.]

Münchener Medizinische Wochenschrift. No. 30. July 23, 1907.

1. Menge. *The Indications for Pubiotomy in Obstetrical Practice.*
2. *Plaut, F. *The Present Position of Serum Diagnosis in Syphilitic Conditions of the Central Nervous System.*
3. Fornet. *Serum Diagnosis in Lues, Tabes and General Paresis.*
4. *Löhlein, M. *Wright's "Opsonin Theory," and its Influence on the Therapeutics of Infectious Disorders.*
5. *Pankow. *Why the Appendix Should be Removed in Gynecologic Operations.*
6. Geigel. *The Importance of the Auricle in Hearing.*
7. Tinteman. *The Relation between Certain Psychoses and Life Insurance.*
8. Berndt, F. *Operations for Carcinoma of the Large Intestine.*
9. Tretzel, L. *A Diagnostic Symptom in Appendicitis.*
10. Engels, W. *The Clinical Importance of Bachner's Albumin Qualitative Method.*
11. Bewersdoff. *A Case of Puerperal Septicaemia Treated with Streptococcus Serum.*
12. Pfaundler, M. *The Treatment of Congenital Lack of Resistance.* (Continued article.)
13. *Kienböck, R., Selig, A., and Beck, R. *Observations on Swimmers.* (Concluded.)

2. Plaut reviews the work of Wasserman, Neisser and Bruck on the presence of antibodies and precipitives in syphilitic and parasyphilitic blood sera. In a series of 14 patients with general paresis, the author found, in all but one, a positive reaction in the spinal fluid. In the one case, the blood serum gave a positive reaction, though the spinal fluid was negative. In two cases, the first examination of the fluid was negative, but a later one showed a positive result. The intensity of the reaction bore no relation to the intensity of the process. The same condition of the spinal fluid is to be found in tabetics. Plaut has examined a number of cases of meningeal and cerebral syphilis, without finding this reaction present. Though the number of these latter cases are too few to base rules upon, it seems undoubted that a specific serum reaction is constant in general paresis and in tabes.

4. Lohlein sums up Wright's opsonin theory, and the interesting therapeutic results which have been gained in vaccine therapy. He doubts if Wright's theory is quite correct, and as far as he has been able to judge, thinks the opsonin is the same as the normal amboceptor of the German theory. This, however, must be looked into further before proved.

5. Pankow reviews the pathology, both macroscopic and microscopic, and points out that a large number of macroscopically normal appearing appendices show microscopically marked pathologic changes. He claims that appendicitis is far commoner than supposed, and says that 60% of all women coming to gynecologic operations in his clinic have had appendicitis. In many cases of chronic salpingitis, the author believes the appendix to be the etiological

factor, especially in cases of sterility due to adhesions. In these latter cases merely freeing the adhesions has led the way to a successful pregnancy. When tuberculosis and gonorrhea can be definitely ruled out, appendicitis is the probable cause of such conditions, for it is possible for a very severe inflammation of the appendix to pass almost unnoted. Many cases of so-called neuralgia of the ovaries are due to old adhesions from appendicitis. With all these points in mind the author strongly recommends the removal of the appendix in all gynecologic operations requiring laparotomy.

13. The authors carried out a series of observations by means of the orthodiagraph before and after excessive exertion in swimming contests, requiring a maximum exertion for a short period. In 10 out of 11 contestants examined they were able to demonstrate an actual diminution in the heart area after the contest instead of a dilatation. This they consider an "acute diminution." Accompanying this there were rapid, small pulse, dyspnea and cyanosis, as would be expected after such exertion. The contestants were for the most part in excellent physical condition. The authors consider this condition to be due to a dilatation of the peripheral vessels of the muscles under the influence of the exertion, a smaller amount of blood than normal coming to the heart at each diastole. In 7 out of the 11 cases albumin appeared in the urine. In 2 sugar was present. They conclude from the above data that swimming is one of the severest exercises, and that most careful training should precede the contest. [R. D.]

Berliner Klinische Wochenschrift. No. 28.
July 15, 1907.

1. *Oppenheim, H., and Borchardt, M. *Two cases of Tumor of the Cerebellum; Operation; Recovery.*
2. Babes, V., and Vasiliu. *The Treatment of Pellagra by Atoxyl.*
3. Walliczek, K. *Hyperostosis of the Upper Jaw.*
4. Grosse, O. *Improvised Asepsis.*
5. Blumreich, L. *Gangrene of the Cervix in Abortion and its Significance.*
6. *Helbron. *Tuberculosis of the Eye and Its Treatment.*

1. (I) Oppenheim reports two cases of cerebellar tumor with operation, the first in a man of twenty-six years, in previous good health. There were present headache, especially in the occipital region, vertigo, vomiting, deafness of the right ear, cerebellar ataxia, slight nystagmus, shrinking of the field of vision on the right, absent corneal reflex, slight changes of sensation over the right side of the face, paresis of the facial nerve on the right, and slight ataxia of the right arm. A diagnosis was made of tumor in the posterior fossa of the skull, probably of the cerebellum, and a radical operation was performed. The tumor was a fibroma. Two days after operation, all the symptoms had improved, but the ataxia of the arm had increased. The patient was seen about five months later, and was without symptoms. The second case showed the following: total blindness, total left facial paralysis with reaction of degeneration, left auditory nerve affected, slight paresis of the pharynx on the left side, slight nystagmus, and limitations of movement of the left eye. Here a diagnosis of the tumor in the posterior fossa, involving the roots of the facial and auditory nerves, was made. This was also proved by operation. The tumor was removed with a small piece of the cerebellum. Three weeks later severe bulbar symptoms arose, which necessitated feeding through a stomach tube. Also marked tremor and ataxia of the left side appeared. The bulbar symptoms slowly disappeared, but the blindness and facial paralysis did not recede. The cerebellar symptoms still remained. In this case, the process was too far advanced to hope for complete recovery, but life was saved.

(II) Borchardt describes his technique in the above operations. Six such operations have been performed by him, and three patients are still alive. He finds that removal of small pieces of the cerebellar tissue, though followed by temporary increase of symptoms, are of no moment in the long run.

6. Helbron describes minutely all the forms of tuberculosis of the eye. He points out that in many cases the diagnosis cannot be made from the clinical appearances. He recommends removal of suspicious glands in the preauricular or submaxillary region, and animal inoculation, or the tuberculin test. The treatment should be local as well as general. When possible all tuberculous tissue should be removed. Tuberculin T. R. has been tried with little success. The new antituberculosis remedy, tulase, has been tried of late, but sufficient time has not elapsed since its introduction to permit a judgment as to its efficacy. [R. D.]

Miscellany.

THE MARY PUTNAM JACOBI FELLOWSHIP.

The Women's Medical Association of New York City desires to pay a permanent tribute to Dr. Mary Putnam Jacobi. In selecting a form of memorial the association felt it should be something that furthered the present urgent needs of women in medicine, thus perpetuating the spirit of Dr. Mary Putnam Jacobi's career. To this end it has been decided to establish a fellowship in her name to give greater opportunity to women for graduate study in medicine.

The sum of $8,000 has already been raised by prominent persons throughout the country interested in the establishment of this fellowship. Mrs. Russell Sage was the donor of $1,000, and other contributions have ranged from $500 to $2.

Dr. Putnam Jacobi won an international recognition and reputation as a woman physician in Paris, and opened the Ecole de Médecine to women. She was the first woman admitted to the New York Academy of Medicine, and her remarkable hospital work and medical writings placed her at once with the leading medical lights in the nineteenth century. An early member of the League for Political Education of Woman, the Equal Suffrage Association, and the Consumer's League, she accomplished a noble work for women.

The Fellowship Fund must amount to at least $25,000 in order to provide an annual income of $1,000, and render efficient aid to post-graduate women students in medicine. The Women's Medical Association of New York City (Treasurer, Eleanor Tomes, M.D., 136 East 30th Street) invites the hearty and generous co-operation of all who desire to further the higher education of medical women of the United States. Among those interested in this Memorial, whose names are on the list of honorary members of the committee, are: Prof. Felix Adler, Mr. Jacob A. Riis, William Osler, M.D., Pres. Nicholas Murray Butler, Hon. Seth Low, Pres. Benjamin Ide Wheeler, Mrs. Henry Villard, Pres. M. Cary Thomas, Mr. Richard Watson Gilder, Dean Laura Drake Gill, Rev. Percy Stickney Grant, Pres. J. Y. Schurman, Miss Grace H. Dodge, Charles L. Dana, M.D., Howard A. Kelly, M.D., Mrs. Ellen H. Richards, Emily Blackwell, M.D., Francis P. Kinnicutt, M.D., Mrs. Frederick Nathan. Members of the working committee are: Chairman, Annie S. Daniel, M.D., 321 East 15th Street, New York City; Treas., Eleanor Tomes, M.D., 136 East 30th Street, New York. Auditors, Gordon Macdonald, Josephine Ettlinger, LL.M.

RECORD OF MORTALITY

For the Week ending Saturday, Sept. 21, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,374	538	Quincy	9	5
Chicago	—	—	Waltham	11	3
Philadelphia	—	—	Pittsfield	8	2
St. Louis	—	—	Gloucester	5	2
Baltimore	202	66	Brookline	6	2
Cleveland	—	—	North Adams	8	0
Buffalo	—	—	Chicopee	8	7
Pittsburg	—	—	Northampton	7	2
Cincinnati	—	—	Medford	4	1
Milwaukee	—	—	Beverly	4	—
Washington	—	—	Leominster	3	—
Providence	74	22	Hyde Park	6	2
Boston	217	76	Melrose	—	—
Worcester	60	22	Newburyport	—	—
Fall River	—	—	Woburn	4	3
Cambridge	25	11	Marlboro	8	4
Lowell	44	17	Westfield	2	—
Lynn	29	11	Peabody	—	—
New Bedford	35	16	Revere	2	1
Springfield	16	6	Attleboro	—	—
Lawrence	32	11	Clinton	4	1
Somerville	15	3	Adams	3	3
Holyoke	22	15	Gardner	—	—
Brockton	13	8	Milford	—	—
Malden	10	3	Watertown	6	4
Chelsea	10	3	Plymouth	—	—
Salem	18	6	Weymouth	6	2
Newton	17	5	Framingham	7	3
Haverhill	10	1	Southbridge	9	7
Fitchburg	—	—	Wakefield	—	—
Everett	9	2	Webster	—	—
Taunton	14	6			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING SEPT. 28, 1907.

E. C. Taylor, passed assistant surgeon. Ordered to the Naval Hospital, N. Y.

F. W. S. Dean, passed assistant surgeon. Detached from the Navy Yard, New York, N. Y., and ordered to the "Alabama."

W. A. Angwin, assistant surgeon. Detached from the "Scorpion," and ordered to the Naval Hospital, Norfolk, Va.

J. G. Field, surgeon. Detached from duty with Marine Rendezvous, Houston, Texas, ordered home, and granted leave for 6 weeks.

H. W. Cole, assistant surgeon. Detached from the "Alabama," and ordered to the Naval Training Station, Newport, R. I.

H. A. May, assistant surgeon. Ordered to the Naval Hospital, Norfolk, Va.

The following officers detached from duty at the places indicated after their respective names, and ordered to instruction at the Naval Medical School, Washington, D. C.: Assistant Surgeons, H. A. Garrison, Naval Hospital, Newport, R. I., R. Hayden, Naval Hospital, Annapolis, Md., S. L. Higgins, Naval Hospital, Norfolk, Va., F. W. Smith, Naval Hospital, New York, N. Y., O. V. Huffman, Naval Hospital, Norfolk, Va., G. Trimble, Naval Hospital, Norfolk, Va., H. R. Hermesch, Naval Hospital, New York, N. Y., Acting Assistant Surgeons, F. W. McGuire, F. W. P. Hough, Naval Hospital, Boston, Mass., and K. C. Melhorn, Naval Hospital, Norfolk, Va., Assistant Surgeons, E. V. Valz and J. C. Clayton, ordered to the Naval Medical School, Washington, D. C.

Surgeon J. S. Taylor, commissioned surgeon from Oct. 7, 1906.

Surgeon K. Ohnesorg, commissioned surgeon from June 16, 1907.

Passed Assistant Surgeon R. H. Dorsey, commissioned passed assistant surgeon from March 2, 1907.

Passed Assistant Surgeon, C. T. Grayson, N. T. McLean, commissioned passed assistant surgeons from June 28, 1907.

Assistant surgeons C. W. O. Bunker, H. F. Lawrence, C. J. Holeman, G. D. Hale, A. B. Haward, appointed assistant surgeons from Sept. 21, 1907.

SOCIETY NOTICES.

Centre District and Merrimack County Medical Society. — The Quarterly Meeting, being the one hundredth anniversary of the society, will be held Tuesday, Oct. 8, 1907, in the Senate Chamber, State House, Concord, N. H.

New York and New England Association of Railway Surgeons. — The seventeenth annual meeting of the association will be held at the Academy of Medicine, New York City, Nov. 14, 15, 1907, under presidency of Dr. T. H. Dana, of Cortland, N. Y.

Dr. Robt. Dawbarn will deliver the "Address on Surgery" on Nov. 14, and on the following day will give a clinic demonstrating his method of sequestration.

Eighth Annual Meeting of the National Association for the Study of Epilepsy. — The eighth annual meeting of the National Association for the Study of Epilepsy will be held at the Jefferson Hotel, Richmond, Va., Oct. 24, 25, next. Addresses will be given at the first session by the Governor of Virginia, the Mayor of Richmond and the President of the Medical Association of the State of Virginia. Responses to these addresses will be made by Dr. Everett Flood, President of the association, and Dr. William P. Spratling, of the Craig Colony for Epileptics, Sonyea, N. Y. Reports from all states in this country which are now caring for epileptics will be made by the secretary.

Massachusetts Medico-Legal Society. — The fall meeting will be held in Sprague Hall, Medical Library, Boston, on Wednesday, Oct. 2, 1807, at one o'clock. — Business: What action, if any, shall this society take in the matter of reform in medical expert testimony? Scientific Papers; a symposium on sudden death. — 1. Sudden death in a synopsis of twenty years of medico-legal work,' by Dr. Francis J. Canedy, of Shelburne Falls, president of the society. 2. Sudden death from cerebrospinal lesions, by Dr. George P. Twitchell, of Greenfield. 3. A case of justifiable homicide, by Dr. Silas D. Presbrey, of Taunton. 4. A case of sudden death resulting from abortion, by Dr. Oliver H. Howe, of Cohasset, and Dr. William F. Whitney, of Boston. A large attendance is especially desired at this first meeting of the year.

Oliver H. Howe.
Recording Secretary.

RECENT DEATHS.

John Howard Thurlow, M.D., M.M.S.S., died in Roxbury, Sept. 29, 1907, aged fifty-four years.

Dr. Pantaleon Candidus, long a practitioner in the Williamsburg District of Brooklyn, N. Y., died on Sept. 25, in the seventy-sixth year of his age. He was born in Germany and was graduated from the College of Physicians and Surgeons, New York, in 1872. Dr. Candidus was prominent in Masonic circles.

Vivian Daniel, M.D., M.M.S.S., of Watertown, died Sept. 24, 1907, aged forty-one years. Dr. Daniel was born in Cornwall, England, Nov. 26, 1865. His parents went to Canada while he was still an infant, and later moved to East Boston, where he attended school. He was graduated from the Harvard Medical School and from the Boston City Hospital, beginning practice in Watertown in 1897, where he built up a large practice. He had been a member of the Waltham Hospital Staff since 1898, town physician and a member and chairman of the Watertown Board of Health. Dr. Daniel was married in 1904 and his wife survives him. He died at the Waltham Hospital after an illness of two weeks of appendicitis.

Dr. Peter M. Wise, of New York, who had been a sufferer from locomotor ataxia for several years, died in the J. Hood Wright Memorial Hospital on Sept. 22, from an overdose of a prescription, said to be composed of morphine, hydrated chloral and sodium bromide, which he had been taking for the relief of pain. He was found in his bed room by his wife in an unconscious state, and removed to the hospital, where it was found impossible to revive him. Dr. Wise was fifty-six years of age and a native of Batavia, Genesee County, N. Y., and was graduated from the medical department of the University of Buffalo in 1872.

BOOKS AND PAMPHLETS RECEIVED.

Report of the Surgeon-General of the Army to the Secretary of War. For the Fiscal Year ending June 30, 1907. Washington. 1907.

Heart Disease and Blood Pressure. A Practical Consideration of Theory and Treatment. By Louis Faugeres Bishop, A.M., M.D. Second edition. New York: E. B. Treat & Co. 1907.

What should be the Attitude of the Profession toward the Hygiene of School Life? By Richard Cole Newton, M.D. Reprint.

Zeitschrift für den deutschen Unterricht. Von Prof. Dr. Otto Lyon. Leipzig and Berlin: B. G. Teubner. 1907.

Original Articles.

THE NEED OF POPULAR LECTURES ON INSANITY.*

BY HENRY R. STEDMAN, M.D., BROOKLINE, MASS.

A very limited experience, it is safe to say, is enough to satisfy any alienist that far less is known and that more mistaken notions prevail about insanity and the insane among people generally than is the case in any other department of medicine.

This surprising public ignorance is found among the unthinking and the educated alike, and together with other harmful results has long exposed physicians and their subordinates in hospitals for the insane to misrepresentation and reproach and the relatives and friends of the inmates of these institutions to constant uneasiness and sometimes the greatest anxiety through sensational and false reports regarding their treatment. It is also reasonable to believe that much of this might be averted or greatly modified by the dissemination of accurate information from authoritative sources regarding the disease and the methods employed in treating it, the safeguards against illegal commitment and abuse of patients in hospitals, as well as the comfortable housing, good general care and medical attendance they receive. To be sure, hospital reports might often tell the story if they ever reached the friends of the ordinary patient and were not too full of other matters to appeal to them.

For much of this ignorance there is abundant reason. By the very nature of their disease, the mass of insane patients must of necessity be cared for in hospitals at a distance from home for long periods, where their relatives can see them but seldom. Thus the opportunities for observing the patient and his disease close at hand that obtain in cases of physical disorders, and familiarizing themselves with his true condition and the difficulties of his proper management, aided by the information and advice of the physician, is in most cases, except, perhaps, for a few days, practically impossible. The same reason explains in a measure the unfamiliarity of the general practitioner with insanity and the fact that there is no branch of medicine in regard to which physicians who are not engaged in the practice of it are so ready to admit their ignorance, and no class of cases which they are more anxious to avoid.

The usual avenues of information about the disease thus closed against it, it is natural that the popular belief should be satisfied with the insanity of the newspaper, the periodical and the novel, that people should run after false prophets, and that secrecy and mystery should shroud the disease, begetting false and impossible ideas of its victims and keeping alive the prejudice regarding their treatment which still exists after so many years of progress in the amelioration of their lot.

But it is by no means in this direction alone that the popular ignorance and error regarding insanity manifests itself. There are few aspects of the disease, in fact, which do not call urgently for public enlightenment. How little is generally known of the signs of approaching insanity, for example, and how common an experience it is to see plain indications of the disease disregarded until an overt act, sometimes disastrous, even fatal, has occurred. Of the causes of insanity, also, the precise knowledge of which in individual cases often baffles the alienist himself, not enough is known by the laity to lead it in many cases to take ordinary precautions for its prevention. Mental hygiene also, the study of which is of vital importance to the individual and the race, is only just beginning to raise its head in the vast growth of investigation into and knowledge of the prophylaxis of disease that is becoming so widespread.

The idea of public lectures on insanity is not new. It had its germ in the broad humanitarian and economic measure of patronage or aid societies for the insane which have flourished for more than twenty years in England, France, Germany and Switzerland, a feature of whose work was combating the prejudices existing in regard to mental maladies. In these associations, it will be remembered, originated the system of the after care of the insane, which at last seems to have taken a foothold, and it is to be hoped a firm one in this country. Popular lectures on insanity found a strong advocate in Morel, of Belgium, who addressed our twenty-fifth National Conference of Charities and Correction on Guardian Societies for the Insane, and our appeal cannot be better fortified than by quoting his words in advocacy of this measure as one feature of the work of a guardian or patronage society. "In my opinion," he says, "much good could be done by giving popular addresses upon the predisposing and exciting causes of insanity and preventive treatment of the malady. When once these questions become understood by the public, mutual aid, moral as well as material, becomes possible. From that moment the insane will be considered as sufferers from disease. These popular addresses should instruct as to the patient's early treatment, giving short and clear descriptions showing how a mental trouble can be recognized. People still remain distrustful of hospitals for the insane. They do not believe as they should that many cures are possible and that they are more frequent and rapid if the patient be placed early under treatment. Guardian societies should in this way help to prepare people by information which shall combat these prejudices, and the public should be taught to take an interest in what actually goes on in asylums and how patients are treated there. These results can only be obtained by constant co-operation among persons of broad ideals who shall interest themselves in arranging public lectures in which shall be set forth the suffering engendered by mental disease, the hope that lies in early treatment and the conditions which may contribute to recovery and prevent a recurrence of the disease."

Most of us have long wished that these and other truths about insanity might be publicly and plainly brought home to people in this way, and now is the propitious moment for making the effort, when the tide is so strong in the direction of popularizing the knowledge of medicine in its other branches, a tendency originating in the tuberculosis crusade which has assumed such large dimensions and is accomplishing so much toward checking the spread of the disease. Two or three years ago the first step in the medical education of the public was taken by the British Medical Association, and the *British Medical Journal* reports that the popular lectures at its annual meetings have attracted large audiences, encouraging the hope that the plan may later be developed into a fully organized system.

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* Read at the meeting of the American Medico-Psychological Association at Washington, D. C., May, 1907.

Throughout the winter of 1906–7 a long and comprehensive series of popular lectures embracing a great variety of subjects in medicine and surgery has, for the first time in its history, been given at the Harvard Medical School by its professors and instructors every Saturday and Sunday with surprisingly successful results in point of attendance and general interest. The newspapers have given fairly accurate reports of the lectures and sensible editorial comments have been frequent. This shows that these are live matters with people in general. In this schedule of subjects, psychiatry had no place, but this omission will be remedied next winter when several popular lectures on mental disease will be given as a part of the regular course of popular medical lectures delivered at the Harvard Medical School; and the endeavor toward securing this desirable end in Boston has led us to urge at the same time by this appeal a general movement in the same direction in other parts of the country.

The credit of inaugurating the first series of public lectures on insanity is due to the Psychiatrical Society of New York City. Under its auspices Dr. Adolf Meyer lectured last winter on "Modern Psychiatry, its Possibilities and Opportunities"; Dr. August Hoch on the "Manageable Causes of Insanity"; Dr. C. L. Dana on the "Data of Heredity"; and Dr. Allan McLane Hamilton on the "Development of the Legal Regulations Concerning the Insane." These lectures were intended for the general physician and non-professional leaders of sociological interests as a basis for the organization of a movement toward prophylaxis and the development of sound interest in this eminently important topic. They were of an academic character and, on the whole, less likely to appeal to the general public than other subjects that might be selected, but were quite well attended and will probably be continued in the coming winter.

The ideal arrangement for a course of such lectures should be one, we think, which would attract all classes of hearers. One set, for example, like those just referred to for the more educated, and another, given perhaps in a central locality, which should deal with the more practical aspects of the disease. The auspices under which the popular lecture on insanity should be given are most important. A prominent medical school would seem to be the best indorsement, and if given, as at the Harvard school, as a part of a comprehensive schedule of popular lectures on disease in general, the association of the two would go far toward correcting the prevailing idea that insanity is something apart and not a disease to be classed with other maladies. Boards of insanity also would do well to encourage and institute public lectures, and medical societies of prominence and influence would be sponsors of weight with the community for such addresses. It is very necessary to prepare the ground for such an unusual departure in public instruction by advertising them freely in the press and by sending out a large number of circulars to persons interested in all kinds of eleemosynary work, social reform, schools, hospitals, courts and other institutions.

Appropriate subjects will occur to all. Among those which would seem more especially to appeal to the educated classes are, for example:

1. Hereditary Conditions Influencing Insanity: The intricacy and uncertainty of laws of disease-heredity. The ascertained average proportion of insane relatives to the number of sane persons in a community. The curability of attacks of insanity in patients with strong hereditary taint, etc.

2. Mental Hygiene, in its protean aspects.

3. The Criminal Aspects of Insanity: Crime a common symptom incident to the disease. Pleas of insanity and demonstration by statistics of the actual number of criminals (far smaller than commonly supposed) who escape punishment on that pretext. The many cases which never come into public notice of criminals for whom this plea is made that are found by experts to be *not* insane. The large number of convicts in the penal institutions of all countries who were insane when committed. Tests of responsibility and recommendations for new legislation which shall insure accurate and just expert decisions, etc.

For the public at large the following subjects occur to the writer, and it is in popular exposition of these questions that we probably shall come closer to the main object of such lectures and the real needs of the people in general as regards matters relating to insanity.

1. The True Nature of Insanity: Bad as it is, it is not necessarily so formidable a disease as it appears to be to the minds of people in general. Small proportion of violent "raving" patients. Large numbers of mild cases that never enter a hospital. Comparative frequency of recoveries, temporary and other, and long intervals of health. Short duration of many attacks. Similarity in this respect to general disease. Great advantage of the early treatment of pronounced cases away from home, etc.

2. The Reliable Signs of Approaching Insanity: Possibility of averting an attack. Precautions against dangerous acts. Methods of commitment, etc. The increasing number of voluntary patients in hospitals for the insane. Emergency, cases, etc. The frequency in sane people of minor and transient morbid mental states, fears, etc.,

and even hallucinations that are really unimportant and do not betoken insanity.

3. The Manageable Causes of Insanity.

4. Alcoholism and Insanity.

5. The Care and Treatment of an Insane Patient in a State Hospital from Admission to Discharge. Safeguards against illegal commitment. Supervision of hospitals by state boards of insanity. The large number of discharges (bearing on the popular belief that many are sent to insane asylums, but few come out). Diet of the patients. Systematic training of the nurses. Oversight of nurses and precautions against neglect, abuse and escape of patients. Medical attention to patients and study of the disease in hospitals. Harm done by the usual newspaper accounts of insane patients and hospital management. The contrast between care at home and hospital care. Condition of patients when brought to hospitals and best means of transportation of difficult cases, etc.

With such a list of subjects to draw from, it would seem easy to inaugurate a suitable course of lectures which could hardly fail, if under the right auspices, to enlighten and ease the public mind.

But the manner in which the subject shall be presented to the audience is quite as important as the subject itself. This has been effectively urged in editorials on the subject of popular medical lectures in the Boston Medical and Surgical Journal. A tendency has been noticeable in the lectures thus far given to paint in too somber colors and to make too much of the dangers of incurring this and that dread disease for lack of proper precaution, and for want of care in analyzing statistics, magnifying the prevalence or increase of the disorders. Now while the possibilities of harm should not be understated, neither should they be exaggerated to the extent of creating unnecessary and unhealthy alarm. The utmost care should be exercised to prevent misconceptions on the part of our hearers, theories should be discarded and only actual ascertained facts dealt with which have a definite, practical bearing. The difficulties are in one way far greater than in lecturing to a class of medical students and the temptation greater to speak with less accuracy to a popular audience. It goes without saying that what is said needs to be simply, clearly and graphically put. For the popular medical lecture to be most effective requires in a medical man, according to President Eliot (who originated the course at the Harvard Medical School), the power of interesting description with telling exposition and moving exhortation. To apply these several cautions to psychiatry: the terrors of insanity and its treatment have held the boards far too long, and the more we are able to say with truth that will tend to lessen its horrors in the minds of the community, the better shall we serve the purposes of true psychiatry; and the more widely and generally the nature of our work is known, the more the dignity and importance of our calling is enhanced.

HEREDITY IN DISEASES OF THE NERVOUS SYSTEM WITH ESPECIAL REFERENCE TO HEREDITY IN EPILEPSY.*

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A belief in the heredity of many diseases, especially those of the nervous system, is one of the accepted tenets of medicine,— a tenet to which every one is tempted to subscribe, whether he notes the invasion of Friedreich's ataxia, Huntington's chorea, or muscular dystrophy, in member after member of some doomed family, or studies the social degradation of the Jukes [1] family, or the degeneration and extinction of the Spanish Hapsburgs.[2] It is a belief, too, which has been held even more strongly by the laity, from the days of the Hebrew prophets until the present time. With the development of the doctrine of the neuropathic or psychopathic predisposition by Griesinger the possibilities of morbid heredity in diseases of the nervous system became multiplied, and the studies of the French writers in particular, Dejerine,[3] Féré,[4] Le Gendre [5] and Paul Raymond,[6] have sought to establish heredity as the dominating etiological factor in the vast majority of nervous and mental diseases.

The whole doctrine of heredity, however, has been modified by the theories of Weismann,[7] which have been accepted by many biologists and a number of physicians. According to Weismann, as is well known, acquired characteristics are not transmitted to the descendant, but any influence which, developing in the lifetime of the individual from some external cause, injuriously attacks the germ plasma, may give rise to some defect or modification in the descendant. Weismann holds that there is a continuous transmission of the germ plasma which contains all the elements of the future being. The ovum, in dividing, transmits an integral part of itself to the new cells, so that the ovum of one generation comes directly from the ovum of the preceding generation, and the personal influence of the generator will have no effect upon the quality of the germ plasma, unless the germ plasma be injured by some external influence, such as trauma or poison. Binswanger [8] affirms that we can speak positively of an inherited morbid predisposition coming from the ancestry, only when germ plasma, pathologically altered in one or both individuals at the moment of procreation, has served to form the new individual. This pathological change in the germ plasma in the generators may be directly inherited from their parents or acquired during their own lives from various injurious causes, such as chronic intoxication (alcohol, morphine, lead), infection (syphilis, tuberculosis), constitutional disease (anemia, leukemia, chlorosis, diabetes, gout, arthritis deformans), or local diseases of the generative tract. This pathological alteration of the plasma leads to a general constitutional weakness of the individual, in whom later certain special factors may determine that the nervous system shall first or chiefly give evidence of that weakness.

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*Read at the meeting of the American Neurological Association at Washington, May 8, 1907.

Although Weismann's theories are not yet universally accepted, Le Gendre and Hähnle,[9] among others admitting that acquired characteristics may be inherited, and although Weismann himself has modified them somewhat, so as to admit certain possibilities of the transmission of seemingly acquired characteristics, or that acquired traits due to an external cause may act on a predisposition, the doctrine, as stated above, is of much importance in our conception of the part played by heredity in the etiology of disease.

Another feature in the manifestation of heredity has been pointed out by Galton,[10] and has been further emphasized by the teachings of Bouchard.[11] In various studies Galton has shown that, although certain characteristics are so common in certain families as to suggest hereditary influence, these peculiarities have a tendency to disappear in a few generations. He has formulated the law, too, that each parent contributes about one half to the make-up of the individual, each grandparent about one fourth, and each great-grandparent an eighth or less. Thus the sound parent may do something to correct the tare coming from the diseased parent.

Galton's ratios, however, are not always constant. Occasionally some ancestor seems to show a remarkable power of impressing his characteristics upon successive generations, as Ernest the Iron of Carinthia impressed the Hapsburg lip and the prognathous jaw upon several hundred descendants through eighteen generations,[12] or as Justin Morgan impressed the peculiar characteristics of the Morgan horse upon an uncounted progeny. The comparative study [13] of the Jukes and the Edwards family points to a similar power. Although some of this remarkable transmission may be accounted for by in-and-in breeding, yet there is much left unaccounted for which opposes Galton's ratios.

The theories of Mendel,[14] long forgotten and recently revived by De Vries,[15] Bateson [16] and others, explain this condition by the dominance of certain characters in heterozygous or impure individuals. According to Mendel, when two individuals possessing opposite characteristics come together, we may regard the germ cells as units. Each cell may contain one or the other of the two characteristics, but not both. These germ cells come together in pairs to constitute the body cells, and these body cells may be pure or homozygous, when both germ cells contain the same characteristic; or impure, or heterozygous, when each germ cell contains a different characteristic. If a given characteristic be dominant in the impure cell, this cell, although composed of two different germs, may resemble the pure cell composed of two similar germ cells. Mendel's theory, moreover, teaches that these impure individuals may give rise to pure types having the dominant characteristic, and that these pure types subsequently give rise to other pure types without variation, — in other words, that the special morbid characteristic of a race has a tendency to become fixed or to disappear, and in either event be reproduced subsequently without a change. According to his teachings, if an individual escapes the morbid defect of his faimly, he is likely to produce offspring without this defect, and thus Mendel finds little room for atavism.

The application of Mendel's theory to human heredity has hardly begun, and the complexity of the problem is so great that it is a question whether its practical bearings can be determined for many years to come. At all events, as Bateson has shown, the facts of heredity must be collected with far greater accuracy than has thus far been done. Bateson points out that data must be presented for each family separately, that the normal members must also be regarded, and that we must be assured that the cases are similar, that is, dependent on one pathological state. It requires but a glance at any collected body of statistics of heredity of nervous disease to show that these requisites have almost invariably been disregarded.

Recalling the various theories of Weismann and Mendel, if we turn to the recorded data of morbid heredity we find these data absolutely unsatisfactory, if not utterly worthless. The whole teaching as to the etiological importance of heredity rests upon a mass of inaccurate, undigested data which often have no bearing at all upon the real etiology of the disease under consideration.

In the ordinary discussions of nervous heredity we speak of similar and dissimilar heredity, — the latter manifesting itself as the neuro-psychopathic predisposition. Similar heredity is far less frequent than neuropathic heredity, and is seen most strikingly in certain rare diseases, — Friedreich's ataxia, Huntington's chorea, muscular dystrophy and the like. Occasionally it is noted in some of the more common diseases, especially in migraine, as is shown by a recent case under my observation, where migraine existed in eight out of sixteen members of a family in three generations. The fact that these rare diseases occur with remarkable frequency in the members of one family seems a striking demonstration of their hereditary character, especially when the occurrence of the disease is noted in generation after generation, with fatal regularity.

Nevertheless, this is not absolute proof that the disease is due to heredity. On the day that I write these words I have chanced to see two cases of Friedreich's ataxia. In one, a son of intelligent parents, no other case was known in the family. In the other no case was known in the antecedents, although two other cases had occurred in the same generation, in a sister and a cousin. The old theory of atavism, that a morbid tendency may be latent for several generations and then reappear, was formerly invoked to explain these cases where no traits of the disease could be found in parents, grandparents or collaterals of either generation, and this explanation could usually not be contradicted, because few of us know anything definite about our great-grandparents and remoter ancestry. Even in the case of Queen Victoria nothing whatever is known of at least one of her great-grandparents.[17] This explanation, always somewhat hypothetical, can hardly be maintained to-day in face of the teaching of Mendel, that the impure types become unvarying after a generation or two. It occasionally happens, moreover, that we have the opportunity to note one of these rare diseases, apparently of sporadic origin, where no previous case can be discovered in a family, and later we observe its reappearance in a subsequent generation. I had under my care, some twenty years ago, a boy with muscular dystrophy, where no case could be discovered in the antecedents and no definite cause could be made out. Years later, another case of the disease manifested itself in his sister's child.

As I have just said, the occurrence in one family of a dozen or fifteen cases of a disease so rare that only a few hundred are recorded in medical literature, would seem conclusive proof of a hereditary influence at the least, and so much may be admitted. When once the disease is established, it is easy to conceive that the pathological state of the germ plasma may persist in individual after individual among the descendants. Yet these things are little help in understanding the genesis of the affection in individuals where no previous case has occurred in the antecedents. In these cases, too, we find nothing more than ordinary occurrences which might conceivably injure the germ plasma, occurrences which affect the majority of the race at some period or other, trivial accidents, common infections and the like. Even if we assume that such occurrences lead to pathological changes in the germ plasma which are transmitted to the descendants, giving rise to some abiotrophy, why is it that this banal accident so affects the germ plasma as always to cause an abiotrophy of a special set of nerve fibers, — certain ascending tracts in the cord, certain cortical cells, or some of the fibres of certain special groups of muscles?

De Vries' theory that the normal way in which new varieties are produced is by sudden mutation is perhaps a more satisfactory method of explaining the sporadic manifestation of these rare affections. De Vries has found that new varieties appear suddenly and are often constant from the first. He furthermore admits the possibility of a reproduction of the same mutation at different times and in different localities. Yet even if we assume that what is demonstrated as occurring in plant life is equally applicable to man, we find certain effects in the incidence of these diseases which are still inexplicable, such as the predominant occurrence in one sex and transmission by the other, or the disappearance of the disease in certain branches, and its persistence in others, although the tainted stock be crossed with new blood to the same extent in either case.

Although the origin of these rare diseases is still obscure, nevertheless it is possible that they may arise by sudden mutation and persist in the affected family by true heredity, owing to the change set up by this mutation in the germ plasma. It is incorrect, however, to regard heredity as the cause, and the tendency to recurrence of the disease in the affected family steadily diminishes by crossing with healthy individuals, as is shown by the teachings of Galton and Mendel. In this process of regeneration, however, although the affected stock may gradually be restored by cross-fertilization, a certain number of diseased individuals may be produced during one or more generations, until the morbid taint is obliterated, so that the old warning against breeding from such a stock is justified.

Turning now from these rare diseases in which the family occurrence is so great as to compel the belief that heredity plays a considerable part in their transmission, if not in their origin, we must next consider the part played by heredity in the production of the more common diseases of the nervous system. In these affections it is generally admitted that similar heredity is rare, and almost all writers agree in laying chief stress upon the neuropathic or psychopathic predisposition. In this predisposition are included all the different forms of insanity, all the functional and organic diseases of the nervous system, all peculiarities of mind and conduct, genius, the artistic temperament, criminality, alcoholism, pauperism, and even tuberculosis, cancer, diabetes and the different affections classed under arthritism.

The most available statistics for the study of the influence of this neuropathic heredity are those referring to the heredity of insanity; but these are useless for any study except that of the futility of human effort, since the vast amount of labor employed in their collection is wasted, on account of the habit of regarding insanity as one disease, and mixing the statistics of general paralysis, senile dementia, paranoia and all other forms of mental disease included in the various classifications together into one grand whole, and then drawing conclusions as to etiology, symptomatology, prognosis, prophylaxis and treatment, — a method as scientifically accurate as it would be to draw similar conclusions from a collection of cases of bronchitis, pleurisy, pneumonia, pulmonary tuberculosis, pulmonary cancer and embolic infarction of the lung, or, as Von Jauregg [18] suggests, to draw similar conclusions in regard to skin diseases from lumping together scarlet fever, favus, eczema, herpes zoster and psoriasis. I have therefore studied the statistics of the heredity of epilepsy, often regarded as the most hereditary of all nervous diseases,[19] in 320 patients of my own and in 1,200 patients at the Massachusetts Hospital for Epileptics, the data of which were put at my disposal by the kindness of Dr. Flood, and have compared them with the statistics cited by different authors. Even here the error which Bateson condemns, and all writers on insanity have fallen into, is not wholly avoided, since epilepsy must be regarded not as a single disease, but as a syndrome due to various affections of the brain. The error, however, is not quite so glaring as in the collections of statistics of "insanity."

The method which obtains in the collection of statistics as to neuropathic heredity in epilepsy and other nervous diseases seems to be as follows: a more or less careful inquiry is made as to the existence of any form of nervous or mental disease, and often the other diseases referred to above, not only in the direct ascendants, but also in the collaterals. Cousins are often included, as by Turner,[20] forgetful that we usually have there the introduction of a different stock. If any such disease is found, the case is regarded as manifesting neuropathic heredity, either similar or dissimilar; the total number of cases in the ascendants and collaterals is usually disregarded. If the heredity be dissimilar, as is usually the case, little or no attention is paid to the form or nature of the nervous affection occurring in the other members of the family. The percentage of cases showing neuropathic heredity thus ascertained is calculated. This percentage is apt to be larger than the percentage of any other one alleged cause, and the conclusion is drawn that neuropathic heredity is the chief determining factor in the production of epilepsy or any other form of nervous disease under consideration.

	No. of Cases.	Percentage neuropathic heredity.	Percentage similar heredity.	
Delasiauve (cited by Binswanger),	120	11	4	
Osler (Principles and Practice of Medicine. First edition, p. 948),	435	14.5	1	
Massachusetts Hospital for Epileptics,	1,200	14.5	4	2 in parents only
Herpin (cited by Binswanger),	380	21	2	
Echeverria (Epilepsy),	306	25		
Hammond (Diseases of the Nervous System. Ninth edition, p. 678),	396	28	16	
Reynolds (cited by Binswanger),	38	31		
Moreau (cited by Binswanger),	364	32		
Aronsohn (Abst. in Neurol. Centralbl., xiii, 631, 1894),	508	32	16	
Berger (cited by Binswanger),	71	32		
Knapp,	320	35	13.5	
Starr (Nervous Diseases, Organic and Functional, p. 741),	2,000	35	70.9	in parents only
Binswanger (Die Epilepsie. Nothnagel's Specielle Pathologie und Therapie, xii, 1. Abt. 1, p. 81),	121	36		
Gowers (Epilepsy. Second edition, p. 7),	2,400	40	30	
Hamilton (Pepper's System of Medicine, v, 468),	980	50		
Turner (Epilepsy, p. 26),	676	51	37.2	
Spratling (Epilepsy and its Treatment, p. 64),	1,070	56	16	
Bourneville (cited by Binswanger),	350	70		
Kraepelin (Psychiatrie. Sixth edition, ii, 473),		87	25	
Beau (cited by Binswanger),	232		9	
Leuret (cited by Binswanger),	106		10	

I have put down in the accompanying table the figures given by different writers and the percentage of neuropathic and similar heredity in epilepsy as found by them. This percentage varies from 11% in the old statistics of Delasiauve or 14½% in the statistics of the Massachusetts Hospital for Epileptics, to 87% claimed by Kraepelin; and the percentage of similar heredity varies from 1% as given by Osler to 37.2% as given by Turner. The discrepancies are so great as not to be readily explained, and they leave us in doubt as to the real prevalence of neuropathic heredity among epileptics. The same discrepancies occur in other statistics as to heredity in nervous disease. In Munich different men in the same asylum for the insane found in different years from 37% to 66% of morbid heredity. Krauss[21] finds that the percentages in the different asylums of New York State vary from 14% to 76%. Hähnle has collected equally discrepant statements concerning morbid heredity in special forms of mental disease, and Binswanger[22] quotes like variations in the statistics as to the heredity of hysteria.

It is undoubtedly true that the more exhaustive the inquiry and the more intelligent the patient or his family, the more information will be elicited and the greater will be the percentage of morbid heredity discovered; but I must confess to a certain degree of doubt as to whether this is a sufficient explanation of the variation shown in these percentages. At the Massachusetts Hospital for Epileptics, for example, the inquiry I think has been more minute and careful than in my own cases, and yet the percentage is less than one half of the percentage I have found and less than one third of that found in New York.

The etiological relation of syphilis to tabes has been established statistically by the discovery that whereas syphilis exists in about 10% of non-tabid patients, it exists in about 90% of tabid patients. This points to the fallacy of the conclusions drawn from the statistics as to morbid heredity in epilepsy and other nervous diseases. The percentage of neuropathic heredity in the healthy has been absolutely ignored, and it is only within recent years, and in a single community, that any extensive inquiry as to such heredity has been made, — in Zurich by Thomann-Koller[23] in 1895, and by Diem[24] in 1905. Naecke[25] and Jost[26] have made researches on a much smaller number of individuals, which seem far less thorough. Thomann-Koller found neuropathic heredity in 59% of 370 healthy persons, and Diem found such heredity in 66.9% of 1,193 healthy persons. In 370 insane, Thomann-Koller found 77% of morbid heredity, and Diem found the same percentage in 3,515 insane. They both conclude that the difference between the morbid heredity of the sane and the insane is so slight as to be disregarded, but they have both found that, on limiting the inquiry to the morbid heredity in parents alone, and to the prevalence of mental disease only, excluding many of the forms of organic nervous disease, such as apoplexy, there is a greater amount of morbid heredity among the insane.

Another fallacy of this method of estimating morbid heredity is that little attention is paid to the nature or etiology of the forms of disease existing in the patient's family. Dejerine gives a family tree which he regards as one of the most conclusive in its indication of nervous heredity, and he counts in, as showing the neuropathic taint, deformity, deaf-mutism, idiocy, and exophthalmic goiter, as well as various forms of mental and nervous disease. It is so obvious that a case of nervous or mental disease of traumatic, infectious or toxic origin should not be considered as showing a special neuropathic taint, that it would seem impertinent to mention it, were it not so invariably ignored. The existence of several cases of epilepsy in the children of one family, even, cannot be regarded as proof of an inherited tendency, unless we know that they are not due to injury at birth from too small a pelvis.

The data at our disposal for determining the importance of heredity in the production of epilepsy, and of other forms of nervous and mental disease, are therefore inadequate, so far as they relate to a general neuropathic predisposition, since there is no proof that there are more neuropathic conditions in epileptics, for example, than in healthy persons, and the cases of nervous or mental disease that do occur may be due to causes affecting the individual alone, and not to morbid changes in the germ plasma. One thing alone points to the possibility of an hereditary influence in epilepsy. Turner[27] assumes that there are from one to three epileptics to every thousand persons. In the figures furnished me by Dr. Flood, in 1,200 cases of epilepsy there was a similar heredity in 29 parents. The exact number of parents is unknown, but estimating them at the maximum of 2,400, this would give over 12 cases of epilepsy in a thousand parents, which shows that there is a somewhat larger percentage of epilepsy than the average in the direct ascendants of the epileptic. Other statistics would, of course, increase this percentage. We see, therefore, that the data as to morbid heredity in the production of epilepsy are too misleading to warrant any definite conclusions, and the skepticism which has been expressed by various writers, from Delasiauve to Marie,[28] Sachs, Osler, and Von Jauregg has a reasonable foundation. We must not forget the old adage of Morgagni, — *Observationes perpendendæ non numerandæ sunt.* Each case must be considered on its own merits, and dissimilar affections must not be compared. We must be sure that a case is idiopathic epilepsy, and not epilepsy symptomatic of brain injury or cerebral infantile paralysis. We must study the whole life history of all the other members of the family previous to the generation of the patient, to determine the general physical health of the ascendants, and to eliminate the various accidents of pregnancy and childbirth. If nervous disease occurs in the family, we must consider its nature and character, whether indicative of an intrinsic nervous defect, or the result of some extrinsic cause, such as infection or trauma. Furthermore, we must study the patient's own life history, and decide how great an influence post-natal causes play. A child of thoroughly neurotic parents may owe much of his nervous disorder to faulty example, lack of proper restraint, defective training, late hours and improper feeding, and little to his direct inheritance. Only by such thorough study can we come to any definite knowledge of the prenatal causes of disease. If we continue to note "cousin had chorea," "uncle apoplectic," "brother paralyzed" (fractured spine), "aunt insane" (puerperal), and then decide that the patient has hereditary disease because such antecedents are found in 40% of the cases, although they exist in 60% of healthy persons, our conclusions will remain wholly unworthy of consideration.

In studying the etiology of epilepsy, the following case will show the importance of certain prenatal influences. Three older brothers in a family were strong and well. The youngest, always a delicate child, became epileptic. The grandparents on both sides showed no special indications of disease. The parents were healthy until the close of their lives, but they died two years after the birth of this patient, the one of cancer and the other of tuberculosis. No history of nervous disease or epilepsy existed in the family, but is there any question that the diseases which affected the parents led to a defect in the germ plasma and the production of a weaker child in whom epilepsy might develop? Such I believe to be the true interpretation of much of the so-called neuropathic predisposition. Some morbid process, constitutional disease, chronic intoxication, infection or local injury to the generative tract causes pathological changes in the germ plasma, and these changes give rise to a general constitutional weakness in the progeny. The child is not simply a neuropath or a psychopath, — he is a weakling. The constitutional weakness shows itself, as we often see, in the various stigmata of defective development and in general physical weakness, — a weak digestion, a small thorax, a hypoplastic aorta, deficient circulation, poor teeth, slender frame, delicate muscles, undeveloped sexual organs, a small spinal cord and the like. Given this constitutional weakness as a consequence of pathological changes in the germ plasma, various forms of nervous weakness may develop from extrinsic causes which determine whether the weakness shall be manifested in the nervous system, and if so, in what particular way it shall appear. In this way, too, acute infections may temporarily injure the germ plasma, so that the offspring conceived or in utero during the acute infection may show marked neurotic phenomena, while offspring conceived before and after the period of infection may be healthy, and the parents themselves may be for the rest of their lives in perfect health. This explains the alleged preponderance of nervous defects in the children of alcoholic subjects, or the French "children of the siege." Unless, however, there be some general or local cause of injury to the germ plasma, it is doubtful whether any acquired mental or nervous disease of the ancestors can be the starting point of a pathologically tainted family, or even of sporadic cases of disease in the descendants (Binswanger, Forel [29]).

It is apparent, therefore, that the old data upon which the present doctrine of neuropathic heredity is based are misleading, and a much more thorough investigation of the whole question is required before we can draw trustworthy conclusions. Each individual case must be studied by itself, with due regard to the frequency of disease in the ascendants, especially in the direct line. Such disease in the collaterals seems to be of slight importance. The nature of each case must be carefully considered, especially with reference to possible injury to the germ plasma. The frequency of disease in the ascendants needs to be compared with the frequency of disease in the ascendants of healthy persons, and finally all possible causes of disease in the individual himself must be considered, and special attention must be paid to the whole life history of the patient, to determine how far a defective organization is at fault, and how far other influences, such as accidents of parturition, faulty training, bad examples, injuries, infections and intoxications have led to the development of the disease. Only by such study can we determine accurately the influence that heredity exerts.

At the present day there is an increasing dread among the laity of heredity in general, and neuropathic heredity in particular. This dread exerts a considerable influence upon marriage and the procreation of children, and threatens to give rise to ill-considered legislation. The present doctrines are certainly too pessimistic. Galton has pointed out the tendency to regeneration, or to return to the normal average in a generation or two, and further study may throw light upon the question raised by Mendel, as to whether morbid traits may be dominant or recessive. Weismann's teachings show us the importance of guarding against all injuries which may affect the germ plasma, so that it may be possible to guard against the procreation of weaklings, either with or without a history of long continued disease in the ancestry. Furthermore, investigation will often permit us to reassure the individual, when some case of nervous or mental disease develops in another member of the family, or even in himself, and to explain to him that it may indicate no disposition to similar disease in himself or his descendants.

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HENRIK KELLGREN AND HIS METHODS OF MANUAL TREATMENT.

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ALTHOUGH it may truly be said that the name of Henrik Kellgren is known almost throughout the civilized world, yet it must be conceded that few persons know anything definite about the man or the methods of treatment he employs. The following brief sketch of his life and work is intended to supply the particulars hitherto lacking.

Henrik Kellgren, born in 1837, at Alingsas in South Sweden, matriculated in 1855, and in 1858 became an officer in the Swedish army. From 1863 to 1865, he went through the course of training at the Royal Gymnastic Central Institute in Stockholm, and in the latter year received the diploma, whereupon he accepted a post as teacher of pedagogical gymnastics in Lidköping. It was in the latter place that he obtained his first case for treatment by medical gymnastics, and already at this early period he realized how important it is to give not merely local, but also general, treatment (of this more hereafter), but owing to his preoccupation with military duties, he was not yet led to develop any great interest in the subject of medical gymnastics as a whole.

At this time a series of troubles fell upon him, and the death of his wife and only son changed the course of his life. Leaving his native land, he went to Germany with the intention of proceeding to Algiers, where the French were then in conflict with the insurgent Arabs. At Bremen, he became acquainted with a medical gymnast, Dr. Ulrich, with whom he stayed for some weeks. This Dr. Ulrich was the first to recognize in young Kellgren, the great natural aptitude for medical gymnastics, which afterwards developed so remarkably; and he urged him to devote himself to this new career. In the end, Kellgren was prevailed upon, and in the year 1869, he settled in Gotha in Thuringia as medical gymnast.

He naturally began to treat on the lines laid down in the Royal Gymnastic Central Institute, but his real talent, aided by instinct, soon led him to remodel several of the exercises on his own account. He further perceived how much good could be effected through direct stimulation of the nerves; consequently, he gradually developed a nerve treatment, consisting chiefly of frictions and vibrations, which he used in combination with improved active and passive (inclusive of duplicate) movements; and by these means he has treated with unexampled success a number of chronic cases of which some had been previously regarded as incurable. He has also attacked acute cases with wonderfully favorable results.[1]

Kellgren's fame soon spread abroad, and his practice grew enormously. His methods would, without doubt, have been widely taken up, at this time, by German doctors, but that owing to illness from overwork, Kellgren was obliged to retire from active work, and, when his health broke down, he for various reasons decided to come to London. Here, on his recovery, he established an important institute, and later on founded others also at Norderney (1877), Baden-Baden (1883), and Paris (1884). During the summer of 1886 he went, followed by a number of patients, to Sanna, near Jönköping, in Sweden, where he established a summer sanatorium, — now open all the year round, and where Kellgren himself often passes the greater part of the year.

Thousands of people owe their health to Kellgren, and some still live, who, at one time of their life, were regarded as utterly incurable. To how great an extent his successes have contributed to make medical gymnastics known and valued throughout the world is incalculable.

Although Kellgren's treatment has existed for more than thirty-five years, the literature relating to it has hitherto been scanty. Apart from a few newspaper articles which often contained erroneous accounts of Kellgren and his practice, Dr. Arvid Kellgren's work, "Vorträge über Massage" ("Lectures on Message," 1888), was the first to contain descriptions of some of his brother's exercises. In 1890, this book was translated into English, being amplified with descriptions of several more cases treated successfully by the Kellgren methods.

This was for some years followed by nothing of any importance, and, in consequence, I was led to publish my book entitled, "The Elements of Kellgren's Manual Treatment," which claims to be the first attempt at a systematic and scientific description of the subject.

It is probably due to the paucity of information obtainable as to Kellgren's methods that so many errors are prevalent with respect to them. Thus, some authors have been under the impression that the treatment consists wholly of vibrations, while others have believed that there is in it nothing more than hypnotism; since both these ideas are contrary to fact, it is obvious that those who held them had a most inadequate knowledge of the subject under review. The Kellgren treatment is based (a point I desire particularly to emphasize) on a scientific foundation, physiological and anatomical; and it is to be hoped that the profession may soon convince themselves of its true value.

In the following pages, I have aimed at describing the difference between the methods of Kellgren and those of Ling, or rather at indicating the progress achieved by the former beyond the latter.

Unfortunately, at the present time, both in Sweden and elsewhere, the handbook of Wide is regarded as authoritative on the subject of Ling's methods as practiced to-day; I say unfortunately, for it describes them in a form which, compared with earlier practice, shows distinct retrogression.

Most of the following descriptions are contained in my book; but, as the latter has only recently appeared and is not as yet widely known, such repetition as I have indulged in will not be superfluous.

I. Kellgren assigns particular value to the mechanical treatment of the nerves. This was formerly regarded as of very slight importance, P. H. Ling alone using a form of nerve pressure.[2] Branting (1844) brought forward as a novelty pressure of the phrenic nerve and lumbar nerves, and also (1846) of the spinal accessory and the sacral nerves. Somewhat later, nerve pressure, either with or without simultaneous vibrations, came more into use, but apparently without achieving any important results. The enthusiastic Neumann said in 1852: "This is a part of Ling's doctrine which his pupils have least worked out, although they and Branting are well aware that it is of the greatest importance; but its development is proportionately difficult, because the physiological ground work has so far been investigated only very insufficiently, and in part not at all." But in 1856, only four years later, he revised his verdict, saying: "I for my part consider now that these forms of movement can very well be dispensed with, as they can entirely and very advantageously be replaced by duplicate concentric movements." In the handbook of Hartelius (1870) pressure of the arm and leg nerves only is described, and but twenty lines are devoted to this subject in a volume of some three hundred and fifty pages. It should be added that here and there a few other nerves are specified as being suitable for similar treatment.

A few of the different forms of nerve friction and vibrations were described by Arvid Kellgren, and since then have been used by medical gymnasts, but without any acknowledgment of their source. In my book, I have described Kellgren's forms of nerve treatment in considerably greater detail.

The great merit of Kellgren has been his correct development of the processes referred to; in particular, he discovered that the main point of importance was not the pressure, but the mechanical movement set up in shaking the nerves through friction and vibration. And it was he who introduced manipulations following the course of the nerves, which manipulations are called " running nerve frictions and vibrations."

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[1] See Wretlind and Glatter, "Bref från Dr. Wretlind," Hygeia, Stockholm, Nov., 1872.— Feb., 1873. Allgemeine Betrachtungen über den werth der Heilgymnastik." Wien. Med. Presse, 1875.

[2] We must, of course, take into consideration the great progress made in the physiology of nerves between the eras of Ling and Kellgren; but this does not diminish the value of the modifications and discoveries made by Kellgren.

When we consider how everything in the human body is under the influence of the nerves and how many illnesses have their origin, not in the muscles, but in the nerves, it will easily be understood that nothing can be of so great service in these cases as movements of stimulative or sedative effect. Not only the cerebrospinal nerves can be directly treated by Kellgren, but also the sympathetic nerves. Before his time attempts had been made to deal in this way with the solar plexus and the cervical ganglia, but this was of rare occurrence, and in the handbook of Hartelius, for example, the subject is scarcely mentioned. Kellgren, however, discovered that it was possible to deal directly, or indirectly, by reflex action, with almost all sympathetic ganglia through the peripheral nerves that are in connection with them Thus, for example, all the chest ganglia stand in direct physiological relation to the posterior branches of the dorsal nerves, and can be influenced through the fourth and fifth dorsal nerves on the left side, and the liver through the sixth and seventh on the right side, etc.

The value of all these forms of nerve-treatment can scarcely be over-rated, and it is most remarkable what favorable results can be obtained by them in acute cases; it can, indeed, be safely stated that without them such results would be unobtainable. The same applies to central nervous diseases, *e.g.*, bulbar paralysis, multiple sclerosis, spastic paraplegia, locomotor ataxia, tabes dorsalis, hydrocephalus, etc.

II. For other parts of the body, as well as for the nerves, Kellgren's vibrations and shakings, such as chest shaking and eye vibrations, are of great importance. In all the earlier literature of P. H. Ling, Branting, Rothstein, Roth, Neumann, etc., but a few lines are to be found dealing with such methods, and Hartelius also (1870) refers only briefly to shakings. These movements must consequently up to that time have remained quite undeveloped.

It was Kellgren who succeeded in working out — one might almost say who discovered — this new and splendid method of combating pain and disease. He also discovered the method of executing the vibrations in a manner involving the minimum of fatigue to the operator, so that they could be maintained for much longer periods and, at the same time with greater efficiency. For example, when the fingers are executing a vibration, the muscles in actual use should hardly be felt to contract. Only in a few cases, in which a particularly strong effect is desired, should the muscles of the upper arm or shoulder come into action. Unfortunately, medical gymnasts in general use only this latter method.

These vibrations can be executed either quickly or slowly. The maximum rate is about twelve per second.

Certain quite new forms of shaking and vibration have been developed by Kellgren, such as the following:

(1) So-called "suction-vibrations." The manipulator spreads out his fingers (Fig. 69 in my book) so that they lie on the patient's skin around the spot to be manipulated; they are then set into vibration while the finger joints are slowly flexed, causing the pressure on the skin gradually to increase. Such methods make it possible to treat the thyroid gland in Graves's disease, to accelerate the pointing of an abscess, etc.

(2) " Centrifugal running vibrations." These are running vibrations in a direction contrary to that of venous blood and lymph flow. These manipulations make it possible to treat lymphangitis, erysipelas, and to hinder the upward absorption of toxins.

These two new forms, together with the more ordinary forms of Kellgren's shakings and vibrations, are described in my book in considerable detail.

III. During the last twelve or fifteen years, mechanical vibrators have come largely into favor. The advocates of these " vibrators," " concussors," etc., maintain that the movements are rendered easier of administration, as they obviate exertion on the part of the gymnast, that they may be administered with perfect regularity as long as necessary, and finally that they may also be administered more rapidly. Some " vibrators " execute up to 200 vibrations per second.

That a greater rate than twelve per second should be of any advantage seems to me very doubtful. It must, of course, be conceded that a " vibrator " makes less demand on the manipulator, and its use is comprehensible when we consider that in general the vibrations as administered at present involve strong contraction of the arm and shoulder muscles, demanding great physical exertion, and are consequently only to be maintained for short periods at a sacrifice of sureness and delicacy of touch. As, however, the Kellgren vibrations (as already stated) are produced with a scarcely perceptible contraction of the muscles, the gymnast can execute and maintain them as long and as evenly as may be desired. I have myself never executed such vibrations for more than one hour and three quarters continuously, but I am certain that I could maintain them for a much longer period; the necessity for this, however, could but seldom arise.

The superiority of the Kellgren vibrations lies in the fact that the gymnast preserves the delicacy of his sense of touch, and is thus enabled at will and with great accuracy to vary the vigor, extent and rapidity of the movement, as well as the degree of pressure, whenever the condition of the patient indicates such alteration.

In certain cases characterized by a considerable amount of pain, *e.g.*, acute inflammations of the eye, abdomen and appendix, vibrations produced by machinery are entirely out of the question, as the machine can neither judge by touch nor adjust itself. In consequence of this it has become the practice in certain medico-mechanical institutes in certain cases, as when treating the head or neck, to interpose the gymnast's hand between the vibrator and the part to be manipulated.

Kellgren makes use of many new manipulations, and besides this he has modified already existing exercises. These modifications are difficult to specify exactly, and it is necessary to have technical experience in order to grasp fully the differences from — and advantages over — earlier methods. The following may be specified in particular:

(1) The so-called "Head exercise." Roth and Neumann speak of head-shaking that lasted for some seconds and was combined with passive head-rotation. In time, however, this manipulation fell into disuse and oblivion; the handbook of Hartelius does not mention it. Kellgren reintroduced the head-exercise and developed it further. The following form is used in fever cases:

(*a*) Head-lifting.

(*b*) Vibrations or other manipulations on the head with both hands simultaneously.

(*c*) Nerve frictions or vibrations, local or general.

(*d*) Repetition of head-lifting as conclusion.

(2) Passive movements for the liver, gall-bladder, pancreas, kidneys, spleen, etc., (described in detail in my treatise).

(3) Gymnastic treatment administered during childbirth, as well as during the puerperal state, to combat loss of blood, and as a preventive of puerperal fever.

(4) Modifications of many movements to render possible their use in acute cases; of this, more hereafter.

IV. It is at present the custom to make great use of massage only,—*i.e.*, stroking or kneading,—active movements being greatly neglected. Also vaseline and other fatty substances have come into considerable use in connection with massage; this was in earlier times unknown in the Ling school. Kellgren, on the other hand, assigns small value to such stroking and kneading, nor does he ever use vaseline or similar preparations; his grounds are the following:

(1) With vaseline the movement of the fingers employed in massaging is reduced to a gliding over the skin, the tissues underneath being but little influenced. In the Kellgren method, the fingers of the gymnast remain in contact with the skin, and thus they are enabled to really manipulate the parts beneath.

(2) In consequence of the massage-process the vaseline is rubbed into the opening of the sebaceous and sweat glands, with the result that massage corruptions are often induced, necessitating interruptions in the treatment.

It must further be conceded that, in the long run, massage has a weakening effect on the muscles manipulated. Kellgren administers kneading for only very brief periods at a time, and attaches more importance to duplicate movements, nerve-treatment and vibrations. And Kellgren dispenses entirely with the modern so-called "general massage."

V. In all resisted exercises, and in all passive movements involving movement of joints, Kellgren, where possible, makes use of the so-called "traction"; that is, the gymnast, during the movements, effects a passive stretching of the part manipulated, drawing the distal free end from the proximal fixed one. That in many cases a considerable extra effect is attained by these means will become strikingly clear on performing a movement first without, and then with, traction. This traction has been hitherto only described by Arvid Kellgren and myself.

Without "traction" it would in many cases of partial anchylosis, inflammation of joints, etc., be impossible to make use of any duplicate movements, while, by its aid, it is often possible to induce in paralyzed muscles a slight voluntary movement that would otherwise be unattainable.

VI. In all cases of local disease (except a few of mild character or short duration) Kellgren considers a certain amount of general treatment to be of benefit to the general health of the patient, and this for the following reasons:

(1) In the normal healthy body are contained many toxins and excretory products, which are, however, accompanied by no evil results because the body is able to eliminate them. So soon, however, as it becomes unable to do so, there result states of general or local illness, and the general treatment is of great use in restoring the lost power to eliminate.

(2) A local illness acts as a centre for producing toxins and excretory products, and more work than usual is demanded of the body to get rid of such accumulations. The general treatment facilitates this work.

(3) Toxins and excretory products that are of local origin, and are only treated locally always show a tendency to settle in other weak parts of the patient's system and to give rise to fresh morbid states. The general physical treatment hinders this.

(4) It may happen that only by means of the general treatment can the cause of a particular illness be not only discovered but removed. An inflamed ovary, for example, can, in course of time, through continual irritation of the muscles lying above it, cause a spinal curvature, and it would be an error to deal with the latter (subjective) affected part without, at the same time, administering treatment for the (objective) true source of illness. It would be easy to maintain the proposition above set forth by a long series of examples.

VII. The employment of the Kellgren treatment in acute cases, specific, infectious, or otherwise:

Early attempts of this kind were very few in number;[3] but already during his early years of practice in Gotha, Kellgren had worked out the treatment of acute cases and employed it with magnificent results. As early as 1873 Wretlind recorded several acute cases treated by Kellgren, and in 1875, Glatter spoke in laudatory terms of Kellgren's treatment of pneumonia. Kellgren was, in fact, the first to apply manual treatment to a great variety of acute cases that had never before been thus dealt with, and it can safely be said that no other form of treatment has led to such good results. I specify in particular the following illnesses:

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[3] "Pneumonia" by Branting (*vide* his farewell address, March 31, 1847), and H. Ling in "Branting's Efterlemnade Skrifter," 1882, p. xxvi; "Acute Pleurisy" by Melicher (*vide* Annual Reports); "Cholera" by Melicher, Beeker ("Denkschrift über die Schwedische Heilgymnastik," 1864, p. 64), and others; Whooping Cough by various doctors and gymnasts.

Typhus, typhoid, scarlet fever, measles, rheumatic fever, erythema nodosum, erysipelas, acute inflammation of the larynx and pleura, acute tonsilitis, appendicitis, peritonitis, gastritis, enteritis, pericarditis, meningitis, etc.

It is quite impossible in so short a paper to describe the methods used in such cases, and I must restrict myself to referring the reader to the detailed descriptions contained in the following works:

(1) Arvid Kellgren: "Technic of Ling's System of Manual Treatment" (1890), containing eight cases. (In the German edition of this book an additional case is included.)

(2) Möller: "Zur Therapie der Akuten croupösen Pneumonie" (Deutsch. Med. Wochenschr., December, 1900, January, 1901), three cases.

(3) Cyriax: "The Elements of Kellgren's Manual Treatment" (1903); in all thirty-seven cases.

While treating acute cases by manual methods, Kellgren places no restrictions upon diet; he almost always allows the patient to eat what he happens to fancy (especially if the case has been under his care from the commencement), and he has never had any cause to regret his action in this respect. Also Kellgren generally allows the patient to leave his bed on condition that the temperature of the room is suitably warm and that proper precautions are taken against draughts, for it is his opinion that a little movement can only do the patient good. In this connection it must steadily be borne in mind that Kellgren's treatment contributes in a high degree to keeping the digestive organs and nerves in an efficient condition, in consequence of which the strength of the patient is well maintained, and he is enabled to offer considerably greater resistance to the illness. Under this treatment, a patient will scarcely desire to eat what he cannot digest, nor will he desire to leave his bed if not strong enough to do so. On this subject, I must also refer the reader to the experiments of Pawlow, which have shown (although not specifically in the case of fever) that the gastric juice is only secreted when food satisfies the taste. Kellgren is of opinion that to compel a patient to remain in bed against his will can only result in a lowering of his vitality, and, in addition, contribute to establishing a hypostatic congestion, especially of the kidneys, this being a condition to be particularly avoided.

VIII. The old doctrine of the Ling school that the gymnastic treatment is more efficacious, if unmixed with medicine, electricity, etc., has been largely lost sight of. Wide, for example, frequently combines medication with his gymnastics, a combination which can only seem to indicate deficiency on the part of the gymnastic treatment. A natural cure, to be really satisfactory, should not be accompanied by medicine.

This is especially true of central nervous diseases, with regard to which Kellgren has made the following observations: On the one hand, it is very difficult for the Kellgren treatment to effect much progress in cases that have previously been treated more or less unsuccessfully with electricity or strychnine, arsenic, etc.; on the other hand, where such methods have effected some improvement, the latter has been considerably accelerated as soon as the Kellgren method was tried.

It has occurred repeatedly that cases, even of some years' standing, which had never been subjected to electricity or strong medication, were more easily influenced for good, than others which were of more recent origin, but which had undergone such electric or medical treatment. It has also been observed that when certain cases, which had made good progress under the Kellgren treatment, were for some reason removed, in order to undergo a medical or electrical course, the change of treatment was ultimately for the worse.

IX. It often happens now that a doctor who is quite ignorant of medical gymnastics has to superintend a course of such treatment. In such a case, if the patient feels somewhat worse, the gymnastic treatment is often at once suspended, the patient is put to bed and drugs are prescribed, the gymnastic treatment being resumed only when some improvement has taken place. It is clear that, under such circumstances, it is impossible to judge of the efficacy of medical gymnastics.

The Kellgren treatment proceeds on very different lines. Should a patient feel somewhat worse than usual it is often because his illness reaches some small natural crisis. If the treatment is maintained through this period, it will be found subsequently that the patient's condition has materially improved. This improved condition may sometimes continue without any further perceptible modification until another similar crisis supervenes. So long as this condition continues the treatment can be varied as regards frequency, duration and force to suit the patient. When, however, the treatment is temporarily given up during a worse period, the crises are prevented, and as these are the means by which the body tries to get rid of disease, real improvement cannot occur if they are suppressed by enforced rest in bed, diet and drugs.

X. In conclusion, I wish to say a few words about diagnosis by means of palpation. This art, if I may so term it, has been particularly developed by Kellgren. It is very difficult to describe an art of this kind to any one who has not tried it. Kellgren's skill is shown by the fact that he not only feels the smallest local change in temperature, fullness, muscular resistance, etc., even when these changes can neither be seen nor measured. This gift has been the primary cause that enabled him to achieve such brilliant results. It is certain that several of his pupils possess this power to a greater or lesser degree; but time alone can show whether any of them can equal or legitimately succeed Henrik Kellgren.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Continued from No. 14, p. 467.)

There is one other cause which has been attributed to crimes from passion, whose importance I doubt very much. People have considered that one of the principal motives for these crimes is the taste for scandal and notoriety. They point out as a proof of their theory the dramatic attitude assumed by criminals from passion, either during the crime, or at the trial. It seems difficult to me to believe in the existence of such a motive. Criminals from passion occasionally do assume theatrical airs, but they merely borrow the external aspect of certain personages, while at the bottom of all their character remains unchanged. What ordinarily makes one suppose that these people are dramatic or theatrical in attitude is merely their own passion. No longer being retained by any consideration of conduct, they give vent to sentiments of abnormal violence and proclaim it widely. From this arises the analogy with the hero of the theater, who in reality is merely a criminal from passion copied from those of reality. Other than this we do not believe that the taste for dramatic notoriety has ever been the cause for the commission of a crime in a perfectly normal man, or at least we are unfamiliar with any such example.

Beside crimes from passion directly and immediately inspired by love or jealousy, one should also take into consideration crimes which have been committed merely to satisfy these passions. As an example, let us take a man who kills his mistress's husband during an attack of jealousy and afterwards commits suicide; this is a crime from passion. On the contrary he who kills his mistress's husband in order to marry her afterwards commits an ordinary murder. It is not suicide following the first crime which changes the nature of the crime, it merely proves the motive, namely, jealousy. It also indicates the character of the crime imposed by a passion, a crime from which the murderer can gain nothing and has no further interest for him. It is not the same in the second case to which we have alluded. There is no resemblance between a man who, during an attack of jealousy, kills his mistress, and of the one who in order to take a woman to himself becomes an assassin. One is a criminal belonging to a special class; he is certainly guilty and society should defend itself against him, but it should be done within a certain measure. The man that it must strike is normal; his sentiments are those of all decent people, only they have been possessed by a particular violence and were not moderated by a sufficiently strong will. The other type, on the contrary, is a criminal who has stolen or killed from love, but passion in this case is no longer an excuse, and at the utmost could only be used as an extenuating circumstance. Why is this? It is because the latter has abnormal sentiments; it is not merely the excessive development, I might say pathologic, of honorable and normal sentiments; it is the appearance of anti-social sentiments of the highest order, namely, the fact that the individual does not withdraw, in face of the crime, to satisfy his passion; he is subject to relapses and is a vulgar assassin.

These crimes may have numerous ends, and we will mention only a few examples. We have already spoken of crimes having for an end to procure money for a woman; urged on by her, or reduced to misery by her, a man will murder in order to procure money. In reality this is merely an instance in which the motive is one of personal gain, and the most that can be said is that a certain amount of leniency might be shown the criminal if passion deprived him of his ordinary will power when the act was committed. But these cases should not be classed among crimes from passion. Beside a murder perpetrated to procure money for the beloved one should be placed the murder which has for end the union of two lovers, and it is quite certain that this motive is the cause of many of these tragedies. Usually it is the woman who forces her lover to murder her husband so that they may be married afterwards. Her end is in the first place to be freer and also to legitimatize her love and proclaim it everywhere. It is also a crime which, in the idea of the perpetrators, should make them high in public consideration.

A woman has two means by which she can execute this project. She may either act herself, and then it is usually poison that she employs; or she may force her lover to kill her husband; and in order to attain this end she will employ all the means placed at her disposal, as has been recently illustrated by the female murderer Rogers, and her lover Perham. Then, again, she may excite her lover's jealousy, in which case the woman is simply a murderer in the ordinary sense of the term, while on the part of the man, the crime is one from passion. It may appear strange that the same crime may be one of passion as far as one of its perpetrators is concerned and not be as far as the other is concerned. It is, however, certain that it is not the crime, but the criminal, which is animated with passion, and one is consequently dealing with a subjective criterion, the motive which caused each of them to act at the time of the crime. It consequently results that, if this motive is not the same for each perpetrator of the same crime, the latter is not of the same nature as regards each one connected with it. The most extraordinary case is certainly a man killing his mistress's husband, when the latter is perfectly innocent and even is unaware of the tragedy; but, nevertheless, this happened in the Peltzer case which was tried at Brussels in 1882. Another peculiarity in this case was the fact that the assassin himself denounced his crime. Peltzer belonged to a good family, although personally he was deprived of any scruples. Being very intimate with a certain lawyer at Antwerp, he became amorous with the wife of the latter. The husband becoming aware of this asked him to break off all relations with him. Peltzer then started for America and appeared to renounce his love. Sometime afterwards he came back and was so changed that no one recognized him, not even his former friend. He then brought the lawyer into an isolated house under the pretext of consulting him and then killed him. The house in which the crime was committed was too well chosen and too discreet, so the cadaver of the unfortunate lawyer was not found. From this fact his death could not be proven and his wife did not become the widow, but merely the wife of a husband who had disappeared and consequently she could not remarry.

What would have been a great success for another assassin, was a total failure for Peltzer. He was desirous of hastening things, and so wrote to the authorities at Brussels denouncing the crime and the place where the victim lay and so forth. The body of the unfortunate lawyer was found and the assassin very soon afterwards. The latter pretended that the murder took place during a moment of anger at the end of a discursion, but premeditation being absolutely established, the explanation was rejected. Peltzer had killed his victim with the hope of marrying his wife, who, for that matter, was in no manner an accomplice and did not even appear to love him.

We have thus passed in review all types of crimes from passion, but this does not imply that we have considered all crimes which are the consequences of love, jealousy, or hatred, because we have merely considered those which were directly inspired, and for this reason we have left aside abortion and infanticide, as well as duelling. It goes without saying that the criminals of this class are often of much interest, but unless one should greatly change the meaning of words, their crimes cannot be considered as crimes from passion.

Having now seen what we understand as a crime from passion, we will endeavor to distinguish it from those crimes with which it may be easily confounded and which I will term *crimes from pseudo-passion.* When they are carefully examined, their perpetrators will be found different from criminals from passion, and from the standpoint of criminality they may be placed in various categories. They are either irresponsible individuals or insane criminals; or, on the other hand, they may be ordinary murderers, fully responsible and guilty, which gives to a crime of cupidity or a rape the aspect of the crime from passion. We have endeavored to show that criminals from passion are far from being in a perfect condition of mental stability, and, in order to pass any kind of sentence upon them, it is necessary to prove that they had a notion of their acts.

The crime of an insane person may be confounded with a crime from passion in this way. Sometimes it is an ordinary insane person in whom ideas of persecution have taken on a peculiar form; he believes that his wife has deceived him, or he has been imposed upon by his mistress and he wishes to become avenged. Then, again, it may be jealousy which has altered the mind of an individual to such a point that it degenerates into a true case of insanity. Scientifically speaking, the subject is no longer merely a subject of jealousy, but is in reality a furious maniac. The question may be extremely difficult to decide, if a person afflicted by jealousy is in a condition of mind bordering on ideas of persecution. Among murderers there are many possessing weak minds; sometimes this weakness is made evident by an excessive susceptibility, and subjects afflicted with jealousy may even become provoked by a smile or derision. This insane fear of derision is one of the signs of a condition requiring an attentive examination in order to discover whether or not the accused is responsible.

Sometimes this mental weakness will become manifest by a particular facility to undergo suggestion, as may be seen by the following example: A workman, having laughingly said to a friend who was complaining of his wife: " When a man has a wife like that she should be thrown into the water "; the latter took the meaning seriously and threw his wife in. A crime may be so extraordinary, and at the same time so cruel, that magistrates are forced to extreme severity, but the crime is also so strange and so unexplainable that they hesitate to act for fear of wrongly sentencing an irresponsible person. Quite recently an abominable crime was committed in the little city of Fitthausen. A young and healthy husband, odiously mutilated his young wife, although no coquetry on her part could be a motive for the crime. When the criminal spoke of subjects foreign to his jealousy he reasoned correctly and quietly and nothing showed that he was insane, but when questioned as to the conduct of his wife his eyes became hyperemic; his countenance took on a hard and savage look and he accused the unfortunate victim of the lowest actions. His jealousy went as far as a paroxysm of insanity. Moreau of Tours has recorded a case of jealous insanity which took place in the small town of Balace. A landed proprieter by the name of Montée, blinded by an excessive jealousy, suspected that his wife was the mistress of a neighbor by the name of Baron. One day Montée hid himself behind a window in his house and fired a shot at his supposed rival, which instantly killed him. Immediately afterwards Montée took an axe and started towards the house of his victim. He went to the upper story where he found the victim's little girl about ten years old, seated in front of the fire. He broke her skull open with the axe. The assassin then started out to find his victim's wife, and going into a field, not being able to find her there, he slaughtered several sheep which were grazing. When leaving the field Montée went and hung himself on a neighboring tree.

In this case insanity is so evident that if the assassin had been arrested the question of responsibility would not even have been brought up and Montée would have been sent to the insane asylum, but it would appear to us that it was an instance of jealousy which was transformed into insanity.

Closely related to crimes from insanity there are crimes from passion which in reality are merely crimes from alcohol. Intemperance goes arm in arm with *débauche,* and drunkenness only brings about wordy discussions. In December, 1902, the case of a certain Cormaire was tried in Paris. Cormaire was thirty-five years of age, whose father, an alcoholic, committed suicide during an attack of insanity. One evening he himself committed a crime during an attack of insanity which left no trace in his memory. Without any appreciable interest or provocation he pounced upon a *puella publica* and tried to cut her throat. Two days later, after a day of fever, he returned to the shop where he worked and read the account of the crime in a newspaper. Suddenly he was overcome by this detail, "the murderer had left his hat at the victim's house." The amnesia suddenly disappeared and he finally remembered the whole event. When arrested Cormaire was found absolutely irresponsible, but later on, during an attack of jealousy, he killed his mistress. Arrested again, he was submitted to another medical examination, and this time was considered responsible. It was, however, pointed out at the trial that Cormaire was not mentally well balanced, that he was the son of an alcoholic and an alcoholic himself, in other words a degenerate impregnated with alcohol. Insanity not being absolutely characteristic, at least for the last crime committed, caused the jury to render a verdict of guilty.

To sum up in cases of crimes committed by individuals who are recognized insane, the question of a sentence does not even come up, and criminal lunatics should be sent to asylums. For that matter there would be no legal interest to distinguish subjects of jealous insanity from those afflicted with ideas of persecution, like those of which we have spoken. If they have been made mention of here it is because occasionally they are acts strangely resembling crimes from passion, and a careful medical and psychologic examination can alone establish the fact whether or not the criminal is responsible.

Although it is frequently a delicate matter to characterize these crimes, which, from their nature, have the appearance of crimes from passion, how much more difficult it is for the Court and the jury to determine the nature of the crime when the accused affirms that he acted under the domain of passion, when in reality it was quite another motive which caused him to commit the crime. Innumerable are the crimes which take on the appearance of crimes from passion and which are in reality accomplished from cupidity, *débauche,* vanity, etc. The difficulty is to distinguish these crimes from true crimes from passion. When the accused appears upon the stand it is very frequently upon this point that the discussion turns between the government and the defence, namely, What is the motive which caused the murderer to perpetrate the crime?

Each will give his explanation. The defence pleading a blinding passion, while the government will uphold that the crime in question is not one of passion and has been committed by the accused for some interested motive.

Among the crimes having an appearance of passion and of interested motive we should first consider those of cupidity, such as the following example: Some twenty-five years ago a widow by the name of G. was a well-known character in the gallant world of Paris. She began to age and foresaw with terror the approach of the time when generous donators would no longer be in sufficient numbers to satisfy her needs. Her last lover was a very young and wealthy man, but without experience, and she resolved to attach him to herself for life. To accomplish this it was necessary to render marriage an impossibility for him, and, in order to attain this result, she resorted to a very simple means, namely, to disfigure the young man's face by vitriol so that he would be a subject of horror for all others. He then would be forever under her power. But with this plan she could not act herself and she consequently excited a certain X, a man of the people that she had taken for a lover. On a certain evening when the woman G. came home from the theatre with X, the young man already alluded to executed the crime which she had conceived, and inundated the young man with vitriol. She then took care of her victim with such a devotion that the Court had all the difficulty in the world to make her victim understand the guiltiness of his mistress.

Beside this crime, so extraordinary from its perversity and audaciousness, female vengeances are more frequently met with in which a disappointment in love is combined with the need of money. There are cases in which the pain is due to the departure of a lover, who certainly was inconstant, but who, more especially, forgot to give the indemnity hoped for by his mistress in case of rupture. The woman then threatens to make a scandal, and if this blackmailing scheme fails she sometimes carries her threats into execution. She finally poses as a victim of love. Such was the case of M. M., who, in 1880, avenged herself upon her lover who was on the point of getting married. She had hoped that for a long time to come, if not for always, he would attend to her needs, but when she heard of his marriage, she had vitriol thrown in his face by another woman over whom she had sufficient influence to make her execute the crime.

It is not always in illegitimate unions where cupidity takes the place of love, for beside *liaisons* of interest, there are also marriages for money, and here again we will meet with the so-called crimes from passion in which passion has never existed. A farmer, having sought the hand of a rich young woman in marriage, and after having hoped to obtain it, was so disappointed by the parents' refusal and so angered to see such an advantageous party escape him that he had the young girl meet him and, after having obliged her to accept him as a husband, plunged a knife into her abdomen.

(To be continued.)

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., BOSTON,
AND
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PROTOZOA.

During the last decade the protozoa, especially the pathogenic forms, have received considerable attention from investigators interested in the lower forms of animal life, and of these, the trypanosomes have probably been the favorite subject of study. Although the first of this group was described by Valentine more than sixty years ago, who found it in the blood of a salmon, and, although from time to time allied organisms have been identified, sustained work in this direction was not begun until some years later. When Evans in 1880 demonstrated that a disease of camels and horses, known as surra, was dependent upon the presence in the blood of the animal, of a protozoal organism, there was quickly instituted a series of experiments which had, as a result, an appreciation of the proper relation which should exist between plant and animal life as an exciter of infectious diseases. This organism, the trypanosome, may be briefly considered as a fusiform, more or less elongated body, about the length of the diameter of a blood corpuscle, possessed of a fin-like membrane, longitudinally, and a terminal flagellum. It was soon found that other diseases of animals as, nagana, mal de caderas, dourine, etc., might be ascribed to other members of this group. These discoveries attracted but little notice in the medical world until Dutton identified a trypanosome in the blood of a European, who had resided in the Gambia region, and Castellani showed the significance of its presence in the cephalo-rachidian fluid of negroes who were suffering from the disease known as "sleeping sickness." Thus far the conditions set up by the parasite have been met with, for the most part, in Africa, Asia, and South America; but Morax, in a recent paper,[1] has published the results of his work in the experimental pathology of the disease, paying especial regard to the ocular manifestations. He was struck by resemblances between certain corneal appearances in dourine and the well known lesions of interstitial keratitis observed in syphilis.

Nagana, the tsetse-fly disease, affects all domestic animals and many that are wild, and is invariably fatal to the horse and dog, although a certain percentage of cattle recover. The duration may be several weeks or several months, and in case of recovery a certain immunity seems to be established in the animal in question for this particular form, but not for others of the group, thereby suggesting a certain specific character. Man is naturally immune, probably through some peculiar property of his blood plasma. Symptomatically there is noticed fever, lymph infiltration of subcutaneous tissues of neck, abdomen and extremities, destruction of red blood corpuscles, extreme emaciation, blindness and the constant presence in the blood of a parasite which was identified by Bruce in 1894 and which bears his name. There seems to be but little doubt as to the rôle of the tsetse fly in the transmission of the disease, as infected and non-infected animals may run together with impunity in the absence of this particular fly. The process among the smaller mammals is quite acute and ocular complications are rare. The contrary obtains among the larger animals, the process being subacute and eye lesions more frequent. Here will be noticed a turbid, aqueous, fibrinous deposit in the anterior chamber and upon the iris, corneal opacities and a mucopurulent conjunctivitis. The parasite has been found in the conjunctival secretion and in the anterior chamber. Edema of the lids and face has occasionally been mentioned as occurring. In the case of the horse and ass the cornea has become quite opaque, even taking on the tint of porcelain, yet, notwithstanding the apparent severity of the corneal condition the opacities may disappear in the course of a few weeks.

Surra, the term implying a rotten or diseased condition, is a malady of horses and camels in India, although not peculiar to that particular country. Clinically it somewhat resembles nagana, as there exists a sort of pernicious anemia, fever, intermittent or remittent in type, emaciation, edema and lesions of eyes and lids. Evans, in 1880, found in the blood of infected animals, a trypanosome which now bears his name, and by the inoculation of which he has been able to reproduce a similar condition in the dog and horse. This organism so closely resembles that of Bruce, morphologically, that for differentiation it is necessary to study its cultural developmental characteristics upon some proper medium. Some other genera of biting fly than the tsetse must be responsible for its transmission, as infection may occur in regions where the tsetse is unknown. During a buffalo epidemic in Java a mucopurulent conjunctivitis and keratitis was frequently noticed. Five dogs became "blind," as the result of a hyena hunt. Among the cattle ocular complications take the form of a blepharo-conjunctivitis and keratitis, although blindness is rare. The disease is apt to pursue a rapid course, eventually terminating in blindness and death. In the case of laboratory animals, eye lesions are usually external and the organism will be found in the secretion.

Souma, a disease of cattle and horses in the Soudan, has been found to be due to a special parasite, the trypanosome Cazalboui, which, however, does not affect rodents or dogs. Corneal disturbances were noticed in an ass that had been inoculated with infected blood from an animal of like species. The upper half of each cornea became cloudy, and later a condition, somewhat resembling an ulcerative pannus, appeared, but absorbed before the death of the animal. There were no parasites found in the exudate.

Mal de caderas is the only trypanosomatic disease thus far recognized upon the American continent, is prevalent among horses in South America and receives its name from eventual paralysis of the hind quarters before the death of the animal. Although edemas are usually absent, clinically, it resembles surra and nagana. The ass and mule resist, but dogs are susceptible, as well as rats, mice and other small rodents. It is apt to take on a mild type in the case of the larger animals. The parasite was first recognized by Elmassian in 1901 and received the name, trypanosoma equinum. As regards the ocular disturbances, it will be noted that the lids are swollen, there is chemosis and a foul mucopurulent discharge. Upon the cornea will be seen milky white spots, irregularly distributed and poorly outlined, resulting from a diffuse superficial interstitial keratitis, which, however, frequently absorbs, as does the hypopion, if present. Similar conditions obtain in dogs and rabbits, if inoculated.

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[1] Ann. d'Oculist., Dec., 1906.

Dourine is a disease of horses, not limited to the tropics, as it has been met with in many parts of Europe. Although due to a trypanosome in the blood, the equiperdum, transmission is believed to be due to sexual contact. Clinically it resembles the other diseases of the group, and paralysis usually precedes death. Conjunctivitis, keratitis, hypopium and lenticular opacities sometimes occur and the presence of the organism may be demonstrated in the conjunctival secretion of an inoculated rabbit. One or two months after intraperitoneal inoculation of several dogs and an ass interstitial keratitis with corneal opacities developed resulting in complete blindness. When the iris was visible it was seen to be inflamed and covered with a purulent or fibrinous exudate. The ciliary body was found to be involved. Anatomically the corneal opacities are found to be due to the presence of mononuclear leucocytes and trypanosomes in the interlamellar spaces and in the anterior chamber. The posterior segment of the globe was less affected. The dogs all died before showing any amelioration of the ocular symptoms. In the case of donkeys, opacities that may have developed may rapidly disappear, although if there is a tendency to ulcer formation, the inflammatory process may go on to panophthalmitis.

Human trypanosomiasis. — For a long time it was supposed that man was immune to this form of infection, and this is true in some instances, as, for example, surra, nagana, etc. Dutton, however, in 1901, recognized as a trypanosome, an organism which he detected in the human blood and which he named Tr. gambiensis. It has likewise been found in the cephalo-rachidian fluid. Following the invasion there appears intermittent fever with anemia, malaise, erythematous lesions and cutaneous edema. Somnolence and paralyses appear later. The ocular symptoms are few and unimportant. There may be a feeling of fatigue and unsteadiness of the type when reading, which will pass away after rest, providing it does not depend upon an error of refraction. The veins at the fundus may be somewhat enlarged. The conjunctival reflex is one of the last to disappear, and when this happens the prognosis is bad. Collins, who examined one of Manson's cases, stated that the fields were normal, pupils reacted and the media were clear. At each macula there was a superficial area of atrophic choroiditis, with pigment modification. In the right retina were some whitish, circular spots at a deeper plane than the vessels, and at each periphery were numerous spots, suggesting choroidal atrophy, some being more or less pigmented. Papilla normal. No hemorrhages. With such appearances, the possibility of a pre-existing specific chorio-retinitis should be considered.

Spirochcta pallida. — At the meeting of the German Ophthalmological Society, in 1905, Axenfeld, during the discussion of a paper on parenchymatous keratitis, and having in mind certain conditions which obtain in leprosy, stated that as we did not know the pathogenic factor causing syphilis, we should not exclude it from a clinically healthy-appearing cornea. Since that time, however, Dr. Greeff and others have been able to verify this statement, and as the result of work carried on with Hoffman, and also independently with Clausen, he was able to announce at a similar meeting in 1906 that he had been able to successfully inoculate the eyes of apes and rabbits, so that a few weeks later a tongue-shaped opacity appeared, which might seem to extend from the limbus centralwards. In the clear corneal area, in advance of the opacity, the spirocheta pallida could be detected without difficulty, in fresh cases, where they seemed to easily penetrate and multiply, whereas the opaque area had evidently been a battleground, where had taken place the death struggle between the previously existing spirochetæ and the thronging leucocytes. In this contest the odds seemed to be rather with the leucocytes, in the case of rabbits, as the manifestation seemed to be rather local in character; on the other hand, however, the greater diffusion of the disease and its closer resemblance to the analogous condition in man, in the case of the apes, rather suggested a supremacy in the pathogenic organism. As long ago as 1879 Klebs claimed that syphilis could be produced in apes, but this statement attracted very little attention at the time, and it was not until several years later that interest was sufficiently aroused by experimentation, undertaken by Metchnikoff, Roux, Neisser and Finger. Although anthropoid apes were at first supposed to be necessary, it was found that other species, which bore a still more remote relationship to man, were likewise susceptible to a somewhat atypical form of the disease. In 1881, Hansell, by the inoculation of rabbits with human syphilitic material, obtained appearances in the cornea and iris, closely resembling those observed in man. Schucht, quite recently, by using an emulsion of syphilitic inguinal gland, which he introduced into the eyeball, has obtained a parenchymatous keratitis and condylomatous iritis. Many spirochetæ were detected in horizontal corneal sections, but none in cross sections. He also succeeded in carrying the disease from apes to rabbits. Several contributions to the study of hereditary syphilis and the relation of the spirochetæ thereto have appeared quite recently. Gouven has found the pallida in an apparently healthy cornea while examinating a syphilitic fetus. Schlimpert, from the examination of a macerated fetus and a prematurely delivered child, believes the organism to be less frequently found in the eye, as compared with other organs. They were, however, more numerous about the choroidal vessels than in the sclera or retina. They were also frequent in the deeper layers of the cornea, in the retrobulbar portion of the optic nerve and in the trunks of muscles. The lens and vitreous were found to be free. The contention between different zoölogists, as to whether the spirocheta pallida, or triponema pallidum, as suggested by Schaudinn, is to be considered as of the protozoa or not, is quite as interesting as is its etiological relation to syphilis. According to Schultz, it may be stated that this much of our knowledge regarding it is beyond dispute. It is a spiral organism, from four to twenty microns long and four tenths broad, with pointed ends, each of which possesses a single flagellum. The spirals are quite close and regular, averaging one micron in length, and liable to disappear when quiescent. There is neither an undulating membrane nor nuclear differentiation. The single polar flagellum, the large number of flexible spirals and the probability of longitudinal division rather favor its protozoan nature.

The following articles have been utilized in the preparation of this report: Morax: "Les affections oculaires dans les trypanosomiases," *Ann. d'Oculist.*, December, 1906. Scherber: "Ueber Spirochaetenerkrankungen," *Zeitschrift für Augenheilkunde*, February, 1907, as both contain excellent bibliographic references. The attention of the reader is also directed to a paper on "Trypanosomes," by Novy, which may be found in the first two numbers of the *Journal of the American Medical Association* of the current year, and also to one on the same subject by Greeff, contained in the *Reports of the German Ophthalmological Society* for 1906.

Book Reviews.

Essentials of Chemical Physiology. By W. D. Halliburton, M.D., LL.D., F.R.S. Sixth edition, 258 pages. London and New York: Longmans, Green & Co. 1907.

In this sixth edition of his "Essentials of Chemical Physiology," Professor Halliburton has thoroughly revised this well-known book. Many of the parts, especially those concerned with the proteins, have been rewritten, and those concerned with coagulation of the blood and with respiration have been amplified to include the new knowledge in these subjects. The general character of the book remains unchanged and is too favorably known to need comment.

Essentials of Human Physiology. By D. Noel Paton, M.D., B.Sc., F.R.C.P. Second edition, 425 pages. Chicago: W. T. Keener & Co: Edinburgh and London: William Green & Sons. 1905.

As the title of this book indicates, it is a statement of what Professor Paton regards as the essentials of the physiology of man. The book is characterized not only by an emphasis on the main facts of the science, but by simplicity and clearness of statement and by many illustrations. The ingenious diagrams illustrating physiological processes may be regarded as a unique feature. The book is intended, according to the author, to supplement the practical work and demonstrations from which alone a real knowledge of the subject can be gained.

Physiology of the Nervous System. By J. P. Morat. English translation by H. W. Syers. 680 pages, 263 illustrations. Chicago: W. T. Keener & Co. 1906.

This translation of the portion on the nervous system in Morat and Doyon's great "Treatise on Physiology" places before English readers an important comprehensive study of the nervous system. It summarizes in an encyclopedic manner the knowledge both of the structure and the function of the nervous system. The most elementary structure, the neuron, is first considered: its various forms, its conditions of irritability and the nature of nervous conduction. There is in this connection a discussion of the methods of stimulating nerves and the energies which can be evoked by stimulation.

Following the discussion of the nervous element, there is a section on the simpler relations of the elements, in reflexes and in segmental arrangements of reflex functions. The functional determinations of the cranial nerves are treated with special thoroughness.

The relations of impulses in reflexes, *i. e.*, inhibitions and augmentations, and the classification of general nervous functions, such as thermic and trophic effects, are next considered.

The transmission of impulse in the fiber tracts of the spinal cord, the functions of the sympathetic system (very clearly and fully expounded) and the important activities of the medulla are presented, along with an interesting discussion of consciousness and unconsciousness and the degrees of consciousness which may be recognized. Following this is the physiology of the cerebellum, the optic thalamus, corpora striata and the hemispheres, with a complete consideration of cerebral localization.

The volume will be of especial value to physiologists, neurologists and medical students especially interested in the nervous system and its functions. The final chapters in the innervations of the various sense organs, combined with its other features, make the book an important one also for the psychologist.

American Practice of Surgery, a Complete System of the Science and Art of Surgery. By representative surgeons of the United States and Canada. Editors, Joseph D. Bryant, M.D., LL.D.; Albert H. Buck, M.D., of New York City. Complete in 8 volumes. Volume III. Profusely illustrated. New York: William Wood & Co. 1907.

This work improves as successive volumes come from the press, and the list of contributors to Volume III speaks for sound writing, for we read the following well-known names: Eve of Nashville; Horsley of Richmond; Mason of the Army; Oliver of Cincinnati; Painter and Simmons of Boston; Park of Buffalo; Peters and Primrose of Toronto; Rambaud of New York, and Thomas of Philadelphia.

Volume III includes parts 11, 12, 13. Part 11 deals with poisoned wounds by Mason, including the bites and stings of animals and insects. This is an original and striking contribution, and the pages are well illustrated. Then there follows a chapter on Rabies, — a brief, satisfactory essay by Rambaud.

The bulk of the book — parts 12 and 13, 697 of the 760 pages — is taken up with the chapters on injuries and surgical diseases of bones and joints. Eve writes well on fractures; Thomas on pseudarthrosis; Peters on inflammation of bone; Park on noninflammatory affections of bones; Horsley on syphilis of bones; Simmons on bone tumors; Painter on nontuberculous and nontraumatic chronic inflammations of joints; Primrose on bone and joint tuberculosis, and Oliver on wounds of the joints.

How shall the unfortunate reviewer briefly sum up this immense mass of admirable writing? Suffice it to say that the writing is admirable; that the views expressed describe the best and most recent convictions on the pathology and treatment of these difficult subjects, and that this handsome volume certainly finds its place as one of the most important contributions to recent surgical literature.

Treatment of Caries of the Spine. Treatment of Congenital Dislocation of the Hip. By Dr. F. Calot. Translated by Dr. P. Ewald, with an introduction by Prof. D. Oscar Vulpius. Stuttgart: Published by Ferdinand Enke. 1906.

It is unusual to receive the writings of a French medical author through the medium of a German translation and endorsed by a German professor. This speaks both for the excellence of the original as well as for the energy of the German publishers.

Dr. Calot some years ago called attention to the rectification of the deformity of Pott's Disease by forcible correction. In the present monograph the means of the application of plaster bandages to be used in the treatment of tuberculous vertebral diseases are well described. The writer advocates the repeated injection of the developed abscesses with small doses of creosote without incision.

The statistics of Calot in the reduction of congenitally dislocated hips are usually good. The method of reduction may be briefly described as a development of the well known Paci-Lorenz method with a different position of the limb in after-treatment, this position being similar to that recommended by Dr. Mueller, of Chicago. In a few obstinate cases Calot has employed (instead of incision) a dilator for the constricted capsular ring, similar to a curved sinus dilator, introduced into the sac through a small skin incision.

Technique Orthopédique. By P. Redard. Paris: Published by F. R. de Rudeval. 1907.

A number of excellent books on orthopedic surgery are to be found in English, French and German. Articles, monographs, special journals in these languages and in Italian increase the literature of the specialty to such an extent that a writer on the subject requires much diligence and mental activity if he desires to keep abreast of the progress in his branch. It is therefore singular that in a specialty which demands particular acquaintance with the devising and use of apparatus there should be no book especially devoted to this especial part of orthopedic work. It is fitting that at last such a publication should appear and should come from France, the starting place of orthopedic surgery.

The book is useful in giving to the reader detailed descriptions of the apparatus and mechanism in use in the practice of orthopedic surgery, including plaster bandages.

Lateral Curvature of the Spine and Round Shoulders. By Robert W. Lovett. Philadelphia: P. Blakiston's Son & Co. 1907.

To the readers of the Journal the admirable work of Dr. Lovett is familiar as many of his articles embracing his investigations on the subject of scoliosis were published originally in the columns of the Boston Medical and Surgical Journal. These writings have been amplified and are published in an excellent monograph which can be cordially recommended to all specialists and to those interesting themselves in the study and treatment of curvature of the spine.

Besides a statement of his original investigations as to the normal movements of the spinal column the book contains excellent descriptions, amply illustrated, of the gymnastic exercises employed in correcting cases and in measures for correcting by means of plaster jackets.

A Manual of Surgery for Students and Physicians. By Francis T. Stewart, M.D., Professor of Surgery, Philadelphia Policlinic; Associate in Surgery, Jefferson Medical College; Out-Patient Surgeon to the Pennsylvania Hospital, etc. With 504 illustrations. Philadelphia: P. Blakiston's Son & Co. 1907.

This convenient volume of 778 small, closely printed pages is a compendium of well recognized views on surgery, and will doubtless be useful to students.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 10, 1907

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POPULAR LECTURES ON INSANITY.

IN this issue of the JOURNAL we publish papers by Dr. P. C. Knapp, on Heredity, and Dr. H. R. Stedman, on Popular Lectures on Insanity. Both are subjects little understood and, therefore, regarding which most erroneous ideas prevail in the public mind. It will be remembered that last year lectures on the general subject of insanity were given in New York under the auspices of the New York Psychiatrical Society which were semi-popular in character. They were given in the Academy of Medicine, and were intended for physicians and such others as might care to learn of recent opinions regarding the always important subject of mental alienation. These lectures were a success, although possibly they did not reach the rank and file of the people. During last winter at the Harvard Medical School a series of popular lectures was given on a wide range of subjects in medicine, and the appeal made, particularly to the laity, to attend. Although the attendance varied somewhat, as might have been expected, from the differing popular interest of the various subjects presented, nevertheless, it was altogether gratifying and encouraging to those having the matter in charge, and demonstrated the desirability of continuing a similar course of lectures another winter. Through an oversight, rather than through intention, no lectures on the general subject of insanity were included in this course. This omission it is proposed to supply this winter.

In the paper by Dr. Stedman, read before the American Medico-Psychological Society in Washington, it is clear that both the importance and the difficulties of offering such a course of lectures to the laity are fully appreciated. The time, we believe, has come to make a more vigorous attempt than has heretofore been done to remove the curious misconceptions and morbid ideas regarding mental disturbance which have so long filled the popular mind. The subject is a difficult one to present; our knowledge is still vague; classifications are chaotic, and the popular impressions of the insane person are so deep seated that it is not to be supposed they will easily be removed, as, for example, has the fear of tuberculosis. What such a course of lectures as Dr. Stedman proposes should accomplish is to bring before the public certain ascertained facts, and particularly to take every reasonable means of allaying popular fear. The dread of commitment to a hospital for the insane is also still widespread, and the conception of treatment in such institutions wide of the facts. The public should be educated in these matters and at the earliest possible moment. There is, perhaps, no better means of accomplishing this result than by the means which Dr. Stedman suggests.

We are glad also to call attention to Dr. Knapp's conservative interpretation of statistics regarding heredity. There are few subjects about which the public at large, and even the profession, have vaguer notions than this of the significance of the hereditary transmission of disease, and many sins have certainly been committed in its name. This subject should also be considered in popular lectures, but only at the hands of a person who combines much knowledge and experience with the saving grace of tact and good judgment.

In general, we are altogether in favor of the plan outlined by Dr. Stedman, and are confident that good will ultimately come from the judicious dissemination of knowledge regarding the causes, course and treatment, both in institutions and at home, of the various forms of insanity.

CLOSING OF CAMBRIDGE SCHOOL OF NURSING.

IN our issue of May 25, 1905, we commented editorially on a school of nursing, which was at that time being established in Cambridge, Mass. We said, in part, " We have on various occasions commented on this tendency (namely, the tendency to exalt the work of nursing to the rank of a so-called liberal profession) and expressed a degree of skepticism regarding this expansion of the work of nursing. . . . In the minds of those promoting the further education of nurses, it is clear that greater efficiency is to be attained by the new method than by the old. We have no desire to express an opinion on this point, but we are convinced that the success of the new movement cannot be assured until many years of experience have passed."

It has been announced within a few days that this school, auspiciously begun two years ago, has been closed for lack of students and proper support. When the establishment of this school for the training of nurses was agitated, it was designed to lay special stress upon the educational side of nursing, and the school was in some respects modeled after that at the Waltham, Mass., Hospital, which has been conducted for many years with great success, by Dr. Alfred Worcester and his colleagues. This was also the time when the question was agitated as to the desirability of nurses paying for their education, rather than being paid for their services. In pursuance of the general plan that nursing should be regarded in the light of a liberal education, a suitable house was secured in Cambridge, and the school was opened in October, 1905, with eight students. A charge for tuition of $150 was made for the first year, and $75 for each of the succeeding years of the four years' course. A year later but six pupils applied for instruction, and this year there have been seven applicants, too few to make possible a further continuance of the work in the estimation of the executive committee. Of the twenty-one students enrolled since the opening of the school, nearly one half were unable to pay the fees at required intervals and concessions were necessarily made. The course was then reduced to three years and six months, and the price of tuition also reduced, but this also failed to bring up the numbers. It is reported that there has been some difficulty of late in filling the Waltham Hospital School for Nurses, and, in general, the plan of charging nurses for their tuition has given place to the method formerly in vogue.

We bring this matter up again at this time, in the first place, to express our regret that this commendable, if somewhat chimerical, movement for the higher education of nurses has failed. More important than this, however, is the indication it gives regarding the general status of nursing in this and, no doubt, in other communities. As we have frequently had occasion to say, we have long felt that the exaltation of nursing to the status of a liberal profession, as some of its advocates seem to desire, is a mistake. There is as yet no evidence that young women in appreciable numbers will be willing to devote four years to training as nurses, in the meantime paying for their tuition; this experiment, undertaken at Cambridge, certainly does its part in bearing out this statement. There is small doubt in our mind that the limit of the training of nurses has been reached, and that the wave of enthusiasm for more elaborate teaching has begun to recede. The Cambridge School of Nursing, which has just closed its doors, was a product of this over-enthusiasm. There was every reason to think at that time, and we have no doubt that the executive committee were imbued with the opinion, that there was need of just such a training school and that applicants would be forthcoming to render it an unquestioned success. Predictions as to its outcome would have been fruitless, and we mention the failure of the movement merely as indicative of the somewhat abnormal condition of the popular attitude toward the training of nurses. We shall, no doubt, continue to have trained nurses who have long since proved themselves indispensable to medical practice, but both for their sakes and for that of the medical profession, it is very desirable that the limitations of their training should be defined as sharply as possible.

MEDICAL NOTES.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 9, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 29, scarlatina 37, typhoid fever 20, measles 8, tuberculosis 31, smallpox 0.

The death-rate of the reported deaths for the week ending Oct. 9, 1907, was 18.48.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 5, 1907, was 207, against 227 the corresponding week of last year, showing a decrease of 20 deaths and making the death-rate for the week 17.71. Of this number 107 were males and 100 were females; 203 were white and 4 colored; 149 were born in the United States, 56 in foreign countries and 2 unknown; 45 were of American parentage, 136 of foreign parentage and 26 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 30 cases and 1 death; scarlatina, 32 cases and 1 death; typhoid fever, 20 cases and 0 deaths;

measles, 10 cases and 0 deaths; tuberculosis, 50 cases and 20 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 21, whooping cough 0, heart disease 16, bronchitis 3 and marasmus 11. There were 6 deaths from violent causes. The number of children who died under one year was 66; the number under five years, 85. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 61.

There were 3 cases and 3 deaths reported from cerebrospinal meningitis during the week.

Annual Meeting of New Hampshire Surgical Club. — The twelfth annual meeting of the New Hampshire Surgical Club was held at the Pemigewasset, Plymouth, N. H., Sept. 18, with a good attendance of members and their ladies. Dr. Joel F. Goldthwait, of Boston, read an interesting paper on "Non-Tuberculous Diseases of the Joints." This paper was discussed by Dr. Gile, of Hanover, Dr. Smith, of Hanover, and Dr. Prouty, of Keene. Dr. E. L. Bell presented a paper of much importance, "A Medico-Legal Case." The President, Dr. Frank Blaisdell, of Goffstown, gave the annual address on "The New Hampshire Surgeons from 1800 to 1900." The annual banquet was held at eight o'clock in the evening, and was followed by toasts: "The New Hampshire Surgical Club," Dr. Frank Blaisdell, "Our State Society," Dr. John M. Gile, "The General Practitioner and the Specialist," Dr. Goldthwait, "The Clergyman and the Doctor," Rev. Doran, "The Auto and the Doctor," Dr. James Greely, "The Surgeon in the Lumber Camp," Dr. E. L. Bell, "The Doctor's Vacation," Dr. Kingsford. The following officers were elected for the ensuing year: Dr. N. W. McMurphy, of Gilmanton, president. Dr. A. W. Shea, of Nashua, vice-president. Dr. J. M. Town, of Manchester, secretary and treasurer.

NEW YORK.

Roof Garden for St. Luke's Hospital. — Plans have been filed with the Building Department for an addition to St. Luke's Hospital, in the shape of an elaborate roof garden on the Muhlenberg pavilion of the central administration building, which is to cost $20,000.

Laws Regarding Sale of Cocaine and Allied Drugs. — In the new law which recently went into effect in the State of New York which makes it a penal offense to sell at retail cocaine or any preparation containing it except upon the written prescription of a duly registered physician, the same restrictions are enforced regarding alpha and beta eucaine. Proper safeguards are also prescribed for the wholesale disposal of these drugs.

Baths for Working People. — In the section on "Professional Hygiene and Care of the Working Classes" of the International Congress of Hygiene and Demography at Berlin, Dr. Simon Baruch, professor of hydrotherapy in the medical department of Columbia University, read a paper on Sept. 25 on "Baths for Working People," in which he made a strong plea for free cleansing baths. In the course of it he said that the river baths supplied by municipalities, while refreshing and pleasant, were not sanitary in the true sense of the word, and were to be regarded rather as a luxury than a necessity. The fact that propriety demands that women be entirely clothed. and men partially covered, militates against their capacity for cleansing. The application of soap is impossible, and without soap there can be no removal of impurities.

Fees of Experts in Thaw Trial. — The following amounts, for the services of alienists and experts in connection with the Thaw case, have been sanctioned by the controller: Dr. Carlos F. MacDonald, $6,300; Dr. Austin Flint, $5,315; Dr. William Maybon, $3,987; Dr. Robert C. Kemp, $3,102; Dr. A. R. Diefendorf, $990; Dr. William B. Pritchard, $420; Dr. Albert W. Ferris, $380; Dr. William Hirsch, $420; Dr. R. A. Witthaus, $142; Dr. August Hoch, $90.

Bequests. — By the will of the late D. Willis James, of New York, $1,000,000, in sums of $100,000 to each, is bequeathed to ten universities, benevolent societies and institutions, among which is St. Luke's Hospital.

Bequests to Charities. — By the will of the late Gen. Charles E. Furlong, of New York, more than $150,000 is left to charities. Among the institutions receiving $5,000 each are the following: Nursery and Child's Hospital, New York Infirmary for Women and Children, New York Foundling Asylum, and the New York Infant Asylum.

A Lecture on Typhoid Fever. — A lecture was given Oct. 5 at the Library Building of the Medical Society of Kings County, in Brooklyn, by Dr. Darlington, President of the Health Department, under the joint auspices of the Kings County Medical Society and the Brooklyn Institute. The attendance was so gratifying that Dr. Glentworth R. Butler, the president of the Medical Society, said, in introducing Dr. Darlington, that ample encouragement was afforded for the repetition of similar lectures on topics pertaining to the public health in the future. The subject of the evening was "Typhoid Fever and Other Infectious Diseases; How They are Spread," and the keynote of the lecture was given in the opening sentence: "In speaking on the subject of contagious diseases one should have the fact firmly fixed in his mind that the statement that a disease is of an infectious character carries with it the thought that it is also absolutely preventable." In the Borough of Brooklyn, Dr. Darlington said, there had of late been a steady decrease in the number of cases of typhoid reported. In 1905 there were, in 1906, 1,200, and this year, so far, 600. In a city like New York, while contagion might be held in check, it could never be wholly eliminated. Many cases of infectious disease went untreated and so escaped detection, and one of the worst phases of the situation was the neglect of some physicians to report their cases. Co-operation of each individual and physician in the community was necessary to assure any efforts towards ideal attainments, and co-operation could only be reached by educating the public as to its vital importance. Public lectures, the public press, co-operation with philanthropic societies, printed instructions and personal efforts were all valuable aids. In the course of his remarks, the lecturer made a strong plea for a filtration plant to meet the requirements of the city, and deplored the fact that all improvements looking to its welfare moved so slowly and met with so many obstacles. In conclusion, he announced that the corner-stone of the new Board of Health Building, which is to be erected in Brooklyn, and which he stated would be the finest building of its kind in the world, would probably be laid in December.

Obituaries.

HENRY WATSON DUDLEY, M.D.

In Memoriam.

From time immemorial it has been the custom to mingle with laments for the dead eulogies of their well spent lives. We regret that the time has come when it becomes our sad duty to record the death of Dr. Dudley.

We realize that we have not the gift of language or power of speech to correctly portray his strength of mind, the nobility of his character and those qualities he possessed, which are not easily expressed in words, that endeared him to so many of us.

There are three elements which unite to produce a career like Dr. Dudley's. That which his ancestry gives; that which opportunity gives and that which he himself develops.

Among his distinguished ancestors were Thomas Dudley, the Colonial Governor, Rev. Samuel Dudley, who settled in Exeter, N. H., in 1650, and married the daughter of Governor Winthrop; Stephen Dudley, who was born in Exeter and married the daughter of Hon. John Gilman; Deacon Stephen Dudley, who settled in Gilmanton in 1774 and was one of the petitioners for the first town meeting in 1776, and was also one of the original members of the church formed in 1774; Dr. William Smith, the pioneer doctor of Gilmanton, and for some time the only doctor nearer than Concord, whose practice extended out thirty miles, when the only guides to conduct him through the wilderness were spotted trees. He was Dr. Dudley's great-grandfather.

Dr. Dudley was educated in the public schools of his native town, fitting for college at Gilmanton Academy, entering that institution when seventeen years of age and graduating in the Class of '51. He taught in the high school a few years and served as member of the School Commission of Belknap County, N. H., and also as member of the State Board of Education of New Hampshire, in 1861, 1862 and 1863. He taught in Culpepper, Va., at the time of the famous John Brown raid in 1859.

He took his first course of lectures at Dartmouth Medical School, and completed his course in medicine at Harvard Medical School, graduating in March, 1864. He was a member of the Hatherly Medical Club and was identified with the Massachusetts Medical Society since 1866, and among the most prominent in the District Society, having served as its president and held other important offices, being a Counsellor from 1883 up to the time of his death.

He was affiliated with the Masonic fraternity, being a Knight Templar. He did not seek public office, but served on the School Board of Abington during the past ten years of his life, rendering valuable service to the educational interests of the town.

He was Medical Examiner for the second Plymouth District, having held that office since 1890, succeeding Dr. J. C. Gleason. He was a member of the Massachusetts Medico-Legal Society since Feb. 4, 1891. He was Professor of Pathology at Tufts College Medical School, from 1893 to 1900, and lecturer on Legal Medicine from 1901 to 1906. Noteworthy among his characteristics were the interest he took in medical meetings, his ethics and his supreme contempt for the unethical, his devotion to scientific knowledge and his aversion to hypocrisy and fraud.

He was liberally endowed with the most attractive qualities. Strong and active in mind and body, he could assert and express himself with power and force when the occasion required. The duration of his life, the usefulness of his labors, the elevation of his sentiments, and the nobility of his character united to form an attractive personality and a highly instructive and admirable career.

Resolved, That while we are ever mindful of the uncertainty of human existence and the changes that are constantly going on in our midst, we desire to express to the family of the deceased our appreciation of his superior talents and his noble character.

Resolved, That we extend our heart-felt sympathy to the family of the deceased.

Gilman Osgood, M.D.,
Fred J. Ripley, M.D.,
A. Elliot Paine, M.D.,
Committee on Resolutions.

At a meeting of the Massachusetts Medico-Legal Society, held in Boston, Oct. 2, 1907, it was voted that the above resolutions be adopted and a copy furnished the Boston Medical and Surgical Journal for publication.

Oliver H. Howe, M.D.,
Recording Secretary.

ALFRED H. GOULD, M.D.

Dr. Alfred H. Gould died Oct. 2, after an illness of about one week, of an acute infection. Dr. Gould was born in Medford, Mass., and was thirty-four years old at the time of his death. He graduated from Harvard College in 1896 and from the Harvard Medical School in 1900. He thereafter served as a surgical house officer at the Massachusetts General Hospital, and after leaving that institution devoted much time to work in the laboratory and to experimental research on surgical subjects. The main result of this industry was a volume entitled "The Technic of Operations upon the Intestines and Stomach," published by the W. B. Saunders Company in 1906. Dr. Gould had recently been appointed an assistant in surgery in the Harvard Medical School and gave high promise of a successful surgical career. Through the book which we have mentioned he was coming to be widely known, and his course given at the Medical School on operative technique was sought by many practitioners, particularly those connected with the United States Navy. In his death the profession loses an industrious student, a teacher of promise, and a man from whom much might have been expected in the future.

Current Literature.

Medical Record.
Sept. 14, 1907.

1. Allen, D. B. *Cancer of the Head of the Pancreas.*
2. *Einhorn, M. *On Flatulence and its Treatment.*
3. Douglas, C. J. *Morphinism.*
4. Berry, T. D. *An Account of the Destruction of Mosquitoes in the "Original Infected District" in the New Orleans Epidemic of 1905.*
5. Lederer, W. J. *Nutrition: A Factor in Tooth Development.*
6. Meyer, W. *Phthisiotherapy by Means of Emulsion Bacilli (Koch).*
7. Wells, J. H. *Removal of a Large Thyroid Tumor of the Neck; Apparent Death; Recovery upon Removal of the Artery Forceps.*
8. Lysdton, G. F. *Intercurrent Typhoid Fever in Surgical and Renal Cases.*

2. Einhorn says that flatulence may be associated with the stomach alone, or with the intestine. When primary it is not caused by fermentation, but by swallowing of air. The sphincter muscles of the digestive canal are principally affected. It may exist for a long time without serious consequences. In acute and chronic gastric catarrh there is a real increase in the amount of gas in the stomach and a lessened absorption of it. Flatulence can be lessened by distracting the attention of the patient from his own sensations. When it is secondary it results from cardiac, circulatory, or respiratory diseases, and the relief by belching is rather imaginary than real. In primary flatulence treatment consists in the effort not to belch, with a simple diet and avoidance of beverages and foods that produce gas.

New York Medical Journal.
Sept. 14, 1907.

1. Grant, J. A. *Electrolysis and the Nervous System.*
2. Whiting, A. D. *The Ideal Ligature.*
3. *Hawes, J. B., 2d. *Tuberculosis Classes.*
4. Gallant, A. E. *Movable Kidney in the Genesis of Bile Duct Disease.*
5. Benedict, S. R. *The Detection and Estimation of Reducing Sugars.*
6. Bray, A. *Traumatic Edema of the Cornea in the New Born Infant.*
7. Pedersen, V. C. *Instructions for Those Having Chancroids.*
8. Condon, A. P. *An Analysis of the Cardinal Symptoms of Ileus.*

3. This is a detailed account of the management of the tuberculosis class. It gives all the necessary information for the establishment of such a class, including the routine directions given to nurses, volunteer assistants and patients, as employed by Hawes in his classes. [R. I. L.]

The Journal of the American Medical Association.
Sept. 14, 1907.

1. Beck, H. G., and Stokes, W. R. *An Epidemic Pneumococcic Catarrhal Disease.*
2. Mendel, L. B., and Brown, E. W. *The Rate of Elimination of Uric Acid in Man.*
3. Munro, J. C. *Dynamic Ileus.*
4. Mayo, W. J. *Resection for the Relief of Intestinal Obstruction.*
5. Browning, C. C. *Public Provision for Incipient Cases of Tuberculosis, Sanatoria and Dispensaries.*
6. Paquin, P. *Climate and Outdoor Life in the Treatment of Tuberculosis.*
7. Dunn, A. D. *Mucous Colitis.*
8. *Rogers, J., and Torrey, J. C. *The Treatment of Gonorrheal Infections by a Specific Antiserum.*
9. Harland, W. B. G. *The Larynx in Locomotor Ataxia.*
10. Bryant, W. S. *Cleansing Treatment of Chronic Suppuration of the Middle Ear.*
11. McKernon, J. F. *Otitic Phlebitis: Its Symptomatology, Diagnosis and Treatment.*
12. *Fleischman, P., and Butler, W. J. *Serum Diagnosis of Syphilis.*

8. Rogers and Torrey have prepared a specific antiserum by inoculating animals with increasing doses of gonococci, at first devitalized, but finally using living organisms, grown on ascitic agar. The serum of these animals will agglutinate gonococci in high dilutions. They prefer a polyvalent serum, made from several strains of gonococci. This serum has been used in a series of 98 cases of gonococcal arthritis. They found the serum efficacious in 80% of the cases in a fairly acute stage. In chronic cases the results are not so encouraging, but as a rule there are here actual structural changes in the joint. They found the serum useless in acute and chronic urethritis and in gonococcal conjunctivitis. In epididymitis, salpingitis and iritis they think the outlook is promising.

12. Fleischman and Butler employed the method of Wasserman for demonstration of the antibodies in the body fluids of syphilitis. This method depends on the principle of hemolysis and is too complicated for the limits of this abstract. The authors were able to determine with almost positive certainty in a large number of cases the existence of syphilis in an individual, irrespective of the length of time since infection. The luetic reaction is most intense in the untreated, and is faint or may even be absent in certain cases that have been well treated and are apparently entirely cured. [R. I. L.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 31.
JULY 30, 1907.

1. *ROLLY, D. *The Diagnosis of Genito-Urinary Tuberculosis.*
2. MORO, E. *The Clinical Aspect of the Alexin Test.*
3. *SEEL, E. *Combinations of Phenol with Phenolates and Their Advantages as Practical Antiseptics.*
4. GEIGEL, D. *Vicarious Respiration.*
5. REINECKE, P. *Eclampsia without Convulsions.*
6. *LOEHLEIN, M. *Brain Abscess caused by the Streptothrix.*
7. DÖLGER, R. *Diagnosis of Simulated Deafness. Detection of Real Abnormalities under Simulated Disturbances of Hearing.*
8. ERB, W. *An Answer to the Criticisms of My Gonorrhea Statistics.*
9. TEUFFEL, E. *A New Urine Bottle for Male Infants.*
10. HORNUNG, D. *The Treatment of Chilblain with Hot Air.*
11. SCHULTZE, W. H. *Remarks on the Differential Diagnosis of the Pathogenic Streptococci.*
12. PFAUNDLER, M. *The Treatment of Congenital Lack of Resistance.* (Concluded.)
13. JESIONEK, A. *An Historical Retrospect of the Progress in Medicine in the University of Giessen during the Last Two Hundred Years.*

1. Rolly reviews the clinical manifestations of genito-urinary tuberculosis: in 60% of the cases the first symptoms were referable to the bladder; in 20% the first sign was pain in the region of the kidneys; in 10% hematuria, with or without colicky pain, first drew attention to the condition. The infection may be ascending or descending, probably the former is the most common, *i.e.*, infection of bladder, or of testicle, then bladder and later ureter and kidneys. In every case of genito-urinary disease, in which the etiology is not immediately clear, one should think of tuberculosis. The presence of tuberculosis in this region can be diagnosed, however, only by the demonstration of tubercle bacilli in the urine. Here arises another difficulty, on account of the great similarity between the tubercle bacillus and the acid-fast smegma bacillus. Rolly has carried out a large series of comparative experiments with smegma and tubercle bacilli, and claims that it is impossible to differentiate the one from the other by any known staining reaction, nor are the morphological differences marked enough to warrant a diagnosis. With differentiation by cultures, also, he has had little success. With animal inoculation, however, he has been able, in every case, to differentiate clearly. The smegma bacillus never causes pathologic changes in the guinea pig, whereas the tubercle bacillus always brings about definite lesions. This is, therefore, the means by which a diagnosis of genito-urinary tuberculosis may be definitely made. The author has also examined a large number of advanced phthisis patients, without genito-urinary tuberculosis, without ever being able to demonstrate tubercle bacilli in the urine.

3. Seel reviews the chemistry of the combinations of phenol with the potassium phenol salts, as well as those of cresol with potassium cresol salts. They are not simple phenolates nor cresolates, but a double combination of three molecules of phenol (or cresol) with one molecule of potassium phenolate (or cresolate). The bactericidal power of these combinations is the same as that of phenol or cresol. The main advantage lies in the crystalline form, which makes it possible to use them in tablets of known strength.

6. Loehlein reports the case of a man of fifty-eight, with advanced chronic contracted kidneys. At autopsy an abscess, unsuspected before death, was found in the right temporal lobe of the brain. It contained thick greenish-yellow pus. Over it the pia was injected, but no exudate was demonstrable; deeper in the temporal lobe a second smaller focus similar to the first was found. Examination of the pus revealed the presence of large numbers of streptothrix, which in cultures and animal inoculation showed all the characteristics of the streptothrix Eppingeri, described by Eppinger in connection with abscess of the brain. The most careful examination showed no source of infection, either from ear, lungs or elsewhere; the abscess was apparently primary in the brain substance. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT, No. 29.
JULY 22, 1907.

1. *PLACZEK, S., AND KRAUSE, F. *A Case of Circumscribed Arachnitis Adhesiva Cerebralis.*
2. *PEISER, J. *The Habitual Vomiting of Nursing Infants.*
3. LEWANDOWSKY, M. *Apraxia in Movements of the Eyelids.*
4. FUNCK, C. *The Biology of Pernicious Blood Diseases and of Malignant Cell-Elements.*
5. NEUMANN, H. *Metacresolanytol in the Treatment of Erysipelas.*
6. *MOSES, F. *The Present Position of the Atoxyl Treatment of Syphilis.*

1. Placzek and Krause give the clinical history and operation findings of a most interesting case. The patient, a woman of twenty-five, with good family and previous history, began to suffer from vomiting and unsteadiness in gait. When seen she complained of headache, double vision, dizziness and repeated vomiting. There was a complete paralysis of the right facial nerve, without reaction of degeneration; slight ptosis of left eyelid was noted. The movements of the right eye were lost but for a slight movement upward and downward. The left eye could only be moved very slightly outward, and a slight nystagmus was also present on this side. Retinæ were normal, also optic nerves were both normal. The gait was staggering, the patient falling now and then to the left side. Standing with eyes open, the patient swayed to a marked degree. On these findings a diagnosis of tumor in the posterior fossa was made. Against actual cerebellar tumor was the absence of optic neuritis, and of stiffness of the neck. At operation, towards the median line, below the cerebellar hemisphere, was found a tense bladder-like cyst, the walls of which were composed of normal arachnoidea. The cyst was emptied of a large amount of clear fluid. Puncture of the ventricles gave no increase of fluid. The patient made a long, slow convalescence, complicated by sudden and severe attacks of fever between 103° and 105°, lasting from one to three days, and separated one from the other by afebrile periods of from five days to two weeks, without localizing symptoms of any kind, and without symptoms suggestive of sepsis. These febrile periods disappeared after four months and the patient recovered completely. All other causes of fever having been carefully ruled out, the authors conclude that in this case the febrile periods were of cerebral origin and due to the manipulation of the region of the medulla, necessary at the operation.

2. Peiser recognizes three forms of habitual vomiting in infants. The first occurs in healthy appearing babies who receive too much food at one feeding, or are fed too often, or the milk is too rich in fat. These cases are easily controlled by regulating the amount and the number of feedings, or by cutting down the fats. A second form occurs in children who though apparently well nourished are of nervous temperament, awake easily, cry much and are easily irritated. Here the vomiting occurs from two to four hours after feeding, when normally the stomach should be empty. Often in this class of cases laryngismus stridulus or tetany occurs. In certain families with marked neurasthenic tendency, all the children are subject to this form of habitual vomiting, which is extremely resistant to treatment and finally disappears spontaneously. The author considers this form to be due to a pyloric spasm, more easily excited in such highly strung children.

The third form occurs in badly nourished weak infants, and is more a regurgitation than an actual vomiting. In observations on such children with the x-ray, the stomach was dilated and the period of gastric digestion prolonged. The vomiting in this latter class of cases takes place three or four hours after feeding. The cause is probably a weakness of the musculature of the stomach and particularly of the cardiac orifice, which allows of a regurgitation of food. The treatment of this third form is general, and not until the general condition of the child is normal will the regurgitation disappear.

6. Moses reviews the success of the treatment of syphilis by atoxyl as published up to date. With but few exceptions each observer has been able to report certain cases of syphilis which have done well under atoxyl, but the consensus of opinion is that its efficiency is not nearly so high as that of mercury and iodides. In a series of 19 cases of syphilis treated with atoxyl by the author 5 were cured, and 7 improved greatly under the treatment. Toxic symptoms referable to atoxyl were diarrhea in 7, albumin in the urine in 3, albumin with casts in 1 case. Disturbances of sight were noticed in none of the cases. The injections were accompanied by no local reaction, and were painless. Moses concludes that in all cases where for any reason mercury cannot be borne or is contra-indicated, atoxyl should be tried. The dosage should be carefully regulated, never more than 3.5 gm. (gr. lii) in all. Atoxyl is by no means so harmless a drug as has been claimed.

[R. D.]

Die Therapie der Gegenwart.
August, 1907.

1. Klapp, R. *Narcosis with Artificially Diminished Circulation.*
2. *Brugsch, T., and Schittenhelm, A. *Gout, its Origin and Treatment.*
3. Curschmann, H. *Artificial Increase in Pressure of the Cerebrospinal Fluid as an Aid in Lumbar Puncture.*
4. Hirschfeld, H. *The Prognosis of Pernicious Anemia.*
5. Kohnstamm, O. *Hypnotic Treatment of Disordered Menstruation.*

2. The weightiest factor in gout is the "uricemia," first noted by Garrod. The source of the uric acid in the body is the purin bases, derived in turn from the breaking up of nuclein and nucleic acid by the action of ferments. In man the source of uric acid in the urine is twofold: (1) endogenous, from the breaking down of the nuclei of cells in the body and (2) exogenous, from the diet. The question of uric acid content of the blood also depends upon the above factors, and it has been found in a series of observations on patients with gout, who were kept for months on a purin-free diet, that there was a constant though small amount of uric acid in the blood. From this it is fair to suppose that in gout there is a disturbance of endogenous uric acid metabolism as well as of the exogenous. Three possible causes of increased uric acid content of the blood are: (1) diminished excretion, (2) diminished uricolysis, (3) increased uric acid production. The authors find that the real factors are a diminished uricolysis through diminished fermentative action. They find also an increase in the excretory period for exogenous uric acid; in other words, we have an anomalous condition of the entire nuclein metabolism. In a gouty person, the increase of nucleins in the diet will precipitate an acute attack. It has been found that the addition of HCl to a saturated watery solution of uric acid will lower the solubility, and sodium salts have the same effect on a saturated watery solution of monosodium urate. Working along these lines Loghem injected uric acid, subcutaneously, into rabbits, and found that the deposit of urates in the tissue could be prevented by large doses of HCl, which lowered the sodium content of the body fluids. By giving sodium bicarbonate, instead of HCl, the deposit was hastened and increased. Other observers have carried out the same experiments with like results. These observations show that the early alkali treatment of gout was of no value, and probably increased the severity of the attack, and also that Falkenstein's empirical observation that gouty persons improved under the use of HCl had a physiological basis. The authors consider HCl of greatest value in the treatment of gout. As in diabetes the metabolism of sugars is upset, so in gout the nuclein metabolism is impaired. We must therefore regulate the diet, so that it shall be purin-free, and continue so over long periods, to be regulated by the severity and frequency of the acute attacks. This does not mean a pure vegetable diet, by any means, as the alkali of the vegetables will precipitate acute attacks. First in importance in the diet of gout, are carbohydrates, in the form of cereals, and then fats. Albumin is allowed, so long it is not meat albumin. Vegetables and fruits should be given with care. The diet must not be too rich in salt. The patient should receive 20 or 30 drops of dilute HCl three times a day. Much exercise is to be recommended, as it has been shown that exercise has a direct effect on the nuclein metabolism. The authors have seen no good results in "washing out" the uric acid with alkaline waters; also little can be said in favor of the drugs which are given as solvents of uric acid (piperazin, etc.). The drinking of large quantities of plain water is to be recommended. It must be remembered that régime in all things is as important in gout as in diabetes and nephritis.

[R. D.]

Zeitschrift für Klinische Medizin. Bd. 62.

(Concluded. See Boston Medical and Surgical Journal, Sept. 12, 1907, p. 380.)

12. *Mannaberg, J. *Intermittent Fever in Visceral Syphilis, Especially Syphilis of the Liver.*
13. *Kobler, G. *Severe Intestinal Disturbances Caused by Malaria.*
14. Réthi, L *Headache of Nasal Origin.*
15. Baumgarten, E. *Multiple Papillomata of the Larynx.*
16. Sendziak, J. *The Diagnosis and Treatment of Laryngeal Carcinoma.*
17. Gleitsmann, J. W. *A Contribution to the History of Laryngology in the United States since the Introduction of the Laryngoscope.*
18. Kienbock, R. *A Case of Diaphragmatic Hernia with X-ray Examination.*
19. *Helly, K. *So-called Atypical Cases in Hematology.*
20. *Leiner, K. *Palpable and Movable Kidneys in Babies.*
21. Mucha, V. *The Bacterial Flora of the Mouth.*
22. *Reitter, K. *Renal Tuberculosis and Arterial Hypotension.*
23. *Bauer, F. *The Relations of Blood Pressure to Tuberculin Injections.*
24. *Minkowski, O. *Esophageal Cardiograms in Cardiac Arrythmia.*
25. Heymann, P., and Meyer, A. *The Etiology of Edema of the Larynx.*
26. Onodi, A. *Spontaneous Healing of Empyema of the Antrum of Highmore and the Value of Endonasal Irrigation.*
27. Sternberg, M. *Skoda's Terminology of Cardiac Action: An Historical Study.*
28. *v. Weismayr, A. R. *Pleomorphism of the Tubercle Bacillus.*
29. Weil, M. *A Case of Cavernous Lymphangioma of the Posterior Wall of the Pharynx.*
30. *Landsteiner, K. *Squamous Cell Carcinoma and Sarcoma of the Biliary Tract in a Case of Cholelithiasis.*
31. Reinhard, P. *The Relation between Diseases of the Nose and the Eye.*
32. *Alexander, G. *Tumors of the Acoustic Nerve.*
33. Weinberger, M. *The Diagnosis and Clinical Course of Mycotic Embolic Aneurisms, Rupture of Blood Vessels, and Influenzal Endocarditis.*
34. *Weiss, H. *The Diagnosis of Slow Obstruction of the Pulmonary Arteries.*
35. Löwy, H. *Glandular and Other Cysts in Nasal Polypi.*
36. *v. Schrötter, H. *The Diagnosis of Tumors of the Lung; Bronchogenic Carcinoma with Glycogen Formation; with Remarks on its Histogenesis.*

12. The possibility of the existence of an intermittent fever, in form entirely similar to that of malaria, but the result of visceral syphilis, is but little recognized and the

condition is one that might readily escape diagnosis, and, what is more important, fail to get appropriate therapy. Mannaberg reports several of these cases, which under treatment with mercury and iodide rapidly recovered, with decrease in size of the liver.

13. Kobler has observed cases which present a picture suggestive of Asiatic cholera, with marked gastric and intestinal disturbances, in which examination of the blood reveals a malarial infection. Quinine cures these cases. In regions where cholera is to be expected, such cases may be incorrectly diagnosed as cholera and a useless quarantine be established. Consequently, the possibility of malaria with intestinal manifestations is to be borne in mind.

19. The more exact hematologic studies of recent years have revealed many cases presenting variations from the common types. Helly believes such cases should be reported in detail, in order that later data may be at hand for a proper classification of the blood diseases. At present a satisfactory grouping is not possible. He describes a case presenting many of the characteristics of pernicious anemia, combined with those of cirrhosis of the liver. A peculiarity of the post-mortem findings was the occurrence in the bone marrow of many foci composed of cells resembling lymphocytes. [The reviewer believes it is important to record such cases, but more minute hematologic study during life than was given these cases is necessary before such data will be of much aid in making a final satisfactory classification.]

20. According to Leiner, in infants the kidneys can be palpated very frequently, especially if there is emaciation, and often the kidneys are slightly movable. Such, however, is not to be regarded as a pathological condition. A true wandering kidney (a pathological condition) is very rare in infants.

22. See " Progress in Theory and Practice of Medicine"; blood pressure, Boston Medical and Surgical Journal, 1907, clvii, p. 222.)

23. See same.

24. An understanding of cardiac arrythmia has received great assistance from the graphic method of simultaneously studying the radial pulse, cardiac impulse and venous pulsations by means of tracings made with receiving and recording tambours. In many cases, however, there is no palpable apex impulse or visible venous pulsation in the neck. In such cases Minkowski has given us a method which consists of a graphic record of the pulsations of the left auricle, made by means of a stomach tube in the esophagus. The pulsations of the left auricle are transmitted through the anterior wall of the esophagus. With an inflated membrane in the esophagus connected with the opening in a stomach tube, such pulsations can be transmitted and recorded on a revolving drum. These can be compared with ventricular pulsations recorded at the apex, or in peripheral arteries. The present paper, by means of several cases, shows the applicability and usefulness of the method. Also its limitations are touched upon.

28. Weismayr describes a case of pulmonary tuberculosis, in whose sputum there were thread-like and branching forms of tubercle bacilli during a period of eight days. Many other examinations during a period of two years showed only the ordinary forms. Pleomorphic forms occur in old cultures and under certain artificial conditions, but they are uncommon in sputum.

30. A case report. The squamous cell carcinoma was confined to the mucosa of the gall bladder. The sarcoma was of the myosarcoma type and metastasized in the liver. In the metastases there were osteoid areas.

32. A report of two cases with a careful study of the changes produced in the structure of the ear.

34. The most remarkable thing about this case, reported by Weiss, is the very great extent of lung whose blood supply had been gradually cut off by thrombosis, without producing any very severe symptoms. The diagnostic point of most importance in obstruction of pulmonary arteries is the sudden appearance of a systolic murmur heard in the second and third interspaces near the sternal margin and accompanied by clear valvular heart sounds.

36. H. v. Schrötter gives a very careful clinical and pathological study of a case of bronchial carcinoma. In the former he emphasizes the importance of bronchoscopy and x-ray examination as means of accurate early diagnosis. The tumor in this case he believes to have originated in a large bronchus and extended into the lung. The cells were particularly rich in glycogen. The tumor was of the flat cell type. [H. A. C.]

Revue de Chirurgie.

August, 1907.

1. Estor, E. *Congenital Dislocation of the Wrist.* (Continued.)
2. Gayet, G. *Note on a Mixed Tumor of the Cheek.*
3. *Mally. *The Present Status of Phototherapy.*
4. Pichon, R. *Hernia of Muscles.* (*Myocèles.*) (Continued article.)
5. *Baumgartner, A., and Huquier, A. *Subastragaloid Dislocation of the Foot.*

3. Mally calls attention to the great success of the Finsen light in the treatment of lupus. He does not agree with the view, however, which explains this therapeutic action by assuming a bactericidal power for the light. On the contrary, he feels that we have here to do with a counterirritant, acting in the same way as scarification, or the application of chemicals, but having the remarkable quality of causing neither pain nor intolerance. The great value of phototherapy lies in the fact that it is painless. Cases of lupus should be exposed daily, for an hour or more, to the action of the light, over a period of about five or six months. This is followed by a suspension of all treatments for about the same period, at the end of which they are resumed. The average case is cured at the end of this second period of treatment.

5. Subastragaloid dislocation of the foot, if recent and uncomplicated, should be reduced immediately after the accident. Lateral dislocations are reduced by abduction for internal dislocation, or adduction for external, at the same time pushing the head of the astragalus backward. A second form of lateral dislocation can only be reduced after having first placed the foot in forced flexion on the leg. Antero-posterior dislocations are to be reduced by downward traction of the foot as a whole, in the long axis of the leg, followed by pushing the foot either forward or backward. Recent irreducible dislocations, without external wound, should be treated by arthrotomy and removal of whatever hinders reduction. It may be necessary to remove the head of the astragalus before reposition of the body of the bone can be accomplished. Occasionally, even this does not suffice, in which case the astragalus must be removed as a whole. Compound, infected dislocations should be immediately treated by astragalectomy and drainage. The authors give the results of 23 astragalectomies as follows: (1) Good functional result in 13; (2) ankylosis in 6; (3) secondary amputation in 1; (4) death from infection in 2; and (5) one case untraced.

[W. C. Q.]

Miscellany.

THE MASSACHUSETTS MEDICAL SOCIETY.

MEETING OF THE COUNCIL.

A stated meeting of the Council was held in the Medical Library, Boston, on Wednesday, Oct. 2, 1907.

The meeting was called to order at 12 noon by the president, Dr. G. W. Gay. Eighty councilors were present.

Delegates to the meetings of other state medical societies were appointed as follows: Vermont, Drs. C. K. Cutter, of Somerville, H. G. Stetson, of Greenfield; New York, Drs. H. F. Vickery, of Boston, Henry Colt, of Pittsfield.

On motion of Dr. Wheatley it was voted that a committee of three, of which the president of the society shall be one, be appointed to consider and report at the next meeting of the Council what action, if any, it will recommend the Society to take in regard to defending its members in suits for malpractice.

The following were appointed to constitute the committee: Drs. G. W. Gay, F. G. Wheatley, C. H. Cook.

Attention was called to the request of the American Medical Association that the Society take action regarding the establishment of branch associations of the American Medical Association, the North Atlantic branch to consist of the State Medical societies of the New England states and of New York and New Jersey.

Voted, to refer the matter to the Committee on State and National Legislation to report thereon at the next meeting of the Council.

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Correspondence.

LETTER FROM PARIS.

[*From our Special Correspondent.*]

Recent Papers from Professor Chantemesse.

Paris, Sept. 13, 1907.

Mr. Editor: The early summer months were marked this year in Paris by the appearance of an unusual series of interesting medical papers, of which I shall endeavor to give you the gist in these fall letters.

The most important one, Calmette's ophthalmo-reaction to tuberculin, I dealt with in my letter of a fortnight ago. To-day I shall consider two communications from Professor Chantemesse, one of the less-known members of the Paris Faculty, but a hard worker for all that. As one of these papers is a direct outcome of Calmette's experiments, we can suitably take it up first.

THE OPHTHALMO-REACTION TO THE TYPHOID TOXIN.

Chantemesse, as you probably have heard, is the author of a serum for the treatment of typhoid fever. This serum he has now employed for a number of years, and according to a statistical table published in 1904, it has in his hands given the following results: Whereas during a period of four and three quarters years in the fourteen largest general hospitals of Paris there were 3,595 cases of typhoid fever, with 753 deaths, an average rate of 17.3%, in Chantemesse's wards and for the same length of time (April 1, 1901, to Jan. 1, 1906) there were 712 cases, with 27 deaths, an average rate of 3.7%. This is a truly remarkable showing, when we bear in mind the length of the period it concerns, the fact that these are hospital patients and the efficiency of the Paris hospital nurse.

But there appears to be something mysterious about this serum, which would seem to be confined to the practice of Chantemesse and about three other physicians. If it really is efficacious, and certainly these figures indicate that it is, how comes it that the serum is not prepared for the profession at large and used by them, in so common and serious a disorder as typhoid fever?

Well, Chantemesse has been trying to adapt the ophthalmo-reaction method to typhoid fever, and the idea is an interesting one and may lead to developments. It is self-evident that in importance it is not to be mentioned in the same day with Calmette's affair, the early and visible diagnosis of a case of typhoid not being often a matter of any great moment — you have only to wait and you will find out all right! Still, curiously enough, it might be of considerable use to us physicians whose practice consists of traveling Americans. We are frequently called on to see patients just sailing for home, but presenting a doubtful condition, — headache, slight rise of temperature, furred tongue and constipation, a state of affairs having existed already for several days. The question that then arises is whether the case is merely one due to much traveling and will yield to starvation and laxatives, or whether it is one of incipient typhoid, and the patient ought to be advised to give up sailing by a certain steamer, often a serious matter, especially at this time of year. In such instances a means of early diagnosis, otherwise I believe impossible, would unquestionably be of value.

Anyhow, Chantemesse proceeds just as Calmette does. He takes a strong solution of typhoid toxin, precipitates it by means of pure alcohol, and obtains a powder, which, at the dose of 1-50 mgm., dissolved in a drop of water and instilled in the eye, gives in suitable cases an ophthalmo-reaction just like Calmette's, and with all its characters, — rapidity, harmlessness, brief redness when no typhoid is present, more serious and prolonged reaction in positive cases, etc. The only troublesome point will be how to have the preparation always at our disposal!

However interesting these facts may be on purely scientific grounds, and as an example of what may prove to be a general law of pathology, it is difficult to believe that the method is destined to turn out to be of much value to the practising physician, unless in very exceptional instances.

ON THE PROPHYLAXIS AND TREATMENT OF PERITONEAL INFECTION AFTER TYPHOID PERFORATION, BY MEANS OF THE HYPERLEUCOCYTOSIS INDUCED BY HYPODERMIC INJECTIONS OF SODIUM NUCLEINATE.

This is the title of Professor Chantemesse's second paper, in which he begins by recalling the fact that the gravest danger to which typhoid patients are exposed is peritonitis following on perforation; the frequency of which accident, in a compilation of about 20,000 cases, he finds to be 2½%.

This complication, when abandoned to itself, is almost invariably fatal. It can only be cured by a surgical intervention, and this intervention must furthermore be immediate. Physicians and surgeons of all countries agree that after a lapse of eight or ten hours from the occurrence of perforation the patient's chance, even from surgery, is hopeless; the perforation can be closed, but the evolution of the peritoneal inflammation, to which it has given rise, will continue to a fatal issue.

The problem then is to diagnose perforation as soon as it occurs; are there signs that render this possible?

Going over the symptoms that have been described, Chantemesse observes that none of them is at all characteristic of actual perforation: they are all dependent on the peritoneal reaction the perforation has occasioned, and, as mentioned above, when peritoneal infection has once got under way, the time for intervention is past. In addition to this, the symptoms of peritoneal reaction may also be due to peritonitis by propagation, without perforation; or, they may either be very slight or be altogether wanting, at the early stage of a very small perforation.

The quandary then of the practitioner and his moral responsibility are very great; imperative necessity for certainty in diagnosis, a serious surgical intervention being the outcome; and no means of attaining this end!

In presence of this grave *impasse* Chantemesse has made an interesting attempt to at least improve the situation *by increasing the patient's power of resistance to peritoneal infection;* and he raises the question whether we may not be able to prevent, check, or at least moderate this peritoneal inflammation, to oblige it to develop less rapidly, to put the patient in a better posture against it, and to bring about a state of affairs such that the surgeon on opening the abdomen will find the serous membrane in a condition of vigorous defensive reaction.

Typhoid intestinal perforation, left to itself, carries off the patient in from two to five days; Chantemesse thinks that by inducing hyperleucocytosis in the blood and peritoneum by means of hypodermic injections of sodium nucleinate, the patient's resistance to peritoneal infection may be made to extend over a period of *ten* days or more, so as possibly, in some few cases, to admit of spontaneous recovery when the perforation is small and placed in such a way as to allow the omentum to obliterate it.

The human system defends itself against the invasion of germs by the natural function known as phagocytosis;

it is very probable that a number of remedies, whose efficacy has stood the test of time, such as quinine in malaria, antitoxin in diphtheria, collargol in pneumonia, act largely by the hyperleucocytosis they induce.

Now there is among the therapeutic agents that produce hyperleucocytosis, one, nuclein, that has attracted Chantemesse's attention, and which he has employed in sterile hypodermic injections of a 1% solution in artificial serum. Six to eight hours after such an injection, hyperleucocytosis of a mononuclear type is observed; this increases during about forty-eight hours, and then gradually disappears in four or five days. The increase in white globules is very considerable, their number doubling, or even more.

When a dose of 1 cg. is injected *into the vein* of an arm, the patient feels in two or three hours slight rigors, soon followed by a rise of temperature to 104°. This aseptic pyrexia, a defensive process, is of short duration, is accompanied by very manifest leucocytosis, and ends in the space of a few hours.

The preferable way of giving the remedy is *subcutaneously.* Forty centigrams of sodium nucleinate dissolved in 40 cc. of sterile normal saline solution and administered in one or two injections beneath the skin of the abdomen or external aspect of the thigh, produce in a few hours a slight degree of local pain. In twenty-four hours the region sometimes swells slightly and reddens, which signs all disappear in another twenty-four hours. Two or three days later a second injection can be given, and again a third, lessening the dose each time; hyperleucocytosis is in this way maintained and favors the system in the struggle in which it is engaged.

The opsonic index, or stimulating power of the patient's serum as regards his leucocytes, can be measured before and after each injection. In a case of intestinal perforation treated by sodium nucleinate, Chantemesse made this calculation, and found that in twenty-four hours the opsonic index passed from 1.60 to 2.50, while the peritoneal inflammation was found to have manifestly receded.

From a clinical point of view, here are the results of Chantemesse's observations: he has had several typhoid patients who, after intestinal hemorrhage, experienced severe pain in the abdomen, with reaction, muscular defense and disappearance of liver dullness. An injection of nucleinate, given as soon as possible after the appearance of pain, removed it almost completely in twenty-four hours; the day after the injection the abdomen was puffed up, but not painful, resisted palpation, and in some cases conveyed the impression of swollen and immobilized intestinal loops, as is seen in tubercular peritonitis. By repeating the nucleinate injections two or three days later, the peritoneal symptoms all gradually disappeared.

It is, of course, venturesome to claim that these were cases of small intestinal perforation. Still, the following instances that ended fatally seem to throw considerable light on the question.

In two cases, with large intestinal perforation seen at post-mortem, the patients who were not operated on lived *twelve days* after the perforation occurred, thanks to two or three nucleinate injections. And even in these cases the injections were not made at the beginning, but fifteen to eighteen hours later, when the classical signs of peritonitis by perforation were already present. Twenty-four hours after the injections, the patient's situation had noticeably improved to such an extent than an operation could have been undertaken with hopes of success; but this they declined. And when they died, at the end of twelve days, from slow peritonitis, having produced abdominal retraction, the peritoneum was found in a state of systematic defence, the perforations themselves, in spite of their size, being fairly well obliterated by the omentum and organized connective tissue.

By the side of the advantages connected with this powerful therapeutic agent, we must place its drawbacks. The local pain has been already mentioned. In addition to this the sodium nucleinate puts the system to some strain. It produces in a short time, and in proportion to dose, a rise of temperature and general distress, which although lasting but a few hours, are not specially advantageous to a sick person.

In the case of a healthy person, about to undergo laparotomy the following day, an injection of 40 cg. will prepare the peritoneum admirably for possible operative infection, and without appreciable inconvenience to the patient. This would, however, no longer hold true, if with a very ill patient the operation and injection were to be carried out simultaneously, for then the double shock would be cumulative.

The difference between the action of intravenous injections of collargol in infectious disorders and the hypodermic use of sodium nucleinate appears to be solely one of *degree,* largely in favor of the latter.

The conclusions that Chantemesse has drawn are the following: sodium nucleinate seems to act by a temporary though quite prolonged increase of the phagocytic function; its effects are very marked, and its dose must be adapted to each individual case.

As a preventive it is an energetic remedy against infection. When infection already exists, the nucleinate is useful if applied at the beginning of this complication. Its benefit can be guaged by the degree of defensive reaction it induces, provided the patient be in a state to supply and stand a vigorous reaction.

The hyperleucocytosis it gives rise to is particularly useful in preventing or moderating the evolution of a case of peritonitis starting in the organs covered by that serous membrane, whether spontaneous or surgical. Even if it does not cure acute peritonitis, it increases the chance for a successful outcome to a consecutive surgical intervention.

"Spectator."

TUBERCULOSIS AT THE LONG ISLAND HOSPITAL.

Boston, Oct. 6, 1907.

Mr. Editor: In the "Medical Notes" of last week was a statement regarding tuberculosis at Long Island Hospital, with a call on the trustees of the Consumptives' Hospital to do something to relieve the congestion there.

It seemed in reading the Note as though your reporter must have written the same in a hurry, and without much consideration of the facts in the case.

There is, consequent to the campaign of education that has been going on for years, a decided demand for beds in which tubercular patients may be cared for, but outside of the Long Island Hospital, the city has only been able to provide a few additional beds, mostly in the Holy Ghost Hospital in Cambridge. The trustees of the new Consumptives' Hospital are working as rapidly as possible to get their building started. But under the existing economic conditions they will be able to provide only a small part of the needed beds, and that not at once. Certainly, the Board of Trustees of Pauper Institutions must be prepared to care for all poor people presenting themselves, whatever the pathological condition with which they may be suffering. Consequently, it would seem as though a careful consideration of the field would show them that the Long Island Hospital must be prepared to treat in a proper manner many tuberculous patients for a long time to come, and that they must make arrangements so to do. Meantime the other board will doubtless do all in its power to build as large a hospital as possible for tuberculosis patients.

Very respectfully yours,
A. K. Stone, M.D.

[Dr. Stone has apparently read into our notice of tuberculosis at the Long Island Hospital a meaning which it was not our desire to convey. It is true that this hospital is overcrowded with tuberculous patients to the detriment of those suffering from other diseases, and it is no less true that it is desirable for the Consumptives' Hospital trustees to take as early measures as possible to provide for this class of cases unless separate buildings can be provided at Long Island. We recognize perfectly the duty of the Long Island Hopital in respect to tuberculosis, but the fact must not be lost sight of that if tuberculous patients are to be treated there, they must be properly provided for, both in their own interest and in that of patients suffering from other diseases. The present situation is altogether unfortunate. — Ed.]

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPT. 28, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	1,365	524	Quincy	9	4
Chicago	—	—	Waltham	11	2
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	3	1
Baltimore	169	51	Brookline	4	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	—	Chicopee	8	4
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	3	2
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	4	3
Providence	65	23	Hyde Park	5	2
Boston	200	71	Melrose	—	—
Worcester	44	17	Newburyport	—	—
Fall River	52	29	Woburn	3	1
Cambridge	23	12	Marlboro	6	1
Lowell	39	21	Westfield	6	4
Lynn	23	6	Peabody	—	—
New Bedford	32	20	Revere	3	1
Springfield	27	8	Attleboro	1	—
Lawrence	20	10	Clinton	1	1
Somerville	19	5	Adams	1	1
Holyoke	27	15	Gardner	3	2
Brockton	7	1	Milford	—	—
Malden	8	4	Watertown	3	2
Chelsea	19	5	Plymouth	—	—
Salem	15	6	Weymouth	2	1
Newton	9	3	Framingham	4	1
Haverhill	15	2	Southbridge	2	—
Fitchburg	—	—	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 5, 1907.

L. H. WHEELER, assistant surgeon. Detached from the "Raleigh," when placed out of commission, and ordered home to await orders.

G. L. WICKES, assistant surgeon. Detached from the "Cincinnati," when placed out of commission, and ordered home to await orders.

B. H. DORSEY, passed assistant surgeon. Ordered to the "Washington."

M. K. JOHNSON, surgeon. Detached from the Naval Training Station, Charleston, S. C., and ordered to the Naval Training Station, Newport, R. I.

H. A. DUNN, passed assistant surgeon. Ordered to additional duty with Naval Recruiting Party No. 2.

H. W. COLE, JR., assistant surgeon. Orders to the Naval Training Station, Newport, R. I., revoked; detached from the "Alabama" and ordered to the Naval Training Station, Charleston, S. C., Oct. 6.

A. B. CLIFFORD, assistant surgeon. Ordered to duty at the Naval Medical School Hospital, Washington, D. C.

E. L. JONES, assistant surgeon. Detached from the "Milwaukee" and ordered to the "Maryland."

The following officers have been ordered to the Naval Medical School, Washington, D. C., for course of instruction: Assistant Surgeons A. B. HAYWARD, G. D. HALE and J. T. MILLER.

APPOINTMENTS.

DR. PHILIP COOMBS KNAPP has been appointed Clinical Instructor in Diseases of the Nervous System at the Harvard Medical School for a term of three years.

DR. ROBERT BATTEY GREENOUGH has been appointed Instructor in Surgery at the Harvard Medical School for a term of three years.

DR. H. M. SWIFT has been appointed Assistant Neurologist at the Long Island Hospital, Boston.

SOCIETY NOTICE.

LECTURES BEFORE THE HARVEY SOCIETY, WINTER OF 1907-08. — The program of the Harvey Society course of lectures for the coming year is as follows: Oct. 26, 1907. Prof. E. O. Jordan, University of Chicago, "The Problems of Sanitation." Nov. 16. Prof. James Ewing, Cornell University, "Etiology of Tumors." Nov. 30. Prof. D. L. Edsall, University of Pennsylvania, "The Bearing of Metabolism Studies on Clinical Medicine." Jan. 11, 1908. Prof. Ernest H. Starling, University of London, "The Chemical Control of the Body." Jan. 25. Prof. George W. Crile, Western Reserve University, "Shock." Feb. 8. Prof. Joseph Jastrow, University of Wisconsin, "Subconsciousness." Feb. 22. Prof. Otto Folin, Harvard University, "Problems of Chemistry in Hospital Practice." March 7. Prof. Ross G. Harrison, Yale University, "Embryonic Transplantation and the Development of the Nervous System." April 11. Prof. E. A. Schäfer, University of Edinburgh, "Artificial Respiration in Man." The lectures are given under the patronage of the New York Academy of Medicine and are held at the Academy Building, 17 West 43d Street, on Saturday evenings at 8.30 o'clock. They are intended for the medical profession and all interested are cordially invited to attend them.

RECENT DEATH.

ALFRED HENRY GOULD, M.D., M.M.S.S., died in Boston, Oct. 2, 1907, aged thirty-four years.

BOOKS AND PAMPHLETS RECEIVED.

Trypanosomes and Trypanosomiases. By A. Laveran and F. Mesnil. Translated and much enlarged by David Nabarro, M.D., B.Sc., D.P.H., London. Illustrated. Chicago: W. T. Keener & Co. 1907.

A Directory of the Charitable and Beneficent Organizations of Boston, together with Legal Suggestions, Laws Applying to Dwellings, etc. Compiled by The Associated Charities of Boston. Fifth edition. Boston: The Old Corner Bookstore, Inc. 1907.

Year Book of the Medical Association of the Greater City of New York. 1907.

University of California Publications in Physiology. The Chemical Character of the Process of Fertilization and Its Bearing upon the Theory of Life Phenomena. By Jacques Loeb.

How to Cure Spleens for Food. By Edward T. Williams, M.D.

Harmful Involution of the Appendix. By Robert T. Morris, M.D. Reprint.

Heart Clots in Pneumonia. By Beverley Robinson, M.D. Reprint.

United States Department of Agriculture. Bureau of Plant Industry. Bulletin No. 112. The Use of Suprarenal Glands in the Physiological Testing of Drug Plants. By Albert C. Crawford. Washington. 1907.

Yellow Fever Institute Bulletin No. 16. Yellow Fever Etiology, Symptoms and Diagnosis. By Joseph Goldberger. Washington. 1907.

Public Health and Marine-Hospital Service of the United States. Hygienic Laboratory. Bulletin No. 39. The Antiseptic and Germicidal Properties of Solutions of Formaldehyde and Their Action upon Toxines. By John F. Anderson. Washington. 1907.

Lippincott's New Medical Series. Edited by Francis R. Packard, M.D. Rontgen Rays and Electro-therapeutics. With chapters on Radium and Phototherapy. By Mihran Krikor Kassabian, M.D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1907.

Practical Diagnosis. The Use of Symptoms and Physical Signs in the Diagnosis of Disease. By Hobart Amory Hare, M.D., B.Sc. Sixth edition, revised and enlarged. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Fiske Fund Prize Dissertation. No. I. Diet in Typhoid Fever. By John Benjamin Nichols, M.D.

Ueber das spizifisch Menschliche in anatomischer, physiologischer und pathologischer Beziehung. Von Dr. Ludwig Hopf. Stuttgart: Fritz Lehmann. 1907.

Obstetrics. A Text-Book for the Use of Students and Practitioners. By J. Whitridge Williams. Second enlarged and revised edition. Illustrated. New York and London: D. Appleton & Co. 1907.

Diseases of the Genito-urinary Organs and the Kidneys. By Robert Holmes Greene, A.M., M.D., and Harlow Brooks, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

The Differentiation of Black Pigment Found in the Liver, Spleen and Kidneys from Coal Dust or Other Foreign Deposits. By Frederick Gaertner, A.M., M.D., LL.D. Reprint.

The Hand of Iron in the Glove of Rubber. By Robert T. Morris, M.D. Reprint.

Address.

THE PRESIDENT'S ADDRESS TO THE SIXTH INTERNATIONAL DERMATOLOGICAL CONGRESS HELD IN NEW YORK, SEPT. 9-14, 1907.

BY JAMES C. WHITE, M.D., BOSTON,
Professor of Dermatology, Emeritus, Harvard University.

My Colleagues from far and near: It is my high duty and privilege to greet you in assembly, to welcome you to this Sixth International Congress of Dermatology, and to all of you, my countrymen and residents of other lands, who had share in placing me in this most honorable office, to offer my sincere thanks.

Many of you are passing through novel experiences; you have been living on the vast tracts of ocean, and have learned how small a part of the world are the spots of earth you call home. You have come to a new and younger land and may be expecting to find much that is strange to you. If you travel far over our vast continent you will indeed see a great diversity in its peoples, immense inland seas, rivers which in size dwarf your own to brooks, enormous chains of towering mountain peaks, lofty cataracts and deep cañons, marvellous basins and geysers, and magnificent forests of ancient and gigantic trees, overtopping even our heaven-aspiring, Babel-like edifices. We trust you will visit them all. But in your friends and colleagues who stand here on the edge of this new world to meet you with open arms and warm hearts, and who will try to make you feel that this magnificent city is another home to you, you will find nothing novel or strange. We are just as yourselves. In no other land could a great congress be held where visitors would find so close a tie of blood kinship in their hosts.

You Germans and Austria-Hungarians will see right around you more of your race than in almost any city of the Fatherland. You from Holland will find in this town they founded representatives of your oldest and purest families still. You Latins will read the names and hear the tongues which will make certain districts seem as if you were at home again. You Frenchmen may live here as in France, eat the dishes of your best chefs, see such masterpieces of modern French art as you will scarcely find at home, and associate with the best old Gallic stock in our many Huguenot families; and in one of our states, founded by your enterprising ancestors, your old names, your old customs still flourishing. And you of the North, repeating the Viking's earliest voyage to the West, will find in our central regions three mighty states, called New Scandinavia, with an imported but dwindling remnant of your old enemy, Lepra. As for you of Great Britain, are not you and we mostly of one and the same motherhood? Shakespeare and Bacon, Alfred and Elizabeth, and hosts of other illustrious names are as much our ancestors and those of our near and dear sister Canada as they are yours, and far more speak here the common mother-tongue than on your own soil.

Here, then, and in the American part of this congress, you will all find representatives of your own nationalities. Moreover, in some of us the solution of that interesting question in ethnology, — What is the outcome of a mixture of these leading races of mankind?

And no doubt some of you have been wondering on your way hither, what sort of physicians, what sort of dermatologists, shall we find in these men of the Western Continent? Some of you, 'tis true, have met some of us in Europe and have, no doubt, read some of our writings; but all of you do not know all of us in this way, and you perhaps do not know us and our literature as well or as generally as we know you and yours. It is one of the most important functions of this international league to promote our mutual acquaintance. Now there are no great differences between us, you will find. I have just alluded to the identity or similarity of stock. How has professional training affected it? I need not speak of our common schools or of the academic departments of our universities. I grant that yours may be a little more thorough, as the influences of ours are more generally diffused. The period of required professional study is longer with you than it has hitherto been with us, but now the best educated young men amongst us do not obtain their degree of Doctor of Medicine before they are twenty-six or twenty-seven years old; and after that may come further study in European schools. We may all alike read the works of the great masters in medicine of all nations. We have at home only too many medical schools; we have one hundred and twenty-five professors and teachers of dermatology. We have large and well equipped special laboratories and clinics, perhaps the largest and most magnificent medical school building in the world, and we have produced some admirable and exhaustive treatises and countless papers on dermatology. Most of our teachers have had the advantage of studying our subject with the most distinguished teachers of Europe, living and dead. You see, therefore, that you should find us very much the same as yourselves, and that we meet as equals, alike prepared to study and discuss the questions and cases which shall be presented for our consideration, and equally desirous of contributing to the advance of our department of medicine. In one point we may indeed find ourselves your inferiors: in our efforts to repay in the same measure the grand hospitality you have so often shown us. But this failure shall not come from any lack of desire or effort on our part.

Permit me to offer you a brief sketch of some of the changes which have taken place in the study and practice of dermatology under the observation of the oldest student among you in the last half century. In 1856 and 1857 I sat in the clinic of Ferdinand Hebra in Vienna, that marvellous training school of future dermatologists. I took with me to Europe a clean slate, for at that time no instruction in skin diseases worth mentioning was given in America, therefore, that terribly iconoclastic feature of his teaching was needless for his transatlantic hearers. It seemed to me then that this ticket admitted me to an almost perfect system of object-lesson instruction, given by a master of keenest observation, of merciless invective toward the schoolmen of the past, of enthusiasm-inspiring earnestness. No one could fail of learning a great deal under such teaching. I still believe it deserved and still deserves the title unparalleled. We were taught to observe closely what we saw, and to waste no time in attempting to classify the result of such observation under undemonstrable etiological or pathological theories; moreover, to treat lesions by remedies addressed as immediately as possible to them and not to imaginary causes. Treatment, therefore, was purely empirical. We did try to look a little below the surface of the skin, and a limited number of parasitic affections were then recognized. We did take portions of diseased cutaneous tissue, and under Professor Wedl's directions tease them out into shreds under the microscope. We had not then arrived at the knowledge of infinitely attenuated section-cutting, of chemical reactions beyond the solvent power of potash, or of the innumerable, discriminating stains of to-day. No wonder, then, that we failed to recognize the all-present foreign organisms beneath our very eyes. At that period the school of Vienna was at its highest mark, and under such men as Skoda, Rokitansky, Oppolzer, Hyrtle and Sigmund, one had unsurpassed advantages of instruction in other branches of medicine.

Paris was then beginning to lose that supremacy she had so long held undisputed as Vienna rose. There Hardy was giving excellent instruction. Bazin was possessed by his overmastering theories of dartrism, arthritism and the like, and Ricord still reigned as the unrivalled teacher in syphilis. Wilson, with his fluctuating views on etiology and nomenclature, was the sole authority in English-speaking countries. Simon was in Berlin, Veiel, Sen., in Canstatt, Boeck, Sen., in Christiania, and Fuchs had just died in Göttingen. These were our worthy predecessors in dermatology fifty years ago. There were but few professorships and clinics, and no special laboratories. The literature of our subject was scanty. Hebra had as yet published no book but his surpassing Atlas, and there were no journals devoted exclusively to the interests of our department.

In America dermatology was scarcely recognized as a specialty. No systematized instruction in it was given in any school of medicine. There were no special clinics connected with them, and in our hospitals no wards for the treatment of skin diseases. There was hardly a physician exclusively engaged in the practice of this class of affections. All these opportunities for the study and teaching of dermatology had to be created. It has been a long and hard struggle to overcome the opposition on the part of the general profession, the governing boards of hospitals, and the faculties of our medical schools to the position of dermatology as an independent department of medicine. One obstacle has been the unfortunate fact that the universities had no hospitals under their control, no clinical material to offer their appointees. Then, too, our National Government has no share in the direction either of universities or hospitals, so as to regulate or unify medical education. Therefore, this struggle for recognition on the part of your colleagues in the United States had to be made single-handed in every hospital and every institution for medical education. It is not quite yet wholly over, but we may rejoice in great advances. Nearly every one of our one hundred and sixty or more schools of medicine gives special instruction in dermatology, most of our large hospitals make at least provision for out-patients with skin diseases, a few of them have wards for their exclusive care, and all our cities and towns of magnitude have practitioners of this specialty. We have a National Dermatological Association, now thirty years old and numbering sixty associates, a large Dermatological Section in the American Medical Association, and many of our most important cities have local dermatological clubs or societies, all of whose proceedings are published. Then, too, we have long had (under various titles) an *American Journal of Cutaneous Diseases*. There have been published also extensive treatises, cyclopedias, atlases and monographs by American workers. You see, therefore, that we do not stand so far below the standard of activity you, our colleagues from abroad more favored in opportunities, have set for us.

The attention of our American school was first directed to determine what differences might exist between dermatoses here and in Europe, how far, that is, they might vary on account of diversities in climate, racial stock, methods of living, morals, dietaries, etc. For this purpose a careful collection of statistics has been made by members of the American Dermatological Association representing observations made in all parts of the United States and Canada. The number of cases thus collated amounts to more than half a million. Their value is exceptionally great and reliable, because they are founded upon the observation of trained dermatologists. A study of them reveals some striking features: the almost complete absence of some affections common in Europe, the occurrence here of others only by direct importation, a variation in the intensity of certain pathological processes, even an inclination to self-extinction in some of them, and the existence here of certain diseases not occurring elsewhere. In recent years our efforts have been especially directed to the foundation of laboratories devoted to research into the essential nature of skin diseases. The results of such investigations are already of high importance and promise.

The recognition of the importance of such researches has completely changed the method of teaching dermatology amongst us. We are no longer content with those of our former great masters, — the didactic lectures in course, a rapid survey of the whole field of cutaneous medicine, with clinical illustrations, it is true, but scanned mostly afar, and at close view only by the fortunate holders of the first row of seats or by the most successful rushers of the crowd around the bedside. The medical student at our best schools takes up its study after two or three years' laboratory drill in histology, biological chemistry, pathology, bacteriology and all practical methods of microscopy. He comes thus prepared to apply this knowledge to the proper understanding of the wide pathological panorama which skin diseases present. He makes himself familiar with their clinical features by sight, by touch, in sections, or classes of a few members, three to ten only. He sees what the biopsy reveals of anatomical changes, and what bacteriological researches may discover. He must elucidate the history of cases, and give the grounds for the diagnoses he must present. All this study is carried on in the immediate presence of the instructor, who directs and criticises at every step in the clinic and laboratory. Such is the individual system of teaching dermatology to-day with us. For graduate students greater facilities are furnished, work in special laboratories, and the study of great numbers of clinical cases for eight hours of the day throughout the year under the constant supervision of instructors. Such modern methods of teaching cannot fail of yielding a superior product to those of our student days.

With this brief sketch of the evolution of dermatology in North America during a half century we may well note the changes which the same period has brought to pass in our department everywhere. European schools have risen and declined in popularity with the coming and passing of celebrated teachers. The days of narrowing theories and schoolmen have gone forever, let us hope. In their place we have the marvellous revelations of modern chemistry, physics and the microscope, tangible data for the basis of our etiology and pathology. We may now credibly predict what we are about to discover in both these directions when our knowledge of methods shall have advanced a little farther. We see no bounds to the extent of such discovery. In an address delivered thirty years ago I ventured to predict that I should live to behold with my eyes the cause of pulmonary tuberculosis; of its cutaneous forms we had then no suspicion. We now look backwards upon this memorable event. When our great master of cellular pathology was giving some of you his inspiring instruction, who thought that he might some day come to distant and primitive America to see upon a screen, simultaneously with a thousand other observers, the image of a cell a foot in diameter filled with visible organisms of that scourge of mankind, variola? Even our trained imagination cannot bear us forwards to the limit of such revelation.

When I began the study of skin diseases under Professor Hebra there were upon his tabular list of diseases less than one hundred titles. Since then closer clinical observation, advanced knowledge of their anatomical nature, recent investigations into their etiological relations have individualized and multiplied them until they now number more than two hundred. (At the first meeting of this International Congress in Paris, in 1889, a previously unnoticed disease, discovered simultaneously and independently in France and America, was first brought to your attention. Now we are able to show other dermatoses with which some of you are unacquainted.)

Perhaps a word of caution regarding the unnecessary division of diseases and multiplication of titles may not be out of place here. It seems to me that some of us are over-inclined to magnify the significance of slight clinical variations, to attribute to them specific importance, and to emphasize their pseudo-independence by bestowing upon them titles of individuality. In my opinion we should not change well established landmarks except for reasons founded on demonstrable differences in anatomy or etiology. Then, too, the character of modern titles has become a matter worthy our serious consideration. It has become too complex and cumbersome, as has the nomenclature of other departments of natural science. There was a time when naturalists were content with simple generic and specific names; now every flower or bird must have at least three or four individual titles bestowed upon it. Are we not in danger of exceeding even this redundancy? There is evident a disposition to avoid such profuse and exhaustively descriptive nomenclature by calling a newly established dermatosis by the name of its sponsor, as Bazin's disease, Kaposi's disease, etc. Some fifty or such titles might be enumerated. This is an entirely arbitrary system of designating a disease, suggesting nothing descriptive of its nature, or its proper position in any plan of scientific classification. If it continue, a pocket glossary will soon become necessary to every reader of our literature, unless blessed with an exceptional memory. Such titles, like those geographical names given to affections of remote regions, may be admissible until the nature of the disease be fully elucidated; then they should be properly christened and registered. It should be one of the most important functions of this international body to prepare and officially adopt some satisfactory system of classification and nomenclature, to which we should adhere for the common good. I believe the creation of a standing committee of this association to consider the subject in a broad way, on which should be representatives of all our great nations, unprejudiced by past systems of schools or individuals, would result in vast advantage to dermatology. The establishment of such an international code should not be an impossibility. Let us undertake it.

And are there not other matters coming within the bounds of our field of medicine, which we, as the most competent body in existence, should take a more prominent part in than heretofore? Should we not feel it incumbent upon us to assume a more advisory and executive position in relation to sanitary questions of international interest, rather than the merely academic one we have hitherto occupied? Had we conscientiously interpreted our highest functions in this direction, it would scarcely have been necessary to found a special international congress for the study and control of leprosy, of syphilis, and of cutaneous tuberculosis. But even if we have allowed our sphere of usefulness to be thus curtailed there yet remain many important questions for us to act upon. I will mention some of them:

1. What are the influences of race, geographical conditions, climate, national customs, etc., upon the evolution and type of diseases of the skin?

2. What variations does emigration induce in dermatoses?

3. What cutaneous affections should national governments regard as infective, and seek to control by restriction of immigration, by enforced insulation, and similar measures?

4. How far is it practicable and incumbent upon national governments to control the continuance and prevalence of hereditary dermatoses by restriction upon marriage laws?

5. Should not the influence of this body be directed to induce governments to aid in the support of researches bearing upon sanitary questions of national importance?

We must all alike be greatly interested in the investigations which have been recently carried on by our colleagues in certain tropical regions which are of vast importance to dermatology and general medicine. We are fortunate in having before us the great privilege of hearing the results of their researches directly from some of the most eminent of them. Primarily these studies have been undertaken so far from the usual centers of such research, because there only could be found available in sufficient abundance the requisite material. Fortunately, we are not yet differentiated so widely from our simian relatives in the physical character of our tissues, that we do not possess in common the susceptibility to the invasion of certain morbific agencies, which are the cause of some of our most disastrous diseases. As their serious nature inhibits the application of the ordinary methods of experimentation to our fellow men, it is indeed fortunate that we may legitimately use these lowly brethren for such purposes.

With the important studies concerning the nature of the variolous affections made at the same time in Manila by Drs. Brinkerhof and Tyzzer you are acquainted. (Their results are published in the *Journal of Medical Research*, January, 1906, under the title: "Studies upon Experimental Variola and Vaccinia in Quadrumana.") I am happy to announce that Dr. Brinkerhof has accepted the appointment from our National Government of medical director of the establishment for the care of lepers in the Hawaiian Islands, and will devote himself for five or ten years in the laboratory he has established on Molokai to the study of this disease. These researches, unrestricted in scope, conducted by so accomplished an investigator, are of great promise.

And there are not a few other affections of close interest to us of which we see only an occasional immigrant example, which can be properly studied only in their tropical home, and should be there studied by experienced dermatologists. It is evident that such researches cannot be carried on at the personal expense of such investigators, or by any one national government on a sufficiently comprehensive basis. It can be accomplished only by the combined efforts of the medical profession of all nations. Now, fortunately, we have in this association just the right body to carry out this all important work. Such an undertaking on our part should be regarded as one of our most appropriate and essential functions. A large fund should be raised, and the aid of our respective governments should be solicited in behalf of the plan. An international committee, composed partly of members of this body, partly of well-known authorities on tropical diseases in all parts of the world, might be established under our administration, which should raise the means for and superintend such investigations. Think of the vast benefit to medical science if we could send out properly trained investigators to any regions where questions of great interest and grave international importance demanded solution. May I suggest that a committee be appointed at this meeting to consider the subject and to report before the adjournment of the congress?

THE NEW PATHOLOGY.

Looking backwards over my fifty years of study and practice in affections of the skin I am led to ask myself, What are the most prominent marks of progress I have observed, and what the present signs of promise are?

I recognize three distinct eras of advance:

1. In place of the artificial systems of classification based on such narrow lines as similarities in external manifestations, especially in the so-called "primary lesion," a superstitious belief in the existence of purely imaginary influences or diatheses as a foundation of etiology, and a survival of the old doctrines that all dermatoses are necessarily merely surface expressions of internal systemic disorders, and that the cutaneous tissues are denied the possibility of independent pathological modification; in place of such an unscientific status as then prevailed there came about, largely through the powerful teaching of a great master, a proper appreciation of the meaning of external manifestations and a regrouping of the mutual relations of individual affections, the recognition of the pathological independence of cutaneous changes, and a healthful skepticism with regard to undemonstrable creeds; a school based on purely clinical data was inaugurated, an immense step upwards, an emergence above the clouds of superstition and fetishism.

2. Under the analytical spirit infused into all departments of medicine by Virchow, students in dermatology did not long remain satisfied with the old methods of studying the anatomical changes which underly the surface expressions of cutaneous disease, but with the resources of improved technique carried their researches into

the minutest details of tissue modification. Thus was built up a knowledge of cutaneous pathology, by which some sort of scientific classification became possible. It was one of anatomical affinity, of identity of structure in the place of one founded on merely external resemblances. This was, indeed, a great advance, but far from satisfactory. It might show that the tissue changes in lupus and leprosy, for instance, closely resembled each other, but not why they clinically were so far apart. It gave not the slightest clew to their etiological relations.

3. There was revealed to one or two patient investigators through advanced methods of technique the presence in the tissues of these two most important diseases of foreign organisms, which explained all the phenomena we had been so blindly observing. This was the key to the secret of causation which had so long baffled us. I need not dwell upon the all-importance of this discovery, and the constantly increasing development in methods of research to which it has led. It has already taught us a vast deal as to the real nature of cutaneous disease, the means of controlling some of the most dangerous forms of pestilence, and given us the hope of solving the mystery of much or all that yet remains unrevealed to us.

These, then, are the three eras of advance within my experience:

1. The knowledge founded on a more careful study of the external manifestations and unbiased interpretation of clinical phenomena.
2. A deeper knowledge of the minute anatomy of tissue changes in, and a more scientific grouping of, dermatoses.
3. The recognition of the real nature and cause of visible lesions and underlying tissue changes and the essence of disease, — a true system of pathology, — the promise of attainment of the power of prevention, of establishing immunity, of founding a broader system of rational therapeutics.

And how shall we interpret the action of the micro-organisms which have been found in so many cutaneous diseases, or which our justifiable convictions forestall the revelation of their existence in others, to such an extent that the remainder will be the exception to such etiological relations? The effects of the parasitism on cutaneous tissues of our earlier experience was purely local and simply inflammatory in character. The trauma of animal parasites produced a slight degree of superficial dermatitis of the immediate surrounding area, sometimes followed by widespread secondary disturbances in consequence of the pruritus thus excited and subsequent scratching. The then known parasitic flora excited also purely local changes in the skin and appendages of unimportant nature. Neither animal nor vegetable forms gave rise to any constitutional disturbance, or endangered life.

Then came the demonstration of the existence of other forms of parasitic organisms in the tissues of far more serious diseases, the etiological relations of which have been established on irrefragable evidence. The tissue changes produced by their presence, both local and remote, and their influence upon their host are of the gravest character, some of them in fact being the cause of the greatest mortality in mankind and other animals within historic times. How can we account for such deadly influences inherent in such infinitely minute organisms, or for the striking differences in the nature of the manifestations they give rise to, in their periods of incubation, the diversity of tissue changes they cause, their variations in course from a few days to many years? Here are two so-called bacilli of minute size, so like in appearance and reaction under known reagents that they can scarcely be distinguished by the most experienced observers, yet just as the human ovule or the plant germ carries with it the inherent capability of building up from the material furnished it the stately tree with its century changes, or the heroic future of a man, so does the micro-organism of lepra bear within its simple and insignificant form the power of transforming human tissues into the fell shape we know; and so does the other possess the undeveloped power of causing the cutaneous tissues to express the influence of its presence in quite different objective forms, and of adding countless victims to the "great white plague." Some of them, too, have a mysterious power of protection, of bestowing immunization upon their human host.

How shall we, I repeat, explain such manifold and far-reaching powers? Can they be mechanical, in part, at least? When we consider the effect of the smallest particle of foreign inert matter upon human tissues at times, the "spec" in the eye for instance, we cannot deny the possibility of such sort of action, in some measure, at least. Can they be chemical in nature? We have only to recall the influence of organisms but slightly higher in the scale of vegetable life, in producing new and beneficial modifications in organic compounds, — the alcoholic and acetous fermentations, for example; or of the most disastrous nature, as some of the oidia. We may feel assured that they, too, may possess the inherent property of generating products too subtile to be recognized by our limited analytical agents, and well capable of producing all grades of tissue change in their immediate presence, as well as those which express themselves in other ways throughout the whole economy; or is there some other subtler form of influence at work, the nature of which is wholly unrevealed?

To such remotely manifested influences we give the name toxins, a well chosen title, perhaps, but bearing in itself no interpretation of their nature. To such mysterious powers we may attribute the prodromal and evanescent cutaneous manifestations in lepra, and the long delayed surface lesions in tuberculosis we call tuberculides. In the solution of this grave question — the nature of the action of such micro-organisms upon human tissues — we have before us an untrodden field of research. The satisfactory answer may be surely expected, for there is no secret of nature which human intelligence may not eventually comprehend.

THE RESULTS OF OUR KNOWLEDGE OF MODERN CUTANEOUS PATHOLOGY ON PRACTICAL THERAPEUTICS.

Is it not lamentable to confess how loitering has been the advance in practical therapeutics upon our recent progress in the knowledge of cutaneous pathology? We are well nigh as helpless in the control of our gravest, as well as of our most common, dermatoses as we were half a century ago, and our most successful therapeutical measures are as empirical in nature as they have ever been. A few until recently unrecognized physical agencies have been employed, working some good, and evil as well, but we are learning that their beneficent powers have narrow limitations. We have recognized the parasitological nature of more and more affections, but our parasiticides can control only the most superficial of them.

So far, our researches in the portentous realms of immunization have not brought forth such practical results as did the shrewd, unaided observations of that old English country physician, Jenner. Can we predict with certainty the curative results of our prescriptions in any individual case of eczema, or psoriasis, or lichen, or acne, or the other common dermatoses which fill our daily clinics, results which convert our most confiding private patients into doubters of our skill, and give encouragement to the ingenious efforts of the nostrum manufacturers? Have we any power over the pigment producing layer of the cuticle? Can we control the disordered actions of the sweat glands? Who claims ability to cure lupus erythematosus, not the one case, but every case? Have we a surer power over the deeper and graver forms of cutaneous disease than the surgeon's hand of fifty years ago?

Now I am not a pessimist in therapeutics. I know that the skilled dermatologist does a vast amount of good in the relief of human suffering, and is fully as successful in dealing with disease as physicians in other fields of practice. Unfortunately for us the immediate results of treatment are always in view. Still I believe in an honest recognition of our present limitations as one of the steps towards securing greater powers of control in the future. I look forward with assurance to the slow coming of successful and rational methods of cure, of which a few happy glimpses have appeared.

PROGRESS.

Even since the last meeting of this congress in Berlin there has been a noteworthy progress in dermatology, especially in research work. The great activity and general interest in this direction are shown by examination of the current literature in connection with a single question. The discovery of spirocheta pallida, its etiological relations to syphilis, and its revolutionary bearings upon the pathology of this disease, have stimulated the production of several hundred articles from observers in all parts of the world. The transference also of the field of investigation in this and kindred diseases from man to his nearest relatives in the animal creation has led to surprising and most important results. Your committee of organization has selected, therefore, as themes for special consideration such subjects as will enable distinguished workers in these fields of research to present to you the results of their latest investigations and conclusions.

You are all familiar with the self-sacrificing spirit in which our distinguished colleague, Professor Neisser, has devoted himself, time, revenue, comfort, to the study of this most important subject, syphilis. How he transferred the field of his investigations from his clinic and observations upon human patients to the distant tropics and the home of the higher apes. You know the invaluable results of the experiments there made. You have read also in his recent report to the German government the details of this work. He was to have been with us on this occasion to present his latest conclusions from the results thus obtained, but alas, in obedience to the call of that government, which has generously appropriated 100,000 marks for the continuation of these investigations, he has again banished himself, with his devoted wife as co-laborer, to the Orient, and sends us a message of his regret that he cannot be present with us. What an example of clinical experimentation on a grand scale, of noble devotion to science and humanity. Will you, his colleagues from all parts of the world, join in sending him our best congratulations upon his continued good health, and a sincere expression of our high appreciation of his all-important labors?

And I would say a word, too, for those dumb relatives of ours, the anthropoid apes, who show their near affinity to us by their susceptibility to this great curse of mankind. Would they could comprehend our grateful appreciation of their passive sacrifices for humanity.

And I cannot close this brief account of most recent progress without alluding to another therapeutic agency evolved from research work in the field of micro-parasitology, the protective and curative influence of the introduction of the modified essence of disease-producing germs within the economy, which we call opsonism. This subject will also be presented by competent observers.

In the face of such surprising results of research in the past few years how inadequately can the keenest imagination foretell the possible progress of the coming decade.

The marked increase in the number of dermatological societies in all civilized countries, some twenty or more existing at present, and the twenty to thirty journals devoted exclusively to the literature of our specialty bear witness also to the progressive interest shown in dermatology, so that it has become well nigh impossible to keep in touch with such a record. You may be surprised also to learn that the number of invitations to attend this congress, sent only to those especially interested in our department of medicine, is twenty-five hundred.

NECROLOGY.

But, alas, it is my sad duty to make brief mention of those who have hitherto worked with us, and who have left us forever since our last meeting.

Neumann, Barthelemy, Tarnowsky, Haslund, Du Castel, Mauriac, Finsen, Shaudinn, Atkinson, Greenough, Allen, Dron.

Some of them were among our most distinguished colleagues, who had labored long and nobly for science and humanity; others were only at the beginning of their brilliant career, already illuminated by splendid achievements — one of them, Allen, a lamented member of your organization committee. During my professional life some forty conspicuous colleagues in our specialty, some of them the great masters, have died. May I ask you to rise for a moment in respect to their memory?

CONCLUSION.

And now in closing I invite your attention to the full and inviting program which the organization committee has prepared and placed in your hands. They have solicited contributions upon the most important subjects from distinguished dermatologists of all countries, and if we have not met with that degree of generous response from our foreign colleagues we expected, we hope with the aid of those who honor us with their presence to make the congress a success.

Original Articles.

THE PROSTATE FROM THE SURGICAL STANDPOINT.*

BY CHARLES S. BENSON, M.D., HAVERHILL, MASS.

The literature on the prostate gland is most voluminous. One can find carefully prepared statistical reports; papers proving to the writers' satisfaction the only and best method of operative attack. Others show conclusively that catheter life is the only way to handle these sufferers, until the outraged bladder settles the question in its own way.

For all exhaustive treatises, anatomy, functional physiology, histology and pathology, I refer you to the interesting works of Denver, Young, Willy Meyer, Guiteras, Murphy, Chetwood, Keyes, Watson and a host of others. It is a simple matter to abstract any and all of these writers, but of what avail to you and me, for such would be inferior to the originals which lie within your reach.

My personal operative experience is confined to but few cases, all done by way of the perineal route, and all cured, which fact is of little value considering the small number, for the next few may go the other way.

As an interne, however, I assisted at no small number of prostatectomies, and cared for these afterward. Most were done suprapubically, and I have since been rather prejudiced against this method, for convalescence was stormy and mortality was pyrotechnical, as I look back on the fistulæ, and infections of the prevesical space.

Since this paper was presented in the winter I have added two cases only, one of which is now two weeks in the hospital and apparently doing well. This is my only case operated upon by the suprapubic route, and for the reason that it seemed best to divide the operation into two stages.[1]

With only these few prostatectomies to my credit, it may seem presumptuous to address you, but I crave your indulgence for so doing and further ask your tolerance in that I may make these remarks personal, not abstractive, nor quotative, merely as the subject appears to myself. Suppose, then, we discuss the prostate gland along the following lines:

1. Is the patient with a prostate which is symptomatic, better for being subjected to operation, or should he be advised catheter life as long as possible, followed by ultimate operation when catheter life is no longer possible or endurable?
2. If operation is the desideratum, what then constitute the indications for operation?
3. If not operative, is there any other treatment apart from or combined with catheterization?
4. If operation, what shall be the method of attack?
5, and perhaps this would have better come first, although I question it: What constitutes the symptomatology of hypertrophy of the prostate gland which establishes the diagnosis?
6. Prostatism without hypertrophy of the gland, its causes and treatment; the confusion of this with true hypertrophy of the prostate.

Concerning the first proposition, namely, catheter life or operation, there has been during the past several years a very great diversity of opinion as to the preferable means of procedure, and to-day it is still a very much mooted question, although I think surgeons are coming nearer together as to the advisability of the earlier operation.

For my own part, it seems to me after diagnosis is established, that the earlier we operate the better the chance of life, the better the chance of complete symptomatic recovery.

To pursue the old course of using the catheter as long as the patient could be made comfortable by such means, and ultimately operating when the patient's condition had become desperate from cystitis and ascending pyelo-nephritis, is wantonly running up the mortality rate and giving us simply palliative surgery. The fact that in individual work the mortality of all methods of operation is between four and six per cent would seem to me a great argument in favor of the earlier operation, before we have infective complications.

The catheter is of the greatest use in establishing the diagnosis, and every patient should be kept under observation for a few months before deciding upon operative measures; but once the diagnosis is unqualifiedly established, the sooner we operate the better.

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* Read before The Massachusetts Medical Society, June 11, 1907.

[1] This case died of bronchitis some weeks later, suprapubic wound not entirely closed, but clean and granulating.

When I say diagnosis, I mean more than merely that a patient has hypertrophy of the prostate; I mean that this patient has more than merely nocturnal frequency of micturition. I mean, more especially, that urination is difficult to start, is what we call stuttering and stammering during the act; stops slowly with considerable dribbling and soiling of the clothing, and that the relief which ordinarily comes from emptying of the bladder is not experienced by the sufferer from prostatic hypertrophy.

In other words, to go only a step further, we now use the catheter and establish that the patient has four or more ounces of residual urine after urination.

Now it is perfectly possible for this patient to have this amount of residual urine and not have cystitis. I believe that with these symptoms it is not necessary to subject this patient to years of catheter life in the future, but by operating at this time we can save this inconvenience and also get a symptomatic and actual cure.

In this connection it is only fair to say that there are certain types of cases in which operation is probably the last resort after the case has been considered most deliberately, and yet for the most part I think operation should not be undertaken or considered at all.

I refer especially to those cases coming to the practitioner, who have been so long sufferers from an enlarged prostate with its damming back of the urine, whether or not depending at the present time for their visit completely on catheterization. These patients have an atonic bladder, and operation will not cure or relieve symptomatically this condition. It should be undertaken only when there is actual danger of death, in patients comparatively young and to whom every year of life is of the greatest importance, knowing that although you remove the hypertrophy, you still go on to the end with the catheter, and your operation has been done simply to provide the means of introducing the catheter.

Another class where it seems to me operation is questionable, is in old cases which, at the time of being seen, already possess infected bladder and kidney. By all means, in these cases, I should advise a long treatment by catheter and irrigation, unless the case is so desperate that suprapubic drainage affords quickest relief for the infected condition, if there is any relief at all to be obtained. These last cases can only be judged on their individual merits.

There is no dogmatic position of No operation or Operation. One thing is very certain, however. Any operation which takes more than a few minutes to perform will certainly put your patient on the wrong side of the mortality statistics.

To take up the next topic: The desirability of operation being established, what then are the indications?

It almost seems as though I had answered this question in the preceding paragraphs, but it will do no harm to repeat.

For me, at least, I believe that operation is indicated when, upon rectal examination, we find a pronounced enlargement of the prostate gland. When there is difficulty in starting the urinary stream, and, I might say, difficulty in stopping the same, with or without necessity of using the catheter. In addition to this, the discovery of a few ounces of residual urine. These I think, after proper observation, justify advising the patient to submit to operation and enable the surgeon to hold out the prospect of a cure and to inform the patient that taken at this time the risk is very much lessened.

To take in topics three and six under one head, namely, if the case is not operative, is there any treatment apart or combined with catheterization and the subject of prostatism with hypertrophy?

It is impossible to separate these two for the very reason that the only justification of adopting a treatment other than catheter life or operation in hypertrophy of the prostate gland, is the fact that hypertrophy does not exist; that we do have a condition which I have diagnosed as prostatitis, in which there is a certain amount of irritation and congestion of the gland, without any increase in glandular and connective tissue elements, which in itself gives rise to very similar symptoms of the early stages of hypertrophy. Perhaps, if anything, this condition carries with it more pronounced discomfort than the graver type.

Given, then, prostatism of this nature, what are we to do with it?

If we consider the fact that in the majority of instances this is due to an old gonorrhea, we shall come nearer appreciating the treatment which will be most efficacious. We will massage the prostate gland and use instillations of nitrate of silver, deposited in the membranous and prostate urethra. We will use, I say, instillations, not injections, and I wish you to consider this word instillation as spelled with capital letters. It is only a few drops that should be thrown in, and the strength of the solution should be varied according to the indications arising during the course of treatment.

It is rarely that irrigation of the bladder itself will be called for. I might say it is never called for, except as we may irrigate the whole urethral tract; in the milder type of cases, filling up the bladder only that we may get a second passing of the fluid over the area selected when the bladder is emptied.

Perhaps in this connection it will be well to touch upon the possibility of treatment in cases followed with cystitis, ureteritis and pyelitis.

Kelly, of Baltimore, in examination, at one time practiced washing out the ureters and the pelvis of the kidney through catheters passed clear to the renal pelvis. A few other surgeons have tried this method of procedure but, for the most part, however, have condemned it.

I cannot help believing that it is extremely dangerous, even in the most skillful hands, and certainly it is entirely out of the province of the average practitioner who possesses neither the equipment nor the training to even catheterize the ureters; consequently, in these severe cases we are practically limited in our treatment to vesical drainage alone.

4. Now if we have decided upon operation, how shall we proceed?

We have practically only three operative procedures before us, namely: Bottini, suprapubic, and the perineal. I purposely leave out what is known as the combined method, as being absolutely useless and dangerous in creating an unnecessary opening.

The Bottini operation has, I think, a place, but the limitations are very strict, and it requires a high amount of technical skill and training. It is adapted only to a very mild degree of hypertrophy, or perhaps I might better say to those cases which do not necessarily possess a true hypertrophy of the prostate, but only a stenosis of the vesical orifice, or what is known as the vesical bar. Its great advantages lie in the fact that generally anesthesia is not needed, that the patients are not confined to bed, or even, but for a short time, to the house, yet it is dangerous. It necessitates, also, conditions which allow of a painstaking and minute cystoscopic examination. For the most part this operation has been again assigned to oblivion and will, I trust, remain there. With very few exceptions, it possessed no merits which are not equalled or surpassed by prostatectomy; its only virtue apparently consisting in adaptability to a very small number of cases wherein general anesthesia is absolutely contra-indicated, and any measure which may give relief is justifiable, short of electing actual operative death.

Certainly, the suprapubic operation has its uses.

Personally, I think that in those cases of badly infected bladders, in which the vital tone is very much lowered, that a suprapubic opening done at first only for drainage, and irrigation of the bladder, to be followed after an interval by an enucleation of the prostate gland through the same opening, is the only proper method of procedure in these cases.

We are told that the large, soft prostates are better removed through a suprapubic opening; that the small fibroid prostates are better removed through the perineal opening. We are told by the advocates of suprapubic operation, that the urethra in part is better preserved by suprapubic operation. Yet on the other hand, within two years that party who popularized the suprapubic operation is now pleading for removal of the prostate gland *en masse*, together with the prostatic urethra, of course thus dropping one of his own arguments for the superiority of the suprapubic operation.

We are told that the operation is quicker and the drainage better by this route. I question very much if the operation is any quicker in uncomplicated cases. I question if drainage is not better or as good where the operation and the drainage are sought for at one and the same time in those cases which permit of doing the operation in one stage; certainly not where we are forced to operate in two stages.

For the perineal route which has been so strongly advocated by Young, it is said that we can see the parts as in any dissection. The same claim is made as for the suprapubic route, that the drainage is better by the perineum. It is further claimed for the perineal operation that we can preserve ejaculatory ducts, and so preserve the potency of the patient. Now as a matter of fact, I reserve for myself the same right in the election of the method of operation as I would reserve for myself if I were practising medicine. If I were an internist and I knew of any drug which would benefit my patients, whether used by the homeopathist, or the eclectic, or the so-called "herb doctor," I should use it; in operating on the prostate gland, if it seems best to me to operate by the suprapubic route, I shall do so. If I elect the perineal it will be because I think that I can give the patient better prospects for an ultimate cure with less risk to life. I do not believe that it is necessary to make a minute and painstaking dissection of the perineum, nor attempt in the vast majority of cases to preserve the ejaculatory ducts.

Most of our cases are in men well past sixty, and at the time that they come to us these patients are impotent, not only as regards their powers of procreation, but as regards their power of sexual relation, and the conservation of these powers is a matter of absolute indifference.

The median perineal incision, with opening of the membranous urethra, dilatation of the vesical neck and enucleation of the prostate masses through the lateral walls of the urethra can be done rapidly and thoroughly and will give one as perfect results as any other method of operation. There is rarely any hemorrhage, if we keep with the capsule, using the finger as a blunt dissector.

There are certain cases in which the relation between the capsule and the gland and the surrounding tissues is so intimate that enucleation as such cannot be accomplished. It is said that these cases can be better removed by *morcellement* than through a suprapubic opening.

This means rather a wide destruction of the vesical mucosa.

For my part, I think that these masses can be removed through the perineal incision, modified to give a broader exposure of the field, and it is in these cases that I believe in the technique of Young, using a tractor within the bladder, as causing less destruction of the bladder tissue than can be accomplished in any other way. It seems to me that the question of injury to the rectum has been very much magnified. If we use the exaggerated Trendelenburg position, with the thighs strongly flexed on the abdomen, we shall find that the rectum falls aways very readily from the prostate. The only question of anatomy that I shall raise in any operation through the perineum will be to keep close to the bulb dividing the recto-urethralis muscle and keeping outside the fascia of Denonvillier.

One thing which has run through the entire list of topics, if you notice, very much like a *motif* in music, although not named, has been the question of diagnosis. Beyond what has already been said of this, I am disposed to say a little something as regards the use of the cystoscope, and also touch upon the differential diagnosis.

There is one condition in which the cystoscope is of very great value; that is, where we have an enlarged middle lobe, with comparatively small amount of hypertrophy to be felt by rectal touch.

If we can get the instrument into the bladder at all, it gives us a very good view of the extent of this enlargement and enables us to choose our method of attack with reference to the ease of reaching the trouble. On the other hand, to use the cystoscope needs a large amount of special training, or the observations are not only not of value, but they are absolutely dangerous. These cystoscopes which depend upon air inflation of the bladder, and in which the opening or the prism is situated at the end of the tube, the so-called direct cystoscope, are of no use in this condition. We need a simple instrument with a prism on the concave side and water dilatation of the bladder. To use the instrument with any satisfaction, we must follow the procedure of Young, of Johns Hopkins, who has devised a scheme for reconstructing the inverted cystoscopic image and patching together the detached picture segments to give us a schematic representation of the whole field.

In the average case of prostatic hypertrophy the cystoscope is of no practical value. There is, however, one condition of the bladder as determined by the cystoscope which justifies us in diagnosing prostatic hypertrophy without being able to feel same. I refer to the trabeculated bladder, which almost invariably is significant of enlarged prostate, with more or less urinary retention.

It is particularly important to differentiate hypertrophy of the prostate gland from new growths of the same, especially malignant disease; although in cancer we are told that hematuria is one of the symptoms, yet it occurs perhaps in not over 25% of the cases.

In the early stages the most prominent symptom for differentiation is pain. The pain of cancer is much more severe than the pain of advanced hypertrophy, if such occurs; is sharper, more lancinating and very apt to radiate in the groin and down the leg. In fact this radiation, if we omit the coincidence of stone, is almost pathognomonic of cancer of prostate. A little later we get the stony hardness so significant of malignant disease. My records give me a total of eleven cases of malignant disease of the prostate, only one of which, so far as they have been followed, has shown hematuria. All but two have had severe pain; in fact that was the first symptom noticed by the patient, and for which he sought relief. The increase in size of the prostate had not been very marked prior to the onset of cachectic symptoms.

Manifestly it is important to exclude malignant disease before we decide upon operative measures, for with the one exception where the cancer is contained entirely within the capsule of the gland, operation is absolutely hopeless.

Then, too, simple hypertrophy of the prostate gland, or a congestive condition which has passed beyond the actual acute stage, calling as they do for two entirely different lines of treatment, should be carefully distinguished.

Retention of urine, difficulties in urination, in fact, practically all the symptoms that go with hypertrophy, are present in this congestive state. Even residual urine can be found, without the evidence, however, of any cystitis. This condition may persist for many weeks. Its treatment, however, is merely the employment of massage, instillations to the membranous and prostatic urethra; perhaps also enemata of hot water or the irrigation through a metal closed tube of hot water by way of the rectum.

Then, too, we should differentiate between a primary pyelo-nephritis, to which the cystitis is secondary in a man well past fifty, who in the natural order of events would possess a prostate gland which to the touch is more or less enlarged. Exclusive of the actual retention of urine, he may possess all the symptoms of the sufferer from prostatic hypertrophy, and only the most careful consideration of the previous history will help to establish the diagnosis; and it is in this type of case where operation for the prostatic trouble is practically almost always contra-indicated.

We cannot use a cystoscope to catheterize the urethra, on account of the dangers of increasing the infection and causing uremia; nor is it going to be of very great value should we succeed in securing the urine from one or both kidneys, for the reason that the whole question hinges on the fact of the infection being of an ascending or descending character. As regards the existence of stone in the bladder, the operation for relief of the hypertrophy of the gland will serve for the removal of the stone. In other words, there is a limit to the size of the stone which may be removed by way of the perineum. There is practically no limit to the size of the stone which may be removed by the suprapubic operation.

Abscess of the prostate gland may simulate acute prostatitis and, with the exception of tuberculosis and what is practically a chronic abscess, comes into conflict with the prostatic hypertrophy but very rarely. Save as in massive acute abscesses, I think that the ordinary prostatic abscess should be evacuated through a perineal incision and not by the old method of a curved trocar thrust into the abscess through the rectal wall or by incision through the rectal wall. Incision through the rectum is, however, I think justified in those large abscesses which pronouncedly bulge into the rectum, and often by pressure bring the rectal walls practically together.

Cysts of the gland require no especial mention. If large enough to give symptoms, they require evacuation and, of course, are better done through perineal incision. It is largely a matter of indifference whether we diagnose cyst of the prostate or hypertrophy of the prostate.

If we find a cyst we stop with our evacuation.

If we find hypertrophy we simply proceed and enucleate the gland.

Tuberculosis of the prostate is rarely a primary disease, usually being secondary to tuberculosis of the testicle and seminal vesicles, and in those rare instances where we find it as a primary focus, its symptomatology will be largely that of abscess, either acute or chronic, and its treatment will be surgical only in so far as it is an abscess.

During the year, in the course of my office practice, I see a great many cases of chronic gonorrhea with all its complications, and I find that daily I am either examining or treating by massage several cases in which there is apparent enlargement of the prostate gland.

These cases, of course, are simple cases of prostatitis, and yet they are undoubtedly on the road which will bring them in later life to hypertrophy of the prostate. Coincident with these cases, and really the cause which keeps alive the prostatitis and the gonorrhea, is inflammation of the seminal vesicles, and it is really by the emptying of these vesicles, through massage, that we improve and cure the gonorrhea and, to a large extent, the prostatitis, although in long-standing cases it is my opinion that changes have taken place in the prostate from which the gland never recovers.

An analysis then of what I have said to you to-day resolves itself practically into the following: A plea for the education of the public as we meet members of it in our offices, in regard to the dangers of neglected prostatic hypertrophy. A plea for the earlier recognition by the physician and surgeon, and after a careful hearing of all the evidence, the advice to the patient of a much earlier operative interference than has heretofore been the custom, for the sake of cure of symptoms and conditions and the danger to life itself. A plea not to send the patient to a surgeon who elects, or to perform yourself, a suprapubic or a perineal operation without due regard for all the facts in the case, but to advise your patient, and so do yourself, that which shall be the best for the individual concerned, remembering that time in operative work is a very great feature, in the fact that it lessens anesthetic shock in a patient already on the downward path of life.

Of course it goes without comment that this saving of time shall not be at the expense of clean, smooth work, nor is it necessary on the other hand to exaggerate infinitesimal details.

There is no place in the surgery of to-day for either the putterer and bungler, or the man who is all " front " and gallery play, when dealing as we are with life, attempting to the best of knowledge and ability to keep it from fluttering into the " Great Beyond."

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Johns Hopkins Needs New Buildings.— President Remsen of Johns Hopkins University urges the immediate need of increased accommodation for the work in pathology in the medical school. From the beginning, this department has occupied a building owned by the hospital which has become inadequate in size and equipment.— *Jour. Amer. Med. Asso.*

THE TREATMENT OF SIMPLE INFECTIONS OF THE STAPHYLOCOCCUS AUREUS WITH THE " VACCINES OF WRIGHT."

BY H. F. HARTWELL, M.D.,
AND
ROGER I. LEE, M.D.

(From the Pathological Laboratory of the Massachusetts General Hospital. J. H. Wright, M.D., Director.)

In many cases vaccine treatment is complicated and requires the application of special knowledge, but we have found that there is a certain type of infection in which the vaccine treatment is conspicuously successful and at the same time straightforward and simple. This type of infection consists of localized surface infections, such as boils, carbuncles and septic wounds. In practically all of these cases it is fair to assume that the offending organism is the staphylococcus aureus. Our communication is based on an experience with about one hundred of such cases, which have been obtained mainly from the wards and Out-Patient Department of the Massachusetts General Hospital.

We have found that it is not necessary to prepare the vaccine from the identical organism of the lesion, an "autogenous vaccine," but that these cases do equally well when treated with a vaccine of staphylococcus aureus derived from any source, a " stock vaccine." The stock vaccine is prepared according to Wright's method and put up in bottles of 50 cc., each cubic centimeter of which contains 600,000,000 dead organisms. We have found that vaccines are not so efficacious after they have been kept for two months, and we therefore prepare fresh vaccines about every six weeks. They are preferably kept in a cool, dark place.

In many of our earlier cases we followed the opsonic index, but we have found that equally good results could be obtained without the index. We have inoculated our patients at intervals of four days. This period had been arrived at by the early studies on the index by the writers and by Dr. Roger Kinnicutt, and by watching the clinical manifestations of the lesions. We give as an initial dose ½ cc. containing 300,000,000 organisms and at the second inoculation a full cc. or 600,000,000. This last dose is repeated every four or five days until the lesions are cleared up. As a rule two or three inoculations will clear up a single focus; a boil will have discharged and dried up while a carbuncle will have sloughed out and left a clean and granulating base. Most cases will have regained their natural immunity and will require no further treatment. Some, however, will not regain their immunity for a longer period, and during that time inoculations to provide an artificial immunity are necessary to prevent a recurrence of boils. These patients have been inoculated at intervals of seven days for three or four times after their acute lesions have been cleared up and then they have been instructed to report for inoculation immediately on the appearance of the smallest pustule. By these infrequent inoculations we have found it possible to prevent the recurrence of lesions during a period of six months in a patient who has not been free from boils for two years.

The inoculations are given deep into the subcutaneous tissues (previously sterilized with alcohol), preferably in the abdomen or back, choosing a region which is free from the pressure of clothing. A fresh site is taken for each successive inoculation to avoid the production of a local immunity. We have always boiled our syringes and have had no suppuration or anything more serious than a trifling discomfort at the site of inoculation. A slight constitutional reaction is sometimes noted, especially after the first inoculation. It has been present in about one half of our cases and usually shows itself in headache, backache and lassitude. These symptoms appear a few hours after inoculation and have entirely disappeared in twelve hours. We have never seen changes in temperature, cutaneous eruptions, or arthralgias, such as frequently follow the inoculation of sera.

The changes which take place about the lesions are striking. There is a marked diminution in the pain and tenderness. After twenty-four hours there is a profuse discharge which continues until the focus clears up. If the lesion has already broken down and is discharging no further opening need be made, but if the pus is still confined a small opening should be given for drainage. Opening up wide areas of tissue and curetting delays the reparative process. According to the experience of Wright antiseptics nullify the action of the opsonins and have not been used. The pus has been absorbed into sterile gauze. When sloughing tissue has been present it has been removed with forceps. We have occasionally seen lesions disappear during treatment without breaking down.

We have selected a few cases from those which we have treated which will serve to illustrate different types. We are well aware that simple boils tend to cure themselves, but we can only say that patients so afflicted prefer treatment by vaccine to any other method to which they have been subjected. The following is a case of simple boil:

Case T., about one week before had a boil on neck, which was opened twice and wicked. Neck was sore all the week. Now for two days has had red, indurated tender boil on neck, with some constitutional symptoms. He was given 300,000,000 of stock vaccine of staphylococcus aureus. In the morning the constitutional symptoms had disappeared, the boil was discharging freely and there was no tenderness. In four days only the scab remained. At that time a second inoculation of 600,000,000 was given.

With boils about the face this treatment is of value as it prevents unsightly scars as in the following:

Case P., a middle-aged woman, was seen with a boil the size of a dime, just to the left of the upper lip. The skin at its summit was broken down and there was a slight discharge. She received two inoculations. Four days after the first the boil had discharged freely, all tenderness was gone, and a slight induration, with a serous ooze at its summit was all that remained. A cocoon dressing was kept on during treatment to absorb the discharge.

The great advantage in treating carbuncles with vaccine is that they can be healed in a shorter time without a radical operation and the patients can be at work while under treatment.

Case H., a young man, first seen on June 11, with a carbuncle on the back of his neck, which was of ten days' duration. It was two inches in greater diameter. He received three inoculations. The sloughing tissue was removed with forceps, as it loosened, and on June 19, all that remained of the lesion was an area of clean granulations the size of a dime, with a surrounding zone of indurated tissue. There had been severe pain until the night after the first inoculation, when the patient had a comfortable night. The pain did not return.

Cases of chronic furunculosis can be cleared up and kept free from serious recurrences.

Case G. The patient was a doctor, who for several years had had boils of various severity. These had been incised, excised, cauterized, treated by crude carbolic, etc. He presented several typical boils on his neck and one on his face. These were all tender, some discharging. No local treatment was attempted. He was given 300,000,000 of the stock staphylococcus aureus vaccine. He was inoculated at irregular intervals of four to ten days. He stated that the inoculation took the pain out of the boils almost immediately, but that they recurred after six days. He was then inoculated every four days for four times. After the third inoculation the lesions were all cleared up. He has had no serious lesions since then, three months ago. He is emphatic in stating that the present treatment was the easiest and most effectual he had ever had.

Most abscesses with good drainage will promptly heal, but there is a certain definite type which will remain sluggish and indolent and will not clear up, as the following case shows:

Case A. N., a young girl with axillary abscess which was incised and drained. In spite of good drainage considerable induration persisted, which did not yield to hot poultices. There were numerous small pustules about the wound. After ten days she was referred to one of us and immediately given 300,000,000 of stock staphylococcus aureus vaccine. Four days later the induration was largely gone and the wound was healing fast. She was subsequently given four more inoculations of 600,000,000 at four-day intervals, the last inoculation being given after the wound had healed.

We have observed a very few cases which have not responded well to treatment. Cultures from these cases have shown them to be infections with staphylococcus albus or streptococcus. Administration of appropriate vaccines has been followed by a prompt response. These cases are rare.

CONCLUSIONS.

1. Treatment with vaccines is the most effectual treatment for boils and carbuncles.

2. Although the vaccine treatment does not prevent recurrence, cases of chronic furunculosis can be absolutely controlled by occasional inoculations.

3. Vaccine treatment is a valuable surgical adjunct in appropriate cases.

4. The treatment of this class of cases can be successfully carried out without the estimation of the opsonic index and without any special technical training.

A CASE OF RABIES.

BY CHARLES F. WITHINGTON, M.D.,
Visiting Physician, Boston City Hospital.

H. M., aged fifteen. Errand boy in a grocery store. Father and mother living and well. No history of insanity or extreme nervousness in either side of the family. Patient is the third of eight children, six of whom are now living, and none of whom have ever had any nervous symptoms. While pregnant with this child the mother had no illness or injury, and the delivery was normal.

The patient had scarlet fever at four years. He has always been a wilful child. Seven years ago he received a blow above and to the outside of the right eye, which has left a depression in the skull. Since this blow he has been subject to headaches and vomiting, especially if he became very tired, and more often during the hottest days of summer. The attacks last only one day.

Six months ago he was treated at the Massachusetts General Hospital for " lung trouble."

Patient entered my service at the Boston City Hospital March 31, 1907.

On Dec. 17, 1906, when near his home in East Boston, he was bitten on the left side of the upper lip by a dog which at the time was sick and which died about twenty minutes after biting him. The dog's body was disposed of by some boys and the subsequent attempts of the Board of Health to find the body were unsuccessful.

The bite produced a lacerated wound of the lip, which was immediately dressed at the Relief Station, and the following day he was admitted to the City Hospital, on the surgical side.

He remained in the hospital one week and the wounds were dressed with iodoform wicks. Some pus discharged from the wounds and the sutures were removed at once. The night after he was bitten he was nervous and slept poorly. He had no chills and no headache.

After being discharged from the hospital he appeared to be well and continued so till March 29 (one hundred and two days after being bitten by the dog).

On that day the boy was kicked by his father, and was deeply grieved at the assault, having always been on very friendly terms with his father. He had headache that afternoon; no vomiting. Felt very nervous. The next day the nervousness increased and the mother noticed that he could not swallow; also that he acted queerly. These symptoms grew rapidly worse until he entered the hospital.

At entrance he had a flushed face; temperature 98.4°; pulse 88; respiration 20. Pupils equal and react to light and distance; expression of the eyes somewhat staring. A small depression in outer table of skull was observed to the right and above the right orbit.

Heart of normal size; action regular and of good strength. Faint systolic murmur heard over precordia, best at apex. Chest and abdomen otherwise negative. Knee jerks present, equal.

The boy was very nervous, somewhat irritable. He tossed about with almost incessant motion of some part of the body. He was mentally clear and talked incessantly about himself and of how many things he had had the matter with him. Said he had been written up in the papers and appeared rather proud of it. He complained of dryness and tightness in his throat. Something seemed to be gripping him there. His arms and body thrashed about. About every thirty seconds he jumped up in bed and expectorated very forcibly, as if he had something unpleasant in his mouth which he wished to expel as quickly and thoroughly as possible. What he spat was a frothy, rather thick saliva. There appeared no excess of saliva in the intervals of the spitting. The spitting in each case followed a gasp for breath.

His condition appeared rather hysterical, but he did not cry. On being ordered to keep still, he made an evident effort to comply, which was successful for a few seconds, after which he would again spring up and spit violently. At entrance he swallowed milk readily. He drank water also, but with more apparent effort, draining the glass, and with slight twitching movements afterward. The next morning he took a boiled egg, but only a little milk. He swallowed water when told to do so, but immediately afterwards had clonic convulsions lasting a few moments. There was, however, no hydrophobia. The sight of water did not disturb him and he even asked for it.

On April 1 the picture was as already described. He referred to the fact that his condition had been spoken of in the papers and that people had talked much about him; that he had had " many kinds of sicknesses." The movements of his body were sudden and violent. Once his hands were observed in the position of tetany, but pressure over the upper arm failed to reproduce the spasm. Generally the motions were those of a jactitation. Preceding the spitting and apparently the cause of the sudden up-spring was a sound in the throat as of a laryngeal or pharyngeal spasm which subsided after the expectoration. He spat with great violence.

No Babinski, Kernig or Oppenheim reflexes. Patellar reflexes normal. Sensation good.

Patient still exerts an obvious mental control of his jactitation for a few seconds when warned to do so.

The following history from the time of the last note till the patient's death, some seven hours later, is from the notes of the house officer:

On the same day, April 1, patient was given his clothes about 1 P.M. with the idea that he might be more comfortable in a chair, as he was so restless in bed. A few minutes later he fell out of chair and had clonic movements of hands and legs, with extreme salivation. He was then put back to bed.

During the afternoon the symptoms grew worse. Restlessness increased and salivation became marked. About 2 P.M. the patient became wildly delirious, with extreme clonic movements of arms and legs, laryngeal and pharyngeal spasm and marked cyanosis. Large amounts of reddish froth exuded from nose and mouth. Patient had extreme dyspnea, rolling of eyeballs and an intermittent sharp, high-pitched cry. He moved head from side to side, with jaws opening and shutting spasmodically, but made no noticeable attempt to injure any one. Transfer of patient to lower ward was accomplished at this time, with considerable struggling and resistance on his part. Morphia gr. ¼ was given at this time. As soon as patient reached the ward ether was administered and convulsions controlled. Color improved after etherization and spasm of larynx ceased to some degree. On recovering from ether (3 o'clock) he was somewhat quieter, though markedly excited. He seemed to know that he was in a hospital, and for a few moments at a time would be practically clear mentally. At other times he had delusions of persecution. He kept repeating that while everybody seemed to think that he had hydrophobia, he was sure he did not have it, and that if his hands were untied he would act quietly and behave himself. He also kept asking for water, and stated he was sure he could drink it without trouble. The pulse at this time was 160, of fair volume and tension. Heart sounds clear and sharp, soft systolic murmur at apex, no enlargement to right. Condition remained about the same for one hour (4 P.M.) when patient was offered water.

As soon as he saw the glass his convulsions came on again with increased force, extreme cyanosis of face with spasm of larynx and pharynx; large amount of froth coming from nose and mouth. He was again etherized, and following etherization remained quiet for about fifteen minutes, when he had another convulsion. Ether was again administered, with ¼ gr. of morphia. Pulse slightly more rapid, but volume and tension remained about the same. From this time convulsions became more severe, and he remained in this state until 6.05 p.m. Pulse remained fair in quality up to this time, when it suddenly disappeared at wrist. Heart sounds became rapid and feeble; area of dullness increased to right mid-elavicular line. Convulsions ceased, cyanosis became extreme and patient died quietly at 6.10 p.m.

The autopsy, as will be seen, demonstrated besides the Negri bodies which are believed characteristic of rabies, a persistent thymus, general lymphoid hyperplasia and a small aorta, which mark the so-called status lymphaticus, often the cause of sudden death in children.

The essential features of the autopsy have been kindly summarized by Dr. F. B. Mallory as follows:

"The post-mortem findings in this case may be briefly summarized as follows: Three irregular scars on the face; moderate general edema of the subcutaneous tissues; marked dilatation of the right side of the heart; congestion and edema of the lungs; persistence of the thymus gland, which weighs 23 gm.; hyperplasia of the lymphoid tissue throughout the body; slight internal hemorrhagic pachymeningitis; small cyst of the pituitary body; mypoplastic aorta.

"Microscopic examination shows fatty degeneration of moderate degree in the heart and kidney, and marked in the liver and intima of the aorta.

"The histological examination of this case is not yet finished, but so far as completed shows nothing remarkable except the presence of the Negri bodies, which are characteristic of rabies, in the Purkinje cells of the cerebellum. They occur in the cytoplasm of most of these cells and frequently also in the cell processes. In numbers they vary from one to seven or eight. The size is quite variable, but many large, oval forms of characteristic appearance occur. The bodies show the well-known acidophilic staining reaction and stand out very distinctly in sections stained by the anilin blue connective tissue method.

"The cerebrum and cord have not yet been examined."

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SOME PERSONAL EXPERIENCES IN ABDOMINAL SURGERY.*

BY A. C. HEFFENGER, M.D., PORTSMOUTH, N. H.

Those surgeons whose professional life embraces from thirty to thirty-five years have enjoyed the privilege of seeing the most wonderful advance in the field of surgery the world has ever known. Although advancement has been general, and brilliant achievements have been wrought in every branch, it is in the abdomen that the greatest strides have been made, and the boldest work done. During my entire course as an undergraduate, I never saw the abdomen opened intentionally by a surgeon unless it was post-mortem. Even suprapubic cystotomy was shunned, and stone removed almost invariably by perineal section. In the early seventies of the last century I assisted in the first ovariotomy I had ever seen, and the crudity of the technique and disastrous results of the operation are indelibly impressed upon my memory. The patient was a woman, about fifty years old, who had a large multilocular cyst of the right ovary. The operator and his two assistants simply washed their hands in the usual everyday manner, and wiped them on towels taken from the washstand. The operator wore a white apron, and the assistants were simply in shirt sleeves. The woman's abdomen was washed with ordinary soap and water, and a steam atomizer on an adjacent table threw carbolic spray over the abdoman and upon the operator and his assistants. A number of surgical needles of various sizes and no particular form were threaded with silk and stuck into the waistcoats of the assistants, and silk cut for ligatures was hooked over the needles so as to be handy to pull off and tie. Of course neither needles nor silk had been sterilized. A large, waxed silk ligature, consisting of half a dozen strands of silk twisted together, intended for tying off the pedicle, lay on a table with the instruments. The instruments were simply washed, dipped into a carbolic solution, and then placed on a table covered by a nonsterile towel. An incision from umbilicus to pubis was made, and a rough hand was forced around the tumor in all directions to break down the numerous and dense parietal adhesions. Pieces of peritoneum several inches in length were stripped off, and afterward found hanging to the cyst walls. An attempt was then made to deliver the cyst with the hands, but, of course, failed, and the operator plunged a trocar into the various cystic sacs, and squeezed out the contents over and into the abdomen. When the cyst was finally delivered, the pedicle was tied off in two sections with the waxed ligature before mentioned, the cyst cut away, and the ends of the ligatures left about one inch long. Small bleeding vessels were tied with the silk ligatures taken from our waistcoats, and the abdominal wound closed by through-and-through silk sutures from the same waistcoats. There was a bit of rubber tissue, which had been previously immersed in the carbolic solution, placed over the wound, the abdomen was wound several times with a bandage swathe, and the case was finished in more senses than one. Septic peritonitis ensued, with death on the fifth day.

This was the beginning of Listerism in America, and the spray and carbolic solution were relied upon to prevent infection. What a hopeless delusion! What a contrast to the scrupulous, scientific technique of to-day, and what a difference in results. Shortly after this I saw an ovariotomy done by an English surgeon in South America, who claimed to have been a pupil of Lister. The technique was fully as crude as in the one previously mentioned, but fortunately the woman lived, owing, I believe, to the fact that the pedicle was sutured in the abdominal wound, and buried; unsterilized ligatures were left in the abdomen to infect it. On my return to the United States a few years later, Listerism *per se*, had passed, and the beginning of modern aseptic surgery had set in. Drainage, however, in nearly all abdominal operations was a rule, showing a sad lack of faith in the principles of the new doctrine preached. The tube gradually gave way to temporary gauze drains, with an early closure of the wound, and bolder men closed more and more wounds without drainage, until finally confidence became general, and all non-septic or slightly septic abdomens were closed at once. The advent of the salt solution was a great aid in forwarding abdominal technique, and enabled many doubtful abdomens to be closed, thus diminishing the mortality rate and post-operative suffering, and hastening recovery. It is still good surgery in many sections with immediate closure of wound to leave a quart or more of salt solution in the abdomen, for it certainly prevents sepsis, and through its rapid absorption increases the blood volume, diminishes shock and alleviates thirst. The interval operation in appendicitis was a distinct advance in the surgery of the abdomen. For many years surgeons had been opening abdominal abscesses which presented against one of the walls, but were not emboldened to open a nonsuppurating cavity till asepsis came to their aid, and made it clear that invasion of the peritoneum under proper precautions was a perfectly safe procedure. When this fact became generally known the offending, and often unoffending, appendix was attacked with a vigor that fairly took the breath away from the older surgeons, and made the civilized world stand aghast with fear and wonder. The introduction of the Lembert and other intestinal sutures, together with Halsted's demonstration of the holding quality of the fibrous layer of the intestines, and the invention of the Murphy button and other anastomotic contrivances made practically a new field in the surgery of the abdominal alimentary canal. Intestinal anastomosis can be still further improved by the use of a sterile, absorbable scaffolding, say in the form of oval or round bobbins of various sizes made of gelatin and starch or dextrine, so that they would liquefy in the intestinal juices in from twenty-four to forty-eight hours. I have had patterns of these made from which moulds could be cast, and have asked several surgical dressings manufacturers to put their chemists to work to make a suitable absorbable material. To effective hemostasis with sterile and absorbable suture material, however, probably more than to any other advance, we owe our great achievements in abdominal and intrapelvic surgery, for this alone has changed the mortality rate in the graver operations from 50% to 5%. A quicker appreciation of anatomical appearances, enabling more rapid and accurate work, is another distinctive advance. Improved handicraft has lessened the size of the wound, and this, with a better knowledge of closing and treating it, has diminished mortality and suffering, with fewer subsequent herniæ.

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* Read at the annual meeting of the New Hampshire State Med. Soc., May 17, 1907.

Twenty-five years ago, abdominal surgeons were few, and were practically to be found only in metropolitan centers. Now, however, every small city is blessed with one or more, and it is no longer necessary for patients to travel hundreds of miles to obtain able and skillful operators. Many emergency cases, requiring immediate operation, and which were generally fatal, are now happily saved, thanks to the local surgeon.

No branch of surgery requires such quick comprehension of an ever doubtful problem, more ready wit, or resourcefulness. However sure one may feel of a diagnosis, it is better to qualify it till after the operation, for great surprises that may sorely tax one's ingenuity may be encountered. To illustrate I will briefly relate some cases from my own practice.

Case I. A young married woman, aged twenty-eight, mother of one living child, with no previous history of pelvic or abdominal trouble, and in apparently good general health, was sent to me with what was supposed to be a cyst of the right ovary or broad ligament. A tumor extended from the right flank to the right lobe of the liver, and thence across the abdomen under and above the umbilicus, for several inches, to the outer border of the left rectus muscle. A guarded diagnosis was given. A median incision extending above and below the umbilicus was made, and the boundaries and attachments of the tumor carefully explored. It was found to be a cyst of the pancreas, arising by a broad base from the head of the organ, and extending over the region previously mentioned. The cyst was evacuated, a part sutured to the abdominal wound, the cavity packed with gauze, and drained with a tube. She made a good recovery.

Case II. A man, aged thirty-seven, entered the hospital with violent symptoms of intestinal obstruction which had existed for several days. He gave a history of left inguinal hernia, and had worn a truss. Examination showed the left inguinal canal to be wide open, with nothing foreign in it. The finger could be passed readily into the abdomen. There was great tympanitis, and vigorous movements of the small intestine could be seen through the abdominal walls. By deep pressure a mass could be felt in the left hypogastrium. Several consultants pronounced it volvulus. As the hernia had not been down for some time, and no sac was found in the canal, incarceration seemed doubtful. The abdomen was opened by median incision, and the mass found to be a hernial sac the size of a grape fruit, with a pedicle attached to the internal ring. In the opposite free end of the sac was an opening the size of a ten-cent piece, through which a part of the small intestine entered and emerged. The opening was enlarged and about two feet of apparently viable intestine pulled out. The empty sac was obliterated by two purse-string ligatures, and the abdominal wound closed. Recovery uneventful.

Case III. A schoolboy, aged sixteen, developed symptoms of intestinal obstruction May 15, 1898. Two days later violent peritonitis set in, with infantile vomiting, fecal in character. His condition became grave, and his physician sent for surgical assistance. He was found in collapse. Inspection of abdomen showed an irregular prominence of the abdominal walls about two inches in size, and two inches to right of umbilicus. The tumor was very sensitive to manipulation, and doughy to touch. Inquiry elicited a history of congenital umbilical hernia, with fecal fistula. The hernia disappeared, and fistula closed a few months after birth. An umbilical truss was worn for some time as a safeguard. The patient was stimulated vigorously, and under ether an incision several inches long was made opposite umbilicus, and along outer border of right rectus muscle. A spur of ileum was found crossing the middle of the wound to under surface of umbilicus, where it was closely adherent, as well as to adjacent peritoneum under right rectus muscle. Firmly attached to this spur at the umbilical end was the appendix, and wound round both appendix and spur were several coils of small intestine, dark, lusterless and barely visible. General peritonitis existed throughout the abdomen. The appendix was removed, the spur of gut dissected free, the intestinal coils unwound, and the abdominal cavity flushed with hot salt solution. The patient rallied some after the operation, but relapsed next day, and died from continued peritonitis.

Case IV. A grass widow, aged twenty-seven, was admitted to the hospital with a history of sudden and sharp pain in lower abdomen, followed by great prostration. This had occurred several days before medical aid was summoned. When seen by a physician she was in bed and very weak, sallow and blanched, but no pain. She was ordered to hospital for exploratory laparotomy, which was done on the tenth day after her sudden illness. She most emphatically denied pregnancy, and was highly indignant at the bare suggestion of such a thing. The abdomen was enlarged and slightly tympanitic, and there was nearly 2° of temperature. A median incision was made, and a large quantity of dark fluid blood escaped through the wound. A hand was passed into the abdominal cavity, and while removing large clots, encountered a fetus lying loose and detached. It was removed and found to be about three months old. The abdomen was then thoroughly flushed with salt solution, wiped dry, and the wound retracted to give a good view of the pelvic contents. There was a mass occupying the left side of the pelvis, from which blood slowly oozed. This was firmly attached by a broad base, and every effort to detach it was followed by copious hemorrhage. The mass consisted of placenta and thickened and altered tube and broad ligament. A clamp was applied at the pelvis brim and another one at the uterus, and the entire region packed off with gauze, the ends of which came out at the lower angle of wound, the upper half of which was closed with through-and-through silkworm-gut sutures. Transfusion finished the technique. The patient rallied well, and clamps were removed the following morning. The gauze packing was removed on the fifth day, and an attempt was made to remove some of the placenta. Several fair sized pieces were picked off, when hemorrhage became so severe that clamps had to be applied and the region repacked with gauze. This process was employed from time to time, and as the placenta necrosed it came away easier and without much hemorrhage, so that in six weeks it was all removed, when the wound filled in rapidly and closed.

Case V. A young married woman, aged thirty-three, married several years, and was never aware of being pregnant, menstruation erratic and excessive since girlhood, flowed two-thirds of the time during past six months, several months ago realized that there was a tumor in lower part of abdomen. During the week previous to admission to hospital had suffered from nausea, vomiting, pelvic pain, fever and sweating. Examination showed a large, nodular uterine fibroid, and hysterectomy was advised and agreed to. A median incision from umbilicus to pubis was made, and with much difficulty the tumorous uterus was delivered upon the abdomen. As the broad ligaments were a mass of large, venous sinuses and newly formed arteries, the difficulty of controlling hemorrhage made the operation a slow one. After the uterus was isolated down to its neck, amputation was begun, and when the cervical canal was opened, a small brown foot prolapsed into the pelvis, and amniotic fluid escaped. The canal was hastily plugged with gauze, and the amputation completed. The subsequent steps of the operation were completed as hurriedly as possible, and as oozing persisted and the patient's condition was bad, a couple of clamps were left on and the wound closed down to them, a provisional suture being left untied. Transfusion was done, and the patient gotten into bed. Next morning the clamps were removed and the suture tied. Shock was severe for several days, after which she convalesced rapidly. The uterine mass was laid open, and a small cavity was found in the right side of it containing a three months' fetus, dark brown, and partly decomposed.

Case VI. A woman, thirty-nine years old, married, rather tall and stout, weighing 180 lb., in previous good health, was suddenly seized with violent pains in hepatic and epigastric regions, radiating under right shoulder blade. She was visiting at a farmhouse on the coast of Maine about fifteen miles distant. A local physician was called who administered morphia without relief. A physician from Portsmouth was then called in consultation and decided she was suffering from biliary colic, and in grave shock. I was telephoned for in the evening, about twelve hours after onset, to come prepared to operate. On arriving at 11 p.m., she was found collapsed from agony of pain, and operation was at once decided upon as offering the best chance of recovery. As rapidly as possible the sitting room of the farmhouse was made into an operating room, the kitchen table being pressed into use for an operating table. Three kerosene lamps were obtained, affording meager light, and a sand bag had to be dispensed with as not obtainable in reasonable time. With the local physician to give ether, and the Portsmouth consultant to assist me, a cholecystotomy for exploration of biliary passages was begun. The obesity of abdomen, together with absence of sand bag, made it necessary to use the Mayo-Robson extended incision, and even with this it was most difficult to deliver the gall bladder, though it was free from adhesions. Poor light made it practically impossible to see beyond the fundus of the gall bladder, so this was seized with tenaculum forceps and pulled up, while the index finger of right hand palpated the ducts. This detected an obstruction in the cystic duct near the neck of the gall bladder. The fundus of gall bladder was then incised, and a finger passed inside to neck, while the index finger of the other hand milked the obstruction back. Soon three small stones passed back into the gall bladder, and were removed. A searcher was then passed through cystic and common ducts freely, finding nothing. Further palpation from head of pancreas to hilum of liver revealed nothing, so it was decided that the cause of trouble had been removed. The fundus of gall bladder was stitched to parietal peritoneum, a drainage tube inserted and secured by suture, the wound sutured above and below the drainage, a gauze wick passed down to the fundus, dressings applied, and patient put to bed in a fairly good condition. There were no complications; the tube came away in a week, and the wound closed completely in about five weeks. This case illustrates what may be done in emergency under most disadvantageous circumstances.

Case VII. A single man, aged thirty-seven, wiry build, high liver and free drinker, was seen in consultation the third day after having had violent colic with vomiting. Two weeks previously he had experienced a like attack after eating eggs and drinking a lemon squash. This attack followed similar eating and drinking, and naturally was considered the same in character, and in view of subsequent developments, the two attacks up to a certain stage may have been alike. Saline purgatives and high enemata were recommended and close observation of the case enjoined. I may say that at this time the abdomen was flat, there was no specially tender point, and no abnormality on palpation. Temperature normal. Two days later I was called in consultation again and found conditions much worse. Well marked intestinal obstruction existed with intestinal bunching across hypogastrium. General condition fair in spite of gravity of case. He was sent at once to hospital where median section was done and rapid exploration of abdominal cavity made. General twisting of the ascending colon and ileum was found to exist, and the intestines above stricture being enormously distended, nothing could be done till an incision above the umbilicus was made and the entire mass delivered on the abdomen under hot towels. Then it was found that the ascending colon was devoid of mesentery for the first two thirds of its length, and at the ileo-cecal junction the small and large intestine had turned over and over till about half a dozen twists existed. The difficulty of unwinding this tangle was great, and after it was accomplished and the intestinal canal was free it was found that the enormous gaseous distention made it impossible to return the viscera to the cavity without evacuation of gas, and puncture of the cecum was done. This collapsed the gut, after which the wound in cecum was closed, intestine returned and abdomen closed as rapidly as possible. The patient's condition was most grave, requiring transfusion and all possible stimulation. He rallied at first and inquired particulars of his case, but collapsed from shock afterward and died in six hours.

Case VIII. A young man, twenty-six years old, presented himself for examination, declaring he had appendicitis, and thought an immediate operation was necessary. Examination revealed a linear scar along the outer border of the right rectus muscle opposite McBurney's point. Inquiry elicited the fact that he had been operated upon previously and his appendix removed. He insisted, however, that there was constant pain in the appendical region which was unbearable. There was rigidity of the abdominal muscles, and apparent pain on pressure. No tumor evident, and percussion sounds normal. It was considered probable that sensitive adhesions existed, which might be freed by operation, and the abdomen was opened parallel with the old scar. There was no appendix, the first operation having evidently disposed of it, but the cecum was bound down by dense adhesions, as was also the ileum for a short distance beyond the ileocecal valve. These adhesions were freed as far as possible, and the abdominal wound closed. Convalescence was rapid, and the man was out in a couple of weeks. He went to a city in an adjoining state, and in a couple of months apparently had another attack of local pain, for he called in a prominent surgeon and told him he had appendicitis and desired to be operated upon at once. What the surgeon thought upon seeing two scars upon the man's belly I never heard, but he proceeded to investigate the inside of it, and, of course, found only some adhesions. The man was soon out again, and presumably happy and contented at having had his abdomen opened three times for appendicitis. This state of contentment did not last long, for a few months afterward he turned up in a hospital in another New England city, and informed the house surgeon he had appendicitis and wanted to be operated upon without delay. The visiting surgeon after examining the abdomen and viewing the scars of many surgical combats, made a careful investigation into the history of the man, and upon finding him an operation crank declined to operate, and had him discharged from the hospital. This man undoubtedly had a monomania for abdominal section, or what might be called the operation habit, and had he not been firmly dealt with by the fourth surgeon to whom he applied, might have been still wandering from hospital to hospital, seeking inspection of his viscera, or else have died from operative interference. The rebuff he met with finally cured him, and induced him to enter the field of medicine in a legitimate manner, as he is now a general practitioner.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Continued from No. 15, p. 497.)

And, lastly, one should also exclude from among crimes from passion those which are merely cases of rape disguised. All these crimes cannot be considered as crimes from passion, because they are not disinterested crimes, neither are they directly caused by passion. Their motive is not love, but in reality is *amour propre*, the regret of lost habits and cupidity. It is also to be pointed out that when jurists ask for a severe sentence in all cases of crimes from passion, it is usually to these crimes from pseudo-passion that they refer.

It unfortunately happens to many men to be amorous, jealous and deceived, and when they discover it they become indignant and are pained, but the larger number silently suffer, forget or become resigned to it. Only a few revolt against the moral law by avenging themselves by crime. Nevertheless, all of them undergo the same sentiments. The indignation for the traitor, anger for the unfaithful seducer, the resentment of outraged honor in the husband and maternal love are sentiments, not only normal, but moral as well. Everyone has them under such circumstances and we all should have them. For a proof we have only to recall the esteem in which a woman indifferent to her children is held, or a husband who cares little for his honor.

Even jealousy is, without any doubt, a natural and general sentiment in man, although it is a low order of sentiment, since it is derived from egotism. The reasons why these sentiments develop in an excessive manner in certain people and become abnormal on account of their intensity are as follows, and we will examine these individuals from the standpoint of their character as well as their mental condition. The sentiment which, in the first place, seizes passionate individuals is the absence of will, and these subjects are weak. The absence of control over oneself is what characterizes these unfortunates, and is both the result and the cause of their physical and moral stigmata. For this reason it is astonishing that a psychologist as eminent as Stendhal should have considered them as energetics. The only application is in the sense that Stendhal gives to the word energy which, according to him, is the violence, the sudden blind explosion, having no design and no outcome, of a passion which cannot be either repressed or controlled. These energetics are merely impulsive subjects who are lacking in force to resist themselves. As Stuart

Mill remarked, it is less on account of the ardor of their desires that men fall into evil than from the weakness of their will. There exists a natural relationship between a passionate character and a feeble will, in this sense, that passion does not develop in those who know how to overcome it by self effort as soon as it arises. These subjects never obey other than their own will, and consequently cannot be considered passionates. On the other hand passionates are not only weak, but they are presumptuous and consequently imprudent; instead of taking the fruit, instead of putting aside a passion which will be fatal to them, the danger of which is all the greater the weaker they are, they believe that they are stronger and more skillful than others, and from this time on, they, in reality, have everything to fear. Afterwards, when suffering has taken the place of the happiness of their passion, they excite it, instead of appeasing their chagrin. It is a fire which consumes them and makes little difference to them if they die from it, but, unfortunately, they do not wish to die alone. Instead of assuming a perfect outward tranquillity, so that this calm may become real after having stimulated, they become pleased in their chagrin and love their suffering.

The best proof of this will be found in the descriptions that they all make, even the greatest, like Goethe, or Musset, of their story and their misfortunes. The worst cases are those which will not allow themselves to be cured, because the only thing in life that they care for is the sensation of their suffering. Later, when they find themselves in face of the crime and wish to retract, it is too late. As one of them said, "At one time I was perfectly free. My heart was unfettered, and nothing was easier than to separate myself from my thoughts; every one gave me this advice and I thought that I would always be sufficient master of myself, but imprudence wrecked me." It is just at this time that the responsibility should be looked for in this class of criminal although it is quite particular and social, rather than moral. Their mind is still free, the heart unfettered, but the subject, being persuaded that he is stronger and more tactful than others, throws himself in the same river in which others have been lost. With this confidence in himself it is not at all astonishing to meet with an extreme susceptibility and an immense *amour propre.*

Laffarge, the ebonist worker and the hero dear to Stendhal, when questioned regarding the motives of his crime, replied, "I wanted to avenge myself upon her, as her disdain rendered me crazy." Another subject gave better evidence as to the motive of his crime when he said, "I was too proud to submit to this affront, and honor demanded me to take revenge."

This question of honor plays a great rôle in crimes, but if a husband can feel wounded in his honor from reason of the one who bears his name, he must nevertheless have an exceptionally high opinion of himself in order to believe that he has the right to destroy a human existence from this fact. And what is still worse, it has been shown that the husband does not always have such a delicate sentiment for the honor of his hearthstone, and that the mere fear of being ridiculed occasionally makes him an assassin. This susceptibility may, as has been pointed out, go as far as ideas of persecution. To sum up this side of the character that we have just been examining we would say that the passionate is extremely personal. Jealousy, in the first place, is a proof of love, without any doubt, but ordinarily it shows more *amour propre* than love. It must be said that everything is not sacrifice of devotion in lovers, and an unconscious egotism frequently occupies a large place in their sentiments. What is not easily borne when breaking off is the happiness of the one that they leave. The lover becomes consoled when he knows that his former mistress is unhappy and, if she returns to him, he may perhaps pardon her, but if he learns that she is happy and that she loves another, his jealousy will no longer pardon her, his love changes to hatred and he wishes to take revenge.

If we now study this same criminal from passion in the physiological point of view, we will find the explanation of his character and also some little excuse for his acts. According to the great Italian criminologist, Ferry, he is physically a man possessed of a sanguine or nervous temperament, contrary to born criminals who are lymphatic subjects. This first remark abounds in proof, and Proal says in his most interesting book that "it has been observed that jealous subjects who become assassins have a red face, congestion of the brain and the eyes projecting. It is said that he sees red, because he is blinded by the blood." A witness said, speaking of a husband who had killed his wife, that "the face was violet, and one would have said that he had a congestion of the brain." In another case a witness testified that the assassin was very red in the face and in a condition that he had never seen him before, while another witness added that the assassin was so red in the face he could no longer see, because the blood blinded him.

The accused that we have mentioned were evidently of a sanguine temperament, while, on the contrary, subjects like Chambige, Soularue and Marie Bière were evidently of the nervous type, and, among the papers belonging to the first mentioned, this cry of despair is found: "*Oh ma mere, pourquoi m'avoir donne des nerfs de femme!*" Born into the world nervous and sick, these individuals could be saved by a severe moral discipline, but ordinarily everything that surrounds them simply tends to exasperate their nervous type. As Maudsley has remarked, those who have this temperament have a sort of elective affinity for subjects having the same mental qualities and the same moral tendencies, and they afterwards share the defects of character. This simply tends to develop their nervous nature, and modern life, especially in cities, is not at all calculated to calm very excitable natures.

Without speaking of that part of the population in which the uncertitude of the morrow strains the nervous system by the uneasiness it causes, in the easy classes, the abuse of pleasures and excitement, prolonged dissipation, have rendered nervous diseases frequent. On the other hand, the ordinary necessities of life are the cause of many neuroses. The struggle for life which is all the time becoming more difficult, professional rivalry, preoccupation of business produced by an always increasing competition, produces intellectual and physical overwork which fatigues the nervous system.

For the working class one may add to these causes the vibrations of machinery, insufficient nourishment, or meals too hastily eaten, and lastly, and above all, alcoholism.

The proofs of this general neurosis are to be met with even in our pleasures, the taste for violent emotion, dangerous sports and everything that overexcites the nerves. The intelligence of neurotic subjects is in no way affected, but their will power suffers. Energy becomes an extremely rare virtue, and we more frequently meet brilliant minds than firm characters.

We have said that the criminal from passion is essentially a feeble being and, according to our way of thinking, the reason is this: If, as it has been upheld, crimes from passion have increased in number, the cause is to be looked for in the increase of nervous diseases. The physiological state of criminals often presents stigmata more serious than a disease of the nervous system, and one is struck by the large number of these criminals who show mental disease in their family antecedents. Many of them have had insane, vicious or alcoholic parents, who have a certain part of responsibility in their children's crimes. One should not assume that these indviduals are irresponsible, but merely that they are less well prepared to fight against their passions.

The question is particularly delicate, because we constantly find ourselves face to face with subjects who certainly are not sufficiently insane to be placed in an asylum and who, on the other hand, it would be difficult to call absolutely and fully responsible. To acquit them and send them back to liberty is perhaps imprudent, but, on the other hand, it is neither right nor useful to society to condemn them. It is quite possible that all criminals do not belong to families tainted with insanity, although this is met in a very large number of cases, but for all, at least, passion is a dissolvent of the will. Gall has said that all men have the germ of a monomania in the existence of a passion. This is because passion is essentially absolute and nothing exists beyond its goal. It begins by requesting, afterwards it commands and finally compels its victim to act. Although there may have been a struggle there may be a final defeat of the health. Usually, it is true, there is no struggle because the idea opposed to the passion does not even come up. The mind has been corrupted before the will, and before imposing an act the passion has obliged the idea to be admitted as just.

Among all the passions love certainly would appear to have a decided aspect of a monomania, and one of the most eminent in the study of mental disease, I refer to Dr. Paul Janet, gives it this character. He points out that everything in this passion resembles insanity in its origin, its development and mechanism. In the first place it does not depend upon the will, because "*il ne suffit pas de vouloir être amoureux*," any more than to wish to cease to be.

On the other hand, there is a period of incubation, as in all virulent disease; the idea accomplishes its underground work and only reveals itself in its full activity, like a fire which smoulders only to suddenly burst out in all its violence.

(*To be continued.*)

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T BOWEN, M.D.,
AND
HARVEY P. TOWLE, M.D.

HISTOLOGY OF THE CHANGES CAUSED BY THE RÖNTGEN RAYS IN MALIGNANT TUMORS.[1]

No one at present can deny the very favorable influence of Röntgen rays on malignant neoplasms, and especially on certain forms of cutaneous cancer. Writers are not, however, in accord as to the exact way in which the Röntgen rays act in this astonishing and quite elective manner. Some consider that the first action of the Röntgen rays is to produce a reactionary inflammation of the connective tissue, or believe that the blood vessels are damaged in the first instance. By far the greater part of the authors, however, believe that there is a primary damage of the cancer cells by the Röntgen rays. In other words, that there is a primary degeneration of the cancer cells while the inflammatory reaction is only secondary.

Marschalko's histological studies were based upon material from 4 cases, 3 cases of cutaneous epithelioma, and 1 case of multiple sarcoma, Kaposi's type. The epitheliomata represented three different types of cells, and the tumors were all examined before and after treatment with the Röntgen rays. The conclusions which he arrived at from his investigations are that soon after the beginning of treatment an intense reactionary inflammation is produced, with thickening of the epithelium, infiltration of the tissue with leucocytes, and much dilated and partially new formed vessels, swelling of the endothelial cells, partially with thickening of the intima and breaking up of the media, and with the formation of a considerable cell infiltration consisting, for the most part, of plasma cells. This cellular infiltration is soon accompanied by a connective tissue proliferation which in later stages leads to a considerable hypertrophy of the collagenous tissue with the formation of giant cells. This hypertrophy progresses from the periphery toward the center, and undoubtedly has a tendency to bring about a walling off of the specific tumor elements.

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[1] Von Marschalko: Arch. für Derm. und Syph., lxxxiv Band, 1-3 Heft.

Hand in hand with this inflammatory reaction there is also a change and degeneration of the tumor cells. In carcinoma the karyokinetic figures are very small in the parts reached by the Röntgen rays, the growth is checked, and the cancer cells undergo degeneration and necrosis.

The whole process, however, has its beginning at so early a period that it is impossible to conclude that the change of the cancer cells is only secondary and brought about by the reactionary inflammation. On the contrary, the writer's investigations tend to strengthen the belief that the cancer cells are primarily damaged by the Röntgen rays.

He does not, however, believe that the reactionary inflammation is simply a consequence of this primary damaging of the cancer cells, but believes that there is also a primary damaging of the connective tissue by the Röntgen rays, which leads to a great increase in the inflammatory infiltration and proliferation of the connective tissue. He was not able to determine whether the vessels were first and most seriously affected.

Primary damaging of the cancer cells and also of the connective tissue appear, therefore, to be quite independent of one another as the result of the action of the Röntgen rays.

The question arises whether this degeneration of the cancer cells is specific and only connected with the action of the Röntgen rays, or whether it is simply a quantitative increase of the processes of degeneration which are more or less constantly occurring in cancerous tissue. The writer inclines to the latter view.

In the later stages, at least, the reactionary inflammation appears to play an important part in breaking up the specific tumor elements. This is seen by those appearances in which the cancer nests are found surrounded by leucocytes; these press not only between the cancer cells, but partially within them. Hence he concludes that the leucocytes play an active rôle in the destruction of the cancer cells.

With regard to the sarcomata few conclusions can be drawn from his investigations, as it was not a real sarcoma, but a so-called sarcoid tumor.

With regard to the important and practical question how deep the Röntgen rays can penetrate in cancer, his investigations support those authors who believe that the action of the rays does not penetrate very deeply. His microscopical preparations show that only the more superficial masses of the tumor are destroyed at first, and even in such cases where there is apparently no carcinomatous tissue to be seen under the microscope carcinoma cells are still to be found singly in the deeper tissues. That these cells may take on a further growth is proved by one of his cases in which there was a recurrence after what was apparently complete healing and after an interval of half a year.

As to the question whether there is a difference in the different forms of cancer with respect to the action of the Röntgen rays, the writer's investigations point to the conclusion that such a difference does not exist, as all of the forms which he investigated reacted in the same way.

DIPHTHERITIC INFLAMMATION OF THE SKIN.[2]

There is very little to be found in the newer textbooks on dermatology on the subject of diphtheria of the skin. Primary diphtheria of the skin is a rare affection, meaning by this a diphtheritic lesion of the skin caused by the direct inoculation of diphtheria bacilli at the spot, and not of inoculations of the skin which are continuous with diphtheria of the mucous membrane.

Five cases of inoculation of the skin with demonstration of diphtheria bacilli were observed in the University clinic in Breslau during the 'ast year and a half. In three of these pure cultures were obtained, and their virulence proved by experiments on animals. Three of the cases from which the bacilli were obtained from pure culture were very much alike clinically. All were in children from one and one quarter to two and a half years of age, and the lesions were purely ulcers, in the beginning of very small dimensions and extremely superficial. Later they became confluent, and usually quite large. Their form was very irregular, as the edges formed polycyclical bows or deep sinuses into the normal skin. The edges were slightly infiltrated, very intensely reddened, and only here and there somewhat undermined, and they were usually pretty sharply cut out. The floor of the ulcer was covered with a grayish white, firmly adherent diphtheritic membrane. There was very little odor. After the ulcers were cleansed, there was a speedy formation of granulation, and recovery was quite rapid. These ulcers were situated especially about the abdomen, groins and genitals. In none of these cases was there any affection of the mucous membrane, nor were there any discoverable signs in the internal organs. Diphtheria serum was injected in all these cases, and they all did well, but it is questionable whether any inferences on this score can be drawn from so small a number of cases. No trace of a toxin could be found in the blood.

The fourth case is that of a child of three, in whom the affection took the form of an infantile ecthyma. The localization was a peculiar one, the larger ulcers being in the lower abdominal and inguinal region, whereas ecthyma usually affects the extensor sides of the extremities and back. The lesions began as small pustules with an inflammatory areola. In their further development, the roof of the bullæ was broken and superficial ulcerations were formed. The ulcers were rounded, the edges surrounded by a small red areola. The floor of the ulcers was covered with a yellowish covering. Diphtheria bacilli were found by staining and by culture in only one of the larger ulcerations. Pure cultures were not obtained, nor was there any result from animal inoculation.

In the fifth case, that of a man of thirty-one, diphtheria bacilli were obtained from a deep ulcer covering the dorsum of the penis and a part of the mons veneris. Later, when the ulcer had become smaller, the spirocheta pallida was found.

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[2] Schucht: Arch. für Derm. und Syph., lxxxv Band, 1-3 Heft.

The number of cases of diphtheria of the skin with the presence of Löffler's bacilli which have been reported in the last years is small. In most of the cases in which diphtheria bacilli were found there was an infection of deep wounds, abscesses and other subcutaneous infections. In these the typical diphtheria membrane is not formed, and these affections differ in no way from the pictures which can be produced by other pyogenic affections. The writer thinks that his first 3 cases are typical enough to warrant a probable diagnosis of diphtheria of the skin from clinical appearances alone, and the most characteristic appearances he considers to be the irregular form of the ulcers, the diphtheritic covering, and the localization.

LUPUS ERYTHEMATOSUS AND LUPUS VULGARIS.[3]

The writer thinks that there is sometimes a doubt between the clinical diagnosis of lupus erythematosus and lupus vulgaris. It is evident that we do not yet know all of the cutaneous manifestations of tuberculosis. Apart from the forms already recognized, such as lupus vulgaris, acute miliary tuberculosis of the skin, etc., there are a certain number of cases which surely belong to tuberculosis, or are related to it, which it is not possible to definitely classify. In the face, especially, there is a series of affections which may reach the subcutaneous cellular tissue, which belongs in this group. If lupus erythematosus and lupus vulgaris were related etiologically, it seems that the combination of the two processes would occur more frequently. In point of fact, this association is extremely rare. Even in the well-known case of Besnier and Lacavalerie, there was no histological examination.

On the question of the tubercular nature of lupus erythematosus, the dermatological world is divided, one side affirming this etiology, the other denying it. Arning believes in the tubercular origin, and bases his belief upon the frequent presence of tubercular adenitis. He has experimented with Koch's tuberculin and obtained some general reactions, such as headache, erythema, etc., but never fever or local reaction. Boeck found in 36 personal observations, signs of scrofula in two thirds of the cases, and believes in the possibility of a toxic origin. Besnier regards lupus erythematosus as tubercular in its nature, basing his conviction on the existence of intermediate clinical forms between the two types of lupus, their coexistence and the frequency of tubercular adenitis. The same arguments are used by Jeanselme and Hallopeau. Jarisch considers the cases which are regarded as combinations of the two types of lupus as errors of diagnosis. He does not deny that tuberculosis plays a part in the appearance of lupus erythematosus, but protests against the assimilation of the two affections. Kaposi protested against the unitarian theory, but declared that those who were affected with lupus erythematosus are often tuberculous, and said that he had never seen this affection in old people. Koch, in 37 cases, has seen two of pulmonary tuberculosis. Jadassohn and Neisser consider lupus erythematosus an infectious granuloma, and reject all association with tuberculosis.

The case is reported of a man of thirty-seven, who was admitted in 1896 in Kaposi's clinic, with a diagnosis of lupus erythematosus. Three years later he was admitted to Lang's clinic, with lesions on the right and left cheek. The plaque on the left cheek was sharply bounded, pigmented, and of a cicatricial appearance, covered in places with scales, and in the cicatrix there were nodules either confluent or isolated, which were unquestionably lupus vulgaris nodules. On the right cheek there was a similar lesion, cicatricial, with reddish-brown nodules on its lower border. The diagnosis was a combination of lupus erythematosus and lupus vulgaris. The lesions were excised, and microscopical examination of the plaque on the left side verified the diagnosis of lupus vulgaris. Seven months later, the patient returned to the hospital with a further development of lupus erythematosus, and some years later another outbreak was observed. Histologically the characteristics of both lupus erythematosus and lupus vulgaris were found. In two sections from the nodule of lupus vulgaris tubercle bacilli were found.

This is the third case only in the literature of this association of the two affections. It is quite possible, in view of the rarity of such observations that the association was simply a coincidence. The histological examination of this case proves conclusively the presence of tubercles of lupus vulgaris, some writers having questioned whether in cases previously reported masses of elastic fibers undergoing a colloid degeneration have not been taken for lupus nodules.

VON RECKLINGHAUSEN'S DISEASE.[4]

An interesting case of this affection occurred in a widow, forty-five years old, who came to the hospital, complaining of painful itching tumors of the skin. She said that they had first appeared when she was twelve years old, five or six in number. They were seated mostly on the trunk and steadily increased until they were very numerous. None ever disappeared spontaneously. They all gave rise to extreme itching and pricking pains. Several of the growths removed at the hospital when she was thirty years old had reappeared. Her general health had been good with the exception of fits at various times.

Upon examination it was found that the patient was very neurotic and of variable temper. She was quite thin, and the skin atrophic. Some of the tumors were pedunculated, loose and soft; others firm and obviously arising from the subcutaneous tissue. The pedunculated growth seemed to cause more itching, while the firmer ones were more tender and painful. There was no pigment upon the body, as is usual in such cases.

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[3] Spitzer: Ann. de Derm. et Syph., March, 1907.

[4] Malcom Morris and Wilfred Fox: Brit. Jour. of Derm., April, 1907.

While she was in the hospital for a period of months, there was a series of epileptiform fits, which were considered hysterical in character.

Six of the growths were excised and examined microscopically. The two varieties of growths differed considerably when they were cut open. The pedunculated growths apparently consisted of loose, fibrous tissue, while the sessile ones were gelatinous and firm. Staining by several methods showed in sections fine nerve fibers arranged in bundles between the layers of fibrous tissue. The small tumors were seen to be fibromata made up of spindle cells.

The points of interest in the case are the absence of any large pendulous tumors, the fact that apparently no large nerve trunks were involved, that only very fine fibers in the skin were involved, and the hysterical convulsions.

Reports of Societies.

AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

Tenth Annual Meeting, Held at Atlantic City, N. J., June 3 and 4, 1907.

The President, Dr. Henry Wald Bettmann, of Cincinnati, in the chair.

THE EVOLUTION OF GASTRO-ENTEROLOGY.

Dr. Bettmann, in his opening address, said the most important change in the spirit of internal medicine during the past quarter of a century had been the swinging of the center of gravity from the pathology of structure to the pathology of function. Twenty-five years ago pathological anatomy and histology were beginning to lose their force as a means of medical progress; they were becoming sterile from over-cultivation, and had ceased to reveal new truths. An entirely new point of view became absolutely essential to vitalize research, and this new point of departure was afforded by bacteriology, which in an amazingly short period became a well-organized science. At the same time, rapid advances in organic chemistry rendered possible the development of new methods of research, and chemical pathology became a fertile department. Chemistry and bacteriology had rejuvenated pathology, making it seem like a young science capable of unlimited development and growth. Every branch of internal medicine had been quickened by the change.

INCOMPLETE FORMS OF EXOPHTHALMIC GOITER IN RELATION TO GASTRO-INTESTINAL DISORDERS.

Dr. J. P. Sawyer, of Cleveland, in this paper, said that gastro-intestinal processes were intimately associated with vasomotor conditions. These in turn were markedly affected by the hyperthyroidism, which at present was recognized in exophthalmic goiter. This hyperthyroidism existed in many cases which did not show the "cardinal signs." Routine examination of all cases for diagnostic recognition of disturbed vasomotor function, due to this cause, might show its existence in patients not having the symptoms of goiter of this type developed to such a degree that attention would be attracted to them in the course of an examination made without having that point in mind. It was thought to show, at least in the writer's vicinity, the greater prevalence of the disorder than was commonly noted; also, that therapeutic procedures based on special examination of stomach contents and feces might be considerably assisted by measures adopted to meet the recognized development of exophthalmic goiter. Among these measures were climate, hydrotherapy, electricity and various drugs, including the antithyroidin of Moebius, and thyroidectin. Special note was made of the effects of atmospheric conditions, particularly of relative humidity. Note was also made of certain blood findings.

Dr. A. L. Benedict, of Buffalo, said the thyroid gland was very unstable in its functions, and especially in young girls I found all kinds of disturbances, some with goiter, some without, and in all these cases the personal equation of the examiner must not be lost sight of. The speaker referred to the comparative frequency of thyroid disturbance, not only in gastro-enterologic, but also in general, practice.

Dr. J. A. Lichty, of Pittsburg, said he had used thyroidectin in a number of cases with somewhat doubtful results. Those cases in which it apparently had most effect were young girls at about the age of beginning menstruation, with enlarged thyroids and evidences of hyperthyroidism. Many of these, doubtless, would have done equally well without the thyroidectin.

Dr. J. Kaufmann, of New York City, referred to the profuse diarrhea, which was at times the only pronounced symptom of an incomplete exophthalmic goiter, and said that instead of being due to vasomotor disturbance, as suggested by Dr. Sawyer, it was possible that it was the result of the toxins which were such a prominent factor of exophthalmic goiter, and which were perhaps excreted by the intestines. Based upon that idea, he had employed colonic irrigations in these cases with good results.

Dr. I. Adler, of New York City, said he had seen many cases of exophthalmic goiter, in which almost the only subjective symptoms were of the gastro-intestinal type. Chemical and bacteriological examinations of the urine, blood and other substances in these cases gave very variable results, and were of no practical benefit. The speaker referred to the use of rodagen in these cases. It was expensive, but those patients who were able to afford it were apparently benefited by it. It had practically the same effect as the antithyroidin of Moebius, but had the advantage of being a distinct food, and to that extent counteracted the emaciation.

Dr. Max Ballin, of Detroit, said he treated all his cases with thyroidectin, and he could affirm what had been said regarding the efficient qualities of rodagen. He was opposed to the use of iodine in these cases, as it usually aggravated the symptoms of hyperthyroidism.

Dr. Sawyer, in closing, said the ages of his patients ranged from that of children two or three years old to people advanced in years. They included both sexes. His experience with antithyroidin and thyroidectin had convinced him that the effect of these remedies was positive, but less effective when used alone than when combined with physical measures.

A NEW BLOOD TEST.

Dr. Max Einhorn, of New York City, demonstrated this method. He stated that examinations for the presence of blood have increased in significance since Boas reported the occurrence of occult blood as an almost constant symptom in carcinoma of the stomach. Usually, the aloin or guaiacum test was employed for the demonstration of the blood, and recently a new test with benzidin had been described by O. and R. Alder. Both the guaiacum-aloin and the benzidin tests require the preparation of fresh solutions, which render them more difficult. Dr. Einhorn therefore tried to simplify the test by making a reagent paper. He prepared an aloin paper and a benzidin paper. Aloin paper was made by saturating ordinary filter paper with a solution of aloin in 70% alcohol; the benzidin paper by moistening filter paper with a saturated solution of benzidin and glacial acetic acid, and drying it. In preparing the paper, as well as in making the test, it was of importance to avoid contact with the fingers, as a drop of perspiration caused a similar reaction. In handling the paper it was best to use an ivory-tipped forceps, or protect the hand by means of a towel. Aloin paper was much inferior in sensitiveness to benzidin paper. He, therefore, recommended the latter.

CASES OF TRUE INTESTINAL DYSPEPSIA.

Dr. Max Einhorn, of New York, read this paper. He stated that by the expression "intestinal dyspepsia" we understood conditions in which the digestive function of the intestinal tract was disturbed. It was advisable to distinguish two large groups of intestinal disturbances: 1. Those which concerned all these classes of food substances, namely, albuminates, carbohydrates and fats; dyspepsia intestinalis universalis. 2. Those affecting only certain classes of food stuffs; dyspepsia intestinalis partialis. This second group might be further subdivided, according to the varieties of foods, the digestion of which was disturbed. These functional disturbances of the intestinal digestion might exist without appreciable anatomic change of the digestive apparatus, or they might be associated with lesions of that tract. The idea of testing the functions of the intestine in a similar manner as those of the stomach prevailed among clinicians for a long time, but its execution was attended with great difficulties. By means of the bead test, which Dr. Einhorn demonstrated at a meeting of the association a year ago, an approximate estimate of the work of the intestine became possible. The method was easy to apply and the results were sharply defined. By a large number of examinations, the results of which would soon be published, he had become convinced that the digestive functions of the bowels might be well judged by means of this test, and he saw no reason why it should not be utilized in the study of diseases of the bowel. In using the bead test, if we found a substance in the beads undigested, it should not be taken for granted that no digestion whatsoever of such substance might occur in the bowel. That would be wrong, for the same food stuffs in liquid form might still be well digested. We could only conclude from this test that there was a considerable diminution of the digestive power for those substances.

Dr. H. W. Bettmann, of Cincinnati, said he had used these beads in some forty instances, and the conclusions he had derived from them were very similar to those of Dr. Einhorn. In a certain number of cases where he had employed them, only the potato substance was passed unchanged, indicating a carbohydrate intestinal indigestion. Because of the simplicity of the bead test, suggested by Dr. Einhorn, it would probably eventually have a wide application.

The discussion was continued by Drs. A. L. Benedict, of Buffalo, and J. C. Johnson, of Atlanta, and was closed by Dr. Einhorn.

(*To be continued.*)

Book Reviews.

The Prophylaxis and Treatment of Internal Diseases. By F. Forchheimer, M.D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio; Department of Medicine of the University of Cincinnati, etc. New York and London: D. Appleton & Co. 1906.

This book of Dr. Forchheimer fills a distinct need in American medical literature. Its scope has been limited wisely to two phases of the art and science of medicine, prophylaxis and treatment, with only a few necessary excursions into the other phases of medicine. It is a field not occupied fully by any other recent book. A book of such scope is a useful addition to the library of every practicing physician because it contains information for daily use in an accessible form. Frequent personal reference to the book during the past six months has proven it to be of much value, and on these grounds it is recommended rather than on the basis of a hurried review.

Most of the therapeutic suggestions receive the approval or disapproval of the author because in his own experience they have shown themselves useful or not. In fact, comparatively little of the work is based on other than first hand knowledge, though due credit is always given to the originator of every procedure. Methods not sufficiently tried by the author are given, however, with the opinion of some good authority as to their value. It is not to be expected that the reader will concur in all that is said, and a number of the reader's pet modes of treatment may be undescribed or subjected to adverse criticism. However, treatment based on the directions of this book will be rationally conservative and form a most excellent foundation from which, with experience and cautious experiment, the practitioner can gradually develop an efficacious therapy satisfactory to himself.

The general arrangement of the subject matter is excellent. In places, however, there is a distinct lack of smoothness of diction which detracts from an otherwise satisfactory book. Fortunately this is more evident in the preface than elsewhere — though to find it in the first few pages brings it with undue force to the attention of the critic. In a number of places through the book, there is an uncertainty of meaning which does not disappear on close analysis of the sentences. This results from a somewhat loose use of pronouns which might refer to one of several things, and the occasional heading of a paragraph in a way suggestive of a division of the subject into several parts, whereas in fact no such sub-division is carried out.

Rather more mistakes in spelling and use of words occur than should. The very frequent use of the active form, as "is doing," "is making," in place of the passive form "is being done," "is being made," jars on the ear. These, however, are minor defects to be righted in subsequent editions, and do not seriously detract from the value and usefulness of a book which presents so many good features. The list of drugs given at the back of the book does not contain a number referred to in the text. This is inconvenient as it necessitates reference to some other book. Some bibliography in the opinion of the reviewer would be an addition to a book in which various authors are so frequently quoted.

However, we understand that the demand for the book has been such as already to require a new edition, in which these minor changes can be made. No change in the make-up of the book will be needed so far as the publishers are concerned.

Cancer of the Rectum, Its Surgical Treatment, with an Appendix of 380 cases; Jacksonian Prize Essay. Fifth edition. By HARRISON CRIPPS, F.R.C.S., Senior Surgeon to St. Bartholomew's Hospital, etc. London: J. & A. Churchill. 1907.

This is a fifth edition, published thirty-one years after the first writing of that Jacksonian Prize Essay.

Readers familiar with surgical writing of the present generation know this work of Mr. Cripps', which has become almost a classic within the author's lifetime. The book, as now presented, contains 255 pages with 13 beautiful plates, and tables of cases filling 66 pages. It seems needless at this time of day to review again this well-known book. Mr. Cripps has rewritten the entire manuscript, introducing the best thought on recent investigations of the pathology, differential diagnosis and treatment of rectal cancer. We commend the book cordially to surgeons and to thoughtful students.

The Care of the Baby. By J. P. CROZER GRIFFITH, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Fourth revised edition. 12mo of 455 pages, illustrated. Philadelphia and London: W. B. Saunders Comapany. 1907.

This little book, which is now, as it has been in the past, one of the best of its class, has been thoroughly revised and brought up to date. An appendix, dealing with the principles of infant feeding both in health and disease, and giving a number of formulæ, has been added for the use of those parents for who some reason are thrown upon their own resources in this matter. We agree with the author, however, that these directions and formulæ should never be made use of except under these conditions, and that otherwise the feeding, both in health and disease, should be directed by a competent physician.

Gallstones and Diseases of the Bile-Ducts. By J. Bland-Sutton, F.R.C.S., Eng., Surgeon and Lecturer on Surgery to the Middlesex Hospital, etc. With 17 illustrations. New York: William Wood and Co. 1907.

Any book from the pen of this distinguished author deserves consideration, and though the little 200-page monograph before us is unpretentious we commend it cordially to students or practitioners who look for a brief, interesting and readable presentation of cholelithiasis, to intelligent practitioners, perhaps, rather than to students, for students concern themselves little with interesting books.

Bland-Sutton gives us eighteen short chapters, and deals in a pleasantly familiar way with the anatomy, physiology, pathology and surgical treatment of the bile passages. He gives the average reader all he can care to know, while one finds in the book various descriptions and dissertations on some of the more unusual aspects of bile passage disease.

The book is unpretentious, is well printed, is illustrated in a somewhat antique fashion and is comfortably small.

Woman. A Treatise on the Normal and Pathological Emotions of Feminine Love. By BERNARD S. TALMEY, M.D., Gynecologist to the Metropolitan Hospital and Dispensary, New York. For Physicians and Students of Medicine. 228 pages, flexible covers, with 22 drawings in the text. New York: The Stanley Press Corporation. 1906.

The author of this book explains in the preface that the medical student is not instructed as to the normal sexual emotions by his professors or by his textbooks, and sets himself the difficult task of filling in this gap in the medical curriculum. It has not occurred to him, apparently, that the subject should be approached reverently by one endowed with a wide training, not only in gynecology, but in ethics as well. Love is regarded as synonymous with passion, an affair of the flesh solely; therefore, the book, although containing a certain amount of valuable information, and planned with the best intentions, is distinctly nasty. There is a lot of pomposity in the use of Latin terms, a great many headlines, and noted authors are paraded freely. The following extract from the end of Chapter 38 gives a pretty good idea of the character of the work: "While in libido the entire body is in a state of sexual excitement. This general excitement depends upon the irritation of the fibers of the sympathetic nerves. The irritation spreads over the entire extent of the vasomotoric system. Hence, with every sexual excitement ensues an irritation of the vasomotoric system. The result is a great turgor of the genitals and an increased turgescence of all organs accessible to an objective examination. The general turgescence is seen in the injection of the conjunctiva, the prominence of the bulbi of the eyes, enlargement of the pupilla to almost twice its normal size and palpitation of the heart, which is caused by the paralyzation of the vasomotoric nerves coming from the sympatheticus of the neck. The coronary arteries become thus widened, and the muscles of the heart hyperemic, hence an increased excitation of the ganglia of the heart ensues."

THE BOSTON

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INTERNATIONAL CONGRESS ON TUBERCULOSIS.

A preliminary announcement of the International Congress on Tuberculosis, to be held in Washington from Sept. 31 to Oct. 12, has been published. The cosmopolitan character of this congress is forthwith manifest from the fact that the text is printed in four languages: German, French, Spanish and English. This meeting will no doubt be the most important that America has yet seen in regard to the tuberculosis problem. The Federal Government has shown a decided interest in the aims of the congress, and seven of the government departments have petitioned the United States Congress for the authority and means to participate in its deliberations, these departments being the Departments of State, of the Treasury, of War, of the Navy, of the Interior, of Agriculture and of Commerce and Labor. The whole question of tuberculosis has so far outgrown the attention merely of the medical profession, and has become a national problem of such wide significance that this action on the part of the Government is in no way surprising. In addition to the Federal Government, the governors of individual states have been notified of the congress, and most of them have taken official action in consequence. In fact, all the agencies in the United States which directly or indirectly come in contact with the tuberculosis problem have been invited to offer their contributions to the general fund of knowledge which the congress will provide.

The congress will be divided into seven sections: first, pathology and bacteriology, under the presidency of Dr. William H. Welch, of Baltimore; second, clinical study and therapy of tuberculosis, sanatoria, hospitals and dispensaries, under the presidency of Dr. Vincent Y. Bowditch, of Boston; third, surgery and orthopedics, under the presidency of Dr. William J. Mayo, of Rochester, Minn.; fourth, tuberculosis in children, etiology, prevention and treatment, under the presidency of Dr. Abraham Jacobi, of New York; fifth, hygienic, social, industrial and economic aspects of tuberculosis, under the presidency of Mr. Edward T. Devine, of New York; sixth, state and municipal control of tuberculosis, under the presidency of Surgeon-General Walter Wyman, of Washington; and, finally, tuberculosis in animals and its relations to man, under the presidency of Dr. Leonard Pearson, of Philadelphia.

During the three weeks of the sessions a tuberculosis exhibition will be open and lectures by distinguished investigators will be held, together with various clinics and demonstrations. The success of tuberculosis exhibitions is already assured as a means of education, and this one, in connection with the International Congress, will no doubt be more elaborate in detail than any hitherto held. Literature will be widely distributed, and matters illustrative of the disease will be gathered from all parts of the civilized world. In order still further to insure the success of the exhibition, the committee has decided to award testimonials to meritorious exhibits. For example, three cash prizes of one thousand dollars each will be given and several other awards of smaller value.

It is intended to publish papers announced in the official program previous to their presentation before the congress. These papers, printed in four languages, will be distributed on the day they are read. It is estimated that the final publication of the work of the congress will amount to four volumes, each of about two thousand pages.

It is hoped and expected that this congress will bring together men interested in the universal scourge of tuberculosis from every part of the world, and it is certainly not to be questioned that their deliberations will be of value as summing up our present knowledge of means of prophylaxis and treatment. In this connection it is interesting to look back twenty years and legitimate to congratulate ourselves upon the enormous progress made in combating an affection which we now know could only be successfully accomplished by combined effort.

BOSTON DIRECTORY OF CHARITABLE ORGANIZATIONS.

This volume, bearing the full title, "Boston Directory of Charitable and Beneficent Organizations," published by the Associated Charities of Boston, is of so great value to the medical profession that we are glad to call attention to it in these columns. The first edition of this directory was published in 1880, and contained but 182 pages of text as contrasted with the 500 of this last, fifth edition. This great enlargement of the volume is evidence, not only of the general growth of the city, but also of the special development of its various agencies of a charitable character.

We speak of the directory particularly because of our desire to call the attention of the medical profession to the information it contains bearing directly on their work. Many physicians are so completely occupied with the details of their professional work that they find small opportunity to investigate the various charitable organizations with which this or any other great city is filled. If this knowledge were more widespread, there is no doubt that many puzzling problems which present themselves to active practitioners regarding the proper disposition of cases would be easily solved. The procedure necessary, for example, in dealing with the insane, or others demanding the care of the city, will be found detailed in this admirable volume, succinctly and in convenient form for reference.

Further than this a section is given over to legal suggestions in which the rights of individuals and the duties of the city in relation to the poor, illegitimate children, boarding of infants, paupers and similar matters are clearly stated. These are evidently matters about which every physician practising in a large community should know, and which, if known, he would undoubtedly find a great help in that part of his practice which deals with the unfortunate poor. A further matter of importance is a summary of the more important laws applying to dwellings in the city. In this department the organization of the health department is discussed and its duties defined. The significance of the term "nuisance," which often bears very closely on matters of health, is laid down in definite form. Garbage, drainage, infectious diseases, overcrowding, building permits, air spaces, — all these and many other analogous matters are gathered together in small compass and so arranged as to be exceedingly easy of reference. The main portion of the volume is taken up with a well arranged list and description of all reputable charitable institutions in the city, although the Directory does not assume any special knowledge of the character of these institutions, beyond the fact that they are being legitimately conducted.

We have no hesitation in cordially recommending this book to the medical profession as a valuable directory and also as a means of explicit information on a great variety of subjects with which every physician must be brought more or less into contact. As the physician enters more and more into the social life of the community in which he lives, and takes a larger share in its problems, it is evident that the need of such a directory as this of the Associated Charities will be increasingly manifest.

REPORT OF THE SURGEON-GENERAL OF THE ARMY.

The report of the Surgeon-General of the Army to the Secretary of War for the fiscal year ending June 30, 1907, is a pamphlet of 183 pages containing many interesting facts regarding the medical conditions of the United States Army, together with the usual statistics and figures illustrative of the rise and fall of various diseases. As we have repeatedly had occasion to say, the careful tabulation of statistics regarding disease in the army, if carried out each year by the same system, must throw much light finally on the fundamental problems of the sanitation of large bodies of men. For example, it appears that malarial diseases have steadily increased in the army since 1904, a fact which has led to an investigation of the cause. Although it is now recognized that effective screening against mosquitoes is an important preventive measure, nothing has been accomplished in this regard in the Philippine Islands. Certain hospitals are absolutely without screens, and when this became known, a recommendation was forthwith made that adequate screening be provided to exclude mosquitoes. This example of apparent flagrant neglect of an ordinary precautionary measure was clearly brought to light by the unexplained increase of malarial fever. The same naturally applies to other conditions. In general, we commend this report to the careful inspection of all health officers and those engaged particularly in sanitary problems. The amount of information compressed into small compass is so great, and much of it is so significant for problems of sanitation and prophylaxis, that it will well repay careful study. Naturally, the extension of our domain into tropical countries increases the scope of this report to a very great degree.

A NEW CLINICAL JOURNAL.

We have received within a few days the first number of a new medical journal, entitled *The Quarterly Journal of Medicine*, printed at the Clarendon Press, Oxford, and also obtainable in London, New York and Toronto. The following names appear on the editorial board: William Osler, J. Rose Bradford, A. E. Garrod, R. Hutchison, H. D. Roleston and W. Hale White, with the collaboration of twenty-five other distinguished practitioners. So far as one may judge from this first volume, the journal is to be devoted to medicine rather than to surgery, a need which is apparent in the English-speaking countries. There are thirteen contributions to this number by such men as Byrom Bramwell, Robert Hutchison, William Osler and G. A. Gibson. The articles for the most part are much more than mere clinical reports of cases, and represent painstaking laboratory research. It is particularly to be hoped that the future numbers of the journal may continue to insist upon the intimate relationship existing between the clinic and the laboratory, and that the journal may therefore stand as a completely adequate representative of medicine from the broadest standpoint. There is small doubt that this policy will be followed, judging from the men who are responsible for the publication. In form the journal is dignified and entirely satisfactory. It is liberally illustrated, two plates being in colors and many others printed on special paper. Altogether, both in form and substance, the journal starts on its career with every prospect of success, at least on the literary side. It is announced that a number will be issued once in three months after the manner of the chief English neurological publication, *Brain*. We wish the journal all success.

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MEDICAL NOTES.

Cholera in Russia. — It is reported that cholera is spreading in Russia.

Death of Dr. Eduard Hitzig. — In the death of Dr. Eduard Hitzig, Emeritus Professor of Psychiatry in the University of Halle, the world loses an indefatigable worker on the subtle problems of brain physiology. Professor Hitzig has long been a prominent figure in German medicine. He reached the age of seventy years.

Endowment for a Hospital. — By the will of the late Miss Anna T. Jeanes about $5,000,000 is said to have been left for public purposes, among others the establishing of a hospital. A large bequest was made to Swarthmore College conditional upon the abandonment of intercollegiate sports. The decision of the board of managers has not yet been made public.

Entering Medical Classes. — It is stated that the entering medical class at McGill University is smaller than usual, attributable probably to an increase in the requirements and to the fire which destroyed one of the most important buildings. The entering class at the Harvard Medical School is this year somewhat larger than for several years previously. A considerable number of those coming to this school for the first time this year have applied for advanced standing.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 16, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 43, scarlatina 40, typhoid fever 23, measles 4, tuberculosis 30, smallpox 0.

The death-rate of the reported deaths for the week ending Oct. 16, 1907, was 19.51.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 12, 1907, was 212, against 178 the corresponding week of last year, showing an increase of 34 deaths and making the death-rate for the week 18.14. Of this number 112 were males and 100 were females; 207 were white and 5 colored; 138 were born in the United States, 66 in foreign countries and 8 unknown; 44 were of American parentage, 135 of foreign parentage and 33 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 35 cases and 3 deaths; scarlatina, 38 cases and 0 deaths; typhoid fever, 27 cases and 1 death; measles, 6 cases and 0 deaths; tuberculosis, 35 cases and 13 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 16, whooping cough 1, heart disease 30, bronchitis 1 and marasmus 14. There were 11 deaths from violent causes. The number of children who died under one year was 65; the number under five years, 79. The number of persons who died over sixty years of age was 45. The deaths in public institutions were 79.

There were 4 cases and 1 death reported from cerebrospinal meningitis during the week.

Nurses in the Boston Schools. — Although the new system of school nurses has been in use but a short time, results are apparent. As the principal of one school expressed it, "The nurses are supplying the medium between the school and the home." It is said that the chief difficulty which the nurses encounter in the prosecution of their work is the ignorance of parents. This is not surprising in view of the limited intelligence of many with whom the schools and the nurses come immediately into contact.

Children's Clinic at Consumptives' Out-Patient Department. — Within a few days the first clinic for children at the Boston consumptives's out-patient department has been held. Twenty presented themselves, but none were found with positive symptoms of the disease. One object of this out-patient department is to discover the disease at the very earliest time, and in general to do missionary work regarding fresh air and good food, even if signs of the disease have not actually appeared. A gratifying amount of work has already been accomplished by this addition to the city's means of combating tuberculosis.

Ether Day at the Massachusetts General Hospital. — As has been the custom for some years past, Oct. 16 was celebrated at the Massachusetts General Hospital as "Ether Day," being the sixty-first anniversary of the surgical use of ether as an anesthetic. Nurses were invited to visit the hospital on this occasion; in the afternoon lantern slides were shown in the lower amphitheater of the Out-Patient building, and tea was served in the old operating room in the dome of the Bulfinch Building. The recently completed orthopedic ward was also thrown open for inspection.

NEW YORK.

College of Physicians and Surgeons. — At a meeting of the trustees of Columbia University held Oct. 7, Marcellus Hartley Dodge was elected a member of the Board of Trustees to fill the vacancy caused by the death of Dr. George E. Wheelock, and Dr. Robert F. Weir and Charles McBurney, professors of clinical surgery, were made Emeritus Professors of Surgery. The following gifts to the medical department were announced: from Bernard M. Baruch, $5,000 for the Vanderbilt Clinic, and from Mrs. George E. Wheelock, $5,000 as a fund in memory of her late husband, the income to be applied to the service of the Department of Physiology.

School of Catholic Women's Association. — The School of the Catholic Women's Association of Brooklyn has just entered upon its twelfth season. It was inaugurated by the rector of St. Augustine's Church, in the interest of the young women of his parish, whose education had been neglected, and it has gradually extended its work throughout the diocese. The association is now a branch of the State University, and among the subjects taught is nursing. The course in nursing is for young women over twenty years of age, who cannot spare the time to take a regular hospital course for trained nurses. It comprises lectures five days in the week by competent physicians, and practical lessons by a masseuse and dietitian, with instruction in cooking for invalids. At the end of twelve weeks candidates are thoroughly examined, and if they pass satisfactorily are given a certificate, which entitles them to enter upon work immediately as Nazarene nurses. After six months' practice these nurses are given a diploma and qualified to take cases for which a trained nurse is not specifically required. It is now four years since this system was instituted, and, on account of their comparatively low fees and their efficiency, the demand for these Nazarene nurses has become so great that it can scarcely be met by the graduates. They do not pose as trained hospital nurses, but in many cases are recommended by physicians in their stead.

Reduction in Death-Rate. — The weekly reports of the Health Department show a gratifying reduction of the death-rate, both as regards August and the month of September last year. The mortality in the city during September represented an annual death-rate of 16.62, as against 20.12 in the month of August and 17.88 in September, 1906. Among the diseases in which there was a diminished fatality were the following: The weekly average of deaths from measles decreased from 13.5 in August to 4.75 in September; the weekly average from whooping-cough, from 15.75 to 6.25; from diphtheria and croup, from 23.25 to 21.5; from pulmonary tuberculosis, from 148.25 to 142.75; from broncho-pneumonia, from 87 to 59.75; from diarrheal diseases, from 440.75 to 252; from diarrheals under five years of age, from 414.5 to 233.5; from cancer, from 64.75 to 57.75; and from Bright's disease and acute nephritis, from 104.25 to 87.75. Among the few diseases in which there was an augmented mortality were the following: The weekly average of deaths from typhoid fever increased from 16.25 to 19; from lobar pneumonia, from 51.25 to 56; from apoplexy, congestion and softening of the brain, from 41.5 to 45.75; from organic heart diseases, from 114 to 121; and from cirrhosis of the liver, from 17.5 to 20.5.

Current Literature.

Medical Record.

Sept. 21, 1907.

1. Richardson, H. *The Hepatic Functions, Their Pathology and Treatment.*
2. Coburn, E. B. *Advantages and Disadvantages of Simple Extraction of Cataract.*
3. Flint, C. P. *The Operative Treatment of Fractures Involving the Elbow Joint.*
4. Krall, G. H. *The Administration of Proteids in Tuberculosis.*
5. Harvey, T. W. *A Case of Very Large Dilatation of the Cecum.*

New York Medical Journal.

Sept. 21, 1907.

1. Cumston, C. G. *A Case of Facial Paralysis.*
2. Benedict, F. G. *Metabolism during Inanition.*
3. *Pancoast, H. K. *The Advantages and Limitations of the X-Ray in the Treatment of Surgical Tuberculosis.*
4. McPhedran, A. *The Natural Course of Disease.*
5. Potts, B H. *Report of a Case of Septic Meningo-encephalitis or Cerebritis.*
6. Ullman, J. *Nephroptosis.*
7. Karpas, M. J. *Juvenile Paresis, with a Report of One Case.*
8. Welker, W. H. *A Contribution to Our Knowledge of the Effect of Urinary Preservatives on Urinary Analysis.*

3. The x-ray probably has no direct effect on the tubercle bacillus, either inhibitive or bactericidal. The action is that of stimulation of the surrounding tissues. In lupus vulgaris Pancoast finds the x-ray a specific. In this disease the x-ray has supplanted surgery, which is to be regarded only as an adjunct. In other tubercular conditions, the x-ray is to be used only in connection with other treatment. The writer reports good results with x-ray in tuberculous adenitis, laryngitis, peritonitis, cystitis and orchitis. He thinks it may be of some value in phthisis. He has seen no good results in the treatment of bone and joint tuberculosis with the x-ray. [R. I. L.]

The Journal of the American Medical Association.

Sept. 21, 1907.

1. Bouvée, J. W. *The Status of the Fight against Cancer of the Uterus.*
2. Montgomery, E. E. *How Can We Lessen the Mortality of Uterine Cancer?*
3. Marvel, E. *Prevention of Peritoneal Adhesions by Adrenal Salt Solution, with Special Reference to the Pelvis.*
4. Ochsner, A. J. *Practical Points of Economy in Hospital Construction.*
5. Thompson, W. G. *Modern Hospital Construction.*
6. Pedersen, V. C. *An Inhaler for the Ordinary Sequences and Mixtures of Anesthetics. On the Principle of Unobstructed Respiration.*
7. *McClure, R. D. *An Experimental Study of Intestinal Obstruction.*
8. Martin, F. *Post-operative Ileus.*
9. Bull, W. T., and Coley, W. B. *Report of Two Thousand Operations for the Radical Cure of Hernia.*
10. *Hatcher, R. A. *Cactus Grandiflorus and Cactin or Cactina.*
11. Stone, I. S. *Salpingitis Caused by Appendicitis.*

7. McClure isolated in animals a loop of bowel, closing the ends, and at the same time restored the continuity of the bowel by an anastomosis of the free ends. The animals all died within a few days with symptoms similar to intestinal obstruction. This suggests that the symptoms of obstruction are due to intoxication from the confined intestinal contents. The writer produced chronic obstruction by reversing a portion of bowel. The animals showed no severe symptoms, but became progressively emaciated. Autopsy after several months showed a distention of the intestine greater than in most cases of acute obstruction.

10. Hatcher finds that the "cactina pillets" of the Drug Company and the cardiac tonic (cactin) of the Sultan Abbott Alkaloidal Company are inert when used on animals in doses that are even thousands of times as large as those recommended by their exploiters. [R. I. L.]

Annals of Surgery.

September, 1907.

1. *Crile, G. *The Technique of Direct Transfusion of Blood.*
2. Torrance, G. *Arteriovenous Anastomosis.*
3. *Munro, J. C. *Ligation of the Ductus Arteriosus.*
4. *Stewart, F. T. *Arteriotomy for Thrombosis and Embolism.*
5. Sweet, J. E. *Technique of Blood Vessel Suture.*
6. Frazier, C. H. *Endo-Aneurysmorrhaphy.* (*Matas.*)
7. Gibbon, J. H. *Endo-Aneurysmorrhaphy.* (*Matas.*)
8. *Watts, S. H. *The Suture of Blood Vessels. Implantation and Transplantation of Vessels and Organs.*
9. *Tilton, B. T. *The Operative Treatment of Acute Abscess of the Lung.*
10. Weil, R. *Concerning a Distinct Type of Hypernephroma of the Kidney, which Simulates Various Cystic Conditions of That Organ.*
11. *Watson, F. S. *The Extension of the Field of Treatment of Certain Renal and Vesical Conditions That is Made Available by a New Contrivance for Long Continued or Permanent Drainage of the Kidneys through Renal Fistula in the Loin.*
12. Watson, F. S. *Certain Aspects of Calculous Anuria with Especial Reference to the Performance of Bilateral Nephrolithotomy Simultaneously in Some Cases of This Condition.*
13. Walker, G. *A New Combined Lithotrite with Cystoscope.*
14. Jacobson, A. C. *A Telephonic Searcher for Use in the Bladder.*
15. *Ladd, W. E., and Osgood, G. *"Gauze-Ether" or a Modified Drop-Method, with its Effect on Acetonuria.*

1. Crile describes his method of direct transfusion of blood by the aid of a specially devised tube, which allows him to place intima against intima, and thus avoid clotting. In the human, transfusion is made between the radial artery of the donor and a superficial vein of the recipient. The blood should be introduced very slowly, and the anastomosis continually protected from the air by constant application of warm salt solution. The blood lost by the donor is regained in from four to five days. His experience is based on 225 animal experiments, and 32 clinical cases.

3. Munro suggests that in cases of babies in whom the ductus arteriosus has failed to close, this vessel may be ligated by surgical intervention. He has demonstrated the feasibility of such ligations on the cadaver. The difficulty of diagnosis of the condition, however, makes its practical application problematical at present.

4. Stewart believes that the opening of an artery to remove either a thrombus or embolus can be readily performed without danger of secondary hemorrhage. Such a procedure is particularly indicated when the intima is smooth. It should be performed as soon as possible after the arterial obstruction develops. Even though the vessel again becomes obstructed with clot, this may form slowly, and give the collateral vessels a chance to dilate.

8. Watts gives a very careful résumé of all the literature on the suture of blood vessels, including its application to transplantation of vessels and organs. From a large amount of experimental material, he concludes that completely divided vessels can be sutured with almost uniform success, when the aseptic technique is perfect. In making the suture, he uses the method of Carrel. The vessel's ends are first united by three interrupted stitches, equally distant from each other on its circumference, and penetrating all the coats. By traction upon these guide stitches, the edges of the vessel are approximated and a continuous suture applied. The material used was silk, boiled in vaseline. All instrumental handling of the ends of the vessels is to be avoided. Out of 31 experiments upon the vessels of the neck, 28 were successful.

9. Tilton reports 20 operative cases of abscess of the lung occurring at the Bellevue Hospital. The mortality was 50%. Cases of lobar pneumonia running an irregular course, suggesting secondary empyema, should be regarded with suspicion. In such cases, he advises exploration by resection of one or more ribs; palpation and inspection of the pleura; search for an adherent area, and trial punctures of the lung through the adherent portion. Should there be no evidences of adhesion between the visceral and parietal pleura, he advises suture of these two membranes, so as to bring about such adhesions. If the suture has been done satisfactorily, the incision of the pleura can be done at once, without being put off until a second sitting. If, however, the patient's condition is good, the delay of a couple of days will doubtless insure stronger adhesions. In making a diagnosis of lung abscess, the x-ray is often of value.

11. Watson proposes the simultaneous performance of bilateral nephrostomy, tying off both ureters, and at the same time establishing permanent renal fistulæ in the loin, thus wholly diverting the entrance of all urine into the bladder. This can be done (1) as a palliative measure for cases of inoperable tumor of the bladder, as well as in cases of tuberculosis of the bladder, originating in the kidneys; (2) as a preliminary step toward total extirpation of the bladder. The apparatus which he has devised to insure permanent drainage from the renal fistula is composed of (1) a hard rubber cup-shaped shield, through which the tube that drains the cavity is passed; (2) a light metal receptacle into which the urine is conveyed; (3) a rubber tube at the bottom of the receptacle by which it is emptied; (4) elastic belts passing around the body, by which the shield and receptacle are held in place. Good illustrations of this device are given. In two instances, the writer has used it with entire success.

15. Ladd and Osgood, in examining the urine of 120 cases after etherization, found acetone present in 88.5%. These cases were all etherized with a cone, or by the semi-open method. Ether anesthesia produced by a modified drop method, using a plain pad of gauze over the the patient's mouth and nose, was followed by acetonuria in but 26%. They describe the method of etherization as follows: A square pad of gauze, twelve layers thick, and large enough to cover the patient's mouth and nose, is laid directly on his face. Ether is then dropped on this gauze by means of a drop bottle. In about a minute, a similar pad is laid on the first, and the rapidity of the drops increased. The ether should never be poured on in large quantities. The average time needed to produce complete anesthesia is about five minutes. The average amount of ether necessary is about 7 oz. per hour. It is also claimed by the writers that this method is less disagreeable to the patient, that post-operative vomiting is much less frequently seen, and that recovery of consciousness occurs more quickly than after the closed methods of administering ether. [W. C. Q.]

Bulletin of the Johns Hopkins Hospital.
August, 1907.

1. *Hamman, L. *A Brief Report of the First Two Years' Work in the Phipps Dispensary for Tuberculosis of the Johns Hopkins Hospital.*
2. *Hazen, H. H. *The Home Factor in Tuberculosis. A Study of Tuberculous Families.*
3. *Hamman, L., and Wolman, S. *The Early Diagnosis of Pulmonary Tuberculosis.*
4. Flick, L. F. *The Crusade against Tuberculosis.*
5. Jacobs, H. B. *The Tuberculosis Situation in Maryland.*
6. *Bloodgood, J. C. *Intestinal Obstruction.*
7. Pohlman, A. G. *The Purple Island of Phineas Fletcher.*

1. Hamman describes the development and work of the Phipps dispensary, and gives statistics of results. The main function of the dispensary is held to be the prevention of the spread of the disease by means of popular education. In carrying this out much stress is laid upon the importance of the work of the nurses in securing continued adherence to the principles of treatment. A list of 700 patients is being visited. The effect of this in prophylaxis cannot fail to be great. Secondary to the prophylactic aims, but with increasing attention, the treatment of individual patients has been undertaken in a total of 1,474 cases, treated mainly by direction of the dispensary under supervision of the nurses. A small number were treated by the class method. The symptoms and results are briefly analyzed. Of 498 cases of pulmonary tuberculosis followed from eight to twenty-six months 16.4% are now improved, 14.3% unchanged, 18% worse and 51.27% dead.

2. Hazen has studied 83 families, of which one or more members were tuberculous, to obtain evidence as to the frequency of the transmission of infection to other members of the family In two thirds of the cases a diseased parent had infected one or more children. Of cases where a husband or a wife had tuberculosis the consort developed the disease in 43%. Of the children exposed to parental infection 38% contracted tuberculosis. Of the 254 members of these families only three of those not in contact with their families developed the disease.

3. Hamman and Wolman discuss the diagnosis of pulmonary tuberculosis with special reference to the tuberculin reaction. They urge the greatest possible care in consideration of symptoms, physical signs and sputum examination, but in cases where these create suspicion, but fail to establish the presence of tuberculosis, they rely upon the diagnostic use of tuberculin, beginning with a dose of one fifth of a milligram, repeated three or four times, then doses of 1, 5, and 10 mgm.; temperature constitutional symptoms and local reaction manifested by changes in the local signs must be considered. A negative reaction gives positive proof of the absence of tuberculosis. A positive reaction must not be regarded conclusive, but is of value as a bit of evidence in addition to the symptoms and physical signs.

6. Bloodgood describes the condition of intestinal obstruction in two forms: strangulation ileus where in addition to obstruction there is interference with blood supply, and obturation ileus where the blood supply is not disturbed. In both of these surgical treatment should be applied, if possible, within the first twenty-four hours, but in the strangulated form there is special danger in delay. Fortunately, in this form the symptoms of onset are more acute and characteristic. The symptoms due to interference with circulation are pain (probably due to pull on the mesentery), peritoneal shock, and reflex vomiting. The obstructive symptoms, fecal vomiting and distention occur later and should not be waited for in diagnosis. The severity of the shock is greater than in appendicitis, gallstones or renal calculus, a point which is of value in diagnosis. The patient is pale with rapid pulse and feeling of weakness "as if he had keen kicked in the abdomen." The local tenderness and spasm of appendicitis and cholecystitis are absent, but there is a general rigidity of the abdominal muscles. Occasionally a distended loop of intestines can be palpated, externally or by vagina or rectum, and when this is present it is pathognomonic. Peristalsis may be made out in certain cases. A leukocytosis is constantly present. In obturation ileus the acute primary symptoms are frequently absent, but there is often a history of previous constipation and colic, and frequently of previous attacks of obstruction. Vomiting may be absent but the constipation and distention must be regarded as suspicious. Visible peristalsis is a constant early symptom where the small intestine is the seat of the obstruction, but the distention is much less than where the obstruction is lower. For the general practitioner it is to be emphasized that the diagnosis of any intestinal obstruction should be made early, and that cathartics by mouth and morphia are to be avoided; the stomach should be washed out and enemata given. In operation chloroform is the best anesthetic. In desperate cases a simple colostomy under cocaine is indicated. [F. W. P.]

The Lancet.
Sept. 21, 1907.

1. *Paterson, H. J. *The Operation of Gastro-jejunostomy and its Physiological Effect.*
2. Iwai, T. *Relation of Polymastia to Multiparous Birth*
3. *Harrison, E. H. *Mucous Colitis.*

4. Nash, J. T. C. *Notes on, and Remarks Suggested by, a Case of Malignant Endocarditis (Diphtheritic) with Terminal Cerebrospinal Symptoms.*
5. Higgens, C. *Case of Double Optic Neuritis; Symptoms of Cerebellar Tumour; Complete Recovery.*
6. Dawson, J. B. *A Case of Land Scurvy Occurring in a Patient after a Prolonged Period as an In-patient in a Hospital and as a Complication of a Fistula in Ano.*
7. Seligmann, C. G., and Sambon, L. W. *Preliminary Note on a Leucocytozo-on Found in the Blood of the Red Grouse (Lagopus Scoticus).*
8. Jones, E. *The Clinical Significance of Allochiria.*
9. Mackie, F. P. *A Preliminary Note on Bombay Spirillæ Fever.*

1. Paterson, while admitting that both bile and pancreatic secretion must find their way into the stomach after the operation of gastro-jejunostomy, thinks that it is distinctly beneficial, and that some of the good results noted after this has been done for gastric ulcer are due to the alkaline fluid bathing the ulcer. There is also a marked diminution of the total acid secreted by the stomach, due not only to partial neutralization by the pancreatic fluid but to an actual decrease in the chlorides. He does not agree with many others who believe that gastric digestion is entirely done away with after this operation. Beneficial results after this operation are not due to drainage, but to the diminished acidity which allows healing of the ulcer. Many writers believe that such a radical change in the abdominal anatomy cannot be made without bad results on the metabolism. Paterson does not agree with this view, and reports experiments he has made confirming his theory.

3. Harrison gives a careful summary of the various views on the subject of mucous colitis. He dwells especially on the disorders of a more or less neurotic nature associated with it, such as asthma, disturbances of the female pelvic organs, and appendicitis. This latter may be part of the colitis, in which case operation will not cure the disease in the colon, or else it is a true appendicitis preceding the attack of colitis; in which case operation often relieves all symptoms. The evidence points to the conclusion that this disease is a pure neurosis, either secretory or motor. He goes over the symptomatology in detail, especially that cardinal symptom — pain. The patient should be kept in bed and carefully watched for some time. During the attack castor oil in large doses is indicated, enemata of various kinds and colon irrigations of warm water. In the intervals general measures to relieve the constipation, and to reduce all nervous irritation should be employed. [J. B. H.]

British Medical Journal.
Sept. 21, 1907.

1. Craig, J. *Clinical Remarks on Medical Cases Demonstrated in the Meath Hospital, Dublin.*
2. Weaver, A. E. R. *A Case of Bradycardia with Epileptoid Attacks.*
3. Handley, W. S. *An Operation for Embolus.*
4. Tweedie, A. R. *Aneurysm of the Foot.*
5. Symmers, W. St. C., and Wilson, W. J. *Epidemic Cerebrospinal Meningitis with Typhoid Agglutinins in the Blood.*
6. Leary, T. G. S., and Ellis, C. *A Case of Aneurysm of the Abdominal Aorta without Symptoms.*
7. Inglis, H. M., and Fenwick, P. C. *A Case of Cerebellar Hemorrhage.*
8. *Power, D'A. Howard, R., and Dixon, W. E. *A Discussion on Diseases and Displacements of the Testicle.*
9. Edington, G. H. *Some Malformations of the Penis.*
10. *Nitch, C. A. R. *Pneumococcic Arthritis in Children with a Report of Two Cases.*
11. Voelcker, A. F., Sikes, A. W., Stephenson, S., and Thompson, T. *A Discussion on Acute Nephritis in Children and its Results.*
12. Buzzard, E. F., Batten, F. E., and Forbes, J. G. *A Discussion on Lumbar Puncture: Its Diagnostic and Therapeutic Value.*
13. Langdon-Down, R. L. *Precocious Development.*
14. Guthrie, L. G. *Precocity in Relation to the Ductless and Accessory Genital Glands.*
15. *Kelynack, T. N. *The Care of Tuberculous Children.*

8. Power briefly considers the diseases of the testicle under the headings of tuberculosis, syphilis, teratomata, malignant disease, acute torsion of the cord, hydrocele and undescended testicle. In the latter case if the testicle lies in the femoral region or in the groin he invariably removes it. Howard goes over exactly the same ground in a similar way. Dixon considers the subject from the point of view of organo-therapy and discusses the literature of the subject of an internal secretion from the testes and its physiological effects. He believes that there is a very close physiological connection between the adrenal glands and the testes.

10. Nitch reports two cases of pneumococcic arthritis in children, and considers the subject in general. The prognosis is grave, the mortality being 50% in children. The treatment is essentially surgical, though vaccines in early cases should be tried.

15. Kelynack believes that pulmonary tuberculosis in children is far commoner than supposed, and deplores the lack of interest shown in this subject. He gives statistics of English examiners and Grancher's figures among Paris school children showing that 2% to 3% of children had open tuberculosis and 16% to 18% closed tuberculosis. The most important part of treatment is prophylactic. All children of tuberculous parents or who have been exposed to tuberculosis should have special surroundings and training; removal of these children from their homes into the country, forest schools, etc., are measures which should be imitated. France has 6,000 beds for consumptive children; England, 500. Special sanatoria are needed; those planned for adults will not do. He hopes soon to see established a national society for the study and care of tuberculous children. [J. B. H.]

Münchener Medizinische Wochenschrift. No. 32.
Aug. 6, 1907.

1. *Fischler. *The Sucess and the Dangers of Alcohol Injections in Neuritis and Neuralgia.*
2. Küster. *Eczema Following the Continuous Both.*
3. Wiens. *A New Method of Blood Culture.*
4. Leybreth, L. *Contribution to the Literature of Tumors of the Bladder in Anilin Workers.*
5. Wyss, M. O. *Theory of the Action of "Scharlachöl" Injections in Causing Carcinoma-like Growths.*
6. *Fraenkel, E. *A Case of Congenital Syphilis of the Intestine.*
7. Schumacher. *Severe Streptococcus Conjunctivitis Simulating a Diphtheritic Infection Following Measles.*
8. Danziger, F. *Vaccinia Generalisata.*
9. Pasch, E. *Foreign Bodies in the Nose Resulting from Trauma.*
10. Bernhard, O. *Remarks on the Radical Operation for Inguinal Hernia.*
11. Bretschneider, A. *Findings in the Blood of Neurasthenics.*
12. Aufrecht. *The Treatment of Delirium Tremens.*
13. His, W. *A New Apparatus for Determining the Viscosity of the Blood.*
14. Wiesner, B. *Improved Method of X-Ray Examination in Stomach Cases.*
15. Neustätter, O. *Some Facts Interesting to Physicians Gathered during a Mediterranean Voyage.*

1. Fischler has treated 15 cases of neuritis and neuralgia with Schlösser's method of alcohol injection. The injection is made directly into the nerve, 70% alcohol being used, and the place for injection being usually the point tenderest on pressure. Out of 12 cases of sciatica thus treated, 4 were completely cured, 4 much relieved, in 3 no relief was obtained, and in 1 case, though the pain was relieved, a complete paralysis of the deep peroneal nerve ensued; 3 cases of trigeminus neuralgia were cured. In 3 cases treated by Erb in his private practice, though pain was relieved, more or less complete paralysis followed the injections. The author concludes that while this procedure is often of great value, it is in many cases dangerous.

6. Fraenkel reports the case of a premature baby born

of a syphilitic mother, who five days after birth died, with symptoms of general peritonitis. The autopsy showed an old chronic peritonitis, which must have occurred during intra-uterine life, and a fresh purulent peritonitis. In the gut numerous small deep ulcers were found, which the author considers as the starting point of the peritoneal processes. Histological examination of the ulcerated areas revealed great numbers of the spirocheta pallida, occurring in the walls of the ulcer, in the capillaries of the submucosa, and in the muscular layers. In a zone about the ulcers the mucous glands of the mucosa were everywhere filled with spirochetes. Though no other manifestations of syphilis were to be demonstrated the author considers these ulcers to be of syphilitic origin. Such a condition is extremely rare. [R. D.]

BERLINER KLINISCHE WOCHENSCHRIFT. No. 30.
JULY 29, 1907.

1. *MEYER, E. *Examination of the Nervous System of Syphilitic Patients.*
2. BRIEGER, L., AND KRAUSE, M. *Contribution on the Concentration of Immune Bodies in Diphtheria Serum.*
3. PICK, L. *Spermatocystitis Due to the Meningococcus.* (Continued article.)
4. *PERITZ, G. *Neuralgia and Myalgia.*
5. ROLHSCHUH, E. *"Family" Syphilis in Central America.*
6. COHN, M. *The Results of X-Ray Examination in Fracture of the Elbow.*

1. Meyer reviews the observations of Jolly and others on the appearance of functional and organic nervous disorders in the secondary and early tertiary stages of syphilis. He reports the results of careful examinations of 61 cases in the early secondary stage and 11 in the early tertiary. Out of 61, only 3 gave evidence of functional conditions developing after the infection; in 9, pre-existing functional disturbances were increased in intensity; in one half the cases a markedly increased irritability of the nervous system was to be demonstrated. Organic nerve lesions were found in only 5 out of the 61. Jolly's "Syphilitic neurasthenia" was not seen in any case. Out of the 11 patients with tertiary syphilis, in only 3 was organic disease of the nervous system found; in one a pre-existing hysteria had increased. The author concludes that early nerve disturbance, whether functional or organic, is extremely rare. In 30 syphilitics the spinal fluid was examined; 19 showed a more or less marked lymphocytosis, and 15 a pathologic albumin content. No connection between these findings and the clinical manifestations of nerve disorders could be discovered.

4. Myalgia and neuralgia are much abused terms, Peritz claims, also numerous cases of the above diseases pass unrecognized under the name of rheumatism, heart disease, etc. Though no pathologic changes can be demonstrated, each has a definite set of symptoms. Pain is the foremost complaint: in neuralgia it is referred to the nerve affected, occurs periodically, and is accompanied by tender points over the nerve. In myalgia, the pain is referred to a muscle, usually near its tendinous insertion, or at its thinnest part. Tender points occur also in myalgia, but are usually much larger than in neuralgia. A most characteristic symptom is, that over the affected muscle the skin is hyperesthetic to pin prick and to the faradic current. The introduction of a needle into the affected muscle, the skin being previously cocainized, causes acute pain. The author has found that 0.2% salt solution injected into the tender points of the muscle will usually relieve the pain. Many cases of simple "myalgia" over the precordia have led to a diagnosis of angina, pseudo-angina, or cardiac neurosis. [R. D.]

ZEITSCHRIFT FÜR KLINISCHE MEDIZIN. BD. 63, HFT. 1–4.

FESTSCHRIFT HERRN PROF. DR. S. E. HENSCHEN.

1. *FORSSNER, G., AND SJÖVALL, E. *Poliomyelitis acuto, with a Contribution to the Knowledge of Neuronophages.*
2. *KÖSTER, H. *Two Cases of Diagnosed and Operated Tumor of the Spinal Meninges.*
3. *JUNDELL, I. *Vaccine Fever.*
4. *BORELIUS, J. *The Diagnosis and Treatment of Subcutaneous Traumatic Rupture of the Spleen.*
5. PETTERSSON, A. *Anthrax Immunity and the Bactericidal Substances of the Leucocytes (Endolysins).*
6. PETRÉN, K., AND BERGMARK, G. *Disturbances of Sensibility during and after Herpes Zoster; a Contribution to the Knowledge of the Distribution of the Nerves of Cutaneous Sense.*
7. *HENSCHEN, F. *Serous Cysts and Partial Defects of the Cerebellum.*
8. TILLGREN, J. *A Rare Case of Ependymitis of the Fourth Ventricle with Granulation Tissue and Giant Cells.*
9. *DAHLÉN, B. *A Case of Aortic Aneurism with Rupture into the Left Auricle; Some Remarks on Aortic Aneurism, Fibrous Aortitis and Syphilis.*
10. *JACOBAEUS, H. C. *A Case of Lymph Gland Tuberculosis Presenting the Picture of Pseudoleukemia, and its Treatment with X-Rays.*
11. HEDRÉN, G. *An Amyloid Tumor of the Bone Marrow.*
12. RYSTEDT, G. *A Case of Solitary Tubercle of the Cord with Incidental So-Called Heterotopia of the Spinal Cord Substance.*
13. *LENNANDER, K. G., AND NYSTRÖM, G. *A Casuistic Contribution to the Knowledge of Peritonitis Arising from Enteritis.*
14. *HEDENIUS, I. *Banti's Disease.*
15. KLING, C. A. *Spinal Cord Tumors and Cavity Formation in the Spinal Cord.*
16. *PETTERSSON, O. V. *Are Books Used by Patients with Pulmonary Tuberculosis Infected with Tubercle Bacilli?*
17. WICKMAN, I. *The Prognosis of Acute Poliomyelitis and Etiologically Related Diseases.*
18. HULTGREN, E. O. *Bibliographica Henscheniana.*

1. Forssner and Sjövall describe 2 very acute cases of poliomyelitis in which the most interesting finding is the occurrence of a very active phagocytosis by cells which invaded the ganglion cells. The ganglion cells appear to be injured, to degenerate, and then their remains are removed by a process of phagocytosis. This is a new observation in poliomyelitis, but the authors think that it is a common process which has hitherto escaped notice because the cases come to autopsy too late after the onset of the disease. They discuss also the problem as to whether the primary lesion is interstitial or parenchymatous and whether there is a causal relation between the two. They arrive at no very definite conclusion, but incline to the view that the interstitial is the earlier lesion and that the two arise independently from the same toxic cause.

2. Köster describes two cases of tumor of the spinal cord meninges almost solely from the point of view of symptomatology.

3. A detailed study of the temperature curves of infants to show the effect of vaccination. One hundred and fifty infants were studied and numerous illustrative temperature curves are given in this paper.

4. The report of one case of traumatic rupture of the spleen successfully operated upon, with a study of the blood changes over a period of two and one half months.

7. A detailed study of one case of cerebellar cyst with an extensive review and analysis of other reported cases.

9. This paper contains a detailed study of 22 cases of aortic aneurism.

10. Jacobaeus describes a case of a man of twenty who for three years had had a diffuse glandular swelling of one side of the neck with almost no constitutional symptoms. It was considered a case of pseudoleukemia and received x-ray treatment. After eleven exposures superficial ulceration developed. This slowly healed, leaving the glandular enlargement much less. Several months later marked splenic enlargement was noted. Exposure of the splenic region to the x-ray resulted in a marked decrease in size of spleen. Eventually the case died with symptoms of miliary tuberculosis of lungs and meninges. Autopsy and histologic examination showed a tubercular process in lymph glands, spleen, etc. Jacobaeus regards the case as primarily tuberculous. The good result of

x-ray treatment, contrary to the experience of many, he considers due to the fact that the tuberculous lesion was in large part a lymphocytic proliferation. Cases in which the change is mainly caseous or endothelial and connective tissue proliferation would be little affected by the x-ray, since its destructive action is chiefly on lymphocytes and leucocytes. This according to Jacobaeus explains the discrepant reports on the value of x-ray treatment in glandular tuberculosis.

13. Lennander and Nyström on a basis of 14 observed cases discuss peritonitis following enteritis. They distinguish the condition from septic peritonitis clinically by the much less marked constitutional and local symptoms. At operation they find sometimes purulent exudation, more often serous, which they believe in many cases to be either sterile or to contain very few bacteria. The lower intestine usually contains solid fecal matter, and some portion of the upper, varying in extent, shows congestion, hemorrhage and edema,— the primary local lesion. There is no demonstrable perforation. Many cases give no antecedent cause, others appear to follow dietary indiscretions. Prognosis is quite good after exploratory operation and exclusion of perforation or septic focus. After-treatment consists of rigid gastro-intestinal rest.

14. A single case is reported to show that the symptom-complex of Banti's disease may occur in conditions in which the pathological-anatomical changes in no wise resemble those described for Banti's disease. Syphilitic cases of this type have been reported. This case of Hedenius is interpreted to be a case of cirrhosis of the liver with very early, simple hyperplasia of the spleen. Hedenius thinks that the diagnosis Banti's disease should be carefully limited, and that at present it is undoubtedly too widely applied so as to include many cases that do not properly belong to this group.

16. Pettersson points out that very little attention has been paid to books as possible vehicles for the transmission of tuberculosis. Can tubercle bacilli be transmitted by books used by the tuberculous? He answers the question in the affirmative as the result of his investigations. He examined history sheets from a tuberculosis sanatorium by washing their surface with water and a brush and then sedimenting the water and examining the sediment microscopically. Of 10 histories examined 4 gave positive results. Of the 4 positive, 2 had lain on a table by the patient's bed, 2 had hung at the head of the bed. Of the 6 negative, 4 had lain on a table in the center of the room and 2 had hung at the head of the bed. There was no evidence that flies had served as carriers of the bacilli. Pettersson thinks that in coughing the bacilli are expelled in droplets of moisture (Flügge's Schleimtröpfchen theory) and so reach the sheets.

The larger part of this Festschrift consists of case reports, chiefly of neurological interest. They are not well adapted for review but the titles indicate fairly well their contents.

[H. A. C.]

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Correspondence.

LETTER FROM LONDON.

[*From our Special Correspondent.*]

Moncton Copeman and Cancer. The Hospitals and Physical Remedial Measures. Dr. Dreschfeld.

London, Sept. 4, 1907.

Mr. Editor: In 1905, Monckton Copeman, and Wilson Hake published in the *Lancet* the results of some determinations of the amount of physiologically active hydrochloric acid in the stomachs of normal mice and of mice suffering from cancer experimentally produced. Their estimations, which were made from stomach tissues plus contents, showed an *increase* of HCl, amounting in some cases to 50%, in the cancer cases, both where the tumor had ulcerated and where it had not. In a recent lecture these authors have offered some additional statistics, and remarks. They find that the increase of HCl is demonstrable in the stomach contents alone in almost the same degree as in tissues plus contents. Bashford explains the apparent divergence from the results of Benjamin Moore and others in human cancer, by suggesting that the increase corresponds to the needs of "mouse plus tumor" which often exceeds double the weight of a mouse alone; he draws a further deduction, *viz.*, that the conditions of growth of cancer are to be distinguished sharply from those of its origin. The investigators are now engaged upon the estimation of HCl in the stomachs of mice, the subjects of spontaneous cancer. Lazarus-Barlow does not consider that Jensen's tumor is a carcinoma at all, and Copeman admits that it is not biologically comparable. The lecturers naturally voiced the growing tendency to seek the conditions favorable to the origin and growth of cancer in disturbed metabolism; they correlate the observations of Moore as to the increased alkalinity of the blood-plasma in cancer and of Loeb as to the increase of cell growth, and the determination of pathological nuclear divisions in many of the lower organisms occasioned by increased alkalinity. Further, they call upon the work of Pawlow and Starling which has shown the extreme delicacy of the chemical relationship between the various digestive secretions, initiated by the gastric HCl, for an explanation of the cachexia and general bodily illness of many cancer patients. Copeman is making use of Metchnikoff's "lactic acid milk," the living bacilli of which rapidly supplant the normal bacterial inhabitants of the intestine, as a therapeutic measure. As a possible explanation of the action of trypsin in cancer Copeman suggests — basing his opinion on Fronin's observation that the injection of succus entericus induces a great flow of the intestinal juice — that the injection of the trypsin induces a flow of pancreatic juice which the deficiency of gastric HCl had hitherto left unstimulated, and that therefore great improvement of general body metabolism results and is quickly reflected in the cessation of growth, or actual retrogression observed in the tumor.

Hitherto, in London, we have left the exploitation of the fashionable methods of remedial gymnastics and physical exercises to quacks, for the most part; at any rate, we have had no departments in our large teaching hospitals either for the practice of the treatment or for the instruction of students. One of the many ill effects of this negligence has been that many, perhaps the majority of, practitioners do not know enough even of the technical terms of massage to be able to give proper instructions to a masseuse. Obviously, too, they cannot employ the measures to the full advantage, and it unfortunately results that a good deal of treatment is carried out apart from medical inspection at all. It is not that the staffs of the hospitals do not appreciate the possibilities and the scope of the treatment, but in most of the institutions considerations of space have precluded the organization of such departments. St. Thomas's Hospital has set the example, however, and the others will not be slow to follow.

By the death of Dr. Dreschfeld, of Manchester, the north of England loses perhaps the most distinguished of her physicians. Commencing life in this country with almost every handicap of physique, of speech (for in the early days his English was decidedly "broken") and of having to make his way as an "alien" in a city by no means free from a taint of bigotry, Dreschfeld attained not only financial prosperity, but also in an extraordinary degree the confidence, the admiration and the esteem of the profession in Manchester, in Great Britain, and in the wider field abroad. It is related of the time when he first entered Owen's College that he had to put up with a good deal of chaff from his fellow-students by reason of his foreign accent; the laugh was upon his side at the end of the first session when he carried off the prize for English.

His memory was prodigious, his reading encyclopedic, his industry enormous; distinguishing himself first as a physiologist, he secured the chair of pathology and later that of medicine in the University of Manchester. A first-rate clinician, a pathologist of great acumen and experience, a lecturer of great power despite a poor delivery, it is very hard to see where Manchester, already mourning the loss of Dr. "Tom" Harris within the last twelve months, will find a worthy successor to Professor Dreschfeld.

C.

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 5, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	1,362	491	Quincy	6	2
Chicago	565	197	Waltham	7	2
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	2	1
Baltimore	202	69	Brookline	4	1
Cleveland	—	—	North Adams	5	2
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	3	0
Cincinnati	—	—	Medford	2	1
Milwaukee	—	—	Beverly	4	—
Washington	—	—	Leominster	3	1
Providence	56	14	Hyde Park	3	1
Boston	207	85	Melrose	4	1
Worcester	37	10	Newburyport	—	—
Fall River	49	31	Woburn	4	—
Cambridge	26	10	Marlboro	—	—
Lowell	53	19	Westfield	4	3
Lynn	20	3	Peabody	—	—
New Bedford	31	21	Revere	3	1
Springfield	12	3	Attleboro	1	0
Lawrence	24	10	Clinton	8	3
Somerville	14	5	Adams	3	2
Holyoke	19	12	Gardner	2	1
Brockton	17	6	Milford	—	—
Malden	6	2	Watertown	4	2
Chelsea	17	8	Plymouth	—	—
Salem	16	5	Weymouth	3	1
Newton	9	3	Framingham	4	1
Haverhill	13	3	Southbridge	3	3
Fitchburg	6	3	Wakefield	—	—
Everett	8	2	Webster	—	—
Taunton	12	0			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 2, 1907.

Mead, F. W., surgeon. Granted leave of absence for twenty-eight days from Sept. 10, 1907. Aug. 30, 1907.

Bahrenburg, L. P. H., passed assistant surgeon. Granted leave of absence for seven days from Oct. 4, 1907, under paragraph 191, Service regulations.

Long, J. D., passed assistant surgeon. Relieved from duty at San Francisco and directed to report to Passed Assistant Surgeon Rupert Blue for special temporary duty. Sept. 28, 1907.

Creel, R. H., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Creel in February, 1907, for one month, revoked.

Brooks, S. P., acting assistant surgeon. Granted leave of absence for thirty days from Sept. 25, 1907. Sept. 27, 1907.

Curley, C. P., acting assistant surgeon. Granted leave of absence for eight days. Sept. 30, 1907.

Dunn, J., acting assistant surgeon. Granted leave of absence for thirty days from Oct. 8, 1907. Sept. 27, 1907.

Hume, Lea, acting assistant surgeon. Granted extension of leave of absence for nine days. Sept. 30, 1907.

Marsh, W. H., acting assistant surgeon. Granted leave of absence for ten days from Oct. 11, 1907. Sept. 27, 1907.

Tuttle, Jay, acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Tuttle for sixteen days from Sept. 16, 1907, amended to be effective Oct. 3, 1907. Oct. 2, 1907.

Thornton, M. J., acting assistant surgeon. Granted three days' leave of absence on account of sickness from Sept. 20, 1907, to Sept. 27, 1907.

Thornton, M. J., acting assistant surgeon. Granted leave of absence for thirty days from Oct. 5, 1907. Oct. 2, 1907.

Weldon, W. A., acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Weldon for one month from Sept. 10, 1907, revoked. Sept. 30, 1907.

BOARDS CONVENED.

Under date of Sept. 28, 1907, boards of medical officers were convened, as follows, for the purpose of conducting medical examinations of candidates for appointment as cadet-engineer in the Revenue-Cutter Service, the examinations to be held Oct. 1, 1907:

At Newport News, Va., Assistant Surgeon G. L. Collins, Chairman; Acting Assistant Surgeon A. C. Jones, Recorder.

At Boston, Mass., Surgeon R. M. Woodward, Chairman; Assistant Surgeon T. W. Salmon, Recorder.

At Philadelphia, Pa., Surgeon J. M. Gassaway, Chairman; Passed Assistant Surgeon T. Clark, Recorder.

A board of medical officers was convened to meet at Baltimore, Md., Sept. 30, 1907, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: Surgeon L. L. Williams, Chairman; Passed Assistant Surgeon J. T. Burkhalter, Recorder. Sept. 28, 1907.

A board of medical officers was convened to meet at Chicago, Ill., Oct. 2, 1907, for the physical examination of candidates for appointment as cadets in the Revenue-Cutter Service. Detail for the Board: Surgeon G. B. Young, Chairman; Passed Assistant Surgeon B. S. Warren, Recorder. Sept. 28, 1907.

A board of medical officers was convened to meet at Cleveland, Ohio, Oct. 4, 1907, for the physical examination of an officer of the Revenue-Cutter Service. Detail for the Board: Passed Assistant Surgeon H. S. Mathewson, Chairman; Acting Assistant Surgeon W. A. Baird, Recorder. Oct. 2, 1907.

SOCIETY NOTICE.

The New England Hospital Medical Society. — This Society will hold its regular meeting at Hotel Nottingham, Thursday, Oct. 17, 1907, at 7.30 p.m. Pediatric Section. Dr. Marion Nute, chairman. 1. (*a*) Dosage of Antitoxin and the Serum Reactions; (*b*) Some Unusual Sequelæ of Scarlet Fever. Dr. Mary S. Holmes, Worcester Isolation Hospital. 2. Observations on the Recent Problems of Infant Feeding, Dr. Edith Hale. 3. Report of a Case of Syphilis in an Infant Infected in Utero in Seventh Month, Dr. Marion Nute. General Discussion.

Dr. Blanche A. Denig, *Secretary.*

RECENT DEATHS.

Jonathan Jason Smith, M.D., M.M.S.S., died in Boston, Oct. 8, 1907, aged seventy years.

Dr. Valentine Manahan, of Enfield, N. H., died Oct. 15, in that town, at the age of eighty-one. He was graduated from the Jefferson Medical College of Philadelphia, and was widely known throughout the state, in which he had practiced for upwards of fifty years.

BOOKS AND PAMPHLETS RECEIVED.

A Text-Book on the Practice of Medicine. For Students and Practitioners. By James Magoffin French, A.M., M.D. Third revised edition. Illustrated. New York: William Wood & Co. 1907.

Petite Chirurgie et Pratiques Spéciales Courantes. Par P. Soubeyran et P. Ardin-Delteil. Illustrated. Montpellier: Coulet et Fils. Paris: Masson et Cie. 1908.

Tropical Diseases. A Manual of the Diseases of Warm Climates. By Sir Patrick Manson, K.C.M.G., M.D., LL.D. (Aberd.). Fourth edition. Illustrated. New York: William Wood & Co. 1907.

The Pancreas. Its Surgery and Pathology. By A. W. Mayo Robson, D.Sc. (Leeds), F.R.C.S. (Eng.), and P. J. Cammidge, M.B. (Lond.), D.P.H. (Camb.). Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Proceedings of the American Medico-Psychological Association at the Sixty-second Annual Meeting held in Boston, Mass., June 12–15, 1906.

A Graphic Method in Practical Dietetics. By Irving Fisher, Ph.D. Reprint.

A New Method for Indicating Food Values. By Irving Fisher. Reprint.

Transactions of the Maine Medical Association. Vol. XVI, Part I. 1907.

The Diagnosis and Treatment of Diseases of Women. By Harry Sturgeon Crossen, M.D. Illustrated. St. Louis: C. V. Mosby Medical Book and Publishing Co. 1907.

Original Articles.

THE ROENTGEN RAY IN PEDIATRICS.*

BY THOMAS M. ROTCH, M.D., BOSTON.

Although the use of the Roentgen method has for some time been recognized as an important addition to our knowledge of disease, especially of the bones, yet its use in our routine work among children has been comparatively limited, especially in the so-called medical cases.

The value of the Roentgen method in children can best be tested by a systematic study of cases in the wards of a children's hospital, where each case can be kept under observation continually from the beginning to the end of the disease, and where all the other methods of diagnosis and treatment are at our command, in the hands of experts connected with the hospital equipment. In a hospital also there arises no question of expense to the patient or consent of the parents. The hospital physician is free to use his wards and the hospital facilities as a clinical laboratory, unbiased by anything but the good of the patient. Such a clinical laboratory, thoroughly equipped through the wisdom, liberality and humane foresight for accomplishing the greatest amount of benefit for the patients, has been placed at the command of the physicians and surgeons connected with the Children's Hospital by the managers, and it is my good fortune to have had rare opportunities for expert study in the medical wards under my charge. This opportunity has been greatly enhanced in value by the generous aid given me by my colleagues on both the surgical and the medical sides of the hospital, — aid which can only be appreciated when we consider how closely the diseases of young children are interwoven in medicine and in surgery, — beginning, perhaps, as a surgical trauma and ending with a general septicemia; beginning with a tubercular infection of the hip-joint and ending with terminal infection of the meninges; beginning with a pneumococcus infection of the lung and ending with an infection of the pleura or peritoneum; beginning with obscure pains in the joints, which would naturally make the parents think of rheumatism and so send for a physician, and ending with a rapidly developing osteomyelitis rendering operative interference imperative; beginning, again, with a subperiosteal hemorrhage, with symptoms such as would lead to surgical advice, and before the true scorbutic and medical aspect of the case has been recognized, terminating in destruction of bone and surrounding tissue.

For the complete study, then, of an individual child, a combination of expert medical, surgical, pathological, bacteriological and chemical knowledge is required, with all that a hospital gives in expert work on the blood, the spinal fluid, the feces, the urine, and, in young children, most important of all, the ear and naso-pharynx.

As one of the primary aids to diagnosis, and often alone determining the treatment in both medical and surgical cases, the Roentgen method of examination is rapidly taking its place, not only in rank with all the others, but in many cases proving the expert physical examinations to be wrong, and influencing the resulting lines of treatment to so great a degree that to diagnosticate and treat without this proof of the correctness of the diagnosis has in many cases proved to be foolhardy, dangerous and without excuse.

The knowledge obtained from the Roentgen ray, although at present confined to certain specific conditions, is continually widening; and it is well for the medical profession to recognize this fact and to assist in still further establishing its position among the instruments of precision to aid us, and in encouraging the perfection of its technic.

There are three chief objects to be borne in view if we are to make a systematic study of the Roentgen method among children. First, the technic should be carried out by experts who have been thoroughly trained for this work, and in whose hands a failure to make a successful plate is reduced to a minimum. The reason for this is that children are so restless and difficult to take that it is much more important than in adults to have the first plate successful. Experts, also, who understand the temperaments of children and possess the faculty of managing them quickly and successfully. This necessity can only be appreciated by watching the work as it is done in the Roentgenological laboratories of a children's hospital. Experts from long experience can make their work uniform by placing the tube at a uniform standard distance from the object taken, and the object in a uniform position and standard angle. This is especially necessary when we come to compare the normal anatomy of the part taken with disease of the same part, and emphasizes the fact that the use of the Roentgen apparatus in the hands of the practitioner in general almost invariably ends in imperfect and inexact results, and results which tend to throw discredit on the Roentgen method.

Second in importance is the full, intelligent and expert interpretation of the plate. Although this seems at first sight so simple, so easy to accomplish, namely, to look at a picture and see what one sees, yet in the present state of our knowledge the result, when a number of physicians are examining a plate, is liable to be as many opinions, as so often happens when a number of opinions are given on an obscure cardiac murmur. Even the expert has not begun to learn what can be seen and will be seen when the interpretation of plates in the future has been further developed by broader experience and by careful comparison with post-mortem findings. For the picture is there, and all that we have to learn is to determine the language and learn to read it. I have, for instance, had some Roentgenographs taken to determine the presence or absence of an infantile pyloric stenosis, and yet expert knowledge has failed as yet to read these plates, although the picture is directly and plainly before our eyes. We should then appreciate of what vast importance for future diagnosis is the perfection of interpretation. This can, of course, only be accomplished by those who are continually working, studying and devoting many hours a day to this work in a children's hospital, where a large number of cases can be kept under daily observation, and the clinical course and results of an especial case compared with plates showing the progress of the disease. Great progress can be made in this way in the interpretation of pleural and pericardial effusions, pulmonary solidifications and the rapid changes which are so common in the degrees of cardiac dilatation in young children.

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* Read at the annual meeting of The Massachusetts Medical Society, June 12, 1907.

So much impressed have I been, when following up my clinical examination, with the ever increasing expert interpretations of the same cases by the Roentgen method in the hands of Dr. Arial W. George, our hospital Roentgenologist, that I have become much shaken in the confidence which I formerly had that I was making a correct diagnosis by means of my physical examination. Cases of pericardial effusion, which would have been tapped but for the negative findings of the Roentgenograph, not infrequently arise, and these cases cannot all be accounted for by my individual incapacity and lack of skill in physical diagnosis, as in each case I have had as controls the opinions of other examiners whose knowledge and skill are acknowledged to be trustworthy. Of very great and unquestioned value, therefore, is the aid given now by technically good plates and expert interpretation; and of vast importance in the future, when this method of differential diagnosis is perfected, will be the routine use of the Roentgen ray in the hands of expert Roentgenologists.

The third object of importance to which I have alluded is a branch of special work which I have been engaged in during the past year at the Children's Hospital. This work is to give the normal living anatomy of infancy and childhood, showing the development of the organs and bones at successive periods, with short intervals as of months in infancy and with the intervals in childhood of a length which will be practically useful. Besides showing the changes taking place in all the organs during their growth by months and years they show us the changes so intimately connected with growth in height that it is only a wonder that a complete series of these changes was not tabulated long ago.

The bones in this series show at what age and period of development the centers of ossification and the epiphyses begin to develop, and the gradual increase until fully developed. The idea of the series is that, during the active period of development from infant to child and child to adult, there are so many varieties under normal conditions that it becomes exceedingly important to have pictures which shall show the different stages. For instance, it is not only necessary for intelligent diagnosis and treatment to recognize diseased conditions, but to be able to compare the diseased conditions of a certain age with those of normal development which would be present at that age. Such a series, as, for instance, in rachitis, enables the physician to recognize what conditions would be expected at certain stages of the disease by eliminating normal conditions; also the surgeon as to how far the normal conditions, according to the age, should aid in indicating when to operate and to what extent, by keeping in view such conditions. In order to show more clearly the ever-changing epiphyses and centers of ossification, I have had some of my plates reproduced for lantern pictures, but it must be understood that these pictures only represent an exceeding small number of the changes which I have found necessary to tabulate, in order that they can be of practical use to the practitioner, who at any time in a special case may need a particular stage of development to compare with the development of the age he is treating, for the purpose of exact diagnosis, and who will not be satisfied with too long intervals in the plates. It is also to be noted that the pictures on the plates are far more clear than are these reproductions.

Following out the idea of first having a series of normal anatomy to compare with diseased conditions of the same period of development, I have begun the series with the picture of a premature infant. In these normal pictures we have taken, as representing a normal condition, the average of a number of children who, according to a standard of normal external conditions, such as weight, height, development of the teeth, fontanelles and general health, could be taken as representing the normal condition at that age. In order to do this we need at least four or five pictures of the same normal external development to decide upon which picture would be most practical for the use of the physician and the surgeon, and this we have accomplished in this series.[1]

When we have become familiar with the living normal anatomy of the different parts at the different stages of development, we can, by knowing where to turn for reference in a complete series of plates, or by memorizing these plates, use them as letters of our alphabet, and can, with a proper interpretation of these plates, learn to recognize the living pathological anatomy of such cases.

The series of pictures which I have just shown are simply examples of what the series will represent when completed, for in the short time at my command it would be impossible to describe the many phases and daily changes which, in even a few cases, are needed to intelligently understand and treat a special case.

The Roentgen method of examination assists and does not replace other methods of examination. Over and over again, however, it corrects and controls an otherwise faulty diagnosis and makes possible a study of the living anatomy and pathology of the different periods of life. In pediatrics I have found it of inestimable value, for the wonderful recuperative power which exists

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[1] When this paper was read I exhibited fifty lantern slides which, for want of space only, do not appear in this printed paper.

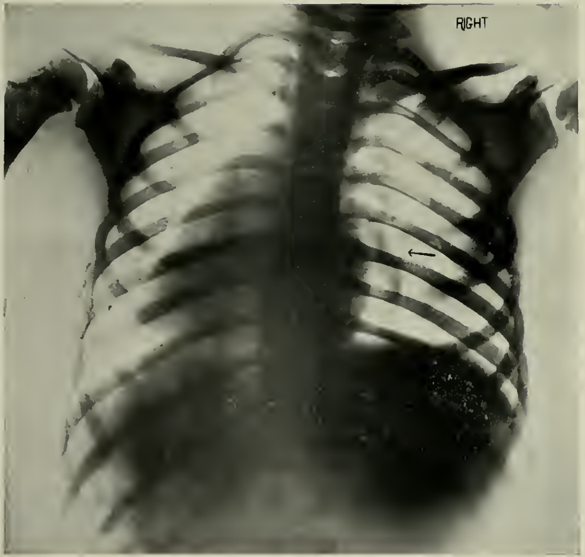

PLATE I. (A. W. George, M.D.)

CASE I. Case of enlarged bronchial glands, girl of twelve years. Notice dark shadows situated along right border of heart, extending up into apex. Seen in all normal chests, but to less extent than this. Lungs and pleura otherwise normal.

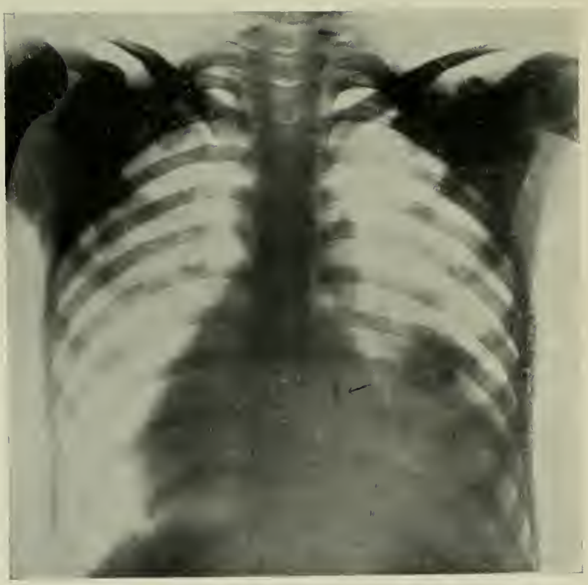

PLATE II. (A. W. George, M.D.)

CASE II. Case of foreign body, nail, in lower lobe of right lung, boy of twelve years. Nail inhaled five years ago and not suspected then, as case was examined by Roentgen method, and foreign body not recognized. Treated since for various diseases of lungs and pleura. Roentgenograph shows nail surrounded by a dark shadow, indicating thickened pleura and collapsed lung. Operation not successful.

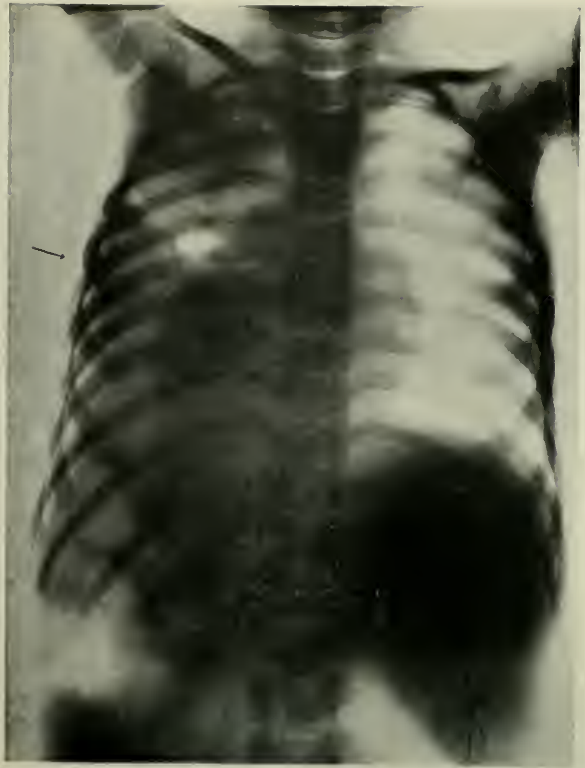

PLATE III (A. W. George, M.D.)

CASE III. Case of plastic pleurisy in girl six years of age. Shadow extending over entire left chest excepting in central part. Shadow not changed with position.

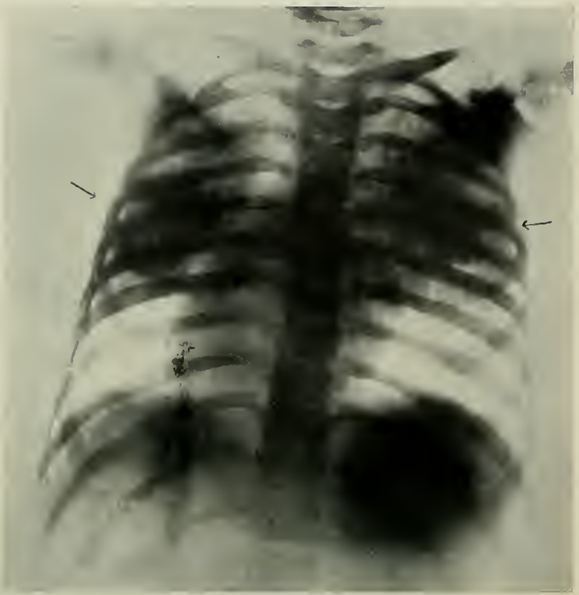

PLATE IV. (A. W. George, M.D.)

CASE IV. Case of acute miliary tuberculosis in girl of twelve years.

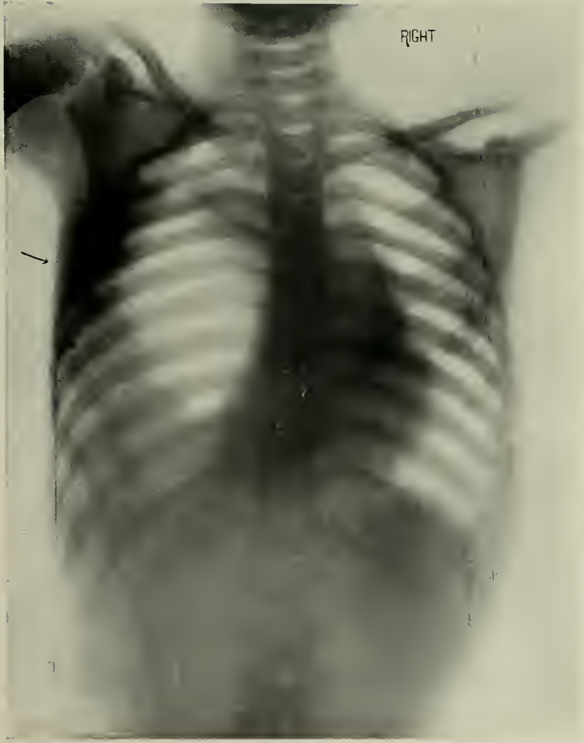

PLATE V. (A. W. George, M.D.)

CASE V. Case of pneumothorax in boy of nine years, taken a year after an attack of hydropneumothorax, showing the cardiac shadow displaced to right, and held there probably by adhesions; shadow of thickened pleura in lower left pleura. An area of either empyematous lung or cavity formation seen in central part of left lung.

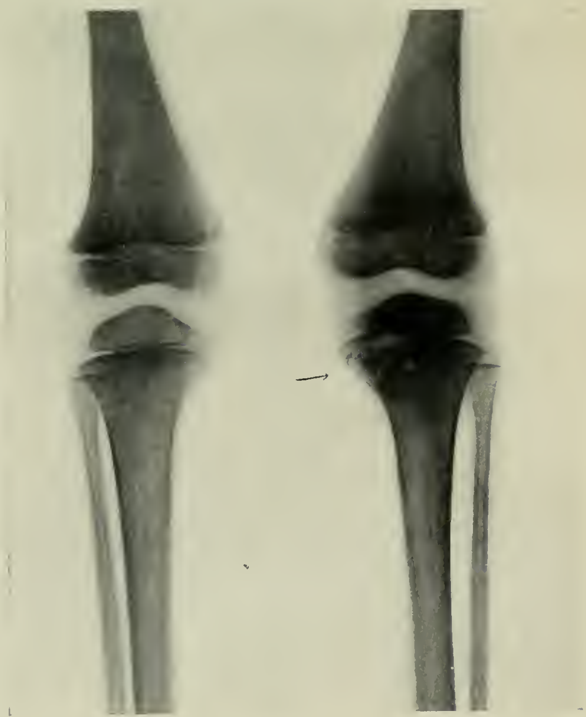

PLATE VI. (A. W. George, M.D.)

CASE VI. Case of osteomyelitis, boy of eight years. Process started in epiphyseal line of tibia. Operation delayed and process extended into epiphysis with destruction of bone and sequestrum formation. Capsule of joint thickened as seen by shadow.

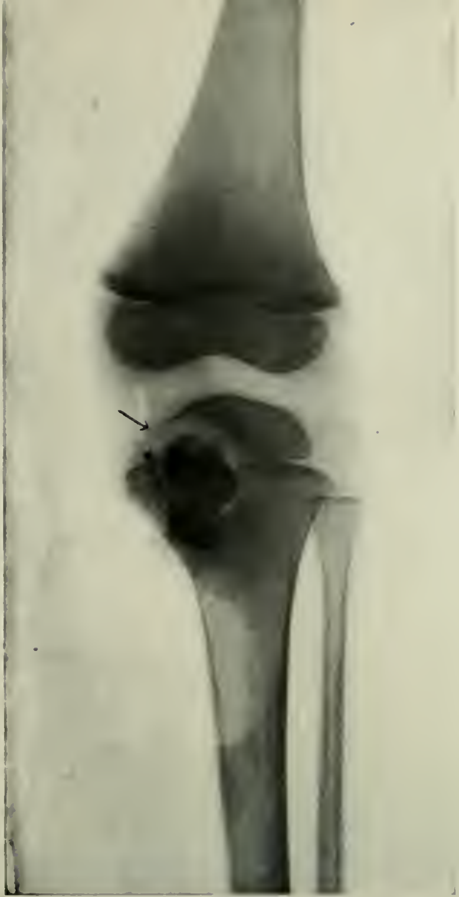

Plate VII. (A. W. George, M.D.)

Case VI. After operation with bone plug in place. Plate demonstrates why operation was a failure. Sequestrum remaining behind plug.

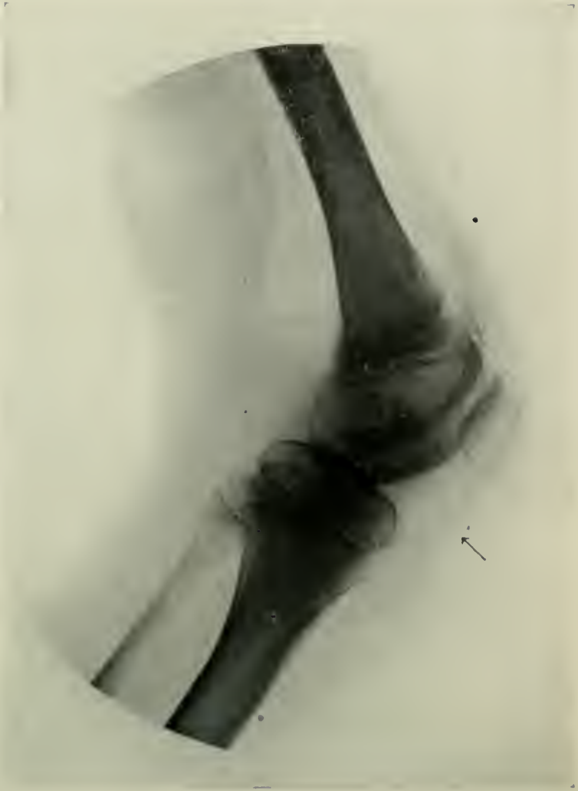

Plate VIII. (A. W. George, M.D.)

Case VII. Case of villous arthritis in girl of thirteen years; capsule thickened and joint full of hypertrophic villi.

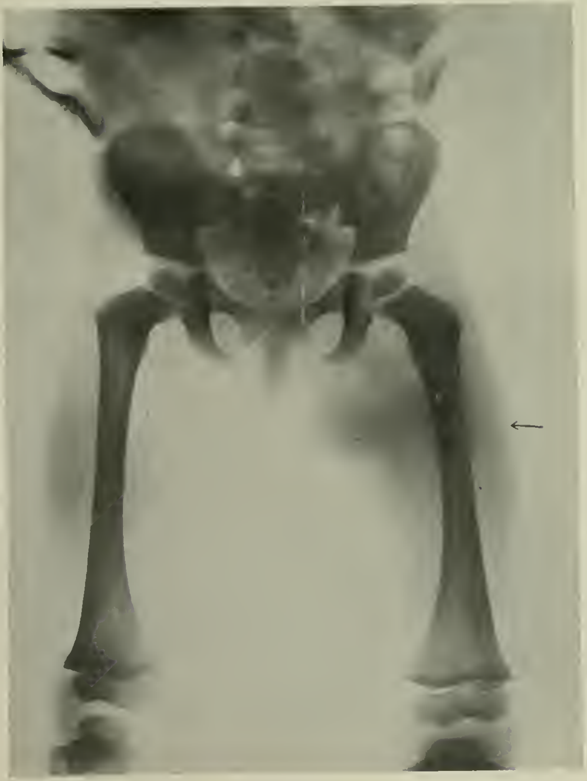

PLATE IX. (A. W. George, M.D.)

CASE IX. Case of acute infectious osteomyelitis in child of two and a half years, twelve hours after onset. Roentgenograph shows a haziness of the outline of the left femur with thickening about thigh. Process went on to general destruction of bone of the entire shaft of the femur. This (Plate IX) illustrates how early changes in tissues and bone can

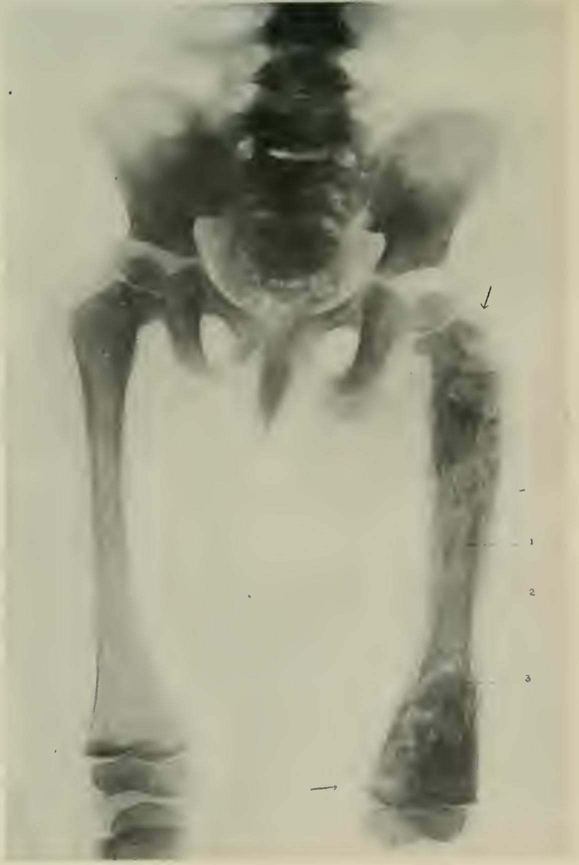

PLATE X. (A. W. George, M.D.)

CASE IX. Case IX five weeks later. 1. — Areas of suppuration. 2. — Newly-formed periosteal bone. 3. — Necrotic cortical bone. Arrows indicate point of attachment of capsule and periosteum to shaft of femur. Notice that joints have not as yet become diseased, and that infection of the bone is confined within the limits of the periosteum.

in children allows great opportunities for a varying treatment, if we can only follow the living, ever changing processes of the disease every few days. Used in this way for diagnosis, the Roentgen ray shows us the primary lesions of the disease, and for treatment therefore, the knowledge obtained by this method is far more important than a knowledge of the terminal lesions found at the post-mortem, especially as these latter lesions are often misleading as merely representing terminal destructive processes corresponding to the later stages of a number of different diseases.

REMARKS OF DR. ARIAL W. GEORGE, OF BOSTON.

There are certain points which should be noted in regard to the Roentgenology of children. In the first place the technic offers many more difficulties than that which is required in adults. What Dr. Rotch has referred to is especially important, that is, having the first plate taken successfully. Even though a child has submitted quietly when the first plate has been taken, it has become so restless from being restrained that it has been almost impossible to get a second plate, even if it comes on another day.

There are certain conditions which can only be diagnosticated by the Roentgen method. For instance, in normal conditions the epiphyses and centers of ossification are an unknown quantity until an examination has been made by the Roentgen method. In like manner small effusions in the pericardium, and very often the existence of thickened pleura, can be diagnosticated. In other conditions, although the Roentgen method is not the only one which will throw light on the disease, certainly a correct diagnosis cannot be made without it. The truth of this assertion is shown in the differential diagnosis of obscure cases of tuberculosis, osteomyelitis and syphilis.

What I have just said has not included those cases of foreign bodies, which can only be absolutely located by means of the Roentgen method. Also those cases of anomalous conditions of the organs and of the bones. Instance, the absence or imperfect development of the tarsal bones, the absence of ribs, or parts of ribs, and the numerical variations which at times arise in the spinal column.

A subject of especial interest has come to my notice through a fairly large experience in the Out-Patient Department of the Children's Hospital, — the injuries to the elbow joint in children. Very little is known at present about these injuries, and what knowledge we have of them is exceedingly imperfect. Yet the results of this lack of knowledge and the unfortunate results of improper treatment are manifest where such a series of injured elbow joints are followed up from beginning to end. The reputation of the surgeon who has charge of these cases will in a vast majority of instances be injured unless he avails himself of such conditions in the elbow as can be seen in the Roentgenograms.

The epiphyses are the most important centers of the skeleton, for on them depend its future development, epecially in infancy and childhood, and when these centers are impaired there results far-reaching influences in later life. A thorough knowledge of the different changes which take place in even this small area is very important, for these centers are where disease may begin, from which disease may disseminate, where it may lead to disastrous consequences and may leave its permanent marks.

Very little is known of the etiology of the diseases of nutrition and the especially important rachitic conditions which play such a great rôle in early life, and we also have a comparatively slight knowledge of its early stages. A more exact knowledge, obtained by the Roentgen ray, of the normal development of these parts, may lead to the recognition of more definite etiological facts regarding the disease and all other diseases connected with nutrition.

I have never yet found that the radiographs, however misleading they may be through imperfect interpretation, failed to represent a picture of what really exists. The Roentgen method will not demonstrate everything which exists in the body, but it certainly will not show that which does not exist.

In closing my remarks I should like to call your attention to how little regard is paid to the teaching of the Roentgen method of diagnosis in the medical schools. I am sure that great benefit would result from giving such teaching, for it would enable the student to understand the physical conditions existing in disease far better than he does now from simple physical examination of disease.

TWENTY-FIVE YEARS' EXPERIENCE IN THE TREATMENT OF STRICTURE OF THE URETHRA.*

BY FRANCIS S. WATSON, M.D., BOSTON.

What I have to say upon this subject to-day is of a frankly personal nature, and relates in large measure to my own experience in the treatment of this malady and some of the lessons that I have learned in the course of the last twenty-five years, during which such cases have come under my care. For the sake of clearness and to enable you to follow my remarks more readily, I will state the points upon which I shall touch and the sequence in which they will be referred to, which is as follows:

1. The cases summarized in the form of a table which shows their total number, the nature of the process in which the strictures originated, the different methods of treatment to which they were submitted, and the mortality attending each of them respectively and of the total number as a whole.
2. An analysis of these cases with reference to the causes of death.
3. The character of the results of each of the different kinds of treatment.

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* Read before the Massachusetts Medical Society, June 11, 1907.

4. The rules which must be observed in the performance of internal urethrotomy and the after-care of the operation.

5. The best manner of dealing with impermeable or very dense and extensive strictures of the perineal portion of the canal.

Table I.

	Cases.
Of gonorrheal origin,	542
Traumatic,	35
Due to the action of caustic,	1
Congenital,	2
	580

METHODS OF TREATMENT.

	Cases.	Deaths.	Mortality.
Gradual dilatation,	172	1	0.58%
Divulsion,	9	0	—
Internal urethrotomy alone,	220	2	0.91%
Internal and external urethrotomy,	102	5	4.9%
External perineal urethrotomy alone,	56	5	8.9%
Combined suprapubic cystotomy and external perineal urethrotomy,	4	0	—
Partial resection,	4	0	—
Electrolysis,	13	0	—
Total,	580	13	2.2%

OPERATIVE MORTALITY.

Gradual dilatation is universally acknowledged to be the safest of all methods of treatment.

The mortality attending the operations of divulsion and internal urethrotomy is very small and is practically the same for both of the methods.

The high mortality which attends the performance of external perineal urethrotomy is to be referred to the critical conditions under which the operation is in many cases performed, and not to the procedure *per se*.

Electrolysis has about the same risk attaching to it as that which attends gradual dilatation.

The mortality of divulsion and of internal urethrotomy I have determined from a series of 1,000 cases of the former and nearly 5,000 of the latter, which I have collected from the literature.

The operative mortality of the series of cases in which divulsion was done was 2.1%. That shown in cases in which internal urethrotomy was done was 1.9%.

In my own series of 220 operations of internal urethrotomy in which that operation was performed alone, there were but two deaths, or less than 1% mortality, and I have never had a death follow the operation in private practice.

The mortality of external perineal urethrotomy I have computed from a series of 2,200 cases which I have collected from the literature and found it to be exactly 9%. My own mortality record is almost identical with that of this large number of cases, it being 8.9% in 56 cases in which I have done the operation alone.

CAUSES OF DEATH.

Deaths occurring in connection with any of the methods of treatment of stricture are, practically speaking, referable to one of two conditions.

1. Shock propagated from the peripheral nerves of the urethra and originating in the use of urethral instruments. One of the interesting features in this connection is the curious fact, which is true of both the constitutional disturbances and of the deaths which follow the use of urethral instruments, as in gradual dilatation for example, and which is, that neither the one nor the other of these untoward results is more likely to occur from shock, when violence and injury have occurred with the use of the instruments, than when they have been used with skill and gentleness.

In the cases in which deaths of this kind take place, the renal function is almost always suppressed. In most instances it is probable that the kidneys are already more or less diseased, but it is still an open question whether or no nervous impulses transmitted from the urethra or bladder in this way are capable of suppressing the function of a normal kidney.

The deaths of the kind of which I have just been speaking occur usually within a few hours following the use of urethral instruments.

2. Sepsis in one form or another accounts for almost all the other deaths which occur. In the cases in which so-called urinary infiltration is present, it is the already existing general septicemia which is responsible for the fatal result, and not the operation.

Much the larger number of deaths occur in this class of cases.

Death from sepsis is undoubtedly more likely to follow internal urethrotomy than other forms of treatment, if cleanliness and aseptic precautions are not observed in the performance of the operation. If they are, this ceases to be true and no further proof of the fact is needed than the very small mortality which appears in connection with the large number of operations which I have mentioned above.

As a matter of fact and everyday experience, a large contingent of the deaths is furnished by the employment of gradual dilatation by those who are unskilled in its use. This is because of the making of false passages by the rough use of the instruments and the opportunity thus afforded for the originating of septic processes which have their starting point in the false passages and the septic products which they harbor.

Gradual dilatation is therefore quite as dangerous a method of treatment as any other when it is not carried out by well trained hands. But few practitioners hesitate to use this method while they would not undertake the more definitely operative measures.

CHARACTER OF THE RESULTS OBTAINED BY THE DIFFERENT METHODS.

At the time at which I was a medical student one often heard the dictum, "Once a stricture, always a stricture"; in other words, it was regarded as an incurable malady. How little true this is to-day we shall see in a moment.

CURE.

By cure I mean that patients do not require to pass sounds subsequent to the operation or to the completion of the treatment, in order to maintain the normal caliber of the urethra.

My knowledge of the later results obtained by *gradual dilatation* by *internal* and by *external urethrotomy* is derived from my own experience, and that is the most accurate basis upon which to rest an opinion. Of *divulsion*, my own experience is not sufficient to enable me to speak authoritatively. I have therefore taken for the purpose of determining the final results of this method, the most favorable exhibition of them with which I am familiar, namely, the table of 27 cases out of a series of 404 operations performed at the Massachusetts General Hospital and published a number of years ago by Scudder. Before referring to these two methods, I will dispose in a few words of the results obtained by *gradual dilatation*, and *external urethrotomy* and electrolysis.

I have succeeded in curing but 10 out of 172 patients treated by gradual dilatation, that is to say just a little less than 6%, and in all 10 of these cases the strictures were in an early stage of formation.

Most of the 56 patients upon whom I have performed external urethrotomy alone were hospital patients and the larger number of them were lost sight of. Of the few that I have seen and examined since, but a small proportion have been cured, 10% perhaps.

When electrolysis was being vaunted as a method of treatment, a number of the members of the American Association of Genito-Urinary Surgeons gave it a fair and thorough trial. Personally I applied it in 13 cases. The unanimous verdict of all of us was that it was useless in all cases and harmful in some.

INTERNAL URETHROTOMY.

Of the whole number of 322 patients upon whom I performed the operation of internal urethrotomy alone, or in combination with external urethrotomy, there were 96 who furnished the opportunity to make subsequent examinations of the conditions of the urethra. In 22 of these cases less than two years had elapsed, when these examinations were made, since the operations were done, and I have not included them in the table. In 20 *others* the operation *failed*, in that the symptoms were not wholly relieved, or else that recontraction had taken place. In the remaining 54 cases, or 56% of the whole number, *cure* had resulted from the operations. The subjoined table gives in detail the calibers of the strictures at the time of the operation, the times at which the examinations were made subsequent to the operations, the sizes to which the strictures were cut by the operation and the calibers of the urethras throughout when examined later.

Cases.	Caliber of strictures when operated upon.	Times at which later examinations were made.	Sizes to which strictures were cut.	Calibers when examined later.
2	22 and 24	22 years	32 and 34	30–30
2	26 and 14	20 ,,	32 in both	30–29
3	25–27 and 22	16 ,,	30–32–32	30–28–28
2	20 and 18	15 ,,	30 and 32	30–29
1	18	13 ,,	34	30
3	12–10 and 26	12 ,,	32 in all	32–30–28
2	22 and 18	10 ,,	30 and 32	28–30
2	18 and 24	9 ,,	32 in both	32–30
5	14–18–20–10–22	7 ,,	32 in all	32 in 1; 30 in 2; 29 in 2
5	8–26–24–14–18	6 ,,	32 in all	30 in 3; 28 in 2
8	Fili–22–14–22–18–22–16–10	5 ,,	34 in 2; 32 in 4; 30 in 2	32 in 3; 30 in 2; 29 in 1; 28 in 2
8	22–20–26–24–20–10 Fili–26	4 ,,	32 in all	30 in 6; 32 in 1; 28 in 1
11	28–14–22–10–16–Fili–22–14–24–22–26	3 ,,	30 in 2; 32 in 9	30 in 4; 32 in 3; 28 in 4
54				

No contraction whatever in 13
Recontraction of 4 mm. in caliber in 12
,, ,, 3 ,, ,, ,, ,, 5
Recontraction of 2 mm. in caliber in 20
,, ,, 1 ,, ,, ,, ,, 4
—54

It is to be understood that sounds were not used in any of these cases subsequent to the opera-

Cases.	Times elapsed since operation.	Use of sounds.	Recontraction or not.
2	12 years	Yes	28 in both
1	11 ,,	No	16
1	9 ,,	Yes	21
1	8 ,,	Once in 6 months	22
1	7 ,,	Yes	29
1	6 ,,	,,	30
2	5 ,,	In 1 case, 4 months; In the other, no	30 26
6	4 ,,	In 1 case, no; in the other 5, yes	13–25–21–25–18–31
3	3 ,,	In 1 case, no; in 2 others, yes	Very small in 1; in other 2, 30–21
3	2 ,,	In 1 case, 2 months; in 2 others, yes	26 in 1; in other 2, 26–11
6	1 ,,	In 4, yes; in other 2, 6 months and 9 months	28–30–25–25 in 4; in other 2, 26–29
27			

tions except at intervals of a year or more for the purpose of examination.

The following are the data given in Scudder's table:

It will be seen from this table that there were but four patients who did not use sounds at all after the operations. Recontraction took place in all of the cases as follows:

To 26, 16, 13 and to a " very small size." That is to say, none of them can be called cured.

In 5 more of the cases the patients used sounds but a short time only, or at long intervals after the operations. In 3 of these cases no recontraction of any consequence took place, and they may properly be claimed as cures. In the other 2 cases recontraction to 26 and to 22 occurred.

The rest of the patients, 18 in number, all used sounds after the operations. Even so there were but 8 of them who succeeded in maintaining the urethral calibers at sizes varying from 26 to 30. Recontraction in various degrees (between 11 and 25) occurred in the other 10 cases despite the use of the sounds.

In other words, 11% of cures by divulsion as compared with 56% in internal urethrotomy.

With the exception of a very few English surgeons and a small number of the profession in this community who still practice, I believe, the operation of divulsion, it has been for many years universally relegated to the number of obsolete surgical procedures to which it properly belongs.

Why should the results of internal urethrotomy be better than those obtained by other forms of treatment, and why should not the cicatrix of an internal urethrotomy incision follow the law of other cicatrices and contract?

These questions have been renewed from time to time ever since Reybard, in 1853, presented in his treatise upon urethral stricture the results of his study of the cicatrization of *longitudinal* incisions in the urethra.

He showed conclusively that such wounds, if prevented from reuniting during the process of healing, result in smooth, thin, delicate and noncontractile cicatrices which add to the caliber of the urethra at the points occupied by them, instead of narrowing it.

The truth of this statement was confirmed for the first time by post-mortem examination, in the human subject by Perrin in 1865, in the case of a patient dying three years after an operation of internal urethrotomy performed upon a stricture of the bulbous portion of the canal.

Since then, other post-mortem proofs have accumulated, and a very large number of observations in the living subject by means of the endoscope and other instruments have established beyond dispute the correctness of Reybard's assertion.

Not long ago I had the opportunity of examining two patients upon whom I had performed internal urethrotomy twenty-two years previously. Both had had well-marked organic strictures. Neither of them had used sounds subsequent to the operations. The endoscope enabled me in one case to detect a very fine white line upon the roof of the urethra at the site of my former incision. In the other urethra I could find no evidence of any cut having been made. There was no sign of stricture in either case. Acorn tipped sounds failed to detect the slightest unevenness or constriction in either of them. In both cases a number 30 sound slipped perfectly easily into the bladder through the urethra.

It is evident why internal urethrotomy is the method of choice from a surgical point of view. Let me add, however, that this is true only with certain reservations, and only when the operation is done according to certain rules which will be specified in a moment.

Gradual dilatation remains, as has been said, the safest of the procedures. There are three reasons for it not being the form of treatment which is always applicable These are:

1. It is rarely curative. 2. It cannot be applied or it cannot be made effective in cases of impassable stricture, in such as are so resistent as not to yield to the pressure of the instruments introduced, and in such as recontract rapidly after the employment of the instruments used to dilate them — resilient strictures. 3. It is unwise to employ the treatment of dilatation when constitutional disturbances, chills, fever, etc., follow its use.

The cases which fall under one or another of these headings are numerous and all of them should be treated by internal urethrotomy. Upon one point I wish to lay special stress. It was insisted upon most wisely by Sir Henry Thompson, and is this: In the cases in which gradual dilatation is attended by constitutional disturbances, it is far safer to perform an internal or an external perineal urethrotomy than to continue the treatment by gradual dilatation.

I accentuate this because I know it to be true from experience, and because those who may be ignorant of the fact might well hesitate to adopt the seemingly more radical procedure of internal urethrotomy in the face of the occurrence of constitutional disturbance which had arisen in the course of gradual dilatation.

On the other hand, the following restrictions should be imposed upon the operation of internal urethrotomy.

1. It should not be applied to strictures further from the meatus than five inches. This is because of the greater danger of hemorrhage and of sepsis which occur when the incisions are made at a deeper point than this.

If external perineal urethrotomy is *combined* with internal urethrotomy, the latter operation can be performed as safely upon the strictures of the deep urethra as upon those of the anterior.

2. The operation is not as effective as external urethrotomy or resection in cases of very dense and extensive strictures of the perineal part of the canal and deeper.

RULES TO BE OBSERVED IN THE PERFORMANCE OF INTERNAL URETHROTOMY.

To be safe, and if it is to be successful in obtaining cure, the following rules must be strictly observed in the performance of internal urethrotomy:

1. The urethra must be thoroughly irrigated immediately after the operation, after the first urination and after the first passage of sounds subsequent to the operation. The bladder should also be emptied and irrigated at the end of the operation.

2. The meatus must be cut to a size of 4 mm. larger than the normal caliber of the urethra.

3. The strictured part of the canal must be cut to the full size of the normal caliber of the urethra in each individual case.

4. The normal caliber should in each case be determined beforehand in accordance with the standard of measurements laid down by Otis.

5. The operation will fail if the urethra is acutely or subacutely inflamed at the time of its performance, or if such inflammation arises during the healing of the incision subsequently. The tying of a catheter into the urethra after the operation is objectionable because of the inflammatory reaction which it so frequently excites. When this occurs a greater amount of connective tissue is formed in the cicatrix and recontraction results.

6. The normal caliber of the urethra must be maintained during the healing of the incision, and this is secured by the passage of a sound of the size of the normal caliber of the urethra every second day after the operation until the wound is healed.

This requires on an average fourteen days. The absence of bleeding following the use of the sound is a reliable guide for determining when the incision has healed.

OTIS'S STANDARDS OF URETHRAL MEASUREMENTS.

The more important points connected with the standard of measurements laid down by Otis are these:

1. A constant relation exists between the circumference of the flaccid penis and the caliber of the urethra.

2. The penile circumference and urethral caliber vary in different individuals; consequently there is no such thing as one normal size for all urethras.

3. The average caliber of the normal urethra corresponds to No. 32 sound measured by the French scale. The penile circumference which corresponds to this is 3¼ inches. For every quarter of an inch of increase or decrease in the penile circumference there is a corresponding variation of 2 mm. in the caliber of the urethra.

This standard of measurements I, many years ago, confirmed by testing it in nearly 100 cases. I have not found a single instance in which it was not correct. Otis's standard is the only reliable, logical and accurate one that has ever been produced.

It is scarcely necessary to add that the size of the meatus is no guide to that of the urethra. The average size of the meatus is 24. A great many meatuses fall below this size, but few exceed 26. The meatus should be cut as the first step in the operation.

There remains a word to be said with regard to the best manner of dealing with the difficulties encountered in cases of impermeable stricture, and of treating those of unusual density and extent which are in the perineal part of the urethra.

With regard to the first I would say that there are but two ways which I think desirable to employ in order to trace or to make a road through an impassable stricture in the perineum.

The first of these is to perform a suprapubic cystotomy, pass a sound from within the bladder through the posterior urethra until it is arrested by the posterior face of the stricture. Next, pass another instrument from the meatus through the anterior urethra until it is arrested by the stricture. Now divide in the median line the strictures that intervene between the points of the two instruments and the road will have been safely opened.

The second way of accomplishing this result is by exposing the membranous urethra and the anterior end of the prostatic portion of it by the classic transperineal incision which extends in a forward arch in front of the anterior margin of the anus from one ischial tuberosity to the other, and by blunt dissection after dividing the median tendinous point of union of the structures of the perineum. The anterior bit of the prostatic urethra is then incised longitudinally, and as a rule a fine filiform bougie will readily pass from behind forward through the constricted part of the canal. Upon this instrument as a guide, the mass of connective tissues constituting the stricture is then divided.

Partial resection of the urethra. — The best method of treatment for the intractable strictures of the perineal portion of the canal which resist all the more usual means is by excision of the mass of connective tissue constituting the stricture. The results obtained by this method in such cases are better than can be secured in any other way.

Summarizing what has been said it may be put thus:

1. Electrolysis and divulsion are methods of treatment which should both be abandoned.

2. Internal urethrotomy is the only method of treatment by which an important number of cures can be obtained. It is an operation involving but little danger. Its application should be restricted to strictures within the first five inches of the canal unless external perineal urethrotomy is done in combination with it.

3. For strictures of the deeper part of the canal gradual dilatation is the best form of treatment if constitutional disturbance does not rise in connection with its employment, and if the urethra for a reasonable length of time maintains the caliber to which it has been expanded by the instruments.

4. For the cases in which the strictures of the deep urethra recontract rapidly after dilatation, or those in which constitutional disturbances arise in the course of its employment, also for the resistant or impassable strictures of the deep urethra, in all of which conditions gradual dilatation

is useless, external perineal urethrotomy, or internal urethrotomy combined with the external incision in the perineum is the safest and most efficient method of treatment.

5. External perineal urethrotomy is the only operation that should be applied in cases of stricture accompanied by urinary extravasation.

6. Resection of the strictured part of the canal should be selected in cases of intractable, very dense strictures of the perineal part of the canal.

Internal urethrotomy done under the conditions and in accordance with the rules I have stated above will yield from 50% to 60% of radical cures, and at an operative risk of death of about 1.5%.

DISCUSSION.

Dr. J. C. Munro, of Boston: What Dr. Watson has said upon divulsion should be printed in large letters. I have never done the operation myself, and have always condemned it as most unsurgical. External urethrotomy has always been an operation of great interest to me, and some years ago I took occasion to look up my end results, and found that the deep urethra instead of contracting had become larger in caliber than normal.

I heartily agree with Dr. Watson in his views on the permanency of the results following gradual dilatation. This method has a very limited field of usefulness and should not be placed in the same class with urethrotomy. I personally feel very grateful to Dr. Watson for what he has taught me this afternoon, and wish to express to him my thanks.

Dr. F. B. Lund, of Boston: I have been greatly interested in Dr. Watson's excellent presentation of this subject. We have at the City Hospital many cases of stricture of the urethra to treat, and we treat them all by urethrotomy; internal for the anterior strictures and external for the deep strictures. Internal urethrotomy as compared with divulsion is a scientific and accurate procedure instead of a violent and inaccurate one.

In a large number of external urethrotomies without a guide, which we are often compelled to perform in difficult deep strictures at the hospital, we are practically always successful, and I have only seen one case in the hands of a colleague in which the procedure of suprapubic cystotomy and retrograde catheterization had to be resorted to.

Many of our hospital cases belong to the class who neglect themselves after operation and consequently have to be operated upon a second or even a third time for reconstruction. It is in these recurrent cases, where the urethra is twisted and deformed by scar tissue, that the surgeon has the greatest difficulty, a difficulty, however, which patience will usually surmount.

I think that Dr. Watson's long experience in this class of cases enables him to speak with authority, and that his conclusions will be of great value to those privileged to hear or read his paper.

PROSTATECTOMY IN TWO STAGES BY SPECIAL TECHNIC.

BY FOLLEN CABOT, M.D., NEW YORK,
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The question of when and by what method to operate on middle age and old men suffering from prostatic obstruction is a difficult one to answer. No other problem in surgery requires more good judgment and skill.

There is no one method of operating to which all cases must fit. The patient's condition must be carefully considered and treatment instituted to meet the individual needs. A man may have a well developed senile hypertrophy of the prostate and yet be free from evidence of urinary obstruction. It is the position of the hypertrophy rather than its size which makes the trouble. While the rectal touch and the cystoscope are both of value in determining the amount and position of intravesical prostatic overgrowth, we must not depend upon these measures to the exclusion of others. The urinary distance, bladder tone and amount of residual urine should be carefully estimated. The presence of pain, of cystitis and other complications, — all should have consideration in determining the surgeon's decision. The general condition of the patient must be completely examined into and his arterial system, digestive organs and kidneys considered as to their probable resistance to surgical shock. Unfortunately, many prostatics do not reach the specialist until they are partial wrecks from long suffering and have become the victims of misguided kindness on the part of their physicians. In considering the question of treatment for a prostatic, his age, by itself, should not be considered of much importance. A man of seventy-five may be a much better risk as to resistive power than one of sixty-five.

In this paper I have under consideration sixty personal cases operated on in the past four years. I have divided them into three groups. Before referring to them in different groups, I will say that I do not believe it good treatment to allow a prostatic to become entirely dependent on the catheter. I find with few exceptions that this rule holds good. The catheter, however, may in certain cases be used to tide over occasional temporary attacks of retention, if the bladder tone is fairly well regained in a few days.

In another class of patients the catheter may be used once a day to empty the bladder and at the same time irrigate it with boric acid or a mild solution of silver nitrate. If, however, we find the residual urine is gradually increasing, or there is pain, spasm of bladder, hemorrhage or chills following use of the catheter, I advise early operation.

In my list of 60 prostatectomies, 33 were operated by perineal route with 1 death, and 27 by suprapubic, with 3 deaths. In spite of the lower mortality in the perineal cases, I have become convinced that in the majority of prostatics the suprapubic route is the one of choice. In my 33 cases the prostatic hypertrophy was fairly small and the patients were much better risks than the 27 done by the suprapubic route. I believe the urinary function and sexual power to be better preserved when the prostate is removed above the pubis.

I. Therefore, I now teach that no more than 20% of prostatic cases, and those with a small growth easily reached by rectal touch and without apparent complications, are suited to the perineal operation.

II. While the remaining 80% of the cases are best adapted to the supra-enucleation, many of these, owing to complications and debility, will not survive a complete prostatectomy by any route.

III. What shall we do with this debilitated and emergency class of probably 40% of all prostatics, — the cases which make us doubtful as to their standing more than mild surgical shock and yet where something of a surgical nature is necessary?

Lilienthal, of New York, answered this question in 1896, by performing preliminary cystotomy by suprapubic route; draining till the patient was up and about, then through the same cut enucleating the prostate. To my mind this method is one of great value, and from my own experience with it, I believe it will be used more and more as its merits are better understood.

In performing this two-stage operation by special technic of my own, I always use the suprapubic route.

My reasons for this are that the field of operation can be more closely watched during and after operation than can the perineal one. This is a matter of importance when loss of blood has to be carefully prevented and slough watched for later on. The size of the prostate and general condition of the bladder can better be determined; for instance, stone discovered loose or in a pocket; also new growth found which might have otherwise been overlooked, even when the cystoscope has been used; and, finally, enucleation more quickly performed than by perineal route, and the drainage tube much more comfortably placed for the patient when he is up and moving about between the two operations.

The following case, in which I performed enucleation in two stages, typifies what I have already said. I have no doubt that this patient would have succumbed to any prostatectomy if it had been performed in one stage. As it was, he weathered two little blows given with an interval between them for recuperation, instead of going under to one big blow delivered when he was weak and unprepared to resist it.

This patient, the relative of a prominent New York physician, was operated on in December, 1906. He was seventy-five years old and had been suffering from symptoms of prostatic obstruction for twenty-five years. General condition was bad; irregular heart; well-marked arteriosclerosis. Digestive system in fairly good condition. Some albumin and few casts in urine showing evidence of renal irritation as result of back pressure. Very severe cystitis, alkaline urine with well-marked ammoniacal decomposition. Urinating 6 or 7 times at night and each hour or less in day till catheter life was begun shortly before I saw him. Residual urine, 14 oz. Urinary distance somewhat increased and prostate, by rectal touch, high up and difficult to reach. It was apparently not very large and felt smooth and firm. Recently he has complained of chills and has reacted badly to bladder irrigation. Never has passed much blood. Owing to the patient's enfeebled condition and severe cystitis it seemed best to operate by two stages, and so I performed a supracystotomy under light chloroform anesthesia, it being thought best not to give gas. The bladder was opened under air dilatation and a tube of 44 French caliber introduced. The prostate and bladder were also carefully palpated, all of which took eight minutes. The third lobe or isthmus was hypertrophied and caused the difficulty. The rubber drainage tube was secured in place with a Bangs shield and the patient was put to bed. The old gentleman quickly recovered from the anesthesia. Strych. sulph. gr. 1–30 each three hours was administered, also small quantities of soft, uncharged water were soon taken at frequent intervals. The latter was given to stimulate the kidneys. While the pulse never went over 100 and the temperature remained at about 99.5°, there was considerable prostration the following day. However, in forty-eight hours the patient rallied well, and on the third day sat in a chair for an hour or two. Bladder was washed frequently with boric acid and saline solution. Cystitis gradually improved with addition of urinary antiseptics and acids to correct alkaline reaction. In about two weeks the patient was walking about and going downstairs to his meals. At the end of three weeks the urine was clear and free from albumin. He then was in much better condition than he had been for several years. I then, without telling him that the operation had not been finished, operated again through same cut under chloroform, and in nine minutes removed the prostate. During the enucleation a catheter was introduced through the penis, hot saline solution was continually run into bladder and at the end of the operation several ounces of solution of adrenalin 1–3000 was introduced. Very small amount of hemorrhage. The congestion about the prostate had disappeared during the period of rest and so there was less blood in and about the gland. The enucleation was carried out so that the whole prostate was removed in one piece. The prostatic capsule was packed with a strip of gauze which had been soaked in adrenalin 1–3000. The urethral catheter was left in place behind the packing to use for adrenalin in case of hemorrhage and later, after gauze was removed at end of forty-eight hours, for inlet to irrigation. The large tube in the suprapubic wound was for outlet to fluids. The patient seemed to have less prostration following this final operation than he did from the preliminary one. I attribute this fact to his improved condition as a result of good drainage of bladder, rest and nursing for three weeks. In three days he was up and at the end of seven days both tubes were removed. During the healing of wound a small catheter was daily passed into the bladder through wound and the cavity irrigated. In fourteen days the wound had completely closed and the patient was soon passing urine in a very satisfactory manner. The control was good from the first, as it usually is when the operation is performed suprapubically. After this time no further irrigation was employed and no urethral sounds passed at any time. It does not as a rule seem to be necessary unless there is some complicating condition in the urethra which needs it. Stricture, however, in my experience, is rare in prostatics. This month, June, patient reports himself in fine condition, is back at work, has no urinary symptoms, empties his bladder completely and feels better than he has for twenty-five years.

While all cases do not do as well as this one, the advantages of the two-stage operation are clearly shown. In some of my more recent cases I have performed a preliminary cystotomy under local anesthesia and then at the same sitting, if the patient's condition warranted it, given a little chloroform and removed the prostate. This enucleation should not consume more than ten and frequently only five to six minutes. In one case I did the whole operation under local anesthesia and the patient complained of little pain. In subjects with very fat abdominal walls, local anesthesia is difficult or sometimes not practicable at all. I believe though that, in future, I shall open the bladder under local anesthesia in all the cases in which I find it practicable. Fortunately few prostatics are very fat, so that it can be done in most instances. Then, if I do not believe it wise to do more, drain till the patient's condition warrants further interference. This is a new way of using the two-stage operation and is readily adapted for a different class of individuals than given in the history of the one above. I am also convinced that ether anesthesia is the cause of many deaths in prostatics from kidney and lung complications following operation, and so never use it. Again, if we avoid general anesthesia of any kind for half the operation, we are saving the patient a great deal. The nervous element, of course, has to be considered, but I have seen no ill effects from the local anesthesia. I agree with Fuller that opium or any of its alkaloids should not be given, as they injure the patient's chance of recovery, by lowering his vitality and preventing proper renal action. I, therefore, never use them.

I present the following conclusions:

1. In the event of any question of the patient's physical condition being equal to a complete prostatectomy, do a preliminary suprapubic cystotomy under local anesthesia. This will probably be the operation of choice in 50% of the cases. Drain the bladder while the patient is up and about, till the condition is better than before cystotomy. This will take from ten days to four weeks.

2. In all cases with severe cystitis, damaged kidneys in cases suffering with severe hemorrhages, in all so-called emergency prostatectomies, and in diabetics, carry out this preliminary cystotomy and later, as the patient's condition warrants it, do an enucleation.

3. Its advantages are the quick relief afforded with slight shock from severe symptoms. We give a patient all the advantages of a prostatectomy, with none of the serious dangers. He gets good bladder drainage and consequent rest and comfort.

4. If the preliminary cystotomy kills, a prostatectomy would have been foolhardy. If the patient recovers from the little blow he usually rapidly gains strength; the prostate becomes less congested; the cystitis disappears and we have produced a change which usually permits a successful enucleation later.

5. At the time of this second operation, well developed granulation tissue has appeared and prevents absorption.

6. At each operation we have only one point of hemorrhage to look out for instead of two, as is the case in a complete operation at one time. This is of importance in feeble old men, and should not be overlooked. My special way of controlling prostatic bleeding is of distinct advantage and would better be used in all cases.

7. The final operation should never be performed till the patient's condition is better than it was before the preliminary cystotomy.

8. The ease with which these feeble old men become bedridden is a danger, and therefore the fact that they can be gotten up so quickly after the preliminary and final operations adds much to their chances of recovery.

Their proneness to contract pneumonia and other diseases while lying in bed is well known, and we diminish this danger by getting them on their feet in a few days. This is a much more difficult matter in the severe shock following a one-stage operation.

THE QUESTION OF "JUSTIFIABLE HOMICIDE."

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

(Concluded from No. 16, p. 531.)

Chateaubrand thus relates that in his youth he was surrounded only by the women of his family, but he became amorous for a woman who only existed in his imagination. "*Je me composai donc une femme de toutes les femmes que j'avais vues: elle avait la taille, les cheveux et le sourire de l'étrangère qui m'avait pressé dans son sein; je lui donnai les yeux de telle jeune fille du village, la fraicheur de telle autre. Les portraits des grandes dames du temps de Francois I, de Henri IV et de Louis IV dont le salon était orné, m'avaient fourni d'autres traits, et j'avais dérobé des graces jusqu'aux tableaux des Vierges suspendus dans les églises.* . . ."

"*Un seul de ses regards m'eut fait voler au bout de la terre; quel désert ne m'eut suffi avec elle! A ses côtés, l'antre des lions se fut changé en palais, et des millions de siècles eussent été trop courts pour épuiser les feux dont je me sentais embrasé.*"

Later when he was exiled in England, he became extremely amorous of a young girl, because he found in her a resemblance to his former ideal, but, being married, he was fully aware of the inanity of his passion. If such is the passion in healthy minded men, what can it be in those who, on account of their family antecedents, or a nervous nature, are subjects of predilection for all mental diseases? They are in need of a particularly rigorous moral hygiene, and, on the contrary, I have endeavored to show that, during all their life, this feverish nature has been developed from their surroundings and the character of their life. Consequently, one can hardly conceive of the intensity of these passions beyond which nothing else exists; they are a physical torture and, at the same time, a moral pain.

In studying the character of the criminal from passion we have seen the latent and deep causes of the crime, those which are the nearest to human nature and which, consequently, are the most difficult to reach. The occasional causes, on the contrary, those which furnish the circumstances to the subject which will cause him to commit his crime, are possible to modify, although this is a difficult undertaking. In the first place, the general causes which influence criminality are to be considered, and afterwards certain causes which pertain strictly to crimes from passion. We will merely mention the principal causes of criminality, making note of those which may exercise an influence over passionary crimes.

In the first place alcoholism has, as is well known, a very great influence on this class of crime. It often happens that it is during alcoholic intoxication that the jealousy of the man of the people breaks out, and the continued use of alcohol renders the character violent and irritable, and for this very reason predisposes the subject to acts of violence and vengeance.

I have also pointed out the influence of heredity and insanity upon crimes from passion. In the moral point of view one should note that the passionate subject does not lack moral sense in a general way, like the ordinary criminal, but that occasionally he is wanting in it as far as the special point of vengeance is concerned, and he considers the latter as an act of justice. As to imitation, the passionary criminal appears to be subject to the same rules as other criminals. One not only often meets with instances of repetition of the same kind, but occasionally one can distinctly see a copy in a passionary crime even including the details of another crime which has been committed shortly before by another person. For this reason one cannot underrate the dangers incurred by the detailed accounts of crimes in the newspapers and the bloody pictures that they place daily under the eyes of their readers who, unfortunately, are only too avid for these accounts.

A certain influence may be attributed to the climate and, generally speaking, it may be said that these crimes are more frequent in warm countries than in temperate ones; and lastly we would note that misery, ignorance, great political crises, are without any influence whatsoever on the criminal from passion.

Beside these causes of a general order, which have an influence on all criminality, one should rank the causes which are peculiar to crimes from passion. Leaving aside the culpability of their authors, these crimes are the consequence of the mistakes of people, of the law or of public opinion. A large part of the responsibility is incumbent upon public opinion, which encourages the seducer by its indulgence, if not even by its admiration. It is this same public opinion which directs the education of woman and gives her a tendency especially to the art of seduction and coquetry, thus rendering her far easier to seduce than seducing. And, lastly, it upholds the laws which insufficiently protect young women excepting to cause her to carry her fault in disgrace.

A part of the responsibility of a crime from passion is often incumbent upon the victim. Ordinarily what makes the murderer so interesting is the little interest that his victim inspires to honest people. There is evidently no proportion between the offense and the vengeance, but either he or she who has only been the victim is extremely badly placed to appreciate the greatness of the offense received. The seducer generally does not take into consideration the extent of his responsibility and always says that he has merely done like others, and he was protected by public opinion up to the day of the scandal. Morals have diligently taught him that to seduce a young girl and leave her afterwards is to dishonor her, to morally assassinate her, and that a man should marry the virgin that he has possessed, but customs and the law speak in a different tone.

It, however, is not enough for a man to ask, it is necessary that the young girl give herself up to him, and a question arises whether or not she is not quite as responsible, having given up all that her fall will bring upon her. Most assuredly there is certainly much truth in this objection; but, just as we admitted that a portion of the responsibility of the seducer is incumbent upon public opinion and the laws which protect and cover him, so one must recognize that woman, especially in the working classes, is prepared for the seduction by everything which surrounds her.

In the first place her education is bad. In all large cities young girls of the people are in a condition much superior to the men of their own class, in their dress, their external appearance and even mentally. They thus become the easy conquest of men of the easy class, and there would be fewer girls seduced and less adultery among married women if parents did not give their daughters habits of luxury superior to their fortune and their social rank. It is also to be remarked that at the present time the form of work has greatly facilitated seduction. Formerly workmen and their wives worked at the common home, the children also, and thus they all had a hearthstone around which they remained united. Now machinery, the large department stores and workshops have called them out of their homes, and there is a decrease in the morality which naturally follows this splitting up of families.

In the well-to-do classt he education of young girls is almost entirely directed towards everything that can render her seductive, and it would even appear that the instruction she receives merely adds to the possibility of her seduction. The jests, actions and words that she acquires are those which appear eminently suited to please, and all this tends to exasperate her coquettishness and simply goes to show that her education has for its ultimate attainment the conquest of a husband. Then marriage comes and the woman has from this time on less use for her brilliant qualities and must, on the contrary, search the more severe ones of marriage.

Outside of education and coming back to the popular class, there is another cause which may force the woman onward to her fall, namely, the general insufficiency of the salary paid to girls.

To sum up, it must be admitted that the nature and education tend to draw women into a trap, into which they fall easily when the solicitations of a man are sufficiently pressing, and the need of money weakens her resistance still more. To resist all these temptations a woman must possess a very great moral force, and she must also be able to resign herself to her condition. Now, in point of fact, religious sentiment has very greatly diminished in the popular class, and in all classes, for that matter, within the last century. During the epochs of faith, in order to cause disorder, it was necessary to truly love; to violate the general laws one was obliged to make great sacrifices. It not only meant to face fortuitous dangers and to brave the laws, but one was obliged to vanquish in himself the empire of regular habits, the authority of the family, the tyranny of domestic customs, the opposition of the conscience and the terrors and the duties of the Christian.

We do not pretend to study the consequences of the disappearance of religious beliefs, but, from the standpoint of the question which we are considering, we should place aside two of its consequences, namely, the absence of resignation and the desire of an immediate personal benefit. It is quite certain that morals deprived of sanction cannot become popular, and that by losing the belief in a higher life the great mass of people have lost the sense of the moral itself.

The conduct of a young girl whose poverty prevents her marriage thus becomes a question of an interest well understood and is no longer a moral one. She will argue that it is just as well to have as much fun as possible during her young days, if nothing but age and infirmity are to follow. On the other hand the conception of marriage as the only possible union has also disappeared from the large majority of minds, and marriage has ceased to be a sacrament and has become a contract, which itself becomes every day more fragile under the influence of public opinion, law, and the jurisprudence in matters of divorce. The customs having rendered the fall of woman an easier and a more frequent matter, has law increased her protection?

In every instance where a misdemeanor is easy to commit the law should redouble its severity in order to do away with those who profit by this facility and, consequently, it should be severe for the seducer, especially severe for him who abuses the young girl by promising her marriage and abandoning her as soon as she becomes a mother.

Unfortunately, this, however, is not the case, and there is a certain Pharisaism to defend the search of paternity in the name of the family and morals.

This does not mean that the seduced girl's crime is legitimate, and if this crime was merely caused by some defect of the law, it would nevertheless be an immoral act and absolutely antisocial, because it is a crime and not an act of justice, and, on the other hand, the punishment inflicted upon the seducer is quite out of proportion to his crime. It is as much as wishing to proclaim the right of vengeance to the seduced girl, and this has most seriously compromised her cause and it has been discredited by a certain party of public opinion. It has been thought that the acquittals of juries practically proclaimed this right, when in reality they merely wished to give proof of an extreme indulgence that they had for the cause, because there are no punishments of a special nature for the passionary crime.

However, the mistakes of legislation have had an undoubted influence on criminality, and there is a sociologic law which may thus be defined; in every instance where, on account of an absence of legislation, the individual is not sufficiently protected, he will always have a tendency to mete out justice himself. Thus, for example, the law does not allow a suit to be brought for a gambling debt, and consequently society and customs have considered these debts as privileged, or ones of honor, and public opinion is far more rigorous for those who do not pay them than for the debtors against whom creditors are armed. It is, however, in cases of insult made to a person that the fact is most evident. It is quite certain that individual property is much better protected by the law than the human being. Thus the law renders hardly any satisfaction in the case of a person outraged in his honor and so forth; the consequence has been that the individual substitutes himself for the law and avenges his honor himself. What satisfaction could a man, who has received a slap in the face, obtain from justice? The defamation is also insufficiently punished, and here again the individual will mete out the justice himself. When he cannot or will not do it by resorting to duelling it is by a murder that he accomplishes his vengeance. The law does not protect sufficiently the honor of the young girl or of the husband, and here again feeling that they are not sufficiently protected they have been desirous of carrying out justice in their own way.

In France, at least, there seems to be a change for the better in the legislation, and in January, 1904, the civil court of the Seine accorded, as an indemnity to a seduced girl, a pension that her lover in reality owed her in his quality as father.

A young woman, abandoned with two children, claimed a yearly indemnity in order to bring up the children that she had had by him during several years of cohabitation. She proved that, during the entire time of their false marriage, he had conducted himself as a father towards her children, and, although he had not entered into any formal contract, he had given her to understand that she could rely upon him. The Court condemned the physician to pay his former mistress eight hundred francs income a year until the majority of the children, the decision handed down by the learned judge being as follows:

"Since it has been proven that up to within very recently the defendant has contributed in a certain measure to the support of the children; since it has been shown by the written correspondence produced in the trial coming from the defendant and constituting the commencement of a written proof, that from an *ensemble* of grave, precise and concordant presumptions that he engaged himself to be responsible for a portion of the aforementioned expenses," etc.

Relative to the husband, jurisprudence has been less fortunate, since it has diminished the sentence of adultery so as to make it almost purely theoretical. When a husband brings a divorce on the charge of adultery before the Courts and presents himself at the trial as a witness, he submits to a very trying position, but at least he hopes to be avenged. If society simply accords him a derisive satisfaction, it is to be feared that he might be desirous of adding his vengeance to that of society, and it is more especially to be feared that others will scoff at such a meagre satisfaction in order to render justice themselves.

Mistakes in legislation have always existed, but why should it be that in modern times the consequences of these mistakes should be murder? In the first place these *lacunæ* in the law have not always existed in the same manner. In former times a young woman of quality was far more protected than the modern young woman, from the fact that, shut up in a convent until her marriage, she remained a stranger to daily life. The mistake of a young girl in the eighteenth century, for example, the mistake of a young girl well born, especially, was of an extreme rarity. For that matter seduction is not a gain; far from it; and its consequences would cause one to seriously reflect and make the most amorous very tepid in their desires. In 1737, M. de la Roche-Courbon was condemned to have his head cut off for having seduced Mlle. de Moras in the convent of Notre Dame de la Consolation. Her mother died from a broken heart and he himself fled and, driven out of Sardinia, where he had taken refuge at the house of one of his relatives, M. de Senneterre, the French Ambassador, finished his days miserably. The curate who had given the pair the nuptial benediction was placed in the galleys; the chambermaid of Mlle. de Moras to be whipped, to be branded with the fleur de lys and to nine years' banishment.

Formerly, the husband was not less well armed, although he employed his arms less freely. Ordinarily tolerant, especially during the eighteenth century, the husband shook off his indifference occasionally, wounded less by a sudden jealousy than by the humiliation which the wicked tastes of his wife caused him. Consequently, the older laws gave very severe punishment in cases of adultery between a woman of condition and a man of the people. Muyart de Vouglans mentions a sentence rendered by the Parliament of Paris which condemned a valet to be hanged for having committed the crime of adultery with his mistress, "*quoique celle-ci lui eut donne occasion en se decouvrant immodestement devant lui.*" Fournil mentions the case of a woman of condition, who, taken by surprise in the act of adultery with a car driver, was condemned to be hung, as well as her accomplice, in 1567. Bruneau, another jurisconsult, quotes the case of a wife of a magistrate who was caught in the act of adultery with her servant, and another of the same condition with her husband's clerk, and in both cases the same sentence was handed down. Adultery was in these days reprimanded, not merely with severity, but with cruelty.

During the eighteenth century customs became milder, husbands likewise, and nevertheless when one of them wished to avenge himself the powers given him by law were certainly immense. The wife was taken from her bed in the morning and thrown in a carriage which was drawn under the escort of four armed men and conducted to the Convent du Bon-Pasteur, which was a kind of house of correction. Oftentimes the wife was even taken away during a banquet, brutally snatched away from some pleasure, like, for example, Madame de Stainville, the foolish lover of Clairval, who was seized with all her fineries in the midst of the rehearsal for a ball to be given by the Duchess de Mirepoix; she was separated from her women, her confidential maid was locked up at Sainte-Pelagie and she herself was taken to the sisters of Sainte-Marie at Nancy. Many other notable seizures and imprisonments could be mentioned, but space forbids. These imprisonments of an unfaithful wife in a cloister were the right of the husband during the eighteenth century and he had in his hand these sudden and fearful punishments. In the midst of a relaxation in the morals and of all the complaisance of the society for scandal, he remained armed by the law. A sealed letter, obtained upon the proof of adultery, was sufficient to give him power to place his wife in a convent to the end of her days, if he so chose. Occasionally, having recourse to justice, he had her condemned to two years in the convent, during which he retained the liberty to visit her or take her back, if he chose. When the two years had elapsed the wife was condemned to be shaven and imprisoned in the convent for the remainder of her days if the husband took no steps for reclaiming her.

It must, however, be said that the husbands rarely resorted to the power given them by the law. Then, again, the idea of marital honor, as much in the higher societies as in the popular classes, the idea of honor of the young girl, even, in the popular classes, was less developed at that epoch than in ours. This change should be considered as a progress in morals; a husband indifferent as to his dishonor is always a suspicious person and liable to profit by it rather than otherwise. Public opinion has to-day become infinitely more severe for a man whose love is not disinterested; the husband for this reason must become himself more susceptible for his conjugal honor.

The scandals of the sixteenth century, the cutting sarcasm of Molière, the memoirs of the eighteenth century, prove distinctly this indifference which was so frequent under the old régime. We have already pointed out that young girls in the higher walks of life were extremely well protected, while in the popular classes she had little, but the notion of feminine honor must have still been quite confused. Even in the nobility it seems as if at certain epochs it became obscured. De Thou relates that in the sixteenth century, Baleins, Governor of Lectoure, stabbed an officer who had abused the former's sister, by promising her marriage, and that the King of Navarre was frightened by the audaciousness of the assassin and the enormity of his crime. Proal, in his interesting work entitled " Le Crime Passionnel," states that the jury is less frightened than was the King of Navarre at the audaciousness of those who kill from love or from jealousy. This hardly means that human life has less value in the eyes of the people of the twentieth century than those of a great nobleman of the sixteenth century, but the motive which appears so serious to us probably appeared to have no value in the sixteenth century.

The last cause which seems to give to crimes from passion the aspect of ordinary crimes in modern times is our ignorance regarding a large number of crimes committed in days gone by. It is evident that at a time when medicine was in its infancy, poison must have often been employed in this type of crime, and, on the other hand, the brawls in the street were in the older days attributed to robbers, but in reality often served to carry out private vengeance.

We have, relatively speaking, numerous examples of passionary crimes in old law. In the first place we have the tragedy committed in the seventeenth century by two men occupying high social conditions, the Abbé and the Chevalier de Ganges, who both being extremely in love with their sister-in-law, the beautiful Marquise de Ganges, whose portrait was done by Mignard, and furious at being repulsed, they concentrated their efforts to avenge themselves of her disdain. In the night they penetrated into her room, the Chevalier with his sword in hand, the Abbé carrying a pistol in one hand and in the other a glass full of poison, and they forced their victim to poison herself. After she had drank the liquid the assassins waited a few minutes in order to allow the poison the time to produce its effect and to prevent any help being brought their victim. These two assassins, who belonged to the highest society, were condemned to be torn to pieces alive. Under the reign of Louis XIV came the famous Brinvilliers case. The fair assassin not only gave poison to obtain successions, but in order to break off marriages and prepare others. Beside the " *poudres de succession*," there were love powders as well, and it is well known how many and terrible were the revelations made in the ardent chamber. · Louis XIV, on account of the scandal to which he would be subjected, was obliged to stop the procedure. Madame de Montespan, more especially, was shown to have asked Voisin for a powder to kill Mlle. de la Vallière, and later another in order to kill the King himself, who had abandoned her, as well as Mlle. de Fontanges, who had become the favorite in her place. She died at the age of twenty-two years, persuaded that she had been poisoned. We only know of these prominent examples, but without doubt there were a large number of crimes committed which have not been recorded, and a great many were in all probability attributed to other motives. They were probably tried as ordinary murders in spite of the opinion of very advanced minds of the epoch, and notably the great lawyer Jousse, who considered love as an excuse and the accomplice of insanity or drunkenness.

Clinical Department.

A CASE OF INTESTINAL TUBERCULOSIS WITH PSYCHONEUROTIC SYMPTOMS.

BY ARTHUR K. STONE, M.D., BOSTON.

THE patient was a young man of twenty-three years of age and a clerk. He had a phthisical family history, but had been separated from his parents from early childhood. His habits were good as regarding the use of stimulants, and he took a fair amount of exercise, belonging to a local military company. From time to time he had to be warned by me that he could not take part too freely in the social side of the organization and do his work at the store. But he had never had any serious sickness. One January he presented himself for examination, complaining that for a period of several months there had been a loss of appetite and a loss of weight. This had been accompanied by a little cough, but without expectoration. The urine showed nothing abnormal. The heart was slow, but not strong. The temperature was 98.8°. At the right apex of the lung there was slight dullness with increased fremitus, spoken and tactile; the respiration was harsh and the expiration was prolonged. During the past two weeks there had been indigestion, but the bowels were in every way regular.

Further questioning elicited the information that he was engaged and expected to be married in the near future. He had purchased a house on a mortgage; later, in attempting to pay for it, had purchased stocks on a margin and had had his margin wiped out. Consequently he was much worried and had had considerable difficulty in carrying his mortgage. On general advice he improved rapidly and his cough disappeared. In March he complained of more indigestion, which increased steadily as the time of his wedding approached. No particular kind of food appeared to bring on distress, but almost everything digested with difficulty until he had his " bachelor dinner," which he ate and drank with relish, and was married the following day and thereafter took his meals without distress, so that early in October he told me that he considered himself perfectly well. On his return after his wedding he, with other of his fellow clerks, bought out the business and started for themselves. The organization and financiering of the business fell principally on my patient's shoulders, and he worked very hard all through the summer and fall, and soon after the first of October began to have occasional attacks of indigestion, not sufficient in importance, however, to lead him to consult me. Immediately after his Thanksgiving dinner, however, he vomited and had chills during the night. About a week later he had an attack of abdominal pain, which was relieved promptly by an injection. After that, except for cold hands and feet, he did well till Christmas time, when again he had an upset. In January he reported that he had had much pain after eating, coming in severe attacks; that not even liquids were retained, until finally some large fecal masses were passed, after which he would recover slowly. He shortly after went for a trip to Old Point Comfort and during the time there ate freely and without distress. On his return he ate an enormous meal just before leaving the steamer and his unpleasant symptoms returned at once. These attacks of pain, while quite severe at the time, were often very quickly relieved with the administration of a high enema or of hot water with 10 to 15 gr. of bromide added.

Another trouble now appeared, large and loose movements of the bowels with much gas and colic. These movements came usually at about 4 to 5 o'clock each morning and were very annoying, as they disturbed his sleep. The stomach examination gave normal amounts of acid and well digested contents. Seen in consultation with Dr. Hewes, it was agreed that the intestinal indigestion was of nervous origin. The examination of the stools failed to disclose any bacilli of tuberculosis. There was a remission in April, when for several weeks the patient attended to his business, with very little discomfort. Then the pain and diarrhea returned. The patient became emaciated, and irritable at times, turning to his business whenever he had a few days' let-up. Variations in diet appeared to have no apparent effect upon his pain or diarrhea. One day at my office, in an attack of pain, his agony was so great that opisthotonos was brought on, and this weak man balanced himself on his head and heels for some minutes. The pain, however, quickly yielded to a small subcutaneous injection of morphia, given then for the first time. Immediately after this he went to the Baptist Hospital, where he could be out of doors a great part of the time and under good nursing supervision. While there he improved during the first few days and was fairly free from pain. He was seen by one of my colleagues who, after going over the case and considering the question of tuberculosis carefully, expressed the opinion that in spite of his appearance he would consider the case a neurosis unless there was a positive diagnosis to the contrary. That same day the fecal examination enabled me to make a positive diagnosis of intestinal tuberculosis, large numbers of bacilli of tuberculosis being found in the stool.

In the hope that there might be a localization of the processes in the intestine which gave rise to the obstructive symptoms, which at no time could be located at any particular part of the abdomen, at my request Dr. G. W. W. Brewster made an exploratory laparotomy. The first coil of small intestine seen presented evidences of a well marked ulcer and as coil after coil was rapidly lifted, it was evident that the whole small intestine was thickly studded with large tubercular ulcers, and in many places the presence of lymph on the peritoneal surface of the ulcer showed how deep was the ulceration. Just above the cecum there was a thickened mass, where the lumen of the intestine was evidently contracted. This, so far as the hasty examination went, was the oldest lesion and the probable cause of the colic pains, although never had the pains been localized or had there been any tenderness pointing to any particular part of the belly. The wound was immediately closed. The patient died about a week later, a little over a year and a half from the time of the first symptoms.

The case is reported as illustrating the difficulties which may be encountered in deciding between a neurosis and a very extensive pathological process. There was every reason for mental worry and nervous instability. There was the long remission after his marriage, with the return of symptoms after a hard summer's work in financing his new business venture, and the less complete remissions on his vacation and again in March. The irregularity of the attacks of pain, the absence of localizing symptoms, all tended to make the case obscure.

Medical Progress.

PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D., AND HARVEY P. TOWLE, M.D., BOSTON.

LIQUID AIR IN DERMATOLOGY.

The utilization of liquid air in the field of therapeutics offers another example of the adaptation of a discovery made in one branch of science to the purposes of an entirely different branch. The commercial possibilities of liquid air were fully discussed at the time of its discovery but its use as a remedial agent was not thought of. Recently, however, it has been used with striking results in the treatment of a number of cutaneous affections. The advantages claimed for the method are that it is clean and dry, easy of application and that it produces uniform results with a smooth, thin, pliable, scarcely perceptible scar. The expense, the difficulty of keeping the substance and of obtaining a regular supply are disadvantages so great as to have limited the method to a few localities and to a small number of cases.

Trimble describes the properties of liquid air as follows: "Liquid air is the common air we breathe, very much reduced in temperature. It liquefies at 312° F. below zero. The gases that make up the normal air are practically in the same proportion when the air is liquefied. To the eye the liquid seems to be boiling, giving off fumes similar to those of nitric acid. It is slightly opalescent in color and to the touch feels cold and dry, giving a sensation of tingling. It evaporates rapidly, consequently it can be kept but a short time. We have been unable to keep it at the hospital more than two or three days. Its method of transportation is really a great obstacle as it will explode if corked tightly; therefore a small hole is always left in the stopper from which evaporation goes on." At the present time the liquid air is generally kept in a Dewar bulb which is made up of a larger outside bulb inside which is a smaller bulb. To prevent radiation as much as possible the sides of the bulbs are silvered and the air is pumped from the space between the two bulbs until a vacuum is created.

In the use of liquid air advantage is taken of its property of immediately freezing the tissues with which it comes in contact. Whitehouse says of its effects, that "a drop on the sound skin causes a sensation of burning and tingling and, if allowed to remain a moment or two, will cause a blister. In the absence of moisture no slough nor death of tissue takes place, but on a perspiring skin contact immediately ensues and a blister is quickly formed; on a denuded or moist surface a slough with loss of tissue follows. A mild and short exposure to the normal skin by means of the spray produces blanching followed by a moderate congestion; a longer exposure thoroughly freezes and anesthetizes the part but, if not distally situated as the ears, toes, fingers, etc., the circulation is slowly restored without affecting its integrity. It is surprising to see how deeply a part may be frozen without ultimately causing any injurious effects.

"In applications with the swab the resulting inflammatory swelling varies in degree with the amount used, the pressure employed and the location and character of the tissues. If these are firm and well nourished it is often very considerable; while if ill nourished or in a senile condition, irrespective of the age of the subject, a large dose will cause little or no reaction."

From the results of various experiments it would seem that liquid air does not destroy bacteria but that it does temporarily inhibit their activity. The results obtained from its use must, therefore, be referred to its action upon the tissues themselves rather than to its bactericidal properties. The application of liquid air with light pressure produces a temporary contraction of the capillaries with anemia, which is succeeded by a dilatation of the vessels with hyperemia and the outpouring of serum, but without destruction of tissue. A prolonged application with hard pressure causes an intense inflammatory reaction and even an obliterating endarteritis and sloughing of the part. It is apparently by reason of these changes that the results recorded are obtained. It is also stated that diseased cells are more quickly and more profoundly influenced which, it will be seen, is analogous to the action of the x-rays. White's explanation of its beneficial action in diseases of bacterial origin is that "the temporary suspension of the vitality of the germs due to the application of the liquid air gives nature an opportunity to completely destroy them, gives the system a chance to manufacture its antitoxin."

Opinions differ as to the amount of pain caused by the applications. Some writers maintain that there is usually but little pain, whereas others state that it is considerable. It seems probable, therefore, that the presence or absence of pain may be dependent upon several factors, such as the age of the patient, the condition of the tissues, the pressure employed and the duration of the application.

All writers are agreed upon the great importance of the technic. Success or failure depends upon the accuracy of the operator in applying the liquid air to the surface, his skill in applying just the pressure which will accomplish his object without causing unnecessary reaction or damage, and his judgment as to the duration of the application, the proper saturation of the swab and how frequently the treatment should be repeated. Liquid air may be applied either by spray or swab. The latter is usually preferred as it can be better controlled. A swab is made of a pine stick long enough to reach to the bottom of the bulb by wrapping absorbent cotton about one end. The cotton is moulded to fit the surface of the lesion to be treated, making it flat or round or oval as the case may demand. The swab is dipped into the liquid air until saturated after which the surplus liquid is allowed to drip off. It is then applied accurately to the surface of the lesion with light, medium or hard pressure, according to the intensity of the effect which is desired. The ability to always use the same pressure seems to be the most difficult part of the technic to acquire. Trimble's description of what is meant by light, medium and hard pressure is, therefore, helpful. He compares "light pressure" to the light touch with which the Paquelin cautery is used in lumbago to produce a slight erythema. "'Medium pressure' is used when the applicator is held upon the lesion with sufficient firmness to prevent its slipping from its place and hard enough to depress the skin slightly." Another point made is the removal of all crusts before making the application. It is also advisable that all moist or denuded surfaces should be covered with a thin layer of gauze in order to prevent the swab from freezing fast to the surface.

In regard to the amount of pressure to be used in the treatment of the various conditions, light pressure of short duration is employed in such affections as lupus, erythematosus and port-wine marks; medium pressure in pigmented and hairy nevi, angiomata, lymphangioma and lupus vulgaris; and firm pressure of considerable duration — twenty to sixty seconds — in the scattered nodules of lupus vulgaris and in epithelioma. Whitehouse advises that in the treatment of epithelioma and rodent ulcer the pressure should be exerted upon the periphery of the lesion rather than upon the center in order to prevent recurrence. He also uses liquid air as a diagnostic aid in distinguishing the pearly cicatricial nodules, occasionally seen on the periphery of a healed lesion, from true epitheliomatous nodules, relying upon the fact that the diseased tissue is frozen while the scar tissue is not appreciably affected.

The time when the application should be repeated demands the exercise of considerable judgment, for if the treatment is given too frequently it intensifies the reaction and causes unnecessary destruction of tissue. It is agreed that the best results are obtained when the operator proceeds slowly. Therefore, it has become the rule to wait until the effects of the first application have entirely passed off before making the second. Some, indeed, wait until the crust resulting from the preceding application has fallen before giving another treatment. It is claimed that if the operator is skillful, superficial affections may be removed with practically no scarring, and deeper affections with a scar which is so thin and pliable as to be scarcely noticeable. It is said that it is only when the applications are too long continued and the pressure too hard that tough, irregular scars result.

A brief résumé of some of the cases reported will give the best idea of the character of the cases in which liquid air is used, the method employed and the results obtained. For example, Trimble reports eight cases of hairy, pigmented nevi. Case I was a boy, aged eleven, with a brown, very hairy, pigmented lesion one and a half inches long and one-half inch wide, situated upon the upper eyelid. After four applications the hair began to disappear, ulceration commenced and a crust formed. Healing took place beneath the crust leaving a practically normal skin. Case II, a girl, aged five, presented on the cheek near the angle of the mouth a deeply pigmented, hairy lesion of the size of a twenty-five-cent piece. Six applications were made, the last causing some inflammation. The result was good, only slight scarring resulting. Case III, girl, aged sixteen; nevus of mouse-skin variety on side of nose, three fourths of an inch long and one-half inch wide, covered with long hair. After seven applications there remained only a healthy scar with slight pigmentation at one point. Case IV, girl, aged six; pigmented lesion on right temple. Three applications resulted in a smooth white scar which was scarcely noticeable. Case V, woman, aged twenty-four; lesion on left lower cheek, pigmented and covered with thick, reddish-brown hairs; size of a twenty-five-cent piece. Five applications removed the lesion with the exception of one small spot in the center. Case VI, boy, aged seventeen; dark brown nevus on cheek, size of twenty-five-cent piece; covered with coarse brown hair. Six applications cured with very mild scarring. Case VII, girl, aged twenty; nevus about the size of a five-cent piece, under the chin; black and covered with coarse black hairs. Entirely removed by seven applications except for one patch the size of the head of a match and with practically no scarring. Case VIII, girl, aged twenty; mouse-skin nevus, size of ten-cent piece, on the shin; central portion verrucous and projecting one-eighth inch above the surface. Four applications cured without remaining pigmentation and without a noticeable scar. All of these cases remained under observation for over a year and none showed any sign of recurrence.

Whitehouse reports three cases of pigmented nevi and two cases of hairy nevi in which his results were similar to those of Trimble. In addition he reports cases of vascular nevi, lupus erythematosus, lupus vulgaris and fifteen cases of epithelioma. As a result of a single application, a *vascular nevus*, the size of the finger nail, situated on the nose, disappeared completely within three weeks, leaving a smooth flat scar. Three months later there was no sign of a return. A port-wine mark on the nose, twice the size of the last, disappeared within three months after eight light-pressure applications, leaving a very superficial, atrophic-looking scar. No return. An irregular vascular nevus over the angle of the jaw and the adjacent part of the neck was removed by six applications and showed no signs of return after two years. In a case of *lupus erythematosus* of three years' duration, one patch on the cheek the size of the thumb nail was cured by three applications and another, slightly larger, indurated patch on the nose by five or six applications with smooth, superficial scars. In a second case a patch of one and a half years' duration, situated on the temple, had been almost completely removed by six applications with moderate pressure, when the patient disappeared. A patch of *lupus vulgaris*, nearly one inch in diameter, of three years' duration, was completely cured by one fairly severe, one moderately severe and two milder applications, leaving a smooth, pliable, but slightly depressed scar. No tendency to recurrence shown two years later. In another case of lupus vulgaris five isolated tubercles remained of a patch which had been previously treated by other measures. Deep boring with a pointed applicator destroyed the tubercles but produced a marked reaction. Sixteen months later there was a questionable recurrence of one tubercle which one application would cure. The fifteen cases of *epithelioma* were of the type commonly seen about the head and face and unaccompanied by glandular involvement. The following will serve as examples. An epithelioma, one quarter of an inch in size, was cured by a single application with firm pressure and showed no recurrence a year and a half later. Two other cases of the same size were also removed by one application. Thirteen months later one showed two pin-head recurrent nodules which were attributed to a tag left attached at the time of the first application. The second showed no return. Several other cases, varying in size from one quarter to three quarters of an inch, were cured by from one to four applications and showed no return in from two to three and a half years. An excavation involving almost the whole width of the lip and extending into the mouth was left by the removal of a fungating growth by Marsden's paste. Nine severe applications of liquid air were then made to the mucous surface. A group of nodules developed on the chin at a distance from the original growth. Two applications were made to the nodules and two to the original growth, making eleven in all. Three months from the first application the whole had healed perfectly with a scar level with the surface. The lip was slightly shortened but the contour was not affected.

The above cases are sufficient, without detailing similar cases reported by other men, to show the striking results obtained by the use of liquid air. Certainly they are not equalled by any other method with the possible exception of excision. Unfortunately the general use of liquid air is impossible because of the very great difficulty of obtaining it. Its employment at present is almost confined to New York, and even there it is sometimes difficult to secure a regular supply. It is to be hoped that some method will be invented which will render its production commercially profitable and thereby bring it within the reach of the profession generally.

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AMERICAN GASTRO-ENTEROLOGICAL ASSOCIATION.

TENTH ANNUAL MEETING, HELD AT ATLANTIC CITY, N. J., JUNE 3 AND 4, 1907.

(Concluded from No. 16, p. 535.)

GASTRIC DISTURBANCES CAUSED BY HERNIA.

Dr. Max Ballin, of Detroit, Mich., read this paper. He stated that any and every kind of hernia caused more or less gastric or intestinal trouble. The common large inguinal herniæ, if reducible, were responsible for flatulence, constipation, pain in the back and groins; if adherent, all these symptoms became more pronounced. Omental adhesions in a hernial sac could make a patient so miserable by loss of appetite and indigestion that serious loss of weight resulted, and there were cases of supposed malignant disease, where afterwards radical operation of the hernia removed all the intestinal disorders. It should be borne in mind that if in a hernia any adhesions existed between the hernial sac and its contents, a truss would usually aggravate all the symptoms by pressure on the unreduced parts. Generally speaking, in adherent hernia, a truss was contra-indicated. Wherever located, post-operative ruptures were most troublesome to the patient, but Dr. Ballin said that the main object of his paper was to call attention to intestinal disorders caused by small herniæ that were not easily discovered. Of these he considered in detail four kinds, namely: 1. The so-called incomplete inguinal hernia; (2) the small femoral hernia; (3) umbilical hernia; (4) epigastric hernia, in or lateral to the linea alba, and peritoneal lipoma. Under the latter heading he included hernia protruding in or close to the linea alba, between the xiphoid process and the umbilicus. These herniæ occurred very rarely below the umbilicus, and were apparently due to congenital or acquired defects in the linea alba, although some claimed that loss of fat was an important factor in their etiology. Others claimed that just the opposite, adiposity, predisposed to such weakness, the fat replacing to some extent the resistant fibrous tissue. Epigastric hernia and lipoma might exist for many years without causing any symptoms. Then, suddenly, symptoms might arise, the chief one being pain. Usually, these epigastric herniæ, on account of their size and the peculiar lipoma formation and adhesions, were not benefited by trusses and bandages, and a surgical operation was indicated. In conclusion, Dr. Ballin said that many cases of obscure abdominal trouble, colics and vomiting, could be caused by hernia, and that it was very important to look in all such cases for small ruptures. These could be of any of the known varieties, but of special importance in producing gastric symptoms were the small epigastric herniæ and the peritoneal lipomas.

Dr. Max Einhorn, of New York City, said that, according to his experience, these herniæ, especially those of the epigastric variety, were very frequent indeed. He probably saw three or four every week, and he did not think that one half or even one third gave rise to any symptoms. In the majority of these cases he ignored the hernia entirely, and considered it a mistake, sometimes, even to call the patient's attention to its existence.

Dr. J. A. Lichty, of Pittsburg, said he had seen only two cases of epigastric hernia, and in those two instances the patients did not complain of any symptoms referable to the hernia.

Dr. J. C. Johnson, of Atlanta, said that in a case of epigastric hernia which he saw recently the chief symptom was periodical attacks of pain. This was the only case of epigastric hernia he could recall among several thousand examinations.

Dr. G. W. McCaskey, of Fort Wayne, said he was greatly astonished at the frequency with which Dr. Einhorn met with cases of epigastric hernia.

Dr. A. L. Benedict said the statements made by the various speakers in regard to the frequency and infrequency of epigastric hernia showed either the personal equation or a peculiar coincidence. Personally, he saw these cases rather frequently, perhaps one every week or two; some of them good-sized epigastric herniæ; others so small that they could scarcely be called herniæ, but rather epigastric finger-points. He had never seen a single case in which the symptoms could be attributed to the hernia itself.

Dr. I. Adler, of New York City, said he wished to protest against the statement that epigastric herniæ were so very frequent. The stomach symptoms in these cases were not necessarily due to the presence of the hernia. Occasionally, however, an operation on such a hernia would act as a suggestive measure and relieve the symptoms, but there were still other cases where he agreed with Dr. Ballin that an operation was necessary, particularly in those cases where there were inflammatory adhesions.

Dr. S. J. Meltzer said it was not only incomplete herniæ that were liable to give trouble, as the simple pressure of the intestines against a patulous internal ring or against some diastasis in the abdominal muscle was not infrequently the cause of such pains, which were always relieved by the application of a well-fitting truss. Doubtless, there were some cases of incomplete herniæ which were not relieved by trusses; but even if a truss was effective, why should a man wear a truss for thirty years or more when he could be radically cured in less than a fortnight?

Dr. Charles D. Aaron, of Detroit, said a case of epigastric hernia which he reported ten years ago was that of a man who had been an invalid practically for fifteen years, because of an epigastric hernia about the size of a marble, with an opening into the linea alba scarcely larger than the point of a pencil. He was completely relieved by an operation. These cases were not the kind where the opening was large enough to admit even the finger-tip, and replacement was impossible.

Dr. J. Kaufmann, of New York City, thought there were cases of epigastric hernia which gave rise to serious trouble and which could not be cured by putting the patients to bed. In any case that was giving rise to symptoms, he would certainly advise an operation.

The discussion was continued by **Drs. J. Fuhs**, of Brookline, **G. W. McCaskey**, of Fort Wayne, and was then closed by **Dr. Ballin**.

THE GASES OF THE INTESTINE, WITH DEMONSTRATION OF AN ORIGINAL APPARATUS FOR THE COLLECTION AND ANALYSIS OF STOMACH AND INTESTINAL GASES.

By **Dr. S. Basch**, of New York. The author stated that the study of the intestinal gases possessed interest mainly as a physiological and chemical problem, but the important rôle which they played in a number of abnormal conditions clothed them, clinically, with more than theoretical interest. As was well known, the intestinal tract, after the very first ingestion of food, was never entirely free from gases. Throughout life there was a constant cycle of production and elimination. Under healthy conditions this balance of interchange proceeded without discomfort or marked disturbance, but if from any cause there was a derangement of its equilibrium, then flatulence, borborygmi, meteorism, tympanites and other conditions, varying in their significance from the merest discomfort to the severest gravity, might result. It was formerly held that the greater portion of the intestinal gases passed off per anum. This view was now known to have been erroneous, and it was conceded that in the healthy individual at least as much disappeared through absorption into the blood and expulsion by the respiratory tract.

Under a mixed diet the prevailing gas formed in the intestine was CO_2. The amount, naturally, was larger under a heavy than under a light form of diet. CO_2, being a product of fermentation, was most abundantly evolved in the earlier stages of both intestinal and fecal fermentation, while the hydrocarbon series, being the result of putrefactive decomposition, developed, in general, later. H_2S also increased as the fermentative changes were replaced by the putrefactive. It could not be quantitatively determined in these gas mixtures, but its presence was demonstrated by exposing strips of filter paper soaked with lead acetate solution to the gas.

Dr. S. J. Meltzer, of New York City, said that, in view of the present tendency to ascribe a lot of trouble to the faulty digestion of proteids, it would be interesting to learn in what proportion the intestinal gases varied when the patient was on a proteid or carbohydrate diet.

Dr. S. Basch, of New York City, in closing, said it had been shown that the carbohydrates were largely responsible for the production of carbonic acid gas, while the proteids were responsible for the production of marsh gas, ammonia and putrefactive gases.

LACK OF GASTRIC MUCUS AND ITS RELATION TO HYPERACIDITY AND TO GASTRIC ULCER.

Dr. J. Kaufmann, of New York, read this paper, in which he emphasized the fact that a lack of gastric mucus should be considered an unfavorable symptom, and that a diminished secretion of mucus and insufficient mucous covering deprived the gastric mucosa of its protection against all harmfuli nfluences and particularly against the digestive activity of its own secretion. The routine examinations of stomach contents had heretofore been principally directed toward the study of the gastric juice and its disturbed secretion. A more careful study of the protective secretion of mucus and its disturbances should be systematically made. We were all familiar with the increase of mucus in certain gastric conditions, but too little attention had been paid so far to the decrease and the lack of secretion of gastric mucus. Dr. Kaufmann said his observations during recent years had convinced him that decrease and lack of secretion of gastric mucus was of frequent occurrence and played an important rôle in the pathology of diseases of the stomach.

Dr. Max Einhorn, of New York City, said he did not agree with Dr. Kaufmann that the symptoms of hyperchlorhydria in achylia gastrica could be explained by this condition of a lack of mucus. The number of cases in which there was an absence of mucus was very large, while the number that complained of symptoms of hyperchlorhydria was very small. There was also another variety of gastric disorder, in which there was a great deal of gastric juice and also mucus, and he could recall a number of cases where the mucus composed fully one half of the gastric filtrate.

Dr. Kaufmann, in closing, said that in his paper he limited himself to cases in which there was a lack of secretion of gastric mucus. An increase of mucus was a subject that he did not discuss at all. A lack of secretion of gastric mucus certainly played an important rôle in the pathology of the stomach, and was deserving of more consideration than it had received thus far.

DEMONSTRATION OF ESTIMATING PERCENTAGE OF PROTEIDS, FATS AND CARBOHYDRATES IN FOOD.

By Prof. Irving Fisher, of New Haven. In connection with this demonstration the speaker stated that there had been previously two methods in use for estimating the proteids, fats and carbohydrates in foods, which might be distinguished as the method of weight per cent and the method of calories per ounce. By the first method the weight of each food is multiplied by the percentage of weight of proteid, fat or carbohydrate which it contains. The products give the weights of the three elements. The total calories were then found by multiplying these weights by the food value of proteids, fats and carbohydrates per gram and adding the results. This method was too laborious to be of much practical service to physicians. In the second method, a table was prepared, expressing in calories the proteids, fats and carbohydrates in an ounce of each given food. This method had the advantage that the proteids, fats and carbohydrates and total fuel value were all measured in the same units, namely, calories. A simpler method than either of the preceding was to form a table giving the per cent of total calories in the form of proteid, fat and carbohydrate. This method had the advantage of being easily visualized by graphic representation, and of lending itself to quick computation, by means of a mechanical diet indicator.

Dr. A. L. Benedict, of Buffalo, said Professor Fisher's demonstration had given a very clear illustration of what small quantities of food the average adult really required, and how much we ate in excess of that amount. To verify that fact, one had only to observe the average diner at his hotel table, where even in the bread and butter that he munched before his meal, and the olives he consumed between the courses, and the fruit and nuts and ice cream he took for dessert, he had eaten more than his daily ration of calories.

STUDY OF URINARY ACIDITY.

Dr. A. L. Benedict, of Buffalo, read a paper on this subject, in which he reported in detail his clinical deductions from a study of the urinary acidity. He was unable to verify the observation that there was an alkaline and an acid tide in the urine in the course of digestion, nor was he able to verify the observation in patients that rheumatism was associated with superacidity. In acute articular rheumatism, the acidity was not as high as we should expect. In numerous observations of the urine he had rarely found it alkaline, nor had he found the decrease in acid units after meals, as we should expect.

AN UNUSUAL CASE OF ULCER OF THE STOMACH.

By Drs. J. M. T. Finney and J. Friedenwald, of Baltimore. In this case the clinical diagnosis of gastric ulcer was made, which was confirmed by the gross findings in the laboratory and subsequently by the microscope. At the operation, a markedly indurated ulcer of the stomach was found, with enlarged glands in the mesentery. The case was thereupon regarded as one of cancer, and a gastrectomy was done, with the removal of a large portion of the stomach. The case was interesting from the fact that notwithstanding the existence of a markedly indurated ulcer in the stomach, the symptoms which were presented were by no means distinctive of that condition, and even upon direct inspection it could not be differentiated from carcinoma. The speaker emphasized the fact that all indurated ulcerations of doubtful character situated in the stomach should be regarded as carcinomatous, inasmuch as it is impossible in many of these cases to differentiate ulcers from carcinoma by simple inspection; and again, because in a certain number of these cases a carcinoma was apt to develop upon the indurated border of an old ulcer.

Dr. J. A. Lichty, of Pittsburg, said the case reported in this paper was very interesting on account of the fact that some enlarged glands were found in the mesentery. While he was aware of the fact that surgeons were inclined to consider these small enlarged glands in the mesentery as almost positive proof of a malignant condition, and a positive indication for a radical operation, in cases which would formerly have been regarded as benign, he personally did not understand why these glandular enlargements should not be the result of an infection in the presence of a good-sized gastric ulcer, and he was not convinced that they were necessarily an indication of a malignant condition.

Dr. J. Kaufmann, of New York City, said he had seen cases of gastric ulcer which caused enlargement and hardening of glands in the mesentery, and where a gastro-enterostomy was performed and the future development of the case proved that the ulcer was of benign character.

Dr. G. W. McCaskey, of Fort Wayne, expressed the belief that every indurated ulcer of the stomach, after an exploration, should, if possible, be freely and liberally excised. The frequency with which cancer developed from an ulcer base should not be lost sight of.

THE FACTORS CONCERNED IN THE HEALING OF PEPTIC ULCER.

Dr. F. B. Turck premised this paper upon a reassertion of his former contention, based upon experiments on a large number of animals, that true peptic ulcer had for its most important factor certain alterations in the alimentary canal, with subsequent changes in the blood, characterized by diminution of the normal protective bodies, and that these etiological factors were general in character and not local. The progressive microscopic picture revealed a process of breaking down — the cells themselves jagged and irregular in form, without round cell infiltration, and a disintegrating and diminishing connective tissue structure. When the process of repair was instituted those cells capable of rehabilitation reasserted their physiological activity; those that had been injured beyond recall were carried away by a process of leucocytosis; new material for the formation of connective tissue was introduced, which progressively drew the edges of the ulcer together, acting in constricting bands. Hence the scar that remained. Similar factors that were active in the normal defense of the tissues were also concerned in the process of reconstruction. Processes of repair were impossible without restoration of the normal defenses of the blood.

Dr. Turck's paper was discussed by Drs. S. J. Meltzer, of New York City, and J. C. Hemmeter, of Baltimore.

DEMONSTRATION OF A MODIFICATION OF THE BOAS TEST FOR BLOOD IN THE FECES.

Dr. A. L. Benedict, of Buffalo, said that gasoline was first added to the feces to extract the fats. Then old, ozenized oil of turpentine was added, and a fresh solution of guaiac. The test was just as delicate as the ordinary Boas test, and a great deal simpler.

THE EFFECT OF DESTRUCTION OF THE SALIVARY GLANDS (BY DISEASE OR EXPERIMENT) ON THE GASTRIC SECRETION. A POSSIBLE INTERNAL SECRETION OF THE SALIVARY GLANDS.

By Dr. J. C. Hemmeter, of Baltimore. The speaker stated that his attention was first attracted to this subject by the case of a woman who was suffering from septic parotitis, which involved also the submaxillary and sublingual glands. Repeated examinations of the stomach contents in this case revealed an entire absence of hydrochloric acid and enzymes, with no proteolytic and no milk-curdling effect. Subsequently, the septic parotitis improved, and this was followed in turn by a restoration of the normal gastric juice. This case, Dr. Hemmeter said, brought to his mind the two cases of salivary gland disease and known as Mikulicz's disease, which consisted of a bilateral induration of all the human salivary glands, resembling adenoma, and in which a chemical examination of the stomach contents showed this same deficit of hydrochloric acid and other gastric secretions.

Influenced by a knowledge of these cases, the speaker said he undertook a series of experiments on three dogs with experimental accessory stomachs (Pawlow). After determining the proteolytic and milk-curdling power of the amount of hydrochloric acid in the secretion from the accessory stomachs of these animals, so as to learn what their gastric juice would accomplish under normal conditions, their salivary glands were removed. It was found comparatively easy to extirpate the submaxillary and sublingual glands, but extirpation of the parotid was accomplished with great difficulty on account of the distance it extended backward underneath the skull. Still, even if a portion of the gland was left behind, its usefulness would be destroyed, providing its nerve and vascular connection was severed. It was found that extirpation of the submaxillary and sublingual glands had some deleterious effect on the gastric secretion, but after removal of the parotid the quantity of hydrochloric acid and the proteolytic power of the gastric juice gradually became less and less, until four or five days after the removal of the last portion of the salivary glands, the canine gastric juice no longer gave any evidence of hydrochloric acid, milk-coagulating or of proteolytic power, and the accessory pouch of the stomach secreted nothing but a serous liquid containing a considerable trace of mucin. Upon removal of the accessory stomach there were no evidences of inflammation, and to all appearances the cells of the peptic ducts were normal.

A second series of experiments was then undertaken. An esophageal fistula was produced upon a number of normal dogs, so that they could chew and swallow their food with apparent enjoyment. This food, however, was not permitted to enter the stomach, but was collected at the esophageal fistula and fed to other dogs who had been previously experimented on by having their salivary glands removed, with consequent loss of gastric secretion. The introduction of this food into the stomach of these animals failed to excite any secretion of gastric juice. This experiment proved that the failure of gastric secretion after extirpation of the salivary glands was not due to absence of canine saliva, nor to lack of mastication.

In order to corroborate these findings still further, the salivary glands of a number of healthy dogs that had been recently killed in the course of various experiments were obtained, and ground up with quartz, and after a rather elaborate process a salivary extract was obtained free from proteid in the shape of a thick, opalescent, gelatinous liquid, which was injected into the superficial veins or peritoneal cavity of the dogs that had lost their power of normal gastric secretion after extirpation of their salivary glands. These injections were followed within one half to two hours by such a resumption of the secretion of hydrochloric acid and ferments that presence of gastric juice could be determined by the ordinary methods. This restoration was only temporary, however, lasting eight or ten hours, the period depending largely on the amount of the extract that was injected. It was also apparent that the injection of this salivary extract had a marked vaso-motor influence; and the speaker said that in his efforts to produce a prolonged secretion of hydrochloric acid he sometimes injected too much, producing a surprising increase of blood pressure. When fed by the mouth, the extract had no effect on the secretion of hydrochloric acid. On the other hand, when injected, it was effective even after all the nerve supply of the stomach had been cut off.

Dr. Hemmeter said he had not been able to isolate from this extract of the salivary glands the active principle, a substance like that obtained from the suprarenal gland.

The speaker also referred to some experiments upon normal human subjects who were one day given a test meal which they were permitted to chew and swallow naturally, and the following day the identical test meal was poured into the stomach through a test tube. A chemical analysis of the gastric juice after the second method of feeding showed a considerable deficit of hydrochloric acid and enzymes. He also referred to Pawlow's psychic secretion. If a hungry dog even saw a piece of meat it had the effect of exciting an immediate flow of gastric juice — the so-called psychical secretion (Pawlow), or *appetit-saft,* which was brought about by the intermediation of nerves.

Dr. S. J. Meltzer, of New York City, said if Dr. Hemmeter's experiments could be verified, a new and interesting condition confronted us. The discovery of Bayliss and Starling established the fact that the secretion of the stomach produced in the duodenum a substance which they called secretin, and which stimulated the secretion of the pancreas. Now, Dr. Hemmeter found that a secretion of the salivary glands was essential to produce a secretion from the stomach. The substance Dr. Hemmeter found in the extract of the salivary glands apparently belonged to the group which Starling designated as hormones.

The discussion was continued by Dr. F. B. Turck, of Chicago, and Dr. J. C. Johnson, of Atlanta, and was closed by Dr. Hemmeter.

GASTRIC ULCER COMPLICATED WITH THE SYMPTOMS OF CHOLELITHIASIS.

Dr. J. A. Lichty, of Pittsburg, read this paper, in which he offered the following conclusions: (1) The diagnosis of uncomplicated gastric ulcer should be made without difficulty. (2) When complications existed, it may be impossible to form an exact opinion of the pathological condition in this region of the abdominal cavity before a laparotomy is done. (3) A careful and methodical anamnesis in these cases is of the utmost importance.

Dr. J. P. Sawyer, of Cleveland, said that for a number of years he had been following up a class of cases in which the symptoms at first were those of a catarrhal gastritis, and then, in the course of a few years, if not cured, they developed an infection of the gall bladder or appendix, as shown at subsequent operation.

THERAPEUTICS OF MINERAL WATERS OF THE FRENCH LICK TYPE IN GASTRO-INTESTINAL DISORDERS.

Dr. G. D. Kahlo, of Indianapolis, read this paper, which contained his observations upon the therapeutic indications of alkaline-saline waters based upon a year's clinical experience at French Lick Springs, and the results of certain experiments made upon healthy subjects, together with a brief description of the water, and a general outline of the treatment. He had found the waters at the French Lick Springs especially valuable in gastric diseases, particularly after the abuse of alcohol, and equally favorable in hepatic disorders and hyperchlorhydria.

Dr. S. Basch, of New York City, said we had in the past made the mistake of sending too many of our patients abroad when we had so many excellent springs in our own country which compared very favorably with those in Europe. Unfortunately, at most of our springs there was a lack of proper attention to detail, not only in regard to the analysis of the waters, but also in regard to the general supervision of the springs. In Europe, the physicians who practiced at such resorts were usually trained in physiology and body metabolism, while in this country that factor was almost entirely neglected. Furthermore, the patients were not kept under proper control. The hotels were usually on the American plan, and the patient did not attempt to restrict his appetite, and often drank the waters in unreasonable amounts. He thought the association should interest itself in this important subject, and by arousing the proper interest, actual results could be obtained.

Book Reviews.

Modern Medicine, Its Theory and Practice. In Original Contributions by American and Foreign Authors. Edited by William Osler, M.D., Regius Professor of Medicine in Oxford University, England, assisted by Thomas McCrae, M.D., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Vols. I and II. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

This system of medicine, for such it deserves to be called, has long been awaited by medical men, both in this country and abroad. If one may judge of the succeeding volumes from the two which have already appeared, there will be no disappointment. Medical writing at the present time is at best difficult. Our knowledge of many diseases is imperfect; our therapeutic resources are in a state of uncertainty, and many departments of medicine are in a continual state of flux. The result is that a system of medicine of so pretentious a character as this edited by Dr. Osler should mark a certain epoch in the history of medical progress, representing as it does the matured opinion of special students in many correlated branches of medical science. It is, however, not to be expected that what is here set down will be forthwith accepted ten years hence, and the demand will surely come for a new and complete revision of the work as it at present stands, or of another to take its place.

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DINNER TO DR. CHARLES P. BANCROFT. — As a recognition of Dr. Charles P. Bancroft's twenty-fifth year as superintendent of the New Hampshire State Hospital, a number of his colleagues, many of whom had formerly been associated with him in professional work, gave him a dinner, Oct. 15, at the University Club in Boston.

APPOINTMENT OF DR. HENRY A. COTTON. — Dr. Henry A. Cotton, of the Danvers Insane Hospital, has been appointed medical director of the New Jersey State Hospital for the Insane to succeed Dr. John W. Ward, who has recently resigned. During his stay at Danvers, Dr. Cotton has won for himself an enviable position as a psychiatrist. The hospital will lose much by his departure.

BEQUESTS TO HOSPITALS. — By the will of the late Miss Florence Lyman the following institutions are beneficiaries: House of the Good Shepherd, $50,000; Carney Hospital, $30,000; St. Mary's Infant Asylum, $25,000; St. Vincent's Orphan Asylum, $10,000; Massachusetts Charitable Eye and Ear Infirmary, $10,000; Massachusetts General Hospital, for free beds, $5,000, and several other minor charities. The entire amount of public bequests in the will is estimated at $235,000.

DEATHS FROM AUTOMOBILES. — According to a recent report of the Safe Roads Automobile Association, there have been 41 deaths and 313 injuries in Massachusetts from the careless driving of automobiles in the three months ending Sept. 21. In this same period there have been 211 collisions in which automobiles were involved. It is believed that the numbers here given are incomplete, inasmuch, as the tabulation includes only those accidents which find their way into the papers. The report concludes, from the facts obtained, that reckless driving on the part of automobilists is common, that an organization which shall take active measures to prevent such reckless driving is necessary, and that some radical action should be taken to prevent reckless operators of automobiles from continuing in their work. Fifty cases have been investigated by the association and five have been brought before the criminal court. The work of this association should certainly receive the fullest co-operation, not only of the public at large, but also of automobile owners. It is proposed to bring before the legislature a bill requiring operators of automobiles to pass an examination, and it is hoped also to institute certain tests regarding eyesight and hearing.

NEW YORK.

THE SMALLEST ADULT BRAIN ON RECORD. — In making a post-mortem examination of the body of Daniel Ryan, a watchman forty-six years old, who died suddenly, coronor's physician O'Hanlon and Dr. Larkin, adjunct professor of pathological anatomy in the College of Physicians and Surgeons, discovered a brain which is believed to be the smallest in point of weight ever recorded in a normally intelligent adult. It weighed only 24 oz., or scarcely one half the weight of the average brain of adults of similar size and physical condition, while the convolutions were regular and the color normal, and there was no evidence of disease in any part of the organ.

EDDYITES GUILTY OF MANSLAUGHTER. — On Oct. 10 Edwin M. Watson and his wife, of Moorestown, N. J., were found guilty of manslaughter in failing to provide medical treatment for their son, seven years old, who died in May last from pneumonia and cerebrospinal meningitis. They are Christian Scientists and had the services of an Eddyite healer, but a physician was called in only when the child was *in extremis*. The case was tried at Mount Holly, the county town, before Judge John Horner, who reserved sentence as the defendants gave notice of appeal from the verdict of the jury. The maximum penalty for the offence in New Jersey is stated to be fifteen years' imprisonment.

BEQUESTS TO COLUMBIA UNIVERSITY. — It is announced that Mrs. George E. Wheelock has given $5,000 to the Department of Physiology of Columbia University in memory of her husband, and that Mr. B. M. Baruch has given $5,000 to the Vanderbilt Clinic in connection with the Medical Department.

POLLUTED SHELLFISH FROM NEW YORK AND NEWARK BAYS. — After a careful investigation, the New York Bay Pollution Commission and the Pollution Committee of the Merchants' Association report that approximately 2,000,000 bushels of oysters and clams are gathered annually in New York Bay and adjacent waters, where it is estimated that sewage is emptied to the extent of 1,000,000 gallons a day. Many of these are taken annually from Newark Bay, where the estimated sewage discharge is 450,000,000 gallons daily. It is a common practice to take oysters from the salt water and place them in shallow water at the mouth of some fresh-water stream to be "fattened." According to Dr. Daniel Lewis, recently head of the New York State

Health Department and now president of the metropolitan committee, " there is not a square foot of the waters of the harbor that is not polluted with sewage. New York Bay is in a disgraceful condition, and the waters of the bay on the south shore of Staten Island, where most of the oysters and clams are gathered, are nothing more or less than a whirlpool of sewage." Of several thousand specimens analyzed, Dr. Lewis reports that there was not one which did not show traces of sewage. Commenting on the present conditions, Edward Hatch, Jr., chairman of the Pollution Committee of the Merchants' Association, says: " There is only one inference to be drawn from this custom of harvesting oysters and clams from sewage-burdened waters. It does not take a scientist or physician to draw conclusions as to the result of eating poisoned shellfish. With millions of gallons of sewage being poured daily into the harbor of New York and adjacent waters where oysters are grown and fattened, it must be evident that no healthy shellfish can be cultivated, and the consequent menace to the health of the neighboring communities which are supplied from these sources cannot be questioned."

Dispensing Cocaine without a Prescription. — Charles W. Hitch, a druggist, who has a pharmacy in the Borough of the Bronx, was convicted on Oct. 15, in the Court of Special Sessions, of selling cocaine without a physician's prescription, and sentenced to serve six months in the penitentiary. The defendant had been fined twice before for the same offence. One of the strongest witnesses against him was the Rev. J. B. Curry, rector of St. James Roman Catholic Church, who stated that a score of young men and boys in his parish had been ruined by the cocaine habit. He testified that they had procured the drug at Hitch's store and cited a number of instances in which cocaine had been purchased there without any difficulty, without a prescription. Both Father Curry and Health Commissioner Darlington, who was present and took special interest in the proceedings, pleaded earnestly for a jail sentence in the case.

Obituary.

ACTION ON THE DEATH OF CHARLES FOLLEN FOLSOM, M.D.

At the regular meeting of the Boston Society of Psychiatry and Neurology, Oct. 17, 1907, the following expression of the sentiments of the society on the death of Dr. C. F. Folsom was adopted.

" The committee appointed to express the sentiments of this society with regard to the death of Dr. Charles Follen Folsom begs leave to report as follows:

" Dr. Folsom was one of the original and most valued members of the Medico-Psychological Society, the parent of the Boston Society of Psychiatry and Neurology. His thoughtful contributions were always listened to with the attention and respect accorded to an acknowledged authority, and his continued interest in our meetings was felt by all of us as a stimulus to good work. His public labors were fruitful in many benefits to sufferers from disorders of the mind. Not only was he an admirable secretary of the State Board of Lunacy and Charity, but it was due to the recommendations of the special commission of which he was a member that the present State Board of Insanity was established and the insane removed from the almshouses and placed under the direct protection of the state. His brilliant mind, his fertility of resource in the treatment of disease, his deep sympathy for his patients and devotion to their needs, the far-reaching benefits to the insane of the Commonwealth from his enlightened public work, his warm interest in the labors of his colleagues and loyalty to the claims of friendship so won our regard and admiration that we feel his death as a personal and public misfortune.

George F. Jelly.
James J. Putnam.
Henry R. Stedman.

Current Literature.

Medical Record.
Sept. 28, 1907.

1. *Fisk, E. L. *The Therapeutic Value of Apomorphinæ Hydrochloridum.*
2. *Ebstein, W. *Obesity, Gout and Diabetes Mellitus Considered as Diseases of Cell Metabolism Transmissible by Inheritance.*
3. Hart, T. S. *The Relationship of the Life Insurance Company to the Applicant Showing Glycosuria.*
4. Castelli, E. *The Clinical Significance of the Symptom Headache.*
5. Kelsey, C. B. *Is There a Surgical Treatment of Constipation?*

1. Fisk urges the use of apomorphine for its expectorant properties. He finds it efficient and harmless, even in relatively large doses, when taken by the mouth. When given by mouth its effects are widely different from those obtained by hypodermic use of the drug. Hypodermically it is a most valuable centric emetic in doses of from one twentieth to one sixtieth of a grain, acting quickly and gently. The possibility of depressing effects should be borne in mind when it is given to children, and strychnine should be combined with it. By mouth it has little emetic effect, but acts as an efficient expectorant in doses of one eighth of a grain every two hours. It does not increase the effect of other narcotics. It should not be used when there is abundant expectoration. Crystalline apomorphine is to be specified, since the amorphous form is uncertain in its effects.

2. Wilhelm Ebstein, of Göttingen, places obesity, gout and diabetes mellitus in one group, that of hereditary diseases of cell metabolism. The close relation of the three diseases is evident, and the frequent occurrence of all in the same subject. All are to be traced to a certain

deficiency in cell activity. The victim of obesity is unable to consume the fatty acids that result from metabolism in the same degree as a normal individual. The cause of gout is to be sought for in a disturbance of the intermediary stage of metabolism, especially that of the nucleins, growing out of inherited tendency. Diabetes shows a deficiency of carbonic acid excretion, the property of this gas to inhibit the action of diastatic enzymes making it a regulator of the formation of sugar from the glycogen stored up in the body. The sugar is more or less completely excreted before it can be assimilated by the organism. These diseases are seen to result from a primary defect of the cells, and each one may be traced to a change in the biogens different in localization and character.

New York Medical Journal.

Sept. 28, 1907.

1. Carlton, E. P. *Dermatitis Exfoliativa Neonatorum (Ritter's Disease).*
2. Knopf, S. A. *In Memoriam of Prof. J. J. Grancher, of Paris, France, 1843–1907.*
3. Bellantoni, R. *Autodermic Grafting of the Hand for Deforming Cicatrix.*
4. Willson, R. N. *How Far may the General Practitioner Employ and Benefit from Laboratory Methods of Diagnosis.*
5. Wells, W. A. *Aural Vertigo and Meniere's Syndrome.*
6. Hill, C. D. *Materialism in Medicine. A Plea for the Patient.*
7. Schram, C. *Chronic Myocardial Disease.*
8. Koontz, F. L. *Adynamic Ileus.*

The Journal of the American Medical Association.

Sept. 28, 1907.

1. *Anders, J. M. *Hemoptysis Due to Tuberculosis.*
2. *Hektoen, L. *Systemic Blastomycosis and Coccidioidal Granuloma.*
3. Goler, G. W. *Municipal Regulation of the Milk Supply.*
4. Darlington, T. *The Methods of Dealing with the Milk Supply of New York City.*
5. *Jordan, J. O. *Boston's Campaign for Clean Milk.*
6. Magruder, G. L. *The Milk Supply of Washington, D. C.*
7. *Leonard, C. L. *Some Advances in Renal and Ureteral Diagnosis.*
8. Garceau, E. *The Surgical Treatment of Ureteral Calculus in the Female.*
9. Harris, P. A. *The Early Diagnosis of Tubal Pregnancy.*
10. Branson, L. H. *The Syncytium.*
11. *White, C. W., and Pröscher, F. *Spirochetes in Acute Lymphatic Leukemia and in Chronic Benign Lymphomatosis (Hodgkin's Disease).*

1. Hemoptysis in tuberculosis has for its etiology either congestion or erosion of vessels or rupture of miliary aneurisms. Hemoptysis is much more frequent in cases with chronic heart disease. However, the general assumption that early bleeding is from congestion is incorrect. There are probably minute erosions. The exciting factors are hemorrhagic tendency, aggravation of cough, muscular exertion and mental excitement. Hemoptysis occurs in probably 60% to 80% of the cases of pulmonary tuberculosis and always tends to recur.

2. Hektoen discusses a tabulated summary of the recorded cases of systemic blastomycosis and coccidioidal granuloma. These diseases are caused by closely related varieties of organisms, which are very similar culturally. In living tissue both exist as spherical bodies. However, the organisms of blastomycosis multiply almost wholly by budding, while those of coccidioidal granuloma multiply essentially by endogenous sporulation. Neither forms mycelium in the animal body. Coccidioidal granuloma tends to involve lymph glands, and its nodular lesions resemble the typical specific tubercle. Blastomycosis does neither. The diseases are rare and nothing is known of the circumstances of infection.

5. The foundation of Boston's campaign for clean milk was the adoption of a standard limiting the number of bacteria to 500,000 per cubic centimeter and prohibiting the sale of milk having a temperature over 50° F. By these means unclean milk has been traced to its source. The ultimate aim of cleanly conditions for milk from the cow to the customer and the refrigeration of all milk is hoped for.

7. Leonard considers that the Roentgen technic has been so perfected and that method of diagnosis so firmly established, that no renal diagnosis is complete or treatment rational, where calculus is suspected, without its employment by a competent and experienced Roentgenologist. In a series of 356 cases, the total error has been less than 3%.

11. White and Pröscher in their second communication report the presence of spirochetes in the glands during life in two more cases, one each of acute lymphatic leukemia and Hodgkin's disease. [R. I. L.]

The American Journal of the Medical Sciences.

August, 1907.

1. Jelliffe, S. E. *Signs of Pre-Dementia Precox: Their Significance and Pedagogic Prophylaxis.*
2. Tinker, M. B. *The Surgical Treatment of Goiter.*
3. Ashhurst, A. P. C. *Tendon Transplantation in the Treatment of Congenital and Acquired Talipes.*
4. Vaughan, G. T. *Further Remarks on the Care of Gunshot Wounds of the Abdomen.*
5. *Reynolds, E. *The Causes and Treatment of Sterility in Women.*
6. *Von Ruck, K. *The Influence of Tuberculous Ancestry on the Prognosis in Pulmonary Tuberculosis.*
7. *White, E. H. *The Pathology of Adenoids and Adenoid Hypertrophy.*
8. Reardon, T. J. *Congenital Laryngeal Stridor.*
9. Reik, H. O. *When Shall We Advise Tympanomastoid Exenteration in the Treatment of Suppurative Otitis Media, and in What Percentage of Cases may We Expect a Cure?*
10. Brickner, S. M. *Some Causes of Failure in Plastic Operations on the Female Genitalia.*
11. Posey, W. C. *Chronic External Ophthalmoplegia.*
12. Gordon, A. *The Second Anatomical Proof of the Value of the Paradoxical Reflex.*

5. Reynolds regards the treatment of sterility in women as less unsatisfactory than it has usually been supposed. One reason why treatment fails of results in many cases is that in not a few the defect is in reality in the husband. Where the woman is really sterile, the sterility may be due to a variety of causes, but in a vast majority of cases it is due to an alteration of the secretions of one or another part of the genital tract, rendering them hostile to the ovum or to the spermatozoa. Such abnormality of secretions may be counted among the remediable causes of sterility. Acidity of the uterine or excessive acidity of the vaginal secretions may occur either separately or in combination, to be detected by testing with litmus. The acidity is due to constitutional disorders, to pelvic congestion or to bacterial activity. In treatment, general dietetic treatment is indicated to correct abnormal constitutional states, depletion by glycerine suppositories to relieve congestion, and disinfection of the vagina by insufflation of protargol powder to produce desquamation of the vaginal lining.

6. Von Ruck calls attention to the diversity of opinions as to the influence of tuberculous ancestry upon the prognosis in pulmonary tuberculosis. He reports statistics which he has gathered bearing upon the question. It has long been taught that tuberculous ancestry renders the prognosis less favorable. More recently, however, certain authors have disputed this, maintaining that tuberculous ancestry even tends to produce a slight degree of immunity. Von Ruck has studied the statistics of the German Imperial Health Bureau and those of the Winyah Sanitarium, and finds in both (the total data comprising over four thousand cases) that tuberculous ancestry was somewhat more frequent among patients discharged as cured than among those who failed to improve.

7. White shows that primary tuberculosis occurs in a certain proportion of all cases of adenoid hypertrophy, probably in about 5%. Thus adenoids, as well as tonsils, are to be considered as important channels of infection in

tuberculosis of cervical glands. They may sometimes also be the channels of infection in the development of pulmonary tuberculosis, through the peribronchial glands, but their importance is probably greater as predisposing causes of infection of the lungs, by means of the catarrhal inflammations of the upper respiratory tract which they produce. [F. W. P.]

Annals of Surgery.

October, 1907.

1. *Halsted, W. S., and Evans, H. M. *The Parathyroid Glandules, Their Blood Supply and Their Preservation in Operation upon the Thyroid Gland.*
2. *Pool, E. H. *Tetany Parathyreopriva.*
3. Eggers, C., and Maury, J. W. D. *Observations upon a Form of Exophthalmic Goiter Occurring in a Dog.*
4. *Green, N. W., and Maury, J. W. D. *Experimental Studies upon the Thoracic Esophagus, a Preliminary Report.*
5. *Leggett, N. B., and Maury, J. W. D. *Studies upon the Function of the Pylorus and Stomach after Gastro-enterostomy has been Performed.*
6. *Maury, J. W. D. *Is Death in High Intestinal Obstruction Due to the Absorption of Bile?*
7. *Blake, J. A., and Brown, R. M. *Studies in Intestinal Exclusion.*
8. *Beer, E., and Eggers, C. *Are the Intestines Able to Propel Their Contents in an Anti-Peristaltic Direction?*
9. *Leggett, N. B. *Rectal Anesthesia; Experimental Studies together with a report of its Practical Employment at Roosevelt Hospital.*
10. Dunham, T. *Tuberculins and the Tuberculo-Opsonic Index.*
11. Elsworth, R. C. *Tumor of the Cauda Equina Removed by Operation; Recovery.*
12. *Ochsner, E. H., and Rothstein, T. *Multiple Exostoses, Including an Exostosis within the Spinal Canal, with Surgical and Neurological Observations.*
13. *De Amezaga, G. *Tuberculosis of the Elbow; Arthroplasty.*
14. Sheldon, J. G. *Old Unreduced Posterior Dislocations of the Shoulder.*
15. *Stone, J. S. *Partial Loss of the Tibia Replaced by Transfer of the Fibula, with Maintenance of both Malleoli of the Ankle.*
16. Cook, P. H. *Fracture of the Tarsal Scaphoid Bone.*

1. From an anatomical investigation into the source of the blood supply of the parathyroids, Evans concludes that (1) the parathyroid glands are always supplied by definite parathyroid arteries, which enter them, in each case, at the hilus; (2) the parathyroid arteries, superior and inferior, usually arise from the inferior thyroid, but frequently they take origin from the anastomosing channel between the inferior and superior thyroid vessels; (3) but few if any direct vascular connections normally exist between the parathyroid glands and the connective tissue envelope of the thyroid. In order to preserve the parathyroids in operation upon the thyroid, Halsted advises an operation of "ultra-ligation," *i. e.*, ligation beyond the origin of the parathyroid arteries. After division of the hyoid muscles, the upper portion of the lobe of the thyroid is grasped and traction made forward and towards the middle line. This exposes the superior thyroid vessels, which are tied as close to the thyroid gland as possible. All hemorrhage should be scrupulously avoided, in order that the parathyroid be not obscured. Before and after operations for Graves's disease, Halsted advises chilling or freezing the neck in order to delay, or even prevent entirely, the toxemia which so often follows operation in these cases.

2. Pool reports a case of tetany occurring in a woman thirty-three years of age, on whom he performed partial thyroidectomy, three years after a previous operation on the thyroid had been done. During the operation, the inferior thyroid artery was tied. Four days later tetany occurred in the hands, in the face muscles and in the feet and calves. Some improvement resulted from the administration of Beebe's nucleo-proteid, several attempts at transplantation of fresh parathyroids into the abdominal wall or the lobe of the ear having been without avail. He gives an exhaustive review of the whole subject of tetany following removal of the parathyroids.

4. By the use of positive pressure, through a canula, Green and Maury have been able to perform gastroesophageal suture by the transpleural route. Dogs were used in the research. The protection of the pleural cavity from infection must be complete. When the point of resection was near the cardiac end of the stomach, this was accomplished by pushing down the gastroesophageal wound into the abdominal cavity, so that the omentum might apply itself to the wound area, as in any intestinal operation. No difficulty was experienced in keeping the lung well inflated.

5. The authors have investigated the question as to whether, following gastro-enterostomy, solid food leaves the stomach by way of the pylorus or through the artificial stoma. A dog was allowed to swallow a small bullet tied to a string and imbedded in meat. In one instance, this bullet travelled through the stoma and backward through the pylorus again into the stomach. In other instances the food passed by way of the pylorus. Also from their observation of the lacteals after the feeding of fat it would seem that the fat left the stomach by way of the pylorus. These observations, to be made more complete later, bring out the point that a gastro-enterostomy in the presence of a patent pylorus may be functionless.

6. Maury has demonstrated on dogs, that following a gastro-enterostomy by the twine triangular stitch, if the duodenum be closed at a point within about 35 cm. of the pylorus, the animal will die in from seventy to one hundred hours. If this closed duodenal loop be made longer, however, the animal will live. The condition of the stomach and intestines, whether empty or not, is without influence, thereby ruling out death from decomposition of food. It seems probable that death in these cases is due to the absorption of toxic elements in the bile, which are normally rendered harmless by dilution and colloidal suspension in the secretions of the small intestine; as the length of the small intestine from the bile duct to the site of obstruction decreases, the diluting secretions decrease, and the toxicity rises.

7. Blake and Brown find that after total exclusion of a segment of the large intestine, leaving it in the abdominal cavity, it will continue to distend from accumulation of excretions and its walls will hypertrophy. Distention, in a case operated on, continued until perforation occurred with subsequent abscess formation. It is evident, therefore, that total occlusion, even of a segment of the large intestine, is an unwise procedure.

8. The authors show by a series of twenty experiments on dogs that the intestine can propel its contents in an anti-peristaltic direction. They reversed loops of the small intestine of various lengths, and later observed them by direct inspection. Anti-peristalsis was observed both in the large and the small bowel.

9. Leggett reports 31 cases of rectal anesthesia, performed according to the method of Cunningham. A valuable modification of Cunningham's apparatus consists of an exhaust tube, by which the rectum may be emptied at any desired moment. Properly used, this method of producing narcosis is of great value in selected cases.

12. The case studied by Rothstein, and operated on by Ochsner was as follows: A man, twenty-three years of age, presented 108 exostoses at numerous portions of the skeleton. Combined with these, there was pain on suddenly rotating the head; and motion of the right arm and hand and tactile sense of the left arm were somewhat impaired. He could not place his feet exactly where he wished them, especially his right one. This leg dragged more than the other, and the right hip seemed stiff. Neurological examination made it evident that there was a lesion in the right half of the cord, between the base of the skull and the upper border of the fifth cervical vertebræ. Under ether, a large exostosis was found springing from one of the lamina of the axis, and growing into the spinal cord. Two weeks after removal of this, motion began to return in the right half of the body, and since that time, sensation and motion have slowly but gradually improved.

13. De Amezaga reports a case of successful arthroplasty for tuberculosis of the elbow joint in a girl of eighteen. This was done after a previous resection of the joint. As an end result there was a shortening of about

four inches in the affected arm. Rotation and supination were perfect, as were also the motions of the fingers. The joint could be flexed to 35°, and extended to 150½°. The advantages of such an arm over the ordinary flail joint are evident.

15. Stone reports the case of a boy of five years, in whom, following destruction of the tibia by necrosis, he transplanted the fibula with complete functional success. The upper end of the fibula was first attacked and mortised into the lower end of the tibia. Subsequently the lower end of the fibula was split and united to what remained of the lower epiphyseal end of the tibia. This transferred bone increased rapidly in size, so that two years and eight months after the tibia had been removed the leg was functionally good; both external and internal malleoli had been preserved; there was no tendency to either talipes varus or valgus, and there was a shortening of only one and a half inches. [W. C. Q.]

The Lancet.

Sept. 28, 1907.

1. *Rolleston, H. O. *Some Problems in Connection with the Adrenals.*
2. Ross, R. *The Prevention of Malaria in British Possessions, Egypt, and Parts of America.*
3. Bucknall, R. T. H. *A New Operation for Penile Hypospadias.*
4. Smith, G. E. *On the Displacements Produced by Pleural Effusion.*
5. Carwardine, T. *Excision of the Parotid Gland with Preservation of the Facial Nerve; its Possibility.*
6. Ireland, W. W. *The Increase of Diseases of the Nervous System and of Insanity.*
7. Midelton, W. J. *The Treatment of Rheumatoid Arthritis.*
8. Harris, A. *Notes on Certain Fatal Forms of Pharyngeal Diphtheria.*
9. *Morton, R., and Jones, E. *The Treatment of Mammary Carcinoma by the Local Injection of Pancreatic Ferments.*
10. Putnam, J. W. *A Clinical Study of Paralysis of Sudden Onset and Wide Distribution: Five Cases of Landry's Paralysis; One Case of Acute Infectious Multiple Neuritis; and One Case of Myasthenia Gravis.*

1. Rolleston, in considering the adrenals, speaks first on the functions and histology of the cortex, and then on those of the medulla. As regards the cortex, there are three views: (1) that it is connected with growth, especially of the sexual organs; (2) that it exercises an antitoxic function; and(3) that it plays some part in the elaboration of the internal secretion of the medulla. Of these views by far the most definite is that it is co-related with sexual growth. The cells of the medulla provide a substance — adrenalin — which acts on the sympathetic nerve endings. The pathological relations of the internal secretion of the medulla he divides into alteration in quantity (absence, diminution, or excess), and alteration in quality. Complete absence is met with in Addison's disease; diminution in amount of secretion is found in chronic wasting diseases with low pressure, and in certain acute contagious diseases (especially in children) where there is acute degeneration and hemorrhage into the adrenals. Of excessive secretion little is known. It has been thought that the high tension of some forms of chronic nephritis and arteriosclerosis is due to a hypersecretion of adrenalin. In regard to alteration in the quality of the adrenal secretion little or nothing is known.

9. Morton and Jones report four cases of mammary carcinoma in which there were post-operative recurrences. In each case the trypsin injection treatment was carefully tried. In no case were there any beneficial results, but in two they believe death was hastened and the patient made more uncomfortable. [J. B. H.]

British Medical Journal.

Sept. 28, 1907.

1. Horrocks, P. *The Instruction of Midwives in the Symptoms and Signs of Abnormal Labour.*
2. Dickson, W. E. C. *Acute Streptococcal Septicemia Occurring at the Menstrual Period.*
3. Danber, J. H. *A Consideration of Some of the Factors which Contribute to Success in Abdominal Operations.*
4. Wilson, A. J. *A Case of Primary Epithelioma of the Vagina, Showing Auto-inoculation or Contact Infection.*
5. Shaw, T. C. *Progress in the Treatment of Mental Diseases.*
6. *Mott, F. W. *A Discussion on Alcohol and Insanity.*
7. Mercier, C. A. *Three Cases of Periodic Dementia.*
8. Peterson, F. *The Galvanometer as a Measure of Emotions.*
9. Robertson, G. M. *On the Presence of a Bacillus in the Blood of Persons Suffering from General Paralysis of the Insane.*
10. Candler, J. P. *An Investigation into the Incidence of Diphtheroid Organisms in General Paralysis of the Insane.*
11. Woods, J. F. *A Discussion on Hypnotism.*
12. Schoffield, A. T. *The Teaching of Psychology in Medical Schools.*
13. Mummery, P. L. *Prolapse of the Rectum in Children, with Fifty Cases.*
14. Pinches, H. I. *Retropharyngeal Abscess.*
15. Dean, H. R. *Observations on the Purpura of Children.*
16. *Langmead, F. *The Acetonemic Conditions of Children.*
17. Corner, E. M. *Interscapulo-Thoracic Amputation.*
18. Gray, H. T. *Some Cases which Meckel's Diverticulum was Present.*

6. Mott discusses the various forms of alcoholic insanity, and the relation of alcohol to insanity in general. He calls attention to the effect of alcohol and syphilis as co-workers in producing mental derangement and insanity, and believes that although alcohol may to a certain extent kill off the weaker types and so improve the race, its effect in increasing venereal disease and especially syphilis is far more important in the opposite direction.

16. Langmead divides patients in whose urine acetone may be found into three groups: (1) those showing no symptoms of acidosis, such as cases of starvation, high fever, gastric ulcer, malignant disease, etc.; (2) those who, while the subjects of other morbid states, have also symptoms of acid poisoning which may to a certain extent be masked by those of the primary condition. Such are patients with diabetes, intracranial disease, sepsis, acute peritonitis, and certain forms of poisoning as morphine and sodium salicylate; (3) patients who suffer from uncomplicated acidosis which *per se* may terminate fatally. Of this there are two forms: (*a*) delayed anesthetic poisoning, (*b*) recurrent, cyclical or periodic vomiting. His remarks are confined to the last group. He reports 5 cases in detail and concludes: (1) Acetone and diacetic acid may be present in the urine in a number of conditions without symptoms; (2) cyclical vomiting and delayed anesthetic poisoning are examples of acidosis of unknown origin; (3) delayed anesthetic poisoning is due not so much to the kind of anesthetic as to the state of anesthesia; (4) the determining cause of acidosis is the accumulation of the precursors of acetone, either from excessive formation or deficient excretion; (5) anesthetics are dangerous to patients who are the subject of acidosis.

[J. B. H.]

Münchener Medizinische Wochenschrift. No. 33.

Aug. 13, 1907.

1. Alzheimer. *The Indications for Premature Delivery in the Temporary Insanity of Pregnancy.*
2. *Nieter, A. *The Existence and Significance of "Typhoid Bacilli Carriers" in Insane Hospitals.*
3. *Ach, A. *Lumbar Anesthesia.*
4. Sticker, A. *The Successful Transplantation from One Dog to Another of a Spindle-Cell Sarcoma.*
5. Crewer, M. *Registration of Minimal Electric Currents in the Human Being by Means of the String Galvanometer.*
6. Heincke, H. *A Case of Rupture of the Rectum.*
7. Berblinger, W. *Traumatic Intraperitoneal Rupture of the Bladder, Laparotomy, Recovery.*

8. *Voeckler, T. *Traumatic Injuries of the Abdomen.*
9. Seggel, *Multiple Tumors of the Brain.*
10. Fraenkel, M. *Comparison of the Spectroscope and the Modified Weber's Method as Tests for Blood in the Stools.*
11. Neustätter, O. *Observations made during a Mediterranean Trip.* (Concluded.)

2. Nieter reviews an outbreak of typhoid among the nurses in his insane hospital, for which no cause in food or water could be found. In the ward, however, in which the infected nurses worked, an inmate was discovered whose stools constantly contained both typhoid and paratyphoid bacillus and who was undoubtedly the source of infection. The author then reviews the reports of 13 other such outbreaks, where the infection was traced to the stools of an inmate, who had had typhoid years before. He believes that the bacilli remain for years in the gall bladders of the "bacilli carriers," and are thence discharged into the intestine, and evacuated with the stools. In every outbreak of typhoid, especially in institutions where no other cause can be found, a search for such a "bacilli carrier" should be instituted. [There are a number of cases in the literature in which typhoid bacilli have been demonstrated in the gall bladder long after the primary infection.]

3. Ach gives a careful résumé of the early work on lumbar anesthesia by cocaine, which proved far from satisfactory, on account of the high percentage of deaths and permanent paralyses resulting from its use. Since the introduction of stovain, and later of tropacocain, this danger has been greatly lessened, the author having used tropacocain anesthesia in 250 cases without a death, without any permanent bad results, and with only 20% of unpleasant after effects. He describes minutely the technic of the procedure, and the course and duration of the anesthesia. He is convinced that in a large number of cases it is much to be preferred to ether and chloroform anesthesia.

9. Voeckler reports a case of rupture of the liver and pancreas, with operation and recovery. He discusses at length the symptomatology in such cases, and concludes that every case of severe trauma followed by symptoms of "shock," or in which the pain, prostration or vomiting increases, or wherein a shifting dullness appears in the belly, after injury, should be explored at once. The diagnosis in these cases is never easy, and it is safer to operate on a slight suspicion, than to hold off until too late. The author favors packing the rupture, as the quickest and surest method of stopping the bleeding, though in suitable cases deep sutures through the liver tissue may be used. With early surgical interference rupture of the liver should become a less hopeless condition than it is now considered. [R. D.]

Zeitschrift für Klinische Medizin. Bd. 63.
Heft 5 and 6.

1. *Jürgens. *Clinical Observations on Pneumonia.*
2. *Gigon, A. *The Laws of Sugar Excretion in Diabetes Mellitus. Third Contribution: Metabolism Experiments in a Case of Pancreatic Diabetes.*
3. Pincussohn, L. *The Metabolism of Cocoa in the Organism.*
4. *Plesch, J. *Chromophotometer, a New Instrument for the Estimation of the Concentration of Color Solutions, Especially for the Determination of Hemoglobin Concentration and the Total Mass of the Blood during Life.*
5. *Bourmoff, Th., and Brugsch, Th. *The Neutrophile Blood Picture in Infectious Diseases.*
6. *Kuhn, E. *The Treatment of Carcinoma with Pancreatin, Radium and X-Rays.*
7. *Meyer, F. *The Bacteriologic Diagnosis of Typhoid.*
8. *Geelmuyden, H. C. *Maltosuria in Diabetes Mellitus.*
9. Brodzki, J. *Urotryptic Ferments.*
10. Janowski, W. *Dicrotism in Aortic Insufficiency.*

1. For several years in Kraus's clinic in Berlin cases of pneumonia have been studied by means of the x-ray. The results of many of these observations are here reported by Jürgens, and a number of illustrative cases are cited. It is pointed out that a shadow may remain for a considerable time after the crisis, indicating that resolution in the lung has been delayed, but eventually the shadow entirely disappears, showing that resolution has been complete. On the other hand in cases in which organization follows the consolidation, the picture is different. Here the intensity of the shadow does not decrease, though its extent may diminish as the newly-formed connective tissue contracts. With delayed resolution there is a very uniform clearing of the shadow, while with organization parts clear up and other parts remain dark. In the former there is usually no fever. Both these conditions may escape detection by auscultation and percussion. The development of a pneumonic process as studied by the x-ray shows some points of interest. In some cases, apparently the exudation may clear up without there being any demonstrable change in the percussion note. Sometimes the process advances very rapidly, at other times slowly and gradually. In some cases about a pneumonic area lines of consolidation may radiate out into the neighboring tissue before the surrounding part becomes uniformly consolidated. It is possible that this may represent extension along lymphatics. The decrease in diaphragmatic movement associated with pneumonia of the upper lobes is very distinctly shown by the x-ray examination. The development of pleuritis with pleural adhesions also can be followed. The development of gangrene and abscess was followed in some cases. In particular one case was studied in which a cavity as large as an apple developed as a result of gangrene, and the healing of this cavity was traced until it entirely disappeared, leaving only a small scar behind. Probably of more interest than the preceding were the observations in regard to the relation of tuberculosis to apical pneumonia. It has been long recognized that the prognosis with pneumonia of the upper lobes is not so good as when the lower lobes are involved, and that particularly in these cases is tuberculosis apt to follow the pneumonic process. The exact relation of the bacillus tuberculosis to the pneumococcus in pneumonia has remained a matter of dispute. By means of the x-ray Jürgens has been able to follow a pneumonic process in its resolution and see subsequently the gradual extension of a tuberculous focus in the same area. At times after the pneumonic process had almost disappeared the lung field would remain clear for several weeks and then there would be a quite rapid extension from a small area of consolidation, and this was shown by sputum examination to be tubercular in origin. This author believes that in most cases the tubercular infection has preceded the pneumococcus infection, and that the tuberculosis spreads rapidly as a result of the lowered resistance of the tissue produced by the preceding pneumonia.

2. Gigon contributes a third study of the laws of sugar excretion in diabetes mellitus. This is a careful metabolism study of a case of diabetes, during the course of which the ducts of the pancreas became obstructed with calculi. This case, in which no pancreatic secretion reached the intestinal tract, showed less disturbance of absorption than was to be expected from a study of previous cases. This is possibly due to the fact that in other cases other conditions than pancreatic obstruction worked in conjunction with the pancreatic obstruction to increase the disturbance of absorption. The excretion of fat in the intestinal tract in this case showed great variations from time to time. However, the amount of soap present was continually decreased in comparison with the normal, and the amount of fatty acids always exceeded the amount of soaps. Pankreon administered in this case produced only a transitory improvement in the condition.

4. Plesch describes a new apparatus for estimating the hemoglobin of the blood, for which he claims great accuracy combined with ease of application. The principle of the apparatus is the comparison side by side of rays of light which have passed through a standard solution and a solution of the blood to be tested respectively. The standard solution is carbon monoxide hemoglobin and carbon monoxide is passed through the blood to be tested. Each is diluted 250 times, as the most accurate comparisons can be made of paler colors. The depth of the layer of solution to be tested is varied until it gives the same shade of color as the test solution, and the per cent of hemoglobin is calculated from the thickness of layer

necessary to give this. The rays of light passing through each solution are brought side by side by an ingenious arrangement of prisms. With the instrument the total blood mass of the circulating blood can also be calculated by comparing the oxygen-absorbing power of the hemoglobin before and after the inspiration of a measured quantity of carbon monoxide. [The apparatus seems applicable to more exact investigations rather than to routine clinical use.]

5. In a study published in 1904 Arneth subdivided the neutrophilic leucocytes into five classes according to the irregularity of their nuclei. In class I he placed the neutrophiles with round or only slightly indented nuclei, and in class V those with nuclei showing five chromatin masses as the extremes of his classification. He showed that in infectious diseases as compared with the normal there was an increase in the percentage of leucocytes of the simpler forms. In the present study Bourmoff and Brugsch have confirmed these findings for a number of severe infections like tuberculosis, scarlet fever, pneumonia, erysipelas and tetanus. They find that the degree of change does not always run parallel with the severity of the disease. These authors, however, do not agree with Arneth that the change represents an actual change in the leucocytes of the circulation, but they think it is rather a result of the fixation process dependent on the fact that in these diseases the nuclei are larger and plumper, and consequently not as prone to shrinkage during fixation and staining as under normal conditions. The change then to them is an index of chemico-physical changes of the medium in which the leucocytes circulate. However, further biologic studies of these factors are promised with the hope of attaining a better knowledge of the blood changes in infectious diseases.

6. Kuhn reports here a case of carcinoma (recurrent inoperable cancer of the breast) treated by injections of pancreatin into the tumor masses. The result of this was very extensive destruction, not only of tumor but of surrounding tissue, with a rather speedy fatal end. This case does not speak strongly in favor of the efficacy of pancreatin treatment. In the discussion, Kuhn speaks of favorable results which have been obtained in Leyden's clinic by the use of pancreatin given by mouth in cases of cancer of the stomach. Here a decrease in the pyloric obstruction was obtained, and though the cases are too few in number for very general conclusions, it would seem that pancreatin given thus in one to three teaspoonful doses might be of some value. In another case of cancer with cutaneous nodules the application of radium appeared to have some destructive action on the cancer cells, but this was not very marked.

7. In 27 cases of typhoid Meyer obtained the typhoid bacillus from the circulating blood in 26 cases. Of particular interest in this series are 2 cases, one complicated by pneumonia, in which the pneumococcus and typhoid bacillus were obtained from the blood culture, the other a case of typhoid following child-birth in which both the streptococcus and typhoid bacillus were obtained. In a case resembling typhoid clinically in every respect a pure culture of bacillus alcaligenes fecalis was obtained from the circulating blood. Tests of the typhoid organisms obtained from these cases showed greater pathogenicity for animals when derived from cases of severe typhoid as compared with those from mild cases.

8. In a study of diabetes mellitus Geelmuyden obtained maltose from the urine in a number of his cases. He considers maltosuria not a rare, but a common, accompaniment of glycosuria in diabetes, which is contrary to most of the findings of other authors. [H. A. C.]

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Correspondence.

WARM AIR FOR INFLATION OF THE EAR.

Boston, Oct. 16, 1907.

Mr. Editor. This letter is written to advocate the use of warm air for the inflation of the ear, instead of air the temperature of the room. In secretive middle ear conditions it is especially valuable. The sensation of warm air is agreeable. Air warmed over a gas burner is injurious to an ear.

I have an air chamber, that fits on a bull's-eye electric nose and throat light, perforated at the side to receive the tip of the Politzer bag. The temperature can be tested on the face.

I have in view a more practical and scientific method of using warm air. I realize that it is not an original thought, but certainly it is not generally employed and its advantage is considerable.

Respectfully yours,
Arthur J. Shaw, M.D.

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LETTER FROM PARIS.

[*From our Special Correspondent.*]

On the Abortifacients of Syphilis: Atoxyl and Calomel.

Paris, Oct. 8, 1907.

Mr. Editor: There are glad tidings in the air for the festive bummer, the knight-errant with the *insouciant* device, "Any port in a storm," with whose untiring efforts to relieve the tedium of life we are so often called on to sympathize, and from whom we try to drive off the Neisser, Unna and Schaudinn moths when they settle on him in the course of his convivial endeavors.

For the paternal Metchnikoff, to whom already he owes a statue for the gift of a divine and preservative balsam to be applied during his leisure hours of repentance, has now laid him under an even heavier debt of gratitude.

But first let me give the latest and improved formula of the first-mentioned sinner's *vade mecum.* It appears that the original 25% to 33% calomel in lanoline salve would not slip, "lacked unctuosity," to use the official term, so great was the proportion of its solid contents. Consequently a different formula has to be devised, and the following, which has now been adapted, is said to fit all requirements: Calomel, 33; lanoline, 67; vaseline, 10. This, we are told, can give points in slipperiness even to the uncertain banana-skin; and we now have really no longer any excuse for allowing the pallid treponema to get the upper hand of us.

But even this revised edition of the original salve is not perfect, perfection being not of this earth. It is, of course, a comfort to be assured that the ointment now slips all right; but the method itself leaves much to be desired in a number of respects. It is all very well to inoculate a macacus ape, rub in the pomatum, and demonstrate that the virus does not develop; *you know where to rub!* But how is the ordinary confiding mortal, "the man in the street," to know where to rub? Or is he to inunct the entire genital region? And in that case would not such a generous application risk producing skin inflammation, or mercurial intoxication?

Furthermore, to have a fair chance of proving efficacious the inunction has to be made *during the first few hours* after the infectious contact, under penalty of arriving too late and of finding that the elusive spirochetæ have already moved on.

Again, the lapsers from the paths of virtue are not all of the male sex, evidently: there are the co-respondents, to use the legal phrase; and whereas it may occasionally be feasible for a man to single out a point of entrance for the virus in some slight excoriation, this becomes practically an impossibility in the other sex.

Consequently, it is clear that there are several important drawbacks to the calomel salve preservative, and they have naturally not escaped the acumen of MM. Metchnikoff, Roux and Salmon, of the Pasteur Institute, who now hope that a more satisfactory method has been discovered in the hypodermic use of atoxyl, or anilarsinate of soda, a combination of aniline and arsenic, the latter being the predominating ingredient. But this point requires some development.

When it was found that atoxyl was efficacious against the trypanosoma of sleeping sickness, the idea immediately arose of testing the action of this remedy in syphilis, on account of the close similarity between the spirilla of the two diseases; and about three months ago Hallopeau, of the Paris Faculty, made a report to the Academy of Medicine of this city, on the generally favorable results of this treatment in upwards of 150 cases of syphilis. Since this is probably somewhat of a novelty, and you may not yet be familiar with the method, I will give a rapid summary of his *modus faciendi*, and of the principal details of this treatment.

He always uses a 10% solution in hypodermic injections in the gluteal regions. With a patient of average size and health, he gives first, at an interval of two days, two injections of 0.75 cg. each of atoxyl; then, at intervals of three days, four injections of 0.50 cg. each. This constitutes a series, and must be followed by a rest. Thus:

First day,	hypodermic injection	0.75 cg.	of atoxyl
Third day,	„ „	0.75 „	„
Sixth day,	„ „	0.50 „	„
Ninth day,	„ „	0.50 „	„
Twelfth day,	„ „	0.50 „	„
Fifteenth day,	„ „	0.50 „	„

The drug is eliminated by the urine, in which as a general thing no trace of it can be found two weeks after the completion of such a series. Treatment proceeds, consequently, by series of six injections, taking two weeks, separated by intervals of two weeks' rest.

From a pharmacological point of view, now, there are several important details, to which the closest attention is invited. The drug deteriorates spontaneously at the end of a short period; in two weeks it breaks down, and may form products of greater toxicity. It must consequently only be used when freshly prepared, as it will not keep. The same thing occurs if the drug is heated to 100° C. for a while; it cannot therefore be sterilized in the usual manner. Hallopeau has used two varieties of atoxyl, one of German origin, the other of French; the German appears to be much more toxic than the French, though this may depend simply on the mode of preparation, and also on the fact that the German product can scarcely be procured fresh whenever wanted.

Clinically one feature must never be lost sight of: contrary to what might be supposed from the name, atoxyl is a poison, and it belongs to the group of *cumulative* remedies; trouble from its use is then bound to follow with everybody, if its dose is too great, or if it is given for more than a certain length of time. For these reasons the series must be short, and interrupted by periods of rest to allow for elimination. During the series a patient must be closely watched, and the treatment interrupted at the least sign of intolerance, — returning again later on, if nothing occurs.

The signs of intolerance of atoxyl are: gastro-intestinal pain, nausea or vomiting, general distress, disagreeable sensations in the limbs, dysuria, loss of consciousness and algidity. They are usually slight, and pass off when the remedy is stopped; but in some few cases may be very severe, and cause anxiety for forty-eight hours or more. Great care must be taken to be on the lookout to catch the first symptoms of intolerance, as they appear with the greatest suddenness, as though some rapid dissociation of the drug took place after it had accumulated in the system to a certain point.

On account of the severity and great suddenness of appearance of atoxyl intolerance, it is necessary to proceed with caution, give moderate doses, at proper intervals, and by series. In determining the proper dose, the age, size and weight of the patients must be considered, as well as their general condition of health. If there is heart or kidney disorder, or a cachectic condition, great circumspection in dose must be observed.

Atoxyl forms a third weapon in our hands against syphilis, not one designed to dethrone the other two, but one to be used concurrently with or in succession to its seniors. There is no more incompatibility between atoxyl and mercury than between mercury and iodide of potash.

So much for atoxyl as a *curative* remedy in syphilis; now for its qualities as a *preventive*, — the point that interests us more directly to-day, and which, if it turns out to be true, seems destined to revolutionize matters.

Experimenting on the macacus ape with injections of atoxyl, Metchnikoff has found that when given hypodermically *after* the appearance of a chancre at the point of syphilitic inoculation, it does not prevent the evolution of the disease; *but that, when used earlier, before the chancre has appeared, during the incubation interval, even so long as two weeks after inoculation, — no visible signs of syphilis manifest themselves!* This is the really interesting point in this whole affair.

The apparent reason why atoxyl has time to act, during the long incubation period, is that the treponema does not adapt itself readily to the human system, and that a certain length of time is necessary for it to be able to multiply to any appreciable extent.

Being myself a little hazy about the exact personality of the macacus, I consulted Webster, who says: "The macacus is a genus of apes characterized by having short tails and very prominent eyebrows." It at once becomes clear why Metchnikoff has used this special animal for his experiments, as its relation to man must be very close: we could most of us at a pinch put our hands on fellow-beings who are, in our opinion, apes with short tails and very pronounced eyebrows! Still, in spite of this close analogy, and of the apparent success of the method among our brethren, the pithakoi, the remedy has not as yet won its spurs as an abortive of syphilis in man, so far as I know. But certainly no great interval will elapse before any practitioner so desirous can find an opportunity of testing it for himself.

Think of the comfort it is going to be, to both physician and patient, to have this plank of salvation to tender to these men when they turn up a few days after exposure, half crazed with suspense and threatening suicide through anxiety! What a mercy it will prove if only to keep them quiet, to be able to say that even if they have caught syphilis we have now a means of heading it off before it comes to maturity.

There can be little question as to the practical importance of this discovery. In spite of the meritorious efforts of the many well-intentioned people who are striving to open the eyes of the young to the dangers of irregular life, and to stem the tide of the social evil, I question whether their results will amount to much. At most will they frighten a few timid neurasthenics away from the Scylla of vice into the Charybdis of self-abuse. For they have here to deal with the greatest factor in life: the whole world revolves about the sexual pivot, and there is no use of shutting the eyes to this fact; what then can their feeble voices really hope to accomplish in face of a problem of such magnitude as this?

So long as human nature remains as it is, and we continue to be no more than the descendants of father Adam, so long will such men as Metchnikoff be necessary for the public weal. The ingenuity of man will continue to extract different kinds of alcohol from the fruits of the earth, each race according to its climate; and frequentation of the society of Bacchus leads inevitably to a search after other members of the ancient theogony,— Mars, and Venus in particular,— with the results that always have followed, do follow and will continue to follow, *in saecula, saeculorum*,— the lock-up, hospital, and physician's office! This is why, at least till further notice, we cannot be provided with too many remedies of the order of Hydrarg., KI, atoxyl and calomel.

In fact, so far from improving, the world's morality seems likely to grow worse, on account of the steadily increasing difficulty of marriage among civilized people. Life is now not easy; to most men the expense of maintaining a family grows apace, and marriages occur at a point in life that is steadily receding. It would seem, then, that illicit intercourse between the sexes can do nothing but increase progressively.

To what a degree this can be carried in civilized countries can be realized by a glance at the state of affairs reported a while ago in the city of Toulouse, where, during a given period, out of a total of 194 births, 41 were legitimate, and 153 illegitimate! We in Paris thought we were doing pretty well with an illegitimate proportion of between 25% and 30%; but that is a mere circumstance when placed beside Toulouse's record *of over 75%!*

"Spectator."

RECORD OF MORTALITY

For the Week ending Saturday, Oct. 12, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York			Quincy	6	3
Chicago			Waltham	8	3
Philadelphia	—	—	Pittsfield	11	0
St. Louis	—	—	Gloucester	6	3
Baltimore			Brookline	7	2
Cleveland	—	—	North Adams	9	1
Buffalo	—	—	Chicopee	9	7
Pittsburg	—	—	Northampton	13	2
Cincinnati	—	—	Medford	6	1
Milwaukee	—	—	Beverly	4	1
Washington	—	—	Leominster	4	—
Providence	83	19	Hyde Park	5	2
Boston	212	79	Melrose	4	1
Worcester	40	12	Newburyport	—	—
Fall River	49	33	Woburn	4	0
Cambridge	27	9	Marlboro	3	1
Lowell	43	16	Westfield	4	1
Lynn	18	2	Peabody	—	—
New Bedford	30	13	Revere	—	—
Springfield	23	3	Attleboro	4	1
Lawrence	27	9	Clinton	3	1
Somerville	20	5	Adams	5	3
Holyoke	10	5	Gardner	2	1
Brockton	14	5	Milford	—	—
Malden	13	4	Watertown	4	0
Chelsea	9	5	Plymouth	—	—
Salem	8	3	Weymouth	4	1
Newton	7	2	Framingham	5	1
Haverhill	7	2	Southbridge	5	4
Fitchburg	5	2	Wakefield	—	—
Everett	11	6	Webster	—	—
Taunton	17	4			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 9, 1907.

Stoner, G. W., surgeon. Directed to proceed to Montreal, Quebec, and eastern Canadian stations for special temporary duty. Oct. 4, 1907.

Williams, L. L., surgeon. Detailed to represent the Service at the Sixteenth Annual Meeting of the Association of Military surgeons, Norfolk, Va., Oct. 15–18, 1907. Oct. 3, 1907.

Stoner, J. B., surgeon. Granted leave of absence for one month from Oct. 14, 1907. Oct. 4, 1907.

Wertenbaker, C. P., surgeon. Detailed to represent the Service at the Sixteenth Annual Meeting of the Association of Military surgeons, Norfolk, Va., Oct. 15–18, 1907. Oct. 3, 1907.

Sprague, E. K., passed assistant surgeon. Granted leave of absence for five days from Oct. 15, 1907. Oct. 9, 1907.

McMullen, John, passed assistant surgeon. Granted leave of absence for three days from Aug. 17, 1907, under paragraph 191, service regulations.

Grubbs, S. B., passed assistant surgeon. Granted leave of absence for five days from Oct. 5, 1907. Oct. 4, 1907.

Grubbs, S. B., passed assistant surgeon. Granted extension of leave of absence for three days from Oct. 10, 1907. Oct. 7, 1907.

Parker, H. B., passed assistant surgeon. Granted leave of absence for three days from Aug. 11, 1907, under paragraph 191, service regulations.

Lloyd, B. J., passed assistant surgeon. Leave of absence granted Passed Assistant Surgeon Lloyd for twenty-one days from Aug. 5, 1907, revoked, and leave of absence granted for one month from Aug. 11, 1907. Oct. 7, 1907.

Ward, W. K., passed assistant surgeon. Granted leave of absence for one day, Aug. 17, 1907, under paragraph 191, Service regulations.

Foster, A. D., assistant surgeon. Directed to report to Chief Medical Officer, Ellis Island, N. Y., for duty. Oct. 4, 1907.

Collins, G. L., assistant surgeon. Granted leave of absence for one day. Oct. 5, 1907.

Hallet, E. B., acting assistant surgeon. Granted leave of absence for three days from Oct. 10, 1907. Oct. 9, 1907.

Kennard, K. S., acting assistant surgeon. Granted leave of absence for one day, Aug. 30, 1907, under paragraph 210, Service regulations.

Naulty, C. W., Jr., acting assistant surgeon. Granted leave of absence for two days from Oct. 15, 1907. Oct. 4, 1907.

Ray, D. G., acting assistant surgeon. Granted leave of absence for seven days from Oct. 4, 1907, under paragraph 210, Service regulations.

Ray, D. G., acting assistant surgeon. Granted leave of absence for four days from Oct. 11, 1907. Oct. 8, 1907.

Wetmore, W. O., acting assistant surgeon. Granted leave of absence for one day in August, 1907, under paragraph 210, Service regulations.

BOARD CONVENED.

A board of medical officers was convened to meet at Baltimore, Md., Oct. 10, 1907, for the physical examination of a cadet in the Revenue-Cutter Service. Detail for the Board: Surgeon L. L. Williams, Chairman, and Passed Assistant Surgeon J. T. Burkhalter, Recorder. Oct. 9, 1907.

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING OCT. 12, 1907.

H. L. **Dollard**, assistant surgeon. Detached from the Naval Hospital, Newport, R. I., Oct. 15, and ordered to the "Rhode Island."

H. F. **Hull**, assistant surgeon. Ordered to the Naval Hospital, Newport, R. I., Oct. 15.

B. F. **Jenness**, passed assistant surgeon. Detached from the "Constellation" and ordered to the "Glacier."

R. E. **Ledbetter**, passed assistant surgeon. Detached from the "Glacier" and ordered home to wait orders.

H. D. **Wilson**, surgeon. Detached from the "Dixie," when placed out of commission, and ordered home to wait orders.

SOCIETY NOTICES.

The Boston Society of Examining Physicians and Surgeons. — The next meeting of the Boston Society of Examining Physicians and Surgeons will be held at the Parker House, on the evening of Oct. 30, 1907. A dinner will be served at 7 o'clock. The business meeting will be called to order at 8.30. In view of recent criticisms of medical experts based upon cases outside of this Commonwealth, the society will take for discussion "The Medical Witness in the Courts of Massachusetts," and the following have been invited to attend and to participate in an informal discussion of this subject: Melvin O. Adams, Esq., Herbert Parker, Esq., Thomas W. Proctor, Esq., Samuel M. Child, Esq., E. P. Saltonstall, Esq., Henry F. Hurlburt, Esq., Hon. John A. Sullivan, Wm. B. Sprout, Esq., J. Porter Crosby, Esq., James P. Magenis, Esq.

Chas. Theo. Cutting, M.D.,
Secretary.

The Norfolk District Medical Society. — A stated meeting will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Oct. 29, 1907, at 8 o'clock. Communications: "The Law and the Doctor," Edward G. Morse, M.D.; "Lawyers, Doctors and the Courts," Arthur D. Hill, Esq., and Charles F. Jenney, Esq. The discussion will be opened by Dr. George W. Gay, President of the Massachusetts Medical Society. Collation.

The Board of Censors will meet for the examination of candidates for admission to the Massachusetts Medical Society on Thursday, Nov. 14, at 2 P.M., at the Norfolk House. Fellows will please send to the secretary the names of persons who wish to join the society.

William H. Robey, Jr., M.D.,
Secretary.

RECENT DEATH.

Dr. Thomas A. York, of Brooklyn, N. Y., died on Oct. 17, at the age of thirty-eight years. He was graduated from the Long Island College Hospital in 1901, and was for some years in the service of the Health Department in Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

The Development of the Human Body. A Manual of Human Embryology. By J. Playfair McMurrich, A.M., Ph.D. Third edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Gout, Its Pathology, Forms, Diagnosis and Treatment. By Arthur P. Luff, M.D., B.Sc., F.R.C.P. (Lond.). Third edition, New York: William Wood & Co. 1907.

Bilharziosis. By Frank Cole Madden, M.D. (Melb.), F.R.C.S. (Eng.). Illustrated. New York: William Wood & Co. 1907.

Immune Sera. A Concise Exposition of Our Present Knowledge Concerning the Constitution and Mode of Action of Antitoxins, Agglutinins, Hæmolysins, Bacteriolysins, Precipitins, Cytotoxins, and Opsonins. By Dr. Charles Frederick Bolduan. Second edition, rewritten. Illustrated. New York: John Wiley & Sons. London: Chapman & Hall, Ltd. 1907.

Original Articles.

THE SUPERIORITY OF PRIMARY OVER SECONDARY CESARIAN SECTIONS, AND THE FEASIBILITY AND ADVANTAGES OF A PREDETERMINATION OF THE METHOD OF DELIVERY.

BY EDWARD REYNOLDS, M.D., BOSTON.

When the forceps were first invented it was regarded as an instrument of last resource, and even the simplest forceps operations were considered exceedingly dangerous. Its use has been gradually extended until it is to-day employed to forestall exhaustion, and in its lesser applications, at least, for the mere lessening of suffering. We are living through a somewhat different but in some respects similar development of the Cesarian section. Its ancient use was for the preservation of the child after the death of the mother. Its revival after the introduction of asepsis was with the idea of lessening the fetal death-rate with but little added risk to the mother. It has now come to be regarded as furnishing in certain difficult cases the safest method of delivery for both mother and child. An inquiry into the circumstances under which it is least dangerous seems appropriate to the spirit of the times.

Each man must be guided in the end by the results of his own experience and the experience of those whom he personally knows and trusts. That in my own experience I have escaped without mortality is, I think, due to the fact that the majority of my operations were done before labor, and that only three could by any stretch of classification be considered late; but I was early struck by the, to me, undoubted fact that both the discomforts which my patients went through during convalescence and my own anxieties therefrom were closely proportional to the length of labor which they had endured before operation. My series (29, now 30, cases without mortality) is, however, too short to carry conviction upon this point to others by a mere recital of the cases. The statistical method of inquiry into the results of others whose personalities are not directly known to us, and of whose cases we have not had personal cognizance, is capable of great abuse and is often misleading, yet it cannot be entirely discarded. It is misleading when conducted upon a series so small that the element of chance is not eliminated, and when used to elucidate points of such delicacy as to lie within the very wide limits of error with which it is necessarily afflicted. It is moderately trustworthy when based upon large numbers of cases, confined to broad lines of inquiry, and attested by sweeping differences in results.

The value of any statistical inquiry must, moreover, rest so entirely upon the spirit and methods under which it was conducted that it is proper that any statistical argument should be prefaced by a statement of the method employed in preparing it. The table which I propose as a prelude to my own observations upon this subject was prepared after the following method: A library assistant, who was uninformed of the points involved, was requested to collect from the literature of the world all the papers which contained case reports of Sænger Cesarian sections done within the last ten years by operators who had had at least five cases. These original reports were then submitted to me. From them were eliminated all cases in which the section had been performed for placenta previa, eclampsia, carcinoma or other new growths, or complicated by other operations having a mortality of their own, such cases being plainly inapplicable to an inquiry into the mortality of the Cesarian section when used for mechanical obstruction and as an alternative to the intrapelvic operations. Cases involving operations upon the tubes or ovaries for the prevention of subsequent fertility were not excluded, these being regarded as at times an intrinsic part of the performance of the Cesarian section.

The cases so selected were then divided for the purpose of this inquiry into three classes: 1. Primary sections, those performed before the beginning of labor, or with the advent of the first pains. 2. Secondary sections, those performed after a certain amount of labor had demonstrated its probably unsatisfactory character, but before exhaustion had set in, and before it had become definitely established that the natural powers would fail to effect the passage of the brim. 3. Late sections, those performed after definite arrest of the head at the brim.

It is at once evident that while the line between primary and secondary sections, so defined, is a perfectly clear one, that between the secondary and late sections is, under the definition, indefinite; and especially so in cases reported in the abstract by others. In separating the cases into their respective classes, I therefore assigned to the secondary section only those cases in which it was definitely stated that the operation was done during the first stage of labor, or that the os was of less size than a fifty-cent piece, putting into the class of late sections all doubtful cases, all cases in which the os was more widely dilated, all cases in which labor had endured for twenty-four hours, or in which it was stated that strong pains had been present for more than eight. Thus many comparatively favorable cases were without doubt unfairly assigned to the unfavorable late class, by which the mortality of this class of late sections is undoubtedly represented as less than it in fact should be, and also the secondary sections are restricted to include only the most favorable of all the operations done during labor; but I hope that you will feel that the final argument is strengthened by this discrimination against the results which my personal experience had led me to expect. I was further careful to assign every case to its final position before ascertaining its result for mother or child.

There were left for analysis 289 cases by 20 different operators. Of these 82 were operated upon before labor began, 158 early in labor, and 49 after the failure of the natural powers was established. The 82 cases done before labor yielded one death, a mortality of 1.2%. The 158 cases done early in labor showed 6 deaths, a mortality of 3.8%. The 49 cases done after the arrest of the head, or after an unduly long first stage, showed 6 deaths, a mortality of 12%.

Considered in the most superficial way this very marked variation in mortalities is just what should have been expected *a priori*, *i. e.*, it shows that when the section is performed for purely mechanical indications, its mortality is proportionate to the amount of labor which has been endured before operation.

The Cesarian section before or during labor seems not inaptly comparable to an operation for appendicitis in the interval or during the attack. It is, perhaps, more strictly comparable to the performance of a simple abdominal operation upon individuals selected at different points during the progress of a Marathon run or previous to the start. Would any one doubt that if a number of candidates for a Marathon run were divided into classes and subjected to a simple abdominal operation, say the removal of a normal appendix, some before the start, some after the finish, and some at differing periods of the race, that the mortality would be higher among those who were operated upon in an exhausted condition at the finish than among those who underwent the same performance before making the start? The mortality in this case, as in the sections during labor, would probably be roughly proportionate to the amount of exhaustion which the individuals had undergone. But it is not safe to reason from analogy nor upon *a priori* grounds. It is better to adhere to facts, and an inquiry into the causes of death in these 289 women subjected to the Cesarian section at different periods of labor is exceedingly interesting.

The only death among the 82 primary operations was due to an accidental failure of technic in combination with the incompetence of an assistant. This death occurred in a case operated upon nearly ten years ago, in which the uterus was sutured with catgut, which has since been generally admitted to be an improper material for use in the uterine suture of the Cesarian section, on account of its liability to become untied during the alternate relaxations and contractions of the uterus. The patient collapsed a few hours after labor, at a time when the operator was at a distance in attendance upon another case; an assistant saw her, and pronounced it a mere nervous faintness needing no treatment. She died shortly afterward and at the autopsy the uterine sutures were found untied and the abdomen full of blood. The operator himself calls it an unnecessary death due to a mistake in technic and the incompetence of an assistant. This death would hardly occur to-day, but for the sake of fairness must be left to stand as the only mortality among this long list of primary cases. It is to be noted that there was no case of peritonitis. This mortality is not only in quantity but in etiology also in strong contrast to that of the cases operated on during labor.

Although the 158 secondary cases (those done early in labor) were operated on by the same operators and under the same conditions, their mortality was wholly due to infection, — all six fatal cases died of peritonitis; and among the 49 late cases, under the same conditions, 3 of the six deaths were reported as due to peritonitis, 2 were reported under the word "infection," and one as due to thrombosis and embolism during convalescence. Only one of these fatal cases had been examined before it came under the care of the operator. In the others the occurrence of infection may be explained variously, *i. e.*, as due to contamination during labor (although in many of them the membranes were unruptured), as due to a lowered resistance from exhaustion, or as the results of a peculiar susceptibility of the peritoneum after long labor. I do not think that in the present condition of our knowledge we can discuss this question with any degree of scientific certainty, or from any standpoint other than the beliefs of the individual disputant. The facts remain that the only death in the cases operated upon before labor was from an accidental and preventable cause; that the cases operated upon during labor by the same operators showed a mortality which was due throughout to infection and which rose steadily in percentage in proportion to the length of labor endured before operation.

Are the following three conclusions then unfair, even when we remember all the uncertainties of the statistical method?

First: It is clear that the mortality of the primary section is less than that of the section performed during labor.

Second: It seems also clear that the section performed early in labor is safer than that undertaken after the failure of the natural powers.

Third: It is desirable that cases which are to be subjected to the Cesarian section should be selected as such in advance of labor, whenever the conditions make this possible.

It is a severe arraignment of the obstetrics of the last few years that it has so generally failed to appreciate the desirability of making the decision for or against the Cesarian section in advance of labor, and that its literature shows an absence of any sustained effort to make this decision generally possible. Progress has been made, cases with clear indications are now generally operated on in advance of labor, and the doubtful class which is still commonly submitted to the so-called test in labor is becoming smaller, but it is to be hoped that this unsatisfactory and always dangerous test will, in the end, be entirely superseded and laid aside. This would be accomplished at once if the profession generally believed that it is possible to predict the result of labor in advance with sufficient accuracy to warrant action. Some few obstetricians are already convinced that the amount which can be accomplished in this direction is much greater than has been generally supposed, and that our power in this direction is already sufficiently great to be of practical use in certain classes of cases.

Success in predicting the result of natural labor to be expected in a given case is dependent upon a capacity for estimating in advance each of the three great mechanical factors in labor, *i.e.*, the obstacle offered by the pelvis, the amount of the maternal muscular powers, and the characteristics of the head. Each of these must be estimated separately, however, and the result obtained by a comprehensive judgment based upon all three.

The amount of the pelvic obstacle is too often spoken of as though it were a mere matter of size obtainable by measurement; in reality the amount of the pelvic obstacle is much more a question of its shape, or rather of the influence of its shape upon any diminution of its size. Some abnormal variations in the shape of the pelvis offer rather less mechanical obstacles than are afforded by normally shaped pelves of the same size or conjugate; other variations create obstacles much greater than those of a normal pelvis of the same size. We are, in fact, too apt to speak of the "contracted pelvis," as though it were merely diminished in its diameters, when we should speak of the "deformed pelvis" which alters the mechanism of labor, and so makes any diminution of its diameters a matter of greater importance. It is necessarily beyond the scope of this paper to enter into any extended discussion of the subject of deformities of the pelvis, but the main points which I wish to make,— that the estimation of the amount of obstacle to be expected from a given pelvis is quite as dependent upon a knowledge of its shape as upon its mere size; and of the extent to which a diagnosis of its shape depends upon an extended examination of the patient rather than upon mere measurements, — may be illustrated sufficiently well by using two of the more common forms of difficult pelvis as examples.

Among the most common of all the difficult pelves is that known as the cylindrical or justo-minor type. From a mechanical point of view the leading characteristic of this pelvis is that it is long in proportion to its size and that it is rather straight and longitudinally erect, *i.e.*, the inclination of the brim to the horizon is usually less than normal, the symphysis is erect, and the sacrum is straight and erect.

The longitudinal curve of the sacrum is less than normal, the promontory is high and the ilia are also very erect, the false pelvis flaring less than normal. The transverse lines of the pelvis are highly curved. The inlet is very round and the iliac crests are highly curved, the difference in length between the interspinal and intercristal diameters being marked. A line connecting the anterior superior spines is higher above the pubes than in the normal pelvis.

With these peculiarities is correlated of mechanical necessity a lessening of the antero-posterior curves of the whole spine. The lumbar region is flat, and the relations between the acetabula and the promontory are such that the body weight is borne along a line which forms a less angle with the upper part of the pelvic axis than in the normal pelvis. The hips of such a woman are usually high and, unless disguised by fat on the outer aspect of the pelvis and thighs, are apt to have a narrow appearance. The legs are straight, and both pelvis and skeleton as a whole are more truly neutral or infantile than either feminine or masculine in type. Although no positive rule exists, such women are apt to begin menstruation late, and to have small uteri with long pointed cervices. The high degree of obstacle afforded by this pelvis in proportion to its size is due to the fact that the obstacle continues throughout almost the whole of the bony canal, the relative shallowness of the longitudinal curves making the middle portion of the pelvis but little more roomy than the superior and inferior straits. If the Cesarian section has been ruled out, this form of pelvis is better adapted to forceps or craniotomy than to any other operation. Version is but seldom successful in justo-minor pelves after forceps have failed, and in this form of pelvis pubiotomy and symphyseotomy are especially apt to be followed by extensive lacerations of the soft parts, owing to the fact that the head meets with resistance throughout almost the whole length of the pelvis.

A hint as to the existence of this pelvis is afforded by the history of late sexual development and by the evidences of it observable in the body as a whole. These are, however, not infallible guides. If an examination of the figure standing, and with the corsets removed, demonstrates the presence of a straight spine and sacrum, with an ill-marked intergluteal fold and comparatively horizontal, sharply curved iliac crests, with the anterior spines high above the symphysis, — all this is strongly corroborative evidence. If this is confirmed by the relation between the interspinal and intercristal diameters as obtained by measurement, and by the shallowness of the longitudinal, and exaggeration of the horizontal, curves, as obtained by internal palpation of the sacrum and lateral walls of the pelvis by the fingers within the vagina, the diagnosis of this form of pelvis may be considered established. We have then to estimate from the results of all these examinations the degree of its alteration in the direction of this deformity, in order to estimate the amount of difficulty which is to be expected in labor from its size as estimated from the length of the conjugate taken by measurement.

Another much neglected but very common and highly important pelvis, which has, so far as I know, received no generally accepted distinctive name, is that of which the leading mechanical characteristic is its excessively curved axis. This pelvis is in many respects the opposite of the justo-minor pelvis. The inclination of its brim to the horizon is excessive, the direction of the symphysis approaches the horizontal, the sacrum is very highly curved and the excavation is roomy, the false pelvis is broad with a wide transverse flare, the acetabula are almost directly under the body weight or may be behind it, and the line of pressure of the body weight is consequently almost directly across the axis of the inlet. The inlet is of normal shape, but flat rather than round. The whole spine is of mechanical necessity marked by very highly developed curves, the lumbar curve and the longitudinal curve of the sacrum being especially marked. The hips are wide in appearance, the legs are knock-kneed and often somewhat bandy-legged. The figure as a whole is markedly, if not excessively, of the feminine type, and these women usually have an active sexual life.

This pelvis tends intrinsically to be roomy and is then not of operative importance, but the great inclination of its brim makes a difficulty in labor even with normal diameters, and a very serious obstacle whenever its size is even slightly diminished.[1] When a pelvis of this shape is small in comparison with the head, natural labor usually fails and the intrapelvic methods of artificial extraction have an exceedingly high fetal mortality. The use of forceps high is made difficult, and frequently ineffective, by the posterior position and the excessively backward traction which is necessary to extraction, and though version is a highly effective operation it is apt to result in stillbirth from the excessive strains upon the body and neck as the child is drawn around the nearly horizontal symphysis and through the highly curved pelvis.

In this pelvis the field for the intrapelvic operations is an exceedingly narrow one, and it should as a rule be subjected either to natural labor or the Cesarian section in accordance with its size. Its recognition in advance of labor and the estimation of its obstacle in connection with the amount of the other factors in labor is therefore of especial importance.

The probable existence of this pelvis may be suggested by the excessive antero-posterior curves of the woman's figure as she stands clothed, but a determination of the degree of alteration which is present necessitates a study of the spine in a standing posture after the corsets have been removed. The great curvature of the sacrum with the compensating excessive curvature of the lumbar spine, the deep intergluteal fold and the excessive inclination of the brim are readily appreciated in this position, but the internal palpation of the pelvis also furnishes evidence of the utmost value; the points of especial importance in determining the degree of alteration present being the length and direction of the inner wall of the symphysis, the angle between the superior and inferior straits, and the excess of curvature in the lumbo-sacral region.[2]

The obstacle likely to be afforded by the pelvis is then estimated by comparison of these points with the size of the conjugate as determined by measurement.

It is to be remembered in all cases that we have only one generally applicable measurement which gives us any direct information as to the actual size of the true pelvis, *i. e.*, the conjugate at the brim as calculated from the direct measurement of the diagonal conjugate. The other commonly taken measurements all relate to the false pelvis, and[3] are valuable rather as affording diagnostic information of the character of the deformity present than from the hint which they give us as to size.

The all-important and fundamental point is that every alteration in the shape of the pelvis has so all-important a relation to the rest of the skeleton in the ordinary mechanical efforts of locomotion, that there can be no alteration of its shape without correlated peculiarities of the spine, legs and feet, and in all the varieties of deformed pelvis observation of the degree of these correlated changes furnishes evidence of exceeding importance as to the degree of pelvic alteration.

It follows from all this that we are only in a position to estimate the amount of obstacle offered by the pelvis when we can postulate that we have a pelvis of such a shape, modified in this direction to such a degree, and likely to present an obstacle of large, moderate or small amount, because with such a degree of alteration of shape it combines a conjugate of such a size. This whole matter of the importance of the type of deformity present and also of the importance of estimating the degree of such alteration present in each case has but recently begun to attract attention as a matter of practical urgency, and we as yet lack exact methods for its study. We cannot teach it, we cannot put it within the reach of the general profession until we have established a normal standard, until we have learned the limits of normal variation, and have acquired methods of measuring exactly the degree of variation from the normal in each of the corollated peculiarities. For this it is necessary, first, to establish the normal by the measurement of large numbers of normal women, and, second, to go through the slow process of comparing a generally accepted normal standard with accumulated experience in abnormal cases. This means detailed work by many men, and its completion may take years or even a medical generation; until then scientific exactness is impossible. It is, however, in the meantime well within the powers of any experienced obstetrician to add greatly to his power of estimating the obstacle offered by a given pelvis, by training himself in observation along these lines. Only after such an estimation of the pelvic obstacle are we in a position to estimate its relation to labor, in connection with the estimated amount of the maternal muscular and nervous power, and the size and degree of ossificaton of the individual head.

The long established but, as I believe, incorrect, belief that it is safe to defer decision until after the failure of the maternal powers in labor has prevented any concerted effort to determine the extent to which we can estimate these powers beforehand, except by study of the history of past labors in multiparæ; but of late years a more careful study of the conditions of pregnancy has convinced some of us that such predictions can be made with sufficient certainty to enable us to distinguish at least the more pronounced cases of obstetrical strength or weakness, with practical certainty. Lack of space and the fact that I have in two recently written papers[4] devoted myself more especially to the study of this factor in labor prevents my entering upon this subject at full length here, but some summary of it is necessary to any consideration of the indications for the primary performance of the section.

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[1] The head of necessity enters the highly inclined brim in a posterior position, and the direction of the expulsive forces drives it against the outer side of its curved course, that is, much of the force of labor is wasted in driving the head against the symphysis.

[2] In marked cases the inlet of the pelvis may look almost directly forward and the upper portion of the posterior sacral region may pursue a nearly horizontal direction.

[3] Except in the Robert and similar pelves.

No new departure in medicine is likely to command confidence unless it accords both with the known theory of the subject and with the results of practical experience. It is therefore necessary to examine any such proposition from both sides; when a procedure is found sound in both ways it seldom fails of acceptance. Belief in this possibility of a prediction of the probable character of labor with success, in marked instances at least, rests on the theorem that the strains imposed upon the organism by pregnancy and labor are inherently similar.

The strains of pregnancy have long been studied and are well known. The development of the child, *i. e.*, the addition of its metabolism to that of the mother, and the consequent injection of an increased amount of waste products into her circulation throughout imposes an increased strain upon her eliminative system. The existence of the fetal circulation and the consequent increased pressure in the maternal vessels put an added load upon the heart throughout pregnancy. The increase of size and weight during the latter part of pregnancy involves an increased labor for the muscular and respiratory systems in the performance of all the ordinary efforts of life. The existence of all these added loads involves an additional expenditure in the nervous system which governs each and all of them. These several increased loads act and re-act upon each other. Whenever one part of the system fails under the load of pregnancy it increases the strain imposed upon the others, *e. g.*, when the maternal eliminative system fails to dispose of all the products of increased metabolism, the resulting toxemia in itself decreases the efficiency of the muscular system, and through the heart muscle the efficiency of circulation, which latter of itself impairs anew the efficiency of the eliminative organs, and so creates a vicious circle. The enumeration of the many forms in which deficiency of the one system affects the others must be omitted here, but will be apparent to all upon a little thought.

The strains of labor are these: the intense muscular activity of labor throws into the maternal circulation a sudden and considerable increase in the waste products of metabolism, and consequently involves an increased strain upon the activities of the eliminative system. The great increase in pressure in the uterine and general abdominal circulation involved in each contraction imposes an additional strain upon the heart. The nervous system is called upon to withstand the strains incident both to the maintenance of powerful muscular contractions and to the endurance of physical pain. These added strains, moreover, as before, react each upon the other, *e. g.*, any failure of elimination creates under physiological law a toxemia which decreases the power of muscular endurance and lessens the co-ordination of nervous control which is essential to effective expulsive efforts, etc.

The strains of pregnancy and labor are thus evidently similar in kind, and exerted upon the same organs. The capacity to endure strains so much greater than those of ordinary life is always dependent upon the normal existence within the individual of reserve strength with which to meet the occasional exigencies of life. We must recognize the factor of safety in vital existence as definitely as in bridge building. When an athlete is about to enter upon severe and long continued muscular efforts his factor of safety is carefully increased by the process known as training, *i. e.*, the organs which are to be exposed to strain are carefully developed by a process of gradual increase of the daily load. Under normal circumstances this is what happens to the organs of the woman during pregnancy. If her margin of safety is such that her heart and her muscular, nervous and eliminative systems maintain or increase their efficiency under the gradually increasing load of pregnancy, she may usually be depended upon for strong, sthenic labor. If her natural margin of safety is so narrow that these vital activities fail under the load of pregnancy, it is, to use the vernacular, "dollars to doughnuts" that they will fail more markedly during the added but similar strains of labor. These are the women whose labors are lingering, whose uterine contractions are painful but ineffective.[5]

These theoretical arguments appear to me to be sound. Are they supported by the results of observation? To answer this question each of us must appeal to his own experience, and I can only quote my own. I have been interested in this question for more than fifteen years, during the first ten of which I had under observation a mass of clinical material amounting at the end to about twenty-five hundred cases a year, and during the last five a consultation practice, which, though of course much smaller, has been prolific in cases of this kind. About five years ago, *i. e.*, after a ten years' interest in this question, I formulated for myself the theorem that the character of labor can be predicted from the character of pregnancy, and submitted it to continued observation. I watched it for five years longer before committing myself to it, but have now become convinced that in well marked cases, it is a safe guide in practice. I know that some other observers have reached somewhat similar conclusions and believe that as this problem becomes subjected to still wider observation this leading principle is likely to be generally accepted as trustworthy.

After estimating as carefully as possible the nature and degree of the mechanical obstacle offered by the pelvis, and the probable character of labor as predicted by the course of pregnancy, we have left for estimation the third factor in the result of labor, the size and degree of ossification of the head, a factor for the determination of which we have, in primiparæ, no other guide than physical examination during the last few weeks of pregnancy. We have no mechanically exact method of determining the size or degree of ossification of the head, but by repeated palpation of the child as a whole during the last weeks of pregnancy, aided by combined internal and external palpation of the head, and by forcing it firmly into the inlet by external pressure, I think we can gain an idea of its size and adaptation which, when combined with a full knowledge of the pelvis and probable maternal powers, will enable us to divide even primiparæ clearly into three classes: *A*. Cases which will undoubtedly be most safely delivered by primary Cesarian section. *B*. Cases which may be reasonably expected to deliver themselves by natural labor, and in which if natural labor fails the ordinary intrapelvic operations are not likely to present unusual difficulties. *C*. A large class of cases in which the decision is still doubtful.

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[4] Jour. Am. Med. Asso., vol. xlix, no. 16, p. 1329. Surg. Gyn. and Obst., March, 1907, p. 306.

[5] These are the women who furnish the greater part of the mortality of labor plus the Cesarian section, *i. e.*, of the secondary and late section.

In multiparæ this preliminary classification will be of course greatly assisted by the history of previous labors. It is a matter of universal experience that the labors of any individual woman ordinarily bear a close resemblance to each other, though the first labor is usually longer and harder than those which succeed it. If an accurate history of previous labors is obtainable, its consideration in connection with close study of the three mechanical factors, as already outlined, will usually make the decision easy. It may certainly be laid down as a safe rule that when an intrapelvic operation necessitated by alteration of the pelvic shape and diameters, has been so difficult as to yield a stillborn child at the hands of an experienced accoucheur, subsequent intrapelvic deliveries in the same woman are sure to be highly dangerous to the child, and are likely to be less favorable to the mother than the primary Cesarian section with its exceedingly low mortality and absence of subsequent morbidity.

For the doubtful class, whether primiparous or multiparous, a further examination is necessary. Either with the first pains of labor or at an appointed date, as the judgment of the attendant may dictate, such women should be shaved and both the vagina and abdomen prepared as for any surgical operation. They should be etherized and placed upon the table with abundance of light and assistance. The mechanical conditions presented by the pelvis should be re-estimated and the head examined both by bimanual estimation of its size and by pressing it forcibly into the brim with all the advantages offered by anesthesia and the absence of any hesitation about provoking labor. This further examination should narrow the doubtful class to but few cases, and in those few, if the operator wishes, the hand may be passed into the vagina and the fingers passed within the os between the uterus and membranes, thus subjecting the head to a still better bimanual examination of its shape and size, and permitting their use in estimating more exactly the adaptation between the pelvis and head when the latter is pressed strongly into the brim by external pressure from above. Palpation of the head with two fingers actually within the os at a height which enables them to play freely over the greater part of its surface affords a fairly accurate estimate of its size, and the examination of its adaptation to the pelvis, under ether, and under these conditions, gives very much more definite information than can be obtained at any earlier period.[6]

The single objection to this last method of examination lies in the possible risk of infecting the uterus which is inherent in it, but in the hands of a man competent to open the peritoneum through the vagina and under the same conditions of asepsis and assistance under which he would perform a vaginal hysterectomy, this risk seems insignificant, and is justified by the importance of the question at stake.

When finally the results of either of these last examinations into the adaptation between the head and pelvis are considered with reference to the obstacle offered by such an adaptation under the mechanism of the degree of deformity present, and in connection with the estimated muscular and vital condition of the patient as derived from her behavior during pregnancy, there should be but few cases left which cannot be relegated either to the ordinary care of labor or to an immediate Cesarian section; but for the cases which are placed under the ordinary care of labor (including the intrapelvic operations), the choice should be considered as final and irrevocable, *i. e.*, after they have been subjected to a full trial of the natural forces in labor, they should be treated by determined high forceps or version rather than subjected to the very considerable mortality of a late Cesarian section.[7]

In the very few doubtful cases which may still be left after the final examinations I believe that the choice should be made in accordance with the patient's vital adaptability to labor. Strong women, well equipped for labor, may always take their chances with the intrapelvic operations even with considerable mechanical obstacles; but upon the other hand it must be remembered that the ill equipment for labor which is shown by failure to withstand the strains of pregnancy is peculiarly an ill equipment for *labor*. Such obstetrically ill-equipped subjects nevertheless withstand the ordinary surgical operations perfectly

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[6] I have in the past in some doubtful cases applied forceps to the sides of the head and so drawn the head lightly into the brim by way of measuring its adaptation, and if tractions are carefully abstained from I believe this to be a justifiable process, but it is easily overdone. I have not found occasion to employ it for some years past, and I now consider the examination with the fingers within the os to be so far sufficient that upon consideration I am doubtful if I shall ever again employ the forceps in this way.

[7] Failures of selection may occasionally occur in this class and the choice of operation after the ordinary intrapelvic operations have failed should perhaps be considered here but is hardly within the scope of this article, other than to say that the very great maternal mortality of the section at this time seems to render it too severe an operation to be justified in the interests of the child alone. The choice in such cases would seem to lie between the operations of symphyseotomy, pubiotomy and perforation.

No.	Date	Operator.	No. of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
1.	1901	Kerr, J. M. M.	3.	Craniotomies.	Generally Contracted. in. c.d. 3¾		End of first stage.		Well	Well.	
2.	1901	" "	1.		" c.d. 3¼		do.		Well	Still (prob before oper.)	
3.	1901	" "	2.	Craniotomy.	" flat c.d. 2¾	Yes.			Well	Well.	
4.	1901	" "	4.	All still.	" flat. c.d. 3½	Yes.			Well	Well.	
5.	1901	" "	1.		" flat. c.d. 3.	Yes.			Well	Died.	
6.	1901	" "	2.		" c.d. 3¼.	Yes.			Well	Well.	
7.	1901	" "	1.		" c.d. 3¼	Yes.			Well	Well	
8.	1901	" "	3.	Craniotomies.	flat. c.d. 3¾			Yes.	Well	Well	
9.	1902	" "	1.		" flat. c.d. 2½	Yes.			Well.	Well.	
10	1902	" "	4.	Induction and 2 Craniotomies.	flat. c.d. 3¾		Os partly dilated.		Well.	Well.	
11	1902	" "	3.	1 Induction and 2 Craniotomies.	" flat. c.d. 3¾		End of first stage.		Died.	Well	Septic Peritonitis.
12	1902	" "	1.		" flat. c.d. 3¼	Yes.			Died.	Well.	1 qt. of blood in abdomen. Catgut sutures untied. Collapse considered unimportant and untreated.
13	1903	" "	1.		" c.d. 3¼	Yes.			Well.	Well	
14.	1903	" "	5.	All still.				Neglected Case.	Well.	Well	Porro.
15.	1903	" "	1.		" flat.		Yes.		Well.	Well.	
16.		" "	3.	1 Caesarian. Case 6.	" c.d. 3¾.	Yes.			Well	Well	2 Cae. (Case 6.)
17.	1903	" "	4.	1 Induct. died. 4 still.			Os well dilated.		Well.	Well.	
18.	1903	" "	4.		flat. c.d. 3¾		Os fully dilated.		Well.	Well	
19	1903	" "	2.	Caesarian.			Yes.		Well.	Well.	2nd. Cae.
20	1904	" "	3.	1 Still, 2 Craniotomies.	" flat. c.d. 3⅝		Some hours.		Well	Well.	
21	1904	" "	9.	8 Still.	" "	Yes.			Well.	Well.	
22	1904	" "	3	Induc. Still. Craniotomy.	" "	Yes			Well.	Well	
23	1904	" "	8.	5 Still. 2 Living	" c.d. 3⅝	Yes.			Well.	Well.	
24.	1904	" "	1.		" " c.d. 3¼			Yes.	Well.	Well	Porro. Exam Outside.
25.	1904	" "	4.	3 Still.	" " c.d. 3½		Os well dilated.		Well	Well.	
26	1904	" "	1.		" c.d. 3⅛	Yes.			Well.	Well.	
27	1904	" "	1.		" c.d. 3¼		Os well dilated.		Well.	Well.	
28		de Lee, J. B.	2.	Craniotomy.	Kyphoscoliotic. c.d. 8½ c.m.		8 hours.		Well	Well.	
29.		" "	7.	1 Craniotomy.	Osteomalacic c.d. 9½ c.m.	Yes.			Well	Well.	
30		" "	4.	1 Craniotomy 1 Caesarian.	Generally Contracted. c.d. 10½ cm	Yes			Well	Well.	
31	1900	Sinclair, W. J.	2	Still.	Small.	Yes.			Well.	Well.	This operator 6 previous sections
32	1900	" "	3	2 Craniotomies	Contracted.		Yes.		Well	Well.	

No	Date	Operator	No of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor	Late in Labor.	Result Mother	Result Child	Remarks.
33	1900	Sinclair, W. J	3.	Still and Died Difficult	Flat rachitic	Yes.			Well.	Well	
34	1900	" "	7.	3 Craniotomies.	Small.	Yes			Well	Well	
35	1901	Voorhes, Jas D.	1		Kyphotic. 9¼ cm.			3½ days	Well.	Well.	Cervix dil. c̄ bags at term. 84 hours labor
36	1902	" "	6.	Induction and Cran.	8 c.m.		7 hours dilatation c̄ bags.		Died	Well	Operation typical & easy. Became septic. Secondary hysterectomy
37	1904	" "	2	Premature.	Flat. 7¾ cm.	Yes			Well	Well	Septic puerperium
38.	1904	" "	3	Premature and Cran.	7¾ cm		10 hours.		Well	Well.	
39	1905	" "	1.		Rigid cervix.			Induced c̄ bags 2 days Forceps	Well	Well.	
40	1897	Boyd, G. M.	2.	Cae. Section.		Yes			Well	Well	2nd Cae. Section.
41	1897	" "	2.	Cran.	Oblique.	Yes.			Well	Well.	
42	1898	" "	7.	Induc. and Cran.		Yes.			Well	Well	
43	1900	" "	3.	Cae. Section.		Yes.			Well.	Well.	3rd Cae Section.
44	1900	" "	3.	Still and Cran.			14 hours.		Well.	Well.	
45	1900	" "	4.	2 Craniotomies		Yes.			Well	Well	
46	1901	" "	4	3 Still.				11 hours & forceps	Well.	Well.	
47	1903	" "	4.	3 Still. – Cae.	c.d. 8 c.m.	Yes.			Well.	Well.	2nd. Cae
48	1903	" "	multip.	1 Craniotomy.	7½ cm	Yes			Well	Well.	
49	1903	" "	1.		6 cm	Yes			Well.	Well	
50	1902	" "	2	Still	7½ cm.		12 hours.		Well	Well	
51	1906	" "	3	Difficult.	Occluded cervix.			24 hours	Well	Well	
52	1898	Cragin, E. B.	1.			Yes			Well	Well.	
53	1898	" "	1.		7¾ cm		Yes.		Well.	Well.	
54	1898	" "	1.		Flat 5 cm	Yes.			Well	Well	
55	1898	" "	1.		7¾ cm	Yes			Well	Well.	
56	1899	" "	1		Kyphotic. 10 cm	Yes			Well	Well.	
57	1901	" "	1.		Rachitic. 7¾ cm	Yes.			Well	Well	
58	1901	" "	1					14 hours under midwife	Well	Well	Horseshoe Kidney
59	1898	Markoe, J W	1		8½ cm		Yes		Died	Well	Peritonitis and Pneumonia
60	1902	" "	2		8 cm	Yes			Well	Well	Septic Puerperium
61	1902	" "	3	Premature Still	8½ cm	Yes.			Well	Well	" "
62	1904	" "	1		Nagele 9½ cm		20 hour 1st stage		Well	Well	
63	1904	" "	1		Male		Induced c̄ bougie		Well	Well	Septic Puerperium

No	Date	Operator.	No. of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks
64.	1904	Markoe, J. W	3.	1 Caesarian.	8 cm	Yes.			Well	Died	Atalectatic Premature Hydraminos.
65.	1904	" "	1.		Gen. cont.	Yes			Well	Well	
66.	1904	" "	11.		Osteomalacic		Yes.		Well.	Died	Atalectatic Premature. Septic wound.
67	1904	" "	5.	Difficult and Still.	9 c.m			4 days induction Strong pains	Well	Well.	Septic Wound and Puerperium.
68.	1905	" "	2.		8 cm	Yes.			Well	Well	.
69.	1906	" "	1.		7½ c.m.	Yes			Well.	Well.	
70.	1905	" "	6.		Male. 8¾ c.m	Yes			Well	Well	Septic Puerperium.
71.	1905	" "	3.	Inductions.	8½ c.m	Yes.			Well	Well	
72.	1905	" "	1.		8½ cm	Yes.			Well	Still	Atelectatic.
73.	1905	" "	3.		8¾ c.m.	Yes.			Well	Well	
74.	1905	" "	2.	Still.	Atresia.	Yes.			Well	Well	
75.	1900	Davis, Asa B.	1.		Oblique. 9 c.m		Yes.		Well	Well	
76.	1901	" " "	1.		Flat. 8 cm			48 hours.	Well	Still.	Septic Puerperium
77.	1901	" " "	1.					30 hours midwife.	Died	Died	Septic before operation. Lived 22 hours. No hysterectomy.
78.	1903	" " "	1.		Gen. con. 8 c.m.		9 hours		Well	Well	
79.	1903	" " "	3.	Still and Died.	Funnel shape.		Yes.		Well	Well	
80.	1903	" " "	1.		Oblique.		Yes.		Well	Well	
81	1903	" " "	1.		Kyphoscoliotic.	Yes.			Well	Well	Myomectomy. small fibroid.
82.	1904	" " "	1.		Oblique. 9 c.m.			Operation Dilatation Strong Pains.	Well	Well.	
83.	1901	" " "	2	Caesarian.	Gen. con. 7½ cm.			Previous Intra-pelvic Operating.	Died.	Well.	Purulent peritonitis. 2nd. Caesarian.
84.	1900	" " "	3	Easy.	8 c.m.		16 hours first stage.		Well	Well	
85.	1903	" " "	2	Caesarian.	See Case 89.		Some hours first stage.		Well	Well	2nd. Caesarian.
86.	1904	" " "	1.		8 c.m.		long 1st. stage.		Well	Well.	
87.	1905	" " "	1.		Funnel shape.			2 days prev. Forceps.	Died	Died	Purulent Peritonitis.
88.	1904	" " "	1.		Gen. cont. 7½ c.m.			15 hours forcible labor.	Well	Died	
89.	1905	" " "	4.	Cran. 2 Caes.	Oblique flat.	Yes.			Well	Well	
90.	1905	" " "	1.		8¼ c.m			7 hours second stage.	Well	Well	
91.	1904	" " "	2.	Caesarian	8½ cm		Yes.		Well	Well	

No	Date	Operator	No of Conf.	Previous Labor.	Pelvis	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks
92	1905	Davis, Asa B	1		8 cm.			2nd stage 20 hours strong labor	Well	Well	
93	1906	" " "	1.		10 cm			37 hours extraction attempted	Well	Well	
94	1903	Kasper	2	Craniotomy	7½ cm	Yes			Well	Well	
95	1903	"	3.	Craniotomy.	8½ cm.		Yes		Well	Well	
96	1903	"	1		6½ cm	Yes.			Well	Well	
97	1897	Schauta clinic	1		7½ c.m			33 hours rigid uterus.	Well	Well	
98.	1897		1		7½ cm		12 hrs 1st stage.		Well	Well	
99	1897		1		7½ c.m		12 hrs 1st stage.		Well	Well	
100	1897		2	Miscarriage	8 cm			3 days.	Well	Well.	
101	1897		1		6⅓ cm		7 hrs 1st stage.		Well	Well	
102	1897		3	Craniotomy	6½ c.m		4 hrs. 1st stage.		Well	Well.	
103	1897		3	Still.	8¾ cm		3 hrs 1st stage.		Well	Well	
104	1897		3.	Still	Oblique 7 cm		7 hrs 1st stage		Well	Well	
105	1897		1.		7 cm		3 hrs 1st stage		Well	Well	
106	1898		3		8 cm		24 hrs 1st stage.		Well	Well	
107	1898		2.	Natural.	Rachitic 6½ c m.		7 hrs. 1st stage		Well	Well	
108	1898		2.	Caesarian.	Gen cont. 6 cm		2 hrs 1st stage.		Well	Well.	
109	1898		1.		Osteomalacic 4½ c.m.		6 hrs. pains		Well	Well.	
110	1898		1		7½ c.m.		18 hrs. 1st stage.		Well	Well	
111	1898		5.	Caes Symphyseotomy.	8 c.m.		7 hrs. pains.		Well	Well	
112	1898		2	Craniotomy	7½ c.m.		12 hrs 1st stage		Well	Well	
113	1898		2		8⅓ cm		10 hrs pains.		Well	Well	
114	1898		4	Craniotomy	7¾ cm		8 hrs pains		Well	Well	
115	1898		1		7½ cm		7½ hrs pains.		Well	Well	
116	1898		2	Still	Kyphoscoliotic 6½ cm		3 hrs 1st stage.		Well	Well	
117	1899		2	Decapitation	7⅕ cm		14 hrs 1st stage		Well	Well	
118	1899		1		Gen cont 6½ cm		11 hrs 1st stage		Well	Well	
119	1899		1		Gen cont 6⅓ cm			36 hours	Well	Well	
120	1899		3	Caes Cran	7½ cm		6 hrs 1st stage		Well	Well	
121	1899		1		8½ cm			3 days 1st stage	Well	Well	
122	1899		1.		8½ cm			24 hours 1st stage.	Well	Well.	

No	Date	Operator.	No of Conf.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
123	1899	Schauta Clinic.	1.		7 c.m		2hrs 1st stage		Well	Well	
124	1899		1		7⅓cm		16hrs. 1st stage.		Well	Well	
125	1899		3	Craniotomy	7½c.m.		8hrs 1st stage		Well	Well	
126	1899		5.	Difficult	Osteomalacic			24 hours powerful pains.	Well	Well	Porro.
127	1899		9.		Osteomalacic		12hrs.		Well	Well	
128	1899		1.		7⅕cm			3days.	Well	Well	
129	1899		3.	Cran. Caes.			3hrs.		Well	Well	
130	1899		1.		6¾cm		8½hrs 1st stage.		Well	Well	
131	1899		1.		7½c.m.		5½ hours pains.		Well	Well	
132	1900		1.		7⅓cm		4hours. pains.		Well	Well	
133	1900		2	Caes.	6½cm		15hrs. 1st. stage		Well	Well	
134	1900		4.	1 Caes.	6½cm		Some hours 1st stage.		Well	Well	
135	1900		3	Decapitation and Craniotomy.	5½cm			3 day	Well	Died	Porro.
136	1900		4.		Osteomalacic			28 hours	Well	Well	Porro.
137	1901		4.	Craniotomy	7cm		Some hours 1st stage.		Well	Well	
138	1901		2.	Craniotomy	7½cm		5hrs. 1st stage		Well	Well	
139	1901		1.		6½c.m		16hrs. 1st stage		Well	Well	
140	1901		2	Craniotomy.	8cm.		3hrs. 1st stage		Well	Well	
141	1901		1.		5½cm		2hrs. 1st stage.		Well.	Well	
142	1901		1.		7½cm		14hrs. 1st stage		Well	Well	
143	1901		7.	2 Craniotomies	7½cm		4hrs. 1st stage.		Well	Well	
144	1901		1.		8cm		12hrs 1st stage		Well	Well	
145	1901		3	Craniotomy	7cm		12hrs.		Well	Well	
146	1901		1		7cm		6hrs 1st stage.		Well	Well	
147	1901		2	Still.	8½cm		7hrs. 1st stage.		Well	Well	
148	1901		2	Caes.			6hrs.		Well	Well	
149	1901		1		7½cm		26hrs. 1st stage.		Well	Well	
150	1901		1		5c.m.		5hrs. 1st stage.		Well	Well	
151	1901		1		7¾cm		10hrs. 1st stage		Well	Well	
152	1901		1.		7⅓c.m		27hrs. 1st stage.		Well	Well	
153	1901		2.	Still	6¾cm		25hrs. 1st stage		Well	Well	
154	1902		1.		Anchylosed Coccyx		6hours		Well	Well	

No	Date	Operator.	No. of Conf	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child.	Remarks.
155	1902	Schauta Clinic	3	Craniotomy.	8½cm		24hrs 1st stage		Well	Well	
156	1902		2.	Craniotomy.	8½cm		6hrs 1st stage		Well	Well	
157.	1902		2.	Still.	7cm			39 hours 2nd stage.	Well	Well	
158	1902		6.	Craniotomy	7c.m		16 hrs.		Well	Well	
159	1902		3.	Craniotomy.	7½cm			20 hours. severe labor.	Well	Well	
160	1902		3.	Caes.	8 c m.		18hrs 1st stage.		Well	Well	
161	1902		1.		7 c m.		11hrs 1st stage.		Well	Well	
162	1902		1.		7 c.m		11hrs 1st stage		Well	Well	
163	1902		1.		8 c m.			37 hours.	Well	Well	
164	1902		1.		7¾c.m		7hrs. 1st stage.		Well	Well	
165	1902		1		8 c.m.		8hrs. 1st stage.		Well	Well	
166.	1902		1.		7⅓cm.		7hrs. 1st stage.		Well	Well	
167	1902		7.	Embryotomy.	8 c m.		7hrs. 1st stage.		Well	Died	Trotz wiederbelebungs versuchen.
168.	1902		2.	Caes.	7½cm		8hrs. 1st stage.		Well	Well	
169	1903		3.	Craniotomy.	7c.m		12hrs. 1st stage		Well	Well	
170	1903		4.	2 Craniotomies.	8c.m.		23hrs. 1st stage		Well	Well	
171	1903		1.		8½cm.		15hrs 1st stage		Well	Well	
172	1903		1.		7⅓cm		9hrs. 1st stage.		Well	Well	
173	1903		1.		7 c.m.		14 hrs. 1st stage.		Well	Well	
174	1903		2	Miscarriage.	6½cm		8hrs. 1st stage.		Well	Well	
175	1903		7.		Osteomalacic		3½hrs 1st stage		Well	Well	
176	1903		1.		Nagele.		16hrs. 1st stage		Well	Well	
177	1903		1		5½cm		18hrs. 1st stage.		Well	Well	
178	1903		2	Still	8cm		7hrs 1st stage		Well	Well	
179	1903		1.		7¾cm		11hrs. 1st stage		Well	Well	
180	1903		3.		8cm			30 hours.	Well	Well	
181	1903		1.		5 c m.		19hrs 1st stage.		Well	Well	
182	19[illegible]3		1		8 c m		34hrs 1st stage		Well	Well	
183	1903		5	Craniotomy.	8 c m		10 hours.		Well	Well	
184	1903		1		7½cm		12hrs 1st stage		Well	Well	
185	1904		1		7½cm		16 hours		Well	Well	
186	1904		1		7⅓cm		22hrs 1st stage		Well	Well	

No	Date	Operator	No. of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor	Late in Labor.	Result Mother	Result Child	Remarks.
187.	1904	Schauta Clinic	1.		8 cm.			3 days feeble pains. Membranes unruptured Os 2 fingers.	Died	Well	Thrombosis.
188.	1904		4.	Craniotomy.	7½ cm.		5hrs. 1st stage.		Well	Well	
189.	1904		7.		Osteomalacic.		12hrs 1st stage.		Well	Well	
190	1904		1.		8 cm.		11hrs 1st. stage.		Well	Well	
191	1904		6.	Craniotomy.	Osteomalacic.		4hrs. 1st. stage.		Well	Well	
192	1904		1.		8 cm.		12hrs. 1st. stage.		Well	Well	
193	1904		2.	Caes.	7¾ cm.	Yes.			Well	Well	
194	1904		2.	Caes.	9½ cm.		6hrs 1st. stage.		Well	Well	
195	1904		2.	Craniotomy.	6 cm.		8hrs. 1st stage.		Well	Well	
196	1904		2	Caes.	Anchylosed Coccyx.		3hrs. 1st. stage.		Well	Well	
197.	1905		1.		7 c.m		26hrs 1st. stage		Well	Well	
198.	1905		1.		8 c.m.		22hrs 1st stage.		Well	Well	
199.	1905		3.	Caes.	6½ cm		12hrs 1st. stage.		Well	Well	
200	1905		3.	Craniotomy.	7½ cm.		8hrs 1st stage.		Well	Well	
201	1897	Leopold.	1.		6½ cm.			52 hours	Well	Well	
202	1897		1.		5½ cm.		8 hours.		Well	Well	
203	1897		2.	Caes.	7½ cm			36 hours	Well	Well	
204	1897		2.	Craniotomy.	6 cm		3 hours.		Died	Well	Peritonitis.
205	1897		3.	Craniotomy.	7 cm.		19 hours.		Well	Well	
206	1897		4.	Craniotomy.	7½ cm			23 hours severe labor.	Died	Well	Peritonitis.
207	1897		2.	Caes.	7½ cm.			23 hours rigid uterus.	Well	Well	
208	1897		2.	Craniotomy.	6 cm.		14hrs. 1st stage.		Well	Well	
209	1898	Gache, S. Buenos Ayres.	1.		6 cm.		7 hours.		Well	Well	
210	1899				6 cm.	Yes.			Well	Well	
211	1901		1		7 c.m.		5hrs. 1st stage.		Well	Well	
212.	1901		3.	Still	7 cm.	Yes.			Well	Well	
213.	1901		1.		7 c.m.		7 hours		Well	Well	
214.	1898	Küstner, O	1.		7½ c.m	Yes.			Well	Well	
215.	1898		6.	Craniotomy. Symphyseotomy Caesarian.	8 cm	Yes.			Well	Well	
216	1898		2	Craniotomy and Symphyseotomy	6¾ cm		3½ hours.		Died	Well	Peritonitis.

No	Date	Operator.	No of Conf.	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
217	1898	Kustner, O	3.	Craniotomy	7¾cm		Some hours.		Well	Well	
218	1899		1.		7¾cm	Yes			Well	Well	
219	1899		4	Craniotomy.	8¼c.m.		Strong pains.		Well	Well	
220	1899		8.	Craniotomy.	8¾c.m.	Yes			Well	Well	
221	1899		2.	Caes	7cm.		12 hours		Well	Well	
222	1899		4	Cran and Caes.	7½cm			long 2nd stage	Died		Infection
223	1899		12.	Craniotomy Symphyseotomy	7½cm	Yes.			Well	Well	
224	1897	Heidenhain, L	8	Caes	4cm.		Yes.		Well	Well	
225	1899		5.		Osteomalacic	Yes.			Well	Well	
226	1899		1.		8cm.	Yes.			Well	Well	
227	1901		1.		8cm.			Yes.	Well	Well	
228	1897	Bar, Paul.	3	Caes	Osteomalacic	Yes.			Well	Well	
229	1897		2	Still.		Yes.			Well	Well	
230	1899		3.	Version Induction		Yes.			Well	Well	
231	1897	Gummert	3	Still.	Osteomalacic	Yes.			Well	Well	
232	1897		5.	Still.	6½cm.	Yes.			Well	Well	
233	1898		3.	Craniotomy.	6c.m.	Yes.			Well	Well	
234	1898		4.	Craniotomy	Bony tumor.	Yes.			Well	Well	
235	1898		5.	Craniotomy.	7c.m.		12 hours.		Well	Well	
236	1899		1.		8c.m.			3 days	Well	Well	
237	1899		3	2 Still.	7cm.		end of 1st. stage.		Well	Well	
238	1900		1.		5c.m.		Yes.		Well	Well	
239	1902	Brindeau.	1		7½cm.	Yes.			Well	Well	
240	1902		1		7c.m.	Yes.			Well	Well	
241	1902		2	Caes	7½cm	Yes.			Well	Well	
242	1900	Essen-Möller, Elis	1.		5cm.		Yes.		Well	Well	
243	1902				7½cm	Yes.			Well	Well	
244	1902				8cm			9 hours 2nd. stage	Well	Well	
245	1902		3	Difficult				36 hours	Well	Well	
246	1897	Reynolds, E	4	2 Still	9cm		19 hrs 1st stage		Well	Well	
247	189		3	2 Still.	8½cm			11 hours high forceps failed	Well	Well	
248	1898		2	Premature.	8cm	Yes.			Well	Well	

No.	Date	Operator	No. of Conf.	Previous Labor.	Pelvis.	Before Labor.	Early in Labor.	Late in Labor.	Result Mother	Result Child	Remarks.
249	1898	Reynolds, E	2	Difficult.	8½ c.m.		5hrs 1st stage.		Well	Well	
250	1898		2.	Difficult.	8½ c.m.		7hrs. 1st stage.		Well	Well	
251	1898		2.	Difficult.	8 c.m.		3hrs. 1st stage		Well	Well	
252	1899		1.		7½ c.m		14½ hours.		Well	Well	
253	1899		5.	Cran. Induction. Induction Cran.	7½ c.m.		7hrs. 1st stage		Well	Well	
254	1899		2	Craniotomy.	Small.			36 hours	Well	Well	
255	1899		1.		8 c.m.		18hrs. 1st stage.		Well	Well	
256	1899		1.		8½ c.m.	Yes.			Well	Well	
257	1899		4.	Caes.	8½ c.m.	Yes.			Well	Well	
258	1900		9.	All Operative.	8½ c.m	Yes			Well	Well	
259	1900		1.		8½ c.m.	Yes.			Well	Well	
260	1900		3.	Caes.	8½ c.m.	Yes.			Well	Well	
261	1900		1.		Oblique.		7hrs 1st stage.		Well	Well.	
262	1900		1.		7½ c.m.			Some hrs. 2nd stage 19½ hrs.	Well	Well	
263	1902		2.	Version eclampsia.	Justo-minor 7½ c.m.	Yes.			Well	Well	
264	1904		4.	Difficult intra-pelvic operations.	Cicatricial vagina.	Yes.			Well	Well	
265	1904		2.	Difficult version.	Justo-minor.	Yes.			Well	Well	
266	1904		2.	Caes.	Justo-minor 8½ c.m.	Yes.			Well	Well	
267	1905		3.	Forceps still.	Excessive Curvature 8 c.m	Yes.			Well	Well	
268	1905		1.		Justo-minor 8½ c.m.	Yes.			Well	Well	
269	1906		2.	Caes.	Justo-minor 8½ c.m.	Yes.			Well	Well	
270	1906		2.	Version and Caes.	Justo-minor 7½ c.m.	Yes.			Well	Well	
271	1901	Davis, E.P.	1.				1st stage.		Well	Well.	
272	1901		2.	Forceps.	Small and malpresentation.		1st stage.		Well	Well	
273	1902		1.		7 c.m.			2nd stage.	Well	Well	
274	1902		3	Forceps and Induction.	Small		Yes.		Well	Well	
275	1902		1		Small.		Yes.		Well	Well	
276	1903		1		Small		Yes.		Well	Well	
277	1903		1		Small			2nd stage.	Well	Well	

No	Date	Operator	No of Conf	Previous Labor.	Pelvis.	Before Labor	Early in Labor.	Late in Labor.	Result Mother	Result Child.	Remarks.
275	1904	Davis. E P	1		8 cm.		Yes		Died	Well	Infection
279	1904		1		7½c.m.		Yes.		Well	Well	
280	1904		1.		8 cm		4 to 5 hours		Well	Well	
281	1905		2	Still	7½cm.		Yes.		Well	Well	
282	1905		1.		Small			2nd. stage	Well	Well	
283	1905		3.	Difficult	7½cm			2nd stage.	Well	Well	
284	1905		3	Craniotomy.	Small.		18 hours		Well	Well	
285	1905		1.		Small.			40 hours	Well	Well	
286	1905		1.		Small		Yes		Well	Well	
287	1906		4	2 Induced.	Small Oblique		1st. stage		Well	Well	
288	1906		1		Small.		1st. stage.		Well	Well	
289	1906		1.		Small		Yes.		Well	Well	

This table must not be interpreted as giving the full Caesarian lists of the operators quoted, since it excludes cases previous to the last ten years, and some cases in which the data were insufficient for quotation. It was intended that the table should cover cases of the classical Caesarian section only, but since this has been practically abandoned for late and neglected cases, it proved necessary to include the Porros there

well, they do well under the primary Cesarian section, and for them in case of doubt the section should be chosen; these women in especial should never be subjected to the combination of labor and a peritoneal operation.

It may be objected to most of what I have said in this paper that such practice is beyond the powers of the general practitioner. I would respond, "It is undoubtedly so." This is not work for inexperienced men. It must always belong to those who are really obstetrical experts, and it is for them to bring about the conditions which permit such work.

Under the conditions of practice of but a few years ago the majority of cases of really difficult labor reached the hands of obstetric experts only after the failure of prolonged labor, and in hospital practice, and in some localities in private practice, this is still the rule. With such cases we must do the best we can. They are, however, not usually fit subjects for the Cesarian section. All results show that the late section, even when followed by a hysterectomy, is so fatal an operation as to be justifiable only for the absolute indication, or in those cases in which the mother's condition is so bad that the chances for the child take precedence.

This point is conceded by experts, but has been too little appreciated elsewhere. It is our duty to drive it into the comprehension of the general profession. The mortality of the late section is high when derived from the statistics of men who habitually operate early, but occasional operators rarely publish fatal cases, and if we could obtain complete statistics of all the operations done, I am sure that we should be appalled by the mortality of the late section.

A second and even more important practical point is, that we should teach the general practitioner that the time when his duty to his patient should lead him to seek the advice of a specialist is when he first feels anxiety about a pregnancy or an impending labor, and not after the prospects of both of his patients have been compromised by exhaustion in labor. In my own home, where the Cesarian section is perhaps looked upon with more favor than in any other locality in America, such consultations are steadily increasing in frequency, and especially among the better class of practitioners, and this should become the universal rule everywhere.

I think, too, that these signs of the times already show the possibility of a great improvement in the status of obstetrical practice in the future. The obstetrician of to-day is, as a rule, in the unfortunate position of competing with the general practitioner for the care of normal labor. I am far from underestimating the value of the best attendance in even normal cases, but we must not ignore the practical fact that there are now great numbers of men who can furnish a class of attendance on normal labor, and on ordinary operative labor, which is so nearly that of the expert as to satisfy the community. Most such men feel unwilling to decline the obstetric work which comes up among the families whom they attend for other troubles, and, however conscientious they may be, this fact renders it difficult for them to ask for consultations during pregnancy with specialists who are their competitors for the care of normal labor.

Once we can teach the great mass of the profession that real success in the management of difficult cases is only to be attained by foreseeing their difficulty, and that it is possible for sufficiently experienced men to select these difficult cases during pregnancy; once we can teach them that in such cases the ordinary, reckless and careless habit of trusting to nature, *i. e.*, to blind luck in labor, and of sending for a specialist only after the mischief is done merely leads to ill health to the mother and death to the baby, — we shall find all the better class of general practitioners willing and glad to consult beforehand men who have especial knowledge, and who do not attend normal labor.

It this proves to be the future of obstetrics it cannot be doubted that obstetricians who are not at every one's beck and call for normal labor, but who find their practice in the management of really difficult cases alone will be in a far more enviable position than that occupied by most obstetric experts of to-day.

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THE ORIGIN OF RIGHT-HANDEDNESS.

BY GEORGE M. GOULD, M.D.

Deprived for a time of the use of his right hand, Carlyle was struck both by the vast importance and the mystery of right-handedness. He forthwith pronounced the question of its origin as one " not to be settled and not worth asking except as a kind of a riddle." He was more correct in saying that right-handedness is " the very oldest human institution that exists, indispensable to all human co-operation whatsoever; no human cosmos possible to be ever begun without it." Since the entry in Carlyle's diary was made hundreds have despaired or failed in the same manner to see any possible solution of the " riddle," and all the time, to an extent which Carlyle could never have dreamed, the extension of the influence of right-handedness has penetrated more profoundly and dominatingly into all the departments of practical, commercial, manufacturing and social life. There is no medical science or practice which can ignore it; the law must take constant cognizance of it; mechanics and tool-making are dominated by it; in every evolution or drill of ships or soldiers it is obeyed and kept in mind; and to railroads it dictates wrecks and millions of dollars of expense or savings. It makes or mars the calling, or failure, the success, happiness, or suffering of far more persons than is usually suspected, and scarcely one of us is unaffected in some way for good or ill by our dextral or sinistral complications, co-ordinations and inco-ordinations. There are at least two million left-handed persons in our country, and they are either excluded or handicapped in almost every occupation they may adopt.

But Carlyle's insoluble " riddle " and the perplexities of hundreds of writers is now easily cleared up. The origin of right-handedness and left-handedness is plain, and equally so the history of the puzzle of " the Rule of the Road." Barbaric custom and war are the source of right-handedness; medicine, including cerebral anatomy and physiology, is able to explain the development of general right-handedness upon which rest all the mysteries of the Rule of the Road.

Beyond question the beginnings of right-handedness, and of general right-sidedness, date historicly to primitive war and barter and the tally stick. The first differentiation of function in the use of the hands doubtless arose in telling off the left hand and arm to hold the shield which should protect the heart side of the body from the adversary's blows. This hand thus became known as the shield-hand. Except in a few very modern tasks the fact has dictated that the left hand has been generally the holding hand, chosen instinctively for the more passive or holding tasks, those requiring the less delicate or expert proficiency. Custom and language have long crystallized into an acceptance of the usage and even gone so far as to call the unlucky and misfortunate and awkward by the words *left*, *sinister*, *sinistral*, *gauche*, etc. Conversely, the right hand was chosen for the positive fighting task, and called the spear hand, and some of the most prized virtues, dexterity, dextrousness, etc., were named after the cultivated abilities of the right hand. The oldest Greek vases, and Homer, even the cave-men, demonstrate the existence of the distinctions of shield hand, spear hand, and of right-handedness generally. In Xenophon's "Anabasis" the usages had become the routine of all military drill and discipline. In Smith's " Dictionary of Greek and Roman Antiquities " under the caption " Exercitus," may be found illustrations of the distinction emphasized. For instance:

> " The facing to the right was always the usage, because if the evolution were performed in the face of an enemy, the shielded side could be presented toward him. . . . Similar maneuvers took place if the enemy appeared on the left, though, as this was the shielded side of the soldiers, and the danger was consequently less, it was frequently thought sufficient to keep the enemy in check by means of the cavalry and light troops. One point that a general had to be on his guard against was the tendency of an enemy, when advancing ἐπὶ φάλλαγγος, to sheer off towards the right, each man pressing closer to his right-hand neighbor in order to protect his unshielded side, so that the right wing frequently got beyond the left wing of the enemy."

The Roman army *exercitus* fixed the working of right-hand and left-hand orders down to the most minute details, and at West Point to-day the thousand peculiarities of military drill and custom, and command are exemplifications of the consequences of shield hand and spear hand. Xenophon is still in command of every army in the world. Within the memory of living men companies of American militia often had, at the end, tail, or left of the battalion, a left-handed soldier, placed there in order that his musket, carried in his left instead of his right hand, might not clash with the right hand and its held gun of his next, right-handed, fellow.

In the word *digit*, and in the Roman numerals, and in the five strokes or cuts of the tally stick, we have the most abundant and abiding testimony as to the origin of right-handedness and the location of the speech center, writing center, and counting center in the left half-brain. Counting, writing and speaking are single functions united into act by the volition, the seal and ratification of willing. By all savages for all time, in bargaining, the right hand has been held aloft, and one, two, three or four fingers shown and flung at the opposed bargainer. The gesture is always that of throwing the fingers or numbers at him. The whole hand is flung more energetically, when five is intended, *i. e.*, the letter V of the fork of the thumb and first digit. The scratches on the tally stick tell the same story and the diagonal thumb line, denoting *five*, run across four digits from upper left to lower right hand corner, indicates the thumb or fifth number. And so on, to *ten* or *X*, the crossed or doubled thumbs and to all other numbers. A close study of the Chinese and Japanese numerals convinces that the Roman system described, ancient as it is, is but a late offshoot of far older oriental usage, in general features the same the world over, and ages before history began.

The significance of these illustrations of primitive and persisting sign language, gesture language and counting language is that as they are executed by the right fingers and right hand, the motions of these fingers and this hand are instituted and innervated by " a center " or collection of brain cells in a certain spot (called Broca's convolution) placed in the left side of the brain. With one finger held up, or more, or the whole hand, with one or more cuts in the tally stick made, there was (and as the schoolboy's lip-motion in learning to read demonstrates) the spoken word, one, two, three, etc. Speech is almost the sole and surely the chief muscular function that is single, not double, and which must be executed from a single initiating center of power and control. It is the fusion of all bilateralism, of all bodily and mental components and diversities into the unitized resolve which the whole body, mind and future, must obey. For the right-handed man this center of nervous origin and control is not in the right half-brain, nor in both half-brains, but only in the left. There also are the nervous or ganglionic mechanisms of memory, of writing, of the expert vision, of hearing, of leg-and-foot motion, which may be or are necessarily bound up with the right-hand deeds, the laryngeal and vocal acts issuing in language, or resolve, or social determination. The two halves of the brain are remarkably independent and separated from each other, as a thousand facts of physiology, disease and injury to brain-substance show. Therefore an injury to the speech or writing centers or to the centers of motion of the right-hand fingers of a right-handed person at once paralyzes or destroys, partly or wholly, the power of speech, of writing, of memory, the significance of words, etc. A similar injury to or disease of the corresponding parts of the right brain has no effect whatever upon these functions and acts. The child is born with no discoverable differences of cerebral structure or substance of the two cerebral hemispheres, and none ever appears thereafter. But about the sixth month of life the babe, which will naturally become a right-handed one, begins to put forth the right hand instead of the left to grasp an object, and the cerebral matter about the left third frontal convolution, however unchanged or like that on the right side, is thenceforth increasingly and exclusively used to control the organs of speech, of writing and of memory. Just here comes into view the overlooked fact that the degree of right-handedness, of general dextrality and even of vocal and mnemonic function is different in different persons, and also that it is all a question of growth and progressive development. In the grunting savage or peasant the speech center, although located in the left brain, must be tremendously more simple than in a musician who knows by heart and sings and plays a thousand pieces of music, who speaks and writes a dozen languages, etc. The differentiation and complication of the cerebral mechanism whence spring all the acts begins in infancy with simple homogeneity, and grows in complexity with every year of added life. With each added year of differentiation the expertness grows, and it grows because the single cerebral mechanism has become more and more complex. Therefore with each added year the impossibility of educating the corresponding centers on the right-brain becomes greater. The ambidextery sillies must therefore begin with infants if they are to succeed in making a dextral child of one naturally sinistral. Moreover, historicly, the trend in all human beings is for them to become more and more exclusively and despotically either right-handed or left-handed, so that with each added generation the impossibility of ambidexterity will increase. Even now the attempt to reverse the law as existing in school children is both useless, expensive of life and in reality impossible. No attempt can wholly succeed; none should, and the partial successes produce cripples and awkwards, if not disease and tragedy. The most foolish, impertinent, ignorant, expensive, resultless and maiming fad is that of the ambidexterity mongers. They do not know what they want, do not know that they cannot succeed, do not know that they curse the victim of any partial success. In infancy the left-handed child may be trained to be a right-handed one, but never to be an ambidextrous one. Why should a violinist bow equally well with both hands, and finger equally well with both hands? Why should he write equally expertly with each hand?

The fatuity becomes amazing with the recognition of the fact that right-handedness is necessarily bound up with right-eyedness, with right-earedness, with right-footedness. To train the child to be ambidextrous, eyes, ears and feet, — all must be trained to equal expertness in all tasks, and this is ludicrously impossible. We are as much right-eyed as we are right-handed, as any one can prove by looking at the image of the finger or a pencil held upright a foot before the eyes. Alternate opening and closing of each eye demonstrates (with some exceptions understood by oculists) that the right eye is unconsciously the one chosen to " fix " the image.

The reason for this general choice of the arm and hand, of eye, of ear and of leg and foot for conjoined expert tasks is easily recognized. It insures a speedier and more accurate synthesis of the cerebral functions which must be co-ordinated into a single act and result. The independence of the two halves of the brain makes it necessary that the bodily organs most commonly acting together and most interdependent should be incited and controlled by the cerebral centers in close contiguity and in one side of the brain. There is a measureable slowness of nerve-current transmission (between 100 and 200 feet per second), and even if the connecting links (" commissural fibers ") between the two brain halves were much more intimate and numerous and short than they are, rapidity and accuracy of correlation and unification in willed act would be impaired; and the safety and decision of the entire organism imperiled, if one or two of the coacting centers were in opposite hemispheres. That in the right-handed all these centers of origination and control are in the left, and in the left-handed in the right half-brain, is an inevitable consequence of the location of the speech center and writing center exclusively in one or the other. Writing and speaking are closely interdependent, both in origin (gesture, sign language, counting, Roman numeral or digit-throwing), and in all subsequent history and evolution. Their centers of origin and control must therefore be in close neighborhood and intimate union. Vision which preceded and accompanies all must therefore be in the same side of the brain. This, of course, holds as to hearing and, although less differentiated, to the associated leg and foot movements.

An astonishing and interesting consequence of all this almost draws itself. It becomes plain that, in the right-handed, intellectual life and progress are by means of the mechanisms of the left cerebral hemisphere. There is no intellect as we understand it except through speech, vocal and written, and the instruments of this function exist only in the left brain of the right-handed, and in the right brain of the left-handed. Mentality of the dextral therefore lives preponderatingly in and through the left half-brain. The fact strongly emphasizes and capitally illustrates the great biologic law that all progress consists in differentiation of function. In the evolution of civilization each bit of cortical brain substance is being told off to a certain peculiar office. That large parts are still without particular and discoverable duties argues plainly for the great progress and differentiation of function in the future of humanity's advance. The areas of the more unused half-brain (the right in the right-handed, the left in the left-handed) occupied by the speech and writing centers in the more active half, show microscopically no failure or weakness of part or mechanism. If they did heredity would long since have eliminated the left-handed, and the right half-brain would become changed and atrophied except in those parts originating the muscular activity of the right side of the body. Possibly, the recurrence itself of the two or more per cent of left-handed persons prevents the atrophic tendency in the right-handed. Left-handedness is therefore probably not decreasing, and the forming organisms of the infant may become left-handed, etc., with no want of perfection in any part. The emergency finds the inherited mechanism ready for its task.

In this light and by reason of these facts one sees that materialism is absolutely disallowed. The speech and writing mechanisms of the brain do not as such exist, even functionally, in the fetus or newborn child. They are creations, slow creations, during childhood and youth. At any time they are instruments and mechanisms, expertly manufactured by something not themselves, used as a piano-key and string, and as all the keys and strings, as the piano itself, by something that plays upon them just as a pianist plays upon his instrument. That the instrument can or does make itself, that the player and piano are indistinguishable and of one substance, are the most unwarranted of pseudophilosophic assumptions. Far better than either philosophy or religion, physiology thus demonstrates the existence of the life and spirit of man, apart from the material of his body and its mechanisms.

There is much obscurity and misconception as to what really is the nature and fact of right-handedness, right-eyedness, etc. The crudest blunders, for instance, exist even in learned monographs as to right-footedness. In dressing, a dextral man begins by first putting his left foot in the left trousers-leg; he places his left foot upon the spade or shovel; he jumps from the right foot; kicks with the left; the boxer and prize-fighter places the left foot and arm forward; the rider vaults a horse from the near side, and with the left foot in the stirrup first;[1] the entered apprentice mason " steps off with the left foot first "; all soldiers, since time began, start the march by first advancing the left foot. All of these things are conclusive proofs of right-footedness, and not of left-footedness, as many claim. The right foot and leg are unconsciously chosen as the strongest, the most steady, best co-ordinated, most expert ones, with which the spring, the determining or force-giving factor, is made. It is of course nonsense that animals are right-footed or leftfooted. The differentiation could only arise with sign language and counting, and animals do not make gestures or count. No doubt that right-footedness in man is not so far advanced as right-eyedness and right-handedness; there are more exceptions, less differentiation of function, etc., but it is essentially present, and in process of evolution.

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[1] In the *Art of Horsemanship* Xenophon gives the most detailed instruction as to the method of mounting the horse, after which he says, " I think it good that the horseman should practice springing up from the off-side as well, on the chance that he may happen to be leading his horse with his left hand, and holding his spear in his right," etc.

Right-eyedness is also subject to more exceptions than right-handedness because of the peculiar liability of the right eye to be thrown out of its function as the "dominant" one, or leader, by many ocular diseases, by injuries from blows, and especially by a more disabling optical defect (astigmatism, hyperopia, etc.). The struggle of nature to preserve the dominant function of the right eye is patent in the case of nearly every patient that comes into the oculist's office. The right will preserve its acuteness even under a greater optical defect than that of its fellow; the left is the one more frequently diseased and lost, and even with lessened visual sharpness the right is often retained as the dextral one. For there is tragedy when from any cause the right-eyed man in adult life is made into a left-eyed patient. Every act and co-ordination and judgment becomes slower, more awkward, more difficult and more inexact in result, because the visual factor in every act (and even every thought) is furnished by the opposite far-away and more inexpert center. There are few greater afflictions than one I now am witness of — paralysis of the upper lid of the right eye in a right-eyed person occurring in full adult or late life. The most amazing consequence of right-eyedness is lateral curvature of the spine. Approximately about 20,000,000 of the people of the United States have lateral curvature of the spine, and of these about three fourths, or about 15,000,000, indirectly owe their disease to right-eyedness. The deforming and crippling writing position which causes the deformity of the 15,000,000, is due to the necessity of bending the body and head to the left in order that the right-eye may see the pen point. The right eye must see the intellectual thing written even though the distortion of the back and tragedy of a life result!

When a right-handed person is made into a left-handed one by a broken arm, or by the equal misfortune of a foolish parent wiser than nature, the results are almost sure to be baneful. If undertaken early enough in youth, the foolishness of trying to train the right hand by whipping, tying up the left, etc., may sometimes succeed, but at the expense of a life of trial, handicap, or even wretchedness and disease. Ill success in life is often caused by this folly. It is chiefly the writing act that arouses the sorry parent and the ambidexterity-crank to their impertinent opposition. But it is precisely the writing act which locates the speech center in the side of the brain opposite the writing hand. Writing, bound up with speech and memory, is the demonstrated origin of the localization of the speech center. Science, disease, physiology, tumors of the brain, etc., have proved that one may be left-handed in everything except writing, and that the speech center is in the left half-brain. I have a patient who, as a boy, was cruelly compelled to stop writing with his left hand, and after years of torment he was made a dextral writer. And for forty years he has never been able to think and write at the same time. He cannot write the simplest letter that requires thought, planning or judgment. He sends miles or waits hours for a stenographer, and can dictate the most technical engineering plans with clearness and rapidity. Another patient has been made mentally morbid, and a life of invalidism has resulted from the same cause. In the United States there about are two million originally or persisting left-handed persons, a portion of whom are mental and even physical cripples from the injudicious antipathy of parents or teachers to the "south-pawed." In comparatively few cases is the attempted change entirely successful. They have a sufficiently hard time to get left-handed work benches, tools, etc., and to pursue the avocations of the right-handed, without doubling their handicap by dividing the centers required in a composite act between the two dissociate brain-halves. How pitiable is the lot of the left-handed soldier! I have two thorough-going left-handed patients who by training have learned to shoot a rifle from the right shoulder, but they depress the right eye below the gunstock and awkwardly sight with the left eye! When all his sinistral functions are performed by the left-handed man by means of the cerebral centers located in the right brain hemispheres he is as efficient, quick, intellectual, etc., as the right-handed person. The Jewish left-handed slingers, it is said, could cut a hair set up as a target. Because there are a few persons with the heart on the right side of the chest it would seem to be even more the duty of the ambidexterity societies and of officious parents to remove it to the left side by surgical operation! Let the left-handed child alone! Nature is quite as wise as the ignorant intermeddlers. For ages the stranger, the unknown and unusual person has been looked upon with dislike, and has even been persecuted because he differed from the one without other excellencies than that of being like his neighbors, or like the majority of them. The dislike of left-handedness is a relic of the same vicious egotism. The left-handed person is stupidly charged with being "sinister" and unlucky, and all because ages ago to the left or shield hand was given the natural task of protecting the heart and life of its master!

And a little quiet and unprejudiced observation would have shown that it is rather a division of tasks, a happy and advisable differentiation — not subordination — of function, that is coming about in the jobs which the left hand is commissioned to do. In the sterling old tasks of shoveling, pitchforking, chopping with the ax, etc., the left hand almost divides the honors equally with the right. In locomotive-engineer driving, it is indeed the left hand that is on the throttle valve. Especially in the musician's art both hands must be equally expert and active. The fingering of the left hand of the violinist is technically as fine and dextrous a task as the bowing of the dextral hand. It is of vast significance that all tasks should be divided up and allotted to each hand, each eye and foot (perhaps to each ear?)— all except the one of intellect bound up with writing, speech and memory, which, necessarily single, must be shocked into action by a single and not a duplicated set of organs, which are placed only in one cerebral hemisphere. It is of no advantage to be able to eat with the knife or fork with each hand alternately and equally well; it is a positive disadvantage. Should every musician have two pianos, one as now constructed and another with the bass keys on the right, and should he learn to play equally well upon each piano? That is what ambidexterity means. The poor left-handed person is already almost entirely shut out from any musical calling, except that of singing, and there are many other avocations in which he is handicapped or doomed to failure. From this point of view one may wonder if the number of the left-handed will not decrease in the struggle for existence in civilization's progress of the future. There are no statistics to help us decide the question. The exclusion of such unfit ones will at least be only hastened by any interference with nature's production of left-handedness. With a very few years in childhood of nascent right-handedness or left-handedness started, the habit becomes so fixed that years of punishment, derision, strapping up the left hand and other methods of torture are utterly powerless to alter the developing and educating speech center in the right brain.

The bleatings, mooings, bellowings, roarings, etc., of vertebrate animals, together with the cries of the infant during its first months of life, are not language, or even the beginnings of language. Whether they express or are understood to express desire, pain, anger or passion, they are the voice, or suggestion of the voice, of the organism as a whole, undifferentiate, non-intellectual, — the cry of the abstract physiologic machine, wanting or pained, and as a unit; they are not inspired or guided by vision or by definite motived act. The air issues from the caverns of appetite and emotion, and in passing through the upper organs of respiration is slightly transformed into inarticulate sound. The vegetal or automatic organism is its origin and end. If innervated by the cortical centers these cries probably spring from a bilateral origin. Only when they become purposive in the slightest degree, when the other senses, and especially sight, are called in to furnish data and help for the motived and designed act, does the innervation of phonation arise in a single or one-sided center; the continuous evolution of the speech center thus becomes established and progressive. The " precise " but indefinite time at which this monolaterality begins is the " precise " but indefinite time when inarticulation becomes articulation. Articulate phonation is the intermediate of specialized and designed acts; it is the voice of intellect, choice and purpose. It is compositely formed out of the factors of sight, feeling, hearing, etc., furnished by individual, topographically placed, and neighboring cerebral centers. In a certain individual right-eyedness is doubtless the determining factor in localizing the developing speech-center in the left half-brain. The individual misfortune, possibly tragedy, comes from a compelled change of plan after the localization on one side is under way, or established. A higher error of refraction in the right eye, or the results of disease, such as keratitis, conjunctivitis, squint, etc., may bring about the misfortune. To produce left-eyedness, when obviable, by reckless operations is, in the surgeon, a scientific blunder. To will and compel right-handedness in the naturally left-handed is a crime.

Physiologically, therefore, the reason why an infant puts forth the right hand to grasp objects is because the right eye is the one which is nearest perfect visually, anatomically, or opticly. The law derived from the phylum of the entire past is that the right eye and right fore-foot, or right hand, must work together. In all animals the right eye governs the placing and action of the right front foot of the right side of the body, the guarding against dangers on the right side, etc. The left eye has the same office for the left side. Heredity has place in the creation of the more nearly perfect right eye. If the left eye of the infant is the better seeing eye it will grasp at objects with the left hand, and become left-handed. Handedness, if one may devise the word, becomes either right-handedness or left-handedness, according to the dictating condition of the better eyedness, right or left.

MEDICAL EXPERT TESTIMONY.*

BY E. W. TAYLOR, M.D., BOSTON.

The subject upon which your secretary has asked me to speak has been much discussed from various points of view. It must, however, remain of interest until some more satisfactory system of expert testimony is devised than that at present in vogue. The existing method is admittedly unsatisfactory from the medical standpoint. Each great trial which excites much public interest is a clear indication of this fact. It is sufficiently evident that the medical man is placed at a disadvantage by present methods. Is there a remedy? So far as I have been able to observe, the legal profession as a whole thinks not. From time to time a vigorous agitation takes place, articles are written, propositions are made and nothing results. Some years ago in Boston the matter was seriously taken up, both by physicians and lawyers, but beyond various expressions of opinion no positive reform was instituted. Whatever the attitude of the law may be, physicians remain dissatisfied and are busily searching for methods of procedure which will not conflict with the rights of the people, but which will place the medical profession in a more dignified position.[1]

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* Read before the Worcester District Medical Society, Sept. 11, 1907.

In the first place, what are some of the difficulties of the present situation and how far are the charges against the medical expert witness justified? In what follows I shall attempt to approach the subject from the standpoint, first, of the court, secondly, of the jury, thirdly, of the attorneys for prosecution and defence, and, finally, from that of the medical expert witnesses appearing for the plaintiff and the defendant. It is clear that each of these elements in the modern jury trial looks upon the point at issue from a different angle.

I. The presiding justice maintains an absolutely unbiased attitude toward the litigation over which he is presiding. His estimate of the witness, whether or not such witness be classed as an expert, is based solely on the honesty, clearness of statement and knowledge of his subject which the witness shows. Quick to see the wavering of a prejudiced witness and the floundering of an ignorant one, to discover his honesty or prejudice, and to recognize straightforwardness, the judge naturally represents the intelligence of the situation, not only in points of law but also in the estimation of character.

II. The jury, men untrained in the law and also in medicine, stand as the final arbiters of the veracity, knowledge and credibility of the medical expert witness as of the ordinary witness. To make this even remotely possible the witness is cautioned to speak in commonplace language and to avoid even the semblance of technicality, however difficult of accomplishment this may be. He is continually being told, with varying degrees of severity by the attorneys and by the court, that he must simplify his language, that he must state facts and elucidate theories, however subtle and surrounded by obscurity they may be, in the language of the street. Conceive the futility of explaining the phenomena of hysteria or of the neuroses or psychoses to untrained and often ignorant men without using the terms which have grown up about and form an essential part of the subject. The situation is an impossible one. What happens? The expert doesn't explain. He leaves often a wholly wrong impression. He finds himself incapable of expressing his real opinion, what with the badgering of the lawyers and the restrictions put upon him by the court. Occasions will occur to many of you in which you have left a false impression because of this limitation of your means of expression. I remember on one occasion being called to account for the use of so commonplace a word as "exacerbation." Again I recall a long and fruitless discussion between the cross-examining attorney and myself on the use of the word "neurosis," which the attorney insisted upon defining, apparently to suit his ends, in a wholly inaccurate way, to which I was unable to agree. Under ordinary conditions much of the medical expert testimony is wholly meaningless, and the verdict is determined by the saving grace of ordinary common sense.

III. The attitude of the attorneys, whether for the prosecution or the defence, in relation to the medical expert witness is quite different. The attorney's object is to win his case by the use of all legitimate methods as allowed by the presiding judge. He regards the witness as legitimate prey, whether for or against him. His aim naturally is to bring out the points which favor his contention and to minimize to the last degree the other side of the question. To this end he resorts to methods which place the expert witness wholly at a disadvantage in that he is obliged in answer to the questions asked to exaggerate one aspect of the case, however desirous he may be to express the whole truth as he sees it. From a legal standpoint this is fair and essential to the system of expert testimony as at present constituted. The cross examination is designed to overcome this tendency to apparent bias, and it is apparently the cross examination which renders expert testimony so difficult and irksome to the ordinary physician. Every effort is made by the cross-examining attorney to disclose inconsistencies and to confuse the witness. If the witness can be placed in an absurd position, he may be summarily dropped without further effort to get at his real opinions, naturally leaving a wholly false impression on the untutored minds of the jurymen and placing the witness in the humiliating position which his knowledge by no means justifies. Again the physician finds himself the victim of a system which denies him the privilege of free speech, under circumstances which may demand all his calmness and acumen. A distinguished physician once told me that he would not again testify unless he be allowed to state both sides of the question to the jury in his own language. From the standpoint of the attorneys, therefore, the witness is "used," as the legal expression is, to subserve the ends of their client regardless of the whole truth of the situation. The expert witness leaves the stand, in the great majority of cases, without having given his complete and unbiased opinion upon the question at issue. It is at best a garbled statement. This is consistent with the purpose of the attorney, whether he appears for the prosecution or for the defence. The skill and success of the trial lawyer depends in large measure upon his method of handling witnesses, and his capacity to draw from them those facts which strengthen the contention which he is defending. The physician is something of a puppet in the hands of the skilled attorney. He certainly does not stand in the independent position in relation to the issue at stake which he maintains in other professional capacities.

We are told that the distortion of statement which an attorney is usually able to draw from a witness is neutralized by the system of cross examination, and that the outcome of the statements of a medical witness is thereby sifted down to fact as would be possible by no other method. This I strongly doubt. Lawyers vary widely in their capacity to cross examine, as do physicians in their capacity to answer questions put with hostile motive. The attorney who sneers at a witness, who attempts to confuse him by tricks of expression, who makes him ridiculous, who minimizes the main issue by an insistence on irrelevant details, who abuses him without reason, is well known to all of us. Worse than all this is the direct examination conducted by an attorney who is wholly ignorant of the subject about which he is asking questions. One of the most annoying positions in which an expert witness can be placed is to find no opportunity to state his case either on direct or re-direct examination because of the helpless floundering of his attorney. For these and similar reasons I do not believe in very many instances that the mature judgment of a conscientious medical witness is finally given to the jury under our present system, and the pitiable part of the situation is that each attorney is doing his best to prevent the clear presentation of such a mature judgment.[2]

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[1] In this connection two papers by Prof. Hugo Münsterberg which have appeared in the September and October numbers of *McClure's Magazine*, are of interest, entitled, respectively, "Nothing but the Truth," and "The Third Degree."

IV. Leaving the discussion of the legal side of the matter, which possibly is somewhat out of our province, it will conduce to a clearer appreciation of the general subject to say something of the medical witness himself. First, the medical witness for the plaintiff: Few young practitioners who are working in special subjects, and particularly in the nervous system, fail of an opportunity to testify for the plaintiff in suits for damages which mainly fill our courts. The temptation is apparent. They are not overburdened with practice, they are glad of the experience of court procedure, they are promised liberal remuneration if the case is successful, while sharing with the lawyer the lack of money return in the event of an adverse verdict. Out of this general situation has arisen the pernicious practice of so-called contingent fees for medical expert testimony. The far-reaching evils of this almost universal practice are not fully appreciated. In the first place, it increases the number of suits for trifling injuries, because the lawyers know that men in good standing are easily to be found who will testify on a contingent basis. Secondly, it fosters the neuroses, and not infrequently, I believe, creates them by forcing through the ordeal of litigation many persons who would be spared were experts not so easily obtained. In the third place, the moment a physician places himself in a position where he has something to gain or lose by the outcome of a case he becomes in so far a partisan with all the consequences to his reputation which that implies. If all reputable physicians would refuse to testify for contingent fees, it would do away with much of the present unnecessary litigation and would be a distinct gain for the people as well as for the medical profession. The lawyers, many of them at least, are, for somewhat obvious reasons, in favor of the contingent fee. They urge their own risk in undertaking the prosecution of a case in which there is no financial backing, and I have even been a victim of the argument that purely from a charitable standpoint it was a duty to undertake cases on the basis of contingency. Time does not permit me to enter upon a discussion of the large question involved in this matter. It is sufficient for the present to express the firm conviction that the medical profession would be placed in a far better light and the litigants would be spared the development of many serious disorders, especially of a nervous character, if physicians for the plaintiff stood on the same basis of suitable reward for services rendered as do physicians who testify for the defence.

Leaving aside the question of fees, which after all is a subordinate matter, witnesses are too often regarded as allies of the attorneys, and at times, I fear, actually are. The medical witness, qualifying as an expert, is often young and inexperienced. He finds himself slipping from his supposed unbiased position, and magnifying or minimizing, as the case may be, the ills concerning which he is called upon to testify. He finds himself actually working with the attorney to bring about the discomfiture of his brother physicians who are appearing on the other side, thereby unconsciously adopting legal methods. He begins to be talked about among the lawyers as a plaintiff or a defendant man, and, rightly or wrongly, is looked upon by them, and also by his own profession, as a man whose opinion is preformed and whose testimony is known before it is expressed. There is no question that physicians are often misjudged in this matter, but do they not often expose themselves to this judgment? It must be clearly borne in mind that the legal and medical attitudes under the jury system are or should be different, and that as physicians we should guard against their ever becoming the same. We cannot be too careful in guarding against the subtle influences of gain, of prejudice, and of many conditions which under the present system tend to warp our judgment. It is wholly unfortunate that a medical expert should ever be regarded in the light of a plaintiff or a defendant witness. The present system, however, forces this distinction upon us. It is desirable that we do all in our power to minimize its evil effects.

The witness for the defence, which in the ordinary type of case is a corporation, is exposed to peculiar temptations. Here the very assurance of money return for services rendered carries with it a certain danger. If a man's mind is not quite settled on the significance of certain signs and symptoms, which commonly appear in the person of the plaintiff, the influence is subtle but strong to mold his attitude toward the side of the defendant. His habit of mind changes. Plaintiffs come to be regarded as for the most part grossly self-seeking, if not absolute frauds. Corporations are long-suffering and abused. A certain lack of charity develops. Lawyers for the plaintiff no longer seek his services. All this is in one sense not blameworthy. His convictions may still be honest and his opinions well founded in reason. Nevertheless, the temptation cannot be overlooked and should not be minimized.

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[2] In this connection a book by Francis L. Wellman, of the New York bar, entitled "The Art of Cross Examination," The Macmillan Company, 1904, will be found interesting, as showing the extraordinary methods resorted to by attorneys to gain their ends. The author says in one place, page 83: "The art of the cross examiner should be directed to bring out such scientific facts from the knowledge of the expert as will help his own case, and thus tend to destroy the weight of the opinion of the expert given against him"; and again, page 84, "No question should be put to an expert, which is in any way so broad as to give the expert an opportunity to expatiate upon his own views," etc. An examination of a physician, narrated on pages 94–97, is particularly illuminating, as demonstrating the impossible position in which a conscientious physican may be placed before a jury, through an unscrupulous method of cross examination. In this instance the attorney asked his questions in rhyme to the amusement of the jury and the discomfiture of the physician.

The natural result of the entire situation is that doctors are arrayed over against each other, as are lawyers. Partisanship almost involuntarily develops. The doctor assumes the legal attitude. He takes sides. He confers in the court room with his attorney to frame questions to confound his fellow practitioner on the witness stand, and the pitiable spectacle of medical expert testimony, which any great trial presents, is spread before us. The medical profession as represented by its experts becomes a laughing-stock. The jury disregards its statements. The press ridicules the so-called experts whose disagreements are emphasized to the last degree. Much time and money are spent in bringing out testimony so contradictory that the Court often actually instructs the jury to ignore it, and the whole farce of the present system is ingloriously exposed. We have recently seen an exhibition of this sort in a widely advertised New York trial which excited international comment and once again aroused the medical profession to the possibility of reform. The added misfortune is that precisely the same condition of affairs prevails in varying degree, depending upon the importance of the case and the emotions excited thereby, in all trials where medical witnesses appear on the two sides of the controversy. There is the same quibbling, the same tendency to cloak the main issue, in the small and apparently insignificant trial as in that to which the papers devote their most prominent space. The principle must remain the same while the present system exists.

Radical reform is at present unlikely. What can in the meantime be done quietly and unobtrusively by the medical profession? Each individual who testifies as an expert in court may at least further the cause of reform by the following means: refuse to be forced into even the appearance of partisanship. To this end refuse to testify on the contingent basis; decline to prompt lawyers in the court room; maintain an inflexible determination to state the whole truth as you see it, remembering that the emphasis on a single word or the tone of voice or manner may easily and very definitely indicate bias. Do not allow the natural disadvantage of your position as an answerer of questions to influence your temper or your judgment, and, above all else, do not permit yourself to fall into the common error of testifying regarding matters of which you are ignorant.

In regard to this latter matter, it is evident that the points about which the greatest confusion exists in the court room are just those points about which the greatest confusion exists in the best minds of the profession. No definite final word has yet been said regarding the great problem underlying hysteria, the various insanities and the springs of conduct in general, and yet it is about these very facts that a medical witness is expected to state a dogmatic opinion, and too often is forced into doing so when his knowledge is as vague as the subject is vast. How many men, for example, who go on the witness stand and qualify as experts, are in the least capable of giving a succinct and clear statement of any theory of hysteria, an affection which plays so significant a rôle in many cases of litigation resulting from accident? How many men understand the significance of somnambulism, the manifold alterations of personality, on the subtle interaction between mind and body which occur in this protean neurosis? What justification have men whose lives have been devoted, let us say, to surgery, or departments of medicine remote from the nervous system, to express an opinion to the jury which in the eyes of the Court has equal weight with that of a person who has devoted his life to a study of these subtle questions? The whole matter is naturally involved in difficulties. Our knowledge at best is imperfect and often incapable of dogmatic statement, but the general plan of action is easily evolved from the chaos, and that is that no physician should testify as an expert in a matter before the Court on a subject in which he himself is not conscious of expert knowledge. The jury, the judge and the lawyers cannot be conscious of his qualifications as he is himself. For the furtherance of the best in expert testimony we must increasingly demand of ourselves that we will testify as experts only in those matters in which we have special knowledge.[3] A physician is or should be no longer called upon to give an expert surgical opinion in a court of law, nor should a surgeon regard himself as competent to give an opinion on some subtle matter relating, for example, to the nervous system under the cloak of a somewhat universal ignorance of the subject. We are not now speaking of that minority in the profession whose ignorance is notorious and whose continual appearance in court can be explained on no other basis than that of the desire for gain. This class of physicians, harmful as it is, is a somewhat negligible quantity. We refer rather to conscientious and in general well informed physicians who are disinclined to make sharp distinctions between ordinary and expert knowledge. We cannot expect the courts or the legal profession to help us materially in this matter. It, therefore, becomes necessary that we should with increasing care scrutinize our own motives and diligently refuse to expose ourselves to the possibility of misinterpretation. To this end we must, as I have suggested above, testify only in those cases in which we are assured that our knowledge is such that we may legitimately qualify as experts.

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[3] The following position, for example, quoted in the *British Medical Journal* for Aug. 31, 1907, would be difficult to maintain under a rigid cross examination: "Dr. R. T. Williams gave evidence lately at Marylebone Police Court in a case in which a woman charged with being drunk and incapable denied the insinuation. Dr. Williams said that he found her in a 'mellow, comfortable state of drunkenness, recovering from irritation,' and in reply to an inquiry from the magistrate said that he distinguished practically seven stages of drunkenness: Irritable, mellow, pugnacious, affectionate, lachrymose, followed, if the total doses were large enough, by collapse and death. Mr. Plowden seemed much pleased with the classification, and said that it was a most instructive lesson of which his court stood much in need."

Necessary as it is to do our utmost to elevate the character of expert testimony under the present conditions, efforts should not be spared to bring about a fairer relation between physicians and the courts in the future. Individual instances are multiplying in which to the satisfaction of all concerned commissions of experts have been appointed whose duty it is to report immediately to the Court. Many cases of the highest moment have been adjudicated on this basis during the past few years, and there is no question that many others will follow. By such an arrangement the physician appears at his best. He is selected after due deliberation by responsible and unprejudiced persons. He is allowed ample time for examinations, for mature deliberation on the results of his findings and for the preparation of his report. He is freed from the petty annoyances of an appearance in court, and from the possible disastrous expression of an opinion which he would not have made under other circumstances. The ideal toward which the medical profession must strive in this matter of medical expert testimony is that of an appointment by a central authority, of physicians to sit in judgment upon the medical aspects of the case presented. No doubt such a system, if universally adopted, would have certain objections and would possibly run counter to the general method of court procedure, as exemplified in trial by jury. The fact, however, remains that the present system is unsatisfactory as well to the legal as to the medical profession, and that the medical profession is placed in an invidious light thereby which it should strive by all legitimate means in its power to obviate and overcome.

Clinical Department.

TUBERCULOUS ULCER OF THE ILEUM. PERFORATION. GENERAL PERITONITIS. OPERATION. DEATH.

BY THOMAS F. LEEN, M.D., BOSTON,
Physician to the Carney Hospital,
AND
JOHN T. BOTTOMLEY, M.D., BOSTON,
Surgeon to the Carney Hospital.

A GENERAL peritonitis, resulting from the perforation of a tuberculous ulcer of the intestine, is sufficiently uncommon to warrant the publication of the following case. In proportion to the frequency of tuberculous intestinal ulcer, its perforation into the free peritoneal cavity may even be called rare rather than uncommon. The pathology of the affection would lead us to expect this. For the ulceration usually extends in a direction transverse to the long axis of the bowel. As far as the serous covering of the intestine is concerned the seat of the ulcer is commonly indicated by a local redness, a thickening and by the presence of small nodules; in other words, by a localized tuberculous inflammation of the peritoneum which favors the formation of adhesions between the affected locality and contiguous loops of intestine or between it and neighboring structures. It can readily be seen how this adhesion-formation, this agglutinating process, usually prevents the perforation of the ulcer into the free peritoneal cavity and favors the formation of a localized abscess, should perforation occur. Perforation of the lower rectum by a tuberculous ulcer is not uncommon, but with that fact we are not particularly concerned here.

The patient, an unmarried male of thirty-five, was seen by Dr. Leen in his private practice on the morning of May 18, 1907. For the past seven or eight years he has complained of a chronic cough with thick, yellow expectoration. In December, 1905, began a severe illness of three months' duration. The chief symptoms were dyspnea, ascites, edema of the legs, rapid emaciation and diarrhea with tenesmus. Recovery was slow and the illness was followed for some months by constipation which was rather intractable. Late in the spring of 1906, he had an attack of severe abdominal pain with vomiting but without symptoms of obstruction; he was confined to his bed for three days. Since then he has had five such attacks. For the past two years "bleeding piles" have been a source of great discomfort to him. Though his appetite has been poor, his weight has shown a gradual increase, his condition a constant betterment, and for the two weeks just previous to his final illness he considered himself perfectly well; his bowels were moving twice daily.

At 11 P.M., May 17, 1907, just as he arrived home from an all-day trip to Connecticut, he was seized with a dull abdominal pain, which made itself felt at first to the left of the umbilicus; it gradually worked over into the right lower quadrant, shooting down into the right testicle, but finally became pretty well localized in the left lower quadrant; it soon became severe and later agonizing; the patient felt feverish and was sleepless.

On the morning of the 18th Dr. Leen was called. The prone position of the patient, the flexed lower extremities and the anxious face plainly indicated suffering. The pulse, of small volume but fair tension, was 120; the temperature, 101.4° and the respiration, 18. The sclera of each eye was slightly icteric; the tongue was moist and coated and the heart, slightly enlarged to the left, showed a systolic murmur, mitral in origin. Examination of the lungs disclosed nothing abnormal. The moderately distended abdomen was very tender over a rather indefinite area of dullness in the left lower quadrant; the very lightest percussion there caused pain. Muscular spasm, though present over the whole anterior abdominal wall, was most marked over the tender area. The area of the liver dullness was slightly decreased; the spleen was not enlarged. By rectum there could be felt close to the left obturator foramen a tender, fixed, boggy mass of the size and shape of a Tangerine orange, halved in its long diameter. The urine had a specific gravity of 1,020, showed a slight trace of albumin and in the sediment were a few hyaline and granular casts. The patient's bowels had moved on the morning of the 17th but not since. Cathartics and enemata were used without avail. Surgical consultation was refused by the patient. By afternoon the distention had increased and the pulse had grown weaker; nausea was constant but there was no vomiting. Dr. Sawin saw the patient in consultation with Dr. Leen. A provisional diagnosis of intestinal obstruction due to obturator hernia was made and immediate operation advised. The patient refused consent.

During the night of the 18th the patient's condition grew steadily worse; vomiting began; the pulse increased in rate and lost in strength. On the morning of the 19th the mass, previously felt by rectum, had disappeared and the whole pelvis seemed to be full of loaded intestines. With the hope that the obstruction had relieved itself cathartics were again tried but without avail. The patient failed rapidly, but it was not until 7 P.M. that he would consent to be removed to the Carney Hospital for operation.

He was then almost moribund. His temperature was 97°, his pulse 140 and his respirations were rapid and shallow. His face, covered with perspiration, showed the pinched, anxious expression of toxemia. His chest was negative. His abdomen showed general, symmetrical distention, general rigidity and tenderness; the latter was still most marked in the left lower quadrant where a mass could be indefinitely palpated. The whole lower abdomen was dull to percussion. Rectal examination was negative.

At the operation, done by Dr. Bottomley, a general peritonitis was found, due to a perforation of the ileum. The distance of the perforation from the ileo-cecal valve was not determined. It was about one fourth of an inch in diameter and was at the center of an indurated section of gut about three inches in length. The perforation was sutured into the partially closed operative wound in the abdominal wall. The pelvis was drained by tubes and wicks through two separate incisions. The patient was placed in the sitting position in bed and salt solution introduced into the rectum by the "seeping" method of Murphy. Death followed in about four hours.

After death the indurated section of gut was removed and sent to the Pathological Department of the Harvard Medical School. The pathological diagnosis was "Perforated tuberculous ulcer of the ileum."

Reports of Societies.

EIGHTH ANNUAL MEETING OF THE AMERICAN THERAPEUTIC SOCIETY.

Held at Washington, D. C., May 4, 6 and 7, 1907.

The address of welcome was delivered by Hon. Henry B. F. McFarland, president of the Board of Commissioners for the District of Columbia. Dr. Reynold Webb Wilcox, New York, responded for the visiting members.

Address by the president, Dr. Robert Reyburn, Washington, D. C.

FIFTY YEARS IN THE PRACTICE OF MEDICINE.

After speaking of his early medical career, Dr. Reyburn describes the methods of treatment used in the period following the year of his graduation, 1856. Vaccination was performed by pulverizing vaccine crusts and inserting the moistened powder into the arm. The antiphlogistic method of treating inflammation was still in vogue, bleeding, blistering, purging. While no one would wish to revive bleeding after the old methods, yet he had seen cases in which prompt venesection had saved life. In eclampsia, threatened apoplexy and even acute pneumonia, he had seen prompt relief afforded in this way. The antiphlogistic method was followed by a reaction, and in 1860 and 1862, stimulants were given in inflammatory conditions. In 1862 Dr. Reyburn entered the Union Army, and from this point the paper deals largely with surgery. After describing surgical methods in vogue prior to the war, and contrasting them with those of the present day, he interestingly describes his army experiences. He contrasts the high mortality from gunshot wounds in the Civil War with the low mortality in the Spanish-American war. In the latter the universal use of first aid by antiseptic dressings did more than anything else to lessen the mortality. Also, the rifles used were more humane in that they carried a small bullet of high velocity, which penetrated the tissues more readily and caused less shattering than did those of the Civil War. The paper then deals with personal recollections of President Lincoln and of the scenes following his assassination. The address closes with an interesting account of the assassination, illness and death of President Garfield, Dr. Reyburn having been one of the physicians in attendance.

PURE DRUGS.

Dr. Harvey W. Wiley, Washington: After referring to the different classes of therapeutic agents, Dr. Wiley discusses the attempts that have been made to control the purity of drugs used as medicines. Such attempts have been made for many years. The United States Pharmacopeia, National Formulary and United States Dispensatory are efforts along this line. As early as 1848 a federal law was enacted governing the importation of adulterated and spurious medicines. Prior to this there had been established at the port of New York an examiner of drugs. His testimony before the Congressional Committee shows that the character of the drugs imported a half-century ago was far from satisfactory. At least one half of those which entered New York was adulterated or had deteriorated in value. Under the inspection of drugs their character has materially improved. Dr. Wiley was unable to say how far the new Food and Drugs Act will be applied to the inspection of drugs. The question is now before the Attorney-General for decision. If he adopts the common principle of construction, inspection by the Treasury Department will continue as before, with an additional inspection as required by the Act of June 30, 1906. It is probable that at least 20% of the drug trade will be affected by the provisions of the new law. This leaves about forty thousand articles of drugs to which the law does not apply except as to misbranding. He considers the subject of misbranding, the evils which attend the promiscuous sale of preparations of uncertain, unknown, or even questionable composition, and the beneficial effects which have followed proper and correct branding. Individuals who have not the most elementary knowledge of pharmacy or medicine are permitted, under the state and national law, to concoct almost any agent and sell it directly to the consumer. This is in marked contrast with the qualifications necessary for the practice of medicine and pharmacy. He suggests the following as the most effective method of control in this regard: that no one should be allowed to advertise or offer for sale to the public in any community any remedy of any kind who has not passed an examination before a medical examining board and received a license to dispense medicines and prescribe for patients in the locality mentioned. Thus, the patent medicine trade would be much restricted. After discussing the subject of standardization, the paper closes with an appeal to physicians to write original prescriptions rather than order the ready-made medicinal preparations.

DISCUSSION.

Dr. Reynold Webb Wilcox, New York, spoke of the standards set forth in the Pharmacopeia. Seven years ago he was appointed a member of the revision committee. The aim of the committee had always been to maintain the necessary efficiency and purity of drugs without making the standards so high that manufacturers could not come up to them. They were established after careful study and conferences with manufacturers. After the enactment of the new Pure Food and Drugs Act there came in a flood of protests from manufacturers, who claimed that they could not come up to certain of the standards. This necessitated a reconsideration of the subject, which resulted in revision of the standard in over four hundred instances. Never had the committee failed to lower the standard when it was conclusively shown that it was unreasonably high. He commended Dr. Wiley's work. The new law was a godsend to the physician, the pharmacist and the public.

Dr. E. H. Long, Buffalo, said that the profession could well rejoice that it had the aid of the government in the matter of drug control. He commended the suggestion by Dr. Wiley relating to a license requirement for those who wish to sell medicinal preparations. He commented upon the prevailing neglect of medical schools to furnish adequate instruction in the art of prescribing and the use of reliable and well-known remedies. Much could be done along this line to hasten the era of pure drugs.

Dr. Oliver T. Osborne, New Haven, said that now is the time to let the label tell. He related a recent experience at Hartford in an effort to get poison labels on bottles. There was much opposition from pharmacists and others, and finally two strenuous bills were brought before the legislature. Much to his satisfaction, however, the business men agreed at the preliminary hearing that they preferred the provisions of the new Food and Drugs Act. What can be done as to false and misleading advertisements? The Post-office Department must attend to this, as such advertisements are fraudulent and hence should be denied the use of the mails. He expressed regret that young physicians in the hospitals are prone to prescribe compounds which are kept upon the shelves ready-mixed for the sake of convenience. Thus they soon lose the ability to write their own prescriptions. After they leave the hospital they come into contact with the traveling salesman and his proprietary medicines. He made a plea for the writing of original and simple prescriptions.

Dr. F. E. Stewart, East Orange, commended Dr. Wiley's work. The medical profession and the public could not be too grateful for governmental aid. He commended Dr. Wiley's suggestion as to license requirement. Dr. Gould had said that any one can practice medicine without a license except a physician or a pharmacist.

Dr. L. F. Kebler, Washington, related interesting instances in which articles which were misbranded or falsely advertised were brought to the attention of the post-office authorities with the object of having them excluded from the mails. In many instances failure was due to the difference of opinion among the medical witnesses as to the efficacy of the "cure" under consideration. He testified as to the dense ignorance of many of the promoters of these "cures" and cited instances in illustration.

Dr. Wiley, in closing, said that the Post-office Department had accomplished all that it could under the law. He had always received from it sympathy and help in his work.

SOME CRITICISMS OF THE UNITED STATES PHARMACOPEIA.

Dr. Reynold Webb Wilcox, New York: Dr. Wilcox answers some of the criticisms that have appeared since the last revision became official in 1905:

1. "Many agents have been retained that are not in general use, while others much used have been omitted." As a matter of fact the changes were made only after the committee had consulted manufacturers, wholesale and retail druggists, and the members of the medical profession throughout the land. Every suggestion, no matter how humble its origin, was considered.

2. "More frequent revisions of the pharmacopeia are necessary." A greater frequency would not be possible, because time is needed for definite knowledge of medicinal substances. Active work for nearly five years was required for the present revision and this represents about the shortest time in which the work can be done.

3. "The time has come when the American Medical Association should take a hand in this work." Dr. Wilcox answers this criticism at some length, calling attention to the make-up of the revison committee. The medical profession is represented by 12 out of 26 members. The unfortunate showing which the Council on Pharmacy and Chemistry has made also demonstrates the utter unfitness of the American Medical Association to undertake the far more serious work of revision of the Pharmacopeia.

DISCUSSION.

Dr. L. F. Kebler, Washington, agreed with Dr. Wilcox as to the status of the United States Pharmacopeia. He knew of none equal to our own. It unquestionably has faults, but they will be remedied as fast as practicable. He could not see the justice of the criticisms mentioned in the paper. He expressed regret that Dr. Wilcox had so severely criticised the Council. It had already accomplished something, and for this it deserved credit. It could reach some things that the federal law could not. Already it had exposed a number of frauds; the members were working harmoniously together for a good end.

Dr. F. E. Stewart, East Orange, also expressed regret that Dr. Wilcox had criticised the Council so severely. It was doing a good work and was attempting to solve some of the most difficult problems in existence.

Dr. S. L. Dawes, Albany, referred to the nomenclature used in the Pharmacopeia. The names of remedies are in many instances too long and complex. They could be simplified to good advantage. Students who are taught long and complex names for drugs soon discard them after graduation for simpler terms. After graduation young physicians are apt to lapse from the high standards set for them in the medical schools. He thought this a valid criticism of the Pharmacopeia. Simplify the nomenclature.

Dr. E. H. Long, Buffalo, said that we should not take the position of condemning the Council. We should remember the short time that it has been in existence. Though young, it has already done some good. The Pharmacopeia, on the other hand, has been in existence since 1820. It can stand severe criticism. The more one comes into contact with the members of the revision committee, the more he sympathizes with them in their work. He was in favor of a simpler nomenclature.

Dr. Oliver T. Osborne, New Haven, said he hardly found his prescription blanks long enough for some of the terms he had to use. He suggested that accent marks be used in the next Pharmacopeia in order to secure uniformity in pronunciation. He commended the work of the Council.

Dr. Wilcox, in closing, said that perhaps his criticism of the Council had been rather too severe. Destructive criticism is not always advisable; constructive criticism is often productive of good. His was intended to be of the latter type. He fully appreciated the magnitude of the task before the Council. It had simply undertaken to do more than it could. He favored a simpler nomenclature, and agreed that the matter of pronunciation should receive attention in the next Pharmacopeia.

LEGAL CONTROL NECESSARY IN THE TREATMENT OF DRUG HABITS.

Dr. Frederick H. Gerrish, Portland, Me.: After speaking of the wide prevalence of drug habits, Dr. Gerrish emphasizes the futility of depending upon the victim's will power. Physical restraint is necessary in almost every case. And yet if the physician interferes with the freedom of action of the victim, even with his consent, he makes himself liable to a subsequent suit for false imprisonment. The only way to reconcile the conflicting interests of physician and patient is by the enactment of a law by which the victim can relinquish his freedom long enough to ensure a cure. Such a law was enacted in Maine in 1905. Dr. Gerrish had heard no complaints that its workings were other than salutary. The paper closes with a statement of the law.

(To be continued.)

Book Reviews.

Morris's Human Anatomy. A Complete Systematic Treatise by English and American Authors. Edited by Henry Morris, A.M. and M.B. Lond., F.R.C.S. Eng., President of the Royal College of Surgeons of England, and J. Playfair McMurrich, A.M., Ph.D., Professor of Anatomy, University of Michigan. In five parts. Fourth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Among the composite works on anatomy the comprehensive treatise by Morris which goes under the name of "Morris's Anatomy" takes a prominent place. So successful has this book been, not only abroad, but in this country, that this latest, fourth edition, has been in part revised and rewritten by American anatomists. This has necessitated a very complete revision, and many of the articles, notably those on the muscles, central nervous system, sense organs and the skin, have been wholly rewritten. The complete list of contributors to this edition is as follows: Henry Morris, F.R.C.S., London; R. J. Terry, Washington University, St. Louis; Peter Thompson, King's College, London; Irving Hardesty, University of California; G. Carl Huber, University of Michigan; J. Playfair McMurrich, University of Michigan; Abram T. Kerr, Cornell University; Charles R. Bardeen, University of Wisconsin; Florence R. Sabin, Johns Hopkins University; R. Marcus Gunn, F.R.C.S., London; and W.H. A. Jacobson, F.R.C.S., Guy's Hospital, London.

The illustrations have been changed. Some have been excluded or dropped from this edition and others added. The book at present contains 1,025 illustrations, 319 of which are printed in colors. A notable feature of the book is the adoption of the Basle nomenclature in its entirety. This is the first anatomical textbook in English which has gone so far as this in reformed terminology, and it will no doubt do its part toward making universal a nomenclature which probably the best interests of the anatomical sciences demand. A notable feature of this fourth edition is that it may now be had in five parts, books naturally of varying size but all convenient to handle. These parts are arranged as follows: Part I, morphogeny, osteology, articulations; Part II, muscles, circulation and lymphatics; Part III, nervous system and organs of sense; Part IV, digestion, respirative and reproductive organs, ductless glands, and skin; Part V, surgical and topographical considerations. The advisability of dividing into volumes what is otherwise a ponderous book is not to be questioned. It furthermore makes possible the purchase of a single part by students of special subjects. The book may, however, still be had by those who prefer, in its original one volume form. The arrangement, printing and general form leave nothing to be desired from the point of view of the bookmaker's art. We can most cordially, as we have its predecessors, commend this new edition to the attention of anatomists, particularly surgeons, and others interested in the anatomical sciences.

The Climatic Treatment of Children. By Frederick L. Wachenheim, M.D., Chief of Clinic, Children's Department, Mount Sinai Hospital Dispensary, New York. Pp. 400. New York: Rebman Company. 1907.

This work certainly goes a long way to fill the vacant place in medical literature for which the author states it is intended, that is, the climatotherapy of early life. He first takes up the general principles of climatology and then that of temperate North America. He describes the various health resorts, both here and abroad, in more or less detail, not only as to their climate but also as to their sanitary and sociologic conditions. Much attention is given to the climatic management of the normal child. We especially recommend a perusal of his remarks on "hardening" to those vain and foolish mothers and more foolish physicians who advise bare necks and uncovered extremities during our northern winters. The book closes with chapters on the climatic treatment of constitutional and visceral diseases, scrofulosis and tuberculosis, and also contains a number of valuable charts. It is well worthy of careful reading, and cannot fail to be of assistance to every practitioner.

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THE DEVELOPMENT OF THE WORK OF THE MASSACHUSETTS STATE BOARD OF HEALTH.

At the second quarterly meeting of the Worcester North District Medical Society, held in Fitchburg, Oct. 22, 1907, Dr. William C. Hanson, assistant to the secretary of the Massachusetts State Board of Health, presented a paper on Some Phases in the History, Development and Present Work of the Massachusetts State Board of Health. In this paper mention was first made of a remarkable document written by Lemuel Shattuck, and presented to the Massachusetts Legislature of 1850, with special reference to the following suggestions and recommendations contained therein:

(1) That "one of the most valuable reforms which could be introduced into the present constitution of society would be that the advice of the physician should be sought for and *paid for* while in health to keep the patient well."

(2) That "a general central board of health be established."

(3) That there be "far more efficient local boards of health."

(4) That there be "some intermediary between the central board of health and the local boards."

(5) And, finally, that the "cause of consumption and the circumstances under which it occurs be made the subject of particular observation and investigation," on the ground that "if consumption is ever to be eradicated or ameliorated, it can only be done by preventive means and not by cure."

Attention was called to the fact that the first meeting of the State Board of Health of Massachusetts, the first state board of health in this country, was held at the State House on Sept. 15, 1869.

A portion of the first communication of the State Board of Health to the boards of health of the various cities and towns of the Commonwealth was read, and many subjects of inquiry on the part of the board during the first two years of its existence were commented on, especially those relating to the cause of typhoid fever, and to the health of minors in factories. It was pointed out that in spite of the report of the State Board of Health of 1871, of the advisability of considering further the health of minors employed in factories, and notwithstanding the facts gathered and published in that notable report of 1850, relative to the causes of consumption and the inference drawn that "if the mortality produced by this disease is ever to be lessened, it is to be effected by preventive means," it remained for the Legislature of 1907 to pass an act providing for a better care of minors working in manufacturing establishments, and for the prevention of the spread of tuberculosis.

It was further pointed out that the recommendation of Lemuel Shattuck for the appointment of some intermediary between the State Board of Health and the local boards was provided by this same Legislature of 1907, by requiring the establishment of health districts and the appointment of state inspectors of health.

Brief mention was made of the first law relating to the sale of food and drugs, in 1882; of the enactment of the patent medicine law of 1906, emphasizing the section relative to the sale of proprietary preparations containing cocaine, and of the efficient enforcement of these laws by the State Board of Health. Attention was called to a communication recently issued by Governor Guild, that "the State Board of Health, with the full approval of the Governor, is now visiting chief dairies of neighboring states, and examining the premises; that the lack of uniform legislation between the states on this subject is laying an unfair burden on the State Board of Health of Massachusetts, which is compelled to act as a board of health, as far as herds from which milk sold in Massachusetts is concerned, not merely for this Commonwealth, but for several other states in addition."

The act relative to the general oversight and care of the purity of inland waters by the State Board of Health was referred to, as well as the work of the board, as to advising the authorities of cities and towns, corporations, firms and individuals, regarding existing or proposed systems of water supply and sewage.

Emphasis was laid upon the fact that Massachusetts was the first state in the Union to provide for the distribution of diphtheria antitoxin to anybody who needed it, whether rich or poor, and a statement was made to show that through the widespread distribution of antitoxin by the State Board of Health, the mean fatality during the antitoxin period, 1895–1905, was 12.4% ratio of deaths to cases, or less than half as much as during the three years preceding 1895 in the pre-antitoxin period, which was 28.3%.

It is interesting to observe that after the lapse of upwards of half a century the same questions have again arisen for the consideration of the State Board of Health as those which Lemuel Shattuck clearly brought to attention in 1850. It is, perhaps, less a subject for congratulation that definite legislative action has been postponed to so late a date. Lemuel Shattuck's attainments have not been regarded at their just worth, and we therefore, at this time, are glad to call attention to his pioneer work in matters of importance to the public health and welfare.

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INTERCHANGE OF MEDICAL TEACHERS.

THE facilities of travel have so greatly increased during the past few years and medical men are coming to know so much more of the work of others in their own and other countries, that a definite interchange of teachers in our medical schools might easily be arranged. As is generally known, such an interchange has for some years been in practice between certain American, German and French universities in other departments than medicine with results which certainly justify a continuance of the practice and its further development. There is no sufficient reason why a similar interchange of teachers should not take place between medical schools of this and foreign countries. In fact, a beginning has already been made through such a course of lectures as that given by Prof. Pierre Janet, of Paris, a year ago at the Harvard Medical School, on Hysteria.

Many men in the medical profession are devoting much of their time to teaching and to investigation to the exclusion of practice. Others are apparently finding more and more time to give to the less practical affairs of their work, so that there certainly would be no difficulty in arranging for courses of lectures by men eminent in the medical sciences to be given at other than their own universities. The advantages of such an interchange are manifest. It has always happened, and will continue to do so in the future, that certain medical schools are for a longer or shorter period pre-eminent in one or several branches of medicine, depending upon the men who at any given time are actively engaged in special investigations. It is altogether fitting that the results of such investigations should be presented to as large and varied audiences as possible. It is, furthermore, not to be questioned that many of these men would be glad to make the small personal sacrifice required in traveling to another city and there delivering a course of lectures to its medical students and others who might be interested.

If such a plan were inaugurated, the lectures given should be primarily addressed to students of medicine, rather than to those already in practice. There is no more appreciative audience than a body of intelligent young men who have their ways in the world still to make, whose minds are receptive and who are eager for knowledge. Lectures, therefore, given at the medical schools by the best and most productive men of other cities could not fail to elicit enthusiasm from the student body and be of wide profit in the dissemination of recently acquired knowledge. Nor is there any reason why such a system might not be extended to English and continental universities and courses of lectures on medical subjects arranged on the same general basis as those already existing in the academic departments of several of our colleges.

Perhaps the greatest difficulty in arranging such courses for students is that of finding available time in the already overcrowded curriculum. It might necessitate giving up certain lectures or exercises already prescribed, but the ultimate benefit would, in our opinion, far counterbalance the slight disadvantage arising from a temporary interruption of a set course of instruction. In the rapidly advancing art of surgery, for example, there is ample opportunity for such an interchange of teachers as we have suggested. It would be well if the special surgery of the nervous system could be presented by a man whose time is largely given to that difficult branch. It is not to be doubted that a course of lectures from Sir Victor Horsley would do much toward exciting an interest in this subject, which is too likely to wane in schools where neurological surgery has not yet been adequately recognized.

The same is, of course, true of almost any subject in the range of the medical sciences.

It is not to be questioned that America has much reason to feel a just pride in the development of the teaching of medicine. The opportunity is certainly offered of becoming a pioneer in this further extension of its scope. Constituted as our American universities are, it is impossible for students, until the completion of their course, to learn of the methods of other schools and teachers, unless a plan of interchange is arranged. Naturally, this situation does not arise in the German universities, in which the student goes from university to university, and thereby has an exceptional opportunity of sitting under many great teachers. We look forward with confidence to a systematic plan of interchange, beginning possibly in a small way, but developing into a recognized and definite part of the medical curriculum.

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AN ABUSE UNDER THE PURE FOOD LAW.

The secretary of the Massachusetts State Board of Health, in an address at the Harvard Medical School, Feb. 3, 1907, made the statement that "much power for good or for evil has been placed in the hands of the national pure food commission," and that "large powers have been delegated to practically one man in the nature of fixing standards and making regulations."

Leaving aside the many incongruous conditions and possibilities which might be cited as arising from the passage of the national pure food law, there is one regulation which is so abused that the harm to which it gives rise is destined easily to offset the good ensuing therefrom. One of the sections of the act provides for a guaranty, which is, in effect, an agreement by the manufacturer, packer, wholesaler or jobber, that he will hold himself responsible for the goods furnished by him to dealers. When a guaranty is filed with the Secretary of Agriculture, the package containing the goods bears the statement, "Guaranteed under the Food and Drugs Act, June 30, 1906. Serial No. ——."

In the Food Fair, now being held in Boston, is a booth arranged for the purpose of advertising a preparation known as "Celero," or "a headache lozenge." While the envelopes used for the distribution of the lozenges bear a statement that each lozenge contains two grains of acetanilid, the assertion is also made that the lozenge is a safe and convenient remedy for all forms of headache and neuralgia. Following this statement are the words, "Guaranteed under the Pure Food and Drugs Act, June 30, 1906," which are followed immediately, in a much larger sized and far more conspicuous type, by the words, "EAT IT LIKE CANDY — NO WATER NEEDED." Many of the lozenges are kept in bulk, on the counter, in a large, uncovered glass dish, such as is used by confectioners for candies, and in several instances, in the course of a few moments' observation, a small handful of the tablets was taken by the person in charge of the booth, and given to persons coming to the booth, with such remarks as the following: "The only harmless preparation on the market; nothing injurious about it whatever; will positively cure your headache." In one instance the saleswoman was observed to put a lozenge in the mouth of a young person, as if it were candy. In another instance a young girl came to the booth, saying, "Girlie, my little girl has got a headache; give me some of them." A small handful was put into an envelope and given to this girl. At another time a boy, who appeared to be about sixteen years of age, was in charge of the booth, giving away the lozenges in the same free and indiscriminate manner.

Large sized advertisements are posted on the booth, emphasizing the fact that these lozenges may be "eaten like candy." In a circular, which is sent out with the lozenges, directions are given to "Eat the lozenge like candy, at any time, before and after meals, in any place or under any conditions." The phrase, "Eaten like candy," is repeated in a conspicuous and heavy type.

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MEDICAL NOTES.

PLAGUE. — Up to Oct. 26, seventy-six verified cases of bubonic plague have occurred in San Francisco, with forty-eight deaths. Several suspicious cases have also appeared in Seattle, and one unquestioned case. The Marine-Hospital Service is taking charge of the situation, as in San Francisco.

PILGRIMAGES FROM EGYPT. — According to the *British Medical Journal*, the annual pilgrimages from Egypt are ever a source of trouble and anxiety to the Egyptian Government, for such collections of the dirtiest and most insanitary people afford many occasions for epidemics of cholera, plague and other diseases to flourish. Several reports published under the auspices of the Conseil Sanitaire, Maritime, et Quarantenaire d'Egypte, for 1907, deal with the health of those assemblages. Fortunately plague and cholera appear to have been absent, but other diseases carried off their annual quota.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Oct. 30, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 67, scarlatina 44, typhoid fever 16, measles 4, tuberculosis 61, smallpox 0.

The death-rate of the reported deaths for the week ending Oct. 30, 1907, was 21.05.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Oct. 26, 1907, was 192, against 204 the corresponding week of last year, showing a decrease of 12 deaths and making the death-rate for the week 16.43. Of this number 109 were males and 83 were females; 190 were white and 2 colored; 117 were born in the United States, 66 in foreign countries and 9 unknown; 43 were of American parentage, 119 of foreign parentage and 30 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 45 cases and 6 deaths; scarlatina, 33 cases and 0 deaths; typhoid fever, 22 cases and 0 deaths; measles, 8 cases and 0 deaths; tuberculosis, 50 cases and 15 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 13, whooping cough 0, heart disease 30, bronchitis 4 and marasmus 5. There were 18 deaths from violent causes. The number of children who died under one year was 36; the number under five years, 48. The number of persons who died over sixty years of age was 47. The deaths in public institutions were 64.

There were 1 case and 0 deaths reported from cerebrospinal meningitis during the week.

Diphtheria. — It is reported that the public schools of Rockland, a town near Brockton, Mass., have been closed because of an outbreak of diphtheria.

Bequest to Hospital. — By the will of Mrs. Susan E. Hoyt, a fund which will eventually amount to $20,000 has been left to the Stamford, Conn., Hospital, to provide free beds.

Opening of the Channing Home, Boston. — The Channing Home for Chronic Tuberculous Women on the corner of Bellevue and Francis streets, Boston, was formally opened on the afternoon of Thursday, Oct. 31.

New England Physicians' Club — A club to be known as the New England Physicians Club, to be composed largely of physicians and dentists, has been incorporated in Massachusetts. It has secured for a clubhouse a desirable building on Boylston street. The president is Dr. P. J. Kingsley, and the secretary, Dr. William R. Brown.

School Hygiene. — At the annual meeting of the Massachusetts Schoolmasters Club, held Oct. 26, Dr. Thomas F. Harrington, Dr. Robert W. Lovett, both of Boston, and Dr. John J. Cronin, of New York, assistant chief of Medical Inspection of the Department of Health, made addresses. Dr. Harrington drew attention to the fact that there is no such thing as a system of hygiene, but that it is peculiarly personal and local in its applications.

NEW YORK.

Commencement Exercises. — The thirty-second annual commencement of the New York City Training School for Nurses, on Blackwell's Island, was held on Oct. 19. There were thirty-three graduates, and Dr. Edward Sprague Peck, head of the medical board of the City Hospital, presided at the exercises.

Medical Directory. — The Medical Directory of New York, New Jersey and Connecticut for 1907, just issued by the Medical Society of the State of New York, contains the names of 15,775 registered physicians, of whom 12,168 are in New York State, 2,317 in New Jersey, and 1,292 in Connecticut. Four thousand three hundred and seventy-six are credited to the Boroughs of Manhattan and the Bronx, 1,589 to Brooklyn, 129 to Queens, and 62 to Richmond, a total for the City of New York of 6,156 (as against 6,034 last year); while the physicians residing in the rest of the state number 6,012.

Street Cleaning. — A public meeting was held on Oct. 18, under the auspices of the East Side Physician's Association, to discuss "The Street Cleaning Department in Relation to the Health of the City." Dr. Robert Abrahams, president of the association, presided, and the principal speaker was Dr. Walter Bensel of the Health Department, who for the past three months has done admirable service as acting Commissioner of Street Cleaning. Dr. Bensel told of some of the difficulties which the department had to contend with and of proposed plans for more efficient work, and concluded by saying that there was no question but what the people of New York could have clean streets if they would spend the necessary money.

Was not Hydrophobia. — Dr. Charles W. Dulles, of Philadelphia, recently noticed in a newspaper an item to the effect that a dogcatcher, after being bitten in the course of his career by more than 250 dogs, was dying of hydrophobia at St. John's Hospital, Yonkers. He made an investigation of the case, and has sent a letter to one of the New York papers in which he gives the following account of it: "This interesting narrative, if true, would have furnished me with the second case only in this country charged to so-called hydrophobia that I have found in twenty-five years, of any dog catcher, keeper of a public pound, or manager or worker in a public or private kennel — that is, in the class of persons most bitten by sick, vicious and so called mad dogs. So I followed my custom and wrote at once to the chief resident physician of St. John's Hospital for the facts of the case. His reply is conclusive. 'Isaiah Lee did not have hydrophobia. The diagnosis was cerebrospinal meningitis. Newspaper account was incorrect. He died this afternoon.'"

Opening of New Jersey Sanitarium for Tuberculosis. — On Oct. 24, Governor Stokes formally opened the New Jersey Sanitarium for Tuberculosis, at Glen Gardner, Hunterdon County, in the presence of a number of prominent persons, including state officials and members of the legislature. The building is 107 by 85 feet and two stories high, and will accommodate somewhat over one hundred patients.

Elevation of Standard at Cornell University. — In his annual report to the trustees of Cornell University, made public at Ithaca, on Oct. 25, President Schurman recommends plans for the elevation of the standard of education in all the departments of the university. For entrance to the medical department, he would require the degree of Bachelor of Arts and also satisfactory evidence of the student's having pursued special courses in physics, chemistry and biology.

Cross River Dam Completed. — The last stone in the completed Cross River Dam at Katonah, Westchester County, was laid by President John F. Cowan, of the Aqueduct Commission, on Oct. 26, the exercises being participated in by various city officials, the members of the different water supply commissions, and the engineers under whose direction the rapid completion of the work had been accomplished. It is estimated that this new large dam, by the additional resources from the Croton system, which it renders available, will increase the city's water supply to such an extent as will suffice until the completion of the great Ashokan reservoir in the Catskill Mountains.

Two New Hospitals. — Commissioner of Charities Hebbard has just awarded contracts for two new hospitals, one at Coney Island and the other on Staten Island, Borough of Richmond. The Coney Island hospital, which will be the first city hospital to be erected in Brooklyn for thirty years, is to be a building of reinforced concrete, four stories in height, and to cost $283,475. It will be used for acute and general medical and surgical cases. The Staten Island hospital is to consist, when completed, of eight buildings, for which an appropriation of $2,000,000 has been made. The present contract is for six of these buildings. The institution, which will be known as Sea View Hospital, is to be located at Spring Valley, Manor Road, on an eminence overlooking the lower bay. The pavilions will be four stories in height and of reinforced concrete, and the completed hospital is designed to accommodate 800 patients. The altitude of the location and its proximity to the sea will, it is believed, make the hospital of special value for convalescents.

Examination by Teachers of Sight and Hearing of School Children. — The State Department of Health has just made a new departure in sending to each of the 446 incorporated villages in the State a "complete set of forms with instructions" for the examination by the teachers of the sight and hearing of all children in the public schools of these villages. The wisdom of this proceeding would seem to be very problematical, for, notwithstanding the completeness of the forms and instructions, it is scarcely to be doubted that many defects of vision which, if left untreated, may be attended by very serious consequences are likely to be overlooked by the examining teachers. As one observer has very well remarked, "The action of the department at least indicates that some appreciation of the importance of eyestrain in its relations to the efficiency and character of children has at last made its way into the official mind, and for that reason it is a cause for hearty congratulation; but we would like to know just what the teachers are expected to do, and whether the children found to have defective vision are to be sent to oculists for treatment or to opticians for maltreatment."

Verdict against Physicians. — In the first suit of the kind said to have ever been tried in the State of New York, Mrs. Ellen E. Kenyon-

Warner, a writer, recently secured a verdict in the Supreme Court for $25,000 damages from Drs. Flavius Packer and Sidney D. Wilgus, of New York, on the charge of having improperly adjudged her insane and caused her commitment to the State Hospital at Middletown. The plaintiff's claim was for $50,000, and the case was tried at New City, the county seat of Rockland County, before Justice Morschhauser, who in his charge to the jury stated that the principal question involved was whether the physicians had exercised due care in their examination of the patient. For the defense appeared such well-known alienists as Dr. Charles W. Pilgrim, superintendent of the Hudson River State Hospital for the Insane at Poughkeepsie, and Drs. Charles L. Dana and Bernard Sachs, of New York. Dr. Dana was obliged to leave before finishing his evidence, but subscribed to the entire testimony of his colleagues. Drs. Pilgrim and Sachs, in answer to a hypothetical question, embodying the points for the defense as brought out in the testimony, expressed the opinion that a person performing the acts alleged must be of unsound mind. On cross examination, however, they admitted that some of the things mentioned did not of themselves establish insanity.

Sanitation in South America. — Dr. Louis L. Seaman, of New York, who has just returned from a five months' tour of South America, states that he was greatly impressed with the campaign of sanitation which is being carried on in the principal cities of the republics there; a campaign that is destined, he believes, to make the harbors of South America as disease-proof as any in the world, and which will insure for those countries a leading place among the nations of the earth. The great problem with them, he says, has been that of health, and the way they are solving it is an object lesson to the whole world. Rio Janeiro, a city whose harbor was one of the world's black spots, from a health standpoint, a few years ago, is now as safe as any on the globe, and this is entirely due to the admirable sanitary administration, under the direction of Dr. Oswaldo Cruz, the Health Superintendent, now in operation there. The same is measurably true, also, of the various other harbors and large cities of South America. There is hardly a city of importance on the seaboard which has not had bubonic plague to deal with from time to time, and this disease has now been thoroughly mastered. In Rio there is a reward of five cents for every rat killed, and to secure this it is necessary to send the dead animals, ticketed with the street and number of the houses from which they came, to certain specified depots. From thence they are immediately taken to Dr. Cruz's laboratory, and whenever a rat shows evidences of the plague, a health squad, organized like an American fire company, hurries to the house in which it was killed, and, irrespective of the character or ownership of the place, tears down the ceilings and thoroughly disinfects the place.

The Mosquito as a Sanitary Problem. — The Wesley M. Carpenter lecture at the New York Academy of Medicine was delivered on Oct. 17 by Dr. Edward A. Ayres, of New York, and Monmouth Beach, N. J., whose subject was "The Mosquito as a Sanitary Problem." In the course of it he declared that the mosquito had destroyed more human beings than are living in the world to-day, and that in addition to being the agent responsible for malaria and yellow fever, it was probable that it stood in the same causative relation to beri-beri, which had cost thousands of Asiatic lives. "The mosquito," said Dr. Ayres, "has had more influence than climate in demarcating tropical from temperate zonal occupation by the races of men. A female mosquito, caught in a sudden congelation of a drop of dew, can sleep peacefully through the winter months and when the spring sun sets her free can lay four hundred hatchable eggs. One healthy, favored pair of early June mosquitoes can start a progeny that will rival the human population of the globe ere the harvest moon; yet one man with a spade can destroy more mosquitoes in an hour than mankind numbers at any one time." Having paid a tribute to the self-sacrificing medical men whose researches had proved that the mosquito was the carrier of yellow fever and other diseases, the speaker stated that he had coined a new word for the class of diseases for which the mosquito was responsible, namely, "homosquitic." The closing portion of the lecture was devoted to the matter of the extermination of mosquitoes, which Dr. Ayres declared was feasible, economical and less difficult than was generally supposed; and he gave a number of examples of the effective work done in New Jersey in draining thousands of acres of marsh land which from time immemorial had been the favorite haunts of the pest. The cost of swamp drainage in New Jersey, Staten Island and Long Island, he said, varied from $1.50 to $2.50 an acre, and one man could keep 75,000 feet of ditches in good condition from year to year.

Current Literature.

Medical Record.

Oct. 5, 1907.

1. Perkins, C. W. *Fibroma Molluscum and Pendent Tumor of the Breast.*
2. Gompertz, L. M. *Early Diagnosis of Gastric Cancer, with Report of a Case.*
3. Beer, E. *A Note on the Insensibility of the Human Visceral Peritoneum.*
4. Niles, R. M. *Chronic Pharyngitis.*
5. Bissell, J. B. *The Incision and Treatment of the Stump in Appendectomy.*
6. Leuf, A. H. P. *Uric Acid Symptoms (Rheumatism) and their Relief by Colchicum and the Salicylates.*
7. Barker, M. R. *What is the Function of the Gall Bladder? And Why the Folds of Heister in the Cystic Duct?*
8. *Silkman, A. *The Diagnosis of Glanders in the Human Subject from the View Point of the Veterinarian.*

8. Silkman says that glanders in the human subject is not very rare. Many cases go undiagnosticated on account of their resemblance to typhoid fever, pneumonia, or sepsis. Acute glanders runs a course of twelve to eighteen days. The subacute cases last from six to eight weeks. The Widal and glanders agglutination tests are of value in diagnosis. In the beginning the symptoms are much like those of typhoid fever, with a high and very irregular and uncontrollable temperature. Next the symptoms of pneumonia develop. Then come articular symptoms resembling rheumatism. Abscesses now form which are not relieved by evacuation. Three or four days before death pustules appear on face, neck and shoulders, which rupture and leave rough, uneven ulcerations. The lymphatic glands are often involved. Illustrative cases are given.

New York Medical Journal.

Oct. 5, 1907.

1. Gordon, A. *Morbid Impulses and Their Medico-legal Importance.*
2. *Hutchinson, W. *Varieties of Tuberculosis according to Race and Social Condition.*
3. Barrett, C. W. *Incarceration of the Retrodisplaced Gravid Uterus.*
4. Ballin, M. J. *Intratympanic Operations under Local Anesthesia.*
5. Hutchins, M. B. *Adhesive Plaster for the Cure of Certain External Diseases and Lesions.*
6. Kakels, M. S. *Hypertrophic Wandering Spleen, with Torsion of the Pedicle.*
7. Jennings, W. B. *Congenital Syphilis.*
8. Garratt, J. M. *The Treatment of Tuberculous Cystitis.*

2. Under this very broad heading the writer discusses the relative death-rate from tuberculosis among the American Indians, the Japanese and Chinese in America, and the native whites. He does not mention the negro. The Sioux Indians, who are the flower of the Indian tribes, living in a healthful climate, well fed and comfortably housed, show a death-rate from tuberculosis of more than fifteen times that of the whites. The death-rate from tuberculosis of the Japanese in America is approximately that of the surrounding whites. That of the Chinese is almost double that of the whites, due probably to their extremely unsanitary surroundings. The writer finds an analogy to tuberculosis among the Indians in the frightful susceptibility of the aborigines the world over to the infectious diseases of civilization. The Indians have derived their tubercle bacilli from the white men, hence they are of the same strain. Yet working in the virgin soil of the American Indians, the same tubercle bacilli produce a rather different and much more virulent disease. Among the Indians the average duration of the entire disease is only four to six months. [R. I. L.]

The Journal of the American Medical Association.

Oct. 5, 1907.

1. *Beebe, S. P. *The Physiology of the Thyroid Gland in Its Relation to Exophthalmic Goiter.*
2. *MacCallum, W. G. *The Pathology of Exophthalmic Goiter.*
3. McCormack, J. N. *What Should Be the Relations of Pharmacists and Physicians.*
4. Goelet, A. H. *Examination of the Gynecologic Patient for Diagnosis.*
5. Weir, R. F. *Trigger Finger.*
6. *Miles, A. B. *Spontaneous Arterial Degeneration in Rabbits.*
7. McFarland, J. *The Nephelometer: An Instrument for Estimating the Number of Bacteria in Suspensions Used for Calculating the Opsonic Index and for Vaccines.*
8. McFarland, J., and L'Engle, E. M. *The Specific Nature of Opsonins.*
9. Senn, N. *Travel Notes from South America.*

1. Beebe finds a dearth of accurate knowledge of the physiology of the thyroid gland. He considers the thyroid apparatus as one of the vital viscera. This apparatus consists of two well differentiated structures, (1) thyroid gland, and (2) parathyroid glands. Experimental removal of the thyroid causes cachexia, alleviated by the administration of thyroid substance. Removal of the parathyroid glands causes an acute fatal tetany in a few hours to a few days. Hypodermic injection of beef parathyroid nucleo-proteid will prevent death in the acute tetany, but the animals have all died within three weeks. Chemical studies have shown that the normal thyroid gland contains little nucleo-proteid and albumin, but much globulin. This thyreoglobulin contains the iodin, and it is to this combination that thyroid extracts largely owe their activity. The normal parathyroid contains little globulin and albumin, but much nucleo-proteid. In most thyroid glands removed from cases of exophthalmic goiter chemical examination shows a marked increase in the nucleo-proteid. In simple goiter there is a relatively large amount of globulin poor in iodin. Cases with exophthalmic goiter have a much increased nitrogen metabolism and a low kreatinin output. It has been impossible to produce exophthalmic goiter experimentally, but many of the symptoms of the disease are seen when thyroid substance is given in excess. The hypersecretion theory seems most satisfactory, but there has been no explanation of the mechanism of the production of symptoms.

2. MacCallum has studied the thyroid glands removed from sixty patients, suffering from some or all of the symptoms of exophthalmic goiter. As a rule the changes in the thyroid gland are similar and apparently characteristic. The gland is usually slightly enlarged. The section surface is tougher, dryer and more granular than normal. This change may be patchy, but usually is general. Microscopically, the alveoli are no longer round and full of colloid, but are irregular and contain epithelial projections. The epithelium is columnar rather than cubical. The lumen is markedly encroached upon and there is much less colloid. The amount of colloid varies greatly, but it seems that it may bear a fairly constant relation to the stage of the disease, and that while the presence of quite abundant colloid is not inconsistent with the development of intense symptoms, yet in most cases in which the symptoms are intense, the colloid tends to disappear with the advance in the alterations in the gland. The only constant lesions found elsewhere in exophthalmic goiter are in the thymus and the lymphatic apparatus. The thymus is enlarged. Histologically it is like the thymus of early years. Not only are there masses of lymphoid tissue in the thyroid gland itself, but the lymph glands generally, especially in the neck, are enlarged. This change has the appearance of being a reaction to the absorption of some poison, but whether this material stirs up the thyroid also to proliferation, or is itself the product of the over-active thyroid it is difficult to say.

6. Much has been written on arterial degeneration after the injection of adrenalin. Rabbits have been the animals used. Miles found arterial degeneration in 27% of rabbits receiving adrenalin, and in 34% of presumably normal rabbits not receiving adrenalin. One of the presumably normal rabbits presented calcareous deposit in the aorta and typical arteriosclerotic atrophy of the kidneys. [R. I. L.]

The Journal of Experimental Medicine.

May 25, 1907.

1. Duval, C. W. *The Experimental Vascular Lesions Produced by Bacillus Mallei.*
2. Teague, O., and Buxton, B. H. *Electric Charges Corried by the Hemolysins.*
3. Frank, R. T. *Results Obtained by the Injection of Placenta into Animols of the Same and of Different Species.*
4. *Noguchi, H. *The Nature of the Antitetanic Action of Eosin.*
5. *Noguchi, H. *Local Immunity and Tetanus in Inoculated Rats Treated with Eosin.*
6. Meltzer, S. J., and Lucas, D. R. *Physiological and Pharmacological Studies of Magnesium Salts.*
7. Stookey, L. B., and Morris, M. *The Influence of Salicylic Acid upon Uricolysis.*
8. Kramer, S. P. *On the Function of the Posterior Spinal Ganglia.*
9. *Kramer, S. P. *The Pathogenesis of Gallstones.*

4 and 5. Noguchi describes experiments dealing with the influence of eosin upon the growth of the tetanus bacillus in cultures and in the tissues of inoculated animals. In cultures the presence of eosin in small proportions seemed to limit the spore formation, and in larger proportions to limit the growth of the bacillus. In inoculated animals the injection of eosin solution about the site of inoculation restricted the growth of the bacilli, and prevented development of the disease, although the bacilli remained alive and virulent to other animals. The action of the eosin injection was proved to be one of merely local immunity, since bacilli removed after a time from a site of inoculation treated with eosin and reinoculated in another part of the same animal not treated with eosin produced tetanus. Possible clinical applications of these findings are not discussed.

9. Kramer reviews the theories that have been held as to the cause of the formation of gallstones, and calls attention to the absence of experimental evidence bearing upon the action in this process of infections by typhoid and colon bacilli. He has conducted experiments which show that typhoid and colon bacilli growing in filtered and sterilized human bile and peptone bouillon solutions produce a heavy sediment containing all the constituents of gallstones. [F. W. P.]

The Lancet.

Oct. 5, 1907.

1. Powell, R. D. *An Address on University College and Some Points in Medical Education.*
2. Ewart, W. *An Address on "Res Medica, Res Publica"; the Profession of Medicine, Its Future Work and Wage.*
3. Grabham, M. C. *The First Hundred Years of the Geological Society of London.*
4. Edington, A., and Coutts, J. M. *A Note on a Recent Epidemic of Trypanosomiasis at Mauritius.*
5. Dawson, G. W. *A Case of Acute Lupus Erythematosus.*
6. *Gifford, W. *Two Cases of Hyperplastic Tuberculosis of the Cecum Treated by Excision; Recovery.*
7. *Teizo, Iwai. *Relation of Polymastia to Tuberculosis.*
8. Ingram, P. C. P. *Three Cases of Lobar Pneumonia with Unusual Complications.*
9. Allan, G. A. *A Case of Primary Cancer of Left Bronchus, with Unusual Association of Pressure Symptoms; Secondary Growths in Thyroid and Lymphatic Glands.*
10. McHattie, T. J. T. *A Case of Ruptured Aneurysm of the Popliteal Artery in a Man, Aged Seventy-three Years, the Subject of Chronic Lead Poisoning, Successfully Treated by Ligature of the Superficial Femoral.*

6. Gifford reports in detail two cases of hyperplastic tuberculosis of the cecum which he operated on successfully. The first case both clinically and pathologically simulated malignant disease. The second case was evidently tuberculous and led to a re-examination of the first case, which was found also to be tuberculous. He refers to the literature on the subject, and speaks of the differential diagnosis between this condition and that of cancer. The treatment is surgical.

7. Teizo, who has made an extensive investigation of polymastia among the Japanese, in this paper gives the result of his studies on the relation of polymastia to tuberculosis. He concludes, (1) that cases of polymastia are found more among the tuberculous than among the non-tuberculous. The former are nearly twice as numerous as the latter. (2) That those who have polymastia are more liable to be affected by tuberculosis than those who have not. The difference between them is more than 15%. He gives the references to all works on this subject. No explanation of this peculiar state of affairs is given. [J. B. H.]

British Medical Journal.

Oct. 5, 1907.

1. Tomes, C. S. *Medicine and Its Specialties in Their Relation to the State; a Retrospect and a Prospect.*
2. Peters, O. H. *The Limited Value of Diphtheria Antitoxin os a Prophylactic.*
3. *Ogilvie, W., and Easton, P. G. *Two Cases of Hereditary Dystrophy.*
4. Robertson, A. *The Bacteriology and Treatment of Yaws (Frambesia Tropica).*
5. *Dean, H. P., *et al. Discussion on the Relotive Value of Inhalation and Injection Methods of Inducing Anesthesia.*
6. Bland-Sutton, J. *Discussion on the Indications for Performing Cholecystectomy.*
7. Mummery, P. L. *Lessons of the Sigmoid Flexure as a Cause of Colitis.*
8. Anderson, L. G. *A Case of Sarcoma of the Small Intestine.*
9. Pardoe, J. *The Indications for Prostatectomy.*
10. Freyer, P. J. *A Further Series of Cases of Total Enucleation of the Enlarged Prostate, and a Review of 432 Operations.*
11. Childe, C. P. *A Case of Successful Resection of Nine and a half Feet of Small Intestine for Gangrene.*
12. Taylor, W. *Intestinal Obstruction.*
13. *Maylard, A. E. *Direction of Abdominal Incisions.*
14. Bishop, E. S. *Mobile Kidney with a Description of a New Operation for Its Treatment..*
15. Vernon, A. H. *A New Operation for the Complete Removal of Hemorrhoids.*
16. Edington, G. H. *Hygroma Colli and Branchial Fistula.*

3. Ogilvie and Easton report two cases of hereditary dystrophy of the muscles of the shoulder girdle in a father and son. The father, aged forty-five, first noticed weakness in the shoulders when he was twenty-five years old. The condition has progressed steadily ever since, unaccompanied by any symptoms whatsoever except the increasing loss of power in both shoulders, and the gradual shrinking of the muscles in the neighborhood. The son, aged twenty-five, began to notice weakness of the shoulders two years ago, coming on without any cause, and except for this slowly progressing weakness he has experienced no symptoms. In neither case was there any history of a preliminary hypertrophy.

5. Dean opens a discussion on the relative value of inhalation and injection methods of inducing anesthesia. He gives in detail the method of administering stovain in lumbar anesthesia; he advises cotton in the patient's ears and either dark glasses or a screen so that they cannot see the operation. In five cases he gives the impressions of the patients with regard to this method of anesthesia. In the discussion which followed his paper the general opinion seemed to be that at present ether or chloroform anesthesia given by an expert is by far the best.

13. Maylard gives a long and careful exposition of transverse incisions in abdominal operations, with detailed reports as to the occurrence or non-occurrence of hernia in 16 cases. He concludes: (1) That when time is not of paramount importance more permanently secure scars result from transverse than vertical incisions. (2) Transverse incisions afford more room for the treatment of pelvic

diseases and are also better for exploratory purposes. (3) Vertical incisions involve the division of fewer blood vessels and the apertures can be closed by a single series of through-and-through sutures. For these reasons, where time is a serious consideration, they should be employed. (4) In dividing the sheath of the rectus the chief end to aim at is to carry the incision as much as possible in the line of the fibers of the aponeurosis, and that wherever possible the fibers of the rectus should not be cut but should be separated — serial suturing should be employed. (5) No operation should be performed unless absolutely necessary, when the patient has a cough which it is possible to cure or alleviate. Four weeks should be allowed at least after the operation for rest in a dorsal or semi-recumbent position, and two months more before any undue strain is exercised on the wound. [J. B. H.]

The Practitioner.

October, 1907.

1. Crawford, R. *Valvular Disease of the Heart.*
2. *Howell, C. M. H., and Wilson, H. W. *Movable Kidney.*
3. Hay, J. *Some Points in the Treatment of Diseases of the Heart.*
4. Fisher, T. *Some Complications of Diphtheria.*
5. *MacLennan, A. *The Treatment of Microbic Invasions by Bier's Hyperemia.*
6. *Flett, A. B. *The Treatment of Some Inflammatory Conditions by Bier's Method.*
7. McKenzie, D. *Deviations of the Nasal Septum and the Killian Submucous Resection.*
8. Lane, J. E. *Review of Recent Literature of Syphilis and Venereal Diseases.*
9. Thomson, H. C. *Reviews of Some Recent Work on Diseases of the Nervous System.*
10. Still, G. F. *Recent Work in Diseases of Childhood.*
11. *Bridge, J. C. *Infant Mortality and Fly Infection.*

2. Howell and Wilson give a careful paper on movable kidney in all its various aspects,— historical, anatomical and pathological. Three factors they say are responsible for the greater frequency of this condition in women than in men: (1) The greater shallowness of the renal fossæ. (2) The greater frequency of chronic constipation. (3) Tight lacing.

5. MacLennan reviews the subject of "Stauungshyperämie," and gives various practical points in the use of this method of treatment. He presents the more common objections to this method, and shows how the dangers and discomforts, such as pain, increased infection, bleeding, etc., can be avoided. He counsels the avoidance of tight bandaging as shown by the production of blisters on the affected part, and recommends that the physician should gain experience with the milder forms of sepsis before treating more severe cases, and that in all cases it is not a substitute for other means of treatment but an aid; that antiseptics and dry dressings should be used as they are needed. He describes in detail the technic. He states that this method is agreeable to the patient as well as efficacious; that shorter incisions are needed and fewer operations.

6. Flett presents cases in which he has used Bier's method of treatment with comments of a practical nature.

11. Bridge believes that fly infection of milk and other infants' food plays a large part in the etiology of infantile summer diarrheas. He quotes several cases in support of this view, and gives suggestions as to barn and house hygiene to prevent or diminish this source of infection. [J. B. H.]

Münchener Medizinische Wochenschrift. No. 34.

Aug. 20, 1907.

1. Otto, R. *On Anaphylaxis.*
2. Baer, G. *The Opsonic Index and the Results Obtained in Cases Treated with Marmorek's Antituberculosis Serum.*
3. *Curschmann, H. *Hysterical Sweating.*
4. *Ebstein, E. *The Relation between Pneumonia and Gout.*
5. *Schlecht. *Rumpel's Capsules (Capsulæ Gelodurataæ) and Their Advantages.*
6. Ringel. *Congenital Umbilical Hernia.*
7. Grünberg, K. *Iodide and Mercury Treatment of Tuberculosis of the Nose, Pharynx and Larynx.*
8. Risel, H. *Statistics on Infant Mortality.*
9. Lilienstein. *Etiology and Symptomatology of Cysts of the Pancreas.*
10. Hartleib. *Enchondroma of the Larynx.*
11. Federschmidt. *Cheese Poisoning.*
12. Hofmann, A. *A Simple Extension Apparatus.*

3. Curschmann reports two cases of long continued periodic sweating, occurring in a mother and daughter. They appeared two or three times daily, were of drenching character, unaccompanied by chill or by fever, and without any preceding hysterical manifestations (convulsions, etc.). During the attack the mind was clear, the patient quiet and peaceful, no preceding embarrassment or excitement was demonstrable. The sweats presented the picture of those resulting from the use of diaphoretics. Blood pressure and frequency of pulse were never increased. No organic changes in the central nervous system could be made out. Treatment by suggestion proved promptly effective in both cases. The author considers the etiology to have been hysterical. He has found no similar cases reported in the literature.

4. Since the eighteenth century a relation between croupous pneumonia and the acute attack of gout has been recognized. Ebstein reports three cases of his own and three from the literature, in which persons with a tendency to gout have experienced an acute attack following pneumonia. The gout appears after the pneumonia has begun to resolve, and is probably due to the fact that with the resolution of the exudate in the lungs, comes a destruction of cell elements, and a sudden setting free of nuclein bases and uric acid, which owing to the existing diminution in the nuclein metabolism precipitate the acute attack of gout.

5. Schlecht describes the new "capsula gelodurata" of Rumpel, which resembles the "glutoid capsule" of Sahli, differing only in that fluids can be administered as well as solids. A careful series of experiments has shown that the capsules are dissolved only in the intestine. They are extremely useful for the administration of drugs which upset the stomach, or whose action is primarily desired in the intestime. The author has had great success with this method of administering vermifuges. [R. D.]

Berliner Klinische Wochenschrift. No. 31.

Aug. 5, 1907.

1. Aschoff, L. *The Lower Uterine Segment and Placenta Previa.*
2. *Claus. *Syphilitic Affection of the Parotid.*
3. Grünbaum, D. *A Case of Primary Carcinoma of the Appendix.*
4. *Schanz, A. *A Typical Diseased Condition of the Spinal Column.*
5. *Herzog, B. *The Early Diagnosis of Syphilis of the Heart.*
6. Pick, L. *Menigococcus Spermatocystitis.* (Concluded.)

2. Claus reviews the literature of tertiary syphilis of the parotid gland, a condition of considerable rarity, and gives his observations of a case, a woman with a syphilitic history, who had a hard, non-painful swelling of both parotids, more pronounced on the left, associated with a left-sided chronic purulent otitis media. Under antiluetic treatment both the glandular enlargement and the discharge from the ear cleared up. The author considers that both conditions were of syphilitic origin.

4. Schanz describes a condition of the spinal column, marked by pain and tenderness over certain of the vertebræ, associated with tender points over the ribs and pelvic bones, without any evidence of an inflammatory process. This condition is usually accompanied by gastro-intestinal, or general nervous symptoms. The author considers this to be a condition very like the pain of flat foot. He recommends rest, followed by massage and gymnastics. A support worn about the thorax is of great aid. [The author offers no convincing evidence of any sort in support of this "new disease," the symptoms of which exactly resemble those of certain cases of neurasthenia.]

5. As a result of numerous observations, Herzog believes that the early diagnosis of syphilitic involvement

of the heart is possible, but only when the aorta and coronary arteries are affected. In every severe case of angina pectoris in the young or middle aged, in cardiac enlargement without other demonstrable cause, or in aortic insufficiency appearing in middle age without a preceding acute articular rheumatism, or other acute infection, syphilis should be always thought of as the probable causal factor. [R. D.]

No. 32. Aug. 12, 1907.

1. *Pel, P. K. *Is Opium Useful or Harmful in Acute Appendicitis?*
2. Seligmann, E. *Contributions to the Question of So-Called Absorption of the Complement.*
3. Eysbroek, H. *The Specificity of Amboceptors.*
4. Fink, H. *Principles of the Different Karlsbad Gallstone "Cures."*
5. Heymann, H. *Operative Perforation of the Non-Pregnant Uterus.*

1. Pel believes that, in the hands of a carefully trained man, opium is of great value in the acute attack of appendicitis, especially in cases of beginning inflammatory process with walling off around the appendix. The rest which opium brings the gut hastens the walling-off process. It is unnecessary to give large doses, nor is morphine of advantage. The author uses tinctura opii in doses of from 5 to 10 drops, repeated till the pain is dulled and the patient is quieted. With careful observation, the symptoms indicating immediate operative interference are never masked. [R. D.]

Die Therapie der Gegenwart. No. 9.
September, 1907.

1. *Ewald, C. A. *Myxoneurosis Intestinalis, with Some Remarks on the Technic of Rectoscopy.*
2. *Schmieden. *The Surgical Treatment of Exophthalmic Goiter.*
3. Loewenthal, W., and V. Rutkowski, W. *The Action of Roentgen and Radium Rays on Trypanosoma Lewisii.*
4. Winternitz, H. *The Testing of the Secretory Function of the Stomach by Means of the Test Meal.*

1. Ewald claims that it is clinically impossible to differentiate between enteritis membranacea, colitis mucosa, and myxoneurosis intestinalis. Neither the symptoms nor the stools show differences characteristic enough to warrant a diagnosis. Valuable data can, however, be obtained by use of the rectoscope. In the two former conditions evidences of inflammation, injected vessels, generally engorged mucosa, slight loss of tissue, with small adherent bits of mucus, are to be seen; in the latter the mucous membrane is pale, the mucus is more generally disposed, and, most important of all, the gut shows a marked tendency to spasm, so marked, indeed, as to lead to a suspicion of actual stenosis. The author considers this last as almost pathognomonic. He recommends a bland diet, which leaves a large, soft residue, and high enemata of oil and bismuth. He appends an excellent description of his technic of rectoscopy.

2. Schmieden reviews the symptoms of exophthalmic goiter, and agrees with the generally accepted theory of their thyrogenic origin. He believes that operative treatment is often too long delayed. An important contraindication to operative treatment is the presence of advanced symptoms, particularly marked cardiac involvement. When the patient, seen early in the disease, does not react after a fair trial to medical treatment, operation for the removal of the gland should be at once resorted to. He has had excellent operative results. [R. D.]

The Ophthalmo-Tuberculin Reaction. Comby (*Presse Médicale*, Aug. 10, 1907) has tried the ophthalmo-tuberculin reaction suggested by Calmette in two series of 16 and 53 children. His results agree absolutely with those of Calmette. In the first series he had two very violent reactions in the eye causing a conjunctivitis that took eight days to disappear. After this he reduced the strength of his tuberculin by one half; this he used on 108 cases with no bad results. The tuberculous individual reacts with a marked conjunctivitis with exudate, while a normal person shows at most a moderate injection without exudate. The other eye serves as a control for comparison. Any ocular lesion already present is a contraindication against the use of this test. [J. B. H.]

The Ophthalmo-Typhoid Reaction. Chantemesse (*Le Bulletin Médicale*, July 24, 1907) describes an ophthalmo-typhoid reaction similar to that of Calmette and Wolff-Eisner with tuberculin. By means of absolute alcohol he obtains a dry precipitate of the typhoid toxins; 1–50 mg. of this dissolved in a drop of water constitutes the dose used in this test. The results, he claims, are very decisive, whether positive or negative. In healthy persons or those suffering from a disease other than typhoid, there is only a mild injection of the conjunctiva, coming on in two to three hours and disappearing at the end of five or six hours. In the case of typhoid it is vastly more severe, reaching a maximum in six to twelve hours, and lasting eight to twelve more with a sero-fibrinous exudate and symptoms of a marked conjunctivitis. Although it is too soon to say definitely, this reaction seems to appear very early in the disease, in some instances earlier than the Widal reaction. [J. B. H.]

Thyroid Insufficiency. Leopold-Levi and Henri de Rothschild (*Gazette des Hôpitaux*, June 29, 1907) contribute an interesting article with the title, "The Little Signs of Thyroid Insufficiency." Among the stigmata they mention transitory edemas without albuminuria, especially in the frontal and facial region, continued coldness of the extremities, cyanosis of the hands and feet, subnormal temperature, chilly feelings, an extreme sensitiveness to cold. Constipation is a common and persistent symptom. Such persons are very easily fatigued and have poor appetites. Headaches are frequent as well as muscle and joint pains; insomnia is common. Obesity, a sluggish mentality and precocious senility often appear. There are periodic auto-intoxications, and infections, vomiting spells without apparent cause, extreme nervousness. Such symptoms will often disappear under thyroid medication. [J. B. H.]

Miscellany.

"KULIN POLYGAMY."

A practice that goes by this name — an absurd one, since there is no polygamy about it in the sense in which we understand it — has lately been the subject of several letters published in the London *Times*, as we learn from last Sunday's *Sun*. It seems to prevail among the Bengalis. Some of the *Times's* correspondents approve of it as a means of improving the physique of a race; other speak of it as "revolting" and "abhorrent." Among those who defend it is that interesting person, Mr. George Bernard Shaw. It is well known, of course, that in most communities many women eligible to matrimony fail to form a marital alliance with a suitable man and consequently remain spinsters. Their reproductive capacity is wasted. The Bengal practice purports to spring from a patriotic desire to save this waste. Mr. Shaw says: "What does a Bengali father do under the same circumstances? He selects a picked man, a Brahman representing the highest degree of culture and character in his class, and pays him £700 to enable his daughter to become the mother of a well-bred child."

There is no pretense of marriage, as we understand it; the Brahman is simply hired to beget a child. If more children are wanted, presumably other picked men may be provided for the same woman, and perhaps that accounts for the use of the word polygamy. The whole business seems to us to be on a par with the breeding of domestic animals. The farmer buys the service of a selected stallion for his mare; the rich Bengali hires a picked man to serve his daughter. We must agree with those who call the practice revolting and abhorrent. It is the effort of medical men to promote the physical welfare of all human beings, but never at the expense of morality and social order; consequently we expect that our British confrères will join us in protesting against approval of the strange Bengal custom. — *New York Medical Journal.*

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IN HONOR OF ROBERT KOCH.

A movement for the foundation of an institution which is to bear the name of Robert Koch is on foot in Germany, and a committee has been formed for the purpose of collecting money for the object. The chairman is Dr. von Studt, Prussian State Minister; the vice-president, Privy Councillor Althoff; the secretary, Professor Schwalbe, editor of the *Deutsche medizinische Wochenschrift;* the treasurer, Dr. Paul von Schwabach, General Consul, Berlin. Among the members are Dr. Bumm, President of the Imperial Health Bureau, Berlin; Count Henckel, Prince von Donnersmarck, member of the Prussian House of Lords; Professor Ehrlich, of Frankfort; Professor Fiedler, some time physician-in-ordinary to the King of Saxony; Dr. von Böttinger, member of the Prussian Chamber of Deputies; Dr. Förster, director of the Cultus-Ministerium, Berlin; Prof. Bernhardt Fraenkel, of Berlin; Count von Posadowsky-Wehner; Chamberlain v.d. Knesebeck, Imperial Vice-Upper Master of Ceremonies; Surgeon-General Ilberg, physician to the Kaiser; the Bavarian Envoy in Berlin; the Ministers of the Interior of Saxony, Würtemberg, Baden and Hesse; and the Surgeon-General of the Prussian army. The institution, which is to be applied to the furtherance of research in all directions for the discovery of means of checking the diffusion of tuberculosis, is intended to be a permanent memorial of the discovery of the tubercle bacillus by Professor Koch twenty-five years ago. Appeal is made for contributions sufficient to make the institution a tribute of gratitude to Koch, similar to those with which the name of Pasteur has been honored in France and that of Lister in England. Contributions to the Fund should be addressed to the Treasurer, Dr. Paul von Schwabach, S. Bleichröder's Bank, 63, Behrenstrasse, Berlin. — *British Medical Journal.*

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RESOLUTIONS AGAINST CONTRACT PRACTICE.

At an adjourned stated meeting of the Norfolk South District Medical Society, held in Boston Oct. 3, 1907, the following resolutions were unanimously adopted:

Whereas it has become a common practice with many of the Fellows of this society to engage in what is known as contract work or lodge work, and whereas this method of conducting business is unworthy of an honorable physician and derogatory to his professional character and standing, and also in the end a source of loss rather than a gain in income;

Therefore, resolved, That as a society we condemn contract practice in our profession, and we all will in the future refuse to consult with physicians engaged in this work (except possibly in a case of absolute emergency where a person's life is actually at stake) or to affiliate professionally with such persons.

Resolved, That all the Fellows of this society shall be required to sign a promise or statement that after the contracts which have already been made shall have expired, they shall refuse to make any further contracts under the penalties heretofore stated.

Resolved, That these resolutions be entered on the records of the society and a copy of the same be transmitted to the secretaries of the other district societies of this state and also be furnished for publication to the Boston Medical and Surgical Journal and the *Journal of the American Medical Association.*

Charles S. Adams, M.D.,
Secretary, Norfolk South District Medical Society.
Wollaston, Mass., Oct. 3, 1907.

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Correspondence.

COLLECTIVE INVESTIGATION OF THE POLIOMYELITIS EPIDEMIC OF THE YEAR 1907 BY THE COMMITTEE APPOINTED BY THE NEW YORK NEUROLOGICAL SOCIETY, WITH THE CO-OPERATION OF THE COMMITTEE APPOINTED BY THE SECTION ON PEDIATRICS OF THE NEW YORK ACADEMY OF MEDICINE.

New York, Oct. 29, 1907.

Mr. Editor: The members of the committees above mentioned are anxious to make a thorough investigation of and to collect all the data relative to the epidemic of poliomyelitis of 1907 in New York City and its immediate vicinity. To this end they must have the co-operation of all those who have had, or will have, an opportunity of studying this disease in hospital or private practice. Physicians willing to assist in this work will kindly inform the secretary, Dr. Edwin G. Zabriskie, No. 37 West 54th Street, New York City, who will send history forms so as to secure uniform records. Physicians who cannot collaborate with the committee will confer a favor by reporting to the secretary the number of cases of poliomyelitis they have treated during the past six months.

The joint committee wishes to state most emphatically that due credit will be given to every one who contributes to this collective investigation, and that the publication of the committee's report will in no wise interfere with any article or articles to be published on this subject. Moreover, the committee's report will surely not be printed earlier than a year from date, so that medical men will have ample time to publish their articles long before the committee will have its report ready.

B. Sachs, *Chairman,* E. G. Zabriskie, *Secretary,* J. R. Hunt, J. F. Terriberry, L. Pierce Clark, Simon Flexner, for the Rockefeller Institute; C. F. Bolduan, for the Department of Health, New York City,
Committee of the Neurological Society.

L. E. La Fetra, Herman Schwarz, L. C. Ager, Brooklyn, *Committee of the Section on Pediatrics of the New York Academy of Medicine.*

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 19, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	5	4
Chicago	508	155	Waltham	7	2
Philadelphia . . .	—	—	Pittsfield	6	1
St. Louis	—	—	Gloucester	10	3
Baltimore	210	68	Brookline	3	2
Cleveland	—	—	North Adams . .	5	3
Buffalo	—	—	Chicopee	4	3
Pittsburg	—	—	Northampton . .	4	1
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	2	1
Washington . . .	—	—	Leominster . . .	5	1
Providence . . .	82	26	Hyde Park . . .	5	1
Boston	208	62	Melrose	3	2
Worcester	34	8	Newburyport . .	—	—
Fall River	35	24	Woburn	2	—
Cambridge	32	6	Marlboro	3	0
Lowell	35	10	Westfield	3	1
Lynn	23	7	Peabody	—	—
New Bedford . .	20	10	Revere	3	1
Springfield	16	5	Attleboro	2	1
Lawrence	27	8	Clinton	6	2
Somerville	24	6	Adams	5	3
Holyoke	22	6	Gardner	—	—
Brockton	9	3	Milford	—	—
Malden	7	—	Watertown . . .	3	0
Chelsea	15	4	Plymouth	—	—
Salem	8	3	Weymouth . . .	2	0
Newton	4	4	Framingham . .	—	—
Haverhill	6	1	Southbridge . . .	6	2
Fitchburg	6	3	Wakefield	—	—
Everett	7	—	Webster	—	—
Taunton	10	4			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED OCT. 16, 1907.

G. W. STONER, surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Ellis Island, New York, Oct. 14, 1907.

P. M. CARRINGTON, surgeon. Granted leave of absence for 3 days from Oct. 14, 1907, under paragraph 189, Service Regulations.

T. CLARK, passed assistant surgeon. Directed to proceed to Allentown, Pa., for special temporary duty; upon completion of which to rejoin his station at Philadelphia, Pa. Oct. 14, 1907.

T. CLARK, passed assistant surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Philadelphia, Pa., Oct. 14, 1907.

J. W. SCHERESCHEWSKY, passed assistant surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Baltimore, Md. Oct. 14, 1907.

T. D. BERRY, passed assistant surgeon. Granted leave of absence for 1 month and 10 days from Nov. 1, 1907. Oct. 16, 1907.

A. J. MCLAUGHLIN, passed assistant surgeon. Directed to proceed to Paris, France, London, England, and Berlin, Germany, for special temporary duty; upon completion of which to rejoin his station at Naples, Italy. Oct. 11, 1907.

H. G. EBERT, assistant surgeon. Relieved from the U. S. Revenue-Cutter "Perry," and from duty at Seattle, Wash., and directed to report to Passed Assistant Surgeon Hobdy, San Francisco, Cal., for special temporary duty. Oct. 12, 1907.

W. H. FROST, assistant surgeon. Granted leave of absence for 15 days from Oct. 13, 1907. Oct. 10, 1907.

L. C. BEAN, acting assistant surgeon. Granted leave of absence for 28 days from Oct. 1, 1907. Oct. 11, 1907.

F. DUFFY, acting assistant surgeon. Granted leave of absence for 10 days from Sept. 6, 1907. Oct. 11, 1907.

C. M. FRISSELL, acting assistant surgeon. Granted leave of absence for 15 days from Oct. 15, 1907. Oct. 15, 1907.

K. S. KENNARD, acting assistant surgeon. Leave of absence granted Acting Assistant Surgeon Kennard for 28 days from Sept. 10, 1907, amended to read 20 days, only. Oct. 11, 1907.

B. ONUF, acting assistant surgeon. Granted leave of absence for 9 days from Sept. 26, 1907, on account of sickness. Oct. 11, 1907.

M. V. SAFFORD, acting assistant surgeon. Directed to report at Washington, D. C., Oct. 22, 1907, for special temporary duty; upon completion of which to rejoin his station at Boston, Mass. Oct. 14, 1907.

J. G. STANTON, acting assistant surgeon. Granted leave of absence for 15 days from Oct. 12, 1907. Oct. 11, 1907.

H. GAHN, pharmacist. Granted leave of absence for 12 days from Oct. 14, 1907. Oct. 11, 1907.

L. P. HALL, pharmacist. Excused from duty, without pay, for 10 days from Oct. 14, 1907. Oct. 14, 1907.

L. C. SPANGLER, pharmacist. Granted leave of absence for 23 days from Nov. 7, 1907. Oct. 16, 1907.

PROMOTION.

J. M. BELL, pharmacist. Promoted to pharmacist of the second class, effective Oct. 31, 1907. Oct. 14, 1907.

CASUALTY.

JOHN GODFREY, surgeon. Died at Detroit, Mich., Oct. 16, 1907.

APPOINTMENTS.

THE following appointments have been made to the staff of the Rockefeller Institute for Medical Research: DR. HIDEYO NOGUCHI promoted to Associate in Pathology; DR. G. W. HEIMROD, Assistant in Biological Chemistry; DR. W. A. JACOBS, Fellow in Biological Chemistry; MR. P. A. KOBER, Scholar in Biological Chemistry; DR. R. V. LAMAR, Scholar in Pathology.

DR. GEORGE L. WALTON has been appointed Consulting Neurologist to the Massachusetts General Hospital.

DR. HENRY C. BALDWIN has been appointed Physician to Out-Patients in Diseases of the Nervous System at the Massachusetts General Hospital.

The following appointments have been made at the Harvard Medical School: DR. J. D. BARNEY, Assistant in Anatomy; F. C. BLANCK, Research Assistant in Biological Chemistry; DR. E. N. TOBEY, Assistant in Bacteriology.

SOCIETY NOTICES.

FOUR LECTURES ON CLIMATOLOGY AND CLIMATO-THERAPY. — Dr. E. O. Otis will give a course of four lectures upon Climatology and Climato-therapy, illustrated by the stereopticon, upon successive Wednesday evenings in November, beginning Nov. 6, in the amphitheater of the Tufts College Medical School. Physicians, nurses and all interested in the subject are cordially invited to attend. The subjects are as follows: I. Nov. 6. The general principles of climate or meteorology. II. Nov. 13. Climatic features, classification of climates, characteristics of various climates. III. Nov. 20. Climatic or health resorts and their application to various diseases, especially to tuberculosis. IV. Nov. 27. The influence of climate upon man in health and disease.

NEW YORK AND NEW ENGLAND ASSOCIATION OF RAILWAY SURGEONS. — The Seventeenth Annual Meeting will be held at the New York Academy of Medicine, Thursday and Friday, Nov. 14 and 15, 1907.

CLINICAL LECTURES ON DISEASES OF THE SKIN. — The governors of the New York Skin and Cancer Hospital announce that L. Duncan Bulkley will give a ninth series of "Clinical Lectures on Diseases of the Skin," in the Out-Patient Hall of the hospital, on Wednesday afternoons, from Nov. 6 to Nov. 20, 1907, at 4.15 o'clock. The course will be free to the medical profession.

RECENT DEATHS.

DR. JOSEPH P. GRAY, a well-known practitioner of the Borough of the Bronx, New York City, died on Oct. 19. He was graduated from the College of Physicians and Surgeons, New York, 1882.

DR. HOSEA J. BABBIN, United States Navy, retired, died in Brooklyn, N. Y., on Oct. 25. During the Spanish-American War he was President of the Examining Board at the Navy Yard in Brooklyn, and later he was placed at the head of the Naval Hospital there. A short time since he was transferred to the retired list as Medical Director with the rank of Rear Admiral.

CUSHMAN DAY, M.D., M.M.S.S., died in Boston Oct. 26, 1907, aged twenty-five years.

BOOKS AND PAMPHLETS RECEIVED.

Annual Report of the Board of Health of the Department of Health of the City of New York for the Year ending Dec. 31, 1905. Vols. I and II. New York. 1906.

Annual Report of the Department of Health of the City of Chicago for the Year 1906. Chicago. 1907.

Merck's 1907 Index (third edition). An Encyclopedia for the Chemist, Pharmacist and Physician. New York: Merck & Co. 1907.

Original Articles.

EXPERIENCE WITH OPSONINS AND BACTERIAL VACCINES IN THE TREATMENT OF TUBERCULOUS AND NONTUBERCULOUS ARTHRITIS.*

BY CHARLES F. PAINTER, M.D., BOSTON.

OBSERVERS of new phenomena lay themselves open to errors both of observation and interpretation. Particularly is this true when the phenomena concern problems, the solution of which has been sought long and diligently. There has never been a time when so many well trained men were working upon the problems of physiological chemistry and bacteriology as there are at the present day. At this time, also, great popular as well as professional and scientific interest has been aroused in the subject of tuberculosis, and, to a lesser degree, in chronic nontuberculous joint disease. Witness the money being advanced for the anti-tuberculosis crusade, and the attention devoted by all classes of society to attempts made to wipe out this curse. In the midst of all this popular enthusiasm and highly specialized scientific attainment, has come a new method which has much to recommend it from the theoretical and laboratory points of view. The questions at issue are, Do the clinical results correspond with the laboratory findings? Are the limits of error in methods of laboratory investigation so wide that the conclusions which seem legitimate from such observations may be erroneous? To the first of these questions only will the writer devote his attention.

The literature on opsonins and bacterial vaccines is getting to be quite voluminous, but the greater part of it is concerned with laboratory technic and theoretical considerations of the processes by which immunity may be brought about. A very few reports of clinical experience are on record, and many of these are valueless because of the paucity of data recorded, or because of the obvious inaccuracies of the observations.

Clinical experience must be the court of last resort in matters of this sort for many years to come. The human being is not a chemical retort into which reagents may be injected and results obtained which are identical with those we look for when experimenting in the laboratory upon the lower orders of animal life. Wonderful as have been the advances made, rational conservatism must be the prevailing state of mind of those who would not be carried away by their enthusiasm.

Attempting to put ourselves in this mental attitude, it is proper to review the facts. The laboratory side of the question has been thoroughly presented in the previous paper, and even though clinical experience cannot wholly bear out the brilliant results obtained along purely scientific lines, this does not in any way vitiate the results of such inquiry.

Successes obtained by some observers in the treatment of septic wounds, boils, acne, and similar localized infections, encourage the clinician to hope that there are as yet some ill-understood obstacles in the way of the application of the method to those conditions where it has failed. The good results in some other fields, notably in the treatment of diphtheria, by an analogous method, also offer much encouragement. One cannot read the literature covering the clinical experience of the writers without considerable misgiving as to the practical value of bacterial vaccination. Neither can he be particularly encouraged in the hope that the opsonic index is to be of advantage as a guide to the dosage or the repetition of inoculation. The consideration of its value as a diagnostic aid has not been extensively considered in the literature. Its value from this point of view, in the writer's experience, will appear in the course of this paper.

A few citations from current literature to show the character of the reports of clinical observers may not be amiss. These are cited because in most cases the writer believes acceptance of the findings at their face value would lead the uninitiated reader to improper conclusions regarding the efficacy of the method. French,[1] in the *British Medical Journal*, reports a case of tuberculous dactylitis and tuberculous disease of the os calcis, both having fistulæ. The child had a low opsonic index to the tubercle bacillus. One five thousandth mgm. of tuberculin "R" was given. A negative phase lasting nearly four weeks was the result. A second inoculation, again followed by a prolonged negative phase, was accompanied by some improvement. A third inoculation was given and the sinuses then promptly healed, and at the end of four months the writer says the patient was practically well. Such a case as this, even though it represents an observer's personal experience with bacterial vaccines in the treatment of tuberculous arthritis, should not be given much weight in determining the value of tuberculin in the treatment of bone disease.

Ohlmacher,[2] writing in the *Journal of the American Medical Association*, reports a remarkable series of cases of various sorts treated by bacterial vaccines. In determining the dosage and frequency of inoculation he was admittedly lax in the observation of the opsonic index, without which Wright himself, and Ross, the principal exponent of his technic on this side of the water, claim satisfactory results cannot be obtained. In spite of this failure the results were so uniformly good in all cases, he concludes that, with the possible exception of diphtheria antitoxin in the treatment of diphtheria, there is no more valuable reagent than bacterial vaccines for the treatment of many surgical infections.

Kellogg[3] finds the determination of the opsonic index of value diagnostically in the following reported case: A young woman consulted him because of a troublesome hip. There had been an injury to this joint some years previously, and she had been obliged to use crutches during all this time. The head of the affected femur was dislocated. *One* observation showed the tubercular opsonic index to be .22. From this he concludes that the disease was a tuberculous one. In all probability this was true, but to have argued that it was because of *one* positive result in testing the phagocytic power of her leucocytes, constitutes a very insecure basis for such a conclusion. A second case is reported by the same author. A patient came under his care for a pleural effusion. The chest was aspirated, but guinea pigs inoculated with this fluid showed no signs of tuberculosis. A diagnostic dose of tuberculin was given and a typical reaction followed. Between July 12 and August 24, of the same year, she was inoculated with Koch's tuberculin, " R," not over three times (the record states at ten-day intervals). At the end of this period her physical signs had all cleared up and her weight had increased 7½ lb. I submit that the proof of the tuberculous character of her effusion is lacking, and that to offer such a case as a striking example of the curative value of tuberculin in such conditions is improper.

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*Read before The Massachusetts Medical Society, June 11, 1907.

[1] H. French: Brit. Med. Jour., Feb. 2, 1907, p. 256.
[2] Ohlmacher: Jour. Am. Med. Asso., Feb. 16, 1907.
[3] Kellogg: Northwest Med. Jour., vol. v, no. 1, p. 20.

Wolff[4] reports some interesting results in the treatment of pneumonia by a pneumococcus vaccine. He feels that raising the opsonic power of the patient's serum in pneumonic cases was attended by more favorable results than attends the usual treatment of pneumonia patients, but thinks too few observations have been made to justify any positive assertion that such is the case.

Hollister[5] reports several cases too briefly to be of any scientific value. The general impression conveyed was that there was improvement, but not such as would be inconsistent with other and general treatment, simultaneously carried out.

Ross,[6] in a recent article, reports success in a number of cases of lupus, empyema, staphylococcus infection, endocarditis and Malta fever.

Bunch[7] refers to two cases where bacterial vaccines were employed to reinforce surgical treatment. He believes that this method offers great possibilties in the management of surgical tuberculosis by diminishing the negative phase produced by operating upon tuberculous foci, when the resistance of the patient has not been properly fortified. He also advocates the use of vaccines after operation during long periods, for the same reason. He cites a case of extensive lupus operated upon by Mr. Godlee. The operation was an excision of the lupoid tissue, followed by skin graft. Before the operation and for some time after, injections of tuberculin were carried out, in consequence of which he believes that the entire graft was successful. One one-thousandth mgm. was used at ten-day intervals. He also reports a case of acetabular hip disease which had been treated for one and one-half years, by apparatus and bed treatment, without any appreciable progress. An abscess developed, for which operation was performed. Just before operation 1-500 mgm. of tuberculin was injected, and this was repeated during the succeeding four months, at the end of which time the patient was reported as practically well. He also refers to an article of Turton's, in which 30 out of 34 cases of different sorts were treated with bacterial vaccines with very satisfactory results.

Fraser[8] reports 41 observations upon the opsonic power (tubercular) of the blood in healthy individuals. In the first place she attempted to establish a mean of variation. In the second place she compiled a table of 43 indices from individuals who were suffering from other diseases than tuberculosis. She also reports observations upon the tuberculo-opsonic index in nine members of tuberculous families. Her next series of observations was upon 91 cases of tuberculous disease. She found no striking diagnostic value in the tuberculo-opsonic index. In 58 of these cases the index was higher than that seen in health, while in 33 it was within normal limits. She found she could not classify her cases according to their indices as Wright claims to be able to do. The low index did not necessarily show a localized focus; neither did a high index, within the limits of variation, indicate a generalized process.

Brooke[9] refers to Bullock's remarkable series of staphylococcus infections reported in the *Practitioner* for November, 1905. Eleven cases treated with vaccines showed 9 prompt and complete cures.

There is a notable absence of clinical reports in German and French literature. This absence should have considerable more significance than does the too sanguine position of the observers to whom reference has been made. A few good results have been reported following the use of Marmorek's antituberculous serum, conspicuous among which are the cases cited by Hoffa in a recent article.[10]

In July, 1906, at the commencement of a four months' service at the House of the Good Samaritan, I began the treatment of tuberculous bone disease with Koch's new tuberculin. The inoculations have been kept up by my colleagues, Dr. Augustus Thorndike and Dr. J. S. Stone, during their services up to the present time. The patients upon whom this treatment had been tried were kept in the hospital in nearly every instance throughout this entire period, so that in addition to any benefit which may have accrued from these injections, they have had the benefit of sanitarium treatment. They were all advanced cases when treatment was begun, and were all children. In addition to these children I have followed the same treatment in a few cases of tuberculous bone disease in the adult, at the Carney Hospital. These patients had not the benefit of as good hygienic treatment as had the group at the Samaritan. It was not possible to keep them in the hospital for as long periods and they could not be controlled as well, because they were adults. They were all bad cases. The laboratory work in connection with these observations was done through the courtesy of Dr. Leary at the pathological laboratory of the Tufts Medical School. In private practice I have also treated a few patients with bone tuberculosis in this way and in both private practice and at the Carney Hospital clinic we have treated several cases of chronic polyarthritis, of the rheumatoid type.

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[4] Wolff: Jour. of Infectious Diseases, Oct. 30, 1906.

[5] Hollister: Surg., Gyn. and Obstet., vol. iii, no. 6, p. 740.

[6] Ross. The Canada Lancet, January, 1907.

Bunch: Lancet, London, Jan. 19, 1907, p. 145.

[8] Fraser: Glasgow Med. Jour., March, 1907, p. 194.

[9] Brooke: Dublin Jour. Med. Sc., Sept. 1, 1906.

[10] Hoffa: Berliner klin. Wochenschr., xliii, no. 8.

In brief detail the cases and results have been as follows (their charts have been shown in Dr. Leary's paper):

Case I. Mrs. B., thirty years. Tuberculosis of the lumbar spine, the left ankle and the right great toe. Clinical diagnosis confirmed, so far as the ankle lesion was concerned, by histological examination of material removed at operation and by the tuberculous opsonic index. Patient had been under apparatus treatment for the Pott's lesion for two years and for the ankle one year. Ten injections of tuberculin were given, beginning with 1-10000 mgm. and going as high as 1-500 mgm. on two occasions. The Pott's lesion has made good progress; the ankle lesion was much worse than at any time for a period of three months, but has slowly been improving during the past four months; the lesion on the great toe has caused no trouble at any time during or immediately before the commencement of the injections. Rest and fixation have been enjoined throughout this entire period. The patient has gained in weight, improved in color and general condition, but no more so than has often been experienced in the same time and under the same conditions of hygiene and protective treatment.

Case II. Mr. K., thirty-three years. Tuberculosis of mesenteric and retroperitoneal glands. Suppuration and mixed infection with the bacillus pyocyaneus. There is in all probability at this time an osseous involvement of the lumbar spine. There has been no pathological confirmation of the clinical diagnosis. The case has been under treatment for ten months and has had thirteen inoculations with tuberculin and a streptococcus and pyocyaneus vaccine. During the first five months of treatment there was considerable improvement in general condition and local signs, together with an almost complete closure of the sinus. The past six months his general condition has failed markedly; he has developed a very well defined phthisis, his sputum being loaded with tubercle bacilli, and the local signs in his spine have become much worse. His sinus is discharging very freely and death seems imminent at any time.

Case III. Mr. A., twenty-nine years. Tuberculosis of left hip. Excision. Clinical diagnosis confirmed by histological examination. A very acute case of hip disease, said to be of only four months' duration at the time of admission to the Carney Hospital for excision of the head of the femur. Inoculation commenced before operation in the hope that his local and constitutional resistance might be built up. (*Vide opsonic chart.*) After operation there was a pyocyaneus infection and he was given pyocyaneus vaccine in addition to tuberculin. He was operated upon Oct. 17, 1906, and discharged Jan. 21, 1907. He improved slowly but reacted, it seemed, better than most cases of such severity, and since he left the hospital is reported to be doing well.

Case VI. Miss M., forty-eight years. Tuberculous cervical adenitis. Phthisis. Chronic infectious polyarthritis. Glands in the neck suppurated. No tubercle bacilli found in smears from this pus; pus not injected into guinea pig. Tubercle bacilli in sputum. Patient had three inoculations with Koch's old tuberculin, and later this was changed to the new "T. R." There was no appreciable improvement in the local condition of the glands, and her pulmonary process became worse. She had five inoculations of the new tuberculin at ten-day intervals. She was discharged from the hospital after a stay of eight months, in a worse condition than at entrance.

Case V. M. W., five years. Tuberculosis of the lumbar and low dorsal spine. Abscess. The child has been at the House of the Good Samaritan for two years. On entrance there was a large cold abscess which was opened. Tubercle bacilli were demonstrable in a smear from the pus and were grown on culture media. A few days after the abscess was opened he developed scarlet fever and was admitted to the Boston City Hospital. On his return he was treated a year in the wards with jackets. One year ago tuberculin treatment was commenced and as he had a secondary streptococcus infection of his sinus, he was given a streptococcus vaccine, made from his own organism, in addition to his tuberculin. His opsonic chart has been shown. There has been no local improvement of a permanent character. His sinus is still discharging and he has positive signs of phthisis and a suggestion of the development of an hypertrophic pulmonary osteo-arthropathy.

Case VI. Master C., seven years. Tuberculosis of hip. Amyloid. Clinical diagnosis confirmed by histological examination after operation and by animal inoculation. In many ways this was a most remarkable case. The child came under observation at the Carney Hospital in less than a week after his first symptoms. Limp, pain and muscular spasm, accompanied by a high temperature, led to a diagnosis of acute osteomyelitis. At operation a small amount of pus was obtained coming from a necrotic focus in the neck of the femur. The process extended both up and down the femur and a secondary operation was performed for the removal of more of the dead bone. This was succeeded by an acute nephritis, which virtually became chronic. The spleen and liver were greatly enlarged and there was profuse suppuration from sinuses in the thigh. The boy was soon in such poor condition that it seemed as though he might die at any time. Inoculation with 1-1000 mgm. of tuberculin was commenced and repeated on the average of once in ten days. Improvement, though slow, has been steady since the injections were begun. There is much less discharge from the abscess, his color is better, and his abdominal distention is greatly diminished. The urine also shows less of the products of a chronic nephritis than it did some months ago. This patient had a mixed infection with staphylococcus and was given a staphylococcus vaccine along with the tuberculin. About twenty inoculations were administered. There has been a decided improvement in the general condition of this patient, a change which it seems fair to attribute to the administration of tuberculin. This case would not have been so suggestive were it not for the fact that at the same time we had another child in the hospital in almost the same condition.

Case VII. F. S. This child is a boy of five and one-half years. He entered the House of the Good Samaritan in the fall of 1906. He had double tumor albus, both of which were suppurating. He was very pale and emaciated and had an enormous abdominal distention, part of which was caused by ascites and part by the size of his liver and spleen. There was a marked "caput medusæ." He had been having treatment under the best of conditions for the two years previous in the Children's, hospitals at Lowell and Bumkin's Islands, and failed to respond at all; in fact, had steadily grown worse. In desperation we commenced the administration of tuberculin, much against my better judgment, as it seemed as though I should be subjecting the child to an unwarrantable discomfort. He began to improve after a very few injections and under no different constitutional treatment than he had been having for at least two years. He is not now recognizable as the same child who entered the hospital seven months ago. He is fat, of good color; his sinuses are nearly healed; his abdomen is soft and very little enlarged; the area of liver dullness has diminished, and though both spleen and liver are palpable, they are greatly diminished in size. Both knees are nearly completely ankylosed, but in very good position. He has had tuberculin administered with more or less regularity since his entrance. This case seems certainly to have benefited in a most extraordinary manner by the use of tuberculin.

Case VIII. F. K., six years. Tuberculosis of both hip joints. Abscess. Erysipelas. Child was under treatment at various places for a fairly active tuberculous process in both hips. The left one suppurated, and during the course of the treatment the sinus became infected with streptococci, and she had quite a virulent erysipelas. A culture from her own sinus gave us the opportunity to make a streptococcus vaccine from her own organism, and this was administered along with her tuberculin injections. In this case the pus burrowed out below Poupart's ligament on the anterior surface of the thigh, and though opened freely, two or three times, under ether, refused to cease discharging. After the commencement of vaccine injections there was a very rapid diminution in the discharge until it finally ceased altogether. She was in the hospital about five and one-half months. Her chart has been shown. The progress of the tuberculous phase of her trouble was not affected by the use of tuberculin in any way.

Case IX. A. McD., four and one-half years. Tumor albus. Abscess. Flexion and subluxation deformity of the knees. This child was transferred from the Convalescent Home of the Children's Hospital, where he had been under treatment for a year or more. His general condition was excellent. The knee itself had six or eight sinuses, from which there was moderate discharge. The joint was very much swollen, caused chiefly by bony thickening. A culture from his sinuses gave a pure culture of the staphylococcus. From this a vaccine was prepared and administered along with tuberculin during the fall and winter of 1906–7. During the past three months he has been at the seashore hospital at Marblehead, and his sinuses are reported closed. During this time he has not been having tuberculin. I could not observe any unusual response to treatment in this case.

Case X. Miss P., twelve years. Tuberculosis of left hip. Abscess. This child entered the hospital with a very acute hip. She came from poor home surroundings and had had no adequate care. The thigh was flexed to a right angle with the body and traction would not overcome the spasm. Ether was given and the position corrected. Later a deep seated abscess appeared and was opened. From the time that I manipulated her in October, 1906, she commenced to fail. Tuberculin was administered before the manipulation and was continued through the fall and early winter without any effect; the patient became generally infected and died in March, 1907, of tuberculous meningitis. In this case I made the mistake of manipulating the hip-joint and precipitating into the child's general circulation more tuberculous toxins than she could neutralize. I very much question, in view of that fact, if it was proper to have given tuberculin. This catastrophe should not be cited as an argument against the employment of tuberculin, except in cases of a similar character.

Case XI. Mr. B., forty-five years. Tuberculosis of left hip. Operation. Clinical diagnosis was confirmed by histological examination. Patient was a longshoreman, who had a rapidly developing ankylosis of his left hip, without shortening. An x-ray showed nothing suggestive of tuberculosis and it was regarded as a non-tuberculous, infectious process. Under ether the hip was manipulated. The motion gained was not preserved. Suspicion of tuberculosis again being aroused, he was given a diagnostic dose of tuberculin and had a sharp constitutional reaction but no exaggeration of local symptoms. An open operation was performed upon the hip later, and a number of spurs removed from the superior lip of the acetabulum and a small abscess was exposed in the region of the gluteal bursa. The pathological report from this was tuberculosis. Injections of tuberculin were commenced and continued through the summer, fall and early winter of 1906–7. The patient gradually failed, developed signs of phthisis, and died in the early spring of 1907. Again, in a case of this sort, the lesson it seems to me is that tuberculin is not to be administered, whatever other indications there may be upon estimates of the opsonic power of the patient's serum. Both this case and Case X were treated according to their opsonic indices.

In this series of 11 cases, therefore, we find 4 who were not benefited at all. Two were apparently most extraordinarily improved, and still another (case III) experienced an improvement which, considering the gravity of the symptoms, may fairly be classed as attributable, in large measure, to his vaccines. Two have died and a third is dying. It is an open question if another (case V) has not been made temporarily worse by the treatment. If we take out the 2 cases who have died, and it is fair to do this because they were cases in which the surgical measures employed may have imposed more of an infection upon the patients than it was reasonable to suppose any vaccination could take care of, there are only 2 cases left to speak positively in favor of the employment of tuberculin in the treatment of bone and joint disease. My experience, however, leads me to wish to give the method a longer trial, and with a more judicious selection of cases, I believe better results may be forthcoming.

If the outcome of vaccine treatment has not been brilliant in tuberculous lesions it has been even less so in the case of non-tuberculous lesions.

In chronic polyarthritis it would be the greatest possible boon if the opsonic test could be employed to discriminate between types of infection. If this could be accomplished with any degree of certainty, the next step, that of making a bacterial vaccine for purposes of treatment, should be a comparatively easy one.

In the earlier part of our experience with opsonic work there seemed to be considerable to suggest the possibility of a solution of the problems in the diagnosis and treatment of chronic polyarthritis. When, however, one regards the cases through a long perspective, there is not much to give encouragement at the present time. In acute infectious lesions of joints, such as gonorrheal arthritis, encouraging reports are coming from such reliable sources as the Johns Hopkins

Hospital and the Loomis Laboratory in New York, but the chronic problem seems to be a very different one.

Schüler, in Germany, has isolated from a very large proportion of the cases upon which he has been privileged to operate a bacillus which he regards as the specific organism of chronic progressive polyarthritis. Three years ago Fayerweather isolated from the knee-joint of a patient, upon whom I had operated at the Carney Hospital, an organism which he has described[11] and which Schüler[12] has declared from the description in Fayerweather's article to be identical with his bacillus.

The cultures of this organism had been preserved in the Tufts Pathological Laboratory, and we have been working with a vaccine which Dr. Leary has prepared from these cultures, in an attempt to diagnose and treat the type of polyarthritis with which, according to Schüler, this bacillus is constantly identified. All that can be said as a result of practically a year's experience with the application of the opsonic test for this bacillus is that we have been able to obtain a characteristic serum reaction in the blood of nearly all the patients who were possessed of the clinical signs of this type of polyarthritis. When it has come to treatment I think it is fair to say that there has been no considerable degree of improvement in any case, at least none which is not frequently seen in cases treated by other methods.

The fact that there has been such a uniformity in the opsonic findings in cases that are clinically of one type, together with this further observed fact, that when inoculated with a vaccine made from this organism they reacted locally, just as tubercular joints will react locally to too large an injection of tuberculin, it would seem that a lead had been given which it is worth while to follow.

The following cases are reported to show the kind of problems which have been attacked rather than to record favorable results of treatment:

Case XII. Mrs. L., forty years. Infectious polyarthritis. For five or six years the patient has been gradually becoming crippled in all of her principal joints and has been a great sufferer. With it all has come a considerable degree of neurasthenia. The joints are swollen, only slightly deformed, and possess very little motion. There is occasionally some redness over the phalangeal joints. Patient has been able to sit up in a chair, but walking has been impossible, except with the assistance of two persons to support her. All the possible sources of infection were investigated to make sure that there was no present infective focus. A blood culture was made and found to be negative. Cultures from the stools were also made, but the investigation along this line was not completed. The opsonic index to the staphylococcus aureus, the streptococcus, and Schüler's bacillus of villous arthritis was determined. The reports showed that the index was low, at various times, to each of these organisms, and vaccines were given for considerable periods, being graduated according to the response of the patient's serum to the inoculations. After approximately five months of such treatment there has been no appreciable improvement in the patient's local condition, which could be attributed to the vaccines. I think it is fair to assume, therefore, that the inoculation treatment in her case has been a failure.

Case XIII. Mr. F., forty-eight years. Chronic, progressive, infectious polyarthritis. Three years' duration. No present source of infection made out. Eighteen years ago had gonorrhea. Nearly all the joints in the body have become involved. No redness or other signs of acute inflammation. Marked deformities of the knees and limitation of motion in all the joints which have been involved. A blood culture was sterile. The patient's index was low to Schüler's organism and also to the streptococcus. No improvement attended the administration of vaccines from either of these organisms. During the treatment the patient has developed an iritis which has pretty completely impaired the vision in one of his eyes.

Case XIV. Mr. S., twenty-one years. Chronic infectious polyarthritis. After an exposure to dampness and cold one year before entrance to the Orthopedic Clinic of the Carney Hospital, the patient began to have swelling, stiffness and pain in both knees. This was rapidly succeeded by similar conditions in the wrists, fingers and feet. His index was low to Schüler's organism, but neither local nor constitutional condition was benefited at all by a few inoculations with a vaccine made from this organism.

Case XV. Mrs. S., thirty-eight years. Chronic infectious polyarthritis. Patient has had a chronic suppurating ear for several years. Following the birth of a child five years before, coming under vaccine treatment, she began to have trouble in several joints. The knees have become so badly flexed that she cannot straighten them completely. Her index was low to the streptococcus. The injection of a vaccine made from three strains of streptococci produced no alteration in the local condition, except that the pain was worse and there was greater stiffness immediately after the injections. The discharge from the ear practically ceased, but this may have been in consequence of careful treatment at the hands of an aurist.

Case XVI. Miss L., thirty-five years. Chronic progressive polyarthritis. The patient has been more or less constantly afflicted for five years with painful, stiff joints, particularly the knees, wrists, elbows and ankles. The symptoms were not very acute at the time she came under observation. She had had two very badly infected tonsils, and they were both removed; she had also had acute sinus inflammation. Her index was determined to be low to the streptococcus and also to Schüler's organism, and she was given faithfully for several months a vaccine made from a triple streptococcus culture. She also received a number of inoculations with a vaccine made from Schüler's organism. Neither of these produced any permanent effect. At times she, as well as several other patients, seemed to receive some temporary benefit from the inoculation.

Case XVII. Mr. W., forty-five years. Infectious polyarthritis. For four or five years he has been gradually becoming stiffened in the joints of his knees and hands. One year ago he had an attack of pneumonia, during which the swelling disappeared entirely from his joints, and when he commenced to get about during convalescence, he felt that his arthritis had entirely disappeared. This immunity from former joint symptoms was only temporary, for within a few weeks all his old troubles had recurred, and since that time the knees had flexed to such a degree that walking was painful and difficult. The patient's index was taken for the staphylococcus, streptococcus, pneumococcus, colon bacillus, and Schüler's bacillus. His index was low to the pneumococcus and Schüler's bacillus. Vaccines from these two organisms were repeatedly given, guided by the opsonic index, and no material improvement occurred, which could not be attributed to local and constitutional treatment coincidently carried out.

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[11] R. Fayerweather: Am. Jour. Med. Sc., Dec., 1905.

[12] Schüler: Am. Jour. Med. Sc., Aug., 1906.

Case XVIII. Mr. S., fifty-two years. Subacute phlegmon. Two years ago, while in Egypt, had a very acute phlegmon of the cheek, for which he was operated upon in Cairo, and had at the same time very large and often repeated inoculations of antistreptococcic serum. Since then, in various parts of his body, never in any joint, but usually in close proximity to some large articulation, he has had more or less subacute phlegmons. One of these, close to the elbow joint, was incised and a pure culture of the staphylococcus aureus was obtained. From this culture a vaccine was made and the patient was given several inoculations of this vaccine without any appreciable benefit.

The next 2 patients had intermittent hydrops.

Case XIX. Mr. R., thirty-six years. Intermittent hydrops. Psoriasis. For seven years has had at irregular intervals an intermittent swelling in both knees and both ankles. Associated with this condition has been a very general psoriasis. When, as has happened on several occasions, he has had freedom from joint symptoms for six months at a time, he has also been entirely free from psoriasis. The knees have caused him the greatest inconvenience. The right one has been the more swollen and has had a five-day interval between attacks. The cycle for the ankles was not as clearly defined and he had never taken the trouble to determine it. The capsular swelling in the knees wholly disappeared. The right knee-joint was subjected to an arthrotomy with the hope that the cycle might be broken up. A culture taken from the interior of the joint gave the staphylococcus, which seemed a peculiar bacteriologic finding, but a vaccine was made from the culture and was regularly administered. For three months the operated knee showed no signs of an intermittent swelling. The left knee during this period was less inclined to swell, but did so to some extent. At the end of this interval the right (operated) knee returned to its cyclic distention, though the enlargement has not been as great as before. Observations upon the opsonic index at first showed that it was low to the staphylococcus, but later on the streptococcus seemed to be the organism which showed a low index, and accordingly a streptococcus vaccine was substituted, but without any alteration in progress of the trouble.

Case XX. Miss S., thirty years. Intermittent hydrops. Both knees have swollen alternately every seven days for over two years. Two days were required for the swelling to attain its maximum and recede. The swelling caused a little pain for a few hours, but chiefly inconvenience from the enlargement. Her serum was tested and found to be low to the streptococcus. A vaccine was injected regularly for some time, but not carefully watched with opsonic tests. The patient has been taking Fowler's solution alternating with quinine during this entire period. There have been two intervals of two weeks each when there was no appreciable swelling in either joint, but this has occurred before under other treatment and no treatment. The amount of swelling is decidedly less, though except for the two intervals cited, there has been no intermission of the regular cycle.

Discouraging as these cases are, looked at from the clinical point of view, it must be remembered that we have been applying a new method, the shortcomings of which are not at present wholly understood. Circumstances have sometimes existed making it impossible that some of the conditions imposed by laboratory investigators could be carried out. It may be that cases have been treated with vaccines made from organisms having no possible kinship to the organisms originally present in the patient, though the opsonic findings have pointed that way. Again it may be possible that some of the conditions treated were not originally caused by an infective agent. These and many other obstacles stand in the way of drawing conclusions from the results of the first year's clinical experience. A good many more cases were treated and tested than have been recorded here, but those selected for report were chosen because they covered the types of cases most satisfactorily. It would have been possible to select a group, perhaps an equally large one, where the conformity of the opsonic and clinical findings would have been entirely favorable to this new method of study. So in the matter of treatment, typical opsonic charts might have been exhibited corresponding to remarkable degrees of clinical improvement. The writer believes the danger of expecting too much from an untried method is greater than that of expecting too little, and is desirous of encouraging the continuance of trials now going on in the laboratory provided they can be checked by unbiased clinical observation.

DISCUSSION.

Dr. L. S. Medalia, of Boston: I wish to say that some of the cases that Dr. Painter has mentioned have not been under treatment since the first of February. There are a few cases at the Good Samaritan which have been treated up to date, but those at the Carney Hospital have not been followed up since February 1.

I would emphasize the fact that this treatment has to be carefully and energetically carried out, for the conclusions drawn from those not followed up properly have been unsatisfactory.

THE SERUM TREATMENT OF EXOPHTHALMIC GOITER. A REVIEW OF THE LITERATURE.

BY FRANK S. BULKELEY, M.D., AYER, MASS.

Upon looking over the available literature on exophthalmic goiter, one is at once struck by the fact that drugs having very different actions are, or have been said to be, of benefit. Much of the treatment has been purely symptomatic, perhaps necessarily so. It is hard to see how many of the drugs used could have any influence on the causative factor in the trouble, and their main, if not only, value seems to have been in palliating certain symptoms. This leads us to ascribe the reported cures to general hygiene and the tendency to spontaneous recovery that certain cases show. In a general way such drugs may be divided into four classes: "Nerve sedatives," "vascular sedatives" and cardiac stimulants, gastro-intestinal antiseptics and laxatives, and general tonics, so-called. Many of the results seem, in the light of more recent investigations, mere coincidence, and the fact that spontaneous recovery occurs at times lends strength to this view. Among the various drugs used, belladonna, ergot, intestinal antiseptics and laxatives of various sorts, strophanthus, digitalis, phosphorus, sodium salicylate, bromides, iron and quinine hydrobromate are, perhaps, the most generally used. Forchheimer speaks very highly of the last named drug, and many reports favorable to its use are on record.

The first signs of an attempt at a specific treatment were seen in the use of milk and blood serum from thyroidectomized animals. This has been followed by an attempt to obtain a specific antitoxin by Rogers and Beebe of New York. They report 90 cases, of which 23 were pronounced cured, 52 improved, 11 were not benefited, and 4 died. The cases were of all grades and at all stages. Some of those reported as benefited may later prove to be cured, and some of those not benefited may show improvement. The originators of the serum state that the chronic toxic cases are the most resistant. The dosage and possible limitations of the serum do not seem to be generally understood, and for further details one should consult the original articles.[24] Their serum is a very different thing from the sera prepared by the various manufacturers, and calls for separate consideration. I have had no experience with it, and shall not include it in this review. I have collected the following cases from the available literature:

Enriques.[1] Reports in 1895. Nine cases treated with serum from a thyroidectomized dog. Exophthalmos and all other symptoms relieved. A further report in 1903 says end results are disappointing.

Lanz.[2] Six cases treated with milk from a thyroidectomized goat. One case treated two weeks. Pulse before, 90; after, 70. Goiter less, and general symptoms much improved. One case treated nine weeks. Pulse before, 134; after, 88. Goiter less and all symptoms benefited. One case treated three months. Pulse before, 150; after, 80. Goiter less. Feels completely cured. One case treated three months. Pulse before, 130; after, 80. All symptoms benefited. Previously bedridden, now able to work. One case treated three months. Pulse before, 130; after, 60. Later went through pregnancy and labor without trouble. One case treated three months with great improvement.

Burghart.[3] Three cases treated with the blood of a myxedema patient. Gain in weight and remission of all symptoms.

Moebius.[4] Two cases treated with Moebius' serum. Marked alleviation of symptoms in both cases.

Schultes.[5] One case of three years' duration treated with Moebius' serum for six weeks. Pulse before, 240; after, 90. General and mental symptoms much improved.

Goebel.[6] One case of ten years' duration treated a few weeks with milk from a thyroidectomized goat. Previously bedridden, now able to walk a mile without fatigue.

Kuhneman.[7] One case of six weeks' duration treated with rodagen for one month. Pulse before, 140, after, 90. All symptoms gone, gained twelve pounds. Reported later as completely cured.

Murray.[8] Two cases treated with Murray's serum. Moderately good results in both cases but is not sure it was due to serum.

Thirniger.[9] Two cases treated with Moebius' serum. Both benefited. One, an acute case of five days' duration, apparently saved from death by two weeks' treatment.

Hempel.[10] One case of six weeks' duration treated with Moebius' serum for one month. Pulse before, 180; after, 90. Total of 90 G. serum used. Patient satisfied with her condition four months after treatment was stopped.

Moussu.[11] One case treated with parathyroids of a cow. Gained, but died later of tuberculosis.

Macullum.[12] One case treated with parathyroids of a cow with no result.

Christian. Eighteen cases treated with thyroidectin. All considerably benefited.

Kuh.[14] Ten cases treated with thyroidectin, and one with Moebius' serum. "An excellent palliative but am not certain of permanency of results." All symptoms rapidly improved. In one severe case patient has had no symptoms for two and a half years.

Mix.[14] Two cases treated for a long time with small doses, Moebius' serum. Both are at work with a complete disappearance of all symptoms.

Vanderhoof.[15] Two cases treated two months with thyroidectin. One able to work as hard as ever without trouble. One much improved, but not able to work at time of report.

Waterman.[16] Five cases treated with Moebius' serum. Two cured, free from all symptoms for six and eighteen months. Two benefited, and one not improved.

Rydel.[17] Four cases treated with rodagen with benefit, but is not sure it is due to serum.

Siegel and Ewald.[18] Four cases treated with rodagen with no result.

Adams.[19] One case of three years' duration treated with Moebius' serum for one month. Previously bedridden, but has been at work six months without symptoms.

Kirnberger.[20] Two cases treated with rodagen with disappearance of all symptoms and general improvement.

Peters.[21] One case treated with Moebius' serum with good results.

E. Von Leyden.[22] Three cases treated with Moebius' serum. One case of three years' duration. Pulse before, 96; after, 80. Marked general improvement. One case of two years' duration feels much better. One case cured by eighteen months' treatment.

Sainton. Three cases treated with blood of a thyroidectomized sheep. One case treated eight months. Pulse before, 115; after, 80. "Patient transformed into new and healthy woman."

Number of cases.	Reported by	Duration of disease.	Length of treatment.	Serum used.	Pulse before.	Pulse after.	General symptoms.	Benefited	Not benefited	Goiter	Remarks.
3	Thirniger, 1905			Moebius'			Benefited	3			One, an acute case of five days' duration, apparently saved from death.
1	Hempel, 1905	6 weeks	4 weeks	Moebius'	180	96	Benefited	1		Less	Patient satisfied with her condition four months after treatment.
18	Christian, 1905			Thyroideetin			Benefited	18			
11	Kuh, 1905			10 Thyroideetin, 1 Moebius'			Benefited	11			No symptoms two and a half years after treatment in 1 case.
4	Rydel, 1905			Rodagen			Benefited	4			Not sure it is due to serum.
2	Mix, 1905		A long time	Moebius'			Benefited	2			Possible cures.
4	Siegel and Ewald, 1905		3 months	Rodagen					4		
1	Adams, 1903	3 years	1 month	Moebius'			Benefited	1			
9	Enriques, 1895 and 1903			Serum of thyroidectomized dog			Benefited	9			End results in 1903 said to be disappointing.
6	Lanz, 1899 1903		2 weeks	Serum of thyroidectomized goat	90	70	Benefited			Less	Five possible cures.
			9 weeks		134	88	Benefited			Less	
		3 months	3 months		130	80	Benefited			Less	
			3 months		150	80	Benefited	6		Less	
			3 months		130	60	Benefited			?	
		1 year	3 months		?	?	Benefited			?	
3	Burghart, 1899			Blood of myxedema patient			Benefited	3			Gain in weight in all cases.
2	Moebius, 1901	4 years 2 years	52 days 3 months	Moebius'	134 120	110 90	Benefited	2			
1	Schultes, 1902	3 years	6 weeks	Moebius'	240	90	Benefited	1			
1	Goebel, 1902	10 years	A few weeks	Thyroidectomized goat's milk			Benefited	1		Less	
1	Kuhneman, 1904	6 weeks	4 weeks	Rodagen	140	90	Benefited	1		Less	Reported later as completely cured.

2	Murray, 1904	18 months 5 years	2 months 3 weeks	Murray's			Benefited	2			Not sure it is due to serum.
2	Kirnberger, 1903			Rodagen			Benefited	2			
1	Peters, 1905			Moebius'			Benefited	1			
3	E. Von Leyden, 1904	3 years 2 years 1½ years	1½ years	Moebius'	96	80	Benefited Benefited Benefited	3			One reported cured by eighteen months' treatment.
3	Sainton, 1904	3 years	8 months 6 months 3 weeks	Moebius'	115 120 134	80 100 84	Benefited Benefited Benefited	3			One case reported "cured, but has to continue serum."
2	Vanderhoof, 1906		2 months 2 months	Thyroidectin	140 120	95 ?	Benefited Benefited	2			One at work without symptoms.
5	Waterman, 1906			Moebius'			Benefited	4	1	Less	Two cured, two benefited, one not benefited.
1	Bulkeley, 1907	About 8 months	About 4 months with serum	Moebius' thyroidectin	100 to 140	70 to 85	Apparently aggravated		1		Patient greatly improved, but quite certain it is not due to sera, as they seemed to aggravate symptoms.
86		Totals,						80	6		Sixteen possible cures judging from data given.
				Parathyroids.							
1	Moussu, 1904							1			Gained, but died later of tuberculosis.
1	Macullum, 1905								1		
4	Walsh, 1905							2	2		One severe case not benefited, 2 mild cases apparently benefited, 1 severe case aggravated. Not certain there was no thyroid admixture.

One case treated six months. Pulse before, 120; after, 100. Great improvement, but has to continue serum. One case of three years' duration treated three weeks. Pulse before, 134; after, 84. "Cured but has to continue serum."

Walsh.[23] Four cases treated with parathyroids of a cow. In two mild cases seemed to have a good effect. One severe case not benefited, and symptoms aggravated in one case. Not certain that substance used was free from thyroid admixture.

Billings.[29] Reports 12 cases treated with thyroidectin with varying results, but in no case did he secure the favorable results recorded elsewhere. In 1 case Moebius' serum and quinine hydrobromate were used, with resulting steady and continuous improvement.

In the majority of the cases reported not enough detail is given to allow one to judge of the probability of cure, or of the permanency of results. One case reported by Lanz was able to go through pregnancy and labor without trouble. In view of the tendency to increased thyroid secretion in pregnancy, this may, perhaps, be called a cure, although we must admit that such a tendency is not constant. Lanz reports 3 other cases that seem possible cures. Schultes, Goebel and Kuhneman report cases that might be considered permanently cured. One of Hempel's patients was satisfied with her condition four months after treatment was stopped. Kuh reports that one patient is free from symptoms two and a half years after stopping treatment. Mix, 2 possible cures. Waterman, 2 cures of six and eighteen months' duration. Sainton, 1 case cured. Von Leyden, a case cured by eighteen months' treatment, etc. Nearly all the writers quoted report improvement, and we may, perhaps, be warranted in accepting the statement made by Elsner and Wiseman [25] that the palliative action of the serum seems certain and a cure may be possible. They say, "Improvement usually begins within seven days, and that if there is no improvement in three or four weeks the chances are against ultimate benefit. Tachycardia, tremor and precordial distress show the greatest improvement. Cases without marked goiter, with slight tremor and exophthalmos yield most readily. There usually is an increase in weight. Continued use of the serum may be necessary." My experience with the serum is too limited to allow me to venture a decided statement, but I cannot agree that the palliative action of the serum is certain, however probable it may seem. Osborne [26] states that there is no doubt that the proper treatment of exophthalmic goiter is by antithyroid preparations, but he is not certain whether the treatment can be pushed or prolonged with safety. The assertion has been made that the sera occupy the same relation to exophthalmic goiter that thyroid extract does to myxedema, but such a statement can hardly be accepted on the evidence at hand. It seems as if the writers used the term cured in a very different way. Some do not report cure where it seems probable; others claim it where only palliation of symptoms seems certain. It is desirable that a cure in this condition be more exactly defined.

A contrast of the different sera offers little of value. Two observers report 4 cases in which rodagen was useless, although other reports are favorable to it. The other sera seem to have given uniformly good palliative effects. Practically all the writers quoted report improvement, far too many to have it seem coincidence. It seems as if the treatment is at least worthy of a trial in every case. An estimate of the cures from the data given is very difficult, and I shall attempt no such estimate.

I have made use of the sera in one case with very doubtful results. In this case, goiter was slight or absent, tachycardia and tremor well marked, exophthalmos absent, and the other symptoms those usual in such cases. The thyroid was palpable and visible, but at the same time was no larger than is common in many healthy women. Thyroidectin was used in increasing doses. For a time it seemed to be of some benefit but this effect was soon lost, in fact it seemed to aggravate the symptoms. Later, Moebius' serum was tried with practically the same results. Quinine hydrobromate was used for about five months, in doses just under that necessary to produce cinchonism. It seemed to give positive results. Although the amount of bromine in this preparation is small, a daily dosage of 16 gr. was sufficient to cause a well marked bromic acne in this case. Because of the small amount of bromine in the drug it did not seem probable that the bromide action could be the main factor giving relief. For this reason quinine valerianate was substituted, and while it was used for only a short time, the results obtained seemed to equal those from the hydrobromate. The bromic acne produced soon disappeared after the drug was stopped. At present, while it is too early to make a positive statement of results, the patient has gained in weight, has made little or no complaint of tachycardia for six months, and has little or no tremor. Her main complaint is occasional undue fatigue from very ordinary causes, which seems to be growing less marked. Some flatulency, and a tendency to insomnia and anorexia are about the only other symptoms left, and she has been subject to the two latter ones for years. She is able to go about a great deal with no trouble, and does all her household work. Pulse records taken at random during the past six months have been from 70 to 85, although it is possible that higher records could have been obtained. During the height of the trouble a record of 100 was the rule, and 120 to 140 was no exception. She has had no medicine for about six months. Rogers and Beebe state that some of their cases showed no improvement at the usual period for it to commence, but that it came on after a long interval. It may be that this was the case in the present instance, but the nature of the two remedies and their probable mode of action are so different that it seems improbable. It also seems impossible to say that any delayed improvement was not due to a tendency to spontaneous recovery, or to some other means of treatment. I certainly can trace no benefit directly to the serum in this case.

In arranging the cases in tabular form I have included all cases under the terms "benefited," or "not benefited." The probability, or otherwise, of cure, I leave to the individual reader to determine. Thirteen cases reported by Billings are not included in the summary as the details given are very scanty, and no distinct statement of failure to benefit, or of improvement is made.

The tabulated cases appear on pages 28 and 29.

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SYPHILIS AND GONORRHEA IN INTERNAL MEDICINE.*

BY ROBERT N. WILLSON, M.D., PHILADELPHIA.

Of all the economic problems with which this and other nations must deal, none exceeds in difficulty that of venereal disease. Syphilis and gonorrhea have been reaching out for the vitals of more than one race, and have laid hands heavily on the civilized world. Venereal disease forms a serious social, as well as medical, dilemma. To the necessity of applying itself to this dilemma, the public is just opening its eyes.

One needs to look back only a few years to recall a period in which venereal disease was treated as a matter of course, and often as a half joke, by the general practitioner, and if not by him by the druggist, and at a still earlier time, by the barber-at-large. The profession has grown up, as it were, with venereal disease in its midst, unwillingly conscious of the presence of an unwelcome companion, and yet finding its acquaintance more and more intimately thrust upon it as time has flown. The doctor has known syphilis and gonorrhea as the dog knows his enemy the flea, but no more intelligently. Along with the rest of humanity he classed these diseases as necessary evils to be borne with stoicism and to be disregarded when possible, because too closely bound up with the recognized pleasure of life to admit of a change. The youngest of us can remember the advice of our medical seniors to enjoy our wild oats, because only in such a way could the experience necessary to a doctor be gained. No word was uttered regarding injuries that might accrue to the individual and his home.

Within a few years the medical profession has been learning that syphilis and gonorrhea are factors to be seriously reckoned with. The possibility of the influence of syphilis is considered in every diagnosis, and in the planning of every treatment. Its earmarks stand out upon the highborn and the lowly, the king and his subject, from the grandfather to the third generation. The doctor is to-day hurrying to stem a tide which years ago might have been turned with a finger. He pays no small price for this privilege of serving the people, as is seen in the record of professional accidents that annually result in the syphilization of not a few members of his calling. If there were no other incentive, the danger to which he is daily exposed would commit him to a position in the front line of the battle, now to be waged against a common enemy. The doctor is trusted by the public to a degree that is shared by no other public servant. The laity must simply remind him and keep him faithful to this trust by its interest and encouragement. In one form or another syphilis or gonorrhea enters at some time nearly every home. Their ultimate consequences account for a morbidity and mortality that will exceed that of any given class of disease. The plain physician, the general practitioner, alone knows the full sorrow of venereal infection in the home. He has not realized that the public has for some time been ready for the facts which he has kept in his bosom. Medical literature is full of the material that will rouse the public to action. The people stand at the doctor's door, with hand at ear. What will conservatism and professional ethics allow him to say?

A hurried glance at the literature of syphilis and gonorrhea published during the period 1903 to 1906 inclusive yields the following interesting facts. Four hundred and seventy-five articles have appeared in the leading medical journals, dealing with syphilis alone. The average number of cases of syphilis reported in this series was ten per article; but many included the reports of from 500 to 1,000, and few recorded less than 5. As each instance of syphilitic infection represented at least one other as its cause, this library deals with not less than 5,000 public reports of cases of syphilis, and more much likely 50,000, if the full count were made. During the same period 176 articles appeared upon gonorrhea, a disease which has been discussed, until there is little to say beyond the fact that the profession realizes with each new year how little real knowledge it has upon the subject. The danger is the only settled and established factor, other than the causal germ. Syphilis is at most times a purely medical condition. Only when the internal organs are seriously involved does the syphilitic come for a moment under the surgeon's care. Gonorrhea, on the other hand, has been considered almost exclusively a surgical condition; and only the second glance of one who studies the ramifications of the disease determines how far into pure medicine it may wind its way.

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Let us consider, very briefly, these two conditions from the standpoint of internal medicine and the public.

SYPHILIS.

What medical conditions grow out of, and what is the *natural* outcome of, this disease? Probably if every case of syphilis were isolated and treated by judicious medication and overfeeding in the fresh air, after the manner of tuberculosis, the disease could be stamped out within a few generations. Comparatively few cases are treated thoroughly, and many not at all; and, worst of all, isolation seems neither practicable nor promising of the best results. Prevention seems to be the only satisfactory measure. Every specialist begotten by the medical profession is supplied with material for study. Arteries become hard and lose their elastic and muscular coats. The brain, as a consequence of the arterial calcification, either receives too little blood supply, or a vessel ruptures, and the overamount produces pressure and an apoplexy. The internal organs are sclerosed, some break down into gummata, sclerosis takes place in the liver and spleen, chronic Bright's disease, gastric tumor (gumma), may all be occasional occurrences in the course of syphilis.

The dermatologist notes every variety of skin eruption from a simple erythema to a tubercular syphilide. The orthopedist sees Pott's disease as typical as that caused by tuberculosis; also rickets, and its consequences, and all forms of bone disease.

The ophthalmologist treats keratitis, iritis, choroiditis, optic nerve disease, disease of the lachrymal sac and even the primary sore. It may be interesting to digress long enough to quote in this connection a case reported in 1905 by de la Roche. A young woman of good family consulted an ophthalmologist for a sore upon her eye. He found a typical chancre on her left lower lid, and later observed the symptoms of constitutional syphilis. The woman was a bride who, on her wedding trip, developed a sty. A chambermaid offered to cure it by rubbing, and used in the process her finger, moistened with saliva. The result was the syphilitic infection of a clean woman, and the establishment of a new focus for the spread of the disease.

Reber noted the fact in 1904 that such a primary sore is by no means infrequent, as the result of the application of the tongue to the eye to remove a foreign body, — a common practice among the lower classes. Blaschko reports the cases of twelve doctors seen in ten years, infected in their professional work with syphilis, most of them upon the hand or finger.

The specialist on the stomach will tell you that syphilis may cause any gastric picture, from that of round ulcer to carcinoma. Hayem reports four typical cases of tertiary syphilis of the stomach as follows: Case I simulated a gastric ulcer to such an extent that this diagnosis was made. Case II seemed to be one of benign pyloric stenosis. Case III a tumor in or near the pylorus. Case IV a deceptive simulation of cancerous stenosis. One of these patients was sixty years old, and looked as if he were in cancerous cachexia; but gave a history of chancre forty years before, and recovered on antispecific treatment.

Margulies describes a case of kidney tumor in a woman of twenty-six years, which when opened up was manifestly of syphilitic origin. Wagner cites 14 cases of syphilitic Bright's disease. Quincke notes three interesting instances of abdominal syphilis, one showing a series of gummatous indurations in the cystic duct, and in the head of the pancreas; a second, presenting a gummatous mass pressing on the portal vein and biliary ducts; and, lastly, a mesenteric gumma that pressed upon the stomach, causing dilatation of that organ and stagnation of its contents.

Trinkler reports a case of syphilitic tumor of the pancreas, diagnosed and operated upon as probable cholecystitis.

Klemperer describes a number of cases of syphilitic disease of the liver. Riedel reports several cases of syphilis of the gall bladder, all operative, one of them a physician.

König cites numerous instances of syphilitic tumor of the liver. Von Düring deals with syphilitic aortitis, and states that syphilis has been demonstrated in 56% to 85% of the cases of aortic aneurysm on record. Aneurysm in youth (below fifty years) is nearly always the result of syphilis.

Goldfrank reports a case of multiple gummata of the heart with sudden death. Jones states that in his experience a syphilitic history more frequently precedes valvular lesions of the heart than does rheumatism.

Locomotor ataxia is more and more convincingly ascribed to syphilitic influence. Preobrazhensky reports the case of a child of twelve years with tabes. The mother was syphilitic and developed tabes at the same time with her son. Erb records 400 cases, of which 45% gave an unmistakable history of syphilis or chancre, and in the remainder syphilitic antecedents were probable in all but 2.8%. Erb states that of 600 educated men of the upper classes studied by him, 43.3% were absolutely free from venereal disease. Only 50% of the 600 had had gonorrhea! Adrian describes many cases of tabes in syphilis. Fournier gives his record of 112 cases of general paralysis, in which the date of the primary syphilitic sore is known. All belonged to the well-to-do class. The shortest interval before the onset of paralysis was three years; in the great majority it was ten years. In 223 cases of cerebral syphilis with hemiplegic onset, fully two thirds developed within five years of the primary infection. Nearly all gave a history of insufficient or no treatment. All authorities emphasize the lesson that every case of syphilis, especially those which are clinically light, should be treated energetically and persistently, and be watched for the first sign of tabes; then again energetically treated as before. Also that every case of tabes should be studied for syphilis.

Pritchard cites cases of intracranial syphilis. Peter gives others with disease of the brain and cord. We have ourselves recently studied four cases of cerebrospinal syphilis, two of these in educated, well-to-do men.

Mettler writes of the neuroses due to syphilis; he has also reported cases of syphilitic chorea.

Muravieff and (elsewhere) Gowers describe syphilis of the central nervous system. Finally may be mentioned the fact that syphilis not infrequently involves the peripheral nerves, resulting in neuralgias, polyneuritis, or root neuritis. Usually the trigeminus is involved, and in company with it either the optic, facial, or oculomotor, or other of the cranial nerves. There seems, moreover, to be no doubt that syphilis predisposes to tuberculosis. Fraenkel, Klebs, Beck and many others have cited series of cases that support this view, which has been amply borne out by our own experience upon the wards of the Philadelphia Hospital.

Douty gives expression to the general opinion that 30% of the tuberculous are syphilitic.

Jones believes that the high mortality among the negroes is due to the syphilization of the race with tuberculosis superimposed. Few, if any, are cured of tuberculosis, even when under favorable surroundings.

Time and space remain for only a word regarding hereditary syphilis, the almost certain outcome of syphilitic parentage. Near Stockholm a sanatorium has been built for children suffering from congenital syphilis, in which, under proper care, many have been enabled to survive. As a rule the syphilitic child dies very early. If it survives it often is rachitic, often shows active bone affections, sometimes Hutchinson's triad of syphilitic teeth, keratitis and centrally impaired hearing. Sometimes the syphilis remains latent for months and even for years before manifesting its presence.

Lannelongue claims that Parrot's disease in the young and Paget's disease in adults and in the aged are both syphilis.

A number of writers, among them Etcheverer, cite cases that appear to suggest a predisposing relation between a syphilitic soil and cancer. He notes 13 cases of cancer following leucoplasia; and a still larger number that developed in syphilitic lesions of the mouth. He cites a number of cases reported by others.

Treatment need only be referred to at sufficient length to state that the tendency seems to be to follow the intensive, hypodermic method, injecting mercurial solutions deep into the gluteal muscle. With the discovery of the spirocheta pallida as the probable cause of syphilis Schaudinn has given us both welcome news and an additional incentive to treat the individual case intelligently and well. Not only have we in our possession the possible key to an effective cure, but the urgency of haste, now that we know the spirocheta to be present and virulent even in the tertiary stage.

Doutrelepont published four cases of tertiary syphilis, in each of which he found the spirocheta pallida. Rille and Vockerodt also found the organism in extragenital lesions nine years after infection. Many similar cases are already on record.

Metchnikoff, Neisser and others are now at work upon a series of inoculation experiments upon the various monkey genera. The transference of the disease to these animals is without difficulty and the infection has repeatedly been passed from one monkey to another.

The next advance will be toward, if not to, an immune serum. We have dwelt upon syphilis almost to the exclusion of gonorrhea for a distinct purpose, namely, that it might appear clear to every one that syphilis is a disease which insinuates itself into the lives of physicians and laymen from all sides, openly and in disguise, and in a wide distribution that will require years of effort and patience to conquer. Yet the task can be accomplished just as certainly as with smallpox, and as it will be with tuberculosis. A long step toward this end will have been taken in the discovery of the cause of the disease. An equally marked advance will be the arming of the people with the facts.

GONORRHEA.

A new teaching is also required for gonorrhea, to the effect that it is not merely a local infection of the urethra, but that in every case it is a systemic infection of the blood and lymphatic glands. In most cases, to be sure, the disease manifests its symptoms locally, either in the urethra, the vagina, the uterus, the eye, the rectum, or, much more rarely, the mouth, the nose, the ear, and other portions of the body.

Bull cites five instances of iridochoroiditis. Apetz cites one of gonorrheal ophthalmia, an autoinfection of the eye after six years of latency in the urethra. Kimball reports 8 cases of gonococcus pyemia in infants. Larson describes 2 cases of gonococcus abscess of the sternoclavicular articulation. McColgan and Cooper cite many instances of gonorrheal metastasis and pyemia. K. Flügel recites a series of 56 children with gonorrheal vulvo-vaginitis, in 20% of whom rectal infection had occurred.

L. Emmett Holt urges the stringent isolation and care of gonorrheal patients in children's institutions. In all its forms gonorrheal infection is difficult of control, but in an institution for children it is a scourge. Gonorrheal vaginitis is very frequent in such buildings, and only strict isolation and scrupulous care will prevent or subdue an epidemic.

Lowenburg relates the case of a four-year-old child who infected himself probably by handling the rags and clothes from the refuse boxes. There are not a few instances on record of infection in tiny children as the result of coitus with other children or with adults.

Helman reports a case of multiple periarthritis (gonorrheal) in a child inoculated through a skin wound; Krause notes two cases of gonococcus sepsis, the gonococcus being obtained from the blood of the patient during life; Powers reports one of diffuse gonococcus infection of the entire upper extremity: and Salomon, a case with gonorrheal cutaneous ulcers. Gonorrheal ophthalmia is responsible for from 10% to 25% of the inmates of our blind asylums. The gonococcus surgery of the abdomen includes from 10% to 90% of all the pelvic suppurations in women, the figure varying with the operator. In the male a large part of the surgery of the genito-urinary tract can be traced to the gonococcus as a cause.

There remains simply the statement that the aorta, the smaller vessels, and the heart itself, are all subject to attack by the gonococcus. Eisendrath feels certain from his experience that urethral gonorrhea exerts a distinct influence predisposing the genito-urinary tract to tuberculosis. In both male and female, he says, gonorrhea prepares the soil for a later invasion by the tubercle bacillus.

In the face of the foregoing facts, would it not seem likely that when the public is thoroughly informed it will speedily alter the social conditions that led Joseph Taber Johnson to say only a year ago that "90% of all men acquire the disease." Even if we take exception to his large figure, as some of us will be inclined to do, the minimal percentage persists above 50%, and the consequent harm to the people in sickly women and incapacitated men, and in sterile men and women is sufficiently striking to engage the attention of those who are disposed to protect themselves and their neighbors. Neither syphilis nor gonorrhea is a desirable public asset. In due time, through organic disease, through sterility of both sexes, or through fetal death, they will decimate the hardiest race. Though both are curable under favorable conditions, many unnecessary infections may, and often do, take place while one is being cured. Many cases fail of cure. The ultimate result at such a rate is a retrograde rather than an advance. There is only one radical cure, and only one method of procedure will avail. If the medical profession will inform the laity fully and freely as to the facts in the case, the work will be in the hands of the people from that time forward. There is little doubt that they will rise to the occasion. Their co-operation is indispensable to their own salvation and nothing short of thorough accomplishment should be their aim.

ANATOMIC AND PHYSIOLOGIC REST OF THE PERITONEUM IN PERITONITIS.

BY BYRON ROBINSON, B.S., M.D., CHICAGO.

Since I was a pupil of the late Mr. Lawson Tait, one of the greatest surgical geniuses of his day, I have studied and practiced the subject of *anatomic and physiologic rest* of the abdominal viscera, for fifteen years. Mr. Tait was profoundly suggestive, teaching rather by example and practice than by theory. I learned from the brainy Tait the inestimable value of anatomic rest and physiologic rest in abdominal disease, *i. e.*, practically anatomic and physiologic rest of the *peritoneum.*

Anatomic rest is maximum quietude of skeletal or voluntary muscles. A voluntary, motionless state is secured by rest in bed, not rising for defecation or urination.

Physiologic rest is minimum visceral function. Minimum visceral function is controlled by means of fluid, food, mental quietude and therapeusis. The essential factor in minimum visceral function is peristalsis. Visceral peristalsis is an executor of pain and a distributor of sepsis. The method of treatment for abdominal pain by anatomic and physiologic rest was especially advocated by the distinguished English physician, Wilkes, in 1865 (living at present), continued by the famous American, Alonzo Clark (1807–1887), by the "opium splint," and established forever in 1888 by one of the greatest surgical geniuses of his age — Lawson Tait (1845–1900). Mr. Tait did not secure his success from so-called antiseptic surgery, nor from even present methods of aseptic surgery, for I have watched him do successful abdominal sections on returning from his yachting expeditions, where he delighted to be his own cook, with anything but aseptic hands, and by washing them in soap and water two minutes or less, was ready to do the section.

Tait's success lay in anatomic and physiologic rest with thorough visceral drainage, especially of the tractus intestinalis. He used to remark to his few pupils that the patient should have the bowels so thoroughly evacuated that the intestines were like slippery ribbons when the abdomen was opened. When the intestines are contracted to the shape of slippery ribbons they are in a state of physiologic rest. Besides, Tait kept the bowels in a state of physiologic rest by allowing no fluid or food per mouth for forty-eight hours — a cruel method — after the section. Practically, the patient was without food for four days so far as any action on the bowels was concerned.

Anatomic rest was secured by rest in bed — quiet bones and muscles. On the third day, Mr. Tait again drained the tractus intestinalis with magnesium sulphate and mild chloride. This gave the bowels another physiologic rest, after the visceral drainage. For some fifteen years, I have been following the method of anatomic and physiologic rest in the inflammatory and operative diseases of the abdomen. I am induced to write this on account of the slight attention paid to the subject of anatomic and physiologic rest by so many general practitioners and general surgeons.

First and foremost, the most striking success in anatomic and physiologic rest is shown in septic abortions. Even as short a time as ten years ago, it was a general treatment in some hospitals in septic abortion to curette vigorously, irrigate and pack the uterus immediately on arrival at the hospital and follow this by vigorous catharsis. I learned fifteen years ago from a considerable practice in gynecology and obstetrics, that it was a very fatal practice. In fact, when at that time I saw a case of abortion with temperature 105°, pulse 130 and severe tympanitis, I generally considered the prognosis was fatal with the then active treatment. For the past dozen years in abortion cases I have assumed the treatment I learned from Lawson Tait, *i. e.*, that of anatomic and physiologic rest. When the abortion patient arrived at the hospital, septic, with a temperature of 105°, pulse 120 to 140, with severe tympanites, she is placed on her back in bed, she is not allowed to rise for stool or urination (anatomic rest). No food or fluid is allowed per mouth; she is given a hypodermic of morphine for pain, and warm normal salt solution is injected into the rectum to abate thirst (physiologic rest). Her friends fight against this alleged cruel and unusual punishment, but the hospital should get control of the patients by soon parting with the friends. It is astonishing what a day and a night's anatomic and physiologic rest will do for a septic aborted patient. She soon becomes easier under rest. The small doses of opium aid to check the pain which is wild peristalsis. The tympanites subside. In a few days one finds the peritoneal exudate still there, but in a couple of weeks, if abscess formation does not occur, they begin to subside, absorb. Put the intestines at rest and they will not distribute the sepsis over the abdominal cavity by wild and irregular peristalsis. Under anatomic and physiologic rest, seldom does one lose an abortion patient.

In the second ten years of my practice I have saved double the number of septic abortions by means of anatomic and physiologic rest, in comparison to the so-called active treatment.

I am aware of no septic infectious process where the anatomic and physiologic rest method will demonstrate its utility as well as in septic abortions. Again, for about ten years, an able surgeon, whom I would meet almost daily, has tried to convince me that hot, moist compresses saved him from amputating many limbs. Hot, moist compresses with him are a hobby, and I must say that he saves many terribly septic limbs and fingers. However, I think this good surgeon is mistaking hot, moist compresses for the favorable therapeusis, — anatomic and physiologic rest. When a septic limb is put to anatomic rest, the bone is immobile. The muscles lie quietly, no contractions and relaxations impel or force the lymph stream proximalward, conveying sepsis with it. The blood stream is physiologically quiet, moving at a minimum rate. In short, the sepsis in the infected limb is being circumscribed by anatomic and physiologic rest, and not by hot and moist dressings. He also claims that the hot, moist dressings must be antiseptic, as bichloride of mercury or alcohol. I have argued with this surgeon that it was the anatomic and physiologic rest that produces the favorable effect in the cases which he thought was due to hot, moist dressings. In perityphlitis, the most treacherous and dangerous of abdominal diseases,— dangerous because it kills, and treacherous because its capricious course cannot be prognosed, — anatomic and physiologic rest is equally favorable; but it fails in some cases where the sepsis has been excessively distributed by enteronic peristalsis, and therefore many of my colleagues condemn it.

It is an error to condemn anatomic and physiologic rest in perityphlitis without extensive trial, for it requires the highest skill and abundant experience to form a correct judgment in many cases of perityphlitis as to the appropriate time to operate. For example, I find considerable opposition among physicians in consultation in cases of perityphlitis in regard to the administration of cathartics in acute and incipient cases. I argue with them that a cathartic in acute perityphlitis is about the worst form of malpractice. It makes the perityphlitis worse by distributing the sepsis over new areas of peritoneum and increases peristalsis, and thus increasing the pain while it gives the patient no relief from his perityphlitis. Such a practitioner mistakes the result of the perityphlitis (peritonitis) for perityphlitis itself. What the perityphlitis patient requires is anatomic and physiologic rest, no food and minimum quantities of fluid per mouth; however, ample injections of normal salt solution per rectum to control thirst, and rather opium to quiet the pain, until when? Until recovery, or until he is ready for an operation in a stage as quiescent as possible. During twenty-five years of practice I have been infected in the fingers and hands about ten times. If I worked with the hand with the septic finger, all day, at night it was worse; it throbbed, ached and became swollen. If I placed the hand in a sling — semi-anatomic and physiologic rest — it would improve, but, with a night's anatomic and physiologic rest, it was in a favorable condition in the morning. We can save large numbers of patients from dangerous and unsatisfactory operations by anatomic and physiologic rest. They can be bridged so that operations will not be required during severe local and general sepsis.

Physiologic rest consists of minimum function of viscera. When one considers that every abdominal visceral tract — intestinalis, urinarius, vascularis, lymphaticus, genitalis, nervosus — possesses the four common functions of sensation, absorption, secretion, peristalsis, and all the visceral tracts are connected with the peritoneum, it becomes evident that valuable aid may be rendered the patient by controlling the visceral functions. The four great functions (peristalsis, absorption, secretion, sensation) of the tractus intestinalis, *e. g.*, are practically produced and maintained by food and fluid. In cases of acute peritonitis, no fluid or food should pass per os. All required fluid should be administered by means of a fountain syringe, by means of slow, drop by drop, rectal irrigation. By this method all visceral peristalsis is diminished, and pain subsides. Intestinal as well as genital peristalsis distributes sepsis. The two visceral tracts which should pursue maximum activity in peritoneal disease are the tractus vascularis and tractus urinarius. Both the vascular and urinary tracts may be treated alike effectually by the same method, viz.: gradual, slow, rectal irrigation with normal salt solution — 8 oz. per hour.

This lends volume, that is, vigorous peristalsis, to the vascular system and forces abundant elimination through the kidneys. The peristalsis of both tractus urinarius and tractus vascularis are vigorous, yet neither practically disturbs the peritoneum sufficient to distribute sepsis. There are few diseases which are controlled so effectually by anatomic and physiologic rest as peritonitis. The army of leucocytes of the peritoneum have almost plenipotentiary power in: (1), imprisoning, *i. e.*, building barriers of peritoneal exudates; (2), digesting, *i. e.*, destroying, and (3), sterilizing, *i. e.*, isolating, bacteria if the peritoneum be placed in a peritoneal splint, or rather in a state of anatomic and physiologic rest. The general surgeon appears to realize that the inflamed joints demand anatomic and physiologic rest, but seldom does he apply the principles to a fractured (desquamated) peritoneum. However, it is not strange that the inestimable value of anatomic and physiologic rest is overlooked by both the general surgeon and practitioner, since practically nothing in the medical colleges is taught on the important subject of anatomic and physiologic rest. The modern physician is gone to seed on technic. Surgical technic is the wailing cry of the medical college instead of the grand principles of physiology and pathologic physiology. In abortions accompanied with peritonitis, the cruel and unusual punishment, the uselessness and the brutal fatality of the sharp curette within the uterus has been demonstrated a thousand times; but as a young practitioner remarked, even the gynecologic books herald little warning of its immediate or remote damages. Practically, the sharp curette should be used within the uterus for diagnostic purposes only. Vastly more patients would be saved in abortions and salpingitis, if the tractus genitalis was more frequently placed in anatomic and physiologic rest. Anatomic and physiologic rest presents a double-edged sword of utility, for it is not only the most effective and safe remedy to avoid dangerous operation, but it is the most effective and safe method to prepare the patient for safe operations.

External to the peritoneum, observe the value of anatomic rest in inflamed joints, spondylitis, fractures. That anatomic and physiologic rest aids in the formation of thrombosis and embolism, I doubt.

The great principles gained by anatomic and physiologic rest are: (1) the lymph stream, especially in the peritoneum, is slowed, the muscular action required to force it with sepsis in the general system being practically absent. (2) Pain is diminished by checking muscular action and especially peristalsis. (3) In peritonitis, peristalsis not only enhances the lymph stream, but mechanically distributes germs over extensive areas in the abdominal cavity. (4) Anatomic and physiologic rest aids to circumscribe infection and save the patient from operation and death. (5) Anatomic and physiologic rest is one of the most excellent therapeutic agents to prepare patients for safe and successful surgical procedures.

TARSAL INJURIES.

BY JOHN O. W. KNOWLTON, M.D., EXETER, N.H.

Under the head of injuries to the tarsus, the writer wishes to draw attention to simple, noncomminuted fractures without external wounds.

The above paragraph might as truly read, injuries to the tarsus which the patient considers and describes as a " very bad sprained ankle."

Of the seven (7) tarsal bones, this paper will deal only with the os calcis and astragalus, as the others seldom suffer injury except by severe crushing of the whole foot, when two or more bones are injured and usually in connection with an external wound.

The difficulty the writer experienced in the diagnosis and the importance of consulting the x-rays are the reasons for presenting these cases to the society.

SIMPLE FRACTURES OF THE OS CALCIS.

Case I. The patient was a male, thirty-six years old. He is a carpenter. While at work, standing on a step ladder, it slipped, and the patient fell about eight feet, striking the floor on his right foot. He noticed considerable pain in his foot, but continued working for an hour. The patient was seen next day, complaining of a " sprained ankle." There was considerable swelling of the foot, especially of the posterior and external surfaces. Tenderness was marked over this area, but no bony deformity, no abnormal mobility, and no crepitus could be detected. A plaster bandage was applied and cut the same day.

For several days after the accident the conditions of the first examination prevailed. There was great discomfort when the bandage was removed, pain on motion, movement somewhat limited and considerable tenderness.

An x-ray examination was advised and made. The radiogram showed a fracture into the posterior surface of the os calcis about an inch long.

The plaster was removed and a new one applied, with the foot slightly flexed. At the end of six weeks there was a good callus and movement without pain. Crutches were continued two weeks longer.

Case II. The patient was a linesman, who fell from a height of about twenty feet, striking the ground on his right heel. He was unable to work on account of pain and disability of function of the foot. He was seen a short time after the accident. There was considerable swelling and ecchymosis about the heel. Examination showed bony deformity, abnormal mobility and crepitus. The x-ray confirmed a diagnosis of simple fracture of the os calcis.

SIMPLE FRACTURE OF THE ASTRAGALUS.

Case III. The patient was a male, seventeen years old, and weighing about one hundred and eighty pounds. While standing on the ground, watching an athletic contest, he became enthusiastic as one of his friends won an event, and throwing his cap in the air, he followed it, but he came down in a little hole. He did not fall. He felt a sudden pain in his left foot and, without assistance, hobbled to a carriage, about three hundred yards distance.

The patient was examined within an hour of the accident. He said he had sprained his ankle, and the foot did look like a sprain. There was very little swelling, so that the bony landmarks were prominent.

There was no bony deformity, abnormal mobility or crepitus. The whole surface of the ankle was tender.

No fracture was detected. A bandage was applied and crutches ordered. The following day the physical conditions were the same, with an increase of swelling and pain on motion. A plaster bandage was applied and cut the same day. On the third day after the accident, an x-ray examination showed a longitudinal fracture on the posterior and external surfaces of the astragalus, with slight separation. The tips of the malleoli were intact. Examination of the foot showed ecchymosis on the external surface. Slight tenderness over the point of the fracture.

Three weeks from the time of the accident the patient could move the ankle joint freely without pain; there was no tenderness over the seat of injury. X-ray showed beginning union and the bone in good position. At the end of six weeks the patient left, with a plaster bandage and crutches, which he continued for three weeks, the foot being moved each day.

CASE IV. This patient, a boy of sixteen, injured his right foot Oct. 1, 1906, while jumping. At the time of the accident he was wearing spiked shoes and in the act of jumping caught the spikes of his left shoe into the skin above the right knee, throwing him on to his right foot. He could not bear his weight on his foot. It was very painful.

Physical examination showed two long superficial lacerated wounds above the right knee. All the bony landmarks of his ankle and foot were prominent. There was no abnormal mobility or crepitus. There was slight swelling below the external malleolus and the outer surface of the foot was generally tender. There was no apparent fracture. The foot was held in a pillow and side splints for three days, then a plaster bandage was applied. At the end of a week the foot showed a slight broadening of the malleoli, deep ecchymosis below and posterior to the tip of the external malleolus and exquisite tenderness on slight pressure posterior to the tip of the malleolus.

The patient was urged to have an x-ray examination, but he refused. A fresh plaster bandage was applied. The patient was told that he had a fracture of the astragalus and that it would be necessary for him to use crutches for at least four weeks. He then said that he wished he had had a picture taken.

The difficulty in the diagnosis of tarsal injuries arises from the anatomical arrangement of the bones.

The bones are small, firmly wedged together, held by and practically encased in very strong ligaments. The articulatory surfaces are covered with synovial membrane. The bones are classed anatomically as spongy bones, having the cancellous tissue surrounded by a thin shell of compact osseous tissue.

On account of this arrangement the bones are strong and seldom are injured. The usual seat of injury in the region of the ankle is higher up, about the malleoli of the fibula and tibia. The usual injury to the tarsus is a compound comminuted fracture of the bones.

A simple fracture, with or without a free fragment of only one bone, although not rare, still is uncommon. Such an injury is usually caused by a fall.

In three of the cases reported the apparent cause was slight and the resulting bony deformity, as far as one could feel, was *nil*. With the exception of tenderness, there were no physical signs of fracture. There was no free fragment of the bone, so abnormal mobility and crepitus were not detected. Under ether it might have been possible to manipulate the bones, so that abnormal mobility would have been detected, but even then it is doubtful if it would have been possible to find out the exact location of the fracture.

The usual history of such case is as reported: the patient injures the ankle in some simple way, it is very painful and, although he considers it a bad sprain, yet he expects the doctor to find out how bad the injury really is. A thorough examination is made, and although there is no apparent fracture, yet one hesitates to make a diagnosis of sprain.

Many times the only sign present to aid in the diagnosis of fracture is localized tenderness. But there is no doubt that continued tenderness in connection with injuries of the ankle is very suspicious of great injury, namely, of the bones rather than of the ligaments.

The symptoms of an uncomplicated sprain are swelling, pain on motion, ecchymosis and tenderness, all of which disappear quite rapidly. The symptoms of fracture include the above and, in addition, real deformity, abnormal mobility and crepitus. But there are fractures such as three of those brought to the attention of the society, that have only the character of sprains and no conclusive evidence of fracture. Even if we considered tenderness to be efficient evidence of fracture, are we not still in doubt as to the particular part of the bone affected, and as to the result to be expected? Under these conditions the x-ray opens a new door, for it will or will not confirm our diagnosis and render great assistance in our prognosis.

Before leaving the subject of tarsal diagnosis, mention should be made of the frequency with which the laity confounds all swellings in this region with sprained ankle. This is especially true of tubercular disease of the os calcis or astragalus. Recently a case came under the writer's observation of such a case, in which a tubercular abscess over the astragalus was about to break. Trauma of the bones and ligaments of the tarsus may result in tubercular disease, but the patient goes on for some time thinking it an uncomplicated sprain. If the diagnosis is not clear, then the x-ray will tell the story of the invasion of the tubercle bacilli by the picture of necrotic bone or thickened ligaments. Single fracture of the os calcis with a movable fragment is rather common and the diagnosis is usually easy.

The usual injury of the astragalus is a comminution, by being crushed between the lower end of the tibia and the os calcis. Dislocation of the astragalus is also rather common. The surgical deformity is so apparent that the subject will not be considered at length.

Cases of single simple fractures of the cuboid, scaphoid and cuneiform bones have been reported, but they are uncommon.

It is safe to say that all injuries occurring about the joints should be investigated by the x-ray, when they are at all obscure.

In the treatment of injuries of the tarsus, the important procedure should be, first, hold the foot in the proper anatomical position, and second, encourage the use of crutches.

Immobilization can be maintained during the period of swelling by a firm pillow and side splints. Then a plaster bandage can be applied and as it gets loose a new one can take its place. After the first week the foot should be moved every second day.

Sprains should be treated according to the severity of the injury done to the ligaments. As a rule, a firm bandage during the period of swelling and massage afterwards is the treatment to be preferred. Crutches should be ordered and used from the time of the accident until full recovery in all injuries to the tarsus.

In the treatment of fractures, where there are no objective symptoms, the writer considers it advisable to have frequent recourse to the x-ray. Once, to really make the diagnosis, on which the initial treatment depends; another at the end of three weeks to show the position of the bone, and lastly, before the crutches are discontinued, in order to be sure that good bony union has taken place. Until that is assured the weight of the body should not be borne on the foot. Examination under an anesthetic will tell little, if anything, about the condition. Lastly, if separation of the bone continues and pain persists, or if there is comminution, then under an anesthetic, the bone should be wired or the fragments excised.

Medical Progress.

PROGRESS IN SURGERY.

BY J. G. MUMFORD, M.D., BOSTON.

RESULTS OF THE OPERATIVE TREATMENT OF BREAST CANCER.

The results of cancer treatment concern all men — physicians and laymen alike — almost as much as do the results of tuberculosis treatment; and any authoritative pronouncement on either subject must be received with keen interest.

Last May, in Washington, the American Surgical Association devoted more than half a day to a symposium on the "End Results following Operations for Carcinoma of the Breast," and twelve men took part in the carefully prepared discussion. The verdict of such a jury must carry conviction to the American profession, and their verdict is substantially this: that, although we have greatly diminished the death-rate from breast cancer, during the past ten years, the end is not yet. Indeed, to one viewing candidly the situation, it must appear that surgery in the case of breast cancer, though frequently effective, is but a makeshift for those who go late to the surgeon, an attempt often desperate, to eliminate a terrible evil; but that it offers good hope of cure for those who go early. Doubtless, in the end, we must look to preventive medicine for the proper solution of this problem. However, while we look, surgery is winning its triumphs; the death-rate is being lowered, and we can hold out a far better prospect of restored health in the individual case than we could a few years ago.

Says Halsted: "It is especially true of breast cancer that the surgeon interested in furnishing the best statistics may in perfectly honorable ways provide them. The most conscientious man may refuse to operate on any but favorable cases, and, by performing an incomplete operation, exclude from his list of complete operations such bad ones as he finds himself operating upon. Or the pathologist on whom he relies may classify as carcinoma tumors which on microscopic examination show dangerous spots, *i. e.*, a few epithelial cells here and there escaping into the stroma." That gently derisive estimate of the situation was made at the opening of this cancer symposium. As one studies the papers which were read and published, one feels that Halsted's estimate may indeed be true.

Nevertheless, and in spite of the lack of a common point of departure, or any correlated method of constructing their statistics, the well-known surgeons who took part in the debate furnish us with interesting material, and ground for increasing confidence. Their estimates and opinions vary, and vary through astoundingly wide limits, — ranging from those of the optimist who reports an end-mortality of 19.5% to those of the sober skeptic who admits a mortality of 79.1%. Here are the published figures:

Table I.

SUMMARY.

	Cases.	Operative mortality.	End mortality.	Well after three years.
Halsted,	210	1.7%	57.7%	42.3%
Oliver,	35	—	62.85%	37.15%
Greenough,[1]	376	3.6%	79.1%	20.9%
Cabot,	42	—	78.1%	21.9%
Dennis,	(50)	—	(22)	(78%)
Willy Meyer,	80	1.25%	65.0%	35.0%
Pilcher,	18	—	72.0%	28.0%
Vander Veer,	87	—	19.54%	80.46%
Ochsner,	98	5.1%	45.0%	55.0%
Jonas,	177	2.3%	40.7%	59.3%
Jacobson,	71	—	46.4%	53.6%

The surprising variation in the reported results calls for some explanation, but any explanation, even that given by Halsted, fails to satisfy us entirely regarding the discrepancies in the figures. We read certain statements of the writers, however, statements which deserve notice; most of the debaters protest at once that it is impossible to trace the results of general hospital operations, because many of the hospital patients are lost to sight and can never be followed. In spite of such assumed impossibility, however, both Halsted and Greenough do give general hospital results, worked out with the greatest care, and deserving the highest praise. Halsted's cases, if one may judge from his own writing, include all of his private cancer patients also; while Greenough's cases are general hospital patients only, — the patients of a great number of surgeons operating by diverse methods and through thirteen years, so that, as the author states, his figures do not by any means represent the best private work of any one of these surgeons, but gives us a basis upon which we may estimate the *average* of hospital surgery in the community. Although neither Halsted nor Greenough makes the following statement, it is a fact familiar to all hospital operators, that the class of patients presenting themselves at a public clinic show a far more serious average condition of advanced cancer than do an equal number of any one surgeon's private patients. This fact may explain the high end-mortality reported from the hospital clinic, but does not explain the wide variation of figures reported by the other surgeons from their private clinics. The figures of Dennis should be quite separately considered, because Dennis deals with fifty cases, which had passed the three-year limit. He traces their subsequent careers and shows for our satisfaction that of those persons who survive the three-year period, the chances of recurrence of the disease are but two in ten. Two interesting questions which have been much discussed seem to have been fairly well settled in this symposium, — the true value of a three-year limit; and the proper significance of the term " recurrence." Volkman, more than twenty-five years ago, established three years as the time-limit upon which to estimate cases, but such a limit now seems meaningless. Thirty months or five years would be equally appropriate. It is fair to say that the longer the patient survives after the operation, the less prospect is there of a recurrence. Ransohoff reports an undoubted case of his own, still living and well, twenty-nine years after the operation, while numerous surgeons report cases with recurrence eight, nine, ten, eleven, fifteen, seventeen, nineteen and twenty-one years after the first discovery of the disease and the primary operation. As for the place of late development of distant metastases (recurrence) we know them to be common within the chest, in the liver, in the vertebræ and in the long bones, as well as in the field of the original operation and in the opposite breast. A true recurrence or metastatic development of the peculiar forms of breast cancer should puzzle no expert pathologist. But physicians should remember that coincident or long delayed development of cancer in the pelvic organs, intestines, the genito-urinary apparatus, the rectum and the ends of the extremities, have no direct association with the cancer of the breast. When we see reported cases of uterine cancer following the removal of breast cancer, and *vice versa*, we should reflect that the writer records a coincidence merely. These are prefatory and explanatory remarks prompted by the interesting composite of information furnished by the papers, and we shall have to make more explanations and qualifications later; but a somewhat careful analysis of the discussion brings to the surface certain interesting factors and propositions covering the whole range of breast-cancer surgery.

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[1] Dr. R. B. Greenough, of Boston, by invitation, took the place of Dr. J. C. Warren in the discussion. At Dr. Warren's suggestion, Dr. Greenough, with two associates,— Dr. C. C. Simmons and Dr. J. D. Barney,— had worked up and reported the "results" of the Massachusetts General Hospital for the past ten years. In the discussion and in this writing Dr. Greenough's name is taken to stand for the work of that institution.

Matters of pathology, of diagnosis, of metastasis, of time before recurrence and of methods of treatment bear closely on the question of eventual immunity, and with such matters it is well to concern ourselves here.

Halsted's discussion of the *pathology* of breast cancer, especially its method of dissemination, is important. He accepts the views of W. S. Handley, who published his interesting conclusions some two years ago, to the effect that metastases do not arise from particles swept along in the blood and lymph channels, but come about by a more slow and subtle method, through the actual coterminous growth of cancer cells along the finer vessels of the lymphatic plexuses. This " permeation " takes place almost as readily against the lymph stream as with it, and spreads in much the same way as would a thick injection fluid introduced by a syringe into the tissues. Cancer thus advances like an invisible annular ring, extending like a ripple in a wider and wider circle, within the circumference of which healing processes take place, so that the area of permeation at any one time is not a disk but a ring, though there may be left behind within the circumference isolated islands of the new growth, which, on careful dissection, appear as skin cancer nodules. In this way, gradually, great areas of the body's surface may be involved, including the whole head and trunk, the arms half way to the elbows and the thighs to just below the trochanters, should the patient live long enough. This gradual and wide manner of skin involvement, though occurring late in the disease, is a strong argument in support of Halsted's well-known contention that a great area of skin over the entire breast should be removed in a radical operation. Cancer is found to spread along the planes of deep fascia also; gradually advancing, following always the fascial routes, and by continuity, until it attacks distant organs and parts, — the femur, the humerus, the liver, by way of the deep fascia, the linea alba and the round ligament; the brain by the lymphatics, accompanying the middle meningeal artery, and other parts and organs in similar fashion. Such is the method of " metastasis "; but before this occurs even, the diseased tissues near their central focus assume a certain form, quite characteristic, resembling a biconvex lens in shape. " The thin circumference of the lens situated often far beyond the limits of the breast, is formed by the cancer-filled lymphatics of the fascial lymph plexus. As one approaches the centre of the lens, which corresponds to the primary growth, the adjoining layers — the subjacent muscles on the one hand, and the subcutaneous fat and skin on the other — are invaded by cancer to a gradually increasing depth."

Halsted, with many other thoughtful surgeons, admits this conception of the spread of cancer, and one sees the important bearing of this conception on the subject of radical and searching operations.

The question of cancer cysts also is of grave concern to Halsted, and he dwells earnestly on the importance of making the diagnosis of malignancy in these cysts at the operation itself, if malignancy be present in cases previously assumed to be benign, as so often happens. Halsted mentions further an extremely interesting pathological condition, bearing upon Handley's teaching,— a condition of cancerous axillary glands without apparent involvement of the breast as a starting point. He refers to two such cases, in which axillary dissection had been done before the patients came to him. In both cases, some months subsequent to these operations, breast cancer frankly declared itself.

Greenough also makes certain interesting observations on the pathology of breast cancer, especially as regards the malignancy of varying types. His findings in the study of 376 cases are not novel, but his percentages are interesting, and in reading the percentages, one should remember that he deals with a great number of very advanced cases; indeed, he includes in his list a large group of hopeless cases, for which palliative operations alone were attempted — the removal of foul and sloughing masses of disease.

Medullary cancer is the most frequent form of breast cancer, unfortunately, and shows the highest percentage of fatality, both immediate and ultimate.

Scirrhus stands next with an end result nearly five points better. Adeno-carcinoma is far less malignant, while colloid cancer is the most favorable form of all.

The following table tells the story:

Table II (Greenough).

VARIETIES OF CARCINOMA.

	Cases.	Cases surviving radical operation.	Cases free from recurrence.	Per cent.
Medullary,	136	104	19	18.2
Scirrhus,	46	43	10	23.0
Adeno-carcinoma,	24	21	10	47.6
Colloid,	4	3	2	66.0
Cancer, variety not specified,	127	107	18	16.8
No pathological report,	39	31	8	25.8

Table III (Halsted).

CARCINOMA OF THE BREAST PATHOLOGICAL VARIETIES.

	Number of cases.	Cured cases.	Per cent.
Cancer cysts,	6	2(1?)	33.3
Adeno-carcinoma,	32	24	75.0
Medullary carcinoma,	25	12	48.0
Circumscribed scirrhus,	28	13	46.4
Small infiltrating scirrhus,	80	30	35.5
Large infiltrating scirrhus,	39	8	20.5
Total,	210	89	

Greenough points out also that out of eight cases of Paget's disease but one survives, — an end-mortality of 87.5%. On the other hand, cancer developing in the lactating breast (commonly regarded as an extremely grave condition) showed an end-mortality of but 71.5% in seven cases. Cancer developing during gestation is probably more fatal than during lactation.

Halsted's remarks on glandular involvements are extremely interesting. He deals with a total number of 232 cancer cases, and of these 168 only showed any evidence of diseased glands in the axilla. That is to say, we may expect to find, in a large group of cases, the axilla involved in 72.4% only. But this must not mislead us, for in nearly a quarter of Halsted's cases, which were free from axillary involvement, metastasis occurred sooner or later; so that he is driven to remark, "We must bear in mind, however, that surely in some, and probably in many if not in most, of the axillæ recorded as negative there was disease." Regarding these glands Greenough says, "It is quite possible that in early cases, without palpable enlargement of the glands, the disease is entirely within the glands and can be readily removed; whereas, in glands which are palpably enlarged the disease has extended through the capsule and along the lymphatic trunks and become disseminated through the axillary fat to such an extent and in such minute strands that complete removal is very difficult, if not impossible of achievement." Our understanding of Handley's theory of cancer permeation makes highly probable the supposition of Greenough.

(To be continued.)

Reports of Societies.

EIGHTH ANNUAL MEETING OF THE AMERICAN THERAPEUTIC SOCIETY.

Held at Washington, D. C., May 4, 6 and 7, 1907.

[Continued from No. 18, p. 608.]

DISCUSSION.

Dr. Robert Reyburn, Washington, said that there is no class of patients with whom he has greater sympathy. According to his experience, physicians are peculiarly liable to contract drug habits.

Dr. Oliver T. Osborne, New Haven, said that the method of control was a good one and the provisions of the Maine law should be more generally known in order that interest to take similar action might be aroused in other states. Upon motion it was ordered that a copy of the law be sent to each member of the society.

Dr. V. E. Henderson, Toronto, inquired as to the necessity of having the order of committal made before a superior justice.

Dr. L. F. Kebler, Washington, spoke of the advertised "cures" for drug habits and the method of treating patients by correspondence. Prescriptions sent through the mails are not exempt under the law. He inquired as to the number of *habitués* in the United States. He understood that there was about 1 in every 125 persons.

Dr. F. E. Stewart, East Orange, told of preparations which were advertised and sold with the deliberate intention of setting up the opium habit.

Dr. Gerrish, in closing, said that a Superior Justice was named probably to give dignity to the committal proceedings. He believed that any judge of a court of record could do the work. A valid criticism of the law was that those who were specified to examine the patients prior to their release, by reason of their residence, had to take long and expensive journeys. This could be obviated by designating local county officers to do the work. He did not know the number of *habitués* in this country. Over 50% of the victims he had treated were physicians. He described the events leading up to the passage of the Maine law.

THE VALUE OF PHYSICAL TRAINING IN THE TREATMENT OF NEUROTIC PATIENTS.

Dr. B. E. McKenzie, Toronto: The first step is to make a positive diagnosis to determine whether organic disease is present. In the management of the neurotic there must be no vacillation on the part of the physician. He must separate his patient from all harmful surroundings and subject her to a kindly but firm discipline. She must be turned from introspection and egotism and taught to be cheerful, self-reliant, active and altruistic. The ordinary "rest cure" falls short in that it is merely negative. For discipline, encouragement and development, physical training in the gymnasium and on the playground is a most effective agency. It requires the assistance of a thoroughly trained and tactful director. Many excellent results are reported.

Dr. Oliver T. Osborne, New Haven, said that he had visited the institution under Dr. McKenzie's charge and heartily commended his work and methods. Neurotics form a difficult class of patients, but much can be accomplished by persistent systematic effort. He commended the gymnastic training advocated by the essayist. Suggestion, also, should not be overlooked.

PRINCIPLES UNDERLYING THE TREATMENT OF TUBERCULOSIS.

Dr. Francis M. Pottenger, Los Angeles: Dr. Pottenger classifies the measures employed in combating tuberculosis under six heads: 1. Those which aid in bringing about immunity by endeavoring to restore as far as possible the normal resisting power of the patient. Fresh air, hygienic measures, proper diet, hydrotherapy, favorable climate and suitable tonics. 2. Those which aid in bringing about immunity by artificially stimulating the body cells to the production of specific protective substances: vaccination or treatment with such products as tuberculin. 3. Those which aid in establishing immunity by supplying specific protective substances which were produced by vaccinating some animal such as the horse or cow: antitoxic sera. 4. Those measures which cause an increased flow of blood or lymph to the seat of infection: Bier's hyperemia, Finsen light, poulticing, local congestive action of tuberculin. 5. Remedies and measures which relieve symptoms. 6. Measures which relieve secondary infection.

DISCUSSION.

Dr. B. E. McKenzie, Toronto, emphasized the value of fresh air and sunlight in the treatment. He commended the paper as being thoroughly scientific.

Dr. V. E. Henderson, Toronto, spoke of the open-air treatment. We should also make use of other rational methods which promise benefit to the patient. Wright has shown us how we can do this and also in some degree measure the patient's improvement.

Dr. H. Van Rensselaer, Albany, spoke of the opsonic index as a guide for fixing the dose of tuberculin. He asked Dr. Pottenger to describe the technic used in obtaining the index. If it were not correctly determined, harm might be done by the administration of an improper dose of the remedy.

Dr. Pottenger described the technic. Much difficulty has been encountered with the method here, largely because of the poor literature on this side and inadequate preparation on the part of those who try to do the work. The discovery is one of the greatest in modern medicine. Dr. Henderson had struck the keynote. Harm is done by relying solely on fresh air and sunlight. He had for years believed that much more can be done. There are no more specifics than in any other chronic disease.

ON PYROLIGNEOUS ACID AND ITS INTERNAL USE IN ARTHRITIS DEFORMANS.

Dr. Louis Kolipinski, Washington: Dr. Kolipinski characterizes pyroligneous acid as a forgotten drug, which, however, well deserves recognition as a therapeutic agent. He describes it and explains its chemical composition. It is a dark red liquid, turning black on exposure. It has been called "liquid smoke." After discussing its physiological action, toxicology and its uses in the earlier days, he cites cases in which it has proved efficacious in his hands in the treatment of arthritis deformans. The restoration of function is well shown in the use of the hand and fingers. The claw-like posture, the extended position in which the member is held, the constant watchfulness to protect it from contact are no longer seen. Flexion and extension return and the hand resumes its duties. The patient ceases to complain unless this continues from habit.

DISCUSSION.

Dr. Arthur H. Hall, Washington, related a case of joint disease in which he had used pyroligneous acid with marked success after the usual methods had failed. The joints affected were those of the jaw and right shoulder. Two drams of the acid in water were given every three hours. Before 8 oz. had been taken the patient demonstrated that pain had disappeared, and after a time motion in the affected joints was satisfactorily restored.

Dr. H. C. Wood, Philadelphia, said that the use of undeservedly disused medicines should be revived, and he who revives them deserves credit. Unfortunately, however, in this case, from a pharmacological standpoint, the recommendation is a step backward, inasmuch as pyroligneous acid is a complex substance containing components, some good, some indifferent and some harmful. The tendency of to-day is toward the use of simple drugs. He who orders such complex substances practices polypharmacy. Pyroligneous acid depends mainly for its activity upon phenol and cresol. It is true that they have proved useful in certain cases of joint disease.

Dr. A. D. Blackader, Montreal, expressed doubt whether valid conclusions as to the value of the agent in such a resistant affection as arthritis deformans could be drawn from a few isolated cases. Sometimes the disease gets well spontaneously, and at others it becomes quiescent and later breaks out again. He agreed with Dr. Wood as to the inadvisability of using so complex a substance. Undoubtedly, this class of drugs is useful in a few cases of chronic joint disease.

Dr. Oliver T. Osborne, New Haven, suggested that some of the good may have been due to disinfection of the bowel, as in the case of epilepsy mentioned. He discussed the subject of bowel disinfection. He believed that something can be done in this line, and the beneficial action of such remedies as pyroligneous acid in joint pain may in some degree be due to this effect. He did not see how it can do any good in arthritis deformans after bone has been deposited. Some of these cases get well and no one can tell why or how.

Dr. Kolipinski, in closing, said that in the light of his experience he could not do otherwise than believe in the efficacy of the remedy. He appreciated the force of Dr. Wood's criticism, however, and intended to make the individual components of the acid a subject of further study.

THE VALUE OF CHEMICAL SUBSTANCES USED HYPODERMATICALLY TO ANTAGONIZE MORBIFIC PROCESSES.

Dr. John Blake White, New York: Hypodermic medication was introduced by Wood, of Edinburgh, as a strictly local measure. Hunter, of London, first recognized that it can be used for systemic effect, and now it is universally believed that localization of the injection is not necessary. There is little certainty about the dose by stomach. Quinine has been given hypodermatically in malarial fever in one fifth of the dose given *per orem* with much better effect. It is possible that some morbific processes are combated by antitoxins produced by substances injected hypodermatically. The results achieved by him in fifteen years have convinced him of the superiority of the hypodermic method. Remedies given thus are not changed by the gastro-intestinal juices; they can be given to those unable to swallow, and where irritability of the stomach exists. The remedies selected should be soluble and unirritating. One should be prepared for idiosyncrasy. Dr. White exhibited a syringe which could be kept aseptic more easily than those in general use.

DISCUSSION.

Dr. S. L. Dawes, Albany, said that quicker and more satisfactory results can be obtained if the solution is injected at the temperature of the body. Also, the drug used should be in perfect solution. These points are often overlooked. He asked Dr. White whether he could get as good results from the injection of chemical substances in diphtheria as we can get from the use of antitoxin.

Dr. Oliver T. Osborne, New Haven, inquired as to the composition of the solution injected by Dr. White in cases of sepsis.

Dr. White described the solution, and answered the question of Dr. Dawes.

THE IMPORTANCE OF A KNOWLEDGE OF THE NATURAL COURSE OF DISEASE IN ESTIMATING THE EFFECT OF THERAPEUTIC MEASURES.

Dr. Alexander McPhedran, Toronto: The universal tendency is to regard the phenomena following a cause as resulting from that cause. To nothing does this apply more fully than to therapeutics. The wish is too often father to the thought. The masses are still imbued with the ancient belief in the mythical power of drugs, and relatively the profession often shows quite as blind a faith. Dr. McPhedran urges that in estimating the effect of our therapeutic measures we should more carefully consider the natural or uninfluenced course of disease. He calls attention to the many variations which may occur in the natural course of all diseases, and how readily they can be erroneously ascribed to the administration of drugs. He emphasizes this by reference to pernicious anemia and its treatment by arsenious acid to typhoid fever, diseases of the heart, neuropathic affections, and tuberculosis. It is essential that a careful record of the patient's condition be made, with variations in the course of the illness, in order to enable us to direct intelligently the treatment and accurately estimate its effect. With the advent of the laboratory the tendency has been to rely upon it to the neglect of the proper study of the patient himself. The paper closes with a plea for the more careful keeping of hospital records.

DISCUSSION.

Dr. B. E. McKenzie, Toronto, emphasized the importance of accurate observation of the patient in order that the physician may know the causes which produce definite results. Too often the results are *post hoc* rather than *propter hoc*, and a careful study of the patient would have shown that the changes ascribed to drugs were but natural variations in the course of the disease. He illustrated this by reference to anterior poliomyelitis.

Dr. Thomas E. Satterthwaite, New York, spoke first of intestinal antisepsis. We must distinguish between drugs that kill and those that inhibit the development of bacteria in the intestine. He believed that Dr. McPhedran would agree with him that certain drugs, like the mercurials, do exert an inhibitive action, and to this extent they are intestinal antiseptics. He told a story of Alonzo Clark to illustrate how the most eminent physician can be deceived as to the outcome of heart lesions. Speaking of tuberculosis, he said that when the specific bacillus was discovered the pathologists believed that the cure of the disease was at hand. The claims made then have not been made good, and now the laity is trying to force the profession into the unnatural position of producing a cure when it cannot do so. It is true that medicine is not an exact science; neither is chemistry. He commended the suggestion as to reform in the keeping of hospital records. In a hospital with which he is connected each patient on entering is examined from head to foot, and the results are noted and handed to the superintendent without diagnosis. Then the staff meets, the reports are considered, and after discussion a general vote is taken as to the diagnosis.

Dr. Oliver T. Osborne, New Haven, said that the Connecticut State Hospital for the Insane has used this method for years. He believed that we can secure some degree of asepsis of the upper intestinal tract. What disease can we treat without first cleaning out the bowel to see what symptoms are left? Cleanliness is next to asepsis, but we can do more than secure mere cleanliness. He emphasized the point by reference to salol and its fate in the bowel.

Dr. Francis M. Pottenger, Los Angeles: It is true that we are losing sight of the importance of accurate observation of the patient, and improved laboratory methods have tended to bring about this result. Too often we draw our conclusions wholly from the results of examination of the blood, urine, or stomach contents. No class of patients has suffered more in this way than tubercular patients. Tuberculosis is suffering not from too much laity but from too little doctor, — not enough professional study. Ordinarily the physician does not take sufficient interest in these cases. It should be remembered that the disease is curable in its early stages.

Dr. A. D. Blackader, Montreal, said that the early physicians were too optimistic, their followers were over-skeptical, and now we are upon the middle ground, pharmacology having taught us just what drugs can do. He only can use remedies effectively who understands their action and understands thoroughly the case before him. A stock broker had said that he felt successful if 51% of his ventures resulted favorably; and so with medicine, — we should be encouraged if we get 51% of benefit.

Dr. H. C. Wood, Philadelphia: Medicine is an art, not a science. It is an art founded on science. So is music. The composer must know something of the science of acoustics in order that he may know the art of music. So with medicine; the physician, in order to reach a point of eminence, must know the facts of science upon which his art is based. Pharmacology, for instance, is a science, — an exact science. The successful practitioner is an artist in the highest sense.

Dr. Robert Reyburn, Washington, said that the young physicians of to-day are not so well able to care for their patients as the older practitioners. They have a greater technical knowledge, but lack the ability to look after their patient's welfare. He was in favor of the old-time preceptor; thus students were enabled to see as well as to hear. Increase the sphere of clinical observation; study the patient rather than his disease.

Dr. Louis Kolipinski, Washington, said that the conception that medicine is a science probably originated with some one outside of the profession. Whether it is or is not does not help our patients. He agreed with all that had been said as to the importance of closer clinical observation.

Dr. McPhedran, in closing, further emphasized the necessity for closer observation and better records. Science is knowledge; we know certain facts relating to medicine and so are scientists; in this sense medicine is a science. He was not convinced as to the value of intestinal antisepsis and had no faith in salol; typhoid is a constitutional disease, not a local bowel trouble. He knew no cure for it.

THE TREATMENT OF POST-PARTUM PUERPERAL ECLAMPSIA.

Dr. D. Olin Leech, Washington: Post-partum eclampsia differs from the ante-partum form. The mortality in the former is less. Treatment consists in the arrest of convulsions and elimination of the poison. Morphine in ½ gr. doses is the best remedy to stop the convulsions. Chloroform may be administered, and chloral per rectum is helpful. He highly commends tincture of veratrum viride in 10 to 20 minim doses until the pulse rate falls to 60. It acts like venesection. The poison should be eliminated through the kidneys, bowels and skin. The bowels should be emptied by repeated enemata, and this followed by a pint of salt solution. Hypodermoclysis may be employed if necessary. Six ounces of milk should be given every two hours, and plenty of water. The potassium diuretics are not advisable. Activity of the skin should be promoted by the use of hot air baths, or hot packs. He has used the former to good advantage. Pilocarpine is not a safe drug to use. Magnesium sulphate or croton oil may be used as cathartics. Basham's mixture and strychnia are the best remedies in the after-treatment. Three cases of post-partum eclampsia are reported.

DISCUSSION.

Dr. H. C. Wood, Philadelphia, spoke of the physiological action of veratrum viride. Recent studies have shown that it is not a vaso-dilator, but the reduction in blood pressure is due to the slowing of the pulse rate. Jervine was formerly believed to be its dominant alkaloid, but it is now known that it plays but a subordinate part. The chief constituent, protoveratrine, is a heart stimulant. Thus veratrum viride is a stimulant rather than a sedative. If it does good in eclampsia it is by bleeding the patient into his own vessels.

Dr. W. M. Sprigg, Washington: The presence or absence of albumin in the urine is not so important a guide as the quantity of urea eliminated. In many cases of eclampsia little or no albumin is present; but deficient elimination of urea is always a danger signal. He believed that the same toxic conditions are present in eclampsia after as before delivery, and the treatment is practically the same except that in the post-partum form the uterus has gotten rid of the placenta, the source of the toxins.

Dr. Robert Reyburn, Washington, agreed with Dr. Sprigg as to the importance of urea elimination as a guide. He advocated venesection in certain cases, and cited an instance in which the removal of 16 oz. of blood from a plethoric woman was followed by almost marvelous results. The convulsions ceased immediately.

Dr. Philip King Brown, San Francisco, said that the work of Follin has shown that the urea elimination has nothing to do with eclampsia. In a recent article he shows that no matter how great the retention of urea eclampsia does not necessarily follow. Experiments on patients who have previously suffered from eclampsia point to the same conclusion. The only significance is that something else is retained if urea is. He believed that eclampsia is not due to any one cause. For one thing it is probably due to toxins from the placenta. The thyroids may also play a part.

Dr. W. A. Campbell, Colorado Springs, said that he had seen two cases of eclampsia within six months. In both cases the removal of clots from the uterus was followed by cessation of the convulsions.

(To be continued.)

Book Reviews.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University, and Tracy C. Becker, A.B., LL.B., Councillor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo, with the collaboration of 19 others. Second edition. Vol. II. Illustrated. Pp. 1008. New York: William Wood & Co. 1907.

We reviewed the first volume of the second edition of this work in our issue of April 11, 1907, and on that occasion made the statement that the book is encyclopedic in character and contains a fund of information which should be of vital interest to physicians in general, and particularly to those whose duties bring them into close relations with courts. This statement applies in equal degree to this second volume, in which the editors have the collaboration of the same writers as in the first volume. This volume contains and continues subjects relating to dead bodies or thanatology, under which is included the consideration of wounds, by gunshot and other means, death by electricity, from mechanical suffocation, from submersion, with a section on the determination of survivorship, The following section of the book concerns itself with biothanatology, or matters relating to both dead and living. Under this heading is taken up questions of abortion and infanticide, various crimes against women, and finally, railway injuries. The book in general will undoubtedly stand as an authoritative statement for many years to come on matters relating to the border line between crime and medicine.

A Text-Book of Practical Therapeutics, with Especial Reference to the Application of Remedial Measures to Disease and Their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc. Twelfth edition, enlarged, thoroughly revised and largely rewritten. Illustrated. Pp. 939. Philadelphia and New York: Lea Brothers & Co. 1907.

The twelfth edition of a book requires no special comment beyond a statement of changes. As a matter of fact, inasmuch as this edition has appeared only eighteen months after its predecessor, comparatively few fundamental changes in treatment have taken place worthy of recording. Among these is the value of citrate of sodium, the treatment of syphilis by hypodermic injection, certain matters relating to saline solutions, citric acid for thrombosis in typhoid fever, and the danger of toxemia after the use of chloroform and ether. Revision has been made of the articles relating to the eye by Dr. G. E. de Schweinitz, and also of certain other articles. Since the eleventh edition the book has been translated into the Italian and Chinese languages. Its value is not to be questioned, but its title, " Practical Therapeutics," is rapidly becoming too comprehensive for the subject matter it contains. It is practically devoted to drug treatment, which must now be regarded merely as a part of therapeutic procedure.

A Laboratory Manual of Invertebrate Zoölogy. By Gilman A. Drew, Professor of Biology at the University of Maine. 12mo, pp. 201. Philadelphia: W. B. Saunders Co. 1907.

This little volume is of unusual excellence and is perhaps the best of its kind. It is based upon the instructions prepared by Professor Drew and others for the elementary courses given in the Marine Biological Laboratory at Woods Holl. The directions have been in practical use for several years and have been repeatedly revised, under the general supervision of Professor Drew himself, by many of the workers in the laboratory. It contains for each large group of invertebrates a table of classification, with admirable succinct definitions of the principal divisions, which are so good that they alone would suffice to make the book valuable. For each group a number of characteristic forms have been selected and concise directions drawn up for their laboratory study. These are cleverly designed so as to guide the student sufficiently and yet force him to use his own powers of observation. At the end of the book is a glossary occupying 14 pages, the definitions of which have been formulated with a skill which one wishes were more common with dictionary makers. The little volume will probably be widely used for elementary zoölogical instruction.

The Essentials of Histology. By E. A. Schaefer. Seventh edition. Philadelphia: Lea Bros. & Co. 1907.

The mere fact of the appearance of the seventh edition of this text-book is evidence of the great and steady favor with which it has been received. It is, indeed, a most excellent work, and the improvements which have been made for the present edition are numerous and important. We find many of the most recent investigations adequately heeded, so that information is here presented not yet in other text-books, being elsewhere recorded only in original memoirs. We find this to be the case with spermatogenesis, sinusoids, and especially with regard to the nervous system, of which the investigations of Golgi, Cajal, Apathy and many others have greatly widened our information. Although the book has grown greatly in size, it is still a slim volume, owing to the use of an excellent thin paper on which the illustrations are very successfully printed. Many of them have been improved by the use of colored inks, imparting a much greater resemblance to the actual preparations.

The author's presentation of the subject is clear and felicitous, the more important facts being emphasized, and padding with unimportant details being conscientiously avoided throughout. As a compact book of reference and as a first-class medical text-book this publication may be cordially recommended.

Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College; Surgeon to the Philadelphia Hospital, and Consulting Surgeon to St. Joseph's Hospital, Philadelphia. Fifth edition, thoroughly revised and enlarged, with 872 illustrations, some of them in colors. Philadelphia and London: W. B. Saunders Co. 1907.

Professor Da Costa's fifth edition has been a great solace to this reviewer. It is the work of a trained teacher whose productions become more popular with time. Fifteen years have passed since Da Costa published the first modest edition of his Manual, as he then called the book, a piece of writing which forms the foundation merely of the present work. The author aims to keep his readers abreast of the times, and has incorporated in every succeeding edition the latest surgical knowledge. For instance, in the fifth edition, which covers 1,283 pages of close printing, there are additional essays on bone lesions, on infections, on Harvey Cushing's most recent work on the head, on Ransohoff's operation for empyema, and on Brophy's for cleft palate; on the opsonins, on new methods of anesthesia, on advanced operations for breast cancer, on Hugh Young's prostatectomy, on Moynihan's and the Mayos' contributions to gastro-intestinal surgery, on Matas's operation for aneurism, and on dozens of other new and interesting topics.

We commend the book, as we have previously commended it, to surgeons and to students as the most satisfactory one-volume contemporaneous treatise on surgery, published in this country.

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THURSDAY, NOVEMBER 7, 1907

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MEDICAL BOOKS AND BOOK REVIEWS.

It is commonly said, and often rather thoughtlessly, that too many medical books are written and that in many departments of medicine there is no present need of further additions. It should be remembered by such critics that many books must always be written before one of marked superiority emerges to be generally accepted as authoritative. It is true of medical books as of other departments of human endeavor that there is room at the top and comparatively little anywhere below. The natural result is that many medical men endowed with a legitimate amount of self-confidence believe that they are capable of presenting a subject in a more attractive or a more conclusive form than has hitherto been the case. This attitude of mind is certainly salutary, and, in fact, indispensable to progress. If prospective writers of medical books were to abstain from the effort to put their ideas into words for the benefit of others, through modesty or the recognition that other books had been written on the same subject, it is not likely that the need, which now and always has existed, of excellent text-books would be met. A far safer course of action is to encourage by all legitimate means the writing of books in the hope that from the mass of possible mediocrity an occasional work of real significance, either from the didactic or the research point of view, will emerge. The competition among books is just as healthy a tendency as that in the industries in general. It would be altogether unfortunate if certain men or groups of men wrote all the books and were regarded as having a right to dictate to the rest of the medical profession in this regard. With the general and widespread competition which now exists, it is perfectly evident that the good books and those which are useful, whether to students or to men already in practice, will survive, whereas the others will sink into oblivion, which many of them very possibly deserve. The process at least is a natural one, and one which certainly should not be discouraged by the continued assertion that we have too many books and that the same ground is covered again and again.

An analysis of the reviews of medical books, appearing in medical journals, is also of interest. It is to be remembered that under the influence of modern specialization books in any one department of medicine are ordinarily reviewed by experts in those departments, men for whom the book under consideration may present nothing new, and to whom it very naturally appears commonplace and unnecessary. The object of the ordinary text-book, however, is not to appeal to specialists, but rather to present special subjects in a form accessible to and readable by practitioners in other departments of medicine. It is, therefore, absurd for a reviewer of a book, for example, on the eye, or the ear, or internal medicine, to assert that the volume is unnecessary and not needed simply because it reiterates what he already knows and what, in fact, may be common knowledge of those versed in that particular branch of medicine. Such criticism is both superficial and meaningless. What the critic of such a book should determine is whether it presents knowledge in a systematic fashion, with accuracy, and in a manner to appeal to the ordinary reader. These are the qualities which justify the production of new books, however much the subjects may have been traversed before and however elementary they appear. As medicine develops and subdivides, there is evidently increasing need for simple and succinct statements of well recognized facts. It is proverbial and certainly true that to write a concise book on any subject is a far more difficult task than to elaborate a monograph. Selection is a peculiarly difficult task, and one which should always be commended, if well done.

These points book reviewers in general frequently overlook. We have sometimes thought that it might be well if three quarters of the medical books were sent for review to those who in the future are going to use them. There is no question that the estimate of a book at the hands of an expert in the subject under consideration would be far different from that of a practitioner who in the endless details of his practice is eager for a clear and even commonplace presentation of the subject. Much illiberality in the reviewing of books is apparent. They are dismissed often with a few words and with insistence on the fact that they are superfluous. It would be well to recognize the palpable fact that what is superfluous for one man is a necessity for another, and that many text-books are good just in proportion to the number of physicians they benefit. For our part we welcome new books, recognizing that some of them are excellent and most of them useful. We are strongly disinclined to condemn a book simply because it is a repetition of what has already been said. On the contrary, every encouragement should be offered to writers of books in the hope that ultimately results will appear which could be obtained by no means requiring less active competition.

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PROFESSOR JOSEPH LEIDY.

A STATUE of Prof. Joseph Leidy was unveiled Wednesday, Oct. 30, 1907, at the City Hall Plaza, Philadelphia. This occasion, commemorating as it did the services of one of the greatest scientists which this country has produced, should not be allowed to pass unnoticed. At a time when the people of the country were mainly employed in other occupations than the development of science, Leidy rapidly rose into prominence and became widely known in these fields outside of his native city.

Born in Philadelphia, Sept. 29, 1823, Leidy was graduated from the University of Pennsylvania with the degree of doctor of medicine in 1844. In 1845 he became prosector to the chair of anatomy in the University of Pennsylvania, occupied at that time by Dr. Horner. The following year he was demonstrator of anatomy at the Franklin Medical College. In 1852 he took Dr. Horner's place as professor of anatomy in the University of Pennsylvania, and a year later, on the death of Dr. Horner, was made full professor of anatomy at that institution. He was then thirty years of age. In 1871 his interests were extended by the appointment to the professorship of natural history in Swarthmore College. In 1884 he became director of the Department of Biology at the University of Pennsylvania. Among the many honors which were conferred upon him, both here and abroad, were the Walker Prize from the Boston Society of Natural History, and the Lyell Medal from the London Geological Society in recognition of valuable contributions to paleontology. He was a member of the Royal Microscopical and Geological Society of London, of the Paris Academy of Science and of an immense number of other similar bodies. In 1886 he received the degree of doctor of laws from Harvard University. He died in 1891.

Leidy was, perhaps, better known as a naturalist than as an anatomist, or at least as a human anatomist. His contributions to comparative anatomy, botany, mineralogy, geology, microscopic zoölogy, helminthology, and especially to paleontology, were numerous and of great value. One of his notable discoveries of a highly practical sort was that the hog is the host from which the trichina is introduced into the human system. Leidy occupied in Philadelphia somewhat the same position that Dr. Jeffries Wyman held in Boston.

A statue to Leidy, such as now graces one of Philadelphia's public places, is a just mark of the appreciation in which he is held by his native city as well as by the world at large. The statue stands on a pedestal of granite some eight feet in height and is of bronze. The figure is standing and in an attitude of explanation. A feature which will strike the casual observer is the fact that he is represented in a sack coat instead of a more conventional garment out of deference, it is said, to his custom of never wearing any other sort of coat.

The statue was presented to the city by Mr. Talcott Williams, representing Mr. Joseph Wharton, chairman of the Memorial Committee; in his remarks he compared the attainments of Leidy to those of Stephen Girard and Benjamin Franklin. Mr. Wharton, arriving later, spoke further of Leidy's extraordinary achievements and of his lovable character. The main address was made by Dr. Henry C. Chapman, representing the Academy of Natural Sciences. Dr. Chapman characterized Leidy as "the greatest naturalist this and possibly any other country ever produced," and gave a sympathetic and appreciative estimate of his service to anatomy and to the sciences in general. The vice-provost of the University of Pennsylvania, Prof. Edgar F. Smith, president of the American Philosophical Society, supplemented Dr. Chapman's remarks. Representatives of many institutions of learning were present as well as a large number of invited guests. Among these was Professor Leidy's widow. The country at large should share with Philadelphia the satisfaction it must feel in having publicly recognized the services of this pioneer in the natural sciences.

MEDICAL NOTES.

Mr. Horace Fletcher on Muscular Efficiency after Fifty without Exercise. — A public lecture is announced at the New York Academy of Medicine for Thursday, Nov. 14, by Mr. Horace Fletcher, on the subject, "Possible Progressive Growth in Muscular Efficiency after Fifty Years of Life without Systematic Physical Exercise."

A New College of Medicine. — It is announced that the University of Wisconsin has organized a college of medicine at which, for the present, the first two years only of the medical course will be given. Requirements for entrance are at least two years of college work, with specific requirements in Latin, French, Germany, physics, chemistry and biology. The dean is Dr. C. R. Bardeen.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 6, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 55, scarlatina 46, typhoid fever 8, measles 14, tuberculosis 47, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 6, 1907, was 19.42.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 2, 1907, was 244, against 210 the corresponding week of last year, showing an increase of 34 deaths and making the death-rate for the week 20.88. Of this number 130 were males and 114 were females; 240 were white and 4 colored; 134 were born in the United States, 100 in foreign countries and 10 unknown; 47 were of American parentage, 166 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 56 cases and 4 deaths; scarlatina, 41 cases and 0 deaths; typhoid fever, 10 cases and 2 deaths; measles, 12 cases and 0 deaths; tuberculosis, 47 cases and 28 deaths; smallpox, 0 case and 0 deaths. The deaths from pneumonia were 26, whooping cough 0, heart disease 24, bronchitis 5 and marasmus 6. There were 26 deaths from violent causes. The number of children who died under one year was 47; the number under five years, 59. The number of persons who died over sixty years of age was 59. The deaths in public institutions were 82.

There were 1 case and 2 deaths reported from cerebrospinal meningitis during the week.

Meeting of Health Boards. — At a recent meeting of the Massachusetts associations of Boards of Health, at which Dr. Henry P. Walcott, chairman of the State Board of Health, presided, papers were read by Prof. James O. Jordan, milk inspector in the Boston Health Department, and by Dr. E. Channing Stowell, on the Possibilities of a Clinical Laboratory in Country Towns in Relation to Public Health Work.

NEW YORK.

Budget for Department of Health. — The city budget for 1908 was finally determined upon by the Board of Estimate and Apportionment on Oct. 30. The amount allotted to the Department of Health is $2,279,499, an increase of $432,029 over its appropriation for the present year. Of this increase, it is stated by the municipal authorities that $375,000 is mandatory, being required to maintain the existing plant at its present level of efficiency, and to provide for the completion and equipment of the city tuberculosis sanitarium at Otisville, Orange County. The only item in the increased appropriation which may be considered as optional and not absolutely required, either by law or to prevent deterioration in departmental work, is $35,000 for milk extension and an increased force for the department.

Obituary.

RESOLUTIONS ON THE DEATH OF RICHARD HENRY DERBY, M.D.

The Board of Directors and the Board of Surgeons of the New York Eye and Ear Infirmary record with profound regret the death of their late associate and colleague, Dr. Richard Henry Derby.

Dr. Derby was born in Boston in 1844; was graduated from Harvard in 1864, and from the Harvard Medical School three years later. He served as house surgeon in the Massachusetts General Hospital and subsequently went to Germany to further his studies. He was a pupil of the distinguished German ophthalmologist, Professor Von Graefe, and acted as his assistant during his stay abroad. In 1870 he returned to America and settled in New York.

Dr. Derby was appointed clinical assistant in the New York Eye and Ear Infirmary in 1871, assistant surgeon in 1873 and surgeon in 1874, and up to the time of his death was a member of our staff.

In 1886 he was elected a regular member of the Board of Directors, although he had been a member, *ex-officio*, since 1876, as well as a secretary of the Board for three years. Upon the resignation of Dr. Noyes as executive surgeon, Dr. Derby was appointed as his successor, which position he held until the time of his decease, which occurred July 4, 1907. He was always deeply interested in the affairs of the institution, and for many years was a member of the executive committee.

At the time of his death Dr. Derby was a member of the New York Academy of Medicine and the American Ophthalmological Society; was a trustee of the New York Institution for the Blind, and was connected with the New York Orthopedic Dispensary and Hospital and Trinity Hospital as consulting ophthalmologist.

He was a man of great public spirit and prominent in many of the civic movements of his times; was a member of the council of the Charity Organization Society and the State Charities Aid Association; was one of Commissioner Waring's aids; an unpaid health inspector in the service of the Health Department and a member of the Committee of Seventy in 1894 and the Committee of Twenty-one in 1881 which met to reform the street cleaning system. He was also a vestryman in Trinity Church.

Dr. Derby's wide experience as ophthalmologist, his genial manner, as well as his staunch integrity, gained for him the respect and esteem of all with whom he came into contact whether professionally or socially, and his loss will continue to be deeply felt.

Resolved, That these resolutions be spread upon the minutes and that a copy be sent to the family of the deceased.

James J. Higginson, *Chairman,*
Newbold Morris,
Charles Stedman Bull,
Gorham Bacon,
Walter Eyre Lambert,
Joint Committee.

Current Literature.

Medical Record.

Oct. 12, 1907.

1. *Abbe, R. *The Specific Action of Radium as a Unique Force in Therapeutics.*
2. Taylor, R. W. *Syphilis and Massage.*
3. Willson, R. N. *The Presence in Vaccine Virus of Bacilli and Spores Resembling Those of Tetanus.*
4. Winston, J. W. *Management of the Third Stage of Labor.*
5. Jackson, C. *Septal Perforations: Their Closure by Plastic Operations.*
6. Lewis, D. *Practical Venereal Prophylaxis.*

1. Abbe has made use of radium emanations in numerous cases, and has found it of great value and its action entirely different from that of the x-rays, or electricity. The author believes that radium ranks with the specifics. It is a specific for erratic cell growth. Details of its use are not yet fully worked out, and the dosage is still empirical. Some apparent cures of epitheliomata and sarcomata have endured for three years already. The force exerted by radium is in part an electric discharge, essentially of negative elements. Possibly it may supply an electric force vital to normal and orderly growth, the loss of which causes the formation of tumors. It is supplementary to x-rays and does good where they fail. The overaction of strong radium is injurious. The best results have followed one hour's exhibition of 10 mgr. R. B. on small growths, and four hours on larger ones. Ischemia of the parts aids the effect. Pigmented moles, melanotic growths and giant-celled sarcoma are particularly benefited by it. Its value in nevi and angiomata is due to its irritant action producing obliterative endarteritis and fibroid changes.

New York Medical Journal.

Oct. 12, 1907.

1. Cohnheim, P. *The Different Forms of Hyperchlorhydria.*
2. Noble, C. P. *The Mosetig Batiste.*
3. *Hutchinson, W. *Varieties of Tuberculosis According to Race and Social Condition.* (Concluded.)
4. Jacobs, C. C. *Malarial Fevers of Cuba.*
5. Dench, E. B. *The Indications for the Mastoid Operation.*
6. Krotoszyner, M. *Observations upon Nephrolithiasis with Vague Symptoms.*
7. Thomas, B. A. *Surgical Complications and Sequelæ of Typhoid Fever Involving the Gall Bladder and Liver.*
8. Witherbee, W. D. *The "Open Method" Treatment of Cancer.*

3. In the second part of his article the writer discusses the mortality from tuberculosis among the Jews, Irish and negroes, and the relative mortality of city and country dwellers. His conclusions are: (1) races during the process of citification acquire an appreciable degree of immunity to, or increased resistance against, tuberculosis; (2) different classes of the same race appear to acquire varying degrees of a similar immunity; (3) estimation of these facts may help prognosis; (4) in the fight against tuberculosis one at least of the great forces of nature is helping, as seen in the remarkable increase of resisting power represented in the contrast in the mortality from tuberculosis of 2,488 per 100,000 in the Sioux Indians and of 71 per 100,000 in the Polish Jews. [R. I. L.]

The Journal of the American Medical Association.

Oct. 12, 1907.

1. *Barker, L. F. *The Diagnosis of Exophthalmic Goiter.*
2. *Preble, R. B. *Medical Treatment of Exophthalmic Goiter.*
3. *Kocher, A. *The Surgical Treatment of Exophthalmic Goiter.*
4. Ross, G. W. *Opsonins and the Practical Results of Therapeutic Inoculations with Bacterial Vaccines.*
5. Thomas, B. A. *Variability and Unreliability in the Determination of the Opsonic Index.*
6. Cushny, A. R. *The Venous Pulse.*
7. Frederick, C. C. *Early Post-operative Intestinal Obstruction.*
8. *Craig, D. H. *The Prevention and Treatment of Post-operative Intestinal Obstruction.*
9. Donoghue, F. D. *Successful Treatment of Acute Post-operative Ileus by Incision and Drainage of the Intestine, with Report of Four Cases.*
10. Shaw, H. L. K. *The Present Status of the Transmissibility of Bovine Tuberculosis as Illustrated by Infants and Young Children.*
11. Ricketts, H. T. *Further Experiments with the Woodtick in Relation to Rocky Mountain Spotted Fever.*

1. Barker reviews the various symptoms of exophthalmic goiter. Pycnocardia, as he prefers to call tachycardia, is the most constant and most important sign. In doubtful cases it may be brought out by a few doses of thyroid tablets. Enlargement of the thyroid gland is present in most cases when carefully looked for. It is as a rule slight and of vascular character. Exophthalmos is entirely absent in one third of the cases and is usually late. The various other eye signs may be of value in early cases, when perhaps only tachycardia is present. Tremor and the other thyreotoxic, neuropathic and psychopathic phenomena indicate a well developed disease. Barker, an internist, thinks it the duty and privilege of the physician to recommend early operation in this disease.

2. Preble divides the medical treatment of exophthalmic

goiter into two categories: (1) correction of the neurosis and (2) counteraction of the perversion of thyroid secretion. Rest and general hygienic and dietetic measures are apparently of some use in certain cases. Drugs, as iron, bromides, bromide of quinine, iodides, etc., seem to have no direct effect. The various organic preparations are useless with the exception of that from the thyroid itself, which is positively harmful. The various antitoxic and cytotoxic preparations, manufactured to combat the thyroid secretion, seem of very little value. Yet in spite of this discouraging review of medical treatment, the writer is inclined to advise general medical treatment, largely rest and hygiene, but only as long as the patient does not get worse.

3. Kocher urges great conservatism in the operative treatment of exophthalmic goiter. Operation is contraindicated in the time of severe intoxication. This is determined by the intensity of the various symptoms and the blood examination. It has been found that the lymphocytes increase with the progress of the disease. At the time of severe intoxication he advises medical treatment, rest and cytotoxic serum. The experience of the writer and his father has taught them to prefer several operations rather than a single extensive one. More than two arteries are never ligated at a sitting. Removal of more than one lobe of the gland at a time is dangerous. Bleeding and injury to the portion of the gland left are carefully avoided. The object of these operations is to reduce the diseased tissue or its increased vascularization and thereby reduce the absorption of thyroid secretion. In 315 operations on 254 patients with exophthalmic goiter the writer reports a cure in 83%, with a total mortality of 3.5%.

8. Craig uses eserin salicylate in1-40 gr. doses subcutaneously at the time of operation as a prophylaxis against post-operative intestinal paresis. He reports three cases of its use in the cure of this condition when it had not been used in the prophylactic manner. [R. I. L.]

Surgery, Gynecology and Obstetrics.

August, 1907

1. Cleveland, C. *The Prophylaxis of Venereal Disease from the Standpoint of the Gynecologist.*
2. *Newell, F. S. *Further Experiences with Scopolamine-morphine Anesthesia in Obstetrics.*
3. *Fry, H. D. *Pubiotomy in America, with the Report of Two Cases.*
4. *King, A. F. A. *New Methods of Version in Transverse Presentations.*
5. Stone, I. S. *A Study of Utero-Sacral Ligaments.*
6. *Cragin, E. B. *The Prophylactic and Curative Treatment of Ophthalmia Neonatorum. What Silver Salt Shall be Used and What Strength.*
7. Byford, H. T. *The Use of Laxatives in the After-Treatment of Laparotomy.*
8. Gordon, S. C. *Method of Closing Laparotomy Wounds.*
9. Baldy, J. M. *After-Treatment of Abdominal Section.*
10. Boldt, H. J. *How Long Must Patients Observe Absolute Rest in Bed after Abdominal Operations?*
11. Vineberg, H. N. *Eserine Salicylate as a Prophylactic against Atony of the Bowels.*
12. Smith, A. L. *After-Treatment of Abdominal Sections.*
13. Kirkley, C. A. *Method of Closing the Abdominal Incision by Suture.*
14. Robb, H. *The Comparative Advantages of Catgut and Silver Wire Sutures for closing the Fascia after Abdominal Incision.*
15. *Peterson, R. *Incision of the Anterior Uterine Wall (Anterior Colpohysterotomy) as a Treatment of Chronic Inversion of the Uterus.*
16. *Harris, P. A. *Inversion of the Vagina.*
17. Davis, E. P. *Induced Labor and Delivery by Abdominal Section.*
18. Wakefield, W. F. B. *Cystic Lymphangioma of the Gastro-Colic Omentum.*
19. Frank, J. *Opening of the Cranial Cavity for the Removal of Tumors and Evacuation of Circumscribed Infections.*

2. Newell reports marked benefit from the use of scopolamine-morphine anesthesia in obstetrics; no bad effects noted. The solution was used as follows: as soon as uterine contraction occurred, at five-minute intervals an initial dose containing 1-150 gr. scopolamine, and ⅙ gr. of morphine was given hypodermically. This was repeated at intervals of one to two hours, unless patient showed marked reaction to the initial dose. In no case was the dose repeated after the cervix became two thirds dilated. The results of this treatment were that the pain of labor was markedly reduced; the recollection of pain endured was almost obliterated; labor was shortened, as well as made easier; the necessity of operative interference has been distinctly reduced; there has been no tendency to hemorrhage. It is important that the drugs be used as fresh as possible.

3. Fry has reviewed the cases of pubiotomy done in America. He concludes that it is a satisfactory operation for enlarging the pelvic girdle in moderate degrees of contraction. It is easy to perform, and can be employed in small flat pelves. The convalescence, however, is usually unsatisfactory, and the writer feels for this reason it will obtain but a limited field of usefulness as an elective operation. The indications for pubiotomy are a living child and some contra-indications to Cesarian section.

4. King describes a method of version in transverse presentations by the employment of thigh pressure of the mother upon the external surface of the abdomen, induced either by squatting or the kneeling posture. In several instances this method, correctly applied, has been successful in transforming a transverse presentation into one of the vertex.

6. In the prevention of ophthalmia neonatorum, Cragin has used the various silver preparations in varying strengths in a large series of cases. He concludes that the most efficacious salt is 20% argyrol.

15. Peterson reports the treatment of chronic inversion of the uterus. In his opinion the vaginal route and the operation of anterier colpohysterotomy (Spinelli) are much preferable to the abdominal route or other forms of operation; by this means the uterus can be replaced, and several instances of subsequent pregnancy have been observed. The article is well illustrated.

16. After complete removal of the uterus, inversion of the vagina will follow in a considerable portion of all cases, unless while removing uterus stumps, all its ligaments be securely fastened in the fundus of the vagina. Harris reports his method of so fixing the ligaments, and advocates its employment in all cases of total hysterectomy. [W. C. Q.]

The Lancet.

Oct. 12, 1907.

1. Bennett, W. H. *Lecture on Some Aspects of Appendicitis, Especially with Reference to Cutaneous Hyperesthesia as an Aid to Diagnosis in Certain Complications.*
2. Foulerton, A. G. R. *Address on the Value of Preventive Medicine as a Factor in the Welfare of the State.*
3. Gibson, G. A., Gray, S., Meldola, R., and Kilmorey. *Abstracts of Introductory Addresses, etc., Delivered at Medical Schools.*
4. Colt, G. H. *The Gag.*
5. Lamb, G., and Hunter, W. K. *Action of Venoms of Different Species of Poisonous Snakes on the Nervous System. Venom of Enhydrina Valakadien.*
6. Sommerville, D. *Education in Hygiene for Teachers.*
7. Bruce, H. W. *Case of Vincent's Angina in which the Larynx and Trachea were Involved.*
8. *Kenwood, H. R. *"Hygiene" as a School Subject in Elementary Schools.*
9. *Watson, C. *The Influence of Diet on the Liver.*

8. Kenwood, in an article on hygiene as a school subject in elementary schools, believes that if the teaching of the simpler rules of hygiene were spread over the whole school curriculum it would make but little demand upon the time and energy of the teachers, either in acquiring the necessary knowledge or communicating it to the scholars. He believes that such a scheme should embrace the following items: (1) the importance of fresh air and how to obtain it; (2) the importance of cleanliness of person and surroundings; (3) the healthy maintenance of certain bodily functions and the formation of hygienic habits; (4) the

dangers of contamination of water, air and food, and how to guard against them in the home; (5) temperance in all things; (6) for girls, the elementary facts of the care of infants, and the selection of food and simple cooking. In other courses he believes that the subject of hygiene could be indirectly introduced by means of compositions on matters pertaining to hygiene and proper living. He believes that this subject if properly introduced will do much toward improving the physical condition of the students at the school and in their homes.

9. Watson has experimented on rats by feeding certain series meat alone and others a pure carbohydrate diet. He gives the details of his experiments, and from them deduces the one important fact that the liver is modified by diet, and in particular that a mixed diet which contains a large amount of nitrogenous food throws a greater strain on the liver than a diet given in unrestricted amount, in which the nitrogenous elements are in smaller proportion. [J. B. H.]

The Edinburgh Medical Journal

October, 1907.

1. Thomson, A. *Making of a Shelf below the Unduly Mobile Kidney.*
2. *Matthew, E., and Miles, A. *Observations on the Blood Changes Subsequent to Excision of the Spleen for Traumatic Rupture.*
3. *Stuart, W. J. *Operative Injuries of the Thoracic Duct in the Neck.*
4. Bowker, G. E., and Lindsay, J. *The Skiography of Rheumatoid Arthritis.*
5. Pringle, G. L. K. *Hydrotherapy and Electricity in the Treatment of Neurasthenia.*
6. Miles, A. *Résumé of Some Recent Papers on the Ultimate Results of Operations for Cancer of the Breast.*

2. Matthew presents his observations on the blood changes subsequent to excision of the spleen. His own case is of a laboring man of thirty-eight, who, while drinking one evening, was hit lightly in the splenic region by a friend. There were no signs until the following morning, when he began to suffer from severe pain in that region, with diarrhea, vomiting and all the signs and symptoms of an acute general peritonitis. On operation the spleen was found quite disintegrated and was removed. The blood was watched for over two years. He concludes that after the extirpation of the spleen there is (1) an enlargement of various lymphatic glands soon after the operation, but not to any great extent, nor of any great duration; (2) an absolute and relative increase in the number of lymphocytes persisting for years after the removal of the spleen; (3) a moderate eosinophilia with an increase of the blood plates for some weeks; (4) after recovery from the loss of blood, the red cells and hemoglobin show normal values; (5) after excision of the spleen individuals who recover suffer from no inconvenience; the spleen is consequently not indispensable.

3. Stuart presents a careful paper on operative injuries of the thoracic duct in the neck. He gives the details of his own case which was operated on for the recurrence of a cancer of the breast. He considers in detail the normal anatomy and the variations in anatomy of the thoracic duct, and discusses the various kinds of operative injuries. In the list of 40 cases of operative injury, which he has collected from the literature, 16 were for tuberculous glands, 20 for malignant disease. In 26 cases the injury was recognized during operation, in 13 cases it was not; 35 cases recovered, 5 died. As regards treatment, there were 15 cases in which ligature was used, 11 which were packed. He believes that ligature of the cut end of the duct is by far the best form of treatment in every case if possible. He concludes that operative injuries of this duct are probably far commoner than is generally imagined. He gives a careful summary of the 12 cases which he has been able to collect [J. B. H.]

British Medical Journal.

Oct. 12, 1907.

1. McBride, P. *Clinical Remarks on the Functional Element in Certain Forms of Anosmia.*
2. Rolleston, H. D. *Congenital Syphilitic Obstruction of the Common Bile Duct.*
3. Dodds, H. B. *A Modification of Leishman's Method of Estimating the Opsonic Index.*
4. Plowright, C. T. M. *Malignant Disease of the Intestine Rendering an Inguinal Hernia Irreducible.*
5. Johnstone, R. J. *Recurrence of Retroperitoneal Lipoma; Operation; Recovery.*
6. Mursell, H. T. *Case of Retroperitoneal Hematocele Producing Acute Intestinal Obstruction.*
7. Bolton, J. S. *What Can the Family Doctor Do for the Inebriate?*
8. Johnston, R. M. *The Teaching and Status of Laryngology and Otology.*
9. Semon, F., and Horne, W. J. *Discussion on the Differential Diagnosis of Tuberculosis, Syphilis and Malignant Disease of the Larynx.*
10. Low, W. S. *Nasal Obstruction; Submucous Turbinectomy.*
11. Fullerton, R. *Teratoma Arising from the Right Tonsillar Region.*
12. *Yonge, E. S. *Observations on the Determining Cause of the Formation of Nasal Polypi.*
13. Jackson, G. *The Importance of the Nasal Accessory Sinuses in Relation to the Ears.*
14. Onodi, A. *Etiology of the Complications of Empyema of the Accessory Nasal Cavities.*
15. Milligan, W. *Discussion on the Treatment of Chronic Suppuration of the Middle Ear without Resort to Radical Mastoid Operation.*
16. Nourse, C. *Observations on Frontal Sinusitis.*
17. Syme, W. S. *Remarks on a Case of Acute Suppuration of the Middle Ear Complicated by Septic Meningitis and Brain Abscess.*
18. Bronner, A. *A Case of Thrombosis of the Lateral Sinus and Obliteration of the Jugular Vein.*
19. Milligan, W. *The Surgical Treatment of Labyrinthine Suppuration.*
20. Williams, P. W. *Surgical Anatomy of the Accessory Sinus, — Sphenoidal Sinus Disease.*
21. Guthrie, T. *Development of the Mastoid.*

12. Yonge gives a careful paper on the determining cause of the formation of nasal polypi. According to his observations the probable sequence of events is as follows: (1) chronic inflammation of the mucous membrane; (2) dilatation of the glands either through inflammatory closure of their orifices or hyper-filling of the glands due to over-stimulation; (3) edematous infiltration of the surrounding tissues, resulting from the passage of serum through the capillary walls, with (4) formation of folds or projections of the infiltrated mucous membrane; (5) increase of edema in certain of the folds, resulting in (6) the formation of flat edematous projections, the bases of which gradually become constricted or stretched until they form pediculated nasal polypi. He gives the pathological and clinical evidence on which this sequence of facts is based. [J. B. H.]

Deutsche Medizinische Wochenschrift. No. 34.

Aug. 22, 1907.

1. Loeffler, F., and Rüss, K. *Arsenious Acid a Specific for Experimental Nagana.*
2. Dönitz and Klapp. *Chirosoter, a Disinfectant Spray for the Hands.*
3. *Heile. *Etiology and Treatment of Post-operative Intestinal Disturbances.*
4. *Kaehler, M. *Operative Treatment in Three Cases of Typhoid Perforation and Peritonitis.*
5. Weber, L. W. *Progress in Diagnosis of Nervous Affections.* (Concluded.)
6. *Wederhake. *To Ensure the Removal of all Compresses after Abdominal Operations.*
7. Müller, G. J. *Status of Actinotherapy.* (Concluded.)

3. Heile calls attention to the diarrheas which are occasionally encountered in the after-treatment of operations on the gastro-intestinal tract. These he maintains are due to lack of alkali. The intestinal contents as it passes from the small into the large intestine always has an alkaline reaction in man and in dogs. The amount of alkali depends on the amount ingested and the amount of intestinal juice secreted. When the intestinal acids cease to be neutralized by alkaline elements, they have an irritat-

ing effect on the mucous membrane and diarrhea results. When the alkali ingested is not sufficient to keep the balance, and the intestinal juices are lost in the diarrhea, the organism suffers from alkali poverty, and in severe cases coma may ensue and acetone appear in the urine. In cases of inanition the urine should be examined for diacetic acid and acetone, and the history studied for previous diarrhea. After operations on the digestive tract ileus may develop and the patient succumb in coma from lack of alkali. Such patients should be fed with carbohydrates, and sodium bicarbonate should be given in various ways, even by intravenous injection of a 3% to 10% solution. Heile goes on to describe some cases in which vigorous treatment with alkalies apparently saved the patient. One case, after operation for suppurative peritonitis, was already in coma from post-operative ileus followed by profuse diarrhea. Opium treatment for the diarrhea, and administration of from 12 to 15 gm. of sodium citrate daily, arrested the diarrhea and prompt recovery followed.

4. Kaehler reports three cases of operation for typhoid perforation occurring in the Strasburg surgical clinic in the last two years. Two died and one recovered. All were in young individuals and during a relapse in the affection. He emphasizes the necessity of the earliest operation if any beneficial results are to be obtained.

6. Wederhake's method for avoiding the leaving of compresses in the abdomen after operation consists of using a square yard of gauze cut nearly into quarters, a small circle in the center of the square being left untouched. By this method the four quarters are left attached to each other in the center. If desired the squares can be cut into eighths, all united in the center, and the square can be of several thicknesses of gauze. He then uses these quarters or eighths as separate compresses, and finds them as convenient as if they were separate. When ready to suture the abdomen, the entire set of compresses is lifted out together, not requiring any counting. [L. G. M.]

Münchener Medizinische Wochenschrift. No. 35. Aug. 27, 1907.

1. Kuhn, E. *The Numerical Increase in Red and White Corpuscles of the Blood and of the Hemoglobin under the Use of the "Suction Mask."*
2. Apolant, H. *Experimental Reversion of Mouse Carcinoma to Adenoma.*
3. *Schüffner, W. *Bile Agar as a Culture Medium for Typhoid Bacilli.*
4. Segale, M. *The Internal Friction of Blood Serum in Morphinized Animals.*
5. Neuburg, C., and Reicher, K. *Lipolysis, Agglutination and Hemolysis.*
6. *Walko, K. *Gastric Disturbances in Chronic Lead Poisoning.*
7. Polano, O. *The Treatment of Dysmenorrhea.*
8. Köhler, E. *Infection of the Cells of the Turbinate Bone.*
9. Emin. *Severe Cerebral Conditions Appearing after Ligature of the Common Carotid and Internal Jugular; Recovery.*
10. Hillenberg. *The Use of Tissue Paper in the Contagious Diseases.*
11. Karehnke, M. *Communication on Thigh Dislocation.*
12. Herse, E. *The Action of the Quartz Lamp on the Deeper Tissues.*
13. Köhler, F. *Obituary on Theobald Kerner.*

3. Schüffner in making blood cultures from typhoid patients uses bile agar plates, on which the blood is poured. With this procedure he has excellent success. He finds two kinds of colonies, one the usual form of typhoid colony, small and discrete, the other much larger, and growing with great rapidity. This latter form of typhoid colony has never been observed before.

6. Walko has observed a series of chronic lead poisoning cases, 49 in all, with especial reference to the gastric condition. He finds disturbance of the gastric function, characterized by an absence or great diminution both of free HCl and gastric ferments, with a coincident lessening of motility. These disturbances are of long duration, and are usually functional, though occasionally organic changes in the gastric mucosa are met with. [R. D.]

Berliner Klinische Wochenschrift. No. 33. Aug. 19, 1907.

1. Bickel, A. *Researches on the Effect of Metals on the Gastric Mucous Membrane.*
2. *Kentzler, J. *The Rôle of HCl in Gastric Digestion.*
3. *Weil, E., and Tsuda, K. *Delaying of Phagocytosis in Test-Tube Experiments.*
4. *Martini. *Kala-Azar (Tropical Splenomegaly).*
5. Lipschitz, R. *Remarks on Facial Paralysis.*
6. Clenna, W. N. *A New Iron Preparation.*

2. Kentzler, in a series of experiments, shows that the process of preparing albumin for absorption takes place in the stomach. Further experimentation has shown that it is the hydochloric acid of the stomach, in certain definite concentrations, which brings about this transformation. Pepsin, the author claims, has no effect on the process.

3. Weil and Tsuda have found that in the case of the bacillus of dysentery, the presence of dysentery aggressin delays phagocytosis by guinea pig's leucocytes. This is a specific reaction, for no effect was produced on the phagocytic power for hay bacilli and staphylococci. This lessening of phagocytic power does not depend on removal of the opsonins, for it appears also when bacteria already under the influence of opsonins are exposed to the action of the aggressin. Loss of phagocytic power is, therefore, an active process, by which aggressin protects the bacterium from the phagocyte.

4. The author describes the symptomatology, and characteristic blood findings of Kala-azar, as seen in South Africa and Asia. The clinical picture is characterized by chronicty, marked splenic tumor, anemia, leucopenia and edema. The portal of entrance for the parasite, whose presence is characterized by the "Leishman-Donovan bodies," is undoubtedly through the gastro-intestinal tract. The host of this parasite the authors consider to be certain kinds of fishes. [R. D.]

No. 34. Aug. 26, 1907.

1. *Hölker. *Sporadic Cases of Epidemic Cerebrospinal Meningitis, and their Diagnosis.*
2. *Benjamin, E., and Sluka, E. *A Chronic Blood Disease, Accompanied by Long Standing Icterus (Chronic Acholuric Icterus).*
3. Proskauer, F. *The Employment of Guaiacol Preparations in Anemic Conditions.*
4. Rehfisch, E. *The Point of Origin of the Ventricular Contractions.*
5. Brand, E. *The Effect of Dialysis on the Complement.*
6. *Meyer, O. B. *The Reflex of the Dorsum of the Foot.*
7. Glücksman, G. *Congestive Conditions of the Pelvic Organs in Relation to Appendicitis.*
8. Barth, E. *Functional Disorders of the Voice and Their Treatment.*
9. Laqueur, A. *New Views on Hydrotherapy.*

1. Hölker reports nine cases which clinically seemed to be sporadic cerebrospinal meningitis; in two of these the specific organism of Weichselbaum was not found until between two and five weeks after onset, though repeated attempts to obtain it were made. In six other cases, all of which closely resembled cerebrospinal meningitis, lumbar puncture or autopsy revealed other etiological factors. Two cases of purulent tuberculous meningitis were seen, in which polynuclear leucocytes predominated in the spinal fluid. The absence of lymphocytosis of the spinal fluid, therefore, does not positively exclude tuberculous meninigitis.

2. Benjamin and Sluka report the cases of a grandfather, father and child, without luetic history, who suffered from chronic icterus, the latter two from birth. All had urobilin, but no bile in the urine, with the normal amount of bile in the stools. Each one gave the same blood picture, that of a severe anemia. The father and child had marked enlargement of the spleen. The authors consider that either there was present an inherited anomaly of the hematopoetic system, or that these individuals were under the influence of some toxin, which affected the bloodmaking apparatus.

6. Mendel has shown that in certain organic nerve diseases, a tap on the dorsum of the foot produces plantar flexion of the toes, the great toe excepted, and that in

health there is a dorsal flexion. The author has tried this in 10 cases of organic nerve disease, in which no Babinski was present, and found Mendel's reaction positive in each case. [R. D.]

The Influence of Salt in the Diet on Arterial Tension. R. Bayer (*Arch. für Experimentelle Pathologie und Pharmakologie. Bd.* 57. *Hft.* 1 and 2, p. 162) reports from Krehl's clinic very interesting observations on the effect of changes in the salt content of the diet in cases of arteriosclerotic hypertension. A practically salt-free diet (about 4 gm. NaCl per diem) invariably reduced the blood pressure by considerable amounts, frequently as much as 30 mm. Hg. while the addition of 15 gm. of salt to this diet always gave a marked rise in the blood pressure, considerably above that noted on an ordinary hospital diet. All of these cases showed a well-marked salt retention, that is to say, the salt administered was only in small part excreted within twenty-four hours. It should be particularly noted that these were all cases of arteriosclerosis in which with increased tension there was no evidence of nephritis. This work is of great value, for it shows how the blood pressure may be reduced without the use of drugs, and explains the fact, already known, that a milk diet will reduce the tension, a milk diet being one containing relatively small amounts of salt. In nephritis, on the other hand, the same rules do not seem to apply. C. Loewenstein (same Journal, p. 137), working also at Krehl's clinic, was unable to obtain any constant results on blood pressure by varying the amounts of salt in the diet, contrary to the experience of several French observers. Out of 10 cases only one showed a marked increase of pressure after the administration of salt, and in one case of chronic nephritis, in which there was a very marked salt retention. the blood pressure actually decreased during the administration of large doses of salt. It is interesting to note that in two instances after large doses of salt, edema of the lungs occurred, but was relieved by the use of cardiac stimulants and venesection. The administration of large amounts of salt to nephritics is therefore no indifferent procedure, and requires careful watching of the patient. [W. T.]

Miscellany.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

Progress along all lines connected with the International Congress on Tuberculosis, which is to take place in Washington from Sept. 21 to Oct. 12, 1908, was shown by the reports presented at a meeting of the Committee of Arrangements, held in New York, at the Associated Charities Building, Monday evening, Oct. 28. Dr. Lawrence F. Flick, of Philadelphia, chairman of the committee, presided, and the other members present were: Dr. Joseph Walsh, Philadelphia, secretary; Dr. John S. Fulton, Washington, secretary-general; Mr. William H. Baldwin, Washington; Dr. Hermann M. Biggs, New York; Dr. Frank Billings, Chicago; Mr. Edward T. Devine, New York; Mr. Livingston Farrand, New York; Dr. J. C. Greenway, Greenwich, Conn.; Dr. Chas. J. Hatfield, Philadelphia; Dr. Abraham Jacobi, New York; Dr. Alfred Meyer, Mrs. James E. Newcomb, New York; Gen. Geo. M. Sternberg, Washington, and Dr. Wm. H. Welch, Baltimore.

The meeting was the first held since Dr. Flick's return from abroad, and his reports of his visits to the International Conference on Tuberculosis in Vienna and to the International Congress on Hygiene and Demography, at Berlin, were interesting features of the session. More than a thousand delegates were registered at Vienna, he said, and the gathering at Berlin was quite as large. The leading men in both associations are looking forward with a great deal of enthusiasm, Dr. Flick said, to the meeting in Washington, next year, and about four hundred of the members of the foreign organizations may be expected to attend the Congress. The Conference selected this country as its place of meeting in 1908 just as the Congress did two years ago. The Conference and the Congress are two distinct organizations. The International Conference on Tuberculosis meets every year and keeps up a continuous organization with headquarters in Berlin. The International Congress on Tuberculosis meets only once in three years and does not maintain an international bureau in the intervals. Dr. Flick stated that at the International Conference, interest centered especially in the timeworn subject of the routes of invasion for the tubercle bacillus. It seems to have been demonstrated that the disease may be contracted by both the respiratory route, and the alimentary route. Though this does not make us much wiser in a practical way, still it is somewhat comforting to know that the respiratory route is less important than it was once thought to be. On the other hand, that information is compensated by the importance of the alimentary route.

In connection with his account of the progress made in the preliminary arrangements for the International Congress on Tuberculosis, Dr. John S. Fulton, the secretary-general, reported that ten distinguished foreigners have consented to participate in the series of special addresses that are to form a part of the program. The names of these eminent specialists follow: Dr. R. W. Philip, Edinburgh; Dr. C. Theodore Williams, London; Dr. Arthur Newsholme, health officer, Brighton, England; Dr. C. H. Spronck, Utrecht, Holland; Dr. Karl Turban, Davos-Platz, Switzerland; Dr. Gotthold Pannwitz, Charlottenburg; Dr. Emil von Behring, Marburg; Dr. A. Calmette, Pasteur Institute, Lisle, France; Dr. Maurice Letulle, Paris; and Dr. S. Kitasato, Tokyo, Japan.

Dr. Fulton also reported that up to the date of the meeting, the governors of twenty-three states had lent official auspices to the Congress. This not only insures official representation so far as that many states are concerned, but it insures an active organization in each of these states, that will be interested in the Congress. The states in which this action has been taken so far are: California, Utah, Montana, North Dakota, Minnesota, Wisconsin, Illinois, Iowa, Indiana, Michigan, Ohio, Kentucky, Kansas, Tennessee, South Carolina, North Carolina, Maryland, New York, Massachusetts, Vermont, Maine, West Virginia, Missouri.

Reporting on the formation of state committees, the secretary-general said that such committees had been appointed in nearly all of the states in the United States; that several have already organized and are earnestly at work. He reported also that replies have been received from various foreign countries in reference to the appointment of committees, and the replies indicate that the countries addressed will be represented in nearly every instance by exhibits, as well as by delegates.

Correspondence.

LETTER FROM LONDON.

[*From our Special Correspondent.*]

The Ninth Faraday Lecture. Osler's Working Colony for Consumptives. An Open-Air School.

London, Oct. 18, 1907.

Mr. Editor: I have just returned from the Royal Institution, where the ninth "Faraday lecture" has been delivered by Emil Fischer, and delivered, as was pointed out by Sir James Dewar in seconding the vote of thanks proposed by Sir Henry Roscoe, on the same spot, at the same table, in the same lecture theater amid circumstances almost precisely similar that Sir Humphry Davy exactly, a hundred years ago to the day, demonstrated to the Royal Society the elements potassium and sodium he had then isolated; the year 1807 was indeed the *annus mirabilis* of the Royal Institution, and the eve of the historic nineteenth of October was now doubly honored. It has been said that the greatest discovery Davy ever made was Faraday, and on this occasion both were commemorated.

These facts are in themselves of sufficient interest to warrant my mentioning them in my letter to you, but when I tell you that the subject of the address was the relation of synthetical chemistry to biology and its substance a record of great achievements of the highest moment to physiology, to pathology and to medicine, you will, I am sure, exonerate me for some enthusiasm.

Organic chemistry may be said to be the offspring of biology, the direct descendant of the science of medicine, and though she has developed a vigorous and entirely independent growth, she now returns to lend her most potent aid to the solution of problems we were otherwise unable to solve.

The problems of digestion have been solved to some extent, and we know something about the chemistry of the end products of metabolism, but we have always been in the dark about the changes that take place in the wonderful laboratory of the tissues.

The isolation of urea by Rouelle in 1773 and its synthesis by Wohler in 1828, forms the starting point not only of our conception of the identity of "organic" and "inorganic" chemistry, but also of the long series of syntheses of substances occurring in animal and vegetable tissues, culminating in the artificial production of polypeptides, which closely resemble peptones and proteins.

The construction of organic matter begins in the leaves of plants with the conversion of CO_2 into sugar. Fenton has converted CO_2 into formaldehyde; von Paeyer and Loew have produced from this, by heating it with lime water, a sugar-like product in which Fischer has found an acrose which can be transformed into glucose. There is at present no evidence as to the exact part taken by the optically-active constituent of the chlorophyll granules, but Siegfried has shown that the simple amino-acids are capable of combining with CO_2, and in all probability the proteins offer sufficient opportunity for its fixation. The combustion of carbohydrates in the body is brought about by means of oxidizing enzymes, but we know nothing of the composition of the enzymes because the complete isolation of an enzyme has never been accomplished.

The synthesis by Stolz of the crystalline adrenalin isolated by Takamine, indicates that it has a relatively simple structure; the same is true probably of "secretin," which has the property of liberating enzymes from the pancreas, and Fischer has demonstrated the exact dependence of enzyme action upon close similarity in stereo-configuration between the enzyme and the substance it attacks, a geometrical relationship so close that the lecturer applies the simile of lock and key for its expression.

Since the stereochemistry of the glucosides and polysaccharides is well understood, some idea of the configuration of the enzymes may be inferred, and their synthesis thus becomes not impossible within the near future.

To unravel the constitution of the proteins, hydrolysis by acids, alkalies and digestive ferments has been employed, and nineteen of the ultimate products, amino-acids, have been isolated, five of them in the twentieth century. Of these only three remain to be synthetized, and those already produced artificially have even been obtained in their optically-active form. Moreover, Professor Fischer has been able to refer the configuration of some of them to that of glucose.

Fischer and Abderhalden have prepared a peptide, l-leucyl-triglycyl-l-tyrosine which has all the properties of the albumoses, and the knowledge gained from the synthesis of this and many other peptides has opened up new ways of investigating the peptones and albumoses analytically. Chemists confidently expect to accomplish the artificial production of the nucleins, lecithin and cholesterin in the immediate future.

It is in fact due to the labors of organic chemists that we find ourselves within measurable distance of an understanding of the intimate nature of the bodily processes which it is essential we should possess for the proper appreciation of the morbid conditions that constitute disease and the means for rational therapy.

At the conclusion of the lecture Lord Rayleigh presented to Professor Fischer the Faraday medal of the Chemical Society.

Since my last letter we have had the annual meeting of the British Medical Association at Exeter, at which the privilege of listening to eloquent speeches by several physicians and surgeons from your side of the water was properly appreciated; the second International Congress of School Hygiene and the meeting of the British Association; but these are all so fully reported that you need no words from me on them.

If space permitted, I should like to tell you something of the scheme initiated at a little sanatorium down in Oxfordshire in which Osler has interested himself, for the establishment of a working colony for consumptives, where even the poorest can find opportunity to earn something by light employment as soon as they are able, and so prolong their stay away in the country under conditions as to air, food and hygienic discipline suited to the attainment of permanency in their cure, instead of returning to the unfavorable surroundings of work in the cities which so often results, if not in a fatal issue, at least in that "hope deferred" which "maketh the heart sick."

The London County Council has put into operation this year an "open-air school" on some high woodland to the southeast of London to which we have been very glad to send some of our little hospital patients, with, so far as my experience goes, the happiest results.

We could wish that the Imperial Parliament showed a tithe of the intelligent appreciation of the disinterestedness of the measures proposed by preventive medicine possessed by the London County Council.

C.

"PROSTATECTOMY IN TWO STAGES BY SPECIAL TECHNIC."

New York, Oct. 27, 1907.

Mr. Editor: In the issue of your valuable Journal for Oct. 24, 1907, there is an article by me entitled "Prostatectomy in Two Stages by Special Technic."

Thinking that I should see proof of the article before it was published, I was not as careful in the construction of sentences and punctuation as I should otherwise have been. Unfortunately, owing to a change in my address, the proof did not reach me.

On page 556 of the Journal, under the third division of conclusions, the sentence should read: "Its advantages are: the quick relief afforded, slight shock and absence of serious symptoms."

Very truly yours,
Follen Cabot, Jr., M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCT. 26, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	11	2
Chicago	—	—	Waltham	13	3
Philadelphia	—	—	Pittsfield	8	1
St. Louis	—	—	Gloucester	7	2
Baltimore	214	63	Brookline	6	2
Cleveland	—	—	North Adams	4	0
Buffalo	—	—	Chicopee	5	3
Pittsburg	—	—	Northampton	10	1
Cincinnati	—	—	Medford	6	2
Milwaukee	—	—	Beverly	5	1
Washington	—	—	Leominster	7	3
Providence	53	12	Hyde Park	4	1
Boston	192	48	Melrose	5	2
Worcester	39	8	Newburyport	—	—
Fall River	46	21	Woburn	3	1
Cambridge	27	4	Marlboro	3	1
Lowell	38	11	Westfield	5	2
Lynn	18	7	Peabody	—	—
New Bedford	30	17	Revere	2	—
Springfield	22	2	Attleboro	—	—
Lawrence	23	5	Clinton	4	1
Somerville	27	7	Adams	10	5
Holyoke	11	4	Gardner	—	—
Brockton	12	4	Milford	5	2
Malden	11	1	Watertown	2	1
Chelsea	11	4	Plymouth	—	—
Salem	15	5	Weymouth	2	0
Newton	11	2	Framingham	4	2
Haverhill	15	2	Southbridge	—	—
Fitchburg	10	4	Wakefield	—	—
Everett	3	—	Webster	—	—
Taunton	17	6			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOVEMBER 2, 1907.

H. A. MAY, passed assistant surgeon. Commissioned passed assistant surgeon from April 22, 1907.

R. E. LEDBETTER, passed assistant surgeon. Ordered to the Navy Yard, Norfolk, Va., Nov. 14.

A. STUART, passed assistant surgeon. Ordered to the "Yankton" Nov. 5.

M. BOLAND, assistant surgeon. Detached from duty at the Naval Hospital, Norfolk, Va., and ordered to course of instruction at the Naval Medical School, Washington, D. C.

W. N. MCDONOLL, assistant surgeon. Detached from the "Yankton" Nov. 5, and ordered to the Naval Hospital, New York, N. Y.

G. T. GRAYSON, passed assistant surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the Naval Dispensary, Washington, D. C.

F. E. PORTER, assistant surgeon. Detached from the "Franklin" and ordered to the Navy Yard, Washington, D. C.

G. W. SHEPARD, assistant surgeon. Appointed assistant surgeon from Oct. 25, 1907.

R. A. CAMPBELL, acting assistant surgeon. Ordered to the "Franklin."

J. C. THOMPSON, surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered to the "Chattanooga."

R. T. ORVIS, surgeon. Detached from the "Chattanooga" and ordered home.

I. F. COHN, assistant surgeon. Detached from the "Elcano" and ordered to the Naval Station, Olongapo, P. I.

SOCIETY NOTICES.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY IN CONJUNCTION WITH THE BOSTON MEDICAL LIBRARY MEETING. — Wednesday, Nov. 13, 1907, at 8.15 P.M., John Ware Hall. The Treatment of Inoperable Sarcoma with the Mixed Toxins of Erysipelas and Bacillus Prodigiosus; Dr. William B. Coley, New York. 1. Method of Preparation with Recent Modifications; 2. Technique of Administration; 3. Indications for Use; 4. Prognosis, as determined by Analysis of Final Results. Trypsin in the Treatment of Cancer, Dr. Wm. P. Graves. Discussion by Dr. R. C. Larrabee. Light refreshments after the meeting.

J. C. MUNRO, *Chairman.*
J. C. HUBBARD, *Secretary.*

NEW YORK ACADEMY OF MEDICINE. — The anniversary meeting and reception will be held Friday evening, Nov. 29, at 8.30 o'clock. The anniversary discourse will be delivered by Col. W. C. Gorgas, M.D., U. S. A., chief sanitary officer, Isthmian Canal Commission. Subject, "Sanitation of the Canal Zone." Stereopticon illustrations. Fellows desiring extra invitations will please notify the committee on anniversary meeting.

ERRATUM.

The word suggested by Dr. Edward A. Ayers, in his recent Carpenter Lecture, to best name in one word, instead of a phrase, an important class of diseases, was "homomosquitic," and not "homosquitic" as given in our report.

RECENT DEATHS.

CHARLES WILLIAM BURTON, M.D., M.M.S.S., died in Adams, Oct. 5, 1907.

CHARLES BRET POOL, M.D., M.M.S.S., died recently in Lowell, aged thirty-eight years.

HENRY RUPERT BRISSETT, M.D., M.M.S.S., died in Lowell, Oct. 18, 1907.

DR. FRANK HENEL, of New York, died on Oct. 28. He was graduated from the medical department of the University of the City of New York in 1875, and was for some time in the service of the Health Department. For many years he was associated with the municipal institutions on the East River islands, and at the time of his death was consulting physician to the City Hospital and the Randall's Island Hospital.

DR. SETH D. CLOSE, of New York, committed suicide by taking strychnine on Oct. 29. He had been suffering for some time from melancholia, and had only recently returned, in apparently improved condition, from the Rivercrest Sanitarium at Astoria, where he had been under treatment for several weeks. Dr. Close, who was a well-known and highly respected practitioner in the Borough of the Bronx, was fifty-six years of age at the time of his death. He was born in Geneva, N. Y., and was graduated from the College of Physicians and Surgeons, New York, in 1876. He had lived for more than thirty years in the house where he died, and had seen the neighborhood which, at the time he took up his residence there, was a portion of Westchester County, change from a distinctly rural one to a thickly populated city suburb.

DR. V. PLOWDEN MCLAUGHLIN, of New York, died suddenly on Nov. 2 at Saranac Lake, in the Adirondack Mountains.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Orthopedic Surgery. By Augustus Thorndike, M.D. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Transactions of the American Association of Obstetricians and Gynecologists. Vol. XIX. For the Year 1906. New York. 1907.

The Opsonic Index in Diabetes Mellitus. By John C. Da Costa, Jr., M.D.

Elements of Physics. For Medical Students. By Frederic James M. Page, B. Sc. (Lond.), F.I.C. Illustrated. Chicago: W. T. Keener & Co. 1907.

Nierendiagnostik und Nierenchirurgie. Von Dr. G. Kapsammer. Illustrated. Parts I and II. Wien and Leipzig: Wilhelm Braumüller. 1907.

Kirkes' Handbook of Physiology. Revised and rewritten by Charles Wilson Greene, A.M., Ph.D. Sixth American revision. Illustrated. New York: William Wood & Co. 1907.

The Commoner Diseases of the Eye. For Students of Medicine. By Casey A. Wood, M.D., C.M., D.C.L., and Thomas A. Woodruff, M.D., C.M., L.R.C.P. (London). Third edition. Illustrated. Chicago: W. T. Keener & Co. 1907.

Blood-Stains: Their Detection, and the Determination of Their Source. A Manual for the Medical and Legal Professions. By Major W. D. Sutherland. New York: William Wood & Co. 1907.

A Plea for Uniformity of Tests for Albumin and Sugar among Medical Examiners. By J. Bergen Ogden, M.D. Reprint.

Original Articles.

MUSCLE AND TENDON TRANSFERENCE.

BY E. H. BRADFORD, M.D., AND ROBERT SOUTTER, M.D., BOSTON.

The following paper is based upon an analysis of 35 cases, with periosteal insertion and silk strand elongation, including one case of silk suture elongation of the hamstring to the os calcis, and two cases of pectoral trapezius anastomosis.

This procedure in surgery has already won its position in the list of surgical methods, but as there is still much discussion in regard to the question of technic, the careful recording of cases is at present desirable. The following cases are presented as indicating the results which can be obtained by the exercise of ordinary care.

The writers record their appreciation of the great value of the method of extending tendons by the use of silk strands. They wish to emphasize the necessity of the following points: First, the avoidance of disturbance of tissues as far as possible; second, the necessity of thorough asepsis, not simply such as is ordinarily necessary in surgical procedures, but in the preparation of the skin.

Silk strands have been, as a rule, used after having been boiled twice; in some instances the second boiling has been in a corrosive sublimate solution, in others, the simple boiling has been employed. They have not found that any particular advantage has followed, as far as they can determine, the boiling in sublimate claimed by Lange to be essential. As the number of cases is not large, definite claims cannot be made, but it is clear that the danger is not as great from silk not boiled in sublimate as has been suggested.

The dipping of the sterilized silk in solutions of celluloid has been used in one instance, and the method is open only to the objection of increasing detail.

The patient's skin has in two instances been protected with the ordinary means of sterilization by painting with iodine, and afterwards by painting with a solution of rubber in ether over the field of incision. This latter was applied to one limb, and where the other limb was also operated on the ordinary means of sterilization were all that were used. No perceptible difference was noted in this instance, and in the other cases the method was not used in order to avoid multiplication of details.

It is seen that in some of these cases a healing by first intention is not obtained. It can, however, be claimed that such a rule is regarded as desirable in all instances, and can be attained by the most careful attention to detail. It is for that reason, probably, that it is desirable, even at the expense of the multiplication of details, to carry out most thoroughly means for skin sterilization and for other sterilization.

It is desirable that the patients should be kept in a plaster fixation for as short a time as possible, plaster only being applied for a sufficient length of time to secure a healing of the skin incision, and a reasonably strong tissue healing.

After this the apparatus treatment should be begun, with apparatus devised in such a way as to prevent any strain upon the transferred tendon. Massage, muscle training and graded exercises are essential in the after-treatment for several months.

It cannot be claimed that a complete restoration to normal strength can be accomplished in tendon transference. In many instances little can be accomplished, as it is impossible to transfer muscles effectively, if there are no strong muscles to be utilized; but in the larger number of cases considerable benefit can be obtained, and in a certain number surprisingly good results can be secured.

The method of tendon arthrodesis, as described by the writer in an article presented to the society two years ago, has been performed three times. The ultimate result after three years in one case was extremely satisfactory; a sloughing out of one strand delayed the cure in the second case, and in the third case the final result cannot be determined, as the operation has only been recently performed but in both cases excellent results are promised.

An analysis of cases of tendon transference chiefly without silk strand elongation, treated at the Boston Children's Hospital for the previous ten years, was reported two years ago.

The following cases are additional ones, operated upon by the writers, both at the Children's Hospital and elsewhere, with the transference of tendons lengthened by silk strands.

TENDON TRANSFERENCE WITH SILK ELONGATION FOR DEFORMITIES OF THE FOOT.

Case I. J. B., age, ten years. Operation, Sept. 7, 1905. Infantile paralysis, requiring transference of the tibialis posticus and a portion of the flexor communis digitorum into the scaphoid and cuboid for paralytic equino-varus. The result early in the year 1906 was good, with power of dorsal flexion and good adduction. The patient walks without apparatus.

Case II. M. M., age eight and a half years. Operation August, 1905. Paralytic calcaneous. Wedge section of the os calcis, with the transference of the tibialis posticus with an insertion on the calcaneous. Silk elongation. Results, Nov. 14, 1905, good position.

Case III. E. L. R., age eight years. Operation, September, 1906. Infantile paralysis with foot drop, requiring transfer of two slips of common extensor of toes to cuboid, and two other slips to the inner side of the foot inserted into scaphoid. Result, better position, without gain in motion.

Case IV. M. O., age seven years. Operation September, 1905. Peroneus longus and one half of the tendo Achillis into anterior part of astragalus by means of silk.

Result, in good position of foot. Has not reported recently to ascertain motion.

Case V. M. W., age ten years. Operation August, 1906. Paralytic varus requiring the transfer of two slips of extensor of toes by silk into periosteum of cuboid, and removal of a wedge from the outer part of os calcis.

May, 1907, the foot is held in good position and has gained in motion and function. (Fig. 1.)

Case VI. J. K. B., age five years. Operation Aug. 8, 1905. Half of the tendo Achillis was split and brought forward and inward by silk elongation into the scaphoid. The result, when last examined, was good as to position and use.

CASE VII. F. B., age eight years. Operation Aug. 11, 1905. For paralytic equino-varus. Half the tendo Achillis was brought forward to the scaphoid and cuboid by tendon transference with silk elongation, shortening of the tibialis anticus and peroneus longus. Result, good position and functional use.

CASE VIII. R. C., age nine years. A similar condition justifying a similar operation Aug. 16, 1905, with an excellent immediate result. March 19, 1907.

CASE IX. A. F., age ten years. Operation August, 1905. Equinus; insertion of half of the tendo Achillis elongated by silk strands into the scaphoid. Good result in motion and position. March, 1907.

M. W. CASE V. FIG. 1.

Transference of flexor communis digitorum, with silk strand insertion on inner and outer sides of dorsum of the foot to correct front foot drop.

Other view of Fig. 1, showing the regained power of raising front of foot.

CASE X. E. R., age nine years. Operation Aug. 22, 1905. Insertion of a portion of the flexor communis digitorum and a portion of the tendo Achillis into the scaphoid and cuboid by silk elongation; stretching of the hamstrings. Result, good position, and more motion. March, 1907.

CASE XI. W. M. K., age eight years. Operation Aug. 22, 1905. For equino-valgus. Transference of a portion of the flexor communis digitorum and of the tendo Achillis to the scaphoid by silk elongation, with tenotomy of the tendo Achillis. More motion and better position "when he tries." March, 1907.

CASE XII. A. C., age eight years. Operation Aug. 24, 1905. Paralytic equino-varus. Osteotomy of the scaphoid and os calcis, foot twisted and tenotomy of the tendo Achillis. More motion, good position and use of foot. March, 1907.

CASE XIII. G. D., age six years. Operation Aug. 28, 1905. Paralytic equino-varus. Transference of two slips of the flexor communis into the cuboid, tenotomy of the tendo Achillis. Result, good position and use of the foot; a little more motion and better position. March, 1907.

CASE XIV. M. B., age seven years. Operation Sept. 7, 1905. Paralytic valgus. Transference of the peroneus longus and half of the tendo Achillis into the anterior part of the astragalus. Tenotomy of the tendo Achillis. Silk elongation. Immediate result satisfactory. Final result not known.

CASE XV. J. K. A., age seven years. Operation Sept. 26, 1905. Paralytic varus. Transference of outer half of the tendo Achillis into the cuboid with silk elongation. Operative result satisfactory. Ultimate result not known.

CASE XVI. H. A. R., age eighteen years. Operation, August, 1906. Infantile paralysis when ten years of age; worn apparatus for some time. Foot drop. The flexor longus transferred and silk strands inserted into the dorsum of the foot; shortening of the common extensor of the toe; tenotomy of the tendo Achillis. The wound healed, except a superficial granulation in some portions of the incision. The result three months after the operation was good, position of the foot and slight muscular power of flexion. Result, nine months later, good position and function and gain of movement in all directions in the foot. The foot drop.

CASE XVII. E. R., age five years. Operation June, 1906. Transference of a portion of the flexor communis digitorum by lengthened silk strands into the dorsum of the foot with two insertions, one on the inner and the other on the outer side. The immediate result was healing by first intention with good position. Ultimate result not yet determined.

CASE XVIII. R. W., age sixteen years. Operation August, 1906. Slip of flexor longus digitorum inserted by lengthened silk strands, both externally and internally, into the dorsum of the foot. Healing by granulation. Ultimate result six months later reported to be good.

CASE XIX. E. S., age three years. Operation April, 1907. Tendon transplantation of common flexor, lengthened by silk strands and inserted on the outer and inner side of the foot. Healing by first intention. Ultimate result not yet determined.

CASE XX. F. W., age ten. Operation September, 1906. Infantile paralysis requiring transfer of outer portion of common extensor of toes into cuboid by means of silk. Tenotomy of plantar fascia and tendo Achillis. A wedge was removed from the outer part of the astragalus. Good position of foot for use and function. March, 1907.

CASE XXI. E. W., age seven. Operation April, 1906. Infantile paralysis, requiring tenotomes and transfer of peroneus longus by means of silk strand to periosteum of scaphoid and shortening of paralyzed tibialis anticus and of extensor of toes. Result, March, 1907, better position of foot, some motion at point of transfer.

TENDINOUS FIXATION OF THE ANKLE JOINT FOR FRONT FOOT DROP.

Two cases of this procedure were reported in a previous paper. The operation being indicated where the paralysis is so extensive that no muscles offer sufficient strength for transference, the following three cases are mentioned, although recently performed, as suggesting some operative details. In the previous operations the silk strands were passed through a hole drilled in the tibia, and the tendons of the extensor communis were inserted and attached in a chiselled groove in the tibia. In one of these operations some sloughing followed and there was a delay in healing. A good ultimate result finally followed. In the other cases prompt healing occurred without sloughing of the silk, and there was marked improvement in gait and entire correction of the toe drop. In the four following cases no bone attachment was attempted, the attachments being periosteal.

Case XXII. C. F., age fifteen years. Operation June, 1906. Portions of the tibialis anticus and peronei tendons freed from muscular bellies and sutured to the periosteum of the tibia. Silk strands inserted sub-periosteally in the inner and outer side of the dorsum of the foot. The strands were then passed upwards subcutaneously to the incision on the upper portion of the leg, passing under the annular ligament, and secured into the periosteum surrounding the tibia. The tendo Achillis was divided. The wounds healed by first intention. Ultimate result, nine months later, improved position of the foot. Almost complete correction of front foot drop. Walks without apparatus. March, 1907.

Case XXIII. M. S., age seven years. Operation February, 1907. Silk quilted through the periosteum about the tibia, three inches above the malleoli, passed subcutaneously under the annular ligament, and posterior insertion on the outer and inner side of the dorsum. Anterior tibial and common extensors attached three inches above the joint to the periosteum of the tibia. The wound healed by first intention. Ultimate result, foot held with entire absence of toe drop and with marked improvement in gait. May, 1907.

Case XXIV. R. P., age eight years. Operation April, 1907. Complete paralysis of the extensor communis, peronei and tibialis anticus. The silk strands were quilted in the upper end into the periosteum of the tibia three inches above the ankle joint. The silk strands were then passed under the annular ligament and inserted on to the dorsum on the outer and inner side of the foot. A split portion of the tendo Achillis was removed and transferred, with silk elongation inserted into the outer and inner side of the dorsum of the foot. Strands from the tibialis posticus and tibialis anticus were dissected off three inches above the ankle joint and stitched by quilting stitch into the periosteum around the tibia. The tendo Achillis was divided. Immediate result, healing by first intention, with good foot fixation.

Case XXV. M. S., age seven. Operation February, 1907. Silk strands passed through tibia and made fast to cuboid on one side and to scaphoid on the other, holding the foot at right angles. Result, foot held at right angles.

As the operation in the last two cases is recent, the ultimate result is at present undetermined, but there seems no reason to think that the usefulness of the limb will be less good than in the other cases previously reported.

TENDON TRANSFERENCE FROM THE HAMSTRINGS TO THE OS CALCIS BY ELONGATED SILK STRANDS.

Case XXVI. E. D., age eight years. The following unusual operation, performed by Dr. Soutter, August, 1905, is of clinical interest, particularly from the fact that the procedure is an unusual one. The soleus, extensors and plantaris were paralyzed, the foot being held in the position of calcaneus. There was no flexor function of the toes, but there was good power in the hamstrings. A silk strand was quilted into the semimembranosus and extended downward and fastened to the os calcis.

The case was lost sight of for over a year, and when examined, the attachment of the silk in the os calcis was firm. The patient walked without the calcaneous deformity, there was tendency to valgus and abduction of the front of the foot existed; but after four weeks of muscle training, the foot could be extended in the plantar flexion direction without flexion of the knee. The foot is held, at present, a year and a half later, in a good position, and some flexion in the toes is possible. May, 1907. Plantar flexion of the foot, due to the transfer, is strong enough for use.

FOOT AND KNEE.

Case XXVII. H. M., (1) age eight years. Operation April, 1907. Transference of portions of the flexor communis, lengthened with silk strands inserted into the outside and inside of the dorsum of the foot. External hamstrings lengthened with silk inserted subperiosteally on either side of the patella, and continued and inserted into the tubercle of the tibia.

This operation was performed on the left leg. In the right foot, transference of portions of the flexor communis, with extension of silk strands and insertion on the outer and inner side of the dorsum of the foot. Healing by first intention throughout. Immediate result, good position and slight gain of motion. Ultimate result not yet determined.

Case XXVIII. W. D., age twelve years. Operation January, 1907. Paralysis of the quadriceps extensor, tibialis anticus and peronei. Transference of outer hamstrings, with silk elongation to the patella and tibial tubercle. Transference of the flexor longus with silk strands inserted into the dorsum of the foot. Healing in part by first intention, and in part by skin granulation. The present result is good position, with slight muscular power in all directions. Under gymnastic exercises this is increasing.

Case XXIX. M. H., age eight years. Operation August, 1906. Tendon transference of the flexor longus digitorum with silk insertion in the anterior portion of the foot; transference of the gracilis and a dissected portion of the iliotibial band serving as tendon of the tensor vaginæ femoris into the patella by silk strands, and into the tubercle of the tibia. Healing by first intention, except the incision on the inner side of the hamstrings, which healed by granulation. Condition, April, 1907, excellent, with power of motion in extending the leg, and complete cure of toe drop, with slight motion in foot extension, abduction and adduction.

Case XXX. R. R., age seven years. Operation July, 1906. Tenotomy of both tendines Achillis. Transference of a portion of the iliotibial band; gracilis and semimembranosus inserted into the patella. More motion, good position. April, 1907.

Case XXXI. J., age twenty years. Operation Feb. 22, 1906. Paralysis left leg, extensor communis, and dorsal extensors of the foot. Outer hamstring was transferred forward with silk elongation, and inserted into the patella on both sides and on the ligamentum patellæ. Transference of flexor communis with tenotomy of the tendo Achillis. Wounds healed by first intention, except two incisions, which healed by granulation. At present, April, 1907, absence of foot drop, and slight power in motions in all directions of the foot and at the knee.

Case XXXII. S. M., age nine and one half. Operation Sept. 19, 1906. Semimembranosus transferred with silk strands to patella, and flexor longus digitorum put into cuboid. Tendo Achillis lengthened by tenotomy. Patient had complete paralysis of the other leg, and for four years previous to operation he crawled on his abdomen, using his hands for locomotion. March, 1907, his uncle reported that he was walking on the operated leg and crutches.

Case XXXIII. H. W., age seven. Operation September, 1906. Infantile paralysis, requiring transfer of semimembranosus into the patella, by means of silk strands. Tendo Achillis split and one half carried forward to outer side to cuboid. Immediate result good. Ultimate result not known as yet.

SHOULDER.

The writers have already reported two cases of transference of a portion of the trapezius to the insertion of the deltoid for deltoid paralysis. They are able to add three cases of shoulder paralysis. In two the pectoralis major was cut down upon and a portion of the muscle freed and the same thing done with the trapezius; the separated muscular bands were united firmly. Giving an insertion of the elongated trapezius into the humerus.

Case XXXIV. E. W., age five years. Operation July, 1906. Paralysis of the deltoid and triceps, with some power of the outer part of the biceps. The pectoralis muscles strong as was also the trapezius. Transference of portion of the trapezius forward with silk strands elongation into a portion of the tendon of the pectoralis major, which was freed from its muscular attachment, making for it an insertion into the humerus. The wound healed by first intention, and the ultimate result to date is restoration of the power of elevating the arm 45° above the height of the shoulder, with some anterior motion.

Case XXXV. B., age eight years. Operation September, 1906. Paralysis of the right deltoid, but with some strength in the biceps. Transference of the trapezius with silk elongation insertion into the periosteum at the place of the deltoid insertion. Result, February, 1907, patient has improved power, can elevate the arm above the shoulder.

Case XXXVI. D. R., age five years. Operation 1905. Paralysis of the deltoid, triceps and of biceps. Congenital dislocation of the shoulder subcoracoid. A portion of the trapezius separated from its insertion, one half of the pectoralis major tendon and some muscle fibers cut and separated from the rest of the muscle. This insertion of the pectoralis sutured to the freed fibers of the trapezius, forming an insertion for it in the humerus. One year later good use of arm in anterior motion and without tendency of shoulder to drop subcoracoid.

The after-treatment in these cases consisted of fixation of the arm by plaster of Paris bandages in a position extended above the head, so as to raise as far as possible the inserted portion of the muscle. Plaster of Paris fixation was continued for six weeks. The arm was then placed in a less elevated position by a second plaster bandage, which was worn for a month. Later a right-angle wire arm support, keeping the arm and hand at right angles with the trunk, was worn, accompanied by beginning use, gymnastics, etc.

The result in these cases up to date corresponds with the result in two previous cases reported in the previous paper two years ago, the result of which has continued to be as satisfactory as when reported.

The details of the operative procedure in all these cases varied but slightly. They were all performed upon cases with slight or no resistant deformity, beyond tendon shortening, and without great structural changes of tendon and muscular tissue. In all cases complete correction by force or tenotomy or both of the existing deformity was made before the muscle transference, with overcorrection in the resistant cases. The silk strands were inserted by quilting in the divided tendon, which was cut off as low down as possible. As small skin incisions were made as were feasible, but enough to expose adequately the muscle and tendon, and to enable the tendon to be transferred with as little of an angle of the transferred tendon as possible.

The transferred tendon or strand was covered by fascia specially sewed over it independent of the sewing of the skin incision. As a rule, no drain was placed in the wound, which was sewed up by catgut. The limb was placed in a moderately corrected position in a plaster bandage. As a rule, the wound was not examined for ten days or a fortnight. In most of the cases reported, the wound healed by first intention, either entirely or partially. In portions of the wounds there was superficial gaping. In none of the cases was there any evidence of sepsis, and no sloughing out of the tendons, although in the first cases operated upon by silk transference five years ago, sloughing of the silk occurred in five instances.

The periosteal insertion on the dorsum of the foot was made with care, a curved handled needle being used, taking a firm grip upon the periosteum. Bone drillings were not used.

The usual after-treatment in these cases was plaster fixation for two months, followed by apparatus which would prevent toe drop or abnormal strain, followed, when practicable, by muscle training, massage and gymastics for several months.

It is difficult to determine in all cases when plaster bandage fixation should be omitted, and some functional activity of the muscle allowed. The matter is one of judgment and no fixed rule can be stated, as much depends upon the weight of the limb and the age of the patient. It may be considered as a general proposition that as soon as firm healing has been established, slight functional activity of the transferred muscles should be allowed in order to favor the formation of strong tissue.

In order to obtain the best ultimate result, the cases should be followed carefully, with a well-regulated treatment directed to the development of the weakened muscles; in many instances much gain can be effected in muscles previously considered beyond repair.

In cases of this class it is difficult to record and report the exact degree of improvement, as a slight amount of gain in a muscle apparently incapable of exerting functional power justifies in a child an expectation of greater gain under persistent care.

In the cases here reported all apparatus was removed at the end of either six or nine months following the operation, and in many cases increasing improvement followed the release from apparatus, with a gain of power from use.

The conclusions which the writers have drawn from their cases of tendon transference is in accord with the experience of many other surgeons, viz.:

That tendon transference is a procedure which offers with a minimum of risk a chance of great benefit. In none of the cases reported were the patients not benefited by operation, either by an improved position, or gain in functions. The immediate result in all was favorable, and the ultimate result in a number of cases surprisingly good.

A comparative study of the writers' cases previously treated by simple tendon transference without periosteal insertion and of tendon shortening of the relaxed tendons with the results gained by the careful employment of silk strand elongation of efficient muscles and periosteal insertion into selected and mechanically favorable points on the foot and tibia, demonstrates the superiority of the newer over the older method.

The strictest aseptic and antiseptic precautions are demanded. All of the operations herein mentioned were performed not only with all aseptic details as to the patient, instruments and dressings, but with the use of gloves and masks by the surgeon, his assistants and the assisting nurses.

The amount of benefit finally gained in function and correction of disability is in favorable cases so great as to justify an expectation of equal benefit in all cases. Even in extensive paralysis something can often be done to improve the condition.

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THE SEASHORE TREATMENT OF THE TUBERCULAR ARTHRITIS OF CHILDREN.

BY ALBERT H. MILLER, M.D., PROVIDENCE, R. I.

Tubercular arthritis is esentially a disease of childhood, 85% of the patients who have applied at the Rhode Island Hospital for treatment for this condition having been under fifteen years of age. The course of the disease is chronic, its duration, for years, attended with the formation of abscesses and discharging sinuses and usually terminating fatally from tubercular meningitis, tubercular peritonitis, or some other intercurrent disease as the immediate cause of death.

The treatment of these cases has consisted of immobilization of the affected joints by braces or plaster casts and of various surgical operations for the removal of pus and diseased bone, or for the correction of deformities. Although this treatment has been efficient in diminishing the deformities of those patients who have survived, it has had little effect in lessening the suffering and fatality of the disease.

It is urged, with some appearance of reason, that an attempt to save the lives of patients with tubercular joint disease is opposed to the law of the survival of the fittest, and that these children should be allowed to die rather than to grow up deformed, to pass on their tubercular taint to succeeding generations. Opposed to this argument, is the fact that these crippled children suffer tremendously, not only the acute pain of burrowing abscesses and of muscular spasm, but also the constant discomfort from restraint of motion. Whatever our ideas may be as to the value of their lives, we must unite in believing that any time spent in freeing their distorted little bodies from suffering is time well spent.

Following the lead of the Children's Island Sanitarium at Marblehead and the Sea Breeze Sanitarium at Coney Island, the Rhode Island Hospital, in the summer of 1906, first opened the ward for the seashore treatment of the tubercular arthritis of children. The entire expense of the work was defrayed by the late James A. Garland, whose death cast a shadow over the last weeks of the summer's work. The Garland ward was located thirty-five miles from the city of Providence on Conanicut Island, in Narragansett Bay, where an old hotel, with good bathing facilities, was converted into a temporary hospital. This institution was open from the middle of July to the first of October.

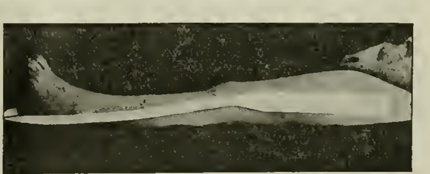
There were 32 patients, 11 of whom came from the wards of the hospital in Providence. A great deal of care was taken in the selection of the patients. They were children under sixteen years of age, who were afflicted with tubercular arthritis and belonged to the following classes:

First, cases of extreme severity.

Second, patients living amid improper surroundings with insufficient nourishment.

Third, cases steadily failing from any cause. There were 20 boys and 12 girls. The average age was nine and one quarter years. The youngest was fourteen months old. In 14 cases, the hip was affected; in 9, the spine; in 7, the ankle; in 1, the knee and in 1, the shoulder. The duration of the disease had been from six months to eleven years. The average duration had been three and one-half years. Every patient had at some time been in the hospital for a period varying from one to thirty months. Twelve children had a total of 25 suppurating sinuses.

Realizing the influence of bad surroundings and improper food in the development of the disease, the treatment was largely hygienic, drugs being used only in an occasional emergency and no operating being done at the summer branch. Fresh air day and night, sea bathing, an abundance of nutritious food and freedom from restraint, both mental and physical, formed the basis of the treatment.



Seashore treatment of tubercular arthritis. The simple extension straps employed.

From sunrise to sunset, the children lived out of doors and the windows of their sleeping rooms were never closed. All the patients bathed in the salt water, as many as possible bathing every day. The bath, which usually began at two in the afternoon, lasted for half an hour. The bathing was the feature of the day's pleasures.

Patients wearing hip braces bathed twice a week. Extension was made by two strips of ZO adhesive plaster two inches wide, one on the outside extending from the great trochanter to the knee and the other from an inch below the perineum to the inside of the knee, each terminating in a strip of one inch webbing which reached to the foot-piece of the brace. This arrangement of the extension, which could be removed and replaced every third day without irritating the skin, was free from the objection of pulling on the knee. On the bathing day, the brace and extension straps were removed and the patient bathed in the sea water. Every precaution was taken against movement of the affected joint while the brace was off, and as soon as the bath was over the patient was dried and the brace and extension were replaced.

Seashore treatment of tubercular arthritis. The patients shown above comprise ten tubercular hips, six spines, five ankles and one tubercular knee.

Patients with plaster jackets were allowed to wade every day. Patients in bed were bathed every day on a frame or in a basket which was wheeled into the water.

Surgical dressings were done after the bathing hour. No chemical antiseptics were applied to the wounds. Drainage tubes and gauze packing of sinuses were not allowed. The soiled dressing was removed, the surface dried, and a sterile pad applied, which remained until after the next bath. On the days when the patients did not bathe in the ocean, the wound was cleansed with salt solution and a fresh pad was applied.

The diet comprised cereals, bread, crackers, meat, fish, vegetables, fruit, simple desserts, several eggs a day and two quarts of milk for each patient. Meals were served five times a day: at seven and ten o'clock in the morning, at noon and at three and five o'clock in the afternoon. Except breakfast on the piazza, meals were served picnic fashion on the lawn, on the beach, or wherever the children happened to be at the time. The patients developed astonishing appetites.

Every thing possible was done to make the patients happy and contented. Only a few rules were made, but these were rigidly enforced. The affected joints must at all times be kept quiet. With this exception, activity was everywhere encouraged. The patients played games, held baseball matches, wrestled, swam in the ocean, and had as good a time generally as any group of well children could enjoy.

This treatment was so radical a change from accepted orthepedic ideas that, day by day, the effects were carefully watched. The results were so good as to leave no room to question the wisdom of the methods used.

Eleven patients had come from the wards of the hospital; 12 had come in beds or wheel chairs;

13 on crutches; and 7 walking unaided. At the end of two and one-half months' treatment, it was necessary to return only 2 to the hospital wards; 2 were in beds or wheel chairs; 18 on crutches; and 12 walking unaided.

An increased mobility with loss of sensitiveness was noted in the affected joints. The gain in weight averaged 2½ lb. per month. The greatest gain was 7 lb. in one week.

Of the 25 discharging sinuses, 11 were entirely healed. All sinuses were improved and several healed soon after the return from the summer hospital. Eight bed sores on one patient were entirely healed.

It was interesting to watch the condition of the patients during the winter following their first outing. They uniformly continued to improve for a time after returning to their homes. No one of the sinues which had healed broke out again. In most cases the improvement continued, but two patients began to fail after a few months and in the spring of 1907 were in practically the same condition as a year before. The cause of this failure was directly traceable to the surroundings and insufficient nourishment to which they were subjected.

With a plan of treatment so different from the accepted orthopedic practice, the results obtained are so far superior to those to which we have been accustomed that even our limited experience seems to have demonstrated as true the following principles:

1. Fresh air and an abundance of food, combined with sea bathing and freedom from unnecessary restraint, bring about a continuous, uniform and rapid improvement in all cases of tubercular arthritis of children.

(*a*) Orthopedic restraint should be applied only to the joint affected. Otherwise, activity should be encouraged.

(*b*) The beneficial effect of sea bathing more than compensates for any theoretical injury done by leaving off orthopedic apparatus for a short time daily.

2. Tubercular sinuses which are bathed in sea water daily and which have no other treatment save a protective dressing improve with surprising rapidity.

In most of the cases of tubercular arthritis, the patients are so improved by the summer treatment that they can safely return to their homes for the winter. A few cases require treatment during the whole year.

In preparing this paper, I have drawn freely from the report of the committee, consisting of Dr. Halsey DeWolf, Dr. J. M. Peters, and the present writer, who had charge of the Garland ward in the summer of 1906. The work is now being continued for the second year at the Crawford Allen Memorial, a branch of the Rhode Island Hospital, situated eighteen miles from Providence, on the west shore of Narragansett Bay.

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An oil portrait of Dr. John Guiteras has been hung in the eastern amphitheater of the medical laboratories of University of Pennsylvania.—*Jour. Am. Med. Asso.*

Clinical Department.

TWO CASES OF HEMORRHAGE FOLLOWING THE REMOVAL OF THE TONSILS.

BY E. A. CROCKETT, M.D., BOSTON.

For about eight years I have been using, for the removal of nonadherent large tonsils, a Farlow tonsil snare, threaded with No. 5 steel piano wire, and in adherent tonsils it has been my practice to dissect off the tonsil with a Leland tonsil knife and then apply the snare as in the nonadherent type, removing such fragments of the tonsil as might remain with the tonsil punch. Prior to this method, I have been using either the tonsillotome or a long throat knife or scissors, and under this method of operation have had a number of severe hemorrhages, which several times succeeded in alarming me, but which always checked under pressure for a few moments without exsanguinating the patient.

Until last spring I had never seen a hemorrhage of even ordinary severity follow the use of the snare, and in addition have seen the tonsil more completely removed than by any other method of operating which I have ever employed, and have been accustomed to say that a severe hemorrhage was impossible to be obtained by this method.

About a year ago, I began threading my snare with a steel wire two sizes larger than the No. 5 formerly used. This wire makes a loop much easier to apply to the tonsil, but it does not apply itself so flexibly to the tonsil to the exclusion of other tissues as does the No. 5. I noticed, as soon as I began to use it, that the snare bit deeper into the tonsil fossa than I had been accustomed to see, but still I had no trouble until the first of the two cases reported to-night. It seems to me possible, although I am not convinced of it in my own mind, that this hemorrhage may have been caused by the use of this nonflexible wire. At any rate, I shall use in the future the No. 5, until I see some reason to change my opinion.

Case I. The first was a boy about eight years old, who had two large nonadherent tonsils and a large central adenoid. The child was evidently in perfect physical health and there was no history of hemophilia. The two tonsils were very easily removed, anterior and posterior pillars were not wounded. After removing the right tonsil, I remarked to my assistant that the tonsil was removed unusually successfully, that the cavity remaining was unusually deep and that I could see a small spurting point from the upper anterior face of the posterior wall of the cavity. The spurting point was small and was about the size of the vessels cut in a mastoid operation. I held a sponge against it for about three or four minutes and then, the bleeding having apparently ceased, proceeded to remove the adenoid. The last thing before I stopped the operation, I wiped out the right tonsil cavity and could see no sign of hemorrhage.

About three hours after the operation I received a telephone message from the hospital saying that they thought that I had better come at once. As I was in the middle of my office hours, I asked Dr. Powers to go around first, as he was nearer, and I followed as soon as possible. He probably arrived there within five minutes and I within ten minutes of the first alarm. When I saw the child he was completely exsanguinated and the radial pulse could not be felt nor could I be sure that I felt the carotid pulsation. The hemorrhage had been checked on Dr. Powers' arrival by digital pressure of the right tonsillar cavity. This was kept up until a tonsil clamp could be procured and placed on (perhaps half an hour) and it may be known that the child was in pretty bad condition when I say, there was absolutely no resistance made to putting a gag in the mouth and holding three fingers firmly against the side of the tonsil space during all this time. A pint of salt solution was given subcutaneously in the breast and two pints by rectum soon afterward. The child's pulse began to come back after the first subcutaneous infusion and could be counted at 160. Dr. Powers thought he had previously counted it at 200, but I could not be sure of this. Later on it fell to 140.

The tonsil clamp when applied was kept on about eight hours and when removed there was a large dark blood clot at the fossa. No further hemorrhage resulted. The child was completely prostrated and did not leave the hospital for ten days, during all of which time he ran a temperature from 100 to 102. He was extremely pallid and the throat was more septic than any throat I have ever seen. The child did not recover from the operation sufficiently to go to school for six weeks.

The nurse said that during the three hours between the operation and first alarm she had noticed no more than the usual hemorrhage until the child began to vomit and vomited fresh blood. The hospital where I performed the operation was within three blocks of my office. Had it been much further off, I do not question the case would have been dead before it could have been reached. It certainly was more exsanguinated than any case I have ever seen.

CASE II. About four months afterward, I operated on a twelve-year-old girl in Auburndale, again with large nonadherent tonsils and not having learned wisdom by experience began with the same technic of operation. Tonsils easily removed; pillars not wounded. The nurse in attendance said that the first sign of hemorrhage was observed about two hours after the operation. After a good deal of telephoning she succeeded in getting Dr. Hammond out about three hours after the operation, and I arrived about four hours after the operation. The hemorrhage, according to the physician who was one of large experience in throat cases, was very profuse, filled the throat so that she was unable to tell which tonsil it came from, consequently, it was impossible to apply the tonsil clamp. The family showed Dr. Hammond a basin which contained about a quart of blood, but they and the nurse said it did not equal all the girl had vomited. The hemorrhage had checked itself before Dr. Hammond arrived. The girl was pallid and the pulse was 130 to 140; she had sighing respiration and a good deal of faintness and complaint of thirst. A large clot of blood could be seen in the space of which one of the tonsils had been removed. The case was watched for about eight hours and then transferred in an ambulance to the Newton Hospital, not far away. She was unable to stand up and remained in bed for about eight days after the operation, but recovered perfectly.

It seems to me that these two cases which are being reported should be placed upon record. One lesson which I certainly learned from them is that I should never again remove the tonsils under any consideration unless the case is willing to come in town and be near my office for twenty-four hours after the operation. The first case would undoubtedly have died had it been anywhere but near my office. The second case would unquestionably have died before help could have reached it, if it hadn't been that the hemorrhage ceased itself. In addition, I should advise No. 5 steel wire in threading the tonsil snare.

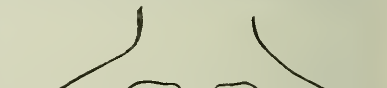
CONGENITAL DEXIOCARDIA.

BY W. F. DOOLITTLE, M.D., CLEVELAND, OHIO.
From the Cleveland City Hospital.

THE following described case of unusual anatomical interest has recently come under my observation.

Mr. F. N. G., aged forty-one, born in the United States, white, mechanic, applied for treatment on my service at the Cleveland City Hospital, May 31, 1907. He complained especially of "a swelling with pressure and distress" in the epigastrium, also of "swollen limbs below the knees, shortness of breath and loss of strength."

The routine physical examination showed among other things a very marked funnel-shaped breast, at whose apex at midsternum a loud diastolic murmur is heard. By percussion and auscultation the heart was made out, lying entirely to the right of the sternum, which bounded it on the left, as shown in the accompanying diagram. The second rib marked its upper limit. The apex-impulse of the heart was located in the fifth interspace just inside the mammillary line, marking the heart's axis downwards and to the right. A movable dullness in the right axilla reaching to the third interspace obscured the outer border of the heart. Its lower bounds were also hidden by similar dullness fading into the liver flatness, which extended to within an inch of the umbilicus in the median line. The pulse



rate was irregular at 115 to 120 and quite arrythmic. A capillary pulsation was easily demonstrated in the index finger, and the poorly sustained radial pulse on elevation aided in confirming the diagnosis of aortic insufficiency with broken compensation.

As it is not the purpose of this article to dwell on the pathology, it may be dismissed with the statement that rest in bed, moderate doses of digitalis and aspiration of 1100 cc. of serous fluid from the right side of the thorax brought prompt moderation of the symptoms. The orthopnea disappeared, the character of the pulse improved and its rate was at 80 in a few days. Following the tapping the lower border of the liver returned nearly to its normal limits and the epigastric distress then ceased.

However, the removal of the fluid did not alter the area of cardiac dullness. Inquiry of the patient revealed the following interesting facts relating to this transposed organ:

The position of the heart on his right side was noted at his birth by the physician, and the mother's attention was called to it. The patient has a twin sister whom, as a child, he very closely resembled in features, but her heart is normally located. Each of their parents was a twin, but their hearts are said to have been on the proper side. My patient has a wife and a twin son and daughter. The children are about four years old and look just alike. While the girl's heart is placed as usual, the boy's heart is, like the father's, on the wrong side of the chest. Some years ago the wife miscarried a pair of twins at the seventh month. Unfortunately no anatomical examination of the fetuses was made as to the heart's position.

It is of interest that the patient's twin sister also has a pair of twins (boy and girl), four years old, residing in a distant city, who are said to look just alike; but, in their case, my patient "thinks" their hearts are on the left side.

The patient is slightly under medium height, well nourished and claims unusual strength and health until recently. As a child he was naturally left-handed — a functional peculiarity noted in other cases of transposed heart. At school he was encouraged to use the right hand more and so became ambidextrous.

The percussion tone at the apex of the right lung is higher than that of the left — a fact which might be accounted for (in case the lungs are transposed) by the pressure of the right hydrothorax. Still, the character of the sign is but little altered since aspirating.

In conclusion, attention may be called to the following:

Dexiocardia, a local transposition, is comparatively rare and should not be confused with the not uncommon cardiac displacement due to disease. Blodgett states that in the examination of 20,000 recruits for the German army only two cases of dexiocardia were encountered.

The condition is said to have been very exceptionally noted at birth, and generally was not suspected during life.

Ballentyne, in his recent excellent work on "Antinatal Pathology and Hygiene" (1906). states that there had appeared no evidence of the transmission of this anomaly by heredity. He cites E. Rogi's cases of brother and sister as being quite unique as an instance of family tendency.

While dexiocardia is said to have been noted twice the number of times in males that it has in females, which may be accounted for by military and insurance examinations, yet many cases may indicate a tendency for transmission, under certain circumstances, in the male line.

Aristotle was the first to describe transposed organs. It is of further historic interest that the wife of Henry IV of France (mother of Louis XIII) had the heart to the right of the sternum.

Several theories as to the cause of this anomaly have been advanced. However, Ballentyne states that the inverted position of single organs is not to be regarded as directly related to the causes of situs transversus viserum (due to malformation of the germs, Winslow), but is ascribed to local anomalies in development, which belong to a later stage in embryological formation.

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AN ABDOMINAL LESION SIMULATING CANCER.

BY BENJAMIN B. CATES, KNOXVILLE, TENN.

In the latter part of March, 1907, I was called in consultation by Dr. J. H. Wilkerson to see Mr. George Dunlap, who was suffering from some obscure trouble in the left lower quadrant of his abdomen.

I obtained the following history:

Mr. Dunlap is a merchant, fifty years old, large-boned, and inclined to be slightly obese. He relates he has always been healthy; but within the last six or seven years has been growing constipated to such an extent that he has had to use purgatives constantly.

Mr. Dunlap further says that on the twelfth of March, 1907, he retired at night as usual, remarking to his wife he "felt better than he had for months and months."

About 1 A.M. on the following morning he was awakened by a sharp pain in the left lower quadrant of his abdomen. The pain became so severe he sent for Dr. Wilkerson, who relieved him by a hypodermic of morphine and a purgative.

However, Mr. Dunlap did not feel inclined to go about his business, and was kept under the constant attention of Dr. Wilkerson.

After a few days of observation, Dr. Wilkerson suggested I be called in to consider the advisability of an operation.

When I saw Mr. Dunlap he was lying in bed, not suffering much pain; he had no inclination to move about. His pulse and temperature were normal, though Dr. Wilkerson said when he first saw Mr. Dunlap he was having fever. His abdomen was not distended.

Superficial palpation showed a slight degree of resistance on the left side, which on deep pressure in the left lower quadrant caused him to flinch and cry from pain.

From a digital examination of the rectum I could discover nothing abnormal, except, four or more inches from the anus I fancied there was a slight bulging of the bowel on the anterior surface. Anyhow, pressure against it caused pain.

With this history and examination I was not satisfied in my mind as to the pathology of the case and made arrangements to see Mr. Dunlap again in a few days. This I did without forming any well defined opinion other than that it was a case for operation.

I, therefore, suggested an exploratory operation, which was accepted.

Accordingly he was removed to the hospital of the Tennessee Medical College, and was operated upon April 4, 1907.

Thinking perhaps I might have an incipient cancer of the rectum to deal with I made a long incision parallel to and above Poupart's ligament. When I got into the belly I found the pelvic cavity filled with small bowels and so adherent to every thing that I abandoned the first incision for the time being, and opened the abdomen in the middle line, in order that I might have a better field for operation. The small bowels filled the pelvis and hid the sigmoid and rectum from view. In sponging the adhesions apart, I broke into a pocket of foul-smelling pus on the left side of the sigmoid and rectum. I estimated there must have been half a pint of this pus.

While the pus had a foul fecal odor, I did not find any fecal concretions, nor did I find any communication with the bowel.

I then placed the patient in the reversed Trendelenburg position, placed gauze around the bowels, so as not to infect the general peritoneal cavity, introduced cigarette drains from both wounds down to the pocket of pus and closed the wounds down to the drains.

The subsequent steps of the treatment followed was to keep the patient in Fowler's position and to give daily enemas of normal salt solution by Murphy's plan. The patient made a slow but sure recovery, without developing any permanent fecal fistula, though for about a week after the operation the discharges had a decided fecal odor.

The pathology of this case was unique to me, and I was at a loss to account for it, because I had never seen a similar condition in the operating room, nor could I find anything in the literature in regard to it. Hence I called it acute periproctitis, and acute perisigmoiditis.

The etiology of this case was interesting, and in seeking for a cause I accidentally learned from the patient that a few years ago a traveling quack came through the town delivering lectures on "health and how to preserve it." Among other things he taught that people, in order to aid digestion and cure constipation, should eat every day a teaspoonful of sand. So this good man was induced by some friends to eat sand for constipation. This, I thought, may have been the secret of the trouble. The sand might have lodged in some of the folds or pockets of mucous membrane of the sigmoid or rectum and caused ulceration, secondarily setting up suppuration around the gut.

Since writing the above report of my case I have read very interesting reports in *Surgery, Gynecology and Obstetrics* for July, 1907, by Drs. W. J. Mayo, of Rochester, Minn., and George Emerson Brewer, of New York, on "Diverticulitis of the large bowel," that throw a good deal of light on the pathology of my case.

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The Cholera Situation in Russia. — According to press dispatches from St. Petersburg, Oct. 31, the latest official cholera statistics for the week ending Oct. 22 show that the epidemic is now being checked with the approach of winter. There were 1,009 new cases reported and 416 deaths were recorded. More than half the number of cases, 569, were in Kiev and Volhynia provinces, where the winter is belated. There were only 103 cases in the four southern provinces and 75 in the five provinces of the Middle Volga region.— *New York Med. Jour.*

Medical Progress.

PROGRESS IN SURGERY.

BY J. G. MUMFORD, M.D., BOSTON.

RESULTS OF THE OPERATIVE TREATMENT OF BREAST CANCER.

(Concluded from No. 19, p. 640.)

Halsted, more than other writers, distinguishes degrees of axillary involvement, giving four groups of cases depending upon the extent of involvement: (*a*) base of axilla only; (*b*) base and mid-axilla; (*c*) base, mid-axilla and apex; (*d*) veins intimately adherent. He shows how groups *b*, *c*, and *d* are much the most difficult and serious and lead with considerable certainty to an involvement of the supraclavicular region, and he finds this region above the clavicle the seat of disease in a surprisingly large number of cases. Of his 232 cases the neck operation was done in 119; while of the remaining 113 cases, in which the neck operation was not done, 44 were operated upon subsequently. Halsted finds microscopic involvements of the neck glands in great numbers of cases which show no palpable evidence of disease in that region. For this reason, he insists upon the neck dissection in all cases in which the axilla is involved beyond the base. He lays down the following rules: the surgeon should perform the neck operation, "barring, of course, special contra-indications: (1) in all cases with palpable, operable neck involvement; (2) when the apex of the surgical axilla is involved. When mid-axillary involvement is demonstrable at the operation, special implication is almost certain, and hence, (3) in these cases also the neck should be typically cleaned of its lymphatics, as high, at the very least, as the bifurcation of the carotid.

"We find ourselves for the past two years again performing the neck operation in most cases. We omit it in hopeless cases."

As evidence that involvements of the neck do not imply necessarily a hopeless condition, Halsted cites 40 traced cases, in which cancer was found and removed from both neck and axilla. Four of these cases survive the three-year limit, showing us positively good end-results in 10%.

On the other hand, Greenough, and most of the other speakers, conclude from their studies that cancerous glands above the clavicle practically contra-indicate an operation for radical cure. Of 38 cases reported by Greenough, with involvement and removal of the neck glands, none survive. Willy Meyer does not favor the neck operation and finds none of his neck cases alive after a five-year limit. Ochsner dissected the neck seven times in 78 cases. His seven neck cases are dead. The studies and conclusions of these three speakers, however, are by no means as exhaustive and satisfactory as Halsted's, nor is their experience with neck involvements as extensive.

L. S. Pilcher supports Halsted's views in an entirely interesting and convincing paper. The former surgeon has made a painstaking endeavor to dissect the neck in all advanced cases which have come under his hands during the past ten years, and his success in eliminating completely the disease is excellent. So long ago as 1900 he reported a series of ten cases, from which he had removed cancerous neck glands, with a resulting immunity of 33.3% after three years. He now reports a further interesting group of 18 cases. Taking all of his reported cases from which demonstrable cancerous growths in the neck were removed, Pilcher shows the surprisingly low end-mortality of 64%, so far as now appears,—the best and most encouraging end-mortality statement dealing with these supraclavicular cancer nodes that has been recorded up to this time. He reminds us further of the dense, deep cervical fascia which renders difficult a detection of cancer nodules until they have attained a considerable size, and insists strongly on the importance of the surgeon's recognizing the probability that the supraclavicular glands are infected in every case of extensive cancer of the breast.

Many of the speakers urged again the vital importance of an early *diagnosis* in all cases of breast tumor, and a few had something new to contribute to the subject. All intelligent practitioners now agree that every tumor of the breast should be seen by a competent surgeon, though unfortunately we know that great numbers of breast tumors remain undiagnosticated until the complete operation is hopeless. Vander Veer dwells upon what he calls " the pre-cancerous state, from the nervous condition of the patient," and relates an interesting case in illustration of his contention that frequently patients are convinced of the imminence of a malignant growth long before the surgeon, while often the outcome justifies the patient's forebodings. Vander Veer would not disregard this anxiety.

Halsted finds a great interest in determining the early diagnosis of cancer. Physicians should remember that more than 80% of all breast tumors are malignant, so that the presumption of cancer is ever present, and should warn the optimist when examining a painful or lumpy breast, even in a young woman, that the burden of proof rests upon him to show that the disorder is not cancer. Says Halsted, " It well repays the experienced surgeon to spend perhaps an hour in the examination of certain breasts." We are seeing constantly " smaller and still smaller tumors, cancers which give not one of the cardinal signs." He reminds us of the adenoma in a transitional stage, but more difficult still the tiny retro-mammary adeno-carcinoma, or the colloid carcinoma, in a breast covered with one or more inches of fat. " If in such a case there should be no shortening whatever of the trabeculæ the diagnosis could hardly be made." " But given even very slight shortening of the trabeculæ from tumor to skin, this fact might be determinable by making both breasts take the widest possible excursions on the chest wall under the skin, the faintest conceivable trace of a difference of the two sides, in a minor pectoral crease, for example, may suffice for the diagnosis." " Frequently there is no sign but the almost imperceptible suggestion of pull, which, when the faintest possible, is of course elicited by dislocation in one direction only. This sign, however slight, is all that is needed for the diagnosis." The surgeon must manipulate both breasts in making this test, in order that one may serve as a control. It is interesting to read Halsted's statement that to him, with his enormous experience, the extreme possibilities of the test were not fully realized a decade ago, and that each year it developed a little in refinement; and he remarks that it should impress the uninitiated to witness the ability of the demonstrator to diagnosticate with the fingers, through considerable fibrous tissue, hardly visible cysts yielding on puncture the tinest fraction of a drop. Halsted dwells also on the importance of determining the size of the involved breast relative to the other breast, and of noting most carefully the relative amount of uninvolved mammary gland remaining.

" Given a carcinoma, say, one half or one quarter as large as the palm of the hand, if this tumor has grown not at all, or little, at the expense of the breast, the prognosis is relatively good, for the tumor in such case is quite surely of a definitely adenomatous type and not of the scirrhous variety." Halsted holds that a scirrhous cancer represents only a part of what has existed, for the struggle against the cancer cells resulting in fibrous tissue production is not always futile, and when the minute foci of cancer epithelium have been destroyed, the new fibrous tissue may in part be absorbed also. As a result the scirrhous disease may be active, and metastasis take place a long time before the visible or palpable tumor is developed. We have seen how cancerous glands in the axilla may exist without obvious breast cancer, though later there developed a malignant tumor in the corresponding breast.

These remarks and reflections of Halsted demand the serious consideration of surgeons.

The subject of *prognosis* is probably the most important single element in this discussion, and we know how the histological character of the special tumor bears immediately on this subject; as Dennis says, the type of the cancer seems to have an influence on the prognosis greater than the now accepted radical operation. I have already referred to this matter in this writing, and incidently have pointed out the significance of glandular involvements as bearing upon the prognosis. Furthermore, Oliver states that the location of the primary growth is significant since " central growths and those located in the lower third of the base give a much larger percentage of recoveries than do growths located elsewhere." But there is no certainty in prognosis, even prognosis of evil, for, as Oliver states further, that matter in an individual case will always remain a doubtful question. " Seemingly favorable cases sometimes progress to a fatal termination, whereas one is sometimes pleasantly surprised by having an unpromising case go on to recovery."

Physicians are wont to ask us how much disability results from extensive mutilating operations on the breast. It is interesting to hear the unanimity with which the Washington debaters assert that the disability is slight. For instance, Greenough states that out of 53 patients interrogated 26, or about half, reported perfect use of the arm; 20 reported good use; 4 fair use, and 2 only " a little " use, while one described the arm as " stiff." That is to say, 50 patients out of 53 had serviceable arms after the subsidence of the initial shoulder lameness, which is so common. About one third of his cases had some swelling of the hand or arm, but this interfered little with the use of those members, and was transient in most of the cases. Ochsner bears similar testimony, stating that swelling of the arm was troublesome in but 10% of his cases. Jonas speaks of frequent swelling of the arm, but no permanent impairment of its use, while Oliver reports lymphedema of the arm in five of his 35 patients. Says Greenough, " It is probable the swelling of the upper arm is to be regarded as the direct result of the removal of the axillary lymph trunks; but swelling of the hands and fingers may probably be attributed to cicatricial pressure upon the vein. It is reassuring, however, to find that swelling of the arm occurs so commonly in cases without recurrence, and that it is not to be regarded necessarily as evidence of axillary recurrence."

Most of the speakers decline to accept an arbitrary time limit of three years as representing cure of the disease, and this feeling is expressed by Halsted, when he says that we should demand as proof of cure in those most difficult cases with involvement of the neck, that the patient live at least five years after the operation. Even in cases which suffer recurrence surgeons find that the recurrence often comes late. Oliver says that the average duration of life after operation (in fatal cases) is twenty months, according to his experience; the average time of recurrence being fourteen and one quarter months. Probably most surgeons will agree with Ochsner, who finds that about one half of the deaths occur within the first year. For instance, out of 43 eventually fatal cases, Ochsner reports 24 dead within a year, 30 dead within two years, and 36 dead within three years, the remaining 7 deaths being strung out over fourteen years. The statements of Oliver and Ochsner correspond quite closely with those of the other speakers, so that the surgeon should feel justified in strongly encouraging the patient who has survived the one-year limit.

The significance of the word *treatment* does not seem to appeal with entirely equal force to all operators, as one may gather from the quotations already given in this article. Greenough discourses upon four types of operations: *complete, semi-complete, incomplete* and *palliative*. By *complete* operation he means wide removal of the breast, both pectoral muscles, the axillary contents, and occasionally a dissection of the neck. We have seen that Halsted and Pilcher dissect the neck if there be cancerous deposits beyond the base of the axilla. All of the other speakers practically agree with Greenough in his definition of a complete operation. But it is needless to dwell further on this well-ventilated topic.

All surgeons appear to agree also in the proposition that wide areas of skin invariably should be removed; but one would be interested to watch their individual practice for, from the words of the speakers at the symposium, it is hard to believe that their conceptions of wide skin areas correspond. It seems that few surgeons remove so small an area of skin as to allow of direct suture of the wound. Halsted dissects out a great disk and covers in the raw surface with skin grafts, while others employ the plastic operations of Warren, Willy Meyer and Mixter. Greenough states that in his list of complete operations many of the wounds were *sutured directly*, with a resulting end success of 11.7%; while, in another large series of wounds closed by *plastic* flaps, 19.4% were successful. Halsted remarks that he should not care to say, " Beware of the man with the plastic operation," and endorses a statement that the operator whose duty it is to close the wound should not be intrusted with the planning of the skin incision. However, he does not regard the use of plastics as entirely taboo, but asserts positively that no surgeon should invariably plan his operation with a plastic in mind.

A careful reading of these papers impresses one with the fact that a great many surgeons interpret the words *complete operation* to correspond with their personal conception of the extent of disease in the individual case. Cabot says, " If the disease had infected many lymphatic glands it was sure to recur, even after a thorough removal of *all the muscles and axillary contents.*" " In case 12 the nodule in the breast was small and so situated in the center of the gland that I felt safe in leaving the pectoral muscle. . . . Since that experience I have removed the muscles in all cases." Says Dennis, after vigorously endorsing the radical operation in suitable cases, " The element of time should be seriously considered, since the performance of any operation which requires the patient to be under an anesthetic for four or five hours is attended with a risk, which should, if possible, be obviated."

The veteran Vander Veer, commenting upon his own most favorable list of cases, remarks, " I would say that in the cases that are reached early I am not yet convinced that the very radical operation of removal of the pectoral muscles is called for, but we cannot be too emphatic in impressing on the younger men the necessity of careful examination and dissection of the axillary spaces."

Jonas sums up well the average practice of the best surgeons, when he states, that " no modern surgeon would have the temerity to stop short of a complete removal of the entire breast and axillary contents in the very early cases, and in later ones remove, in addition, both pectoral muscles and the fat from the supraclavicular triangle"; while Jacobson has "employed the incision suggested by Dr. Halsted and has followed his technic, except as to the supraclavicular glands, in all cases. The latter step has only been undertaken when there has been apparent invasion of the neck. The axillary space has been thoroughly cleaned out, the pectoralis major and sometimes the pectoralis minor have been removed."

Contrast the foregoing statements and their associated evidence of good and improving end-results with the following brief profession of faith by Halsted: recognizing that extension, the most rapid, takes place "beneath the skin along the fascial planes, we must remove not only a larger amount of skin and a much larger area of subcutaneous fat and fascia, but also strip the sheaths from the upper portions of the rectus, the serratus magnus, the subscapularis and at times from parts of the latissimus dorsi and the teres major. Both pectoral muscles are, of course, removed.

"A part of the chest wall should, I believe, be excised in certain cases, the surgeon having in mind always that he is dealing with lymphatic and not blood metastasis, and that the slightest inattention to detail, or attempts to hasten convalescence by such plastic operations as are feasible only when a restricted amount of skin is removed, may sacrifice his patient.

"It must be our endeavor to trace more definitely the routes travelled in the metastases to bone, particularly to the humerus, for it is even possible in case of involvment of this bone that amputation of the shoulder joint, plus a proper removal of the soft parts, might eradicate the disease. So, too, it is conceivable that ultimately. . . amputation at the hip-joint may seem indicated."

In comparison with the splendid radicalism of Halsted all lesser operations pale, yet they are seriously to be considered if we regard published statistics only. Greenough reports 75 *semi-complete* operations, with an end-mortality of 75%, as contrasted with his end-mortality of 84% for *complete* operations. (By semi-complete he means his complete operation, done without disturbing the pectoralis minor.)

He reports 85 *incomplete* operations, with an end-mortality of 75%. (In the majority of these operations, which were done more than ten years ago, the pectoral muscles were not removed; in some the whole breast was not taken, and in others the dissection of the axilla was incomplete.)

Furthermore, Greenough reports 56 *palliative* operations, with an end-mortality of 93% only.

The reader will remember that Greenough's tables deal with cases running back thirteen years. We must not take courage too eagerly over the good results of his incomplete operations. Those patients of his may thank fortune that at the time of their operations the disease was still in its earliest stages.

Methods of treatment for cancer other than operative methods find a certain amount of qualified favor among surgeons. Most of the debaters have something to say about the x-rays, though none of them describe accurately their manner of using them. Cabot feels that occasionally the x-rays have checked and delayed the growth of inoperable cancer, but he does not feel that they are positively curative. Willy Meyer regards the x-rays as valuable in the immediate after-treatment, and urges every patient to submit to a six or eight weeks' course as soon as healing has been accomplished. He reports one case, for which he gave a bad prognosis at the time of the operation, but in this case faithful, intermittent use of the x-rays has had a most gratifying result. There has been no recurrence in four years. Of course, a single case of this kind is not convincing. Ochsner advises the use of x-rays systematically after all operations for breast cancer and believes that he sees their benefit. Jacobson also uses x-rays in the same fashion. On the other hand, Vander Veer has seen little permanent good result from the use of the x-rays, except that undoubtedly in many cases they relieve pain, and sometimes delay the activity of the growth. In this connection one recalls Crile's enthusiastic endorsement of x-ray treatment after the removal of cancer of the neck. His method is to leave the wound wide open and to project the rays directly into its granulating depths, employing the treatment every other day for several weeks, and so vigorously as to keep up a mild dermatitis in the vicinity of the wound. We encounter an interesting paradox when we contrast these facts with the experience of those well-known x-ray workers, who have contracted malignant skin disease from long continued exposures to the rays.

Halsted again reminds us of the occasional value of caustics in the treatment of cancer, and points out that regional recurrences after incomplete operations may be delayed by the use of chemical or actual cauterization. Caustics seem to check cancer permeation of the surrounding tissues, and Halsted states that all incomplete operations for cancer should, when possible, be made with the Paquelin or actual cautery. Other surgeons, notably the Mayos, endorse this view and practice.

If one may epitomize the combined teachings regarding treatment, of the Washington speakers one may say that cancer of the breast should be removed with a great skin margin; with a wide dissection of adjacent fat and subcutaneous tissue; with excision of both pectoral muscles; occasionally with stripping the fascia from the numerous neighboring muscles; with thorough cleaning out of the axilla, and when the axilla is involved beyond its base, with dissection of the neck as far as the bifurcation of the carotid. Palliative operations should be performed if possible with the Paquelin cautery, and in all cases the wounds should be treated subsequently with the x-rays for at least six weeks.

In conclusion, so numerous are the figures and so prolific the writers and speakers that one could pile up great numbers of familiar or curious facts, but the main points of the story have been brought out, and we may sum up the discussion in somewhat the following fashion:

The speakers in Washington dealt with 1,194 cases, and an end-mortality of 56.63%, including all varieties of subjects, all varieties of breast cancer, patients of various ages and growths of various development. The case surviving longest *without* recurrence is a patient of Dennis. Twenty-nine years have passed since her operation. The patient surviving longest *with* recurrence was attacked secondarily in the twenty-second year after her operation.

Of the 1,194 cases reported, 518 are now alive and in good health, after more than three years have passed since their operations.

Operations varying greatly in extent and severity were done by these speakers — operations varying from palliative to extensive mutilating dissections.

Handley's explanation of the permeation of cancer meets best our understanding of the conditions of spread, metastasis and recurrence of the disease.

Extensive axillary involvement implies supraclavicular involvement, and calls for extensive dissection in a great number of cases. Cancerous glands in the neck do not point necessarily to a hopeless condition.

Palliative operations should be executed with a Paquelin cautery so far as possible.

Recurrence in the scar is becoming less common as we appreciate increasingly the importance of removing wide disks of skin. Internal metastasis is most common in the lungs, mediastinum, liver, spine, brain, humerus and, occasionally, the femur.

Even pessimists will admit that these results, representing the work of widely scattered groups of surgeons, show a great advance over what we knew when this generation was ten years younger.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Meeting Held at the Massachusetts Charitable Eye and Ear Infirmary, Jan. 18, 1907.

The President, Dr. A. Coolidge, Jr., in the chair.

Dr. F. A. Crockett read a paper on

TWO CASES OF HEMORRHAGE FOLLOWING TONSILLOTOMY.[1]

DISCUSSION.

Dr. F. P. Sprague, of Providence, read a report of some secondary cases.

One patient was operated on under ether, the ridge, the adenoids and both tonsils were removed. Everything went well until the fifth day. On the fifth day after the operation, in the night, as usual, they telephoned for me to come to the house as the patient was having a severe hemorrhage from the right tonsil. I went and in an hour or two I was able to check the bleeding. In two days there was another hemorrhage, which was more easily stopped than the first.

These are the only cases of secondary hemorrhage that I have ever had, and naturally, every time I see an adult tonsil to be removed, I have a fear of the fifth day. If I can get over the fifth day, I feel quite safe.

In this case, the reason it took so long to stop the bleeding was because every time the patient swallowed the clot was torn away from the surface and the bleeding immediately followed.

As regards antisepsis of the throat, I had this throat sprayed every two or three hours, from the time of the operation until after the hemorrhage, with Dobell's solution. Although this throat seemed perfectly clean, of course there must have been some infection. Certainly, I think some precautions are necessary.

If a person comes to me with hypertrophied tonsils and adenoids, and looks like a thin-blooded individual, I try to have that patient better nourished and do what I can to improve the quality of the blood before anything is done in the way of an operation. After the operation, I take the precaution to paint the throat thoroughly with glyceride of tannin, and it seems to me that this has been a help.

In some cases, if there is very much bleeding at the time of the operation, I use cracked ice and hold it in the body of the tonsil for a few moments after the operation. Following the operation, for the first day, I do not allow the patients to have anything even warm; I keep them on cold milk and ice cream and cracked ice.

Ice cream is always grateful to the children, almost everybody likes it, and it certainly has a beneficial effect in keeping the blood vessels contracted. In grown people, I do not allow the patients to have hard crusty things, nor hot foods, for three or four days following the operation. It seems to me that is some help in the preventing of hemorrhage.

I do not see how much better off we are in taking out a piece of the tonsil, to see whether it is going to bleed or not. In this case that I reported, the woman was twenty-seven years old at the first operation, and thirty-six at the next, but the tonsils were as soft as we usually find in a child of a dozen or fifteen years of age. If a patient comes to me, and I get a history of repeated attacks of quinsy sore throat, I leave that tonsil alone because I think we stand a pretty good chance of getting into trouble by cutting such a tonsil.

After we get the hemorrhage, various methods are used. I have a clamp I carry in my bag all the time. I hope that I shall never have to use it.

I had one case where there was a hemorrhage from the anterior pillar, where the anterior pillar became engaged in the tonsillotome, and although it only chipped off an eighth of an inch, it bled quite profusely for some time. The patient was twenty-eight years old.

Dr. J. P. Clark: I have been very much interested in the reports of these cases of Dr. Crockett's and Dr. Sprague's, and it seems to me rather strange that removing the tonsils as thoroughly as we do nowadays, that we do not hear more of hemorrhage. I want to take this opportunity of reporting the only case I have had of secondary hemorrhage in a child. This occurred last spring, in a little girl of seven years of age, from whom I removed adenoids and tonsils. There was nothing remarkable about the operation, except that I made a note that the right tonsil was larger than the left, and that in removing the left, the hemorrhage was rather freer than usual. I heard from her every day, and on the fourth day about two o'clock, I received a telephone message from the parents saying that, about the middle of the night before, the child had waked up very much terrified, and had vomited up a large quantity of bright red blood, and had been spitting up blood ever since, and asked if they should bring her in to see me. Of course, I was very much surprised that they had not notified me before, and I said I would come out at once. The father came for me in his automobile, and thus I got to the house within a very short time after being notified.

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[1] See page 661

I found the little girl with a bowl in her hands, spitting up blood. She was lying in bed, pulse 140, very nervous, and would not let me look at her mouth at all, but I got a sufficiently good view to see that the blood was coming from the left tonsil.

There seemed to be nothing to do but etherize her. I sent for Dr. D. Crosby Greene, Jr., to assist me, and for the family physician to give the ether. I found, on examination, that the blood was oozing quite freely through the remains of the tonsil. With a curved needle and catgut, I took two stitches through the posterior pillar, under the base of the tonsil and out through the anterior pillar, bringing the pillars together over the bleeding tonsil; after tying the sutures the bleeding stopped completely. During the operation, the child vomited about a pint of bloody fluid. She was put to bed. The pulse was then about 200, as nearly as could be counted. During the following night she was given two or three enemata of salt solution. She was kept in bed for ten days, and made an uneventful recovery.

The instruments used to remove the left tonsil had been a tonsillotome and a tonsil punch. While the sutures were in the throat, the voice was somewhat nasal, as their presence interfered with the motion of the soft palate.

Dr. Kittredge: Is there any special needle holder that you use?

Dr. Clark: I used an ordinary needle holder in this case.

Dr. T. A. DeBlois: I dare say Dr. Farlow recalls the celebrated case of Dr. Lefferts, of New York, who had to take up an artery and tie it in the mouth. He was able to locate it, pick it up with the forceps and tie it.

I had a case, myself, which drove me away from tonsillotomy for several years. I cut off both tonsils, and the woman bled for an hour and a half, and finally, when she fainted and rolled off the sofa, why then, she stopped bleeding.

In the labors of the medical inspectors in the public schools, where the children are sent to the hospitals by scores, for the extirpation of the tonsils and adenoids, one half of the patients will have tonsils to be removed together with the adenoids. We have been doing this for several years, and we have, to the best of my belief, had no trouble with hemorrhage with tonsillotomy, whether with the Leland knife or guillotine. Our procedure is always the same, adenoid, tonsil or anything else; we always scratch with the sharpened finger nail after cutting. It is a good thing in adenoids to clean out the little fossa of Rosenmueller with the finger nail, and it certainly tends to arrest hemorrhage, just as it does in obstetric cases. We follow that procedure with the tonsil cut off with the tonsillotome; we scratch and they bleed very little, and I suppose we have been doing this in these large institutions, 20 to 30 a day, for about five years, and I think that Dr. Vogel will agree with me, that we have never had a case of severe hemorrhage at the hospital.

Dr. F. L. Jack: I have seen only one case of alarming hemorrhage after removal of the tonsils. I did not operate myself, but was called in on account of the bleeding. The operator had removed a small portion of the anterior pillar, which contained a good sized artery. The child was etherized, and the artery seized with a pair of long forceps. I have seen a moderate hemorrhage at the time of operation, but never a case of delayed bleeding.

The causes of hemorrhage are apparent, but no one has enlarged upon the best method of arresting it. Unless the patient is etherized one cannot keep him still or open the mouth to see anything. Therefore, it would seem as though ether were necessary. Sewing the pillars together is a very difficult thing to accomplish.

I always carry with me a large hemostat, one blade of which exerts pressure on the tonsil and the other on the neck. The handles are removed, and the instrument left in the mouth.

Dr. W. S. Boardman: A patient came to the Boston Dispensary from Lawrence. It seemed advisable to remove his tonsils and I took off one with a snare, when an artery spurted and became very troublesome. The fellow kept his mouth open, while I wiped off the surface, found the spot and applied a hemostat. He went to the City Hospital over night, and came back to the dispensary in the morning, but did not care to have the other tonsil excised.

I do not know how long they kept the hemostat in his mouth. It seems to me that we should find out whether the hemorrhage is from an oozing surface or an artery, and consider whether a hemostat or the clamp, Dr. Jack spoke of, can be better applied. A bit of cotton or gauze wet with a solution of gelatin and applied to bleeding tissue acts well, and I have often found that gelatin, locally applied, helps to clot blood in a short time. I think the old remedy of applying compresses wet with compound tincture of benzoin, can be tried in some cases of hemorrhage from the nose, with success, but would not expect so much to result from its use in the case of excessive and obstinate hemorrhage, following removal of tonsils.

Dr. E. M. Holmes, of Boston: About two years ago I had a case, a girl twenty-one years old, from whom I removed a large tonsil. The operation was in the morning, and four and a half days after, there was this profuse hemorrhage. In this case, I used the curved needle and catgut suture, and instead of making two, I made five or six stitches about the pillars, forming a purse-string, drawing the tissues together in that way.

I used a Monks needle holder; it was not the easiest thing to do, but we had to do something, and this was entirely successful.

Dr. G. H. Powers, Jr.: Dr. Crockett told me over the telephone which side had bled at the time of operation, and I assumed that it would be that side when I arrived. I put on all the digital pressure I could bring to bear, until we could get a clamp there, from four to five minutes. After the hemorrhage had stopped, that clamp staid on until the next morning, eighteen or twenty hours, with, of course, great discomfort to the patient, but with no recurrence of the hemorrhage.

The patient was so exsanguinated that extreme measures were necessary — saline infusions, etc., after which he rallied very satisfactorily.

Dr. A. C. Getchell, of Worcester: I have had experience enough with bleeding to make me look upon every case with more or less anxiety, and watch the telephone carefully for two or three hours after an operation.

Dr. Jack has raised the question, What should we do? My general plan, in the first place, is not to operate unless my patients can go immediately to bed, and stay there for a number of hours; in the second place, if there is bleeding, to keep them as quiet as possible with the head and shoulders elevated. I apply cold, in the form of ice, to the outside, and I think it is practical to get a good view of the area. If there is oozing, I think that peroxide of hydrogen, up to the full strength, is well worth using, locally, and if the pulse becomes rapid and weak I give a salt injection by the rectum. Of course, if the bleeding is extreme, as it has been in one of my cases, I inject salt solution into the veins. The last resort of applying constant pressure or sewing together the half arches, I have fortunately never had to resort to. I carry with me a Douglass needle, which seems to meet the indications.

Dr. F. P. Emerson: It seems that the gist of all the remarks that have been made tends to show that this operation of tonsillotomy, even in the hands of the most skilful, is apt to be followed by serious hemorrhage. In these days when the general practitioner, as well as the specialist, is doing this operation, we ought to send out this warning. This is a surgical procedure which should be entered upon with every precaution, and these cases should be where they can be watched for twenty-four hours, especially in adults. There is no other field in surgery where we leave such a raw surface to practically take care of itself as in the adenoid and tonsil operation. In most cases, the hemorrhage comes on two hours after the physician has left the house.

As we are doing a more thorough and radical operation on adenoids and tonsils than formerly, it seems as though these cases should be put in a position where they can be watched, carefully looked after and treated surgically.

Dr. Harry Butler, of Bangor: I would like to report one case of primary hemorrhage at the operation. It was a little girl, fourteen years old. I used cocaine because she could be controlled more easily. I somewhat expected to get hemorrhage. One tonsil was rather a small one, and the other an extremely large one.

The history of the case was, that her family physician had for the past year been attempting to shrink the tonsils by various methods of treatment, preparations of nitrate of silver, galvanopuncture, etc. I made up my mind that the tonsil tissue was so hardened, and the walls of the blood vessels were so hardened, that they would not contract, so I removed the smaller tonsil first.

Then in the course of five or six days I removed the large one with a tonsillotome, and, as expected, got the hemorrhage. I removed it at about ten o'clock in the morning, and I tried all kinds of methods for the control of hemorrhage without result, finally controlling it by pressure with my fingers. I held my fingers, one on the inside and one on the outside, for about twenty to twenty-five minutes, then removed them and kept her very quiet in the office until about five o'clock in the afternoon; after which I accompanied her home and saw her safely placed in bed, and had no further trouble.

In this case, I think that the previous treatment was responsible for the excessive hemorrhage, and I think, as Dr. Farlow says, it pays us to try to determine beforehand what the prospect is for a hemorrhage.

I think that the act of vomiting is one of the methods which is very good in the control of hemorrhage, and I think in one of Dr. Crockett's cases possibly the stopping of that hemorrhage was due to the vomiting.

I always note the character of the blood at the time of the operation. In nearly every operation for adenoids or a tonsillotomy, while the child is being held forward, I notice the character of the blood, as it drops upon the white sheet. If it is watery, or light colored blood, I should naturally expect a little more hemorrhage, and one harder to control than if it is dark, thick blood.

Dr. Boardman: The point is brought up that, in operating, some tonsils are very apt to bleed excessively, while others do not, and are a lesser cause of anxiety. Suppose that you feared a hemorrhage, and it was necessary to operate, what would you do as a prophylaxis? It has been stated, and I believe I have proved, that the extract of the thyroid gland assists in helping the blood to clot, which is also true of chloride of calcium, so it does seem to me that we can prepare a patient shortly before an operation, and proceed to remove the tonsils in all safety.

Dr. E. E. Foster, of New Bedford: There was an article recently in one of the German magazines, which reported a number of cases, and in all these cases (they were brought into this hospital where the writer was a surgeon) showed bleeding in the posterior pillar, and his theory was that these secondary hemorrhages were due to the action in swallowing. That is, the clot was torn away from the artery which, in many cases was quite good size, and in all these cases digital pressure was sufficient.

I had a patient which I operated on, two years ago, for chronic laryngitis, a man fifty years of age, treated for a year or two without success, but the only thing I could find was extremely large tonsils. I expected difficulty in removing them, but I was able to get a wire in back of his tonsils and hold it very easily. On the left side, however, there was a spurting artery, which at each heart beat would force a stream of blood across the throat; I was able to take it up and control it perfectly well, without any secondary hemorrhage whatever.

Dr. A. Coolidge, Jr.: I have read the article to which Dr. Foster refers. The number of cases reported was rather small, something like six to ten perhaps, and although all of those cases stopped by lateral compression in twenty minutes, still it seems to me that, under many circumstances, you would feel a great deal safer, if you could have a clamp on that tonsil which was in place and which was going to stay there for twelve hours.

Dr. Crockett: It has always been my routine practice, in doing tonsils, to dissect off adherent ones with a Leland knife, and with the nonadherent put on an ecraseur forcep and make traction until I approach the pillar. In using the ecraseur, I just draw the tonsil out as far as I can easily, and then take a twist on the tonsil. I have always done that, and with many tonsils have had no trouble. I have always felt it safer to do that than to cut around the tonsil with a No. 5 wire.

I used the clamp on the first case about two o'clock in in the afternoon, and kept it on until ten o'clock at night; he was nearer dead than any one I have ever seen, and made no objection to anything; he was completely unconscious. I judged in this case, as well as the second, that it was impossible to tell which part of the tonsil was bleeding; the bleeding was so tremendous that it filled the throat, and it was quite impossible to tell where it came from, until the case was exsanguinated.

CARCINOMA OF THE AURICLE.

Dr. F. L. Jack: I wish to show you the results in one or more cases of the radical operation, and one of amputation of the auricle for carcinoma.

The patient with the carcinoma is a man sixty years old. The growth was of two years' duration, and located on the upper part of the ear extending into the meatus a quarter of an inch. He was told the nature of the growth, and the only one thing to do, and he readily consented to amputation of the auricle. The entire auricle, with the exception of the lobe which was free from the growth, was removed. The lobe was then cut in halves, and the tissues removed close to the skin, and then this flap was carried above, and with a little adjusting the entire denuded surface was covered and the cartilaginous meatus stitched to this flap. Mattress sutures were successfully used. At the time of leaving the Infirmary, the wound was entirely healed.

One other case, unique in my experience, of

FATAL HEMORRHAGE FROM CHRONIC SUPPURATIVE MIDDLE EAR DISEASE.

The patient was a small child who, a few hours after entering the Infirmary, had a sudden hemorrhage from the nose, throat and ear. It was so excessive that by the time the house officer arrived, the patient was dead. An autopsy was made by Dr. Verhoeff, who saved the temporal bone for a more careful examination, to determine the bleeding point. He feels quite sure that the hemorrhage occurred from the jugular vein. Hemorrhage following middle ear suppuration is unique in the history of this institution, and I can recall few reported cases.

EIGHTH ANNUAL MEETING OF THE AMERICAN THERAPEUTIC SOCIETY.

Held at Washington, D. C., May 4, 6 and 7, 1907.

(Concluded from No. 19, p. 643.)

PHYSIOLOGICAL ACTION, ELIMINATION, AND THERAPEUTIC APPLICATION OF SODIUM CACODYLATE USED HYPODERMICALLY.

Dr. Spencer L. Dawes and **Dr. Holmes C. Jackson**, Albany: Sodium cacodylate was introduced by Gautier, in 1899. During the next four years it was hailed as a desirable substitute for arsenic. In 1903, however, Fraser gave it its *coup de grâce*, for with one or two exceptions all English and American text-books deny the possibility of its having either physiological effects or therapeutic value when given hypodermically. The studies of Dawes and Jackson show that the drug has a distinct pharmacological action (being decomposed and eliminated as arsenates in the urine, feces and probably the sweat and breath), and has a toxic effect; the urine of the patients yields arsenates and reacts to Marsh's test. It also gives many of the therapeutic effects common to arsenic compounds. The authors set forth the experiments used to sustain this contention. Cases are also cited illustrating its therapeutic value. These include lichen ruber, psoriasis, eczema, anemia, Hodgkin's disease, chorea, gastralgia and neuroses. Of 45 cases reported, 34 were either entirely cured or much benefited; 11 were not helped, and 2 were apparently made worse.

DISCUSSION.

Dr. H. Van Rensselaer, Albany, commended the paper as being thoroughly scientific. He was inclined to take a middle ground as to the value of the remedy. The advantages are that it can be used when arsenic cannot be given; in hysteria and nervous affections the hypodermic method in itself makes a distinct mental impression; the patient must come frequently for treatment and is thus kept under observation. Disadvantages are that the drug is expensive, and the patient must expend considerable time in coming for treatment. He thought it wise to try ordinary arsenic first, and if that fails fall back upon sodium cacodylate.

Dr. Dawes, in closing, described the method of injection. It is injected intramuscularly in the buttock. A sense of exhilaration follows. There are few complaints of pain.

A RESUME OF THE PHYSIOLOGY OF THE KIDNEY WITH A VIEW TO THERAPEUTICS.

Dr. V. E. Henderson, Toronto: Dr. Henderson concludes that Brown-Séquard's contention that the kidney has an internal secretion has lost rather than gained weight. The cells of the tubules undoubtedly excrete urates, hippurates, pigments, and possibly creatinin. They are permeable, and in man may excrete water, chlorides, phosphates, sulphates under stimulus, and under more abnormal circumstances dextrose. The urine leaving the tubules, though usually more concentrated than the plasma in salts and urea, under a rapid flow more nearly approximates it in salt composition, and may even become more dilute than the plasma. Filtration does not occur; it is rather a diffusion under pressure. He suggests that the term secretion as applied to the kidney be dropped. A theory may be advanced in the future based on the following facts: between the membrane and the substance passing through it some chemical affinity must exist; for instance, a membrane may exist such that water and salt may pass through it but not such a crystalloid as sugar; when the affinity is slight, in case of a dilute solution, though none of the dissolved substance may pass through, yet with a higher pressure it may do so; the osmotic pressure does not vary with the substance present or with the temperature; different membranes may allow different crystalloids to pass through but not the same crystalloids.

DISCUSSION.

Dr. Oliver T. Osborne, New Haven, commended the paper. A number of years ago we dropped the term "Bright's disease" and now speak of renal sufficiency or insufficiency. We cannot determine the pathological condition of the kidney by chemical means; patients do not necessarily die of kidney disease when albumin is present in the urine, and yet they may do so when none is present. We should make a more careful examination as to salt excretion in order to determine if possible what portion of the kidney is diseased. As to whether the kidney has an internal secretion, the affirmative position must be disproved. It is possible that the kidney forms an antitoxin. This is indicated by the fact that in nonfunctional disease suppression has existed as long as four days without uremic symptoms, whereas they almost invariably occur in organic disease within twenty-four or thirty-six hours.

Dr. Solomon Solis-Cohen, Philadelphia, said that he must differ with Dr. Osborne. In a case in his early practice suppression existed for seventy-two hours without any other symptom than dilatation of the pupil. Dr. Osler confirmed the diagnosis of contracted kidney. The patient died twenty years later of pulmonary tuberculosis.

Dr. William H. Porter, New York, spoke of the vicarious action of the kidneys and liver.

THE THERAPEUTICS OF BRIGHT'S DISEASE BASED UPON ITS ETIOLOGY.

Dr. William H. Porter, New York: Dr. Porter draws the following conclusions: 1. All therapeutics to be successful must have for the primary object the removal of the causative factors of disease. 2. Hemorrhagic nephritis as such does not exist. It is an occasional modification of the chronic parenchymatous change. 3. Most renal lesions are non-inflammatory processes. The one exception is the exudative class. Most renal lesions are due to overwork of the glands at a time when nutrition is impaired. 4. Both the overuse and defective supply of the starches, sugars and fats are important factors in the production, maintenance and cure of renal lesions. 5. Nervous overstrain is also an important factor. 6. Treatment is to be directed both to prevent and cure. 7. It consists chiefly in the removal of causative factors. 8. It calls for a thorough knowledge of chemico-pathology and dietetics. 9. Drugs, while not curative, may indirectly produce wonderful results. 10. These renal lesions, when studied from the histological standard only, are incurable. Considered from the physiological and chemical standpoint a large per cent are curable. 11. It is difficult to see how surgery can be made to remove the underlying factors. Hence such means cannot be classed as scientific.

INDICATIONS FOR THE RADICAL MASTOID OPERATION AND ITS RESULTS.

Dr. W. Sohier Bryant, New York: The indications may be placed in two categories: 1. Those cases of acute mastoid involvement with extensive infection or destruction of the temporal bone, requiring the complete evacuation of all the cellular structures connected with the middle ear and mastoid. 2. Certain cases of chronic suppuration of the middle ear. The results are three: cessation of suppuration, complete lack of external deformity, and greatly improved hearing. After citing cases in illustration, Dr. Bryant concludes as follows: 1. The radical mastoid operation assures cessation of the purulent otitis. 2. It is an operation for the immediate relief of this condition. 3. It may be the operation of final recourse. 4. The hearing is much improved since in a number of cases the auditory function of the middle ear can be almost completely restored. In a small number of cases there is no improvement in hearing. 5. The cosmetic results are very satisfactory. 6. Paralysis of the facial nerve is a very rare accident in skillful hands. 7. The results are uniformly satisfactory when the best technic is employed.

DISCUSSION.

Dr. T. E. Satterthwaite, New York, said that in his experience the almost uniform result was that hearing was not improved.

Dr. W. H. Porter, New York, endorsed this statement. It is a question whether it is not better to proceed more slowly than to risk the total loss of hearing through operation.

Dr. Frederick H. Gerrish, Portland, Me., spoke of sinus thrombosis in connection with disease of the ear. A radical operation is necessary to save the patient's life. He cited the case of a child twelve years old, seen two years ago. The temperature rose to 108°. He performed a radical operation, removing the clots, and the child recovered. The general practitioner should remember the possibility of this complication as a result of extension of infection.

Dr. Solomon Solis-Cohen, Philadelphia: Most of the cases he had seen were in children. The patients are in much danger, and we take a great responsibility in advising delay. Hearing is a secondary matter. In a number of instances he had known meningitis, brain abscess and other serious complications to follow neglected mastoid disease. It is worse than appendicitis so far as danger is concerned. He always advises immediate consultation with a skilled aurist. He cited a case illustrating the danger of delay.

THE NONSURGICAL TREATMENT OF EXOPHTHALMIC GOITER.

Dr. Solomon Solis-Cohen, Philadelphia: Dr. Solis-Cohen had recently heard a paper on the surgical treatment in which a mortality of 30% to 50% was considered a good result; 10% was considered phenomenal. He would be ashamed of a mortality of 10%, from medical treatment. He related 3 cases in which he used the new serum treatment. 1. Patient almost moribund: surgeon refused even to give anesthetic. Beebe's serum given after a few days, all else having failed. Dyspnea had been a marked symptom. Ten minutes after injection the dyspnea was less and the patient was more comfortable. After a few weeks she was sent home better in every way. She remained in bed and continued serum treatment for four or five weeks, until it was no longer necessary. After a few weeks the symptoms returned, and she was as bad as before. Under the serum treatment she improved and was apparently well for two months, when another relapse occurred. At last report she was improving under treatment. 2. A drunkard. Classical symptoms present. Improved much under the serum. Relapsed and improved again, and was discharged a few days ago, the symptoms having disappeared. 3. In this case the serum gave no results good or bad after four weeks' use. In early cases it is not necessary to use the serum. Ordinarily the old treatment is efficient, rest, hygienic measures, and drugs, — ergot, picrotoxin, strophanthus, and thymus and adrenal gland. He tries adrenal first. Generally it proves efficient. It not, he gives thymus, and if necessary, both together. These failing, he goes back to ergot and picrotoxin.

DISCUSSION.

Dr. Philip King Brown, San Francisco, asked why relapses are so apt to occur after the serum treatment. They are not characteristic of the disease. His results from medical treatment were about the same as Dr. Solis-Cohen's. X-rays are very efficient in reducing the size of the gland; Mayo uses them for this purpose before operating; they also reduce the pulse rate. The results from operation in his country, so far as mortality is concerned, were good. He knew of but one death, and that was caused by cutting through the gland and liberating too much secretion in the system.

Dr. Louis Kolipinski, Washington, asked whether exophthalmic goiter is strictly a surgical disease. What are the indications for operation?

Dr. T. E. Satterthwaite, New York, asked as to the nature of the serum.

Dr. Solis-Cohen, in reply, described Beebe's serum. He could not answer Dr. Brown's question as to why the relapses occur. One must give the patients time to recover. The disease is of slow development and slow retrogression. Many failures are due to impatience and lack of confidence in the method employed. The indications for operation are: 1. Failure of timely diagnosis by the medical attendant. 2. Improper or inefficient medical treatment, and threatening death. With a timely diagnosis and proper medical treatment there is no need of surgical interference.

THE IMPORTANCE OF EARLY RECOGNITION OF NASAL OBSTRUCTION WITH RELATION TO DISEASE IN OTHER REGIONS.

Dr Charles H. Knight, New York: Read by title.

THE TREATMENT OF CHRONIC VALVULAR DISEASE OF THE HEART.

Dr. Thomas E. Satterthwaite, New York: The paper first deals with treatment by baths and exercises, particularly the Nauheim method. Its value is now generally recognized. The Oertel method is helpful in mild cases. The Nauheim system is adapted to a much larger class of cases, and even when a complete course of baths and exercises is contra-indicated it can generally be used to advantage. The particular muscles to be exercised, the duration of each movement, and the interval between them depend upon the views of the physician. It is well for the physician to be present at the treatment in person. The Nauheim method does good by driving the blood into the capillaries, thus relieving the heart and lowering arterial pressure; the improved condition of the circulation promotes metabolism and nutrition; the skin becomes softer and the urine increases in quantity and specific gravity, showing that the system is more rapidly getting rid of waste products. The method is applicable to any form of heart weakness or valvular disease, whether due to loss of compensation or not, especially where there is high arterial tension, dilatation and muscular degeneration, provided the muscular relaxation has not gone too far. After discussing massage and baths, the writer turns to treatment by drugs. Strophanthus is becoming better known, and is producing better results. It acts quicker than digitalis and slower than the nitrites. Suprarenal capsule is being used more and more; it is probably the most powerful heart stimulant we have, contracting both the heart and arterioles. He has found no ill effects from as much as one fiftieth grain of nitroglycerin every five minutes in alarming cases. The dose should be increased cautiously in arteriosclerosis. Camphor acts in a few minutes and is a perfectly safe stimulant. Convallaria has had its day; it is unreliable. Sparteine has come into favor. Caffeine is a mild but rapid stimulant. Digitalis is the most effective remedy in cardiac weakness.

DISCUSSION.

Dr. F. E. Stewart, East Orange, said that the varying effects of adrenalin may in part be ascribed to the difference in strength in the preparations employed. Unquestionably some of the tinctures deteriorate on standing; this subject is being investigated in New York, and it is possible that in the future labels may be dated, indicating the age of the preparation. He had used the baths in uric acid diathesis to good advantage.

Dr. Eli H. Long, Buffalo, said that the keynote in treatment is heart nutrition. He highly commended the Schott baths. They rest the heart by lessening peripheral resistance, and thus promote metabolism and nutrition. Even when there is lack of compensation and the case is hopeless as to cure the baths rest the heart and prolong life.

Dr. Arthur H. Hall, Washington, asked how often the baths are given.

Dr. Beaumont Small, Ottawa, said that the acute and chronic forms of heart disease require different methods of treatment. The chronic forms are particularly troublesome. He asked Dr. Satterthwaite how soon after acute onset he ordered the baths. He thought it well to allow a period of rest before beginning the exercises. The chief value of the baths is in the temperature although the saline and other ingredients may have some small value. The patients are best treated at institutions, where there are adequate facilities and trained assistants. The main point is the relief of the peripheral circulation when it is congested. He commended camphor as a stimulant. The tincture is the most trustworthy of the preparations of digitalis.

Dr. Oliver T. Osborne, New Haven, agreed that institutions are the best places for these patients. The *régime* and willingness of the patients are strong factors. Digitalis is a heart tonic rather than a stimulant; it is an error to give it in acute cardiac failure, or at frequent intervals. Thus it may do harm in typhoid, pneumonia, and other acute conditions. There is much poor digitalis on the market. Strophanthus deteriorates rapidly; it should not be diluted with water. He commended nitroglycerin. Adrenalin is being a little overworked; it is not well in these cases to increase the tone of the arterioles too much. It should be remembered that the heart is only a small part of the circulatory system.

Dr. John Madison Taylor, Philadelphia, spoke of the influence which can be exerted upon the circulation through vaso-motor control by means of gymnastic exercises. The importance of these mechanical measures is often overlooked by those who deal with heart affections. There is prevalent a woeful lack of knowledge as to the vaso-motor system. He had hoped that Dr. Satterthwaite would say more as to the value of mechanical measures.

Dr. Spencer L. Dawes, Albany, added his testimony as to the value of strophanthus and its glucoside. It is almost a heresy to speak against digitalis, but there are cases with adequate compensation when it is not applicable. The preparations of adrenalin change on exposure notwithstanding the claims of manufacturers to the contrary. He emphasized the value of chloralamid as a hypnotic in heart affections. It is particularly useful in cardiac asthma.

Dr. Louis Kolipinski, Washington, inquired as to the comparative value of the Nauheim and drug treatments.

Dr. Howard Van Rensselaer, Albany, expressed the belief that the salts in the waters of the baths have no efficacy. It has been proved that salts in aqueous solution are not absorbed by the skin. Shipwrecked sailors soon become insane if they drink salt water, but if they throw over an arm or leg a cloth wet with sea water their thirst is in a measure assuaged: the water is absorbed but the salts are not. The same thing has been scientifically proved by experiments with potassium iodide and lithium. The good done by the baths is mainly due to the water pressure and temperature.

Dr. Robert Reyburn, Washington, said that his experience with the baths had been unfavorable. He had seen no therapeutic effect of long duration. What benefit there is results from friction and temperature.

Dr. Satterthwaite, in closing, agreed with Dr. Osborne that the patients can best be treated at an institution. They cannot be properly controlled at home. We must distinguish between acute and chronic heart affections. The Nauheim method is applicable only to the chronic forms. Mild cases of arteriosclerosis are suitable for treatment, but when there is danger of apoplexy the treatment is dangerous. The baths are given for ten minutes or less every other day, their number depending on whether the patient stays four or six weeks. The temperature is undoubtedly an important factor. Pulmonary gymnastics form a valuable auxiliary to treatment.

RESTORATION OF TISSUE TONUS IN THE ABDOMINAL SUPPORTS.

Dr. John Madison Taylor, Philadelphia: Between the diaphragm and pelvis the body is anatomically and physiologically weak. There is a tendency to inefficiency of the natural abdominal supports, and this tendency is accentuated by weakness of the abdominal muscles from disuse. This inefficiency is greater in some individuals than in others, and it often reaches a point where the abdominal viscera are not properly supported. When the supports are adequate there is a relatively slim waist in man and woman alike. When they are inadequate there is a dropped chest and protruding abdomen, and the lower organs are in a state of hyperemia with insufficient drainage; there is a tendency to ptosis and functional incompetence. Ordinary exercises do not reach this part of the body. The Nauheim treatment does good, but it is not sufficient. After a study of thirty years he had come to place reliance on certain exercises which are directed solely to the strengthening of the abdominal supports. He employs artificial supports, belts, etc., until the natural supports have to some degree recovered their tone. Viscero-ptosia is a serious condition and one that is not to be remedied by the surgeon. His methods had enabled him to restore displaced viscera with marked local and systemic benefit. Time is necessary for a cure. After months, or even years, surprisingly satisfactory results can be obtained. He gave an illustration of the method employed.

A STUDY OF THE MODERN DRUG BUSINESS IN ITS RELATION TO MEDICAL PRACTICE.

Dr. F. E. Stewart, East Orange: Dr. Stewart emphasizes the following points: 1. Medicine and pharmacy cannot be practiced as disassociated and independent professions as they are mutually dependent. 2. The practice of pharmacy should be carried on as a subordinate profession to medicine, and the pharmacists should be subjected to the same professional censorship as physicians by membership in societies that are in affiliation with medical societies. 3. The proper practice of the pharmacologic art requires a free materia medica and common standards, jointly established and maintained by the medical and pharmaceutical professions, and the manufacturing houses engaged in the materia medica supply business. 4. The practice of pharmacy and drug therapeutics should be limited to qualified and licensed practitioners, and the field of practice should be protected from invasion by unlicensed practitioners who set up as manufacturers and conduct their business in unfair competition. 5. Inventors of new and useful processes and apparatus for the manufacture of materia medica products, who are duly qualified by education, training and license, and who are members of regularly constituted professional societies in good standing, should be rewarded for their inventions and discoveries by patent protection.

DISCUSSION.

Dr. H. C. Wood, Philadelphia, did not believe that the science of pharmacology would be advanced by giving it over into the hands of the manufacturers. Their chemists have introduced a few useful drugs, but they are so few that the good they have done is a negligible factor compared with the harm they have wrought. The world would be better off to-day had the coal-tar drugs never been discovered. All of the useful ones can be counted on the fingers of one hand. Antipyrin has justly achieved a place in materia medica. Phenacetin is a justifiable variation. But as for acetanilid and the others, materia medica has no place for them. When we think of the number of acetanilid *habitués*, and the deaths that have resulted from its use in typhoid and other asthenic diseases we realize that the good has been much outdone by the harm.

Dr. L. F. Kebler, Washington, said that manufacturing chemists are not always given due credit for their work. He was a chemist in a manufacturing house for ten years, and he knew the sentiment without and within. His work there was as honest and sincere as that which he is now doing for the Government. Something should be done to control the sale of drugs by manufacturers directly to the public. The problem as to the matter of trademarks is working out nicely. He referred to the case of a wellknown preparation which was claimed to cure all nervous affections, including locomotor ataxia; the decision was that with such claims the preparation had no standing before the court. Finding this out, some of the manufacturers have asked the authorities how they can make their preparations creditable before the new law. This is significant as it shows that they can be kept in check, and that they are inclined to obey the law.

COMPARATIVE CLINICAL OBSERVATIONS OF THE RESULTS OF DIFFERENT IRON PREPARATIONS.

Dr. Eli H. Long, Buffalo: The comparison is between a group of the so-called peptonates of iron and the old well-known official forms. Two largely advertised preparations supposed to contain manganese in addition were chosen, and one especially prepared in the chemical department of the University of Buffalo. The official forms used were reduced iron, the tincture of the chloride and preparations of the carbonate. Fourteen tests were made upon nine patients suffering from chlorosis, or mild grades of anemia, or combined forms. The results were decidedly in favor of the official preparations, as the following summary shows: Iron peptonates used in 8 observations produced no improvement in 4 cases, very slight improvement in in 2, evident improvement in 1, and marked improvement in 1. The official forms of iron, used in 6 observations, produced no improvement in 1 case, evident improvement in 1, and marked improvement in 4. As far as these observations go they indicate that the so-called peptonates of iron are inferior to the old, well-known, simpler, official preparations.

DISCUSSION.

Dr. H. C. Wood, Philadelphia: The system requires 1-60 gr. of iron each day. With every meal we eat more iron than is necessary for the whole twenty-four hours. The iron we give as a medicine acts not as a food but as a stimulant to the blood-making organs. True organic, or food, iron has not this property, and therefore can do no good in chlorosis. The iron must enter the system in inorganic form in order to do good.

Dr. Oliver T. Osborne, New Haven: There are too many preparations of iron. He prefers the simpler ones and uses the tincture, reduced iron and sugar of iron. In chlorosis the trouble is chemical rather than hemopoietic; the food iron is nipped in the intestine. In anemia and chlorosis a little thyroid each day is as efficient as iron.

Dr. D. Olin Leech, Washington, said that he preferred the tincture in small doses. He got better results from it than from the more complex preparations.

Dr. Beaumont Small, Ottawa, said that he relied mainly upon the tincture, reduced iron and Blaud's pill. He believed the tincture to be the most efficient preparation.

Dr. L. F. Kebler, Washington, commended the unbiased character of the paper. Men working on a subject are apt to give undue importance to one side of the question. One should always be conservative in extolling the properties and value of drug products. Otherwise, harm may result. For instance, at the hearings of the Post-Office Department, manufacturers who have made extravagant claims for their products not infrequently claim in justification that their statements are based on the opinion expressed by some reputable physician in a paper read before some society. The claims being thus substantiated a fraud order cannot be issued. The physician thus unwittingly becomes an accomplice. He related a case in point.

Dr. James C. Wilson, Philadelphia, said that speaking as a clinician and not as a laboratory investigator or chemist, he believed that we cannot afford to give up entirely the use of some of the organic preparations of iron, and unfortunately most of them are of proprietary origin. Nevertheless, some of them had value, and he was obliged to give them credit. On the other hand, he valued most highly the official preparations. He had had phenomenal success with the syrup of the iodide in diseases of children. In gonorrheal arthritis it had given him better results than any other method of treatment. He could not treat chlorosis satisfactorily without Blaud's pill.

Dr. Long, in closing, said that most of us were agreed as to the comparative value of the new advertised preparations and the old official forms of iron. In the tincture, syrup of the iodide, reduced iron and Blaud's pill, we have all that we need. The question is not as to whether the advertised preparation is efficient, but whether it is more efficient than the official forms. If not, why use it?

The following officers were elected to serve during the coming year: President, Dr. John V. Shoemaker, Philadelphia; First Vice-President, Dr. Joseph E. Janvrin, New York; Second Vice-President, Dr. Frederick H. Gerrish, Portland, Me.; Third Vice-President, Dr. Howard Van Rensselaer, Albany; Secretary, Dr. Noble P. Barnes, Washington; Treasurer, Dr. John S. McLain, Washington.

Book Reviews.

A Manual of Personal Hygiene. Proper Living upon a Physiologic Basis. By American Authors. Edited by Walter L. Pyle, A.M., M.D. Third edition, revised and enlarged. Pp. 450. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Our commendation of the first and second editions of this book applies to the third which is now before us. It is evident that the book has appealed to a large circle of readers, and in this last edition additions of the following subjects have been made: an illustrated system of home gymnastics, a chapter on domestic hygiene, and appendix containing the simpler methods of hydrotherapy, thermotherapy and mechanotherapy, and a section on first aid in medical and surgical accidents and emergencies. It is to be hoped that the editor will not be tempted to increase too widely the scope of a book, the attraction of which lies essentially in its brevity and clear presentation of a few practical subjects.

Text-Book on Diseases of the Heart. By Graham Steel, M.D., F.R.C.P., Lecturer on Diseases of the Heart in the University of Manchester; Senior Physician to the Manchester Royal Infirmary. With an appendix on "The Volume of Blood in Relation to Heart Disease," by J. Lorrain Smith, M.A., M.D., Professor of Pathology in the University of Manchester. Philadelphia: P. Blakiston's Son & Co. 1907.

A text-book of small size dealing with a subject so much written about is hardly expected to present much that is new. Yet Graham Steel has succeeded in treating his subject in such a way as to make a very interesting book. It differs from most of such books in that heart disease is described rather from the view point of its effect on the body as a whole than from that of a diseased single organ. Dyspnea, enlarged, tender liver and dropsy first receive attention. Even when the heart itself is considered, most attention is given to the cardiac musculature in action, not to the murmurs of diseased valves. The effect of this is to give the student a clear conception of the patient with a diseased heart and some idea as how to deal with his symptoms. To the reviewer, this seems the proper perspective through which to view cardiac disease, and will serve as a counter influence to that exerted by other text-books from which most students come, stethoscope in hand, ready to listen solely to murmurs as the important means of determining diagnosis, prognosis and therapy, thereby missing entirely in very many cases any proper understanding of the case.

This book is based very largely on the author's personal experience, and thereby has that vital interest always lacking in compilations. Of course it is not possible to completely ignore the work of others, but the author rarely discusses views on which his own experience has not touched. However, in so far as authority is quoted, it is almost entirely insular — not an uncommon habit of the Englishman, which seems a fault to those living beyond the bounds of his island home.

This is a good book for the younger student because it is honest, simply told and suggestive. Its attitude toward doubtful points is expressed as follows in one chapter: "The object of the writer has been to give an account of our common knowledge of heart disease, as it has been accumulated by the daily experience of those engaged in the treatment of the disease. Beyond this knowledge there is, however, a margin of imperfect knowledge shading on the other side into absolute ignorance. It has been held that the limit of instruction to the student should be that of perfect knowledge with at most a rare trespass into the perfectly known. . . . It seems desirable to admit to the student that experience has taught that there are rare occurrences which seem to militate against our common knowledge and belief. It is better he should be warned that such exist, than that his faith in well-established clinical truths should be temporarily shattered." With this in mind, a broad conservatism is to be expected, and such is found.

The older practitioner will enjoy the pleasing style and practical suggestions of this book. While it is not profound, it contains much useful information. Though there are many points on which the reader and author may disagree, there is little that should be condemned. Most would consider the author's view as to the diagnosis of adherent pericardium far too pessimistic, and the chapter of the instrumental examination of arteries and veins is too sketchy to be readily understood. In places, undue emphasis seems to be placed on the causal relations of gout. The so-called irregular gout rests on too insecure a basis to warrant much consideration as a definite factor in the production of heart disease. Then most of what the author attributes to gout applies to cardiac disease in this country where gout is an infrequent disease. However, taken as a whole, it is a book which the reviewer takes pleasure in commending.

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THE FREQUENCY OF ANTERIOR POLIOMYELITIS.

The frequency of acute anterior poliomyelitis is worthy of the most careful attention of the medical profession. The feeling has been growing for many years that this disease occurs in epidemic form, although its more frequent manifestation is sporadic. Various epidemics have been described in Sweden, and a very notable one at Rutland, Vt., in this country many years ago. Since then, in many places cases have occurred in sufficient numbers and so closely associated in time as to warrant the supposition that they were due to a common cause. So far as we are aware, however, the number of cases which have been observed during the past few months in New York City is quite unprecedented. It is even said that physicians are advising their patients to remain away until the epidemic which is now active shall have subsided. In our issue of Oct. 31, we printed, under the heading of Correspondence, a statement of the collective investigation of the epidemic under the auspices of the New York Neurological Society and the Section on Pediatrics of the New York Academy of Medicine. The secretary of this committee is Dr. Edwin G. Zabriskie, of 37 West 54th Street, New York, and it is altogether desirable that physicians who may be seeing these cases should report them to him with the object of determining how widespread the disease has become.

Although it seems probable that a larger number of cases have occurred in and about New York, irrespective of its greater population, it has certainly been observed by physicians in and about Boston that many more cases have occurred this year than in many preceding. Not only is this true, but apparently here, as in New York, the type of disease manifested varies widely from the ordinary text-book description of prodromal fever, followed at a short interval by a more or less extensive flaccid paralysis. Although no light has yet been shed upon the exact etiology of the affection, either through lumbar puncture or by other means of investigation, nevertheless a large amount of information, extremely valuable from the clinical and pathological standpoint, has already been gained. The most striking feature of many of the cases has been rigidity of the neck, simulating a meningitis, together with much tenderness over the peripheral nerves, simulating closely a neuritis, accompanied or followed by a more or less extensive paralysis, not infrequently irrespective of the sensory disorders. In general, therefore, it appears to be conclusively shown that the infection, whatever it may be, which has commonly been called poliomyelitis, involves various other areas of the nervous system, as well as the ventral horns of the cord. The pathological anatomy, which has been studied with renewed interest, bears out in great measure the clinical signs. A most valuable paper on the subject has recently been published (*Journal of the American Medical Association,* Oct. 26, 1907) by Harbitz and Scheel, of Christiania, on "Epidemic Acute Poliomyelitis in Norway in the Years 1903 to 1906." These writers present a masterly clinical and pathological report of the disease, the latter based on nineteen autopsies. The evidence adduced from this study is conclusive that poliomyelitis is an infection of as yet unknown etiology, that it manifests itself on the pathological side by widespread inflammatory reactions throughout the nervous system, brain, meninges and cord. Poliomyelitis is, therefore, a misnomer, except as regarded from the clinical standpoint that we are justified in calling a disease after its predominant manifestation. Admitting this widespread inflammatory reaction, it is natural that the clinical phenomena should depart in more or less measure from the accepted text-book description, and it is apparently these unusual types of the disease that we are now seeing, and which in many cases prove difficult of diagnosis for a considerable time after the onset. It is further interesting that Harbitz and Scheel, although frequently observing neuritic symptoms, found no pathological evidence of neuritis in their sections. The cause of this very striking symptom, therefore, remains obscure. The question of early diagnosis is still further obscured by the fact that the disease frequently shows itself in adults — we ourselves have knowledge of two fatal cases within the last two months — and may very easily be mistaken for typhoid fever, as well as for meningitis or a toxic peripheral neuritis.

We beg to call our readers' attention in the first place to the prevalence of the disease, and in the second to the bizarre form in which it may manifest itself. It should no longer be regarded as one of the rarities occurring in general practice, but rather as a type of infection which certainly at this time is likely to be met in widespread distribution.

THE ART OF PROGNOSIS.

Modern medical teaching rightly has for its chief aim the development of the power of diagnosis. Students are taught not only the significance of physical signs and symptoms, but also are expected to be able to draw conclusions from examinations of the blood and various body excretions with a view to the accurate determination of the general physical conditions. That these means, given a student of ordinary intelligence, lead to the desired end is not to be questioned. However distorted the general perspective may be, we have no doubt that accurate diagnoses are much more often made by these modern means than formerly, when common sense and experience were the diagnostician's chief aids.

The question, however, arises whether this increased power of accurate diagnosis has led to a keener and more intelligent appreciation of the outcome of disease. Are our students systematically taught to observe and weigh the facts which point toward a serious or a favorable outcome with the same attention that they are instructed in determining the nature of the malady? We are inclined to think not. There is a certain excess of attention given to the causes and the development of disease, and relatively little to the means by which we may determine outcome. The problems are naturally quite unlike in their character, but we are nevertheless convinced that a course of lectures devoted to the subject of the prognosis of disease might well find a place of usefulness in the medical curriculum. It is certainly true that the chief demand made upon the physician, and particularly the consultant, is in relation to prognosis. Other matters sink into insignificance in the minds of friends and relatives. Any physician of wide experience will say that his greatest difficulty lies in determining with a fair degree of accuracy what the outcome of an illness is to be. The mistakes that are made are too numerous and apparent to demand consideration here. The nature of the question is such that mistakes are sure to continue, but it should certainly be our aim to minimize such mistakes to the last degree and to insist that students should be given the full benefit of the wide experience of their teachers in this regard. It is evident that quite other qualities than laboratory training and the capacity for ordinary observation are demanded if our prognostic ability is to stand on a par with our capacity to make an accurate diagnosis. The judicial attitude of mind needs to be developed to the fullest degree, together with a knowledge, bred of experience, of the mental and physical attributes of the patient, which no mere book study nor laboratory training is competent to provide.

MEDICAL NOTES.

Committee for Holland, International Tuberculosis Congress. — Dr. P. K. Pel, of Amsterdam, has been appointed president, and Dr. B. H. Vos, of Hellendoon, secretary of the National Committee for Holland of the forthcoming International Congress on Tuberculosis.

Tuberculosis in Pennsylvania. — Dr. Samuel G. Dixon, Commissioner of Health for Pennsylvania, is establishing a dispensary for tuberculosis in every county in the state in accordance with the law recently passed. In Philadelphia the dispensary, in charge of Dr. Alfred Stengel, will be the center from which various parts of the city may be easily reached.

A Tribute to Dr. Horatio C. Wood. — Through the interest of Dr. Horatio C. Wood, Emeritus Professor of Materia Medica, Pharmacy and General Therapeutics, at the University of Pennsylvania, a new settlement building has been given to the university. This settlement, conducted by the Christian Association of the University of Pennsylvania, has developed steadily since its inception about ten years ago. The present building has been erected at a cost of $60,000.

A Hospital for the Treatment of Diseases by Electro-Therapeutic Methods. — In gratitude to Dr. Georges Gauthier, of Paris, who recently relieved Mrs. Vanderbilt of a nervous affection from which she had long been suffering, William K. Vanderbilt, of New York, has given the funds for the erection and equipment of a hospital in the city of Paris for the treatment of disease by electro-therapeutic methods. This building, which will be provided with all the most approved appliances in this department of medicine, is now in course of construction in the Rue Leonardo da Vinci, and the institution, it is stated, will be known as the The Foundation Vanderbilt. It is to contain 250 beds, and will be opened about the first of the year, with Dr. Gauthier at its head.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 13, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 46, scarlatina 28, typhoid fever 10, measles 25, tuberculosis 31, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 13, 1907, was 17.71.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 9, 1907, was 205, against 219 the corresponding week of last year, showing a decrease of 14 deaths and making the death-rate for the week 17.54. Of this number 112 were males and 93 were females; 201 were white and 4 colored; 121 were born in the United States, 80 in foreign countries and 4 unknown; 46 were of American parentage, 128 of fereign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 56 cases and 2 deaths; scarlatina, 41 cases and 0 deaths; typhoid fever, 9 cases and 4 deaths; measles, 14 cases and 0 deaths; tuberculosis, 35 cases and 19 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 19, whooping cough 0, heart disease 27, bronchitis 8 and marasmus 4. There were 21 deaths from violent causes. The number of children who died under one year was 39; the number under five years, 47. The number of persons who died over sixty years of age was 51. The deaths in public institutions were 62.

There were 2 cases and 1 death reported from cerebrospinal meningitis during the week.

Boston School Physicians Association. An organization of the Medical Inspectors of Schools has been formed under the name of the Boston School Physicians Association, with the following officers: President, Dr. H. E. Marion; Vice-Presidents, Drs. J. F. O'Brien and D. G. Eldridge; Secretary, Dr. H. J. Perry; Executive Committee, Drs. J. L. Ames, W. F. Bancroft and M. J. Cronin.

Bequests by a Boston Policeman. — By the will of the late Stephen Clougherty, for many years a patrolman in the South Boston district, five charitable institutions become beneficiaries in the sum of $1,000 each; among these are the Carney Hospital and Free Home for Consumptives.

Centenarians. — The death of Dennis Sheckrow, of Millbury, Mass., is announced at the age of one hundred and three years. He leaves twenty grandchildren and nineteen great-grandchildren.

Calvin Worth, of Concord, N. H., reputed to be the oldest man in that city, died Nov. 6 at the age of one hundred and one.

NEW YORK.

Incorporation of Sage Institute. — The Sage Institute, the object of which, it will be remembered, is medical research, and especially in diseases of advanced life, and the creation of which is due to the generosity of Mrs. Russell Sage, was duly incorporated in Albany on Nov. 1. The incorporators named are: Prof. Graham Lusk and Drs. Edward G. Janeway, Theodore C. Janeway, D. Bryson Delavan and Joseph D. Bryant, and the headquarters of the institute are to be on Blackwell's Island, where the city department of charities has provided a laboratory and other accommodations for its work.

Meeting of Section of Anthropology and Psychology at American Museum of Natural History. — During the past week, at a meeting of the section on Anthropology and Psychology of the American Museum of Natural History, papers were read by Dr. C. Ward Crampton, on "Physiological Age," and by G. L. Meylan, on "Some Physical Characteristics of College Students." At the same institution also an illustrated lecture on "The Plasmodium of Malaria" was given by Dr. James H. Stebbins, Jr., before the New York Microscopical Society.

Increase in Insanity. — The annual report of the State Commission in Lunacy, just published, shows that there has been a steady increase in insanity since 1897, and that at the close of the year 1906 there were 26,357 insane in the hospitals in the State of New York, or a proportion of about one to each three hundred of the population. It is stated that the highest proportions in mental disturbances are found in the small urban communities, a condition which is largely accounted for by the fact that in the large cities the rapid influx of population tends to keep the proportion down.

Bequests. — Under the will of Alexander Maitland, formerly of New York, who died recently at his home in Princeton, N. J., $110,000 is left to charitable institutions and societies. Among the beneficiaries are the Presbyterian Hospital of New York, which receives $20,000, and the Presbyterian Rest for Convalescents at White Plains, N. Y., which receives $10,000.

Death of a Veteran Patient. — After spending eighteen years in Bellevue Hospital suffering from organic disease of the heart, Edward Lennok, a native of Scotland, died in the institution on Nov. 4. As long as his illness permitted, he acted as history clerk in the hospital, but for a considerable time past he had been confined to bed. In recognition of the faithful services of Lennok, who was without means, the members of the house staff of Bellevue subscribed an amount sufficient to defray the funeral expenses, and he was buried with all due respect in St. Michael's Cemetery, Astoria.

Increase of Cancer. — In its last monthly bulletin the State Department of Health makes the following statement in regard to cancer: "The cancer problem is assuming more and more menacing proportions, there being reported 572 deaths from this cause in September, 1907, as against 526 in the same month last year and an average for five years of 456. Thus, while deaths from tuberculosis are held practically stationary, we are doing nothing to hold cancer in check as a cause of mortality."

Medical Men as Mayors. — The returns of the recent elections in New Jersey show that no less than seven medical men are elected mayors. In Paterson the successful candidate was Dr. Andrew F. McBride, formerly county physician of Passaic County, and the other cities now provided with medical mayors are Trenton, Rahway, Atlantic Highlands, Summit, Frenchtown and Washington.

Request for New York Exhibit at Tuberculosis Congress. — At the request of Dr. John S. Fulton, Secretary General of the Tuberculosis Congress to be held in Washington next year, Governor Hughes has sent letters to various State departments, suggesting that New York shall make an exhibit at the Congress. In his letter to the head of the Health Department he refers particularly to the gratifying results which have been accomplished at the Raybrook Sanitarium for incipient tuberculosis in the Adirondacks. A request was also made to President Schurman of Cornell University, to name delegates to the Congress from the veterinary and agricultural colleges.

Current Literature.

New York Medical Journal.
Oct. 19, 1907.

1. Taylor, R. W. *A Contribution to Heredosyphilology.*
2. Donley, J. E. *John Riolan, the Son, Conservative.*
3. *Taltavall, W. A., and Gies, W. J. *Brief Contributions to Biological Chemistry. First Series.*
4. White, J. H. *A Partial Résumé of the Prophylaxis of Tropical Disease.*
5. Fischer, L. *An Aid to the Diagnosis of Tuberculosis in Infancy and Childhood.*
6. Johnson, J. E. *Plastic Operations.*
7. Le Fevre, W. I. *The Localization of Foreign Bodies in the Eye with the X-Ray, with Description of a New Apparatus.*
8. Butte, H. J. *The Differential Diognosis between Chronic and Recently Acquired Herniæ from a Medico-legal Standpoint.*

3. The writers found that quinic acid, whose compounds are exploited as valuable therapeutic agents in gout, did not materially affect the metabolism of uric acid in the dog. [R. I. L.]

The Journal of the American Medical Association.
Oct. 19, 1907.

1. *Hunt, R. *The Relation of Iodin to the Thyroid Gland.*
2. Reynolds, E. *Constitutional Ill-Equipment of the Patient as a Factor in Determining the Performance of the Primary Cæsarean Section.*
3. Davis, E. P. *The Delivery of Debilitated Women, with Especial Reference to the Interest of the Child.*
4. Hollopeter, W. C. *The Duty of the Physician to the School Child.*
5. McAlister, A. *The Greatest Menace to Whole Milk in Cities' Supply.*
6. Tuley, H. E. *Certified Milk and the General Milk Supply of Louisville.*
7. Zemp, E. R. *The Absorption and Elimination of Some Commonly Used Drugs, with Practical Deductions from a Knowledge of the Same.*
8. Harris, M. L. *The Paraffin Injection Treatment of Inguinal Hernia.*
9. Pusey, W. A. *The Use of Carbon Dioxid Snow in the Treatment of Nevi and Other Lesions of the Skin. Preliminary Report.*

1. The resistance of certain animals to acetonitrile is increased, of others decreased, by the feeding of thyroid substance. The resistance of the ordinary laboratory animals to morphine is diminished by the feeding of thyroid. The physiologic activity of the different thyroids as tested by morphine and acetonitrile varies directly with the percentage of iodin present. Iodin-free thyroid does seem to possess a very slight degree of activity. A similar but less

degree of activity is found in other glands, as ovaries, testes, prostate, etc. The various iodin compounds used alone altered in a similar manner the resistance of animals to morphine and acetonitrile, but the alteration no longer took place after removal of the thyroid gland. Hence it is assumed that the iodin acted only through the thyroid gland. The writer suggests that perhaps the beneficial action of the iodides in some diseases, *e. g.*, in arteriosclerosis, may be due in reality to its action on the thyroid and consequent increased thyroid secretion. He also suggests that some of the toxic symptoms of iodin are probably symptoms of thyroidism. Simple goiters, as a rule, are poor in iodin and may rapidly disappear after the administration of one of the iodin compounds. It is assumed that the iodin converts a relatively inactive iodin-poor thyreoglobulin into a more efficient compound, besides aiding in the secretion. In exophthalmic goiter the thyroid gland seems to be in a stage of hyperactivity, and iodin makes the condition worse by rendering the secretion still more active. [R. I. L.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

SEPTEMBER, 1907.

1. MacCallum, W. G. *On the Teaching of Pathological Physiology.*
2. Estes, W. L., and Cecil, A. B. *The Relation of Iodine to the Parathyroid.*
3. McClure, R. D. *Pancreatic Atrophy in a Dog Following Impaction of Calculi in the Duct.*
4. MacCallum, W. G., Thomson, H. S., and Murphy, J. B. *Tetany after Parathyroidectomy in Herbivora.*
5. Estes, W. L., Jr. *Parathyroids of the Horse.*
6. MacCallum, W. G. *On the Pathological Anatomy of Lymphosarcoma and its Status with Relation to Hodgkins's Disease.*
7. *MacCallum, W. G., and Fabyan, M. *On the Anatomy of a Myxedematous Idiot.*
8. Fabyan, M. *Leiomyomata of the Gastro-Intestinal Tract, Associated with Fibromata Mollusca, and Subcutaneous Hemangiomata.*
9. Fabyan, M. *Disseminated Subcutaneous Fat Necrosis, Occurring in an Infant without Other Lesions.*
10. Fabyan, M. *A Case of Primary Carcinoma Supervening in a Cirrhotic Liver.*
11. Meader, F. M. *A Study of the Anatomical Relations in a Congenital Cystic Kidney.*
12. Cecil, A. B. *Phlegmonous Gastritis.*
13. *Marine, D. *On the Occurrence and Physiological Nature of Glandular Hyperplasia of the Thyroid (Dog and Sheep), Together with Remarks on Important (Human) Problems.*
14. Helmholz, H. F. *Experimental Epithelial Proliferations of Skin and Mucous Membranes.*
15. Helmholz, H. F. *An Experimental Multiple Chondrama.*
16. Helmholz, H. F. *Two Cases of Atresia of the Small Intestine: I. Multiple Congenital Atresia of the Jejunum. II. Valvular Atresia and Secondary Inflammatory Obstruction of Jejunum.*
17. Helmholz, H. F. *A Syncytiomatous Tumor of the Stomach.*
18. Whipple, G. H. *The Relation of Intestinal Infection to Visceral Tuberculosis.*
19. Whipple, G. H. *A Hitherto Undescribed Disease Characterized Anatomically by Deposits of Fat and Fatty Acids in the Intestinal and Mesenteric Lymphatic Tissues.*
20. Whipple, G. H. *Pancreatitis and Focal Necrosis.*

7. The writers describe in detail the pathological findings in a clinically typical myxedematous idiot. There were no thyroid lobes or isthmus, only two small lobulated cystic structures in the neck, which microscopically somewhat resembled thyroid tissue. At the root of the tongue a small nodule of typical thyroid tissue was found, Apparently this remnant had undertaken regeneration as actively as possible. The parathyroids were normal. The hypophysis showed general hypertrophy. The skeleton was smaller than normal, but the proportions were well preserved.

13. Marine finds iodine essential for normal thyroid activity. Glandular hyperplasia of the thyroid is a physiological reaction to a deficiency, in iodine, and it is to be considered cretinoid in nature. These same changes were produced in puppies by thyroidectomy of the mother and in normal dogs' thyroids by partial removal. The iodine content of the thyroid gland varies inversely with the degree of glandular hypertrophy. Iodine or its compounds will reduce this glandular activity in dogs, and will prevent the occurrence of glandular hyperplasia in thyroids of puppies from thyroidectomized mothers and after partial removal of normal glands. The writer considers that colloid goiter is usually preceded by a stage of glandular hyperplasia, and in its uncomplicated form is the quiescent stage of the same. [R. I. L.]

SURGERY, GYNECOLOGY AND OBSTETRICS.

SEPTEMBER, 1907.

1. *Schmauch, G. *The Histologic and Clinical Significance of Malignant Chorio-epithelioma.*
2. Parker, R. M. *Pleural Fistula.*
3. *Morley, W. H. *Post-Operative Thrombophlebitis.*
4. Frick, W. J. *Reconstructive Endo-aneurysmorraphy.*
5. McKenna, C. H. *An Anomaly of the Cœliac Axis.*
6. *Mandelbaum, F. S. *The Pathology of New Growths of the Bladder.*
7. Cook, J. E. *A Case of Tumor of the Carotid Body.*
8. Reed, C. B. *Gangrene and Eclampsia.*
9. *Garrè. *On Resection of the Liver.*
10. Good, F. I. *A New Obstetric Forceps.*
11. Bartlett, W. *A Simple Method of Removing Stones from the Lower Ureter.*
12. Brewer, G. E. *The Technic of Draining Circumscribed Abscesses of the Pancreas.*
13. Mann, A. T. *Empyema.*
14. Marcy, H. C. *Biliary Obstruction from Calculi in the Common Duct.*
15. Singley, J. D. *Some of the Factors that Influence Mortality in Operative Surgery.*

1. Following a careful review of the subject of malignant chorio-epithelioma, Schmauch is of the opinion that there is only a gradual difference between the simple invasion of the uterine muscles by villi and their sequelæ (adherent placenta, the common and destructive mole); between the localized chorio-epithelial growths limited to the uterus and placental region, and the villous infarcts, developed by deportation of villi; and finally between those cases in which the lungs were able to retain and master the scattered fetal cells (mostly syncytial and atypical forms), and the typical chorio-epithelioma malignum, which becomes generalized through metastases. Only the latter two types deserve the name of malignant chorio-epithelioma.

3. Morley has reviewed the literature and 11 cases of post-operative thrombophlebitis. Nothing new is added to the present knowledge of the subject.

6. Mandelbaum gives a valuable and interesting account of the pathology of new growths of the bladder. The various forms of tumor there occurring are well illustrated by photo-micrographs.

9. Professor Garrè ascribes his success in resection of the liver to the individual ligation of vessels with fine silk, and the subsequent through-and-through suture of the liver tissue with stout catgut. Approximation of the two incised surfaces of liver tissue is in his opinion the most successful way of controlling hemorrhage. It being best to press together two wounded surfaces by suture wherever possible, the resection should be done in shape of a wedge placed in approximately vertical direction to the margin of the liver. The liver needles of Kousnetzoff are of definite value. [W. C. Q.]

BRITISH MEDICAL JOURNAL.

OCT. 19, 1907.

1. Branthwaite, R. W. *Inebriety; its Causation and Control.*
2. Craig, J. *Address on the Choice of a Medical Career, with Remarks on Medical Ethics and Etiquette.*
3. *Stephenson, S. *The Calmette Serum Reaction in Ophthalmology.*
4. Beards, C. *A Case Showing the Stokes-Adams Phenomena.*
5. Fortune, J. *Two Cases of Pernicious Anemia with Unusual Features.*

6. Shapland, J. D. *Case of Spleno-Medullary Leukemia.*
7. Gifford, G. T. *A Forgotten Swab; Another Warning.*
8. *Simpson, W. J. R., and Ziemann, H. *Antimalarial Sanitation.*
9. Charles, R. H., Bose, R. K. C., Bose, C. L., Chakeavarti, S., Roy, R. D., and Sandwith, F. M. *Discussion on Diabetes in the Tropics.*
10. Beckett, T. G. *Phleboliths and the Roentgen Rays.*
11. Nash, W. G. *Repeated Rupture of the Tunica Vaginalis.*

3. Stephenson presents the results in 30 cases of eye disease in which he had used the Calmette ophthalmo-tuberculin reaction for diagnosis. There were 6 cases of phlyctenular keratitis in children, only 2 of whom showed tuberculous lesions elsewhere. Reaction was positive in each case. Three cases of choroiditis reacted positively, although in none had a tuberculous focus been found by clinical examination. In 8 cases of interstitial keratitis 5 showed definite signs of inherited syphilis, and none of these reacted; the other 3 cases were positive to the test. Of 3 cases of episcleritis one reacted positively. One case of tubercle of the iris in a child reacted positively, and later the result was confirmed by a positive reaction to tuberculin given subcutaneously. A case of tubercle of the cornea in a girl of twelve reacted positively to the eye test, and later to tuberculin injected under the skin. In two cases of chronic irido-cyclitis he obtained the ophthalmo-reaction and also a positive tuberculin reaction. In one of these on tapping the anterior chamber of the eye and examining the fluid thus obtained, tubercle bacilli were found. The preparation can be obtained from the Pasteur Institute, Lille, France, in two forms: (1) as dry tuberculin in small glass vials to which the physician adds 10 drops of water, and (2) as a solution in hermetically sealed glass tubes, each of which contains several drops of the product ready for immediate use. The cost is not great.

8. In the Section on Tropical Diseases (British Medical Association) Simpson, Ziemann and others present papers on anti-malarial sanitation. Simpson discusses recent discoveries which have rendered this more precise and less costly. He discusses the first steps to be taken in a malarious district; the distance from dwelling houses that a protected zone is required; the different conditions which demand different modes of treatment, such as measures required in localities subject to tidal floodings, or in marshes at the foot of hills, and the anti-mosquito sanitation of dwellings. Ziemann discusses malaria prevention in uncultivated districts, particularly in regard to the proper administration of quinine. [J. B. H.]

The Lancet.

Oct. 19, 1907.

1. Coplans, M. *Some Vital Properties of Milk.*
2. Walsh, D. *Frontal Band Alopecia as a Possible Sign of Exophthalmic Goiter and Associated Conditions.*
3. Macewen, J. A. C. *Case of Intraparietal Hernia with Very Small Peritoneal Opening Giving Rise to Severe Abdominal Pain.*
4. Dobson, M. S. *Multiple Fibro-myxomata of the Choroid Plexus.*
5. Clarke, H. J. *Interesting Case of Acute Intestinal Obstruction.*
6. King, C. *Vicious Circle after Gastrojejunostomy; Subsequent Lateral Anastomosis; Recovery.*
7. Chatterjee, G. C. *A Mechanism for Replacing the Cotton Plugs of Test Tubes used for Receiving Culture Media.*
8. Moon, R. O. *Notes of Two Cases of Paroxysmal Tachycardia.*
9. Davidson, J. *Blood Pressure in Fevers.*
10. Collinson, F. W. *Case of Intussusception in an Infant Three Months Old; Enterectomy; Recovery.*
11. Thompson, J. A. *Mode of Spread and the Prevention of Plague in Australia.*

Deutsche Medizinische Wochenschrift. No. 35.

Aug. 29, 1907.

1. *Körte, W. *Treatment of Angioma Racemosum.*
2. *Gentzen, M. *Secretion of Gastric Juice in the Fasting Stomach.*
3. Schirokauer, H. *Atony of the Stomach and Chlorosis.*
4. *Goldberg, B. *Contribution to the Knowledge of Nervous Bladder Affections.*
5. Cohn, L. *Investigations with Thephorin.*
6. Port, F. *Poisoning with Maretin.*
7. Neuberg. *Contagiousness of Condylomata Acuminata (Venereal Warts).*

1. Körte has encountered eight cases of racemose arterial angioma. Trauma and vascular nevus were excluded from the etiology, although in one case it apparently developed after freezing of the ear. In the other cases it dated from early childhood or was congenital. He regards the affection as a true growth with a progressive tendency, and calling for extirpation. The process is essentially a new formation of arteries, accompanied by eccentric hypertrophy of the previous existing small arteries. He describes the technic he follows in removing the angioma after ligating the vessels. The danger of gangrene renders the operation unusually difficult on the extremities, and amputation may be necessary as the last resort. After removal of the new-formed vessels making up the main tumor, the peripherally enlarged afferent arteries subside spontaneously to normal size.

2. Gentzen has studied Sahli's desmoid test when employed with the fasting stomach. In 53 healthy persons the methylene-blue pill taken dry into the fasting stomach was dissolved and absorbed in a short time in 52 cases, in 33 instances in less than two hours. Methylene-blue in keratin capsules, which are certainly not dissolved in the stomach, was never refound in the urine in any of his numerous tests. He concludes from his experience that there must be sufficient digestive juice in the fasting stomach to dissolve the catgut string. The digestion in these cases is not the result of mechanical or psychic stimulation. If the methylene blue is detected in the urine from one to three hours after taking, it must have been absorbed in the stomach, as absorption from the intestine does not show until after a much longer interval. The healthy fasting stomach gives the desmoid reaction unusually promptly, and the test can be applied in the clinic, dispensing with the test meal. To determine whether the pathologic fasting stomach behaves in the same way will be the subject of a further research.

4. Goldberg illustrates with a dozen cases the differences between frequent micturition of nervous or psychopathic origin and the pollakiuria that follows enuresis in childhood. The former is often observed after opportunity for venereal infection, and is cured by assurance that such infection has not taken place. In other cases it is without relation to the sexual life, and ceases after regulation of the intake of fluids and exercises; he recommends also 20 drops of the extract of rhus aromatica three times a day. The pollakiuria following enuresis in childhood is much more obstinate. It is aggravated by ingestion of fluids, and is best treated with the usual measures for enuresis. Complete neurasthenic retention of urine occasionally occurs; Goldberg reports two such cases [L. G. M.]

No. 36. Sept. 5, 1907.

1. *Heine. *Diagnosis and Treatment of Iritis.*
2. Cassirer and Bamberger. *A Case of Polycythemia and Obsession Neurosis.*
3. *Westenhoeffer, M. *Contribution to the Pathological Anatomy of True Plethora.*
4. *Veil, W. *Observations on the Detection and Agglutination of Typhoid Bacilli in the Blood.*
5. Poljakoff, W., and Chorosehko, W. *Polyneuritis and the Colon Bacillus.*
6. Guttmann, W. *Significance and Technic of the Patellar Reflex.*
7. *Neuhäuser, H. *Actinomycosis of the Female Genitalia.*
8. Schürmann. *Injury of Neck Destroying the Lorynx.*

1. Heine states that iritis is always a serious affection, and he keeps the patient in bed, or at least in his room. Institutional treatment is always the best. He gives laxatives, and forbids all physical exertion. Moist warm dressings are preferred to cold, and occasionally cupping gives good results. Salicylates, sweat baths and dia-

phoretics are the chief methods of treatment; all stimulants are prohibited. With suspicion of syphilis mercurial enjunctions and potassium iodide should be pushed, in rheumatic iritis general measures with courses of mineral waters. In tuberculous cases, beside the general measures, tuberculin is often beneficial; the administration must be kept up for a long time and small doses used, never pushing it to a febrile reaction ($\frac{1}{10}$ mgm. two or three times a week for several months). In mixed infections mercurial treatment may be combined with the use of tuberculin. The question of removal of injured eye to prevent a sympathetic iritis in the sound one is still open to debate.

3. Westenhoeffer reports a case of true plethora, which, he claims, is the fifth recorded case confirmed by the pathologic anatomic findings. Nothing is known concerning the etiology of this rare condition, but it certainly has no relation to the ordinary passive congestions, or to the condition known as, "full blooded," which may be induced by too rich diet or excessive drinking. Neither is the condition due to the withdrawal of the fluid elements of the blood. It is a true disease, and when once it is developed it continues on to a fatal end. The characteristic anatomic lesions are in the marrow of the long bones, as Türk had previously surmised from study of the blood in living cases, and the process is essentially the persistence of the infantile phase. The spleen, being the organ chiefly concerned in the destruction of the red cells, is invariably enlarged.

4. Veil, in reporting the results of the investigations made in the laboratory of the Strasburg Board of Health, says that he finds the detection of typhoid bacilli in the blood the surest means of diagnosis up to the third week, after that the agglutination test becomes much more reliable. He employs the method of Kayser, growing the bacilli for fourteen to twenty hours in normal ox-gall and then transferring to any of the well known differential culture media. In 210 cases he only failed four times to demonstrate typhoid or paratyphoid by blood culture or the agglutination test.

7. Neuhauser reports from Professor Israel's clinic in Berlin a rare case of primary actinomycosis arising in the right ovary and involving the uterus and vagina. An operation was undertaken but the patient died later. The pathological findings confirmed the diagnosis.

[L. G. M.]

Münchener Medizinische Wochenschrift. No. 36.
Sept. 3, 1907.

1. *Collin, R. *Behring's, "Tulase" in the Treatment of Tuberculosis of the Eye.*
2. Rieder, H. *The Use of Short Exposures to the X-Ray in Therapeutics.*
3. *Mandelbaum, M. *A New Bacillus Found in Cases with Clinical Symptoms of Typhoid.*
4. Honigmann, F., and Schäffer, J. *Experiments on the Action of Bier's Hyperemia in Inflammations.*
5. Strassner, H. *Researches on the Origin of Tuberculosis of the Lungs.*
6. Graeffner. *A Study of 221 Cases of Tabes Dorsalis with Special Reference to Laryngeal Symptoms.*
7. Peiser, A. *The Pathology of the Early Stages of Appendicitis.*
8. Brandt, C. E. *Appendicitis and Carcinoma of the Appendix.*
9. Frey, G. *Does Human Milk Cause Hemolysis?*
10. Huber and Bickel. *Combinations of Formaldehyde and Lime in Room Disinfection (Preliminary Report).*
11. Weber, A. *A Case of Primary Tuberculosis of the Mouth Due to Bovine Tubercle Bacilli.*
12. Mann G. *Severe Acute Anemia after Acute Rheumatism.*
13. Hartog, E. *Uncommon Developmental Differences Occurring in Twins.*

1. Collin reviews Behring's work on bovine and human tuberculosis. In animals he was able to immunize and to cure, by means of his tulase preparations, especially the tulase lactin (a bacterial emulsion). With this substance he and others have had good success in treating localized tuberculosis in man. Another substance, antitulase, prepared by immunizing horses against the tulase lactin, is now in use. The former, after long continued use, confers an active immunity, the latter a short-lived passive immunity after the manner of diphtheria antitoxin. The author has used the above preparations in 25 cases of tuberculosis of the eye. With tulase lactin he begins with a dose of .01 mgm. and doubling the dose daily reaches 8 mgm. at the end of ten days, when there comes a pause of ten days in the treatment. If during the first ten days a general reaction is noted the treatment is stopped for twenty days. Antitulase is given in an initial dose of 100 mgm., and doubled daily till 2,000 mgm. are given. It affects mostly the local lesion, whereas the tulase lactin affects the general condition. All the author's cases cleared up under treatment, and though the period since disappearance of symptoms and signs is not yet long enough to permit of a positive judgment, he believes that we have in the tulase preparations a specific, in eye tuberculosis at least.

3. In 6 cases, clinically resembling typhoid fever in all points, Mandelbaum has isolated a bacillus in pure culture from blood and stools, which is distinct from the B. typhosus, and from the paratyphoid organisms of Brion and Kayser, and Schottmüller. He calls this new organism the bacillus metatyphi. The cultural differences are that the new bacillus has a much more intense growth on plain agar; on glycerin agar it forms constantly crystals resembling tyrosin, which are composed of a combination of calcium with an organic acid. These crystals are probably due to the action of the secretion of the bacillus on the glycerin agar; in blood agar, both the typhoid and paratyphoid organisms act on the blood pigment, causing a greenish yellow color to appear; this is never seen in cultures of the B. metatyphi. Animal inoculation shows the new bacillus to be less virulent than the typhoid, and the 6 cases did not run a severe course. The author concludes that his organism is distinct from, but closely related to, the B. typhosus.

[R. D.]

Berliner Klinische Wochenschrift. No. 35.
Sept. 2, 1907.

1. Kathe, H. *The Floating Power of the Lung and its Relation to Child Murder.*
2. *Michaelis, L. *Wassermann's Syphilis Reaction.*
3. *Watermann, O. *Atoxyl Treatment of Syphilitic Affections of the Nerves of the Eye.*
4. Fleischer, F. *Turgo-tonographic Estimation of Blood Pressure.*
5. *Sellei, J., and Unterberg, H. *Communication on the Pathology and Treatment of Gonorrheal Pyelitis.*
6. *Achert, R. E. *The Prolonged Use of Digitalis.*
7. Loewenthal. *The Action of Radium Rays on Man.*

2. Michaelis reviews Wassermann's work on the so-called syphilis serum reaction. In a series of cases, the author found the reaction positive in 75% of syphilitics and in 8% of nonsyphilitics. From a series of researches with the reaction in liver extracts, he is inclined to differ with Wassermann's conclusions, *i. e.*, that the reaction truly shows the presence of an antibody to the syphilitic toxin. So far he believes the reaction to be more or less empiric, but it has certain diagnostic value.

3. Watermann employed atoxyl in the treatment of 10 parasyphilitic cases (syphilis of the central nervous system and tabes with optic atrophy). The results were disappointing, as either no effect was produced, or else marked diminution of sight, and severe nervous or gastro-intestinal symptoms followed its use. He considers atoxyl dangerous in such conditions.

4. Sellei and Unterberg report 5 cases of gonorrheal pyelitis, in which the diagnosis was made by catheterization of the ureters; the gonococcus was found alone in one case, in the others a mixed infection was present. The gonorrheal pyelitis is always secondary to a cystitis. Most of these cases yield to rest and internal medication. In resistant cases, the authors have had surprising success by washing out the pelvis of the affected kidney with boric acid solution, silver nitrate 1-1,000, or 1% to 2% collargol.

6. In a large number of cases seen by Achert, a cumulative action of digitalis has never been noted. He believes that long continued use of digitalis is most valuable in

chronic affections of the heart muscle, while in fatty degeneration he has had little success from this procedure. The dose to be recommended over long periods is 7 to 14 drops, once or twice daily. [R. D.]

No. 36. Sept. 9, 1907.

1. *Oppenheim, H., and Borchardt, M. *A Case of Tumor of the Cord Presenting Great Diagnostic Difficulties. Successful Operation.*
2. Citron, J. *Tuberculosis Antibodies and Tuberculin Reaction.*
3. *Gutmann, A. *Mikulicz's Disease and its Relation to Syphilis.*
4. Glaubermann, J. *Clinical Observations on the Effect of Atoxyl in Relapsing Fever.*
5. Tugendreich, G. *Two Cases of "Mongolian Spots" (Mongolenkinderfleck) in Berlin Infants.*
6. Rollin. *Nutritive Anemia.*
7. *Bruhns, C. *The Prognosis as to Life in Syphilis.*

1. Oppenheim describes a case of a twenty-three-year old male patient, who had a spastic paresis of the left leg, with atrophy of the quadriceps, also spasticity of the right leg, marked disturbance of sensation, and slight bladder and rectal symptoms. The diagnosis rested between, (1) caries, (2) intramedullary tumor, and (3) extramedullary tumor. After much study the latter diagnosis was made. At operation, performed by Borchardt, a diffuse extramedullary fibroma at the level of the twelfth dorsal vertebra was found and removed, with great improvement of symptoms. The authors consider that in all cases of doubt as to whether the tumor is of the cord or meninges, an exploratory laminectomy is not only advisable, but imperative.

3. Gutmann describes Mikulicz's disease as a symmetrical swelling of the lachrymal and salivary glands, often associated with general glandular enlargement, and without pathologic findings in the blood. The author reports such a case in a young man of twenty-seven, who had had a syphilitic infection three years before. Under KI and general hygiene the condition disappeared entirely. This is the first case of Mikulicz's disease in which the syphilitic origin is proved beyond a doubt.

7. After the disappearance of clinical manifestations, there is no means at present in the hands of the physician to say definitely that a syphilitic is cured. A review of life insurance tables shows that many syphilitics die from a late result of their infection. Bruhns gives figures of life insurance reports, and finds that four out of five of the insured syphilitics die from sequelæ of their infection, inside of twenty years after the first appearance of the disease. How great the influence of early treatment is in these cases cannot be decided. The author suggests a properly organized research into this question, as being a very vital one. [R. D.]

Correspondence.

LETTER FROM PARIS.

[*From our Special Correspondent.*]

On Weil's New Treatment of Hemorrhage in Hemophilia, Purpura, and Allied Conditions.

Paris, Oct. 29, 1907.

Mr. Editor: During the past two years quite a series of articles by P. Emile Weil has been appearing in the French medical press on the state of the blood in hemophilia and allied conditions (the purpuras, pernicious anemia, hemorrhagic nephritis), and on a new treatment for controlling the bleeding that occurs in these cases. In my letter to-day I shall endeavor to give you a summary of these very valuable researches, as well on account of the originality of Weil's work, as of the practical interest of his therapeutic proposals. Having myself twice passed through the prolonged anxiety of a case of Werlhoff's disease in young girls, I speak feelingly on the subject, knowing how thankful I should have been on those occasions to have had such a remedy as this at my disposal.

The reason why Weil has been able to carry the study of this difficult question an appreciable degree forward is that he is the first to have ventured to get his hemophilic blood for purposes of clinical investigation by direct tapping from a large vein with a needle. Heretofore anything of that sort with this class of bleeders would not have been thought permissible; but Weil has shown not only that it can be done with entire impunity, but that it is absolutely obligatory here, as well as in the purpuric conditions, to proceed in this manner, if satisfactory results are to be expected, since experimentation on the peripheral blood by the mere pricking of a finger does not supply a sufficient quantity, nor does the blood flow in its natural manner when thus drawn.

He has had occasion to study more or less thoroughly 11 cases of hemophilia, beside a number of purpura, acute and chronic, primitive and secondary, some of pernicious anemia, and some where hemorrhage occurred in nephritis; he thinks that these last are due to a distinct altered condition of the blood, and ought to be put in a class by themselves and separated from the other nephritic patients, with whom there is no tendency to hemorrhage.

The study of the state of the blood in these 11 cases has led him to the belief that the group hemophilia must be divided into two perfectly distinct parts: one in which the disorder seems to be a family, hereditary affair, passing down from generation to generation (though it may skip one, or even two or three), and affecting the males only and leaving the females immune, at least so far as the important accidents are concerned; and another in which it appears to be a spontaneous, acquired condition, though he admits that the latter division may be only a provisory one, on account of the great difficulty experienced in many cases in obtaining precise information about antecedents; of the second class he has seen 7 cases, of the former, 4.

Incidentally he calls attention to the fact that it is not always easy to separate pure hemophilia, characterized by abundant hemorrhages occurring apart from any dyscrasic or infectious morbid condition, after traumatism, and never spontaneously, from other hemorrhagic conditions in which similar losses of blood occur spontaneously; some hemophils may have inexplicable spontaneous hemorrhages; some chronic cases of purpura may bleed on traumatism. It is consequently difficult to draw the line closely between these two categories, and cases of transition are frequent.

And just as it is impossible to separate certain forms of chronic purpura from certain cases of acquired hemophilia, so is it equally difficult to separate some chronic cases of purpura from some cases of pernicious anemia. Here again the transition cases come in: the abundant hemorrhages of purpura may produce pernicious anemia, the latter following and being induced by the former; or, a toxic or infectious cause may produce at the same time hemolysis and disordered coagulation. Hemorrhage hastens the decrease in the number of blood globules, and the pernicious anemia and purpura are simultaneous, the disorder being named according to the predominance of the symptom anemia or of the symptom hemorrhage.

We have, then, here to deal with a complicated and still imperfectly understood group of conditions, to the unravelling of which it is hoped that Weil's researches will prove an important contribution.

Having examined the blood of these patients according to his method, Weil finds that in the *spontaneous, autogenous form* its characters are as follows:

When a needle is inserted into a vein at the elbow, the flow of blood is seen to be quite different from what it is with a normal person; whereas with the latter the blood comes drop by drop, soon slows up, and the needle blocks after three or four centimeters, with the former it flows on steadily, rapidly and for so long as you desire. In some cases after withdrawing 20 cc. the flow is still as unimpeded as at the beginning.

Morphologically the blood is normal, both in number and characters of globules, aqueous tenor of serum, osmotic pressure, alkalinity, cholemimetry and fibrinogen. The trouble lies in a disorder of the process of coagulation, the clot forming too slowly, and in a special, non-compact manner.

When the process of coagulation is closely watched it is observed to assume quite a peculiar mode, which Weil has called *plasmatic coagulation;* the reds separate from the plasma and fall to the bottom, where they form a layer, the plasma remaining above, noncoagulated. Gradually this plasma thickens, jellifies, and coagulation begins at its free surface and edges and extends downwards. The white clot thus formed immobilizes the cruor, which then also coagulates. When this has taken place normal retraction begins, first of the white clot and afterwards of the red, followed by exudation of clear, normal serum. Then a curious phenomenon occurs: little by little a certain number of red globules separate from the red clot, and, slipping out from among the meshes of fibrin, fall to the bottom; forming ultimately a layer of microscopically intact globules separated from the clot above by a sheet of yellow, nonlacquered serum. This appears to be a further anomaly of coagulation, secondary to the plasmatic coagulation, as though an undue proportion of the fibrin had been retained in the white clot.

The other remarkable feature in the blood condition is *retarded coagulation*, which, during the periods of hemorrhage, takes twenty-five minutes, instead of from three to five, and, after hemorrhage has ceased, to slower still, seventy-five minutes in one case, and forty-five in another. Blood coming from a surface-cut ultimately forms clots *in situ*, but beneath these clots it continues to ooze out and will not stop flowing.

In vitro, the addition of *small* doses of calcium chloride to the blood hastens coagulation noticeably; but *large* doses always delay coagulation.

But the addition of a little human serum to the blood puts an end to the whole trouble, both plasmatic coagulation and retarded coagulation disappearing entirely.

Now the disordered coagulation must be due either to the presence in the blood of substances preventing coagulation, or to the absence of substances that favor it. Making the opposite experiment to the above, adding a little hemophilic serum to some normal blood, no disturbance of coagulation ensues; it is consequently manifest that in this form of hemophilia the trouble is an absence or alteration of substances that favor coagulation, and probably of the coagulating ferment, fibrin-ferment or thrombosis, and that alone, since the addition of a little normal serum corrects the defect altogether.

The serum of cattle, horses and rabbits has the same effect, but is less active than human serum. An excessive amount of serum acts just like large doses of calcium chloride, preventing coagulation.

Clinically it is found that the intravenous injection, in such cases, of 15 to 20 cc. of human serum transforms the pathological condition completely, and renders it normal both in form and time. Twenty-four hours after such an injection a hemophil of this class can undergo an operation with impunity, such as tooth-extraction, or incision of skin and deeper tissues. In a few weeks, however, coagulation has again a tendency to become abnormal in time, though not in mode.

So much for the spontaneous, acquired form of hemophilia; now for the *family, hereditary form*. Here the state of the blood is quite different.

With these patients the blood does *not* flow freely through the needle inserted into the vein, in fact the needle may block after 2 or 3 cc. have passed, though not with clotting, but because the viscosity of the blood is greater than the normal.

In vitro, plasmatic coagulation takes place, but far more slowy than in the spontaneous form, on account of the visclus blood. Coagulation requires anywhere from two to nine hours. The clot that results is abnormal in appearance, and brittle; the blood does not seem to be chemically normal. Fibrinogen is certainly modified quentitatively and qualitively. Microscopically the whites are very low, three to four thousand.

Calcium chloride in small doses improves the condition, as in the spontaneous form: it accelerates coagulation though without altering its mode. Human or animal serum, however, seems here hardly to have more effect than the calcium chloride: and when the serum of such patients is added to normal blood, it interferes with coagulation. Both of these particulars are in striking opposition to what was noted in the acquired form.

Clinically, though, an intravenous injection of human or animal serum has a favorable effect; its hastens coagulation, and ultimately modifies the abnormal mode of coagulation, though the latter never disappears altogether.

These facts concerning the blood condition in the two forms of hemophilia are of great importance as regards its pathogenesis and therapeusis. They introduce into the pathology of the blood the notion of disorders caused by mere functional disturbances. Since one of them is a hereditary complaint, it follows that the absence or anomaly of secretion may be a species of malformation; there are, therefore, functional as well as anatomical malformities.

The separation of hemophilia into these two groups is not only apparent experimentally but clinically.

In the spontaneous form the accidents are less marked, less frequent, and require a more severe trauma for their production; they are, therefore, generally separated from each other by long intervals, between which the patient's health is excellent.

In the hereditary form the tableau is quite different. The troubles begin as soon as the child leaves its mother's arms, every accident no matter how slight gives rise to hemorrhage and may endanger its life, visceral bleeding occurs, and hemarthrosis appears at any blow on a joint, or even after muscular contraction. The latter symptom is very frequent, and may, if the child lives to grow up, end in ankylosis and muscular atrophy.

Two new views that Weil has introduced into this part of the question are, (1) the difference in gravity between the two forms; (2) the close relation between the severity of the symptoms and the degree of the blood disorder: the greater the retard in coagulation, the more serious the case. In the family form it is found that the younger the patient the graver the symptoms, though this may depend on the fact that the worse cases die before they get very far in their career. It is, therefore, evident that blood examination with these patients is of prognostic value as well as diagnostic.

As regards the etiology of hemophilia, some writers have endeavored to incriminate the liver, hepatic disorder being one of the factors of hemorrhage in purpura. It follows that mere analogy might warrant our ascribing a certain action in hemophilia to either functional disturbances or lesions of the liver. But it is found that neither hepatic antecedents nor cholemic stigmata are constant in either group of hemophils. Still, several of Weil's cases did show manifest liver disease, and there can be no doubt that the liver acts on the blood and alters it by other, nonapparent mechanisms.

In view of the fact that physiologists do not yet agree as to the mode of coagulation of normal blood, it is evidently not an easy matter for us to attempt to explain its abnormalities. A physical act for some, chemical for others, normal coagulation occurs through the breaking up of an albumin of the plasma fibrinogen under the influence of a leucocytary ferment, the fibrin-ferment, or thrombosis, into a globulin which remains liquid in the serum, and into concrete fibrin which is precipitated, dragging together with its meshes the figured elements of the blood to form the clot. But the process is apparently more complex than this, since the plasma contains salts of lime, which play a two-fold part in coagulation toward which they are indispensable, transforming on the one hand into thrombosis the prothrombosis or zymogen of the leucocytes, *i. e.*, acting on the ferment; and, on the other hand, forming a combination with the fibrin, which is a calcic albumin. In addition to this, recent researches have shown that in the process of coagulation the rôle of the ferment is an associated one, and that it can only act in the presence of another substance, called kinasis, which appetizes the fibrinogen which the ferment is intended to split up.

However these facts may be, in acquired hemophilia the pathological modification seems to be nothing more than an absence or alteration or the kinasis, the blood being normal both morphologically and chemically.

In the hereditary form, on the contrary, the process is a more intricate one. There appear to be present in the blood substances that oppose coagulation, since on mixing hemophilic serum with normal blood, coagulation is retarded.

Turning now to the practical side of the question, the therapeutic results obtained, Weil stated at the recent French Congress of Medicine (October, 1907) that in his 11 cases spaced over a period of two years, the injections of serum have constantly proved successful in controlling hemorrhage. But of this more anon.

Leaving now hemophilia for the moment, and taking up its allied conditions, we find the blood disturbances in them to be analogous though not identical to those mentioned above. Looking at the various forms of purpura in particular, we there have plasmatic coagulation, delayed coagulation, a clot that does not retract, and an absence of exudation of serum. These disturbances are lessened *in vitro*, by the addition of small doses of serum, or of calcium chloride. Intravenous injection of serum is followed by amelioration, but not by disappearance of the blood disorder.

In acute purpura, primary or secondary, the injection has a manifest curative effect. In two of Weil's cases the hemorrhage was definitely checked and recovery hastened; in a third the hemorrhage decreased considerably; in a fourth the loss of blood ceased, but the patient succumbed to intoxication through hepatic insufficiency.

In two cases of chronic purpura the result was satisfactory, *quoad hemorrhage*, which was also the case with two patients with mixed forms of chronic purpura and pernicious anemia.

The general conclusion to be drawn from the above facts is that in all these different cases this means has proved to be an efficacious one, more so even than calcium chloride. Its action is not dissimilar to that of this salt. The salts of lime, which form a substratum to the ferments of coagulation, intensify the action of the thrombosis, that seems damaged or deficient in hemorrhagic conditions. The injections of fresh blood serum introduce directly into the circulation the ferments of coagulation, and very likely stimulate the system to produce others as well.

When a toxic cause is present in the blood, and continues to act, the check of hemorrhage may only be temporary; or, even though entire, the evolution of the underlying disorder may continue to a fatal termination, the injection modifying the symptoms only, not the disease.

MODUS FACIENDI.

The treatment is the same in all of these different groups, of whatever origin or form.

Any *fresh* blood serum can be used. Human serum is preferable, but that of the horse or rabbit will do also. Cattle serum should not be used, as it has been found to produce accidents: short but violent rises of temperature, with rigors, yawning, emesis, cyanosis and lumbar pain. At a pinch any fresh antitoxic serum would serve, but plain serum is best.

The technic is that of all antitoxic injections, — 20 cc. subcutaneously or intravenously.

The method is applicable either as a *preventive*, the day before a contemplated operation; once in a while, at long intervals, to anticipate symptoms of more or less regular occurrence; or as a *curative*, during the hemorrhagic stage of any of these disorders.

Its effect begins at the end of twelve to twenty-four hours, and lasts from one to three months. Its action is not only a general one, but local as well; consequently it is eminently adaptable to external lesions with these patients: a cut during shaving, tooth extraction, or epistaxis.

Weil long thought that the effect of these injections was only palliative; but he now sees that he was mistaken, and that they really modify the humoral disorder of hemophilia. In the case of a patient with the hereditary form, subject for years to serious hemorrhages every month, there has been no spontaneous recurrence of the symptom now for a year, thanks to a preventive injection once in three months. And the blood lesion has been found to decrease in proportion. But the patient still has a tendency to prolonged bleeding if exposed to any slight trauma, some time after an injection. From a serious form consequently these injections have transformed this patient's case into a mild one.

"Spectator."

P. S. I wish to correct an error that appeared in my recent letter on Chantemesse's treatment of typhoid fever. The statistical figures there given, 712 cases with 27 deaths, were up to 1906, and not 1904. Later figures still reported at the recent Berlin Congress, September, 1907, 1,000 cases with 47 deaths, 4 + % on a nearly seven years run of ordinary hospital cases, constitute unquestionably a very remarkable showing, in which time and numbers would appear to eliminate altogether the effect of chance or of a lucky series.

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THE TREATMENT OF TYPHOID FEVER BY SPECIFIC SERA AND STATISTICAL METHODS OF RESEARCH.

Boston, Nov. 8, 1907.

Mr. Editor: The results obtained by Dr. Mark W. Richardson in his very interesting experiments with specific sera in the treatment of typhoid fever,[1] suggest the question how far the doctrine of chances may have affected his percentages. The groups of cases utilized by Dr. Richardson for comparison of results of treatment by the different sera, as among themselves and with "routine" treatment, would seem at first to be quite large, varying from 21 to 74 cases in each group, sufficiently so not to be seriously affected by chance, and yet the difference in the percentages obtained may have been wholly due to chance; or if the size of the groups had been larger Dr. Richardson's results might well have been more favorable to one or the other of the sera — or the reverse.

In 74 cases treated by routine treatment the deaths were 9.4%.

In 35 cases treated with serum the deaths were 5.7%.

In 74 cases treated with filtrates the deaths were 14.8%.

In 21 cases treated with residue the deaths were 9.5%.

I may here recall a series of observations which I made for the purpose of determining the effect of chance on mortality statistics of typhoid fever and the number of cases required to eliminate this effect (the paper was published in the Journal, Oct. 15, 1895). About 3,000 cases treated by "routine" methods at the Boston City Hospital were taken for analysis and divided into groups of different sizes ranging from 50 to 1,500 cases each. The groups were made up of consecutive cases as they were admitted, without selection.

It was found that when these 3,000 cases were divided into groups of 50 consecutive cases the mortality varied from 24% to 2%, or 22%, and in groups of 100 from 19% to 6%, or 13%. It was not till groups of 700 cases each were taken that this difference was reduced to 3.5%.

In groups of 1,500 cases the difference was still 2.4%. The following table gives a summary of the results:

Groups of cases.	Highest per cent of deaths in each group.	Lowest per cent.	Differences per cent.
50	24	2	22
100	19	6	13
200	17.5	8.5	9
300	17.6	10.6	7
400	17	10.7	6.3
500	17.4	10.8	6.6
600	15.5	10.6	4.9
700	14.2	10.7	3.5
800	14.6	11.2	3.4
900	14.3	10.8	3.5
1,000	14.1	11.5	2.6
1,500	14.1	11.7	2.4

The bearing of these figures upon the results of treatment by specific methods as compared with "routine" methods seems to me to be obvious. Statistical comparisons can only give logical results. When the conditions are exactly the same in all the members of the series compared, excepting in that factor the effect of which is to be determined. But the conditions in different cases of typhoid fever never are the same. No two cases ever are even approximately alike. If they were *exactly* alike, two cases would be sufficient to prove results. Hence the necessity of taking a very large number of cases in *statistical* inquiries on the theory that in very large groups there will on the average be the same number of individual differences in each, and the conditions will average the same.

Very truly yours,
Morton Prince, M.D.

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[1] Bost. Med. and Surg. Jour., Oct. 3, 1907, p. 449.

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 2, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	1	—
Chicago	—	—	Waltham	10	2
Philadelphia	—	—	Pittsfield	8	1
St. Louis	—	—	Gloucester	—	—
Baltimore	162	44	Brookline	4	—
Cleveland	—	—	North Adams	5	1
Buffalo	—	—	Chicopee	8	3
Pittsburg	—	—	Northampton	9	2
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	5	—
Washington	—	—	Leominster	2	1
Providence	82	22	Hyde Park	5	1
Boston	244	59	Melrose	2	0
Worcester	43	5	Newburyport	—	—
Fall River	51	24	Woburn	5	0
Cambridge	14	3	Marlboro	3	0
Lowell	28	8	Westfield	4	0
Lynn	25	11	Peabody	—	—
New Bedford	25	1	Revere	4	1
Springfield	27	8	Attleboro	2	1
Lawrence	26	9	Clinton	4	2
Somerville	14	3	Adams	1	1
Holyoke	21	2	Gardner	0	—
Brockton	9	2	Milford	2	—
Malden	11	3	Watertown	1	0
Chelsea	10	4	Plymouth	—	—
Salem	21	4	Weymouth	3	0
Newton	12	5	Framingham	—	—
Haverhill	3	1	Southbridge	6	—
Fitchburg	18	4	Wakefield	—	—
Everett	10	1	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 9, 1907.

C. P. Bagg, surgeon. Detached from Naval Medical School, Washington, D. C., and ordered to the "Philadelphia" Dec. 7.

SOCIETY NOTICES.

New England Otological and Laryngological Society.— The regular meeting of this society will be held at the Boston City Hospital, on Friday evening, Nov. 15, 1907, at 8 p. m. Papers: Dr. Francis P. Emerson, Diseased Conditions of Rosenmüller's Fossæ in their effect upon the Middle Ear. Discussion to be opened by Dr. Geo. A. Leland. Dr. Geo. H. Powers, Jr., report of a Case of Caries of the Middle Ear, Mastoid and Internal Ear, with Extradural Abscess, Pachymeningitis, and Destruction of the Semicircular Canals. Discussion to be opened by Dr. E. A. Crockett.

Philip Hammond, M.D.,
Secretary.

Boston Association for the Relief and Control of Tuberculosis.— The attention of all members of the Boston Association for the Relief and Control of Tuberculosis is respectfully called to the annual meeting to be held on Tuesday, Nov. 19, at 4.30 p. m., in the Twentieth Century Club, at 3 Joy Street. The reports for the year will be received and officers for the ensuing year elected, in addition to any other business which may properly be brought forward.

Mary Morton Kehew,
Clerk.

RECENT DEATHS.

Franklin Bonney, M.D., M.D.S.S., of Hadley, died Nov. 9, 1907, aged eighty-eight years.

Arthur Harris Cowdrey, M.D., M.M.S.S., died in Stoneham, Nov. 4, 1907, aged seventy-one years.

Robert Disbrow, M.D., M.M.S.S., died in Boston, Nov. 9, 1907, aged sixty-five years.

Dr. Abel Huntington, formerly of East Hampton, died at Islip, Long Island, N. Y., on Nov. 6.

Dr. A. J. Brower, a retired physician of Utica, N. Y., died at Saranac Lake, in the Adirondack Mountains, on Nov. 8, at the age of sixty-seven years. He was graduated from the medical department of the University of the City of New York in 1861.

Dr. Edmond Howard Martin, a retired Southern physician, died at the residence of his son-in-law, Dr. J. Harvie Dew, in New York, on Nov. 3, at the age of eighty-two years. Dr. Martin, who was a descendant of Chief Justice Marshall, of Virginia, was born in Beaufort district, Georgia, and practised in Savannah until after the Civil War. Later he removed to New Orleans, where he continued to practise until his retirement a few years ago. He then came to New York to make his home with his children, two of whom beside Mrs. Dew reside in that city.

Dr. Campbell Colwell Fite, a retired physician, died in New York, after a long illness, on Nov. 9. He was born near Shelbyville, Tenn., on July 29, 1855, and was educated at the Dixon Academy, Shelbyville, and Cumberland University, at Lebanon, Tenn. He studied medicine with his step-father, Dr. R. F. Evans, and was graduated from the Louisville (Ky.), Medical College. In 1882, when but twenty-seven, he was elected Secretary and Executive Officer of the Tennessee State Board of Health, and while in this position he organized the bureau of vital statistics of that state. For several years he practised with much success in Nashville, and in 1885 was appointed assistant superintendent of the East Tennessee Hospital for the Insane, at Knoxville. In 1890 Dr. Fite removed to New York and went into commercial life, organizing the Malt-Diastase Company for the manufacture of malt products, but after some years, his health failing, he retired from business. During his career he was the author of numerous medical and scientific papers.

BOOKS AND PAMPHLETS RECEIVED.

Der Abstinentismus und seine Bedeutung für das Individuum und für die Gesellschaft. Von Dr. Gustav Kubrbel. München und Berlin: R. Oldenbourg. 1907.

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Original Articles.

DELIRIUM AND DELIRIOUS STATES.

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Delirium may occur under various conditions. Its causes are numerous and sometimes obscure, while its manifestations vary and are often atypical. The recognition of delirium is important because, when its presence is determined, the attention of the physician is turned toward the search for some cause, which, if found, may furnish suggestions for treatment.

If seen in the course of an acute infectious disease, as typhoid fever or pneumonia, the recognition of a delirium is attended with no difficulty, its occurrence here being so common, its manifestations usually so typical and its cause perfectly evident. When, however, it occurs under certain other conditions, when its clinical picture departs more or less from the type, and when no cause is immediately evident, then its recognition may not be so much a matter of course, unless a clear conception of its essential nature is possessed by the physician.

It is the purpose of this paper to describe the mental state seen in delirium; to illustrate this by a report of a few cases,[1] showing various modifications, and to consider briefly some of its causal factors.

In all delirious states we find disturbance of consciousness, with lessened power of attention, comprehension and memory, with resulting disorientation. Motor unrest and hallucinatory disturbance are usually present, but in varying degree, sometimes so marked as to predominate the whole picture, sometimes slight.

I shall begin with an attempt at a description of delirium in general, some of the psychology of which I take from Kraepelin.[2]

The fundamental attribute of most deliriums at least is apparently a disturbance of consciousness.

Consciousness is a term of which it is difficult to give an adequate definition. Following Kraepelin's description we may say that consciousness is that condition of mind under which external stimuli produce cerebral changes of some sort, of which the subject immediately becomes cognizant and is accustomed to regard as ideas, feelings, impulses, etc.[2] When, however, owing to some noxious influence, such as a toxemia, this faculty of mind is interfered with, consciousness becomes clouded.

This faculty of recognition of external stimuli may be completely abolished as in coma, or the interference may be only partial.

In delirium this faculty is usually not completely abolished, but here only the stronger external stimuli are heeded, while the rest tend to pass unnoticed; so that even at best the patient gets only an incomplete understanding of his surroundings and of what is taking place around him; and this because the impressions made by even such stimuli as reach him are only fleeting, no association between them and memories of previous experience being possible. Thus impressions tend to remain simply impressions and are without meaning.

Closely associated with this disturbance of consciousness are disturbances of attention and comprehension. Upon examination of the patient we find that his attention is gained only after more or less effort on the part of the examiner, or, if the disturbance is very profound, perhaps not at all. If we speak to him in a natural tone of voice, he frequently does not understand, — perhaps takes no notice. If, however, we repeat our question in a more insistent manner, the attention may perhaps be gained for a moment and a relevant answer given, the condition thus resembling a state of extreme normal fatigue, or that of a person on the verge of sleep. Yet any approach to a connected train of thought is lacking; but instead, the patient may give utterance to a string of disconnected talk which sometimes descends to unintelligible muttering, showing that associated with the diminished reaction to stimuli coming from without is an increased reaction to stimuli arising from within.

On account of these disturbances no concentration is possible, and all ability for mental work is in abeyance. This may be often brought out by asking the patient to solve an arithmetical problem. Often a simple addition like 7 + 8, which is dependent only on past memories, may be correctly answered; whereas a slightly more complicated one like 17 + 25, which would necessitate a certain mental effort, involving something more than memory alone, will not usually be solved.

Owing to these disturbances of attention and comprehension, whereby impressions are isolated and fleeting, there results an extreme memory disturbance, particularly for recent happenings. Thus, delirious patients have no idea as to the length of time they have been in a given place, and in fact can recall little or nothing of what has taken place since they have been ill. But in regard to events which have happened before their illness the case is somewhat different, and if the disturbances of attention do not act as a bar, many detached facts relating to the previous life history are correctly given.

Most striking is this difference in delirium tremens, in which condition sometimes a fairly complete history previous to the present illness may be obtained from the patient, in surprising contrast to his deficiency in recalling happenings from hour to hour.

Owing to the lack of correct appreciation of surroundings, disorientation — at least at the height of a delirium — is always present. Patients do not know where they are. Sometimes, indeed, after being repeatedly told, they may remember for a time the name of a place, but this remains for them only a name and is devoid of any real significance. Frequently their ideas in regard to place may vary from time to time; thus at one time they may say they are in a hospital; at another, that they are at home or somewhere else.

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[1] These were all Danvers Insane Hospital cases which Dr. C. W. Page kindly allows me to report.

[2] Kraepelin: Psychiat., 7th ed., vol. i, p. 155 and following.

In nearly all deliriums are present, at some time, motor unrest and hallucinations, which are often so pronounced as to predominate the whole picture and to throw into the background the manifestations above described; yet, perhaps, for some reasons they cannot be regarded as so essential and generally diagnostic as the characteristic combination of clouding of consciousness and associated disturbances of attention, comprehension, memory, etc.; first, because in atypical cases they may be absent, or at least present in only a slight degree; secondly, because they are found to some extent in many other psychoses.

The clouding of consciousness and associated disturbances of attention, memory, etc., are present not only in all forms of delirium and allied states, but also, in traces at least, throughout the whole course of a given delirium even at the onset and during the period immediately preceding recovery, at which extremes the more striking symptoms — motor unrest and hallucinatory disturbance — may be scarcely manifest.

I dwell on this, not on theoretical grounds, but because I believe it to be a point of practical diagnostic value.

I shall now pass on to the consideration of some of the various forms and modifications of delirium as illustrative of the descriptions given above.

FEVER DELIRIUM.

This condition is well known and requires no lengthy description. There is clouding of consciousness, which is greater or less according to the severity of the case. Disorientation soon appears. The attention can be gained but momentarily; or, as the clouding of consciousness deepens and a state of stupor is approached, not at all. The patient does not appreciate what goes on about him and friends may not be recognized. Hallucinations begin to recur in rapid succession, and lastly — and it is these which give the picture its most salient feature — are the disconnected train of talk to which the patient gives utterance and the motor unrest. The speech usually becomes indistinct and may amount to merely a series of mutterings of which the import is unintelligible.

The motor unrest varies from slight movements of the arms and fingers — carphologia, subsultus — to more considerable disturbances, in which the patient may throw off the bed clothing, and if not prevented, get up and wander about. Often these acts appear to be of the nature of reactions to hallucinations.

Fever delirium, being the best known, may be taken as the type. In some of the following descriptions of cases of delirium from other causes, we shall see how they depart in certain respects from this type, yet bear a fundamental resemblance to it. The resemblance consists in the fact that the disturbances of consciousness, attention, disorientation, etc., and usually motor unrest and hallucinations are present in all. They differ from one another in that these various manifestations are differently combined, sometimes one, sometimes another, predominating, thus giving the pictures their distinctive marks.

DELIRIUM TREMENS.

Delirium tremens, as differing from other forms of delirium, is characterized by the extraordinary vividness of the hallucinations, by extreme motor restlessness, by a general tremor approaching a sort of ataxia, and by disorientation, associated with relatively slight disturbance of consciousness.

The hallucinations are chiefly visual and recur with great frequency. Animals, such as dogs, rats, etc., are in the room; pictures are seen upon the wall, or the patient may fancy he is to be attacked in various ways.

Instead of the purposeless carphologia of the febrile delirium, the actions are rather of purposeful character, and the patient may busy himself in performing various acts, or live over again the scenes of his accustomed daily life; all this being, in large measure, a reaction to the hallucinatory episodes through which he is constantly passing. The movements are performed actively, but accompanied by the characteristic coarse tremulousness or ataxia.

Most interesting is the association of complete disorientation with relatively clear consciousness. While not knowing where he is, nor appreciating at all the nature of his surroundings, the patient is yet usually capable of answering questions in a relevant manner, and his conversation does not show that incoherence generally seen in other forms of delirium, although indeed the attention cannot be long held on one thing, being constantly distracted by the ever recurring hallucinations.

Another interesting feature, which is, however, to some extent present in all deliriums, is the disproportion between the memory disturbances for recent and remote events. Patients, while unable to recall what has happened a few minutes before, may yet be in a condition to give quite a little of their previous life histories.

The comprehension, too, is less affected than in other forms, so that patients understand more easily what is said to them, and as has been already mentioned, answer relevantly, — all this rendering a certain amount of rational conversation possible.

Allied to delirium tremens is alcoholic hallucinosis, but differing from it in that the hallucinations are chiefly auditory, and not accompanied by any considerable disturbance of consciousness or by disorientation. Between the two conditions are intergrading forms.

In alcoholic conditions the disturbance of consciousness may become deeper than in ordinary delirium tremens and the hallucinatory unrest less violent, as in the following case:

Male, forty-seven. Danvers Insane Hospital.

Onset ten days before admission, following a spree. Became confused, picked things to pieces and threw them about. Slept at times, but at other times got out of bed and wandered around his room. Not noisy. *Never appeared to see or hear imaginary things.* History of a long continued alcoholic excess.

Examination. — Sept. 2. Lies in bed turning head from side to side. Later threw off bed clothing and tried to get up. Then sat for a while on the edge of the bed, muttering.

Apparently deep disturbance of comprehension, and does not seem to notice anything which happens about him. Hard to attract his attention, yet when questions are repeated he gives an occasional relevant reply and understands enough to obey a simple direction. When shown objects names intelligibly only "handkerchief." At no time has there been evidence of hallucinations.

Emotional tone indifferent. Untidy. Speech thick, suggesting paresis of tongue or throat muscles. Gait unsteady. Moderate tremor of tongue and hands.

Sept. 6. Weaker. More restless.

Sept. 9. Less restless. Speech largely inarticulate. Does not appear to recognize persons nor even familiar objects.

Sept. 16. Considerable improvement, both mental and physical. Speech is plainer — answers simple questions relevantly. *While he remembers he was in Danvers Insane Hospital twelve years ago, he does not realize that he is there now.*

Quiet. Habits now neat.

Sept. 22. Has become oriented for place, but not for time. Memory clear for past events, but does not know how long he has been in the hospital. Good insight. Appreciates he has been out of his head and that drink was the cause of his trouble.

A month later discharged; talk and conduct normal. Good insight. Memory hazy only for period of illness.

This case differs from ordinary delirium tremens in that the disturbances of consciousness were deeper, in that the motor unrest was less turbulent, and in that hallucinations, if present, were not demonstrable. Furthermore, the duration was longer than that of ordinary delirium tremens, the attack lasting several weeks instead of several days. Yet with the exception of hallucinations, all the characteristic disturbances of delirium were present and the diagnosis "Delirium" was justified.

In some respects the case resembled the type of the asthenic delirium seen in exhaustion conditions, and perhaps a poor physical condition may have been one causal factor, yet the psychosis occurred in a person of alcoholic habits, and the tremors and peculiar speech affection suggesting an accentuated form of the talk of a drunken man were typically alcoholic.

The following case of alcoholic delirium differs from the above in that hallucinations were prominent, in that it was associated with a polyneuritis, in that its course was much longer, and in that the outcome was not recovery but emergence into a state characterized by a peculiar memory disturbance, which is known as "Korsakoff's psychosis." The notes on this case were made by Dr. H. W. Mitchel, with whose kind permission I give a short abstract:

Male, thirty. Danvers Insane Hospital.

Alcoholic habits.

Onset gradual, four to six weeks before admission. Talked excitedly; saw bugs, also people coming and going through the window. Symptoms intermitted at times when he would appear all right, then would recur. Slept poorly. Restless.

Dec. 18. In state of hallucinatory excitement; deep clouding of consciousness; inaccessible and hard to gain his attention, being constantly distracted by hallucinations. Fights the bed clothing; struggles when attempts are made to care for him. When physicians approach, shouts, "Get away, get away," and says something about a woman being behind him. Picks imaginary insects from face and blows them off his fingers.

Occasional relevant answers, but attention could not be held, being replaced by a spontaneous flow of disconnected sentences: "The stuff is boiling out. Have you made that, Kelly? [Points to ceiling.] Raise it up again, raise it up. Put it back the way they were. I'm going to clean up the stairs. Here, wait a minute. No, don't blow my brains out. Keep the lights a-going, boys. No, that's a bluff. Here, go ahead with the machine," etc.

Physical examination showed the presence of a polyneuritis.

Dec. 19. Constantly hallucinated, picking at bed clothing. Impossible to keep attention long in conversation.

Question. What did you do last night?

Answer. Well, I couldn't tell.

Q. Where were you? [No answer, but gazes fixedly at ceiling without reply.]

Dec. 27. Condition unchanged. Difficult to gain his attention. Questions have to be repeated before getting a reply.

Q. What is this place?

A. Hospital and prison; oh, they are burning me alive out there. [Shudders and groans, then turns and gazes furtively about the room.]

Jan. 1. Inaccessible to questioning. Only spontaneous disconnected talk with pauses in which he looks about him or at ceiling. *Speech has become thick* and almost inarticulate.

Jan. 29. Improvement. Less noisy. Questions now answered relevantly, but memory defect for immediate happenings. He came here last night, a whole gang of fellows came with him. To-day he was out walking with a whole gang of fellows. Disoriented, no grasp on surroundings.

March 7. Improvement in physical condition, but still noisy, talking and shouting. Strong enough to get out of bed, but walks with a feeble steppage gait.

June 12. Quiet; disoriented; *memory disturbance* and *fabulation.* Steppage gait. Movements show considerable degree of inco-ordination.

This brief abstract shows how, as the case progressed, the clouding of consciousness, disturbance of attention and the hallucinatory unrest gradually became less while the disorientation and memory disturbance persisted, the end result being a Korsakoff's psychosis.

The following is a case of bromide delirium occurring in an attack of manic depressive insanity (recurrent mania):

Woman, twenty-four. Danvers Insane Hospital.

History of six previous maniacal attacks. At the onset of the present attack she had been given large quantities of bromide at home, in the hope of aborting the attack.

On admission — stuporous. Physical condition weak, so that she had to be carried to the ward.

After admission, usually restless, so that constant attention is required to keep her in bed, but at times sleeps a little. Tendency to throw off bed clothing and clutch at foot of bed. If allowed to get up she wanders weakly about, but soon falls. *Speech thick;* much is unintelligible. *Drools.* Disoriented. Said at one time she was in a hospital, but different places at different times; yet recognized nurse whom she had known at earlier commitment, and finally, after being asked several times, gave physician's name correctly. Generally difficult to arouse her from her stupor and to gain her attention so that she will answer questions.

After a month, consciousness became clearer and she began to have a better understanding of her surroundings. Before this she would sometimes suddenly emerge from an apparent stupor and throw things about and knock over chairs. Then hallucinated at times and apprehensive. Told nurse that somebody was about with a dagger trying to kill her. Her physical condition improved. Later the hallucinations and apprehensiveness faded out and she gradually became exhilarated, noisy, playful and her conversation flighty, her mental condition now being like that of her previous maniacal attacks.

This case is interesting as showing a psychosis within a psychosis. At the beginning, the stuporous condition was predominant, the clouding of consciousness being deep, and the attention and comprehension correspondingly affected. From the first, the restlessness gradually became more violent as the maniacal state was approached. Hallucinations, at first not evident, later made their appearance, and then when the maniacal state became fully developed, again disappeared.

Characteristic for bromidism was the drooling and thick speech, the latter of which, however, as we have seen, is also sometimes met with in alcoholic conditions.

The next case to be described is one of senile delirium, the condition, however, being perhaps in part dependent upon chronic exhaustive physical disease; also, possibly, on alcohol.

Woman, aged sixty-six. Danvers Insane Hospital. Practically no history obtained, except that the patient had previously been alcoholic, and that the onset of the psychosis was gradual.

Examination. — Generally poor physical condition. Arteries generally thickened and tortuous. Heart sounds rather sharp. Restless. Walks feebly — would fall if not prevented. Deep disturbance of consciousness. No grasp on surroundings. Talks incoherently; occasional relevant answer, but attention cannot be held and she immediately wanders, distracted, perhaps by visual hallucination or ideas arising from within.

Q. Where are you?

A. I don't know — I don't know that at all. [Looks about her.] Oh, there, he has got my watch away now. I wish you would send my dinner over. He kept me from getting my meals. [Picks at folds of the bed clothing.]

Q. What are you looking for?

A. Something was put down at my side last night.

Q. Have you lost anything?

A. Yes, the cat — see over there [then mutters unintelligibly]. Such a place as he left me; he tore my clothes and didn't leave a stitch to put on me.

Marked impairment of comprehension. Frequently questions not heeded or answer is irrelevant. When relevant answer is given it is usually only after several repetitions of the question. Names correctly a few familiar objects; at other times cannot be made to understand what is wanted. Obeys a few simple directions, like picking up a pin, etc.

Memory. — Completely absent for present happenings, but recalls a few isolated facts from life history. Gives father's name, — father and mother are both dead; lost her eye in a mill; has been in this country thirty years.

Frequent visual hallucinations. Gets up and looks under bed as if hearing something. Looks at other patients and smiles. Peers around. Looks at walls as if seeing something there.

Considerable motor restlessness, getting out of bed, etc., apparently due to reaction to hallucinations.

A week later became quieter. Disturbance of comprehension as before, but less distracted by hallucinations which are now not so prominent.

Gradual failure and, after two months, death from terminal pneumonia.

At autopsy, performed by Dr. Southard, beside various senile changes and a lobar pneumonia was found an undiagnosed cancer of the stomach.

This case differed from a simple senile dementia in that the disturbance of consciousness was much more extreme; also in the great motor restlessness and, at times, almost constant hallucinations. In ordinary senile dementia, disorientation, lack of appreciation of surroundings, memory defect, and frequently a degree of motor unrest are present. The consciousness, however, remains relatively clear, the patient understands what is said and the attention can be held without particular difficulty, although, of course, the capacity for mental work is low.

The practical importance of the distinction is that a delirious condition as such may improve and pass into a comparatively comfortable state of quiet dementia. That this did not occur in the present case was probably due to the presence of a chronic exhaustive disease.

The following case I considered to be one of delirium dependent upon organic cardiac disease in a patient with tabes:

Woman, fifty-six. Danvers Insane Hospital.

History incomplete. Had been in bad health for several years. Treated seven months in a general hospital, where she had "several attacks of insanity." One week before admission to Danvers, very active mental disturbance, — said it was snowing and wanted windows closed to keep it out. Stared vacantly. Did not recognize anybody.

Examination. — July 4. Color pale with lemonish tinge. Heart enlarged, action weak and irregular — 112 — pulse slower than heart, systolic murmur at apex. Lungs, numerous râles at bases. Liver extends 2″ below costal margin. Urine that of passive congestion. General edema. Hgb. = 80.

Pupils stiff to light. Knee jerks absent.

Mental. — At admission somewhat stuporous. Quiet at first, later became noisy. Resistive at times. Answered a few questions relevantly, but attention soon flagged and difficult to gain it again. Seems to make no effort to think; memory very defective for recent happenings. When asked how long she had been here, said, "Twenty-six, twenty-six, twenty-six; oh, dear me, suz! twenty-six, twenty-six, no, twenty-six; that is all I know is twenty-six, twenty-six: oh, dear, I wish I knew." No definite delusions, but refused milk, saying it was poisoned; but later drank two glasses after a little coaxing.

July 26. Slight improvement. Generally quiet and not so resistive. Not oriented, but answers questions better. Tells her name, but says she is twenty years old. Rather distractible. When paper rattles or nurse whispers, she is startled. Recognizes she is in a hospital, but does not know where.

Q. Have you been out of your mind?

A. I guess I must have been.

$2 + 2 = 4$, $6 \times 9 = 54$, $29 + 36$, unable to tell. Counts correctly to ten. At times hallucinated. Heard some one say she would be murdered; a snake had crawled into her bed; saw a man come into the room with a snake.

Aug. 1. Physical condition better. Talks rationally. Appreciative of what is done for her. Realizes that she has been out of her mind. Names President and king of England; also capital of Massachusetts and of United States. Memory — 2–9–4–7 correctly recalled after thirty seconds' pause. Appreciates the gravity of her condition. Does not believe she can get well, and hopes she will have an easy death.

Aug. 11. Comfortable, oriented, no active mental disturbance except rarely a hallucination.

Sept. 1. Physically not as well. Edema has increased. Mentally clear, no hallucinatory episodes. Gives fair account of previous life history, with a few discrepancies, but does not remember what took place at the general hospital a few days before her admission here. Oriented, giving date and day of week. Slight sensory disturbance over region of breasts.

Sept. 29. Has gradually failed. Of late has shown some confusion and occasional apprehensiveness with hallucinations. Edema of legs extreme. Ascites. Bubbling râles throughout chest. Pulse irregular and feeble. Dyspnea. Death.

The diagnosis " delirium " might be questioned; some, perhaps, preferring to regard the mental symptoms, associated as they were with stiff pupils and absent knee jerks, as manifestations of a general paralysis. Yet characteristic symptoms of general paralysis, as ataxic speech, lack of insight and evidence of extreme deterioration, were absent. Instead of these we find at times a combination of symptoms which characterize a delirium, namely, disturbances of attention and comprehension, the whole picture suggesting less a dementia than mental fatigue and inability to think, which later largely disappeared. Hallucinations and motor unrest are met with also in general paralysis, but are not usually of so transitory a nature as in this case. But most out of harmony with general paralysis was the reasonableness of the general manner and conduct after the mental confusion had passed.

A study of the cortex might have been helpful, but unfortunately, autopsy was refused.

I have further, among my cases, one of an atypical delirious condition, with deep disturbance of consciousness, but without hallucinations or considerable motor unrest, beginning soon after childbirth. The condition was apparently dependent (in part, at least) upon an obscure physical disease. As this case was very obscure I will omit a detailed description.

CAUSES OF DELIRIUM.

The nature of the psychosis should be, if possible, determined by an examination of the existing mental state. If the diagnosis of delirium can thus be established, a cause should be diligently sought. It is preferable that the procedure be in this order: first, diagnosis of condition, then search for a cause. For, to assume without analysis of the present condition, that a psychosis is a delirium merely because some possible cause of delirium happens to be present in the history may be misleading, as in differently susceptible individuals similar agents do not always produce similar effects; and many psychoses occur independently of any known cause.

I shall now consider briefly some of the causes of delirium. In this enumeration, however, I lay no claim to completeness.

Most common are acute infectious diseases as in typhoid fever, pneumonia and septicemia. In these the delirium may be due in part to toxemia, in part to pyrexia. Kraepelin makes mention of such conditions as the delirium seen in influenza without high temperature and the violent, initial delirium of typhoid, as being presumably dependent upon toxemia alone. The delirium sometimes associated with chorea, he is also inclined to regard as due to an infectious agent.

Delirium may also be met with associated with disorders of metabolism as in uremia.

Of drugs which may be mentioned in addition to alcohol, are the bromides, salicylates, chloral, morphine and cocaine. A case of chloral delirium resembling delirium tremens has recently been reported by Dr. H. W. Mitchel.[3]

Next in importance are various conditions of exhaustion as factors in producing a delirium, as when it arises or continues after defervescence in acute febrile disease. Or it may arise during chronic wasting conditions, or after loss of blood. The delirious states following childbirth may be due either to exhaustion or to toxemia, or sometimes to a combination of both. When occurring in cardiac insufficiency, it might be ascribed either to exhaustion or perhaps to cerebral anemia.

Kraepelin separates the exhaustive and toxic deliriums, believing that in some cases at least the difference in symptoms is sufficient to justify distinct groupings.

In many cases the disturbance cannot be assigned to any one cause, but seems to be due rather to a combination of factors, as pyrexia and toxemia in acute febrile disease, or childbirth and exhaustive disease as in our last case. Or, as in another of our cases, to senility, alcohol and exhaustion.

Occasionally a delirium may arise for which, in spite of the most diligent search, no cause can be discovered.

DIFFERENTIAL DIAGNOSIS.

When a delirium is atypical, its diagnosis may be difficult. In general it may be said that it should be made on the presence of the characteristic mental symptoms.

From general paralysis it is to be differentiated by the absence of ataxic speech and other physical signs, and by the indication of mere abeyance of mental functions in place of actual intellectual deterioration.

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[3] Chloral Delirium: A Case Report. Bost. Med. and Surg. Jour., Jan. 31, 1907.

In catatonic excitement or stupor, a sort of barrier seems interposed between the examiner and patient, which cannot really be broken through, while, in delirium, unless the clouding of consciousness is very deep, the patient is usually not entirely inaccessible, so that occasional relevant answers to questions may be obtained. In excitements the motor activity is coarser and of a more senseless character. When typical signs of a catatonic condition, such as stereotypy or cerea flexibilitas are present, the diagnosis is, of course, rendered easier.

In manic depressive insanity, when the excitement and flight of ideas is so extreme that a certain clouding of consciousness results, perplexities may arise.

TREATMENT.

The treatment, of course, should be directed to the cause, and when the condition is due to the ingestion of a toxic substance, as alcohol, bromides, etc., this cause may be removed.

It is to be remembered that we frequently have to do without a condition which is primarily physical and not mental, and the treatment is somewhat the same as that of any acute disease, the chief indications being to keep up the strength of the patient by appropriate nourishment and to prevent exhaustion from the motor unrest, which is frequently extreme.

Of quieting measures the continuous warm bath is generally preferable to soporific drugs. By this method — which is warmly advocated by Kraepelin — the patient is kept in a warm bath at 92° to 95° until the restlessness subsides, and is then put to bed, when he frequently falls asleep. When restlessness reappears he is again placed in the bath, and this procedure is continued until his quiet becomes permanent.

This method is particularly useful in delirium tremens; but in asthenic conditions, caution must be used, and the patient's pulse and general condition carefully watched.

In some cases soporific drugs may be combined with the bath treatment.

Heart stimulants, as alcohol, strychnia and digitalis, may be indicated. In alcohol delirium, however, alcohol should be avoided, and if polyneuritis exists, even small doses given as a stimulant may be distinctly harmful.

When a delirium tremens is threatened during enforced abstinence in the course of an acute illness in an alcoholic person, the case is somewhat different. On this point a diversity of opinion exists, but I am inclined to believe that small doses of alcohol are here beneficial.

In senile delirium, also, the effect of alcohol may be distinctly good, being not only stimulative but sedative as well.

Nourishment should be given at regular intervals as in any acute illness. If, owing to the mental condition, the patient cannot be made to take the necessary amount, tube feeding may become necessary.

PROGNOSIS.

The prognosis is in general good when no underlying, incurable cause exists. In senile conditions and in prolonged alcohol delirium, an outcome in deterioration is to be feared.

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UNDERFEEDING AND ITS ASSOCIATED ILLS.*

BY DUDLEY ROBERTS, M.D., BROOKLYN, N. Y.

The state of nutrition of an individual, a race or a nation in large part determines relative fitness and consequent natural selection. Undoubtedly the dietetic habits are of primary importance in determining this question of nutrition; an improper food supply is detrimental to health, just as abstinence from food is incompatible with life. The effect of innumerable other factors in determining the state of nutrition is very evident but of secondary importance. The best habits tend to increase efficiency under given conditions and to make for the perpetuation of their possessors. The standard customs of a people are, then, actually evolved by choice and the force of circumstances, In any discussion of the best habits of diet it is not proper to overlook these facts; if a choice is to be made between the customs of different individuals or peoples, we have strong *a priori* grounds for the belief that the best habits obtain among the most efficient and the most successful in the struggle.

Whether we turn to history or draw our facts from the lives of those about us, we notice few examples of individuals or groups of individuals showing average efficiency while living on a dietary markedly under average. Among the most efficient physically, at least, the minimum has been shunned and the most liberal food supply has been sought. There are many interesting examples of "physiological economy in nutrition" that stand out as unexplainable exceptions. History furnishes us with no examples of groups of people of such a type achieving or becoming dominant. Generalized reductions in the dietary standards of a highly efficient people, based on theoretical considerations and brief periods of experimentation, seem, therefore, open to serious question.

During the past few years, however, there has arisen a vague idea that the people of this country eat too much; although there has been nothing approaching proof to show that the majority suffer from overeating or would be in better health on a lower dietary standard, this impression has many adherents among the medical profession. Such a broad generalization is hard to attack; it savors of fighting with shadows. Certainly, derogatory statements as to our general average of health are entirely unjustified; the average efficiency suggests no general physical incapacity. There is no reason to believe that the strong would be stronger for diminishing their food supply. If rhyme or reason there be in this prevalent impression, reference is actually made to a class taking little physical exercise, living under high tension, eating improper foods at all hours, frequently with great haste, and ingesting a liberal quantity of alcoholic beverages. The medical mind, struggling with the problem that this class presents, deprecates only the quantity of food ingested, and spreads the idea that overeating is common to all classes. If all instances of poor health be studied with care, free from preconceived prejudice, I am of the opinion that we shall reach an agreement that those who suffer from the over-ingestion of suitable foods eaten in proper amounts at one time and always in a correct way, are indeed few in number.

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* Read before the New York State Medical Society, Albany, N. Y., Jan. 30, 1907.

In the general clamor on this subject the great danger of eating too little has been very generally forgotten. I am convinced that there are many conditions incident to present day life that make for this menace to health. While figures on such a subject as this are not readily given, it is my conviction that more instances of true underfeeding come to my attention than cases of actual overfeeding in the sense in which that term has been used above. The resulting discomfort, loss of efficiency and danger of intercurrent disease indicate to me that of the two evils overfeeding is the preferable one.

There are two reasons that account in large part for the fact that underfeeding is so generally overlooked. In the first place, the present tendency of medicine is toward diagnosis of abnormalities existing in each and every organ. Underfeeding induces innumerable such abnormalities, the fundamental cause of which is not considered. On the other hand, underfeeding is corrected in the prosecution of some of our most valued forms of treatment, and the true cause is unknowingly removed; such therapeutic measures as change of climate, of scene and occupation, life in the open air, exercise, improvement of psychic control, gastric lavage and many tonic medicines depend in large measure on the improvement of nutrition resulting from a more abundant food supply; rest has a similar effect in decreasing the demand for food.

Those who have seriously attempted the determination of underfeeding have encountered a difficult problem; namely, What constitutes underfeeding and how is it to be recognized? As underfeeding and overfeeding are each compatible with unusual leanness or excessive corpulency, we cannot depend on standards of weight to furnish an absolute guide. The *per diem* ingestion of food varies widely in some instances from the standard without disastrous results, and we should not endeavor to decide the question simply on the estimation of the dietetic habits. The different ills occasioned by underfeeding are often caused by conditions detrimental to digestion, or the utilization of food or by depleting processes, and we cannot consider a resulting clinical picture as more than suggestive. The only absolutely final criterion is the effect of an increased diet. I do not advance the absurd proposition that all chronic ailments are to be treated with an increased diet, but I do contend that individuals afflicted with ills known to arise from poor general nourishment, who have the physical conditions suggestive of such a state and who on careful study are found to be living on an amount of nutritive material lower than is usually taken under like conditions of physiological activity, — that such individuals are entitled to the experimental test of treatment. In this way and only in this way have we positive proof of a tentative diagnosis; we are entirely justified in withholding all other possible modes of treatment until this important question can be finally settled.

No effort looking toward a complete knowledge of the gastro-intestinal tract and all its functions is to be spared; every possible cause of excessive waste of energy or destruction of tissue demands a careful search. Fortunately, our methods of accurate observation are constantly being increased. It is clearly appreciated that the removal of all these conditions is of primordial importance; when, however, this is impossible, it is clearly evident that we must supply food in such quantities that the general nutrition is built up in spite of abnormal waste. This is now the accepted practice in tubercular conditions. Failing in our search for a cause of excessive waste, we must turn to an actual failure of intake of nutritive material.

The clinical determination of the amount of true food stuffs habitually ingested by our patients has not been on a practicable basis, and consequently has infrequently been made with any degree of accuracy. We have absolutely no guide in the offhand answers of patients. The weighing of food is impracticable for general use. I have found that the caloric value and nitrogen content of certain bulks of food as eaten may be accurately determined if the patient under cross-examination can state his usual habits for each meal, using simple units of bulk as measures of quantity. Occasionally it is necessary to have records kept for several days. The nutrients and albumin contained in certain bulks of the commoner foods are given in tables published by the writer[1] or can be estimated by the more elaborate method of Fischer.

Daily observation of the diet of different classes of people has convinced me that with the gradual diminution of muscular labor there has been a natural tendency to lessen the food intake; in consequence of this our food standards to-day are, on the average, somewhat lower than those compiled by Voit, Atwater and others of an earlier period.

From an analysis of cases occurring in hospital, clinic and private practice it would seem that there are three chief causes of habitual underfeeding,— the effort to save time and money, the loss of appetite and complaints referred to the stomach. One or more of these three causes can almost always be found, and each tends to become more operative as the struggle becomes keener. Inherited customs might be spoken of as playing a predisposing part. The curtailment or omission of meals is exceedingly common because of the great demands of commercial and school life. Experience teaches that less discomfort results if meals are curtailed than if bolted, but underfeeding may gradually ensue. The cost of food is relatively high in our larger cities and among the poorer classes economy is practised to a dangerous degree. Loss of appetite is dependent on many conditions of mind and body; indoor life, physical and mental fatigue and emotional states are particularly common causes. The appetite may be described as "ravenous," but a few mouthfuls of food cause satiation. Loss of appetite is a condition incident to prolonged undernourishment, and the individual who for any reason eats too little food generally loses the natural desire.

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[1] Jour. Amer. Med. Asso., April 21, 1906.

In a very large proportion of cases underfeeding is due to attempts to relieve true or fancied gastro-intestinal derangements. The complaints commonly held to augur digestive disorder are many and varied. Relief of digestive embarrassment is apt to follow the lessening of the demands on the stomach, and if this diminution of food be temporary or carried only to a point of safety it is a valuable mode of treatment for many conditions. When spontaneous or induced recovery does not come about, the sparing of the stomach continues, and to the real or imagined trouble is added undernourishment of the entire body and actual gastric weakness. The physician is often responsible for this underfeeding, in failing to see that sufficient food is taken to keep up the nourishment. We have been careless of the fact that dietetic prohibitions are dangerous in the hands of those willing to follow them. The uncured chronic sufferer is apt to collect the advice of many physicians and try to cure himself by avoiding rich foods, starchy foods, fatty foods, sweet foods and meats.

The *clinical picture* of underfeeding is necessarily that of the various functional conditions to which it gives rise. The part of the body most affected by the general undernourishment depends on the constitution of the individual mind and body and on the work each part is called upon to perform. The nervous system is most commonly affected, as would be expected from its highly organized character; this is shown by deficiency or aberrancy of innervation, or by some irritability of weakness. Clinically there are certain types of ills most commonly seen to be due to underfeeding, and their separate study is warranted.

GASTRIC TYPES.

Functional disorders undoubtedly constitute the vast majority of all gastric abnormalities; such disorders are incident to almost every disturbance of health, but normal function returns on the resumption of proper conditions. There are, however, certain disturbing factors which tend to persist unless removed in the course of time by chance or conscious effort; in this manner a large proportion of "chronic dyspepsias" are to be accounted for. That all the various abnormalities of gastric function may result from poor general nourishment has frequently been suggested. That such abnormalities very frequently arise from habitual underfeeding is not at all appreciated, but can readily be proven by the criteria we have suggested. This has been the entire cause of such a large number of cases coming directly under my observation, cases of months' or years' duration, cases that had previously been subjected to all other plans of treatment, that I feel it is impossible for me to exaggerate its importance. Hyperacidity, subacidity, anacidity, myasthenia, atonic dilation, peristaltic unrest and spasm of the orifices, each with its particular clinical picture, may be caused simply by the ingestion of too little food. Subjectively there are complaints of belching, slight or excessive, of bloating after meals, constant or late afternoon nausea, nervous vomiting or regurgitation, loss of appetite or anorexia, epigastric pain or discomfort soon after taking food. Usually the patients are of a nervous type; generally they are rather thin, but sometimes pale and fat. Enteroptosis is common, but not always present. We are all familiar with the old and new lines of treatment to stimulate or depress the activity of the stomach. If we are interested in the study of actual causes we must probe into the dietetic habits not so much in search of objectionable foods as to see if a sufficient amount of food has been eaten. We surely cannot expect to find normal stomach functions in an undernourished individual, and yet the average dyspeptic continues to eat too little while all measures are tried except the rational cure.

We must admit, however, that having determined what we should judge to be an insufficient dietary, we are confronted with a rather anomalous situation, for the increased diet must be given to an individual who attributes many of his complaints to the ingestion of even a small amount of food. In practice it is seen that this difficulty is more imagined than real, as the patient soon discovers that two or three times the amount of properly selected food can be taken without causing more trouble. In the course of a few weeks the stomach begins to function normally and irritability disappears. The weight and general condition show steady improvement. Failure to achieve the desired result, if proper amounts of food are actually taken, shows us that we are indeed dealing with a condition other than underfeeding.

Organic changes in the stomach or neighboring organs generally tend to result in underfeeding and its associated disturbances of function, but the cure or amelioration of the organic disease is necessarily the first consideration. It should be recognized, however, that the resumption of proper dietetic habits is not necessarily spontaneous and that the persistence of underfeeding is a good and sufficient reason for the continuance of digestive disturbances following actually successful medical or surgical plans of treatment.

INTESTINAL TYPES.

The various intestinal neuroses, nervous diarrhea, mucous colic and atonic and spastic constipation are frequently found to be due to the ingestion of insufficient nourishment. This is the one dietetic plan that is rarely suggested for these conditions, but is most often of value, as it removes the causative condition while other plans depend on blandness to quiet or irritation to stimulate peristaltic activity. The patient is apt to learn, after months of suffering, that a choice of food makes comparatively little difference in these neuroses, and admits complete discouragement. If the condition is due to underfeeding, the ingesting of a generous diet and one chosen with comparatively little regard to stimulation or sedation of peristaltic activity soon shows remarkable results.

Chronic catarrhal conditions of the bowel are frequently complicated by functional disturbances from underfeeding, and the apparent failure in the treatment of some cases of colitis may be attributed to the oversight of this complication.

ANEMIC TYPE.

Although we have long known how little iron was needed by the body and how small were the daily losses compared with the iron content of almost any diet capable of sustaining life, we have continued to administer iron to the individual with hemoglobin below the average, and have constantly been on the alert to find a more efficacious form of this element. We have no reason to suppose that the red cells have the first call on the ingested proteid for use in the making of hemoglobin. A deficiency of available proteid means deficiency of hemoglobin, whether the deficiency be due to failure of proper intake or to the abnormal destruction of the ingested proteids. I am convinced that we should have these two possibilities in mind in every case of simple anemia. In the absence of those pathological conditions known to affect dissipation of energy or tissue destruction we may find, then, either a diet deficient in total nutrients but abundantly rich in proteid which is used up as a fuel food, or a diet markedly poor in proteids although little below the standard in total nutrients.

Among young children, school girls and young women there is a large number who owe their anemia to this kind of underfeeding. Some have an aversion to all albuminous foods and are overfond of fruit and candy. Others have no particular aversions, but eat little of anything. The resulting anemia is not evidenced alone by the color or estimation of hemoglobin, but often leads to attacks of faintness, dyspnea on exertion, palpitation of the heart, anemic hemorrhages and other symptoms of the true anemic state. Many of these cases have no nervous symptoms or actual gastro-intestinal disturbances. The condition of anemia has usually been recognized by all their medical advisers and iron in all its various forms administered for months. The reply to absolute and strict regulation of the diet is very rapid, if underfeeding is the true cause of the anemia. In every case of simple anemia without discoverable organic cause, this is the rational line of therapy.

NERVOUS TYPES.

The management of the class of conditions spoken of as the neuroses presents the most difficult of medical problems. Their complete understanding requires more knowledge than we possess of the psychic functions and their relation with the physical body. We are almost necessarily led into the maze of metaphysical speculation. Fundamental differences of opinion seem unavoidable. Formerly all treatment was physical, while to-day the pendulum is swinging in the other direction. It seems impossible to deny the mutual interdependence of the mind and the body. It is only in rare instances that we fail to see subversion of the higher mental faculties in depleted physical conditions. Practically it is observed that the so-called neuroses and poor general nourishment usually go hand in hand. Many have called attention to the almost universal habit among this class of individuals of eating less food than their stronger neighbors. Emphasis has usually been laid on the necessity of rest and "overfeeding" when the condition of neurasthenia or nervous exhaustion is reached. No doubt this type is more in need of radical treatment, but all about us are numbers of poor forlorn individuals living in a state of semi-invalidism, possibly able to work, but continually afflicted with "nerves"; with easily developed mental and physical fatigue, headaches and backaches, vertigo and nausea, insomnia and depression of spirits, all manner of aches and pains and disturbances of function. Some owe their condition purely to mental habits, but experience soon teaches that a stronger mind and a less irritable nervous system naturally follows an improvement in nutrition. In an astonishing number of instances a restoration to usefulness and health follows the ingestion of proper foods. The institution of the proper habits is the difficult problem to be worked out in each individual case; the tact and resourcefulness of the therapeutist are taxed to the uttermost. Harmful auto-suggestions must be combated by reason and by encouraging suggestions. It is in this direction that our work as practitioners is broadening out. We are learning to treat not the body, but the whole man.

IMMUNITY AND THERAPEUTIC ACTION.

BY THOMAS J. MAYS, A.M., M.D., PHILADELPHIA, PA.

Belief in the existence of a principle that protects the animal organism against disease and injurious influences is coeval with the history of medicine. The *vis medicatrix naturæ* of Hippocrates, the *archæus* of Paracelsus, and the *vital spirit* of van Helmont, were but various expressions of this faith. The fact that typhoid fever, smallpox, yellow fever and many other diseases protect against second attacks is a practical verification of this principle. The use of tobacco is another example of this. The novitiate becomes intoxicated and violently nauseated when he first begins to smoke or chew, which in the course of a short time passes off, never to reappear so long as the habit is maintained. A similar immunity to injurious influences prevails throughout the vegetable kingdom.

In what does this immunity consist, and what is its possible explanation? If one answer stands out more clearly than another, it is that it is not a guarding "spirit," or an "entity," which is separate from, and independent of, the normal physiologic processes of the body, as was believed in former days; but that it constitutes an integral and essential part of living matter. Spencer has defined life, proximately, as an organism which maintains its moving equilibrium by forces acting from within and from without; and in keeping with this definition, let us make a crude comparison between this moving mass and a spinning top. A top continues its moving equilibrium until it is overcome by the antagonistic action of external incidental forces. Now an antagonistic incidental force brings about one of two results. It either overthrows the top and brings its moving equilibrium to a premature end, or it interferes with it to such a degree that it will have to readjust itself to a new and an altered moving equilibrium. The same holds true of living matter. The unfriendly forces that disturb but do not destroy its moving equilibrium end their effects in establishing an altered equilibrium which still belongs to the confines of health. The toxic effects of tobacco, for example, establish a constitutional condition different from that which obtained before this agent was taken, bring about a readjustment of the bodily forces, and produce a toleration for quantities of this drug, which in the beginning provoked such disastrous results. Nor is there striking evidence that, if used in moderation, it produces any perceptible harmful action in the great majority of those who indulge in it. Seasickness, a disorder of the nervous system with a well recognized pathology, caused by the mechanical motion of ocean vessels, is another instance in which readjustment of bodily conditions conform to the action of hurtful external influences. Very few people who go on long sea voyages are entirely exempt from this disease, yet a single pronounced attack will give them immunity from it so long as they follow the sea. Both tobacco poisoning and seasickness are examples, then, in which bodily conditions have been forced to rearrange themselves into other but also normal attitudes, by the influences of unfriendly external forces, and there is no doubt that these results represent a broad general physiologic truth which underlies many other similar phenomena, like those of smallpox, yellow fever, typhoid fever, measles, scarlatina, etc.

What, then, is the nature of this immunity? What is its mechanism, and where is its location? Great efforts have been made in recent years to show that it consists of a process known as phagocytosis — a process in which the leucocytes of the body are supposed to be engaged principally in the special work of attacking and of devouring pathogenic organisms, and which is designated as a warfare against disease. That phagocytosis exists in the body is true, but whether its physiologic function consists in waging special war against disease is a different thing. Its element is a leucocyte in activity, possessing the characteristics of other unicellular organisms, *viz.*, of enveloping fragments of blood cells, of muscular and elastic fibers, of fat and pigmentary cells, of dust, bacteria and other foreign bodies, and of disintegrating them.

Viewed from any standpoint that it may be, there is no doubt that the function of phagocytosis is that which is exercised by leucocytes everywhere, and plays a very important part in the nutritive processes of the body, but the effort to compel it to assume the special and unnatural province of a disease-destroyer is, notwithstanding its present notoriety, too nebulous to require serious reflection. One of the highest authorities on pathology in Germany states that to define this process, the function of which is to absorb nutritive material, as a warfare against the causes of diseases, does not even rise to the dignity of a poetic conception of this phenomenon.[1]

It seems to the writer that by far the more feasible explanation of the genesis of immunity rests on purely physical principles. When two forces of unequal strength come in contact with one another, the stronger causes the weaker to move in a direction parallel to its own, and to a point where a mutual balance takes place; and although the latter may tend to rebound and to assume its former position, yet through the continuous operation of a series of such impacts, it will finally be forced to seek a new or another state of equilibrium, in which it will remain after the attacking force has ceased to act.

When a violent storm descends on a forest, each tree, individually and collectively, is forced to bear the brunt of the battle. The more unprotected, the older and feebler, trees and the weaker and more exposed branches of the younger and stronger trees, will be the first to go down in the onslaught. Even the strongest will be put to the severest test, and only those remain which possess the reserve power to fully react against the storm's fury. Every individual surviving tree is necessarily forced into another and a stronger equilibrium; and collectively, owing to the strain and furious ordeal to which it was subjected, and to the weeding out of many of its encumbering elements, the forest is physically stronger, less vulnerable, and far more able to withstand and resist a second attack of the same kind, than it was before. In other words, the forest is immune to another similar assault, and will remain so until time and circumstance undermine its stability.

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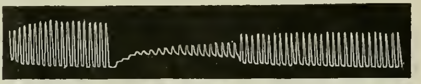
[1] "Ein Vorgang (phagocytosis), der die Aufnahme von Nahrungsmaterial bezweckt, als einen Kampf zu bezeichnen, ist nicht einmal für eine poetische Betrachtungsweise dieser Lebenserscheinung zulässig." Ziegler, article, Entzündung. Eulenburg's Real-Encyclopædie, vol. vii, p. 88.

The reaction between bodily tissues and the impact of external or internal incidental forces is, in effect, the same as that which takes place between the forest and the storm. Thus the effects of a slight blow are readily overcome; but the shock of severe injury is often grave enough to disturb the bodily equilibrium to such a degree that reaction is impossible, and death is the consequence. A strong and healthy body is much less liable to contract disease than one which is already partly broken down. Mortification and gangrene are more prone to follow wounds and injuries in individuals with depraved health, than under opposite and more favorable conditions. Wounds heal more rapidly and kindly in strong than in weak bodies. The same conflict between health and disease is witnessed in chronic ulcers, where the line between health and disease advances and recedes, causing the ulcer to appear large at one time and small at another, in direct correspondence with the strength and weakness of the part, and it is a noted fact that the line of treatment which is pursued universally is that of endeavoring to maintain the local and general resistance of the body. In threatened invasion of mortification, or of gangrene, the early application of stimulating poultices will sometimes avert the danger, or at least tend to circumscribe the process, and limit it to a smaller area than if left to its unrestricted course.

The *vis medicatrix naturæ* is, therefore, in all probability, an innate protective property of all tissues — a part of their very physiologic constitution, and does not reside in any separate special mythical or supposed real entity. Perhaps the most exact demonstration of the truth that this power of organic reaction or resistance is located, at least in the muscular tissue, and that it may be enhanced by or interfered with by drug-action, is found in the following graphic record given by the isolated frog's heart, under the influence of blood, curare and chloroform. Thus it has been discovered that curare 1: 80,000, *i. e.*, one part of curare to eighty thousand parts of 2% solution of blood, will produce the first series of tracings given in the illustration below. These tracings are slightly higher than those which blood alone is able to produce, as has been repeatedly proven. If, immediately after the curare tracings have been obtained, the heart is subjected to chloroform, 1: 500, *i. e.*, one part of chloroform to five hundred parts of 2% blood-solution, the second series of tracings is produced. Now, if after this a 2% solution of blood containing the same proportion of curare and chloroform, *i. e.*, one part of curare to eighty thousand, and one part of chloroform to five hundred parts of 2% blood-solution, is transfused through the heart, the third series of tracings is obtained.

What is the interpretation of these phenomena? First, the tracings which the heart is able to give with blood alone (not shown in the illustration), and which are slightly lower than those given by curare, in the proportion of 1: 80,000, must be taken as a standard of the normal strength or resistance of the heart muscle. Second, the tracings which are given by curare, 1: 80,000, demonstrate that this dose of curare is capable of increasing the heart's strength or resistance over and above the point which blood is capable of giving alone. Third, chloroform, 1: 500, depresses or almost entirely overcomes the heart's resistance or reaction, which is shown in the diminutive and depressed tracings; and, fourth, it is demonstrated that by combining curare in the proportion of 1: 80,000, with chloroform 1: 500 — the same doses which separately produced the first and second series of tracings — the curare dose will reinforce the physiologic resistance or reaction of the heart muscle to such a degree that it is enabled to successfully antagonize and almost wholly throw off the disintegrating effects of the chloroform dose, as is witnessed in the third series of tracings, which are nearly as high as the first series. In other words. the conflict between the two drugs is not a chemical, but a physical one. in which the heart muscle is simply the medium through which the stimulating influence of curare and the depressing effects of chloroform are enabled to display their antagonistic powers when properly adjusted.



Curare. 1 80,000. Chloroform. 1:500. Their combined effects.

That which is true of the antagonism between curare and chloroform is also found to be true of that of the following named drugs:

	Names of drugs and their dilutions with 2% blood-solution.		Elevations of tracings in millimeters.
	Atropine,	1: 160,000	13
I.	Alcohol,	1: 25	4
	Effects of their combined action,		8
	Aconitine,	1: 160,000	15
II.	Ether,	1: 5	5
	Effects of their combined action,		10
	Curare,	1: 80,000	18
III.	Ether,	1: 10	10
	Effects of their combined action,		18
	Atropine,	1: 160,000	10
IV.	Ether,	1: 10	7
	Effects of their combined action,		10
	Atropine,	1: 160,000	8
V.	Chloroform,	1: 500	2
	Effects of their combined action,		9
	Curare,	1 :80,000	12
VI.	Chloroform,	1: 500	3
	Effects of their combined action,		9
	Aconitine,	1: 160,000	16
VII.	Chloroform,	1: 500	4
	Effects of their combined action,		15
	Strychnine,	1: 160,000	14
VIII.	Chloroform,	1: 500	9
	Effects of their combined action,		15

	Names of drugs and their dilutions with 2% blood-solution.		Elevations of tracings in millimeters.
IX.	Aconitine,	1: 160,000	16
	Curare,	1: 26	5
	Effects of their combined action,		15
X.	Atropine,	1: 160,000	15
	Strychnine,	1: 1,000	4
	Effects of their combined action,		14
XI.	Strychnine,	1: 160,000	17
	Atropine,	1: 1,000	4
	Effects of their combined action,		15

Several things are made very clear by the preceding considerations. One is, that drugs expend their forces directly on the bodily textures, and not on any hypothetical intervening medium. Another is, that small or minimum doses enhance bodily resistance, and that large or maximum doses depress or paralyze the same. And still another is, that minimum doses successfully antagonize the disintegrating effects of maximum doses. These antagonistic effects are displayed here as decidedly as if they had been wrought by the two mechanical forces of attraction and repulsion, and they give us an exact mathematical demonstration of the power which drugs have of supporting and preserving life when attacked by adverse forces. Now, if we recognize the fact that disease is but the manifestation of forces which move in a direction adversely to health, and substitute these for the operation of the maximum drug doses in the above illustrations, do we not have a clear picture before us, as to how a large class of drugs in minimum doses combat disease, *viz.*, by stimulation? On the other hand, is it not equally clear how maximum doses possess the property of depressing hyperactivity of the bodily textures — a pathologic condition which lies at the bottom of many important diseases — and thus give us at least a fundamental idea of the action of two other large classes of drugs, *viz.*, antiseptics and antipyretics?

DIAGNOSIS AND TREATMENT OF DIPHTHERIA IN YOUNG CHILDREN.*

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THIS paper is not intended to be a complete consideration of the diagnosis and treatment of diphtheria in young children. It deals with diagnosis particularly in young children, because it is among them that most cases occur, and more especially because the younger the child, the higher the mortality and the greater the urgency of diagnosis and treatment. Moreover, since the general use of antitoxin, the mortality in the very young has not been reduced proportionately to that in older patients.

In making a diagnosis of diphtheria, we have two methods: the bacteriological and the clinical.

The bacteriological method is subdivided into immediate examination of smears and late examination of cultures.

Diagnosis by smears is unreliable, as when smears show no bacilli, bacilli may be shown by culture. By a smear you can only note the presence or absence of bacilli, like the Klebs-Löffler. However, this direct method is suggestive or corroborative when positive, but when negative should be disregarded entirely.

The examination of cultures is the most certain method we have of diagnosticating diphtheria. But is this as valuable a method for purposes of treatment as the clinical diagnosis?

In recent years laboratory diagnosis has properly acquired a high position in the minds of most physicians, but I believe, in the estimation of of many, its position is too exalted. I have had sufficient experience in the midst of laboratory diagnosis to know that it has some fallacies. Aside from the possibility of error, bacteriological diagnosis must use up valuable time; in the case of diphtheria, probably, twelve hours or more. Can we afford this time for purposes of treatment?

Clinically, by certain symptoms and signs familiar to us, we can usually recognize a probable case of diphtheria. There is quite a possibility of mistake; still, bacteriological examinations have generally shown earlier clinical diagnoses to have been correct.

I believe that textbooks in their discussion of diphtheria mislead. They follow the old rule of etiology, pathology, symptomatology, diagnosis, prognosis and treatment, particularly, treatment follows diagnosis. For diagnosis they teach you to rely upon cultures. Here, it seems to me, is a disease in which, especially in young children, treatment should come first upon suspicion. Then positive diagnosis should follow for purposes of quarantine. In the hands of the general practitioner, the reliance upon culture examinations has a damaging effect upon treatment. A physician may be reluctant to make a diagnosis of diphtheria. He may feel that he is working in the interest of his patient, or the family of the patient, to avoid quarantine if possible; to wait for the report of the culture, hoping that it may be negative. He feels justified in such delay because he follows the instruction of the books. He knows that laboratory diagnosis is the surer diagnosis. He knows that his two best diagnostic aids are, first, the report of the culture; second, the spread of the membrane.

In medicine it is good to feel certain; perhaps in a dozen hours one can read, "Diphtheria bacilli found," or can note the visible spread of membrane, although the invisible spread of toxins has been vaster. One then has diagnostic security; the child has less chance of recovery. I believe that the proportionately high mortality of diphtheria in young children is due in part to reluctance to call certain suspicious cases diphtheria and to institute quarantine. An older patient can naturally better tolerate such delay.

We, as practitioners, want the earliest possible diagnosis, because the cases treated earliest have given much the best results. Then, too, isolation and immunization are more certainly accomplished.

Diphtheria antitoxin has been shown to be harmless, and may be beneficial to patients without diphtheria, *e. g.*, in tonsillitis and in scarlet fever. We shall then do no harm in giving antitoxin to a child without diphtheria. It must appear to us that lives have been lost by waiting for more diagnostic evidence, and that lives have not been lost through giving antitoxin on suspicion. If so, for purposes of treatment, which implies prompt treatment, the clinical diagnosis must be the best. Its only possible faults are that we may unnecessarily disturb families and deprive them temporarily of their freedom. Such failings seem trivial when contrasted with the fact that we must otherwise sacrifice lives.

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* Read to the Portland Medical Club, June 6, 1907.

I shall depart from this debate to mention a few cases and a few facts which I think of relevant interest. Pediatrists call attention to the great importance of the examination of the throats of all sick children. Failure in this I know has harmed patients and physicians.

I recall a case of a two-weeks-old baby whose only symptom noticed by its mother was that it would not nurse. Much to my surprise its throat showed advanced diphtheria.

In cases of doubtful diagnosis repeated throat examinations should be made. Young children, sick with diphtheria, may show no evidence of membrane formation for several days. Last winter I watched a fifteen-months-old baby for several days unable to make a diagnosis. The only symptoms were moderate fever, apathy, anorexia and occasional vomiting. The physical examination was negative until on the third day a membranous exudate appeared upon one tonsil and proved to be diphtheritic.

That very young children rarely have follicular tonsillitis should be borne in mind. Recently I noticed the statement of a German physician, Seibert, that in very young children, a probable diagnosis of diphtheria should be made upon slight evidence. It brought into my memory a patient I saw a year ago, a child two and one-half years old, sick about twelve hours with moderate fever and lassitude. On examination one tonsil showed two small patches no larger than those ordinarily seen in follicular tonsillitis, but the unilateral position and especially the age of the patient made me suspicious enough to give 3,000 units of antitoxin. The patches had nearly disappeared the next day, by the time I had found bacilli in a culture. I have seen several similar cases, which makes me believe that they are not uncommon.

My conclusions in diagnosis are that in young children, a probable diagnosis of diphtheria should be made upon comparatively slight evidence; that the dangers of waiting are so great that a clinical diagnosis is of first importance and all sufficient for the purpose of treatment; and that cultures are of value mostly for purposes of immunization and quarantine.

In larger cities where the mortality of diphtheria was from 35% to 50% without antitoxin, it is now less than 10%. Cases treated the first day show a very low death-rate, *e. g.*, in the Boston City Hospital, 180 doctors and nurses had diphtheria without a fatal result. In young children the urgency of early treatment is naturally greater. It is a fact that in early life the mortality of diphtheria with antitoxin has not been proportionately diminished. Under two years of age the mortality is still about 30% in recognized cases.

This higher death-rate in early life is attributed to a greater susceptibility to the toxins and to the greater frequency of pulmonary complications.

It seems to me that diphtheria in an infant should be entirely amenable to a specific treatment that is given early enough. I believe the higher mortality is at least in part due to such reasons as failure in the routine examination of throats, the reliance upon cultures, *i. e.*, the failure to make a diagnosis without delay, and the use of too small doses of antitoxin.

The kind of antitoxin employed is of importance, and I believe that only the newer concentrated forms of antitoxin, of which Lederle's is a type, should be used. Concentrated antitoxin is much more easily injected, — a fact of great value in treating children. It encourages the use of larger doses, and the untoward effects of the horse-serum are less.

I do not intend to go into detail of dosage, but will mention my opinion, that in young children the initial dose should average 3,000 to 4,000 units rather than less, because recovery is quicker and it is less often necessary to repeat the injection, and because, appreciating the harmless character of antitoxin, it is better to give too large rather than an insufficient dose.

In a general way it may be stated that the dose of antitoxin is not dependent upon age, but upon the apparent severity of the disease and its duration when discovered.

One should remember that a nursing mother, sick with diphtheria, excretes antitoxin in her milk. Last fall I had such a patient with a suckling one month old. The mother had a severe form of tonsillar diphtheria. Her boy, six years old, developed diphtheria within twenty-four hours; but the baby nursed at the mother's breast and remained well. This supposition of antitoxin in the breast-milk may be incorrect or only a partial explanation. Recently S. Amberg found that all well nourished young infants have a high opsonic content of the blood; that the value of the opsonic content is in proportion to the nutrition of the infant; that breast-fed infants resist disease better because they are generally better nourished.

The Immediate Prophylaxis of Diphtheria.

This is generally considered to mean the administration of an immunizing dose of antitoxin to all exposed; but it should mean more. A physician showing a proper regard for other children, either wears a special hat and gown in attendance, afterward throroughly cleanses the exposed portions of his person, or the equivalent of these, or else gives an immunizing dose of antitoxin to all other children whom he attends at the same time. There is no doubt about the possibility of carrying the disease in the clothes. Most physicians are willing to take the time for good surgical technic, but I believe many are not willing to take the time for good medical technic, of which this is a good example.

Quarantine. — In Portland, all patients receiving board of health antitoxin treatment are quarantined three weeks. Of course all cases of diphtheria should be quarantined, but I do not believe that all who receive antitoxin treatment should be long quarantined; for example, if in a suspected case antitoxin is given as a safeguard, and if by cultures the case proves not to be diphtheria, I think quarantine should cease. A careful board of health may reply that some physicians would fake cultures, that all cases of diphtheria would not be kept in quarantine. On the other side there is the fact that doctors, at times disliking to quarantine unnecessarily, will, to be more certain of diagnosis, let a mild case advance; and so while the use of board of health antitoxin compels quarantine, lives of patients will perhaps unconsciously be risked. I know of a case of a child three years old, living in a boarding house, which one would not like to quarantine unnecessarily. The diagnosis of diphtheria being uncertain a bacteriological examination was awaited. The bacteriological report was positive and twenty-four hours later the child died.

I believe really that such delays are faults of physicians and not faults of board of health rules; and, finally, that it is surely better to quarantine a number of families needlessly than to lose one patient through fear of it.

A SIMPLE METHOD OF RECONSTRUCTING NERVE PLEXUSES.

BY R. M. SMITH, M.D., AND E. W. TAYLOR, M.D., BOSTON.

A COMMON difficulty in the study of anatomy is the visualizing of relations. This is particularly true of the nervous system. However elaborate diagrams and plates may be, they fail to impress the important spatial relations of various structures. Dissection naturally comes to one's rescue in this respect, but even here the natural difficulties of continuing work in the dissecting room, after the early student years, are practically prohibitive. Any simpler resource, therefore, which will tend to impress upon the mind the relationship of correlated parts is of value, not only in teaching anatomy, but also in learning it. Hence have arisen various methods of more graphic representation than even the best illustrations can supply. Clay modeling, for example, has long been used with great success in the reconstruction of internal organs and, to some degree, in the study of the nervous system. Herring[1] describes in a convincing way the value of clay modeling as applied to the nervous system, and the extraordinary work of Florence R. Sabin in reconstructing the oblongata is well known to all students of the subject.

Perhaps the most elaborate attempt of this sort in teaching the finer anatomy of the central nervous system is described by Hardesty,[2] of the University of California. In a paper entitled, "A Class Model of the Spinal Cord," Hardesty describes in great detail a method of tracing the course of fibers in the spinal cord and lower oblongata by graphic methods. His plan is to make several cross sections of the spinal cord by means of wax plate models, accurately outlined from actual specimens. Stout wire is then used to connect the levels and to represent the various fiber tracts which may be easily distinguished by painting in different colors. By these means it is possible to build up in very considerable detail the essential internal structure of portions of the nervous system. In fact, the method has proved so practicable in Hardesty's hands that the students are expected personally to make such models as part of their training in the anatomy of the nervous system. It need hardly be said that the details which such a model brings out are not to be obtained through dissection, nor through the study of sections by the microscope, and yet these are the important points and far overbalance in significance to the clinician the descriptions which may be derived from textbooks and the ideas which are obtained from the ordinary course in descriptive anatomy.

A matter of considerable difficulty to the medical student is a proper understanding of the significance of nerve plexuses in relation, on the one hand, to segmental lesions of the cord, and, on the other, to disturbances in the distribution of peripheral nerves. In other words, the exact relation of nerve roots to peripheral nerves is not forthwith apparent and cannot be made so by dissection. Stimulated by Hardesty's very much more elaborate work, it occurred to us that a simple means of demonstrating by a graphic method the relation of nerve roots to peripheral distribution would be of value in teaching. In carrying out this general idea, the following means suggested themselves which are absolutely simple and at the same time demonstrate in striking fashion the points desired.

A piece of stiff cardboard is the first requisite. On this cardboard, preferably white, are specified the various nerve roots which enter into the composition of the plexus. Each of these nerve roots is represented by a single colored yarn or worsted, and by as many strands as the final distribution of the particular nerve root in the periphery may demand. As the various nerve roots, each represented by its color, break up in the plexus, the strands of worsted are separated and joined with those which come from other nerve roots according to the ascertained anatomical facts, ultimately emerging as the individual peripheral nerve containing fibers of the various nerve roots from which the special nerve has origin. At points where the plexus divides, and at any others, for the purpose of securing the yarn to the underlying cardboard, we have found the most convenient means the use of very fine wire which may be looped over the strands of worsted and fastened on the under side of the cardboard. The result of this very simple device for making clear the components of peripheral nerves is entirely satisfactory. It is possible at once to determine precisely the nerve roots from which a given peripheral nerve springs and conversely to determine how wide a peripheral distribution any single nerve root has. A reference to the accompanying drawing will illustrate the method better than a more detailed verbal description.

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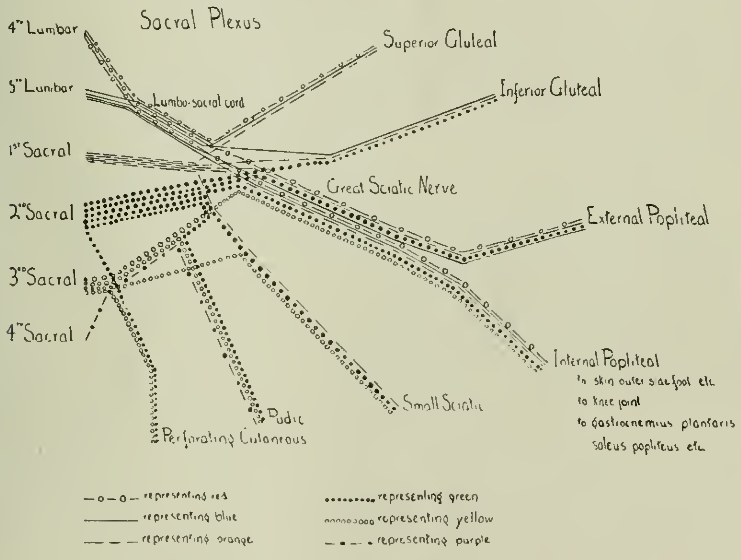
[1] Herring: Clay Modeling in the Study of Anatomy. Jour. Am. Med. Asso., 1904, xliii, 454.

[2] Hardesty: A Class Model of the Spinal Cord. Bull. Johns Hopkins Hosp., 1906, xvii, 43.



Representing the six segments and their nerve roots which go to constitute the sacral plexus by variously formed lines, which in the actual model are much more graphically represented by different colored worsteds, it may easily be seen how the plan of the plexus may be worked out. For example, the inferior gluteal nerve is represented in the fifth lumbar and first and second sacral nerve roots, the great sciatic in all the nerve roots, excepting the fourth sacral, etc. On the other hand, should one wish to determine quickly what the peripheral representation, for example, of the first sacral nerve root is, it may forthwith be seen that the inferior gluteal, external and internal popliteal, and the small sciatic nerves derive elements from it. If carried out further, there is no difficulty in determining the segmental distribution of the sensory nerve supply, a matter which is apparently puzzling to the student.

The plan of reconstructing the plexuses, as outlined in what we have said, is so simple and carried out with so little expenditure of time, that it might well be used for an entire class. Furthermore, the materials necessary are so inexpensive and so easily procured that a large class could be provided at extremely small cost. The essential advantage of such a method of studying nerve supply is that the student does the work himself, referring naturally to anatomical textbooks for details of distribution. We have no question that once having worked out the plexuses in this way at first hand and unaided, a student would have a clearer and more practical conception of their structure than through many hours devoted to textbook descriptions and even to dissection. The reconstruction of plexuses, in this manner, has also much practical importance from the standpoint of neurological diagnosis. It is not likely, after such individual work, that a person would forget the difference between a segmental or nerve root lesion and one in which the peripheral nerve was involved. It is not to be questioned, also, that the relatively small amount of work and study requisite to the correct construction of the plexuses would be of very material value in rendering the knowledge so obtained permanent.

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Antituberculosis Dispensary at Bahia, Brazil. — The corner-stone of a dispensary for the aid of the tuberculous was recently laid at Bahia, with appropriate ceremonies, the governor of the state presiding. It is the work of the Bahia Antituberculosis League, which was organized last spring by the professors of the medical faculty and others.

Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

Thirty-fifth Annual Meeting, Held at Atlantic City, N. J., Sept. 30, Oct. 1, 2, 3 and 4, 1907.

The Laboratory Section held its meetings Sept. 30, under the chairmanship of Dr. Hibbert W. Hill, of Minneapolis, Minn.

The General Association met in the West Solarium of the Marlborough-Blenheim Hotel, with the president, Dr. Domingo Orvananos, of Mexico City, in the chair. One hundred and seven applicants were elected to membership from different sections of America and Mexico.

There were two new sections organized at this meeting: first, a section composed of municipal health officers; second, a section on vital statistics.

A committee appointed to invite the Conference of State and Provincial Boards of Health of North America to affiliate with the association made its report, but this conference did not deem it prudent to affiliate with the association for the reason that it had separate and distinct functions.

THE OUTLOOK FOR A GENERAL SYSTEM OF REGISTRATION OF VITAL STATISTICS.

Dr. Cressy L. Wilbur, chief statistician, Bureau of the Census, Washington, contributed a paper on this subject. The author presented a map showing the extent of the registration area in 1895 and 1907. In 1895 there were only 8 registration states for deaths. In 1907 there were 15 registration states for deaths.

There were no registration states for births in 1895, and even in 1907 the registration area for births was represented by only a few interrogation marks on such states as Massachusetts, Pennsylvania and Michigan, indicating their possible addition within a short time, owing to the operation or effective enforcement of recent legislation.

Study was made of the conditions of population, as density, literacy, etc., affecting the extension of the registration area, and of the favorable and unfavorable circumstances relative to the adoption of effective laws. It was estimated that in the light of experience of slow progress in the past, the United States could hardly expect to have a satisfactory system of registration of vital statistics, including both births and deaths and covering the entire country, much before the middle of the present century, at which time, if all of the present agencies now effectively co-operating shall accomplish this result, the nation will have reached a place of advancement in this respect that would be quite equal to that occupied at the present day by Japan.

A standard certificate of death had been prepared by the association and the Bureau of the Census, and extensively employed with resulting advantage in causing uniformity of the data collected; yet many states and cities had continued to employ their old forms, whose variety was multitudinous, and offices that had adopted the standard blank had not hesitated to materially change it, so that the information obtained was frequently entirely different from what it purported to be when returned to the Bureau of the Census upon the actual standard blank.

The amazing thing about the way in which many deaths from tuberculosis were reported, as abscess of the chest, brain fever, marasmus, etc., was the general indifference of registration officials to the necessity of securing accurate statements of causes of death.

Finally, he said if the people of the United States wanted a thorough system of registration of vital statistics they could get it. It would not be necessary to wait fifty or sixty years for the slow adoption and enforcement of adequate laws. The process could be hastened, and without departing from the constitutional requirement that the primary control of registration should be by the states, and not by the federal government. If Congress, if the people of the United States, were really interested in this matter, and were determined that this thing should be done, the states would readily be brought into line.

DISCUSSION.

Dr. John N. Hurty, of Indianapolis, emphasized the importance of accurate registration of vital statistics. They have been trying to collect accurate statistics of deaths in Indiana, and now they are getting over 95% of deaths recorded, while the United States Census Bureau required but 90%. The medical profession, as represented by the Indiana State Medical Society, had done everything it could, while individually the members of the medical profession at large had not come forward and assisted in this work. They had, however, been compelled to do so and give the records of death. Indiana was now prepared to give a complete registration of births. The law was behind the state board, imposing a severe penalty for not recording births and deaths. If a dead body was buried in Indiana without a permit, and that permit was not issued until a certificate of death was returned complete, the coroner disinterred the body, and required the necessary data on the death certificate. They had a special police officer whose income was dependent upon fees, and he was continually on the watch for instances of illegal burial. According to the law, births shall be recorded within twenty days after their occurrence. They had asked the legislature to make it immediate. The penalty of not reporting a death was, for the first offense, a fine of from ten to fifty dollars; for the second, a fine of fifty to one hundred dollars, and for the third, one hundred dollars. They had a clause in the latter stricken out at the last minute when the bill was on its final passage, namely, that upon a third conviction of the violation of this law for failure to report deaths or births, a physician shall lose his license to practice in that state. This clause was stricken out by a lawyer, and not by a doctor, as the clause was approved by the Indiana State Medical Society.

Dr. Quitman Kohnke, of Covington, La., suggested to the officials of the Census Bureau that a uniform system of laws be submitted to each state for adoption. Law was the main reason why mortality statistics were not the same in every state. He hoped the Census Bureau would assist the whole country in getting a uniform system of laws to make the statistics of one state comparable to those of another.

Dr. Henry Mitchell, of Asbury Park, N. J., said that in an experience of about fourteen years in New Jersey, they had found that it was not a question of law, but one of enforcement of the law.

Dr. Wilbur, in closing the discussion, said that the association had been co-operating with the Census Bureau for five years, first, in laying down principles on which a successful registration law could be constructed, and, second, in drafting such laws for adoption in various states. If registrars depended on the patriotic motives of physicians or midwives or anybody else to comply with the law, in regard to recording births and deaths, if they were not put in jail when they violated it, registration would be worthless. In Germany or France they had 100% of births and deaths.

SOURCES OF ERROR IN THE LABORATORY DIAGNOSIS OF DIPHTHERIA.

Dr. Hibbert W. Hill, of Minneapolis, submitted what was actual proof and what must be assumed to make a bacteriological diagnosis of diphtheria logical and a practical success. *First*, the finding of diphtheria bacilli in a culture taken by itself proved nothing except their presence in the culture. *Second*, granting that the culture was properly taken, the finding of bacilli proved their presence in the throat, etc., from which the culture was taken, nothing more. *Third*, the presence of diphtheria bacilli in the throat plus appropriate symptoms justified the assumption that the patient had the disease, the evidence being that from 98% to 99% of all patients showing this condition had the disease. *Fourth*, the presence of diphtheria bacilli in the throat, without symptoms, required further data as to exposure. If a clear history of the absence of exposure could be obtained, it was legitimate to assume that the diphtheria bacilli found were likely to be nonvirulent, the evidence being that 80% of such cases were not virulent. If exposure was established, a legitimate assumption was that diphtheria bacilli were virulent, and therefore, when present, might infect others who would come down with the disease in a short time, the evidence being that the infection obtained from a cilnical case was almost invariable. *Fifth*, failure to find diphtheria bacilli in a culture was about 90% conclusive of their absence in the throat. If a second culture be taken, and also proved negative, the two consecutive negatives taken together afforded about 99% conclusive evidence. If two or three or four negatives were obtained, the absence of diphtheria bacilli was established with direct finality.

DISCUSSION.

Dr. John N. Hurty asked whether it was not possible that a nonvirulent diphtheria bacillus in one throat might become virulent in another. For instance, the health officer might visit a school and find two or three cases of virulent diphtheria, and yet if cultures were taken from the throat of every child in the room, diphtheria bacilli would be found, but as these were making a good defense against the disease, it was assumed that the bacilli were nonvirulent. In Indiana they had been acting on the assumption that the bacilli were virulent when found in these children's throats. When found, action was taken immediately. If one went into a family to see a case of diphtheria, it was clinical diphtheria or laboratory diphtheria, and whichever it was, antitoxin should be used on all children in the household, giving them immunizing doses.

He had used antitoxin liberally whenever diphtheria existed, and felt that in several instances in his state he had stopped epidemics of the disease. For instance, in one county he rode twenty-seven miles, and in that time visited sixteen families, finding six cases of diphtheria. He immunized every child in each family, and this was the end of the diphtheria, in that there was no further spread of the disease. They did not inquire as to whether the children were infected with virulent or nonvirulent diphtheria bacilli, and he believed this was good practice to recommend.

Dr. William C. Woodward, of Washington, D. C., called attention to the distinction that existed between medical diphtheria and legal diphtheria. A year or two ago the question arose in the District of Columbia as to the exact status of a child in whose throat or nose diphtheria had been found, but who showed no clinical symptoms of the disease, and a wise corporation counsel decided that if diphtheria bacilli were found in a man's or child's nose or throat, that that man or child had diphtheria. The question of the presence or the absence of the clinical symptoms counted for nothing in law, and that a man or child was a danger to the community who had diphtheria, and should be treated as such. Whether that was going to hold in the case of diphtheria patients, he did not know.

Dr. B. Franklin Royer, of Philadelphia, was much impressed with the statement of Dr. Woodward as to what constituted legal diphtheria, and yet the speaker questioned if in a court of law one could prove legal diphtheria by finding the bacillus in accordance with bacteriological methods in the throat or nose cultures. These methods at present were snapshot, were not satisfactory to clinicians, nor to bacteriologists. The great trouble was that so many organisms were met with which closely resembled the diphtheria bacillus, it was with great difficulty it could be positively excluded. Those who dealt largely with bacteriology agreed that a negative test of virulence with a culture that had been injected into a guinea pig was the only reliable test which would exclude some of the forms of diphtheroid organisms, and the simple presence of an organism pronounced by a bacteriologist from his routine culture methods, such as were used in public health work, was not sufficient evidence.

A positive report that such an organism as the diphtheria bacillus was present would not be accepted in a court of law, if some one questioned whether it was a virulent organism or the true diphtheria bacillus. If its virulence had been tested, and it killed a guinea pig with typical lesions, it would be accepted.

Dr. Charles V. Chapin, of Providence, R. I., said that as a health officer he undertook to restrain a boy who had diphtheria bacilli in his throat from mingling with other children, but he was not sick, and the court decided that he did not have diphtheria. Disease was one thing, but infection with disease germs was another thing. He felt very sure that the courts would interpret the term disease as applying to a pathological condition of the human body. They would not apply the term disease to a condition in which there was the presence simply of the organisms which might cause disease, and when, for some reason or other, they did not cause disease.

Dr. J. J. Kinyoun, of Florida, said a great many health officers and the majority of physicians placed too much stress on positive tests or preliminary cultures. He thought that just as soon as they attached less importance to preliminary tests and more importance to discharge tests, the better it would be for patients. In other words, the free use of antitoxin would cure more cases of diphtheria and render the office of the health officer less difficult. As to what constituted diphtheria legally, he felt that the judge who rendered the decision referred to by Dr. Chapin was wrong, because if that generally held, health officers would have to abandon practically all quarantine measures.

Dr. William Bailey, of Louisville, said he did not appreciate fully the close distinction that was made between legal and nonlegal diphtheria. Whatever might be the judgment of a court, he thought that any child who had the bacillus of diphtheria in his throat ought to be put under control. He would not like a child of his to mingle with such a child, and even if it could be decided technically that in a given case the bacillus was nonvirulent, it might become virulent. On the same principle one might take a rag or cloth that had come in contact with a smallpox patient into court, and while the court would not decide, perhaps, that the rag had smallpox and could not be convicted, yet he thought it was wise to take care of the rag the same as he would a child who had the bacilli of diphtheria in his throat.

Dr. Charles A. Hodgetts, of Toronto, Ontario, mentioned an industrial school in Ontario of 250 scholars, in which for two or three years, now and then, there were true cases of diphtheria which were isolated. Of this number over 50% of the pupils were found to be the carriers of diphtheria bacilli. Those found to be sick were given immunizing doses of antitoxin and were segregated. The school-teachers and children, however, grew tired of this segregation, and very soon the children were allowed to mix with one another. It would not surprise him if at any time cases of diphtheria were reported from that school. These cases should be dealt with in a rigid manner.

Dr. Hill, in closing the discussion, said it was necessary to take action as soon as possible whenever the existence of diphtheria was suspected among school children.

CONTROL OF SO-CALLED MINOR INFECTIOUS DISEASES.

Papers were read on this subject by Drs. A. G. Young, of Maine, and Alfonso Pruneda, of Mexico City, in which the authors discussed measures for controlling whooping-cough, measles, etc.

DISCUSSION.

Dr. Gardner T. Swarts, of Providence, R. I., said there was nothing more annoying than a lack of control of the minor infectious diseases. Health officers and physicians could not impress upon the public too strongly the importance of controlling measles and whooping-cough, for as long as these diseases were treated with indifference both by physicians and the people, so long would they continue to spread contagion. Even though they could not be altogether prevented, they could be checked in a measure. The sooner physicians impressed upon school authorities and teachers that these minor diseases were dangerous to the public health, and laws and ordinances were enacted to that effect, the better it would be for mankind.

Dr. Quitman Kohnke said the importance of the so-called minor infectious diseases depended on locality, environment and climatic condition. Each locality should be guided by the local importance of any particular disease, and should adopt such measures as were justified.

TYPHOID FEVER AT KNOXVILLE, TENN., AND ITS RELATION TO THE WATER SUPPLY.

Messrs. Robert S. Weston and Ralph C. Tarbett, of Boston, contributed a joint paper on this subject. The evidence was against the supposition that the water supply was a cause of the high death-rate from typhoid fever at Knoxville. The writers maintained that if the geographical distribution of each case for two or three years could be studied as it occurred, the causes of the disease would be shown and the remedy would suggest itself. Their studies show the importance of paying more attention to the hygiene of the household independently of the great problems of public water supply and sewerage. Undisinfected typhoid exereta and other infectious material which could become insect-borne should be destroyed and typhoid patients should be forced by education and law to protect their neighbors against infectious disease.

DISCUSSION.

Dr. Quitman Kohnke said that his experience in New Orleans bore out the opinion that typhoid fever there was in at least 90% of the cases brought from other places, notably summer resorts. Typhoid fever should be considered important wherever it occurred, and it would be competent in his opinion for the association to issue recommendations based upon those facts.

Dr. John A. Macdonald, of Brandon, Manitoba, said that typhoid fever had been prevalent in Brandon and thereabouts for twenty-four years, every fall. Sometimes it would come on in August and run its course in epidemic form for two or three months. One thing very noticeable this year was the absolute absence of flies until about six weeks ago. It is a curious coincidence, if such it might be termed, that typhoid was absent until the flies appeared. During the greater part of the summer very few flies were seen and it seemed to him that this was a noticeable observation in connection with the possible dissemination of typhoid fever by flies.

Dr. Edward V. Hug, of Lorain, Ohio, said that Lorain was one of the first cities to adopt the mechanical filtration method of dealing with water. For several years this city had no sewer system. This was prior to 1892, and during those years the death-rate from typhoid was about 44 per 100,000 population. During the past two years, 1906 and 1907, so far the death-rate had reached 34 per 100,000. But during these years the city had been building a new plant, with a capacity of six million gallons a day.

Dr. Hibbert W. Hill had seen outbreaks of typhoid fever beginning with the freezing of the water supply and terminating when the river, for instance, thawed. In a town in the Red River Valley, with a population of four thousand people, 10% of the inhabitants had typhoid fever due to a polluted water supply. The epidemic began when the river was frozen, but ceased when the river had thawed out again.

Dr. Henry D. Pease, of Albany, N. Y., corroborated what Dr. Hill had said with reference to winter epidemics of typhoid fever due to the pollution of water supplies. He mentioned five or six epidemics of typhoid fever that had occurred, some in small towns, and some in large ones, which followed the course that was mentioned.

CONTACT INSPECTION.

Dr. Charles V. Chapin, of Providence, R. I., said the valuable report on typhoid fever in our army during the Spanish war and the observations of the English in the Boer war indicated very clearly contact infection as the chief factor in camp typhoid. Jordan's report on typhoid fever in Winnipeg also laid great stress on this mode of infection, and many recent writers in Germany and America attached great importance to it. It was the author's opinion that the larger part of the typhoid fever in the United States to-day was caused in this way. Only a small part was due to infected water or milk, and still less to infected air.

There was ample room for improvement in the management of contagious diseases. We must teach those who had the care of the sick not to waste so much time on the invisible dry and dead micro-organisms of the air, but to use more soap and water on their hands. Better still, try not to infect the hands or clothes in the sick room. There was a great deal of unnecessary handling of the patient and of infected articles by health officers, physicians and nurses. By paying more attention to contact infection, isolation in the family and hospital would be easier and more successful.

UNCINARIASIS IN FLORIDA.

Dr. J. J. Kinyoun undertook an investigation of this disease to ascertain the prevalence of the infection and to see how far the average practitioner would be interested in such an investigation and the eradication of the infection. He examined the children of two orphanages in Jacksonville. There were 39 cases of the disease in all. Careful examination of all the cases showed that the children were undeveloped and were of low mentality. He contended that the majority of cases were infected through the skin, and a few through the alimentary tract. Although the latter could not be altogether excluded, the avenues of infection were far less than that of the skin. He urged that a systematic study of the prevalence of the disease in the state be undertaken.

HIGH ALTITUDES IN TUBERCULOSIS.

Professor Weinzirl, of New Mexico, said that his observations had led him to conclude that the great changes in the daily temperature observed at high altitudes acted as a stimulant on patients, and this was the main factor in the high dry climate cure of tuberculosis. That dryness, altitude and sunlight were important mainly because they were instrumental in producing these great temperature variations which insured cold nights and refreshing sleep, while the stimulation produced a better appetite, better digestion and the assimilation of food, thus affording the consumptive strength for combating the disease.

EFFECT OF HEATING UPON THE DETERMINATION OF LEUCOCYTES IN MILK.

Prof. H. L. Russell and **Mr. Conrad Hoffmann**, of Madison, Wis., contributed a joint paper on this subject. In the methods heretofore proposed for the determination of the cellular content of milk, an important factor influencing the accuracy of the determination had been overlooked. It was found that pasteurized milks almost invariably showed a higher cellular content than unheated milks. The authors found that the heating of the milk to 70° C. for fifteen minutes increased the cellular content from 1% to 30 above that of the unheated milk. This increase was found to be most marked between 60° and 70°, the temperature at which the fat globule clusters were broken up to form a more or less homogeneous emulsion. Many cellular elements were normally entangled in these clusters, and were liberated only when the latter were broken up. That these cells were so enmeshed was clearly shown by allowing whole milk to separate by gravity and then examining the cream and skimmed milk thus obtained. The cream showed a very high cellular content as contrasted with that of the skimmed milk. When milk was first heated, the number of cells found in the cream was materially diminished, and those in skimmed milk increased. It was evident that the cellular elements were carried up with the cream, and unless the milk was heated, a large number would be drawn off with the supernatant fluid, and thus escape enumeration. Examination of this fluid from unheated and heated samples gave much higher results for the former than the latter. Heating of the milk prior to centrifugalization permitted of increased accuracy, as was evidenced from a large series of duplicate determinations, which showed an average variation of only 2.7%. It was accordingly deemed advisable to heat all milks, prior to examination for leucocytes, high enough to destroy the fat globule clusters.

DETERMINATION OF INTESTINAL BACTERIA IN MILK.

Dr. Daniel D. Jackson, of Brooklyn, said a demonstration of the value of the lactose bile medium for determining the presence of intestinal bacteria in water had led to its use in the determination of bacillus coli in milk. The restraining action of the bile salts on growths of the numerous other species of bacteria in milk admitted of its use, whereas the Smith solution gave entirely unsatisfactory results for this purpose, due to overgrowths and to the production of gas by species other than bacillus coli. Contrary to expectation, it was found that when other species were present, the bacillus coli did not increase in number in milk, but gradually decreased so that the extent of fecal contamination could be measured. The range was found to fall within the same dilutions as in water analysis. A clean milk, or one that had been pasteurized, rarely gave the test for bacillus coli in the $\frac{1}{10}$ dilution. A carelessly handled milk would give the test in the 1 cc. dilution. A contaminated milk would give positive tests in the $\frac{1}{10}$, 1 and 10 cc. dilutions.

DIPHTHERIA DIAGNOSIS.

Dr. B. R. Rickards, of Boston, referred to some of the factors which enter into the bacteriological diagnosis of diphtheria. The question of types on which a positive report should be given was discussed from both the standpoint of diagnosis and release, the question being raised that in some cases greater leeway should not be allowed in release cultures owing to the clinical evidence of the organism. The personal element still entered into diagnosis to a certain extent, but could and should be reduced as much as possible. It was better for the diagnostician to have no knowledge of the clinical data of a case until the bacteriological diagnosis was made, owing to the mental bias which might otherwise be produced. In testing diphtheria organisms for virulence, varying results in the virulence of organisms isolated from the same culture had been noted and further work along this line was very necessary.

The writer believed that there should be greater uniformity in the various laboratories as to what forms should be considered as positive for diagnosis and release, and he emphasized the necessity of further experimental work on most of the points regarding the value of co-ordinating diphtheria diagnosis and diagnostic procedures in general, in order that it might be placed on a standard basis.

THE DIAGNOSIS OF RABIES.

Dr. A. W. Williams, of New York City, said that three methods had been used in helping to establish the diagnosis of this disease. First, animal inoculation; second, sections for the presence of small-celled accumulations about the blood vessels and ganglion cells; third, sections and smears for the presence of the so-called Negri bodies. The second method had fallen largely into disuse, because the histological changes upon which its value depended had been shown to be nonspecific for rabies. The first method was used as a decisive test when results from the third method were doubtful. The results obtained from the use of the third method were as follows: (1) Negri bodies demonstrated, diagnosis rabies. (2) Negri bodies not demonstrated in fresh brains, diagnosis very probably not rabies. (3) Negri bodies not demonstrated in decomposing brains, diagnosis uncertain. (4) Suspicious bodies in fresh brains, diagnosis probably rabies.

The demonstration of the Negri bodies by smears was the most rapid and efficient method so far published. Improved technic had lessened the number of suspicious or uncertain cases.

He described the technic of the smear method at present in vogue in the research laboratories of the New York City Health Department.

MILK.

There was a symposium on this subject. **Prof. E. B. Voorhees**, of New Brunswick, N. J., said the public should realize that even at twelve cents good milk was the cheapest and best nourishment it was possible to buy. To produce pure milk at the present selling price in the big cities at a profit to the farmer was impossible. The most careless dairyman could not turn out even his inferior grade of milk for less than 4.7 cents a quart, while an average cost of production of five cents was the lowest practical rate. A very small additional expense in the price of milk was necessary to guarantee absolute purity and general quality of milk.

Prof. C. B. Lane said that the majority of diarymen would prefer to sell only the best milk procurable, if the public would pay for it, and he declared that the general public was quite willing to stand the higher rate. More stringent legislation was needed to procure permanent results. At the present time the man who added water to the milk was fined. Generally, the man who sold impure milk went scot-free, and this despite the fact that the latter was much the greater menace. He advised national laws modeled after the British statutes which permit a consumer to sue for damages a dealer who supplies him with impure milk.

Dr. Thomas Darlington, of New York, advocated that each community should look after its own milk supply. He recommended systematic and constant inspection, in the first place, and, in the second, the prevention of the sale of any milk which was unwholesome and adulterated. Every dairy and every creamery supplying the city of New York had already been inspected. As for preventing the sale of unwholesome milk, he had only to mention that the Court of Special Sessions a day or two ago had 260 cases before it. Gastro-intestinal diseases had been markedly reduced since the proper inspection of milk had been enforced.

Prof. R. A. Pearson, of Cornell University, discussed the protection of milk under five headings, namely, health of the cow; cleanliness of the cow and her surroundings; condition of the utensils in which the milk was handled; cleanliness of the employes, including their health, and the cooling and storing of the milk.

Speaking of the tuberculin test, he said that when farmers clearly understood its true value, they would want this test made. When they were shown by demonstration that which they failed to understand, they were anxious to have this test. Very many milk producers were honest and anxious to do what was right. They needed instruction. A campaign of education had been begun. It needed support. Every milk producer should have the opportunity to know the latest concerning his business, then many of them would make the desired improvements in their dairies, and the realization of ideal dairying would go hand in hand with the necessity of enforcing laws.

SOCIAL ETHICS AS INFLUENCED BY IMMIGRATION.

Dr. Peter H. Bryce, of Ottawa, Canada, said that immigrants were pouring into the United States and Canada at the enormous rate of a million and a half annually, and it was a grave question whether this tremendous influx of human flotsam and jetsam would be assimilated or continue a foreign mass and a menace to the nation. Invasion of foreign labor had driven American girls from mills and factories to a higher plane of employment. But the standard of intelligence was too low for foreign competition to seriously affect American mechanics. The mental status of immigrants to-day was higher than that of many years ago. Steamship companies forced by close competition expended enormous sums in new ships, deliberately seeking the immigrant as a means of making up their losses. This was one of the evils of the problem with which America and Canada had to contend.

The Mexican delegates reported that their country was constantly raising the barriers against undesirable immigrants, and urged that the United States government at Washington formulate a new code of laws that might be adopted also by Canada and Mexico.

TRACHOMA AND IMMIGRATION.

Dr. Augustin Chacon, of Mexico City, said that immigrants to that republic had been the cause of an epidemic of this disease of such serious proportions that it would be absolutely necessary for the government to adopt radical measures for the protection of the country.

OPHTHALMIA NEONATORUM.

Dr. F. Park Lewis, of Buffalo, presented this subject to the association. A committee was appointed to confer and co-operate with a like committee of the American Medical Association and with the committees appointed by other medical societies, to prevent this disease.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Richard H. Lewis, of Raleigh, N. C.; First Vice-President, Dr. Gardner T. Swarts, of Providence, R. I.; Second Vice-President, Dr. Chas. J. Hodgetts, of Toronto, Ontario; Third Vice-President, Dr. Manuel Iglesias, of Mexico City; Treasurer, Dr. Frank W. Wright, of New Haven, Conn.; Secretary, Dr. Chas. O. Probst, of Columbus, Ohio.

Winnipeg, Manitoba, was selected as the place for holding the meeting in 1908.

Book Reviews.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M.D., LL.D., Clinical Professor of Otology in the Medico-Chirugical College, Philadelphia. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

This adds another to our list of students' condensed manuals of the nose, throat and ear. In the process of condensing, some important subjects have especially suffered. Nasal polypus, for instance, is finished in two small pages, papilloma of the larynx in one, and acute tonsillitis, which is combined into one disease with peritonsillar abscess, in four. Although everything is in outline, other parts of the book suffer less from brevity. Gleason's name is widely associated with an operation for correcting septal deviations, and his original work in this direction makes this chapter valuable. In other subjects the opinions and practice of the author are interesting. He has not abandoned the use of the nasal saw. He says little about the dissection of deeply seated tonsils, and is conservative in the symptoms and treatment of adenoids. The pathologist may object to myxoma as a name for a polypus, and to mycosis for keratosis, and perhaps to the aborting of an acute tonsillitis by washing out the crypts, and the surgeon to the description of Killian's frontal sinus operation. The book is convenient and attractive, and on the whole conservative and compact. It ends in a long list of prescriptions for both local and general treatment.

A Textbook of Clinical Anatomy. For Students and Practitioners. By Daniel N. Eisendrath, A.B., M.D., Adjunct Professor of Surgery in the Medical Department of the University of Illinois (College of Physicians and Surgeons); Attending Surgeon to the Cook County Hospital, Chicago. Second edition, thoroughly revised. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

The second edition of this book appears in essentially the same form as the first. The text has been revised, and a certain number of new illustrations added. The idea of this work is altogether to be commended in its attempt to render practical the more theoretical study of descriptive anatomy. It may well be expanded far beyond its present scope, in relation particularly to the nervous system. The book has apparently been so favorably received that we hope its author may see fit to extend it further in subsequent editions.

Pediatrics. The Hygienic and Medical Treatment of Children. By Thomas Morgan Rotch, M.D., Professor of Pediatrics, Harvard University. Fifth edition, rearranged and rewritten. Illustrated by numerous engravings in the text and by colored plates. Philadelphia and London: J. B. Lippincott Company.

This, the fifth edition of this well-known work, is, like each of its predecessors, an improvement on the one before. The book has been arranged, revised and brought well up to date. The divisions on "The Care of Premature Infants," "Feeding," "Diseases of the Gastro-enteric Tract" and "Diseases of the Nervous System," as well as several others of minor importance, have been rewritten. That on "Infant Feeding" is without question the most complete and satisfactory to be found in any textbook. That on the "Diseases of the Gastro-Enteric Tract" is based on the classification of these diseases recently adopted by the Department of Pediatrics in the Harvard Medical School. This classification is based on etiology, and is a decided advance on the old system. The various divisions, as in previous editions, are of rather unequal merit, that on the "Diseases of the Nervous System," in spite of having been rewritten, still being rather unsatisfactory. The divisions treating of the "Infant at Term" and "Normal Development" are still unique in their completeness and accuracy.

While it would be easy, as with every book, to criticise many minor points, it is difficult to find anything of importance with which to disagree. The treatment in general is rational and satisfactory. The book, as a whole, is of great merit. No one interested in the care and feeding of infants and in the diseases of infancy and childhood, can afford to be without it.

Insanity and Allied Neuroses. A Practical and Clinical Manual by Geo. H. Savage, M.D., F.R.C.P., Late Physician and Superintendent of Bethlehem Royal Hospital, Lecturer on Mental Diseases at Guy's Hospital, etc., with the assistance of Edwin Goodall, M.D. (London), F.R.C.P., Medical Superintendent of the Cardiff City Hospital for Mental Diseases, etc. Pp. 662. Chicago: W. T. Keener & Co. 1907.

This book is a revised edition of Savage's individual work published originally in 1884. Although it is enlarged by seventy-six pages and otherwise revised, we cannot follow the authors in the claim that it contains all the essentials with which the medical student is required to be familiar now-a-days. In the endeavor to bring it into line with recent advances in psychiatry, four pages on dementia precox and manic-depressive insanity and various plates have been inserted, a scheme for the examination of cases of insanity, suspected or actual, is appended, a few chapters are partially rewritten or rearranged and various minor changes are made, but there still remains a flavor of bygone conceptions of the disease. Perhaps because of the difficulty of covering so large a field in a manual, some subjects of importance to the general physician are inadequately treated, the psycho-neuroses, for example, and confusional conditions receive scant attention as such. In spite of these deficiencies, there is much that is valuable and instructive in the book which is plainly the result of a rich and varied experience, utilized by a keen observer and a wise and resourceful clinician. A great many cases are introduced. They are interestingly described and should go far toward fixing the symptomatology of the disease in the student's mind. What is said also regarding certain borderland conditions, particularly those of moral defect, as well as the thorough and practical methods of treatment employed to meet acute conditions, is sound and helpful.

Manual of Obstetrics. By A. F. A. King, A.M., M.D., LL.D., Professor of Obstetrics in the Medical Department of the George Washington University, Washington, D. C., and in the University of Vermont, etc. Tenth edition, revised and enlarged. Pp. 688, with 301 illustrations and 3 plates. Philadelphia and New York: Lea Brothers & Co. 1907.

Since the last edition in 1903, the book has been materially improved. The chapter on fecundation and nutrition of the embryo has been practically rewritten, many changes made in the chapters on pelvic deformity, cutting operations on the mother, mutilating operations on the child, placenta previa and puerperal septicemia. The chapter on toxemia gives the erroneous idea that the kidneys are primarily at fault, and nowhere is mentioned the frequent occurrence of pyelitis as a complication of pregnancy. Altogether it is an excellent manual and more than a manual. It is commendable to the practitioner, perhaps, to even a greater degree than to the student.

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SCIENTIFIC ACCURACY AND THE IMAGINATION.

Le Bon, in his work "The Crowd, a Study of the Popular Mind," tells of a crew shipwrecked upon a raft, who kept eagerly scanning the horizon for a sail. After some days of watching one of them declared he saw a sail; unquestionably he saw something, and so desperate was the hope of his companions, that they all agreed with him the thing to which he pointed was a vessel which could rescue them. When they came upon it, however, they found it a tree which had evidently been uprooted in an equatorial storm. Tuke, in his admirable work on "The Influence of the Mind Upon the Body," relates how a boy who had on an afternoon seen a hanging, which had naturally much affected him, took a stroll along the country road in the evening of that day. He presently saw projected against the sky the gibbet of the afternoon and the criminal suspended from it. He ran home dreadfully frightened, to find that a cord dangling over the brim of his hat had been metamorphosed by his overwrought imagination into the aërial gallows.

These are instances — hundreds of the same sort might be cited — of delusions entertained by the unsophisticated, the highly emotional and the unscientific in which such aberrations are excusable enough. We who have been trained in science are so prone to consider such delusions the exclusive property of spiritualists, theosophists, geniuses and other highly imaginative people, that we feel distinctly humiliated when we learn that men of scientific reputations have entertained such psychic aberrations. As, for instance, when the telephone was invented, a lecturer who was giving a public exhibition of the apparatus clearly and repeatedly heard the notes of a trumpet which he had arranged to be played at the other end of the wire. Yet none of his audience could hear them; and for the very reason that the trumpeter had made a mistake in the day, and was not in his place at all. A very modern instance of "illusion caused by a species of autosuggestion based on preconceived ideas" is furnished by the n-rays which all competent men agree to-day never had any existence at all.

The Manchester *Guardian* related how these rays were discovered by Professor Blondlot, of Nancy, in 1903; he described them before the French Academy of Sciences, who gave him a gold medal for his discovery. During the next three years 176 original papers were published concerning them. Blondlot's observations, which were surely made in good faith, were in turn confirmed by such well-known physicists as Charpentier and Bequerel. These rays were said to be given off by almost all substances when in a state of strain; a tempered steel bar, a Nernst lamp, and even human nerve and muscle would emit them. The rather fanciful suggestion came that if a certain radiation were given off by our bodies, according to their degree of activity, our thoughts might possibly be photographed, "thoughts being only brain rays." The n-rays, stated French investigators, could be reduced or removed by anesthetics; for that matter, a tempered steel bar could be chloroformed into quiescence. Following upon this the invitation came naturally enough for us "to revise some of our notions on the difference between the inorganic and the organic." The n-rays were held to be even more wonderful than the x-rays or radium. Oddly enough, however, the n-rays did not, like the Röntgen rays, affect either the spectroscope or photographic plates. Admittedly they were rather baffling and elusive; but they had one physical effect upon which experimenters largely relied — their power to intensify the brightness of a light. A marked increase of luminosity was perceptible when an n-ray was directed upon a spark; or if a bar of tempered steel were held near a clock in a dark room, it was supposed to be possible to read the time.

In time Blondlot's experiments were confirmed and even extended outside France; yet many scientists utterly failed from the first to observe any of the phenomena described. English and German investigators became particularly skeptical, and rather absurdly a dispute arose, which increased in bitterness and became quite akin to our own famous *row upon the Stanislaus.* Two camps were formed — the Latin and the Teutonic; and compliments increased in warmth as they lost in polish. The French imputed prejudice and animosity to their foreign critics; it was suggested that the rays could be distinguished only by the more sensitive and delicate brain of the Latin, while on the other hand nothing could be expected of the British brain, muddled as it is by the London fog, nor of the beer-befuddled German psychism. The matter in dispute threatened to place itself beyond the bounds of demonstration. Presently, however, the coolest French scientists gradually began to suspect that if no results could really be obtained in England and Germany, the explanation of the French experiments must be subjective and psychological rather than objective and physical. Finally, the *Revue Scientifique* settled the question in a very simple way. It was proposed that several small boxes of exactly similar appearance, some containing pieces of lead, others of tempered steel, should be sealed; and Blondlot or his assistants were to decide which of the boxes contained the active material. Blondlot refused this test, saying that " the phenomena were far too delicate for such a trial "; and he left " every one to form his own opinion on the n-rays, either from his own experiments or from his confidence in those of others." Thus was the dispute transferred from the realm of fact to that of opinion, experimentation ceased, and so far as science is concerned the incident was closed.

We repeat, such incidents as these are rather humiliating to the scientific temperament; fortunately they are extremely rare. We feel it pertinent to emphasize, however, that science is knowing; it should always be " certainty grounded upon demonstration "; it should always be self-poised and well judging; and its votaries should be absolutely free of autosuggestions and haphazard conjectures incapable of verification.

EMPLOYMENT FOR THE HANDICAPPED.

Very frequently, both in private and hospital practice, the physician is confronted with a patient unable from disability, the result of accident or disease, to return to his former occupation. Perhaps even a larger group is formed by those still able, for a time, to carry on their previous work, yet if they do so, it would mean a speedy return of the condition which has first brought them under the physician's care. What is to be done with such patients? The answer is, find them work of such a character that for it their particular disability forms no handicap. A one-legged man can do many varieties of hand work, and compete on equal terms with his more fortunate fellow worker. A cardiac case is competent to do light sedentary work with no injury to himself. Many more examples of this kind could be given, but it is not necessary, since on a moment's thought the situation is very obvious.

To find a vacancy in that particular kind of employment, for which the handicap of a given individual does not constitute a preventive disability would often prove a very difficult undertaking for the individual physician or charity worker. What is needed is some form of clearing house, in which the proper adaptation of these laborers to some sort of work can readily be made. About eighteen months ago the Charity Organization Society of the city of New York undertook this function through its Employment Bureau for the Handicapped. This has proven eminently successful in its working, for during the past eight months this bureau has placed an average of more than one out of two applicants, no mean record for any form of employment bureau. This does not mean that the employer has received a damaged article, for the bureau is careful to so select those they recommend that their disability does not hamper them for the particular work required, and this fact has been recognized quickly by those seeking workers. The range of activity of the bureau is indicated by the positions found for applicants, such as domestic servants, factory workers, janitors, messengers, country laborers, clerks, porters, watchmen, drivers, elevator men, guides, telegraph operators, needle workers, etc. The wages of these positions ranged from $3.00 to $20.00 per week, the average being $8.36.

That this bureau has proved of great usefulness in New York is not to be questioned. Moreover in any large city there is an extensive field for such a bureau, and its organization would materially help the medical man whose labors bring him into contact with the middle and lower classes of the population. It is hoped that many other cities will imitate the plan now in operation in New York. It is a form of charity work highly to be commended for its practical usefulness.

MEDICAL NOTES.

Women Physicians in London. — Within the past year, according to the *New York Medical Journal,* eighteen students of the London School of Medicine for Women passed the M.B. degree of the University of London, which is the highest degree obtainable in England. Four took the M.D. degree, and one the M.S. degree, which is the hardest examination given in surgery.

Retirement of Professor Politzer. — Dr. Adam Politzer, for forty-six years director of the Vienna clinic for ear diseases and professor of otology in the university, has recently resigned his position. The occasion was made one of some formality. His last lecture was largely attended by physicians, by his present and former assistants, and also by representatives of foreign otological societies in Europe and America. Among other honors conferred upon him was honorary membership in the American Medical Association. Professor Politzer is succeeded by Professor Urbantschitsch, who up to this time has been director of the ear department of the Vienna polyclinic.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 13, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 46, scarlatina 28, typhoid fever 10, measles 25, tuberculosis 31, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 13, 1907, was 17.71.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 16, 1907, was 185, against 203 the corresponding week of last year, showing a decrease of 18 deaths and making the death-rate for the week 15.83. Of this number 98 were males and 87 were females; 177 were white and 8 colored; 124 were born in the United States, 52 in foreign countries and 9 unknown; 48 were of American parentage, 110 of foreign parentage and 27 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 52 cases and 1 death; scarlatina, 37 cases and 0 deaths; typhoid fever, 13 cases and 1 death; measles, 22 cases and 1 deaths; tuberculosis, 31 cases and 15 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 27, whooping cough 1, heart disease 20, bronchitis 2 and marasmus 3. There were 17 deaths from violent causes. The number of children who died under one year was 37; the number under five years, 53. The number of persons who died over sixty years of age was 50. The deaths in public institutions were 62.

There was 1 case and 0 death reported from cerebrospinal meningitis during the week.

National Health Bureau. — A committee of one hundred of the American Health League held a conference at Yale University, New Haven, Nov. 17, in the interests of the extension of federal regulation of public health. Prof. Irving Fisher read a paper on the subject, "How to Double Working Efficiency by Diet." Dr. J. N. McCormack also spoke.

South Boston Antituberculosis Society.— The South Boston Antituberculosis Society, of which Dr. Edward A. Tracy is president, and Dr. William J. Sheehan, secretary, proposes to give practical talks on tuberculosis every month throughout the winter at the Municipal Court building, corner of Dorchester and Fourth streets, South Boston, at 8.15 p.m. The public is invited.

Enforcement of Law Relating to Distribution of Drugs. — It is reported that four arrests have recently been made of men found distributing samples of a so-called new cough medicine in one of the sections of Boston. The last legislature passed a law prohibiting the distribution of drugs in this manner; these arrests are the first that have been made under the law.

Advisory Committee, National Association for the Study of Epilepsy. — Dr. E. E. Southard, Assistant Professor of Neuropathology at the Harvard Medical School, has been appointed a member of the Permanent Advisory Committee of the National Association for the Study of Epilepsy. The other members are Dr. L. Pierce Clark and Dr. Adolf Meyer. The objects of this committee are "to further the co-ordination of scientific and research work in epilepsy," and "to act as advisors for any workers in epilepsy who choose to apply to them."

Officers, Boston Medical Library.— At the annual meeting of the Boston Medical Library, held Tuesday, Nov. 12, 1907, the following officers were elected: President, Dr. George B. Shattuck; Vice-President, Dr. F. I. Knight; Treasurer, Dr. W. H. Prescott; Secretary, Dr. O. F. Wadsworth; Librarian, Dr. J. W. Farlow. Committee on Library and Finance, Dr. C. P. Putnam; Committee on Medical and Social Meetings, Dr. W. H. Smith; Committee on Membership and Elections, Dr. A. K. Stone.

Outdoor Camp for Tuberculosis. — The outdoor camp for tuberculosis at Mattapan, after a most successful season, will be forced to end its work unless certain financial support is forthcoming. A committee of patients has been formed with the object of soliciting further funds. The Boston Association for the Relief and Control of Tuberculosis has already maintained the camp three additional weeks, but six weeks still remain before the city authorities will be ready to take over the work. It is very important for many of the patients that the treatment be continued, and inasmuch as the amount necessary to maintain the camp is only $1,600, it seems altogether probable that it will be secured. Contributions may be sent to Mr. George S. Mumford, 4 Joy Street, Boston.

NEW YORK.

Inspection of Dairies. — A party of city health officials, including President Darlington, Health Officer Doty, and Dr. Russell Raynor, chief sanitary inspector, have been making a tour of inspection of the dairies in a large portion of the state, going as far as Oswego, and report the sanitary conditions as a rule much improved over those of last year.

Purity of Vaccine Virus. — Reports having again emanated from Brooklyn that school children had died from tetanus as the result of impure vaccine matter being employed by inspectors of the Health Department, President Darlington has come out in an emphatic denial, in which he attributes these strictures to the opponents of vaccination. "From time to time," he says, "such stories crop up, and after investigation they are found to be baseless. The virus used by the Board of Health is supplied by Dr. Huddleston, who is also secretary of the Academy of Medicine; and his name alone should convince the skeptics. Two hundred thousand school children are vaccinated annually, and the wounds, if not properly cared for, may become inoculated, just as any other wound might be. In every case the virus used is uniform and invariably pure, and our process of vaccination has exterminated small-pox in New York."

Death of Prof. Lucian M. Underwood.— Lucian M. Underwood, Torrey Professor of Botany in Columbia University, Chairman of the Board of Scientific Directors of the New York Botanical Garden in Bronx Park, and a Councillor of the New York Academy of Sciences, committed suicide at his country home at Redding, Conn., on Nov. 16, while suffering from melancholia. Prof. Nathaniel L. Britton, who was his predecessor in the chair of botany at Columbia and who is now director of the New York Botanical Garden, gives the following high estimate of his rank as a botanist: "In his work, Professor Underwood stood at the very head of his profession in the United States, and was one of the best known men in his line in the entire world."

A Verdict of $20,000. — At Flushing, Borough of Queens, on Nov. 13, in a suit for $75,000 damages against the General Chemical Company of Laurel Hill, Long Island, for the loss of his eyesight and disfigurement of his face, John L. Muller, an employee of the company, was awarded a verdict of $20,000 by the jury. The injuries, which were received in September last, were due to an escaping flow of sulphuric acid.

Work of the Seaside Hospital.— The annual meeting of St. John's Guild was held on Nov. 12. The reports showed that during the past summer, 36,816 mothers and children were carried on the trips of the floating hospital, and 7,077 patients treated at the Seaside Hospital at New Dorp, Staten Island. The average stay of the patients in the hospital was eleven days. The president, John W. Weed, announced that owing to the inability of the managers to raise a fund of $25,000 which it had been hoped would be subscribed for the purpose, it had been found impossible to keep the Seaside Hospital open during the winter this year. Last winter the work of the hospital was carried on with great success, 480 patients being treated during an average of thirty-one days, while there was constantly a waiting list of applicants. Duff G. Maynard exhibited stereopticon views showing the work of the floating hospital and of the Seaside Hospital in summer and in winter, and said that the greatest need in New York City at the present time was accommodations for convalescents. After the critical period of their illness, patients were sent out from the crowded hospitals in order to make room for others, and serious results often occurred in consequence of this premature discharge. In London, in a radius of two miles, were several hundred convalescent homes, while in the same radius in New York there were only three.

Conference of Charities and Correction. — The annual State Conference of Charities and Correction was held at Albany on Nov. 13 and 14, at which interesting reports and addresses were made by Dr. Edward B. Angell, neurologist to the City Hospital, Rochester, Dr. Adolph

Meyer, director of the Pathological Institute of the New York State Hospitals for the Insane, and others. In speaking of the saving of life which was gradually being effected, Dr. Angell called attention to the fact that while in New York City in 1876, out of 125,816 infants and young children, 3,632, or 28.86 per thousand, died from gastrointestinal disease, in 1906, among 282,424 of the same class of subjects, only 3,354, or 11.87 per thousand, died from this cause. Dr. Meyer said that of the 27,102 patients now under the supervision of the State Commission in Lunacy, over one thousand had committed criminal offenses before their committal to institutions for the insane, and he recommended that every case of suspected mental disorder should be required to be reported to the commission in lunacy in the same way that infectious diseases are now reported to boards of health. In speaking of the lack of adequate accommodations for the insane in the state hospitals he stated that at present these institutions in the Metropolitan District, with 12,328 patients to care for, had a satisfactory capacity of less than nine thousand five hundred. Having complimented New York City in its efforts to provide for defective children in the public schools, Dr. Meyer said there still remained a deplorable number of children whose only salvation lay in removal from inadequate homes to schools where, under intelligent management, they could be brought to a certain degree of usefulness to themselves and others.

Current Literature.

Medical Record.
Oct. 19, 1907.

1. Beard, J. *On the Asymmetry of the Cycle of Life, Being the " End of the Thread."*
2. Cumston, C. G. *Ptosis of the Abdominal Viscera Surgically Considered.*
3. Smith, O. C. *Advanced Age as a Contra-indication to Operation.*
4. Fitch, W. E. *Correction of Faulty Fashions in Dress an Important Factor in the Treatment of Diseases of Women.*
5. Richards, J. H. *The W. Gill Wylie Appendix Operation.*

Oct. 26, 1907.

1. Harris, I. G. *Psychiatry and Its Importance.*
2. *Einhorn, M. *Experiences with the Bead Test for Ascertaining the Functions of the Digestive Apparatus.*
3. Goldwater, S. S. *Hospital Efficiency, Hospital Finances, and the Economics of Administration.*
4. Wainwright, J. W. *Some Examples of Chemical Syntheses as Applied in the Production of Remedial Agents.*
5. Haubold, H. A. *Rupture of the Liver; Operation, Death.*

2. Einhorn describes the latest results obtained by him from the use of the bead test for ascertaining the digestive functions. He divides his cases into two groups: diseases of the digestive tract, and diseases of other organs. Sixty-eight cases in all constitute this series. He concludes that the bead test gives a true picture of the digestive condition, a worse state of digestion existing at the height of a disease than in convalescence. Results are influenced by personal idiosyncrasy. Marked digestive disturbance is found in barely half the cases of achylia gastrica, in delirium tremens, in grave cases of gastro-enteritis, and in typhoid fever. Diminution of starch digestion is often found, while disturbance of proteid digestion is rare. In purely nervous affections, pure colitis and constipation, digestion is good.

New York Medical Journal.
Oct. 26, 1907.

1. Wiener, J. *The Diagnosis and Treatment of Prostatic Hypertrophy.*
2. Lynch, J. M. *Fissure of the Anus.*
3. Baketel, H. S. *Some Facts Anent the Personnel of the Army Medical Department.*
4. Hollmann, H. T. *Diseases of the Eye, Ear, Nose and Throat among Persons Afflicted with Leprosy.*
5. Wachenheim, F. L. *Late Secondary Hemorrhage Following the Removal of Adenoids.*
6. Holladay, G. G. *Injuries to the Head (Brain).*
7. Christian, H. M. *Hematuria of Renal Origin.*
8. *Rosenberg, L. *Some Experience with Tuberculin.*

8. Rosenberg considers that with the aid of tuberculin (Koch's old tuberculin) judiciously administered he has been able to obtain somewhat better results than with the ordinary methods employed, particularly in those cases advanced beyond the first stage of the disease.

[R. I. L.]

The Journal of the American Medical Association.
Oct. 26, 1907.

1. Wood, H. C., Jr. *The Place of Pharmacology in Medicine.*
2. Remington, J. P. *The Pharmacopeial Versus the Proprietary Materia Medica.*
3. *Hallberg, C. S. N. *Pharmacists and Physicians and the Food and Drugs Act.*
4. Dock, G. *Medical Treatment of Cholelithiasis.*
5. Cotton, A. C. *Scarlatina and Dukes' Disease.*
6. *Harbitz, F., and Scheel, O. *Epidemic Acute Poliomyelitis in Norway in the Years 1903 to 1906.*
7. Jackson, C. *Gastroscopy.*
8. Posey, W. C. *Congenital Squint.*
9. Neres, F. E. *Voltaic Turbinal Puncture for the Relief of Intumescent and Hypertrophic Rhinitis.*

3. Hallberg recommends the following modifications of the Federal Food and Drugs Act in all state legislation: (1) Exemption from the label requirements for the articles of the United States Pharmacopeia, and the National Formulary, and physicians' prescriptions. The federal act now requires that all medicines containing alcohol and a number of potent and habit forming drugs, shall show on the label the amount of such drug contained. The articles of the United States Pharmacopeia and National Formulary necessarily conform to known standards. Physicians-prescriptions are not usually subject to interstate com'merce and are of a confidential character. (2) Articles of the United States Pharmacopeia and National Formulary must conform to the requirements, although if feasible or desirable, the preparations may differ in color or flavor from the National Formulary formula if so stated on the label. Now under the federal law articles of United States Pharmacopeia and National Formulary may differ from the requirements if so stated on the label.

6. In Norway, from 1903 to 1905, there were 1,053 cases of acute poliomyelitis with 145 deaths. These cases have occurred often in small epidemics, and several cases have occurred in the same family. However, in the rather numerous cases in Christiania in 1905 and 1906, careful investigations did not demonstrate any connection between the cases. From the various epidemics the writers examined 19 cases post-mortem. There were no essential lesions outside of the nervous system. The inflammation apparently commences in the pia mater (often only demonstrable microscopically) with a probable simultaneous infection of the cerebrospinal fluid, and extends to the cord along the vessels. The pathological changes are always more extensive than would be suggested from the clinical signs. Even in the mild cases

with a very limited paralysis, involvement to some extent of the whole cord, and usually slightly of the basal ganglia and the cortex, was found. Certain cases of Landry's paralysis, of myelitis and probably of encephalitis should pathologically and etiologically be placed in the same class with ordinary acute poliomyelitis. The writers were unable to find any anatomical evidence to show relationship between acute poliomyelitis and acute multiple neuritis or epidemic cerebrospinal meningitis. They believe poliomyelitis is due to a specific virus. In three of their cases they found in the cerebrospinal fluid a diplococcus or tetracoccus similar to the organism previously described by Geirvold as the causal organism of this disease. This organism differs from the meningococcus of Weichselbaum. [R. I. L.]

Bulletin of the Johns Hopkins Hospital.

October, 1907.

1. Osler, W. *On Telangiectasis Circumscripta Universalis.*
2. *Calvert, W. J. *Position of the Heart in Pericarditis with Effusion.*
3. Pohlman, A. G. *The Fetal Circulation through the Heart.*
4. *Emerson, C. P. *Two Cases of Typhoid Fever with Interesting Blood Crises.*
5. Dunton, W. R. *Mrs. Packard and Her Influence upon Laws for the Commitment of the Insane.*

2. Calvert hardened the cadavers of two individuals, who at the time of death had pericardial effusions. From transverse sections he concludes that the position of the heart in pericarditis depends on the size of the heart, which in turn depends on the stage of compensation. In normal compensation the heart is in relatively normal position. In failing compensation the heart becomes progressively smaller and more posterior. The apex is in normal position or displaced backwards and slightly to the right.

4. Emerson reports two cases who during the course of typhoid fever developed a very severe anemia with very many blasts, a very high leucocytosis (50,000 to 80,000) with 70% to 90% of polynuclear neutrophiles and a fairly large number of typical neutrophilic myelocytes. One case had a rather insignificant intestinal hemorrhage, followed by a period of hypothermia for three days. The other case apparently had a considerable hemorrhage. Both cases were fatal. Only one autopsy was permitted. In this case the bone marrow was red and contained typhoid bacilli. [R. I. L.]

The Lancet.

Oct. 26, 1907.

1. *Mackenzie, H. *Mobility of the Kidneys.*
2. Dawson, B. *Roentgen Rays as an Aid to the Diagnosis of Stricture of the Oesophagus.*
3. Griffith, T. W. *Case of Combined Disease of the Mitral, Aortic and Tricuspid Valves of the Heart, in Which the Patient was under Hospital Observation for Twenty-five Years.*
4. *Raw, N. *The Compulsory Notification of Tuberculosis.*
5. Willan, R. J. *The Treatment Before and After Operation of 38 Consecutive Successful Prostatectomies by Freyer's Method.*
6. James, R. R. *Two Cases of Acute Spreading Gangrene, with a Note on Their Bacteriology.*
7. Hann, R. G. *A Case of Erythromelalgia.*

1. Hector Mackenzie has made an examination of the abdomen of nearly 4,000 people in regard to mobility of the kidneys. He is of the opinion that minor degrees of mobility are of trivial importance. Two thousand eight hundred and one females of all ages were examined; in 16% the kidneys were palpable only, and in 18.4% they were not only palpable but freely movable. In 1,067 males of all ages there were 2.3% of palpable kidneys and 1% of movable kidneys. Under twelve years he has met with no case in which the kidneys were movable. His figures agree very closely with those of Glénard, who examined 4,215 patients. He believes that the influence of child-bearing on the production of movable kidney is not very great, and that the influence of tight lacing as a cause of this condition has been exaggerated. Sex seems to be the most important factor, and absorption of the perirenal fat another important influence. Out of 515 cases with the high degree of mobility no fewer than 411 had no symptoms at all. As to treatment, a spring truss properly applied he has found more effective than belts and other cumbersome forms of apparatus. The improvement of general condition is very necessary. He believes that a long, careful medical treatment should be given before operative measures are resorted to.

4. Raw recommends the following measures for the administrative control of tuberculosis: (1) municipal dispensaries with notification of all "open" cases; (2) health visitors; (3) regulations against tuberculous persons handling food; (4) inspection of milk and meat; (5) improved dwellings and ventilation; (6) destruction of expectoration; (7) general sanitary measures; (8) disinfection of houses after death of tuberculous patients; (9) inspection of hotels and boarding houses; (10) separation of children from consumptives, with compulsory notification if necessary; (11) isolation of advanced cases; (12) hospitals for treatment; (13) voluntary notification. [J. B. H.]

British Medical Journal.

Oct. 26, 1907.

1. Paul, F. T. *Address on Some Experiences in Abdominal Surgery.*
2. Robson, A. W. M. *On Cholecystectomy; the Indications and Contra-indications for Its Performance.*
3. Fullerton, A. *Anastomosis between the Common Bile Duct and the Duodenum for Obstructive Jaundice.*
4. *Russell, J. S. R. *Discussion on the Indications for Operation in Cases of Intracranial Tumor.*
5. Robb, A. G. *Some Observations on the Recent Outbreak of Cerebrospinal Fever in Belfast.*
6. *Riviere, C. *Tuberculin Treatment of Tuberculosis in Children.*
7. *Osler, W. *Discussion on the Diagnosis of Acute Pancreatitis.*
8. *Northrup, W. P. *Open-Air Roof Wards on Metropolitan Hospitals.*
9. Clarke, J. M. *A Case of Lymphadenoma Treated by X-rays.*
10. West, S. *Some Remarks on the Diagnosis and Treatment of Pericarditis.*
11. Tyson, W. J. *Some Remarks on the Prevention of Appendicitis.*
12. Luff, A. P. *Discussion on Rheumatoid Arthritis and the Morbid Conditions which Stimulate It, with Especial Reference to Pathology and Treatment.*
13. Atkinson, T. R. *A Case of Wasp Sting.*
14. Nias, J. B. *The Removal of Foreign Bodies from the Hand or Foot.*
15. Moorhead, E. S. *Second Attack of Typhoid Fever; Perforation; Laparotomy; Death.*

4. Russell gives a paper with numerous illustrative cases on the indications for operation in cases of intracranial tumor. Operation may be recommended in some cases in the hope of effecting a cure; in these certain considerations influence this question, viz., (1) whether or not accurate localization of the tumor is possible; (2) although the tumor may be accurately localized, it may be in such a position as to render the chance of its successful removal very slight; (3) the tumor may be of such a nature, malignant or otherwise, that a complete cure is not to be expected. In operations to relieve the symptoms and prolong life the indications for and against trephining must be carefully weighed. The importance of saving sight by relieving intracranial pressure can hardly be overestimated.

6. Riviere gives the results of tuberculin treatment of tuberculosis in children. He divides these cases into two groups: strictly localized tuberculosis, and tuberculosis not strictly localized, that is, accompanied by symptoms of general disturbance. The success or non-success of tuberculin treatment resolves itself into a question of doses. He believes that many disappointing results are to be accounted for by overdosage. He now considers 1-12000 to 1-8000 mgm. suitable for a child of one year, 1-4000 for a child of five years, and 1-3000 for children of ten to twelve years. The effect on the opsonic index

should be carefully watched, and, a convenient dose being fixed, it is best given every two weeks. He considers it very important to watch the opsonic index as a guide to treatment. In cases where this is impossible, clinical evidence may take its place. For localized tuberculosis he has found tuberculin in suitable doses an almost certain remedy. The improvement is threefold, consisting in a change in the general health, a marked mental improvement and a tendency to local healing. Among his cases of this class he has treated tuberculous dactylitis, superficial abscess, tuberculous glands and tuberculous joint diseases. Tuberculous glands do well, but in prolonged treatment his experience with joint cases has been too short and scanty to give conclusions. Cases of tuberculosis accompanied by symptoms, such as phthisis and tuberculous peritonitis, are certainly benefited by tuberculin in most instances. He urges a wider use of tuberculin in the treatment of tuberculosis in children and believes that poor results are generally due to faulty administration.

7. Osler recognizes two groups of cases of acute pancreatitis, a first in which there is enlargement of the gland, often with hemorrhage; a second in which the gland is in a state of suppuration or necrosis. There are three main causes of acute pancreatitis: (1) mechanical, as a calculus leading to bacterial infection; (2) chemical, as bile, gastric juice or duodenal contents entering the pancreatic duct; (3) most important of all, an infective cause. There were gallstones in nearly one half of his cases of acute pancreatitis. Diagnosis is often impossible. The history is of the greatest importance, especially one of alcoholism in middle-aged men, or a record of gallstones, and then sudden severe symptoms. Ninety per cent of his cases not operated on died, and of those operated upon more than 50% recovered.

8. Northrup gives an interesting description of the open-air roof ward on the Presbyterian Hospital in New York City. He discusses its construction and appointments and its functions and gives his general impression of its usefulness after experience. It is to be hoped that this movement will begin a new era in hospital construction. The great thing to be borne in mind in these open-air wards is that the patient must be made comfortable. [J. B. H.]

DEUTSCHE MEDIZINISCHE WOCHENSCHRIFT. No. 37.
SEPT. 12, 1907.

1. HERXHEIMER, K. *Contribution to the Treatment of Acne Vulgaris.*
2. *ARNING AND KLEIN, C. *A Practical Technic for the Detection of the Spirocheta Pallida.*
3. *BOELLKE, O. *Wright's Opsonins in Acute Infectious Diseases.*
4. BORUTTAU, H. *Action of Iodglidine in Animals and Human Beings.*
5. *HESSE, F. *Complications after Spinal Anesthesia.*
6. FRIEDLANDER, J. *Habitual Abuse of Chloroform.*
7. *TURAN, F. *Treatment of Chronic Endometritis.*
8. MULERT. *A Case of Rupture of the Uterus During Labor.*

2. Arning and Klein, in reporting the results of their work in the examination of patients in the Hamburg Hospital for venereal diseases, say that they have convinced themselves that the spirocheta pallida is the cause of syphilis, and is pathognomic for the disease when discovered in suspected lesions. The search for this organism should be made a routine measure in hospital work. The authors found the most satisfactory staining method that of Giemsa as modified by Preiss. One hundred and forty cases of clinical chancres were examined, 112 of these being of the male genitals. In only four instances were the spirochetes not found, the reason in two of the cases being that the ulcers had already undergone prolonged local treatment with mercury. In 44 primary lesions of the female genitals the spirochetes were found every time. Only ten failures are reported in 179 cases of syphilitic plaques and patches of various sorts. Seventeen cases of actual or suspected congenital syphilis were examined, and in every instance in which clinical syphilis existed the spirochetes were found. In 32 cases in which the diagnosis was clinically uncertain, the spirochetes were found seven times, and the subsequent clinical course was that of syphilis. Eighteen cases gave a negative result and were treated as soft chancres, but in two of these the occurrence of secondary symptoms showed that the search for spirochetes had not been sufficiently prolonged. In the remaining 7 cases treatment by mercury had already been given, and no spirochetes were found. In 93 cases the clinical picture was that of soft chancre and the examination was made as a species of control; in two of these the spirocheta was found, but the others, in which a very careful search failed to detect the micro-organism, ran the course of a non-syphilitic affection.

3. Boellke thinks he was able, by specific inoculation, to raise the opsonic index in fourteen pneumonias and one empyema. The latter showed pneumococci and streptococci in the aspirated pus. Six days after the first inoculation there were no bacteria in the aspirated pus, and patient was well by the twelfth day; aspiration was the only surgical procedure.

5. Hesse warns against the use of spinal anesthesia unless general anesthesia is decidedly contra-indicated, and says it should never be used for operations above the umbilicus. In his experience of 60 cases he encountered one collapse from the introduction of the needle, annoying symptoms in 7. One case had intense pain in the right arm and headache, the pain spreading to the intercostal spaces; two months after the pain and other sensory disturbances, with exaggerated reflexes, persisted unchanged. He employed tropacocain 0.05. gm., diluted in all cases with 5 cc. of the patients' cerebrospinal fluid.

7. Turan describes the manner in which he has successfully applied Bier's congestion treatment in chronic catarrhal endometritis. He uses a fenestrated intrauterine catheter, having on its stem a projecting shoulder to keep it from entering too far. The catheter is connected by rubber tubing to a Y-shaped coupling, by means of which it communicates with a mercury manometer and with a suction syringe. A packing of gauze about the shoulder of the catheter prevents the entrance of air into the uterus. Suction is applied by means of the syringe, and negative pressure maintained for a period of from twenty minutes to an hour by clamping the rubber tube. Experience has shown that very little leakage takes place even though the patient walks about during the application. The most suitable pressure has been found to be between 20 and 30 mm. of mercury. The treatment is painless and should be repeated every day for fifteen to twenty-nine sessions. In old chronic cases the results were eminently satisfactory, but recent or acute inflammation contra-indicates this treatment. [L. G. M.]

MÜNCHENER MEDIZINISCHE WOCHENSCHRIFT. No. 37.
SEPT. 10, 1907.

1. MÜNZER, E. *A New Apparatus for Measuring Blood Pressure. Remarks on Sphygmo-Turgography.*
2. KRÜGER. *Torsion of the Appendices Epiploicæ.*
3. *JAHRMÄRKER. *Pachymeningitis Interna Hemorrhagica.*
4. NELIR, E. *Pathogenesis of Hirschsprung's Disease (Congenital Dilatation of the Colon).*
5. FEIGL, G. *A New Method of Treatment for Bubo.*
6. DENCKS, G. *So-Called Acquired Lymphangioma of the Neck.*
7. GRIMME. *A Case of Typhoid, with the Clinical Picture of Weil's Disease.*
8. BRINK. *A Case of Cesarian Section, Necessitated by Spontaneous Fixation of the Uterus after a Previous Delivery.*
9. BOESL. *Methylatropinum Bromatum in Eclampsia of Children.*
10. BINDER. *A Case of Spina Bifida Occulta.*
11. RAHONER. *A Case of Carcinoma of the Stomach with Metastases in the Femur.*
12. DESSAUER, F. *Protection for Physician and Patient against the Harmful Action of X-Rays.*

3. Jahrmärker describes 2 cases, one in a man of sixty-three, the other in a woman of sixty, both of whom rather suddenly developed symptoms of senile dementia accompanied by slowly increasing paralysis of the limbs and face muscles, in the first hemiplegic, in the second paraplegic. The paralyses were accompanied by premonitory symptoms (local spasms, tremors, etc.). This

condition slowly merged into one of complete paralysis and unconsciousness, followed by death. In both cases a diagnosis of pachymeningitis interna hemorrhagica was made, because of the lack of history of trauma, the general marked arteriosclerosis, the slowness of the march of symptoms, and the paralyses combined with symptoms of cortical irritation. The autopsies supported the diagnoses. In the first case (*i. e.*, hemiplegic) there was a one-sided hemorrhagic pachymeningitis. In the second case the process extended over the whole surface of both hemispheres. [R. D.]

Berliner Klinische Wochenschrift. No. 37.
Sept. 16, 1907.

1. Jürgens. *The Position of Paratyphoid in the Typhoid Group.*
2. Rössle, R. *Are Infusions of Salt Solution Dangerous?*
3. *Engel and Bauer. *Experiences with Pirquet's Tuberculin Reaction.*
4. Maas, O. *Multiple Tumors of the Central Nervous System.*
5. *Ruhemann, J. *The Epidemic Importance of the Influenza Bacillus.*

3. Engel and Bauer observed a series of 48 infants who had received tuberculin injections. In 6 cases, which were tuberculous, the Pirquet reaction was present (*i. e.*, a papule at the point of injection); in 5 cases without demonstrable tuberculosis the reaction was also positive. Out of a series of 280 children of more advanced years, all those with a clinically evident tuberculosis gave a Pirquet reaction. Thus it appears that the reaction is more reliable in children than in infants. The authors find that in comparison with the ordinary tuberculin test, *i. e.*, a general reaction, this local reaction is not to be depended on.

5. Ruhemann has observed that of late years the bacillus of Pfeiffer is less often found in association with clinical influenza. He attributes this to the fact that many people have acquired a partial immunity to the bacillus by repeated attacks of influenza. Also he claims that since the first great epidemics, there has been a constant diminution in the virulence of the organism. [R. D.]

Deutsches Archiv für Klinische Medizin, Bd. 90.
Hft. 3–4, 1907.

1. *Geigel, R. *Metallic Sounds in Physical Diagnosis.*
2. *Köster, G. *Temporary Absence of the Patellar Reflexes in Hysteria.*
3. *Uffenheimer, A. *Nodular Lung (Knötchenlunge).*
4. *Klieneberger, C. *Studies of Coli Agglutinins with Especial Reference to the Clinical Value of Coli Agglutination.*
5. *Bickhardt, J., and Schümann, E. *Aneurism of the Hepatic Artery.*
6. *Prym, O. *The Meaning or Clinical Diagnosis of a Stomach Contents in Layers.*
7. *Türk, W. *A Case of Yeast Infection (Saccharomykosis) of the Meninges.*
8. *Porges, O., and Pribram, E. *Orthostatic Albuminuria.*
9. Kollarits, J. *Galvanic Muscle Contraction in Various Diseases.*
10. Mayer, A. *Metabolism in the Phthisical.*
11. Mayer, A. *The Formation and Excretion of Oxalic Acid in Infectious Diseases.*
12. *Groedel, III, F. M. *The Topography of the Normal Stomach.*

1. Geigel discusses in this paper the physical explanation of the metallic sounds produced in percussion, and the various theories which have been advanced to explain this phenomenon in thoracic percussion. He believes it is due to a discontinuous vibration of an elastic body, which produces high overtones, considerably above the fundamental tone. This condition is present in an air-containing cavity with a tense wall, which can be put in vibration at some point.

2. In most cases of hysteria, the patellar reflexes are increased. An exception to this rule is the case published here by Köster, in which there was a temporary absence of these reflexes. Other cases have been reported, and these are discussed by the author. Most of these are undoubtedly cases of hysteria, and the absence of the knee jerks cannot be attributed to organic lesion of the spinal cord. It is much more common to have these reflexes absent in organic diseases, but the diagnosis of organic disease is not justified merely on the absence of knee jerks. Köster discusses the probable explanation of the absent reflexes, but arrives at no very satisfactory explanation of the phenomenon. In most of the cases in which this combination has existed, there has been muscle weakness, but the lack of muscular tone is not sufficient to explain the absent knee jerks, since in other conditions with marked loss of muscle tone the knee jerks may remain very active, and even in hysterical cases with the same symptoms (astasia-abasia) as the one reported by the author, the knee jerks are more often present.

3. The "nodular lung" is a term used by Uffenheimer to describe certain small nodules resembling miliary tubercles in the lungs of guinea pigs which have been inoculated with various organic substances. These nodules do not have the histological structure of tubercles, and inoculation of them into animals does not produce tuberculosis. They appear to be an excessive development of lymphoid nodules, with which is associated a considerable local eosinophilia in many cases. The interest in these nodules is in the belief of the author that their formation is associated with, or is an expression of some acquired immunity; in this particular case an immunity to tubercle bacilli, since in his cases they were produced by the injection of blood and glands from guinea pigs, recently inoculated with tubercle bacilli. Definite proof of this theory cannot be given, but the presence of the nodules seems to be associated with a resistance to tuberculosis.

4. Klieneberger has made an extensive study of the agglutinins for colon bacilli, which are present in normal serum, and the serum of people suffering from various infections with colon bacilli. Under normal conditions one finds somewhat high agglutination values for colon bacilli, and different strains of bacilli are differently agglutinated by the serum of the same individual. Serum from cases with colon bacilli infection very frequently agglutinates the infecting strain of bacteria, but not always, and the highest agglutination values occur in the serum of cases with fever associated with the infection. The determination of a colon bacillus infection by means of the agglutination test must always be controlled by comparative test with a normal serum, and even under these conditions no very definite conclusions can be drawn from strongly positive reactions; consequently the agglutination of colon bacilli with serum of patients is of comparatively little value to the clinician.

5. This is a report of a single case with autopsy of a quite rare condition. The authors have collected 37 similar cases, and attempt to construct a diagnostic symptomatology. The most characteristic features of it are pain in the right upper quadrant of the abdomen, associated with icterus, hemorrhage into the digestive tract and palpable tumor unassociated with liver-edge or stomach. Diagnosis under these conditions, however, would hardly be possible except when there is associated pulsation of the tumor, and a systolic murmur over it. Even under these conditions it is not likely that the condition will often be diagnosed.

6. The veterinarians have long recognized that food in the stomach of animals was not evenly mixed but was arranged more or less definitely in layers. Prym here shows that the same is true in dogs for a liquid meal of thin consistence. In man the same condition is suggested by the finding of a different degree of acidity in two portions of stomach content removed simultaneously by means of a two-way tube with openings at different levels. This being the case there is much chance for variable results from the analysis of stomach contents after the usual test meals depending on the portion removed. This is true for the Ewald-Boas and the Sahli test meals, and there is even more chance for error in the Mathieu method of determining the total residue. These facts render the finding of minor variations in analyses of stomach contents as of doubtful value in diagnosis, and emphasize the great care that should be exercised in drawing conclusions from the results of various methods of gastric analysis.

7. Türk gives a very full account of an almost unique case. There is a careful description of the cultural characteristics of the yeast isolated from the case.

8. Porges and Pribram contribute a study of two cases of orthostatic albuminuria in which they tested the influence of posture ingestion of food, drugs affecting the general circulation (digitalis, strychnine, chloralhydrate) and those acting on the renal vessels (caffein, diuretin), cathartics, etc., on the excretion of albumin. As a result of these studies they conclude that the condition is the result of local disturbances of the renal circulation, probably following an arterial spasm that obstructs the circulation through the kidneys.

12. By means of ingested bismuth and the orthodiagraph, Groedel has made extensive studies of the position and shape of the full stomach. In the first place this is dependent on the position of the body. In the standing position the more usual shape is that of a siphon, while lying down we have a sandal form. The stomach rotates in change of body posture, on an axis running from pylorus to cardia. Many variations in form and position occur, depending on the shape of the body, abdominal contents, the relaxation of the abdominal wall and the position and degree of filling of the intestine.

[H. A. C.]

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Miscellany.

THE AMERICAN NATIONAL RED CROSS.

We have received from Surgeon-General O'Reilly of the United States Army, the following communication with the accompanying resolutions.

As a member of the Executive Committee of the American National Red Cross, I have been requested to forward to you the enclosed resolutions with the hope that you may find it expedient to kindly print them in your publication and lend what assistance you can in discharging the international duty assumed by this country in agreement with all the great powers, of protecting the Red Cross name and insignia from any use save that agreed upon by the Treaty of Geneva.

In cases where the name and insignia are used as trademarks, the suggestion would be of value that their use should be gradually eliminated within the next three or four years, in conformity with the provisions of the treaty that the prohibition of the use of the emblem and name should be enforced not later than five years after the treaty went into effect.

RESOLUTIONS ADOPTED BY THE EXECUTIVE COMMITTEE, OCT. 18, 1907.

Whereas, by international agreement in the Treaty of Geneva, 1864, and the revised Treaty of Geneva, 1906, " the emblem of the Red Cross on a white ground and the words Red Cross or Geneva Cross " were adopted to designate the *personnel* protected by this Convention, and

Whereas, the Treaty further provides (Article 23) that " the emblem of the Red Cross on a white ground and the words Red Cross or Geneva Cross can only be used whether in time of peace or war, to protect or designate sanitary formations and establishments, the *personnel* and material protected by this Convention," and

Whereas, the American National Red Cross comes under the regulations of this treaty according to Article 10, " volunteer aid societies, duly recognized and authorized by their respective governments," such recognition and authority having been conferred upon the American National Red Cross in the charter granted by Congress, Jan. 5, 1905, Sect. 2. " The corporation hereby created is designated as the organization which is authorized to act in matters of relief under said treaty," and, furthermore,

Whereas, in the Revised Treaty of Geneva, 1906, in Article 27, it is provided that " the signatory powers whose legislation should not now be adequate, engage to take or recommend to their legislatures such measures as may be necessary to prevent the use by private persons or by societies other than those upon which this convention confers the right thereto of the emblem or name of the Red Cross or Geneva Cross."

Be it resolved, That the Executive Committee of the American National Red Cross requests that all hospitals, health departments and like institutions kindly desist from the use of the Red Cross created for the special purpose mentioned above, and suggests that for it should be substituted some other insignia, such as a green St. Andrew's Cross on a white ground, to be named the " Hospital Cross," and used to designate all hospitals (save such as are under the medical departments of the army and navy and the authorized volunteer aid society of the government), all health departments and like institutions, and, further,

Be it resolved, That the Executive Committee of the American National Red Cross likewise requests that all individuals or business firms and corporations who employ the Geneva Red Cross for business purposes kindly desist from such use, gradually withdrawing its employment and substituting some other distinguishing mark.

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THE OPERATIVE TREATMENT OF CANCER.

Prof. E. Goldmann, of Freiburg, in the course of an address on " Malignant Disease " delivered before a meeting convened by the Surgical Section of the Royal Society of Medicine, held on Oct. 23, commented on the defensive substances manufactured in the human body against malignant tumors. Present knowledge enabled the inference to be made that the body's first line of defence was established on the boundary of an invading growth. That explained those cases in which cancers of slow growth and long duration had been removed with the result that the patients have returned in a short time with recurrences of an alarming nature which have grown rapidly. It appeared to Professor Goldmann that in such cases the surgeon's knife had done harm, for by removing the growth he has destroyed the barrier of defence, which the body has carefully raised up during the long period of the tumor's existence. He thought that the time had come to consider whether stereotyped surgical interference was the only remedy of the future for malignant growths. — *Lancet.*

Correspondence.

LETTER FROM SAN FRANCISCO.

The Plague Situation in San Francisco.

San Francisco, Nov. 12, 1907.

Mr. Editor: I am enclosing you a report to date on the plague situation in San Francisco.

The first authentic case in this epidemic was verified May 27 and no subsequent case was noted until the middle of August when within a few days five or six cases were found in the City and County Hospital. The situation seemed serious because these cases developed in widely scattered parts of the city, but chiefly along the water front in the miserable shanties which an inefficient city government allowed to remain occupied in spite of adequate quarters for the homeless in sanitary and well constructed camps. It is to the filth and lack of sewer connections of these irregular camps that we attribute also our unprecedented epidemic of typhoid fever a year ago.

Up to Nov. 9, 90 verified cases of plague had been reported with 57 deaths.

Our present mayor — a graduate in medicine as well as in law — was keenly alive to the situation, and within a few days of the matter being brought to his attention, he had reorganized the Department of Health from top to bottom and asked the Federal Government for the further help of its Marine-Hospital services. Eight years ago when we had a similar but smaller outbreak, Dr. Rupert Blue was sent to us, and to his efficiency as a sanitarian we owe the thorough cleaning out of the disease. He remained with us until every cellar and underground passage in Chinatown had been cleaned up and cemented, hordes of rats killed, until the disease was no longer found among them and until no new case among human beings had been reported for a year. It was with considerable satisfaction that we heard promptly that Dr. Blue was on his way here again to assume charge of the situation with our local Board of Health. The first epidemic, if it can be called rightly by that name, resulted in about twenty-five people getting the disease, only one of whom was white — the remainder being Japanese or Chinese.

In the present epidemic only one or two Chinamen have been afflicted, the remainder being chiefly the Latin races who are segregated along the water front. It is needless to say that nothing has been left undone to stamp out the disease. The irregular camps have been vacated and destroyed and stables and cellars everywhere have been rigidly overhauled. Rats are being trapped and poisoned by the thousand and it is gratifying to note that fewer and fewer plague-infected rats are being found in proportion to the others. The number of cases and suspects reported is also diminishing, and we hope to have a clean bill of health before long. In the meantime an isolation hospital has been built and surrounded by a corrugated iron fence buried two feet in the ground. Here the clinically diagnosed cases are taken at once. They are cared for by a staff of physicians, and every case receives attention from the resident physician and the representative of the Marine-Hospital Service each day. The nursing is done by a staff from the City Hospital. The Board of Health provides a suitable laboratory where two bacteriologists with a number of medical assistants check up the material brought in for investigation. An incineratory on the ground has been provided for and nothing leaves the enclosure in the way of waste product or sewage.

It might be interesting to the medical profession throughout the country to refer briefly at this time to the need in San Francisco of a school for the study of tropical diseases. It is no uncommon thing for us to have in the wards of our public hospital cases of pernicious malarial fever, tropical liver abscess, leprosy, beri-beri, and countless cases with intestinal parasites. Our relation to the Orient is not an unmixed blessing. It seems high time that more attention was paid to the portal of entry of diseases which are certain from now on to menace us all the time.

The supervisors of the city are of the opinion that the eradication of plague in San Francisco is not merely a local matter and that the Federal Government should assume part of the expense. The city is willing to expend $10,000 a month and proposes to ask the general government for the other $30,000 which are required.

At a conference, attended by the Governor, the Mayor, and various city and state officials, which was held Nov. 8, the following resolutions were adopted:

Whereas, the United States Marine-Hospital Service, acting in conjunction with the state and the city authorities, has thus far successfully coped with the plague situation prevailing in the city; and

Whereas, it is of vital importance that the labors of these joint bodies be continued without interruption; and

Whereas, the city of San Francisco has contributed most of the funds necessary for the accomplishment of the work of these joint bodies; and

Whereas, we believe that the successful prosecution of this work is a matter of concern to the entire United States, and for that reason one that should be controlled by the Federal Government, and that San Francisco cannot, without seriously crippling itself, continue to defray the expenses of such work, by reason of the enormous demands now being made upon its treasury for rehabilitation purposes; now, therefore, be it

Resolved, That it be the sense of this meeting that the chairman of the Finance Committee of the Board of Supervisors of San Francisco, the president of the Board of Health of San Francisco and the secretary of the State Board of Health proceed at once to the city of Washington for the purpose of securing from the Federal Government the necessary financial means for the prosecution of this work to a successful conclusion.

Very truly yours,

Philip King Brown, M.D.

ON THE TREATMENT OF TYPHOID FEVER WITH SPECIFIC SERA, FILTRATES, AND RESIDUES (VAUGHAN).

Boston, Nov. 16, 1907.

Mr. Editor: I was very much interested to read Dr. Prince's letter in the last number of the Journal concerning the unreliability of statistics when applied to anything but a very large series of cases of typhoid fever. I, myself, have always been conscious of this unreliability, though I was not aware that it had been so conclusively demonstrated as is shown by Dr. Prince's investigation of 3,000 cases.

This lack of faith in figures I thought I had made plain when I said

(1) "A comparative study of 130 cases of typhoid fever appears in the following tables, which offer many points of interest, but which *must be scanned very critically lest they convey false impressions.*"

(2) "*Taken with the reserve with which all such tables must be observed.*"

(3) "That specific therapy increases *apparently.*"

(4) "This claim [prevention of relapses] is, . . . of course, *subject to confirmation by observation upon a much larger series of cases.*"

(5) "The nontoxic residue *seems* to make the typhoid process longer but milder."

It is apparent, therefore, that, if eight years are consumed in the investigation of 130 cases of typhoid fever, it is scarcely possible within a single lifetime to make a satisfactory statistical study of treatment in typhoid fever. I do believe, however, that one who has spent ten years in studying typhoid fever from various points of view is entitled to have some very strong impressions and beliefs, and I should like to state again my *belief:*

(1) That typhoid fever can be favorably influenced by specific methods of treatment, if that treatment can be instituted early enough. Lack of a positive diagnosis is often a great hindrance, but the newer methods of blood culture promise better results in this regard.

(2) That by specific treatment the relapse in typhoid fever can be largely eliminated.

Very truly yours,

Mark W. Richardson, M.D.

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 9, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	4	1
Chicago	—	—	Waltham	6	0
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	—	—
Baltimore	197	43	Brookline	7	1
Cleveland	—	—	North Adams	4	—
Buffalo	—	—	Chicopee	6	2
Pittsburg	—	—	Northampton	6	3
Cincinnati	—	—	Medford	8	—
Milwaukee	—	—	Beverly	1	—
Washington	—	—	Leominster	8	3
Providence	78	23	Hyde Park	5	1
Boston	205	47	Melrose	1	1
Worcester	24	6	Newburyport	—	—
Fall River	88	16	Woburn	2	1
Cambridge	15	3	Marlboro	6	1
Lowell	38	8	Westfield	3	1
Lynn	18	2	Peabody	—	—
New Bedford	27	9	Revere	2	1
Springfield	19	7	Attleboro	2	0
Lawrence	27	6	Clinton	0	—
Somerville	17	2	Adams	7	4
Holyoke	29	14	Gardner	1	—
Brockton	5	2	Milford	0	—
Malden	14	2	Watertown	0	—
Chelsea	18	4	Plymouth	—	—
Salem	15	1	Weymouth	2	0
Newton	7	—	Framingham	1	1
Haverhill	20	—	Southbridge	3	1
Fitchburg	8	2	Wakefield	—	—
Everett	5	1	Webster	—	—
Taunton	—	—			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 16, 1907.

E. Z. Derr, medical director. Detached from the navy yard, Portsmouth, N. H., and ordered to the naval recruiting station, Providence, R. I.

J. M. Steele, medical inspector. Detached from the naval recruiting station, Cleveland, Ohio, and ordered to the navy yard, Portsmouth, N. H., and to additional duty in command of the naval hospital at that yard.

V. C. B. Means, surgeon. Sick leave extended three months from Nov. 16.

J. D. Manchester, passed assistant surgeon. Detached from the naval hospital, Pensacola, Fla., and ordered to the "Panther" when commissioned.

J. H. Payne, Jr., passed assistant surgeon. Detached from the naval recruiting station, Providence, R. I., and ordered to the naval recruiting station, Cleveland, Ohio.

R. B. Williams, passed assistant surgeon. Detached from the "Maine" and ordered to the "Franklin."

R. A. Warner, assistant surgeon. Detached from the "Louisiana" and ordered to the naval hospital, Pensacola, Fla.

L. H. Wheeler, assistant surgeon. Ordered to the naval recruiting station, Indianapolis, Ind.

D. H. Casto, assistant. Detached from the naval recruiting station, Indianapolis, Ind., and ordered to the "Maine."

W. G. Steadman, Jr., assistant. Detached from the "Franklin" and ordered to the "Louisiana."

G. H. Barber, surgeon. Detached from the "Kearsarge" and ordered to the "Wabash."

H. D. Wilson, surgeon. Ordered to the "Kearsarge" Dec. 1.

M. W. Baker, passed assistant surgeon. Detached from duty at the naval hospital, New Fort Lyon, Colo., and ordered to the naval hospital, New York, N. Y., for treatment.

L. W. Bishop, passed assistant surgeon. Detached from the "Missouri" and ordered to continue treatment at the naval hospital, New York, N. Y.

R. H. Nichols, passed assistant surgeon. Detached from the naval recruiting station, Kansas City, Mo., and ordered to the "Missouri."

J. L. Belknap, assistant surgeon. Detached from the "Wabash" and ordered to the naval hospital, Boston, Mass.

G. L. Wickes, assistant surgeon. Ordered to the naval recruiting station, Kansas City, Mo.

J. G. Field, surgeon. Ordered to the naval training station, San Francisco, Cal.

C. Biddle, surgeon. Detached from the naval training station, San Francisco, Cal., and ordered to Washington, D. C., for examination for promotion, and then to wait orders.

C. N. Fiske, passed assistant surgeon. Detached from the "Yorktown" and ordered to the naval hospital, Mare Island, Cal.

G. W. Shepard, assistant surgeon. Ordered to the naval hospital, Mare Island, Cal.

R. I. Longabaugh, assistant surgeon. Detached from the naval hospital, Mare Island, Cal., and ordered to the "Yorktown."

C. A. Lung, surgeon. Ordered to the naval recruiting station, Philadelphia, Pa.

L. W. Bishop, passed assistant surgeon. When discharged from treatment at the naval hospital, New York, N. Y., ordered to the naval training station, Newport, R. I.

SOCIETY NOTICES.

Boston Society for Medical Improvement. — The regular meeting of the society will be held in Sprague Hall, Medical Library Building, on Monday, Nov. 25, 1907, at 8.15 P.M. Program: Personal Experience with Specific Vaccines in the Treatment of Bacterial Disease: Dr. Mark W. Richardson. The Value of Vaccine Therapy in the Treatment of Bacterial Disease: Dr. Cleaveland Floyd (by invitation). Discussion: Drs. H. F. Hartwell and Roger Lee.

Daniel Fiske Jones, M.D.,
Secretary.

Surgical Section of the Suffolk District Medical Society in Conjunction with the Boston Medical Library. — Meeting Wednesday, Nov. 27, 1907, at 8.15 P.M., John Ware Hall. Some Observations upon Renal Surgery, from an Analysis of One Hundred and Thirty-five Operative Cases: Dr. G. E. Brewer, New York. An Insidious Type of Nontuberculous Pyelonephritis: Dr. A. L. Chute. Light refreshments after meeting.

J. C. Munro, M.D., *Chairman.*
J. C. Hubbard, M.D., *Secretary.*

The Norfolk District Medical Society. — A meeting for Scientific Improvement will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Nov. 26, 1907, at 8 o'clock. The following papers will be presented: Cough in Relation to Nose and Throat Affections: Dr. C. D. Knowlton. A Plea for a More Accurate Diagnosis in Throat and Nose Diseases by the General Practitioner: Dr. H. V. McLaughlin. Vasomotor Disturbances (Deviations of Septum; Hay Fever): Dr. F. D. Lyon. The Tonsils and Their Relation to General Infection: Dr. C. P. Sylvester. The discussion will be opened by Drs. J. B. Brainerd, C. R. C. Borden and A. E. Rogers.

William H. Robey, Jr.,
Secretary.

RECENT DEATHS.

William Frederick Heald, M.D., M.M.S.S., died in Pepperell, Nov. 6, 1907, aged sixty-four years.

Dr. Thomas H. Holgate, an old-time practitioner of New York, died on Nov. 14 at his home on West 11th Street, where he had resided for many years. He was graduated from Bellevue Hospital Medical College in 1869, and was seventy-six years of age.

BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Fractures. With Notes upon a Few Common Dislocations. By Charles Locke Scudder, M.D. Sixth edition, thoroughly revised and enlarged. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

Papers upon Genito-Urinary Surgery. By A. T. Cabot, A.M., M.D. Reprint.

The Medical Record Visiting List or Physicians' Diary for 1908. New revised edition. New York: William Wood & Co.

Transactions of the Twenty-ninth Annual Meeting of the American Laryngological Association held at Washington, D. C., May 7, 8 and 9, 1907.

Textbook of Organic Chemistry for Medical Students. By Dr. G. v. Bunge. Translated with additions by R. H. Aders Plimmer, D.Sc. (Lond.). London, New York, Bombay and Calcutta: Longmans, Green & Co. 1907.

A Manual of the Practice of Medicine. Prepared Especially for Students. By A. A. Stevens, A.M., M.D. Eighth edition, revised. Illustrated. Philadelphia and London: W. B. Saunders Company. 1907.

Original Articles.

ANTERIOR POLIOMYELITIS IN THE ADULT, WITH ILLUSTRATIVE CASES.

BY G. L. WALTON, M.D., BOSTON.

This disease deserves more notice on the part of the general medical profession. In the first place, it is of not infrequent occurrence. I have notes of ten typical cases seen in consultation during the past four years. In the second place, its early recognition is important as bearing both on prognosis and treatment, or rather care, for too energetic treatment in the early stages is in danger of retarding rather than favoring the ultimate progress.

The clinical history of these cases conforms much more accurately to the textbook type than do cases of certain other disorders with which the general practitioner is more familiar.

Symptoms of poliomyelitis in the adult are overlooked, not because they vary materially from the same disease in infancy (infantile paralysis) but because this diagnosis does not enter the mind of the practitioner in case the patient is an adult, whereas it is ever present when the patient is a child.

In the adult appears the same stage of fever, during which signs of irritation appear, and during which the destruction of anterior spinal gray matter produces relaxed paralysis of various muscle groups, without loss of sensation or sphincter control (temporary loss of sphincter control did occur, however, in the first case reported); there are the same favorable prognosis as regards health and the same gradual disappearance of paralysis with more or less permanent residue.

The essential features point, in the adult as in the infant, to an infectious process, of more or less diffuse onset, but having for its chief point of attack the anterior gray matter of the cord, to which region the ultimate injury is limited.

It is not improbable that the original infection involves, to some extent, the meninges, and even the nerve sheaths, as shown by rigidity and sometimes retraction of the neck, pain in the back, neck and extremities, and general tenderness. These symptoms attract little attention in the child, and may even be accompanied by convulsions, without diverting attention from the important feature, namely, absolute flaccid motor paralysis of rapid onset unaccompanied by anesthesia. It is this combination which points distinctly to disease of the gray matter of the cord rather than to the meninges or the peripheral nerves.

In the adult the initial symptoms are apt so to color the picture that the essential nature of the injury is overlooked, and the final paralysis is erroneously attributed to the remains of meningitis or neuritis. The following notes are those of two recent cases in which the initial symptoms indicated that the meninges shared in the original infection.

Case I. C. D., male, sixteen, patient of Dr. Beaton, of Franklin Falls, N. H. Previously well and strong. On first day walked two and one-half miles; felt as if had " taken cold "; could not walk home. On second day, feverish; on third day, consulted physician; temperature 104° F., *pain in back of neck with marked retraction of head;* headache; heavy feeling in limbs without numbness; on fourth day, pains in arms; temperature 105° F.; on the fifth day and for two days after required catheterization; on sixth day temperature 102° F.; relaxed paralysis of both legs and right arm; patient feels well, and stiffness of neck has practically disappeared; on seventh day, temperature 100° F., no further extension of paralysis; on tenth day, temperature was normal and patient began sitting up, after which pain and tenderness reappeared in the legs and forced his return to bed, since which they have lessened. Within a month after the onset the arm had nearly recovered its power, but both lower limbs were practically helpless with loss of all reflexes.

It is too soon to announce the final result of this case, but indications point to incomplete recovery as regards the paralysis. In this case the attending physician blamed premature effort for the return of pain and tenderness, an opinion with which I am inclined to coincide. There was certainly no fever or other indication of recurring infection, an extremely rare complication in any event.

Case II. G. G., male, twenty, patient of Dr. May, of Newton. Previously well and strong. On first day was in bed complaining of headache and *sensitiveness to light;* temperature 102° F.; the third day was up but easily tired; on fourth and fifth days, patient kept quiet without definite symptoms; on sixth day, chills and malaise, vomiting, temperature 102.5° F., *general hyperesthesia,* blood count 14,000 whites. On seventh day, temperature 101.4° F., listless, sleepless, *severe pain in head and back, inability to bear light* and sudden onset of complete relaxed paralysis of left shoulder group without anesthesia; *marked rigidity of neck and of back;* on eighth day, while the temperature was still elevated, the paralysis spread to the other arm and to both legs; on ninth day, stiffness and pain had practically disappeared and temperature was normal, general condition was good, but paralysis was complete.

The forecast for the future is the same in this as in the preceding case.

In four other of the ten cases stiffness and pain in the neck were prominent symptoms at the onset, namely, cases 4, 5, 8 and 10.

The distribution of the paralysis in these cases renders it probable that the meningeal infection was coincident with, rather than in extension of, the cord lesion which caused the final paralysis. In Case II, for example, the stiffness, pain and retraction were marked in the *neck,* whereas the final paralysis involved the *lower limbs* almost exclusively.

Although it seems that poliomyelitis in the adult conforms in many ways to the ordinary poliomyelitis of infancy, its clinical features may diverge sufficiently to render the diagnosis far less easy, especially if the practitioner is not on the lookout for it. The apparent difference is, perhaps, largely due to the ability of the adult more accurately to describe his symptoms, partly also to the more leisurely onset of the disorder.

All the cases coming under my observation have occurred in young robust adults, generally from seventeen to twenty, eight of them males.

The affection has been ushered in by severe headache and neckache, perhaps backache, general malaise, with or without chills, sometimes with general pain and tenderness, sometimes with marked rigidity of the neck and retraction. The symptoms of an ordinary " cold " have been common at the onset of, or perhaps preceding, the infection of the nervous system, doubtless indicating the initial action of the micro-organism. The fever has run a fairly moderate course; it has sometimes, but not generally, reached 104° F., and has lasted rather longer than is common in children, for example, seven days. The paralysis is longer deferred than in children, but when it appears it may do so with great rapidity, perhaps in the course of a few hours, but it is generally longer appearing than in infants. In the following cases the paralysis appeared on respectively the ninth and sixth days.

CASE III. C. H., male, seventeen. Patient of Dr. Hunt, of Newtonville.

Athletic boy. First day, legs felt tired and painful. The next day, was walking about. The third day, nausea, malaise and headache. The fourth day, there was fever, temperature 101.6° F.; was in bed. Had pain in back, head and legs. The fifth day temperature 100.4° F.; pain continued. The sixth day the temperature was 102° F.; ached all over, including arms. The seventh day the temperature was 100° F.; legs ached. The eighth day the temperature was 99.8° F. in the morning, 100.7° F. in the afternoon; vomited; pain lessened. The ninth day the temperature was 99° F. This day appeared definite loss of power, and patient had to be helped to chair. The tenth day he handled the legs better and felt better. On the eleventh day the temperature was normal; there was no numbness or sphincter disturbance. Moderate tenderness in both arms and in left leg; cannot raise left knee in bed nor roll left leg. All affected muscles react to faradism. Knee jerks active right, absent left. No anesthesia.

Three months later was up and about, swinging the left leg slightly but able to walk without a cane. Can go up stairs one step at a time. (No extension of paralysis after temperature normal. Case of practical recovery.)

Went on crutches about eight months, then with cane. About eight months later left off cane and from that time has had practical use of leg except a little difficulty in ascending hills and running.

CASE IV. D. D., female, seventeen. Seen recently in consultation with Dr. Adams, of Pittsfield, and Dr. Powers, of Boston.

Well and strong. First day, chilly and severe headache. Second and third days, dull ache in arms, legs, and especially neck and left shoulder. Fourth day the pain continued. Temperature, 99° F. to 100.2° F. Sixth day, knees gave out, especially the right; temperature was normal. No loss of sensation; no sphincter disturbance. Loss of power to raise right foot at ankle, and to less degree same loss on left. Loss of power in left shoulder and upper arm group, especially deltoid and biceps. Weakness in extension of left wrist. Movements of hands and toes normal. Marked stiffness of neck and inability to bend head forward, actively or passively. No further extension of paralysis. Two weeks later all muscles contract voluntarily and to faradism except tibialis anticus on the right.

The paralysis may rapidly spread in the course of a day or two, but *in only one* (Case 5) *of the 10 cases reported was there further extension of paralysis after the fever had disappeared.* This may be of importance in prognosis, but further data are desirable. At present I am inclined to prophesy that there will be no further extension of paralysis after the temperature has dropped to normal, whereas in case it has not done so the family should be warned of the possibility of extension.

In Case II the left shoulder group alone had become paralyzed on the seventh day; the temperature was still somewhat elevated. The next day all four extremities were completely helpless. In Case IV, on the other hand, which I saw on the seventh day after the temperature had become normal, the paralysis had come to a standstill and was practically limited to the left shoulder group, the flexor group of the right leg, and to a less degree of the left leg. The prediction of no further extension was verified by the further history.

It is justifiable to give a good prognosis as regards life, even though there may be at the onset more or less meningeal accompaniment, and though the paralysis may not have reached its maximum. With regard to disappearance of paralysis, the prospect seems to me better than in children. A proportion of four practical recoveries in ten cases is surely unprecedented in the history of infantile paralysis.

A brief history follows of the cases in which, as in Case III, practical recovery followed.

CASE V. P. O. D., male, twenty-seven years. Patient of Dr. Mead, of Winchester.

Robust. In the evening of first day noticed weakness of fingers in undressing; the next day difficulty in walking, and toe-drop. Third day the legs were more helpless but he could still stand. Fourth day was worse, but went to his office, having to be helped to the train. Fifth day could not rise from chair but could walk across room. Sixth day could not even sit up in bed; dull ache in back of neck, no numbness or trouble with sphincters. There had been no elevation of temperature since the third day (that is, there was in this case extension of paralysis after temperature became normal).

Physical examination shows paralysis, purely motor, especially affecting extensors of both lower extremities. Gradual improvement set in about a month after onset, and three months later he could skate, dance and ride without trouble. Detailed examination showed all movements perfect except a slight difficulty in using the arms, as in putting on the coat.

CASE VI. R. D., male, nineteen. Patient of Dr. Beaton, of Franklin Falls, N. H.

First day, fever 102° F. Second day, pain in back, Third day, paresis of superior oculi recti; pupils large and immobile to light; pain in left shoulder and in back. Fourth day, was unable to walk a crack and left toe dragged; knee jerk was absent. Fifth day, the paralysis increased, temperature became normal on this day. Six weeks later, practical recovery, but slight weakness in arms on use, as after a long drive.

CASE VII. Male, fifteen. R. C. T. Patient of Dr. Jackson, of Milford.

Previously well, though not strong. At onset fever during seven days (highest temperature 103° F.). In bed four weeks. No pain in head or back; no soreness, but pain in both legs. No sphincter trouble, no numbness. Before fever subsided found could not move leg. Improved gradually. When I saw him (six months later) left calf nearly one and one-half inches smaller than right, left thigh two and one-fourth inches smaller than right. Coldness of left foot. Complete and extensive relaxed paralysis. The leg is now (three years later) used practically as well as ever.

In the following case the boy now (three years later) gets about as well as ever, but still has weakness in the leg.

Case VIII. P. A., male, seventeen. Patient of Dr. Stevens, of Belmont.

Previously well and strong. At onset thought had taken cold; sore throat, temperature of 103° F. One week later similar attack accompanied by backache and temperature of 103° F. Pain also in back of neck, and stiff neck. In bed ten days during which lost power in left leg, with toe-drop; knee jerk absent left, lessened right. Improvement gradual. Six weeks later could not stand on toes. Three months after could stand on toes but not on heels. Six weeks later could not bend his back to lace his shoes, but after another six weeks could do so. Three months after onset left calf measured three-fourths inch less than right; left thigh just above knee one inch less than right. Three months later complete paralysis of tibialis anticus and peroneus longus persisted on the left, with degeneration reaction.

In the two remaining cases improvement has come to a standstill for so long a time as practically to preclude recovery.

Case IX. M. A., male, twelve. Patient of Dr. Bowker, of Brookline.

Active and strong. Had a " cold " and did not feel well during few days prior to day of actual onset. First day, headache and was delirious after rough usage at football. Second day, temperature 102.5° F., headache, soreness in chest and back. Third day, still in bed. Fourth day, up. Fifth day, temperature normal; this day appeared loss of power in right leg. No loss of sensation, but marked loss of power of thigh muscles right, less left; knee jerks absent both; some loss of power in right leg also. Improvement appeared two days later, but paralysis of leg has persisted four years, and mechanical support is necessary.

Case X. M. C., female, thirteen. Patient of Dr. Averill, of Campello.

Robust. Played football up to day of onset. That night had pain between shoulders. The next day rode bicycle. Coming home found difficulty in getting on and off and in pushing. (Has had coryza two days.) The second day knees gave out, then arms. The third day could only crawl on knees; marked tendency to retraction of head; temperature, 104° F. Temperature normal from the seventh day. The ninth day still unable to bend head forward. No extension after temperature became normal. The paralysis has remained stationary for three years. Patient is unable to walk.

I cannot forbear emphasizing the importance of rest in the treatment. The patient cannot be kept too long in bed, nor too long postpone bearing the weight upon the paralyzed limbs. It is of importance already, while the patient is in bed, to commence upon treatment directed toward the obviation of contractures. A light elastic stretched from the foot to the knee[1] is useful in toe-drop, as well as a cradle to keep off the weight of the clothes. Energetic massage and electrical treatment should be postponed at least a month, after which they contribute greatly to favorable progress. Otherwise the management of the case is orthopedic.

Conclusions. — Acute or subacute poliomyelitis in young adults is not rare.

The real seat of the infection is apt to be obscured by temporary symptoms pointing to the meninges and nerve sheaths. The implication of the meninges is probably independent, not an extension from the substance of the cord.

The onset of paralysis is more retarded in adults than in infants, and the extension of paralysis from one group to the other is less immediate.

No extension of paralysis is to be expected after fever has subsided.

Prolonged rest of the affected muscles is desirable, as well as early orthopedic measures.

DIAGNOSIS OF GASTRIC CANCER.*

BY RICHARD F. CHASE, M.D., BOSTON.

Cancer of the stomach is a very common disease, more common than many realize. It causes about 2% of the total mortality. Of all cancers, nearly 50% involve the stomach. Statistics show that the disease is on the increase. In the writer's experience gastric cancer is encountered once in about every one hundred and fifty patients over fifteen years of age, as seen in a general medical clinic. If in such a clinic we should exclude the considerable number of patients under thirty years of age, we would then find the per cent of cancer patients vastly increased. Of a recent series of 100 consecutive cases of gastro-intestinal diseases taken from private records, it was found that 10 or 10% were cancer of the stomach.

The general physician who sees but one or two of these cases yearly rarely has the great seriousness of the subject brought home to him, as does the physician or surgeon who encounters fifty to one hundred or more cases each year. Yet it is upon the general physician that the welfare of these patients most depends, for it is he who first sees them and first directs their treatment.

Since there is no medical cure for the disease, and because surgery if taken advantage of early enough may bring about cures, an early diagnosis and resort to surgery is the accepted course to be taken.

But here the very important questions arise, By what means and how early may the diagnosis be made?

Medical means of diagnosis:

History. — The symptoms arising from gastric cancer are usually of short duration at the time the patient first seeks treatment; rarely have they extended over a period of more than three to six months. Yet how often cancer has been excluded in the diagnosis, when present, because the patient may have had gastric symptoms for several years! In such cases of cancer, careful inquiry will almost always reveal the fact that the *character* of the symptoms or the *symptoms* themselves have recently changed. That is, the symptoms of a chronic "dyspepsia" have given place to those arising from cancer. Information regarding past ulcer should always be sought, because recent findings show that about 50% (some say 80% to 90%!) of cancer patients give a history of former ulcer.

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[1] An admirable appliance for distributing the pull of the elastic is the boot of Gowers, made of a single piece of sole leather, cut so as to make a hinge at the heel.

* Read at the meeting of the Middlesex North District Medical Society, Jan. 30, 1907.

Age. — It is well known that the disease occurs most often between the ages of forty and seventy years, but cases occurring between the ages of thirty and forty years are by no means rare. In one of the writer's recent cancer patients, the disease occurred at the very early age of twenty-five years, eleven months. This case will warrant a further report.

Weight. — It is equally well known that loss of weight is a very constant symptom. Just how constant and progressive, and of what diagnostic value this symptom is, will be shown in a measure by further reference to the 10 cases already mentioned.

In 8 of the cases at the time of their first visit there were losses of weight from 3½ to 46 lb.; in the other 2 cases there was extreme emaciation. But of *far greater* diagnostic value is the progress of weight during observation and modern medical treatment. Of the 10 cases, 6 were observed and treated from four to fifty-two days, as may be noted in table. Each case during treatment, regardless of the great alleviation of symptoms in some cases, the increased diet and improved digestion, showed a loss of weight.

Occasionally, frequently perhaps, a maintenance or even slight increase in weight may be temporarily observed. But in gastric cancer this condition can be of but brief duration. Considerable alleviation of symptoms and increase of weight in the first ten days of treatment should not lead the physician to too early abandonment of the diagnosis of cancer. Since a progressive loss of weight is rarely encountered during the treatment of gastric disorders other than cancer, its observation is strongly suggestive of a malignant condition.

By observing a patient's weight is meant the weighing of a patient at each visit on a set of accurate scales, due allowance being made for changes in clothing and other conditions influencing the weight. Of course more accurate information might be obtained by weighing the patient stripped, but this method has been found both impractical and unnecessary in office work.

The weight of patients with gastric stasis should always be taken preferably after the stomach has been evacuated, and only such weights are to be compared.

The reason for this is that in cases of stasis, the contents of the fasting stomach may weigh from one to several pounds, hence after evacuation of the stomach, the patient weighs from one to several pounds less, depending, of course, on the amount of fasting contents. Not infrequently loss of weight has been the chief factor in determining the probable presence of cancer; at other times, its continued absence has been the chief sign by which that disease was excluded. Let there be a more general use of this accurate diagnostic instrument, the weighing scales; then will cancer of the stomach be suspected at a much earlier stage of the disease, than at the present time.

If from the history, age and loss of weight (enough points in any case to arouse suspicion) we suspect cancer, then by a thorough physical examination, together with the application of the various diagnostic tests at our command, we can soon strengthen or confirm our suspicions in the case of cancer, or prove their falsity in case of the existence of another condition.

Chemical tests. — The continued absence of HCl and the *persistent presence* of lactic acid, when frequent gastric lavage is employed, are chemical abnormalities of the gastric juice most often met in cancer of the stomach, and very rarely in other conditions. These changes in the secretion are observed in most of the advanced cases of this disease, although with the lesion located at the cardiac end of the stomach, they may be met at a fairly early stage. On the other hand, usually in cases with the lesion at the pyloric end, the HCl may be present in normal or even in excessive amounts, and as late as the last few weeks of the patient's life, but in these cases gastric stasis is almost always present and has probably existed for some time prior to this late stage.

The finding of food in the fasting stomach, at times when it should be empty, indicates either impaired peristalsis-stasis, or atony, or pyloric obstruction, conditions most often caused by cancer.

In the absence of gross signs of stasis, the finding of microscopic fragments of food in the rinsing water, several hours after the stomach has emptied itself, and especially if the lactic acid bacillus is present, is considered by Ziegler[1] an early and constant symptom of cancer.

Salomon's test. — The detection of appreciable amounts of albumin by Esbach's reagent, in salt solution which has been used to wash out the stomach, several hours after the stomach has emptied itself, according to Kuttner,[2] Zirkelbach[3] and others is a reliable and early sign of cancer. In a limited number of cases, the writer has thus far obtained positive results in cancer cases only, and negative results in mucous gastritis and other nonmalignant diseases. The test seems worthy of further application.

Mechanical and other means. — Very often aspiration of the stomach contents reveals the presence of free blood, and in cases in which hematemesis has never occurred. This finding, together with other symptoms, may suffice to practically confirm the diagnosis. The repeated detection of occult or invisible blood in the feces, if the proper precautions are taken in the tests, is a valuable diagnostic sign, and especially so in cases in which blood has not been otherwise observed.

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[1] Ziegler: Zeitschr. für klin. Med., lviii, Nos. 5, 6.

[2] Kuttner: Berl. klin. Wochenschr., xlvii, Nos. 20 and 26.

[3] Zirkelbach: Arch. für Verdauungskrankh., xii, No. 5.

Inability to pass a stomach tube more than 15 to 16 inches indicates an obstruction at the lower end of the esophagus or at the cardia; this condition with other signs may point strongly to a malignant disease.

Much delay or complete absence of the "deglutition sound" after taking a swallow of water also has the same significance. Simple palpation of the stomach, if skillfully carried out, will at times reveal the presence of very small tumors, even merely indurated areas on the anterior wall. And should doubt exist regarding the presence of a tumor, inflation and palpation may decide the question. Inflation and palpation is also one of the best means of locating certain gastric tumors, and of distinguishing between tumors of the stomach and of other organs.

Since the subjective symptoms of this disease are so closely simulated by those of other gastric disorders, they are of but little diagnostic value. Pain, however, of some variety is a very constant and fairly early symptom; so also is anorexia.

Numerous other tests of more or less value are sometimes employed in the diagnosis of this disease. However, the proper application of *all* the methods of diagnosis here mentioned will enable one to arrive at a reasonable certainty of the presence of gastric cancer, when present, much earlier than the diagnosis was formerly made; and in other nonmalignant cases by the same means, one may exclude cancer in a reasonably short time.

Please remember that it is quite as important to exclude cancer in its absence as it is to make a positive diagnosis when present. The above methods are equally valuable in either case.

And, furthermore, let it be remembered that the medical man's full duty to his suspected cancer patient has not been done until *all* of the medical means of diagnosis, if required, have been applied. The old cardinal symptoms of gastric cancer have been purposely omitted because if we are not to see patients until after the appearance of these symptoms, then there is little need of making a diagnosis.

If there are still some physicians who believe that a positive or negative diagnosis of cancer, as the case may be, can be made, simply by a chemical examination of the gastric juice, then the sooner they relieve themselves of this idea, the better it will be for all concerned.

There should no longer be occasion for the utterance of such laments as the following, recently made by one of our prominent surgeons:[4] "It has been pathetic, in some cases, to have patients withheld from operation by supposed absence of cancer, because of the presence of HCl" (in the gastric juice).

The value of the laboratory methods of diagnosis has at times been overestimated by physicians, and underestimated by some surgeons. It should be remembered by both physicians and surgeons that of our medical means of diagnosis, the laboratory tests constitute but a *part*. As is well known, most surgeons advocate surgical exploration as the best means of making an early diagnosis of cancer

There may be some surgeons who believe, even as John B. Deaver[5] does, that "no patient who presents symptoms of chronic gastric dyspepsia should be allowed to go on his way without operation, as a preventive of malignant disease." But William J. Mayo,[6] who advocates and is as prompt in carrying out early exploration as are most surgeons, says of the diagnosis of cancer: "The most careful and painstaking methods of examination, including laboratory tests, should be insisted upon, but they should not be unduly prolonged."

It can be most truthfully stated that if Mayo's advice is heeded, there will be much less needless gastric surgery, and far more cancer patients will be forthcoming, at a stage of the disease warranting a greater number of radical operations. But in this work there must be intelligent and prompt co-operation on the part of the general physician, for it is he whom the patient first consults, and it is during these early visits that the true condition must be suspected, and determined by some means within a very short time.

We are now confronted with the highly important question, How much time may be allowed for the carrying out of the medical means of diagnosis? Of course, no rule can be established for all cases, except the general one, that it must be as short as possible. In advanced conditions the diagnosis may often be made with much certainty at the first or second visit. At this time a radical, in fact any, operation is usually out of the question. In selected cases a palliative operation may prove of some benefit. In earlier cases, two or three examinations in as many days or a week's time may be necessary. At this stage of the disease occasionally a condition will be found which warrants a radical operation, or, failing in this, if the lesion is at the pylorus, a gastro-enterostomy may prolong the patient's life several months.

In a still earlier class of cases, two or three weeks' time may be required to reach a probable diagnosis, or to learn that the patient needs surgical attention. In quite a number of these cases, if the lesion is favorably located, that is, in the pyloric end, and metastases are not too extensive, resection may be done, or, with adverse conditions for resection, the physician should know at least, and prior to the incision, that a gastro-enterostomy is probably indicated. The chief points to be observed in these various classes of cancer patients regarding operations are: (1) that the physician should be reasonably certain of the presence of cancer; (2) he should usually know when the case is beyond surgical relief; (3) in cases which he considers operable, he should have a pretty good idea that the conditions warrant at least a palliative, perhaps a radical, operation. Ulcer cases with stasis may be included here. Some of them cannot be differentiated from cancer by medical means. (4) In certain cases, either early or late, he should know if the cancer is located at the cardia, or lower end of the esophagus, and be aware that no operation, except a gastrotomy as a last resort, should be attempted. In advising regarding operation, the patient's age and his physical condition are features which should be duly considered.

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[4] Munro: Transactions, Mass. Med. Soc., 1904.

[5] Deaver: Bost. Med. and Surg. Jour., Oct. 11, 1906.

[6] Mayo: Jour. Am. Med. Asso., April 7, 1906.

The above classes of patients (and Hoffmann[7] figures it that the disease has then been present ten and three-tenths months) constitute the vast majority, perhaps 95%, of all gastric cancers as seen by the consultant.

In the remaining small portion of cancer cases, the true conditions perhaps cannot be learned by medical means within three weeks' time. In most of these cases, perhaps all, a surgical exploration should certainly be made, and the operation carried out which seems indicated. But even in these cases a radical operation cannot be done, unless the lesion is favorably located. Sometimes the surgical diagnosis will be negative and sometimes mistakes will be made. Mistakes are also made by the medical man. Thus far those of the writer have been in the nature of commissions rather than omissions. They have resulted from one chief cause, lack of sufficiently close and long observation of the patients. In private practice this lack of observation has occurred only in those cases in which it was felt that the physician, referring the case, expected a positive or negative diagnosis from a *single* examination. This source of error in diagnosis has now been eliminated.

If a physician desires a tolerably accurate diagnosis and the best advice from the consultant, he should turn over his patient absolutely, until such time as is required for the final report. Sometimes three days, at other times three weeks, might be required for this report, but not a longer period. A reasonable length of time must be granted for the carrying out of the various tests. In some cases more time may be required to exclude cancer than is needed in other cases to make a positive diagnosis.

For example, at the first visit an absence of HCl, and other symptoms may point to cancer, yet one or two weeks' observation and proper treatment may show, by a return of the HCl, that the case was one of chronic gastritis or simple achlorhydria. Had the case proven to be cancer the diagnosis might have been made in shorter time.

In concluding, it may well be stated that cancer of the stomach should *more often* be thought of by the physician in his diagnosis of gastric disorders, and at an earlier stage of the disease. It is to him that the choice of methods of diagnosis is necessarily left.

Case.	Age.	Duration months.	No of days observed.	Loss during observation.	Diagnosis on day.	Operated on day.	Operation advised.	Duration of life after gastro-enterostomy.	Duration of life.	HCl.
1	45	9	11	4½ lb.	5th	12th	5th day	9 + months	....	0
2	69	6	52	2¾ ,,	1st	......	Not advised	....	5 + months	0
3	49	3 +	14	6¾ ,,	9th	......	,, ,,	....	2 ,,	0
4	65	2 +	8	7 ,,	1st	......	,, ,,	....	1 month	..
5	57	12	38	3 ,,	8th	45th	8th day	7 + months	....	+
6	49	4 +	4	?	4th	......	Not advised	....	1½ months	0
7	45	7	11	2¼ lb.	9th	14th	11th day	8 + months	....	+
8	44	3 +	1	..	1st		1st day	....	....	0
9	40	8	1	..	1st	......	Not advised	....	3 months	0
10	48	8	1	..	1st	......	,, ,,	....	1 month	0
A	25 1/12		15	¾ lb.	10th	17th pylorectomy	10th day	Living	....	0

This table of 10 cancer cases may give one a general idea of loss of weight during observation, time required to make diagnosis, etc.

Case A is included on account of early age, etc.

A PORTABLE TRACTION AND RETENTIVE APPARATUS FOR USE IN FRACTURE OF AND OPERATIONS ON THE LOWER EXTREMITY.

BY ROBERT SOUTTER, M.D., BOSTON,

Assistant Surgeon, Children's Hospital; Member of the American Orthopedic Association.

This apparatus was devised by the writer for fractures of or operations on the femur or leg or hip-joint. It is often important to overcome contraction of the muscles or prevent overriding of the ends of the fractured bone, and at the same time maintain a good relation of the femur to the pelvis as well as a perfect alignment of the leg.

The proper relations must be maintained while considerable traction is employed. Where manual traction is all that is necessary, even this is hard to maintain with uniformity for any length of time.

Moreover, it is difficult to obtain good counter traction. It is difficult to keep the patient steady during manipulation or during the application of retentive appliances, whether this be plaster of

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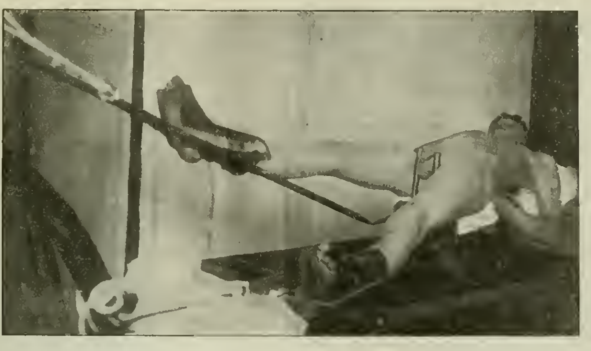
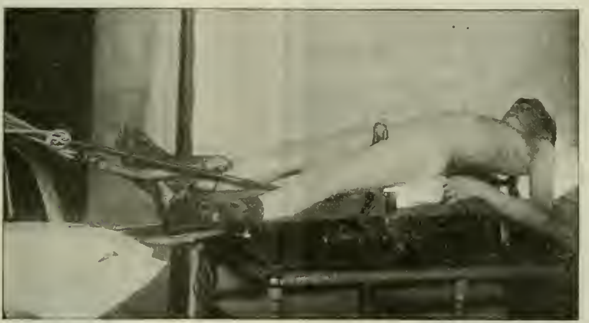
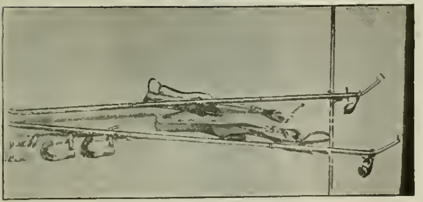
[7] Hoffmann: Mitteil. a. d. Grenzg. der Med. u. Chir., Jena, vol. xlvii.



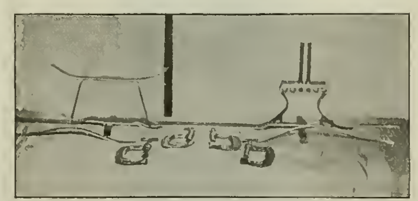
I. Apparatus applied showing traction to both legs with room for the application of retentive apparatus or plaster of Paris.



II. Apparatus applied showing traction to both legs. (Side view.)



III. Traction rods, pulleys, traction, leggins, clamps.



IV. Stand for the shoulders, stand for the pelvis, clamps to fasten them to the table.

Paris or ordinary splints and bandages. At best, improvised methods of holding the shoulders, spine and pelvis, with or without traction, are difficult when a good position is desired.

Many of you are familiar with other forms of traction apparatus, some of which may be seen at the Children's Hospital. These are very perfect in mechanism and are all that may be desired in a hospital, but they are not easily transported. The one before you has proved useful in operations where a strong, efficient and portable apparatus is necessary. While it has been devised for and used in adult cases it is also applicable to children.

It is so arranged that traction can be applied or let up instantly; and during traction the leg manipulated or moved in any position. The shoulders, the spine, the pelvis and the legs are held in position for any length of time, and the apparatus cannot be upset during forcible movement or while a plaster of Paris bandage is applied from the axillæ to the ankles. It is fastened to an ordinary operating table or to a broad or narrow wooden table.

By removing the cross steels and placing a small stand, made for the purpose, between the pelvic and shoulder pieces, the apparatus may be used for certain forms of simple jackets in curvature of the spine or in Pott's disease. It can be carried in a dress suit case and considering the strength and power of the machine, it is not heavy.

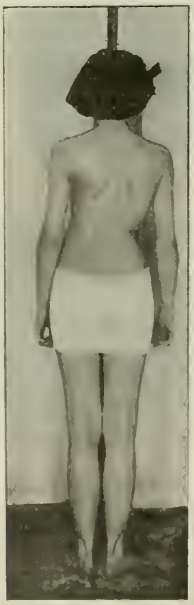
In fractures of the femur, absence of shortening depends probably more than anything else on the length obtained at the first application of apparatus and maintained afterward by pull and splint.

During the wiring of old fractures of the neck of the femur, in congenital hip manipulation for traction and maintaining position after subtrochanteric osteotomy, for osteotomy in deformities from badly united fractures and in some other instances, this apparatus is useful.

A BRACE FOR POSTURAL CURVATURE OF THE SPINE.

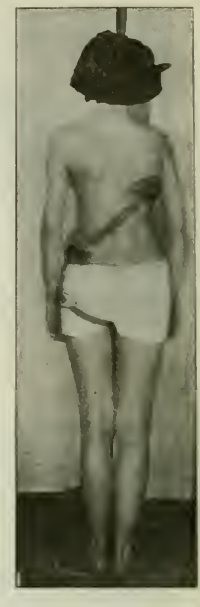
BY ROBERT SOUTTER, M.D., BOSTON,
Assistant Surgeon, Children's Hospital; Member of the American Orthopedic Association.

The apparatus before you has been used for two years and has answered the purpose for which it was designed, namely, to prevent lateral displacement of the shoulders and the postural part of a rotation of the shoulders on the hips.

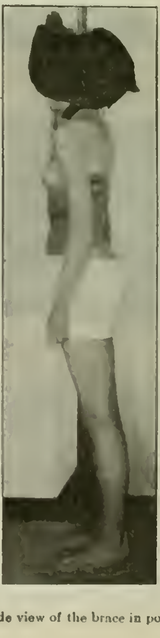


I. Position without the brace — lateral displacement of the shoulders to the right.

It consists of a curved pad for pressure on the



II. Brace applied. The shoulders held squarely over the pelvis with slight over-correction.



III. Side view of the brace in position.

chest bone behind and laterally, and another on the opposite pelvis above the trochanter, the two connected by peculiarly curved steels, one anterior, one posterior. They do not rest on the body to make pressure. The anterior steel is disconnected from the hip pad by a self-retaining catch. The pelvic pad has an arm jointed at the hip which extends down to the thigh band. This arm stands out from the thigh when the thigh band is loose. By the shape of the body steels the leverage is transferred so as to throw the chest forward as well as laterally.

This brace will not take the place of complicated braces and jackets. It will be found efficient for certain postural cases when it is undesirable to weaken the muscles by cumbersome and more extensive apparatus. It does not show through the clothing, remains in place and is adapted for active cases with postural lateral deformities.

Clinical Department.

REPORT OF A CASE OF DISSECTING ANEURISM WITH RUPTURE OF THE AORTA; AUTOPSY.

BY W. E. PAUL, M.D.,
AND
W. A. BROOKS, M.D., BOSTON.

The textbooks fail to give a good description of the clinical features of dissecting aneurism. Our record of one case may, we hope, be of value if an attempt is made sometime to depict the symptomatology which must necessarily be based on a number of complete histories and postmortems. Up to the present time both Allbutt's statement that "it is known only after death" and Stimpson's that "it cannot be recognized with certainty during life," seem to hold good.

The patient was a hard-working merchant, fifty-seven years old, of a rugged type, who up to five years ago drank alcohol freely and continuously. He was an inveterate cigarette smoker and used much coffee. Twenty years ago he contracted specific disease. Ten years ago he had pneumonia. Three years ago he had a severe appendicitis and delayed consent to operation till it was most urgent. A fetid, gangrenous, sloughing remnant of appendix in a purulent cavity, walled off by adherent intestines, was found by Dr. Brooks and successfully removed. A large hernia has occupied the site of operation on the right side of the abdomen since, but has been controlled fairly well by a belt.

For a few weeks previous to his fatal attack the patient had complained of being below par, and had a frontal sinus infection treated by Dr. F. C. Cobb. His digestion was not so good as usual, and he thought he was drinking too much coffee.

The day on which the final sickness began he was feeling very well and ate a hearty lunch of oyster crabs, apricot pie and coffee. He then took part in a game of cards, and at the end of an hour's play got up to take another chair, when he was suddenly seized with severe pain across the lumbar region, not more marked on one side than the other, and extending upwards and outwards toward the scapulæ, but not going toward the abdomen. He described it as a "red pain." It was so severe that he could not go on with his game and was taken to a bedroom and attended by Dr. Buck. Dr. Paul saw him about fifteen minutes after the onset; the patient was then sitting in a chair, moving to and fro, and complaining of nausea. The pain continued and was dull, steady and boring in character. There was a sense of anxiety in the patient's look and manner. It was considered probable that acute indigestion accounted for the condition of the patient, and efforts to relieve the stomach (drinking warm water) were rewarded with fairly free vomiting of sour-smelling stomach contents. The pain, though somewhat less, remained in the back, and the patient could not lie down, as that position was uncomfortable. Later there were two or three attacks of vomiting, with considerable vomitus. A glass of Hunjadi water was taken, but was vomited in a short time. As the pain continued severe in the back, about three quarters of an hour after he was first seen a quarter grain of morphia was given subcutaneously. The patient then felt as though a movement of the bowels was imminent, but two or three enemata gave little result and no gas was passed. A half hour after the first dose of morphia, a second like dose was given and in the course of ten minutes the pain was much relieved. About two hours after the onset he was able to go down stairs and drive home in a cab.

During all this time he was pale and his pulse did not change.

At his home he vomited once or twice and expressed himself as feeling more comfortable than at any time since the onset of the attack. He vomited occasionally, and two or three times considerable amounts were regurgitated.

Seven hours after the onset the pain, never entirely absent, had moved up higher in his back, between the shoulder blades, and was more a discomfort and burning feeling than a decided pain. A hot water bag made it bearable.

Two hours later and nine hours after the first pain there was an access of most severe, dull, steady, constant pain in the lumbar region at the site of the first pain. He groaned with every breath and sat up in a chair by preference. A ⅜ gr. hypodermic of morphia was given as soon as possible, and relief was most marked in the course of ten minutes. It was found then that no gas had been passed, that vomiting had continued at intervals, that the pulse was 100, that there was evidence of shock with marked pallor; and it seemed that instead of a simple case of indigestion, some more serious trouble existed which was obstructing the bowel.

Dr. Brooks was summoned in consultation, and agreed that the case was a serious one and that the trouble might be due to the bowel being caught under some band. Physical examination of the abdomen revealed absolutely nothing abnormal, however, and the limitation of the pain to the back was confusing to our diagnosis in considerable measure. Laparotomy was most seriously considered, but was deemed unwise by Dr. Brooks.

Five hours later a saline cathartic was given, but was promptly vomited.

Eighteen hours after the first pain the pulse was 120 to 140 after going to stool; there was decided pallor and some pain persisted in the back. For the first time there was a slight pain in the abdomen over the descending colon. It was slightly tender, but did not cause the patient to shrink on palpation. Two high enemata brought away a moderate amount of fecal matter, but there was little gas escaping at the same time. The temperature was normal continuously from the onset of the pain. During the morning (some twenty hours after the initial pain) hiccough lasting a few moments at a time had recurred. Also there had been some spells of dyspnea lasting for a half dozen breaths at a time. The patient was carried to the Bay State Hospital and seemed refreshed by the trip. Soon after his arrival high enemata were resorted to again, and considerable mucus, some of it stained slightly with blood, was the chief result.

There was now hardly any pain, but the patient said he by no means felt right. That night he slept fairly and was comparatively comfortable the next day. Small quantities of milk and lime water were retained. The day after entering the hospital a high enema was very successful in bringing away considerable fecal material and gas. It was now assumed that at least the bowel's patency was established. A considerable degree of pallor continued, however; the pulse did not fall below 104 and was unsteady at times, though fairly strong. Hiccough and spells of shortened breath recurred. The tenderness on the left side of the abdomen was a little less marked.

Dr. Franz Pfaff saw the patient at the end of the second day and was of the opinion that an internal hernia or intussusception had occurred but had been greatly relieved. The shock he believed to be an indication that the sympathetic ganglia had been pressed on by the affected intestine.

The condition was little changed for the next two days except that the third night in the hospital there was more shortness of breath coming and going in such a way as to resemble the Cheyne-Stokes type. The temperature ranged from normal to 100°. The urine was normal and fairly abundant, in quantity reaching 50 oz. in twenty-four hours.

The fourth night in the hospital there was an uneasy feeling in the back, as though lame. He could not get into a comfortable position; rubbing relieved for a short time only.

The next day hiccough was rather constant, though he ate more and had a satisfactory movement of the bowels and was rather brighter. He was weak and said he was not right. The uneasy grumble continued in the lumbar region, not more on one side than on the other at any time, and was a source of a good deal of uneasiness and restlessness. Later a menthol liniment relieved him and he slept well for the night.

On the morning of the fifth day of his illness he expressed himself as feeling better than at any time since the onset. He ate a fair breakfast and was so comfortable that after the meal he took a short nap. He answered the inquiries of the nurse cheerily. He sat on the side of his bed in the act of passing his water when he suddenly gave a piercing scream, audible all over the hospital, and grasped his right loin with his right hand, exclaiming in agony; he fell forward, but was caught by the nurse, and after one or two gasps, life was extinct.

It was, of course, now realized that a large internal hemorrhage had been the cause of the final catastrophe. Fortunately, permission for an autopsy was obtained, and Dr. Oscar Richardson's record of the aneurismal findings follows:

The intestines were not obstructed. The peritoneal cavity contains a moderate amount of free fluid blood and the retro-peritoneal tissues are swollen, black red in color, and infiltrated with a considerable amount of blood-like material. About the region of the mesentery the swollen, blood-infiltrated retro-peritoneal tissues bulge forward under the transverse colon. The colon on section is not remarkable. The other abdominal viscera show nothing worthy of note.

On opening the thoracic cavity the right pleural cavity is found to contain an enormous quantity of fluid blood and blood clot, and at a point about where the aorta passes through the diaphragm there is a ragged opening in the wall of the aorta through which the blood has poured into the right pleural cavity and infiltrated into the retro-peritoneal tissues and to a moderate extent into the peritoneal cavity.

On section, the aorta shows, extending along its wall as far down at least as the celiac axis, a black red coat, 2 to 3 cm. thick, which consists of a thick layer of blood-clot-like material apparently resting between the muscular wall of the aorta on the inside and a layer of the adventitia on the outside, limited by the pleura in the thoracic cavity. On section, the intima of the aorta all along its course presents innumerable smaller and larger roughened plaques, fibro-calcareous in instances, and the central portions of many of which show ragged openings which extend into the layer of blood clot and fibrin just beneath the dissected layer of adventitia. At a point in the wall of the aorta just as it passes through the diaphragm there is a ragged opening in the wall margined by arteriosclerotic changed tissue and a ragged interruption in the continuity of the surrounding layer of adventitia, fibrin, and blood clot.

Anatomical diagnosis. — Arteriosclerosis of the aorta; dissecting aneurism of the aorta, with rupture and hemorrhage into the right pleural cavity, the retro-peritoneal tissues, and the peritoneal cavity.

Reviewing the clinical features of the case the pain stands out most prominently of all the symptoms. There were four periods of pain: at the onset, nine hours later, a grumbling discomfort in the back for forty-eight hours before death, and the final death pang. Also there was some pain and tenderness over the descending colon. The pain probably coincided with extension of dissection. Its character and location seem of great significance in differentiating pain originating from dissecting aneurism. The pain was limited to the back and was not more noticeable on one side though it extended across the back and upwards and outwards toward the scapulæ. It was severe, dull, deep aching and boring in character; most distressing and giving rise to feelings of anxiety. The slight pain over the descending colon may very well have been due to extension of blood extravasating in the peritoneum. The final pain immediately preceding death cannot be defined.

Next in importance was the condition of shock which did not disappear at any time, though it varied in intensity. He was pale and his pulse was continuously high after the second attack of pain, except in the last twenty-four hours, when it got as low as 88.

Third, the vomiting was a prominent symptom in the first twenty-four hours of the illness. In the absence of any complaint of indigestion before the onset of the pain it seems fair to assume that the vomiting was due to the aneurismal hemorrhage rather than to coincident irritation by the stomach contents. The vomiting was probably reflex and symptomatic. Of negative value as symptoms was the practical absence of abdominal pain, distension, or anything abnormal on palpation.

It ran its course in five days.

There has been an enormous increase in the number of rats in San Francisco, and a bonus is being offered for their destruction. — *N. Y. Med. Jour.*

DYSTOCIA DUE TO FIBROIDS. INTRA-UTERINE DEATH OF FETUS. CRANIOTOMY.

BY JAMES R. TORBERT, M.D., BOSTON,
Physician to Out-Patients, Boston Lying-in Hospital.

Mrs. R. Primipara. Aet., thirty-six.

First seen after ten hours of moderately hard labor, the last six hours of which there had been no progress.

Obstetrical examination showed, externally, an unusually large abdomen; uterus completely filling abdominal cavity. On the anterior surface of the uterus was a firm, movable tumor the size of a large orange; on the right side and fundus, several nodules the size of walnuts, on the left cornu a nodulum the size of a cocoanut.

The fetal parts could not be palpated and no fetal heart was heard.

Feeble uterine contractions were evidenced on palpation.

External pelvic measurements, crestal, 28½ cm. Spinous, 22½ cm. Antero-posterior, 20½ cm.

There was no uterine tenderness.

Internally: head through the brim of pelvis, no fore waters, os dilated 1½ inches. No fibroid involvement of cervix or lower uterine segment.

Internal conjugate not felt.

The maternal pulse was 80, of good quality and regular but as the contractions of the uterus had about ceased and no progress had been made for six hours, operative interference was decided upon.

The patient was prepared with especial reference to asepsis. On account of the possibility of fetal life it was thought best to attempt a forceps delivery. Under ether the os was fully dilated manually and the forceps applied; repeated traction showed no advance of the head so the blades were removed. Introducing the hand by the head, a firm constriction ring was found encircling the infant's neck and shoulders, the ring including the center of the large fibroid on the anterior uterine wall. Carefully stretching the ring the hand passed it and the cord was found pulseless. Very little liquor amnii was present and escaped at this time. Craniotomy with Braun's cranioclast and the Smellie scissors was done and extraction of the fetus accomplished without difficulty. There was no maceration of the fetus showing a recent death. The uterine muscle contracted at once and in ten minutes the placenta came away naturally. Hemorrhage was absent and the uterus behaved well. A large intrauterine douche of salt solution was given and a minor laceration of the perineum repaired. The maternal pulse rose to 140 during the delivery, but one hour afterwards dropped to 100.

The convalescence was uneventful, save for a slight pyrexia 100.8° F. and a scanty flow of lochia on the third and fourth days. This was met and relieved with copious intra-uterine douches of weak creolin solution followed by ℥iv of 5% alcohol which was left in the uterus. There was no further pyrexia, the lochial discharge continued a trifle more bloody than usual but gradually ceased.

Involution was exceptionally slow; on the third day of convalescence the fundus was an inch below the ensiform cartilage and the fibroids were very easily palpated.

The case without the chart was shown to the students at this time and one of whom made a diagnosis of a full term pregnancy, palpated the fetal head and small parts, but strangely enough had negative results with his auscultation.

The patient was discharged at the end of three weeks, and final examination showed an irregular enlarged uterus extending about one inch above the symphysis. She was advised and consented to, later on, have an operation for myomectomy or whatever seemed best when the abdomen should be opened.

The number of patients with uterine fibroids who pass successfully through pregnancy and labor is really most surprising.

The obstetrical importance of uterine fibroids depends upon their situation,— whether subserous, interstitial or submucous, and whether connected with the upper or lower uterine segment.

Subserous fibroids are of no obstetrical importance.

Interstitial and submucous fibroids in the upper segment of the uterus complicate parturition only by their tendency to produce irregular and feeble pains and thus prolong labor. They are afterwards attended by an increased liability to post-partum hemorrhage, a tendency to delayed involution, and an increased risk of sepsis from sloughing of the tumor. If the tumor growths are not situated at the periphery of the zone of the uterus which dilates, they do not generally give rise to any accident. In the lower segment of the uterus, they offer obstruction to the exit of the fetus; are liable to cause malpresentations and malpositions, and occasionally render delivery by the natural passages impossible.

Rupture of the uterus may take place in healthy uterine structures as a result of mechanical resistance offered to the advance of the fetus, or it may commence at the site of the fibroid where the uterine tissue is particularly thinned.

The conduct of this case with the terminal result naturally raises the query whether, if discovered early enough before the beginning of labor, some operative procedure might not have relieved the condition sufficiently to have accomplished a safe termination of the pregnancy.

The co-existence of a fibroid with pregnancy is not always an indication for operation, but it is extremely desirable to frequently examine women who have such tumors, to note the size, position and rapidity of growth, using such knowledge for the proper conduct of the individual case.

Statistics show that cases of pregnancy complicated with palpably large fibroid growths have a maternal mortality of over 30%, and a fetal mortality of probably 50%.

It has been easy to collect 100 cases of palpably large fibroids complicating pregnancy where myomectomy on the pregnant uterus was performed. In less than 5% was the pregnancy interrupted. The labors have occurred without incident, good uterine contractions have been present and no complications have existed. Subsequent pregnancies have occurred without incident.

Myomectomy is adapted to only certain classes of cases, — where the fibroid is subperitoneal or interstitial, where its size is not too great, and where the uterus may be handled without too much trauma. The hyperplasia of connective tissue in these growths favors the manual separation of the tumor from the uterine walls, therefore rendering operation easier for the existence of pregnancy. Although Cesarian section followed by enucleation of the fibroid would be the ideal treatment of obstructed labor due to a myoma, yet experience teaches that the great majority of the tumors as so situated are of such character as to render attempt at enucleation hazardous, and for these the Porro Cesarian section, or hysterectomy is imperative.

Those fibroids which have already caused a premature or nonsuccessful labor should be operated upon by enucleation; if possible, when the uterus is empty.

Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THIRTY-THIRD ANNUAL MEETING,

HELD AT COLUMBUS, OHIO, OCT. 8, 9 AND 10, 1907.

THE President, DR. HORACE H. GRANT, Louisville, in the chair.

The scientific work was divided into medical and surgical sections.

LOCAL VERSUS GENERAL ANESTHESIA IN RECTAL SURGERY.

DR. G. B. EVANS, of Dayton, Ohio, believed that by using a local anesthetic previous to general anesthesia the amount of the general anesthetic was appreciably lessened; the dread and fear were diminished, also shock and danger. Therefore the combined method of narcosis, less anesthetic, suspending shock incident to conscious dread, as well as anesthetic shock, rendered more complete the operative area and consequently more satisfactory work. It was easy to operate on prolapsing piles, but not so simple to operate on piles above the sphincters, yet they demanded operative interference. Operation for hemorrhoids was serious, often attended by some shock, and the greatest caution should be observed to secure asepsis. He did not think it was best for patients that general practitioners should be taught that aseptic precautions at the time of operation and rest at home for a few days were unnecessary.

DR. BERNARD ASMAN, of Louisville, gave a few reasons for some unsatisfactory results in the treatment of ano-rectal diseases. A correct diagnosis was always a first essential, for without it all treatment was largely guesswork. Of all rectal ailments, anal fissure was ordinarily thought to be one of the simplest and easiest to cure, yet experience frequently proved it to be most unyielding. Ninety-nine out of every one hundred of the laity assumed that all ano-rectal troubles were hemorrhoidal in character, and it was not uncommon for them to approach the physician with a diagnosis ready-made, and to preface a description of the case in question with, "Doctor, I have piles." The doctor was then apt to accept the diagnosis with but a superficial examination, or perhaps no examination at all, and hence failure to afford relief followed. There were comparatively few cases of hemorrhoids, pure and simple; they were usually complicated by other local disease, perhaps requiring attention at the same time if a perfect result was to be expected. Cases were cited in point.

DISCUSSION.

DR. B. MERRILL RICKETTS, of Cincinnati, said that surgical anesthesia should be eliminated as far as possible in all work, especially now as capital operations could be done under local anesthesia. Local anesthesia for the treatment of hemorrhoids should not be denounced, nor should local anesthesia be recommended for all kinds of hemorrhoids. There were certain hemorrhoids that could be removed radically without anesthesia. He cited such cases. The trend of the times was not to put patients to bed for days and weeks for the removal of hemorrhoids, when they could be removed at the office of the surgeon or at the homes of patients with impunity. Hemorrhoids should be properly classified, and each class should receive a separate and distinct treatment, some with and some without anesthesia; some with and some without ligature; some with crushing and some with simple incision.

DR. J. RAWSON PENNINGTON, of Chicago, emphasized the importance of making a correct diagnosis. If a patient had a small contracted anus, with a few painful hemorrhoids, he or she should be given a general anesthetic and operated on. If the patient had a patulous anus, and the hemorrhoids were easily prolapsed, especially internal hemorrhoids, there was no need for a general anesthetic. He described his method of removing hemorrhoids. When the rectum was everted and the hemorrhoids were on the outside, with a pair of scissors they could be removed very readily, the rectum then dressed in extension, and putting into the bowel a rubber-covered tampon. When this was done there was no tissue under stress. Tissue under stress was not in the best possible condition to defend itself against infection.

DR. H. O. WALKER, of Detroit, had operated on a large number of cases of hemorrhoids, and had not yet had serious bleeding from the rectum. Hemorrhoids should be operated on under the same surgical principles as were carried out in operating upon other parts of the body. If there should be hemorrhage, it could be controlled by ligature or hemostatic forceps.

DR. E. B. SMITH, of Detroit, referred to the importance of making a complete and thorough examination. This could not be done under local anesthesia. He had never been able to do it, nor had he seen any one else do it with satisfaction. He had had the privilege of operating secondarily on patients who had been operated on under local anesthesia. He operated on these cases under general anesthesia.

THE FREQUENT INTERDEPENDENCE OF DISLOCATED KIDNEY, GALL-BLADDER TROUBLE AND APPENDICITIS.

DR. EARL HARLAN, of Cincinnati, summarized the salient features of his paper as follows: (1) That dependent pathology, accompanying the primary lesion of dislocated kidney, gall-bladder trouble and appendiceal irritation of a severe nature, is of frequent concomitant occurrence. (2) Many cases have undergone operation for appendiceal trouble or gall-bladder trouble wherein the causal factor was a dislocated kidney, the latter producing pressure interference to the bile outflow or bowel current. (3) All cases presenting for abdominal treatment, complaining of indefinite and recurrent distress, discomfort and pain, the attacks being accompanied with the presence of an excess of stagnant gas at certain points in the bowel, and in which the involvement of the stomach, gall bladder and appendix are more or less equal, should receive the careful consideration of the physician, in order that an accurate differential diagnosis may be made. (4) In the vast majority of cases a freely movable kidney presents no pathology on the part of the organ itself, and this immunity may cover a considerable space of time, after which there may appear symptoms of functional and mechanical disturbance on the part of the stomach, cholecyst and bowel. (5) On account of the wide and uncircumscribed range of pathologic symptoms produced by a dislocated kidney, it is more often liable to go undiagnosed than are other symptoms producing abdominal lesions. (6) Permanent and complete relief results only from a correction of the primary lesion with its dependent pathology.

THE DISPOSITION OF THE APPENDICEAL STUMP.

DR. B. MERRILL RICKETTS, of Cincinnati, concluded that the stump should be as short as possible. Any one of the pursestring methods is dangerous. Ligation for the firm appendix and extirpation for the soft one were the better methods. Hemorrhage from the appendiceal vessel was a common accident, and one that could be avoided. The escape of feces into the peritoneal cavity was also frequent. Infection from the stump occurred rarely. Adhesions resulting from a denuded stump, or mesocolon resulting from ligature, were of little consequence. Ligature around the stump without mucosa between it and a stenosed Gerlach valve would not cause pain, otherwise it might do so. A more definite classification of the pathologic appendix and its results should be more generally accepted. The mortality in cases with vomiting, ileus, obstruction, peritonitis and distention was much higher than reports would indicate. It was probably as great as 90%, if not more. It was difficult to understand why so few such cases had been reported, and still more difficult to understand why they were absent in the work of one and numerous in that of others. The average per cent of mortality for acute cases (7.50), and the average per cent for chronic cases (1.75) was probably a fair estimate for the work during the last five years. Linen and silk ligatures had more advantages than catgut, without the disadvantages, and should therefore be given preference. Ligatures of any material or character should be transfixed in any tissue, especially within the peritoneal cavity. Stumps of living tissue should be sutured or ligated with transfixion, especially if there were canals of any character within the stump.

DISCUSSION.

DR. H. O. WALKER believed in ligating the stump of the appendix. After tying off the appendix close to the cecum, he disinfected it with carbolic acid and alcohol, and then by means of a pursestring suture covered it up. As long as the suture material was aseptic, it did not make much difference what was used. He had never had a death from hemorrhage in appendicitis, except where it occurred some ten days or two weeks after the operation, due to the sloughing of the omentum, rupture and obstruction from a gangrenous condition of the arteries of the appendix from which the patient died.

DR. A. M. HAYDEN, of Evansville, said that if one used silk or linen in uncomplicated cases, there were liable to be suppurating sinuses as a result. In these cases he would use catgut, which, in infected cases, becomes disintegrated in seven or eight days, and there were no suppurating sinuses following. He used linen in all of his clean cases, but in the infected ones he preferred catgut.

DR. CHARLES STOLTZ, of South Bend, Ind., spoke of the use of the thermo-cautery, and believed if it was used it would afford hemostasis without the unsurgical method of tying off a mass and letting it stick up in the cavity, without knowing what would become of it.

DR. CHARLES A. BONIFIELD, of Cincinnati, had excised the appendix, closed the wound with chromicized catgut, and then covered the surface by bringing the meso-appendix up over it. He had done this for several years, and to his knowledge had never had a patient die from the bowel opening.

DR. RICKETTS, in closing the discussion, said the so-called absorbable ligatures failed in many of these cases, and that there was nothing better than catgut or linen. They could be boiled and thoroughly sterilized. He had done 400 appendectomies, without a serious hemorrhage or infection, and had never had to take a ligature out. He never used catgut in his abdominal operations, but employed Pagenstecher linen for almost everything.

WHEN SHOULD GASTRIC ULCER BE TREATED SURGICALLY?

DR. MILTON R. BARKER, of Chicago, said that all cases of gastric ulcer, regardless of any class in which they might be placed, excepting the neglected class, should primarily be treated medically, but that in the light of surgical achievements in this malady the internist had a double responsibility to his patients. First, to do all his methods could do, and, second, to discontinue those methods before his patient had reached such a condition that surgical methods could not be instituted without undue hazard. When medical and surgical science could thus work together, the treatment of gastric ulcer would have attained the acme of perfection.

THE REMOVAL OF ADENOIDS.

DR. JOHN F. BARNHILL, of Indianapolis, described a safe and rapid method of removing adenoids. The selection of a proper curette having been made, an assistant took the child upon his lap, placed the patient's knees between his own knees, and thus clamped them as in a vise. The child's head was placed upon the left shoulder of the assistant where it was firmly held between the two hands of a second assistant. Neither a tongue depressor nor mouth-gag was necessary. The operator sat on a chair facing the patient, who was requested to open the mouth. The curette was quickly inserted behind the palate, the posterior surface of which it should closely hug until the crest of the instrument pressed firmly against the vomer at its point of junction with the body of the sphenoid. In this position the patient's mouth must be opened to its fullest limit, and the curette would occupy a position in a plane about 45° to the horizontal, when the ample width of the fenestra surrounded the entire growth. Keeping the curette exactly in the center line of the patient's naso-pharynx, the crest of the instrument was pressed firmly against the vault, in which situation it was quickly pushed backward and downward, the cutting blade of the curette closely hugging the entire base of line attachment of the adenoid, which was thus completely severed *en masse* and fell from the patient's mouth when the head was held forward for that purpose. In the majority of cases only twenty or thirty seconds were required to do the entire work after all was in readiness.

THE SURGICAL TREATMENT OF SOME INFLAMED GLANDS.

DR. E. B. SMITH, of Detroit, urged the enucleation of inflamed suppurating glands. Where there was a hernia and the protruding tissue irritated a set of glands, then the hernia and not the glands must be cared for. Where the inflammation had progressed to the stage where resolution could not be brought about by poulticing, or where a simple incision would not affect a cure, and the tissue was broken down, or there was an accumulation of germs, then the only logical procedure was a radical operation. Glands found beyond hope of repair were excised, thus getting rid of a large number of germs, the remaining tissues being treated antiseptically and repaired. Repeated attacks of inflammation rendered the glands weak and susceptible to disease and suppuration. When the glands were incised the inflammation and suppuration either subsided or became quiescent for a time, and then from a slight trauma became inflamed and suppurated.

GOITER.

Dr. George W. Crile, of Cleveland, recently made a study of his cases of operations upon the thyroid gland, numbering 152, and he briefly summarized them from the standpoint of the practical management of the surgical thyroid. The development of the surgery of the thyroid is best appreciated by the statement that the mortality from thyroidectomy in simple goiters, in nonmalignant and benign tumors, had fallen from 40% to a fraction of 1%. In his own series, the last 101 such operations had been done without a fatality. The surgery of benign tumors and hypertrophies of the thyroid gland was now placed upon a basis comparable with that of appendicitis in the quiescent period, of gallstones and of ovarian tumors. The mortality from unexpected complications was perhaps one in one hundred or two hundred cases, in the hands of a surgeon experienced in this line. Graves's disease was demanding much further investigation. Excision of the thyroid in Graves's disease broke a pathologic chain and the cure was permanent. In a goiter under observation, if the gland began to grow, it should be promptly excised because of the great possibility of its becoming a malignant growth. Many more thyroid glands should be removed, just as benign tumors elsewhere were removed, to prevent the appearance of a malignant growth.

NEUROSES OF THE BLADDER.

Dr. Robert C. M. Lewis, of Marion, Ohio, considered a few of the neurotic conditions which were traceable to the genito-urinary organs, especially those involving the vesical neck and the deep or prostatic urethra. In neurotic bladder troubles he gave first place to hyperesthesia because he believed it was met with more frequently than any other of its order. Mental worry or over-tension of the nerves for a long period might produce a vesical hyperesthesia with a train of symptoms simulating a true cystitis; but, as a rule, if there were no inflammation, the absence of mucus or mucopus in hyperesthesia would give a line of distinction so that cystitis might be excluded as a complication or as a sequel to other diseases of the bladder; there was found no other condition which gave so much mental and physical discomfort as hyperesthesia. Men were quite sensitive when it came to genito-urinary troubles, but if a physician once gained the confidence of such patients, and afforded them relief, they would not run away.

INTRAMURAL TRANSPLANTATION OF THE ROUND LIGAMENTS VERSUS THE ALEXANDER OPERATION OR VENTRO-SUSPENSIO-FIXATION.

Dr. Channing W. Barrett, of Chicago, gave a résumé of the work done with intramural transplantation of the round ligaments, and, after comparing it with the Alexander operation and ventrosuspension, presented the following conclusions: (1) The Alexander operation fails because most cases of retrodisplacement are complicated. (2) An operation to be widely useful must open the abdomen for inspection and correction of complications. (3) It should be capable of being combined with the best incision for doing work. (4) It must not create false ligaments which will not evolute during pregnancy and involute thereafter. (5) There must be no abnormal arrangement of natural ligaments which allows them to run transperitoneally. (6) When the round ligaments are ample, the inner, stronger portion of the ligament should be chosen. (7) Operation for retrodisplacement must often be performed after much more operating, and so should not offer any tedious technicalities, such as are found in the external search for the ligaments. (8) His internal inguinal shortening and transplantation of the ligaments through the abdominal wall is submitted for comparison with external shortening of the ligaments, or ventrosuspension operations, as one seeming to meet the essential requirements of an operation for retrodisplacements.

WHAT WE CANNOT DO WITH PURGATIVES.

Dr. Edwin Walker, of Evansville, Ind., said the action of purgatives was not well understood. Authorities varied widely as to how they affected the human organism. Practically all agreed that they were irritants. Purgatives and infections of the alimentary canal presented the same symptoms, namely, liquefaction of feces, increased albuminous exudate, the formation of gas and pain. The physician used purgatives in chronic constipation, when very few were in the least benefited, and nearly all were made worse. In obstruction of the bowels, both acute and chronic, they did harm, besides, the time lost often decided the fate of the patient. The routine practice of preceding every surgical operation with a purge was absurd. If the operation was not on the alimentary canal, there was little reason for giving it. If it was on the stomach or bowel, they did not render the condition more favorable since they increased bacterial activity. The author had operated on nearly one thousand cases in which the preliminary purge was omitted. The results were as good or better than when they were given. The patients were more comfortable, and suffered much less with tympany. Laxatives were rarely required after operation, as the bowels would move as soon as it was necessary. Patients did better without them. Purgatives were useful, but should not be given in a routine manner. They should only be given when there were clear indications.

PERINEAL SECTION FOR OBSTRUCTION OF THE PROSTATIC URETHRA.

Dr. Charles E. Barnett, of Fort Wayne, Ind., summed up the cause and effect of acute retention of urine. He considered catheterization more dangerous than operation. He believed that bladder drainage through a median perineal section was the operation of choice. Patients who were practically moribund recovered following improved operative technic with a minimum quantity of anesthetic, oxygen inhalation post-operative, Fowler's position, aspiration irrigation with large drainage tubes, and out-of-bed posture second day. Simplicity, but thoroughness, in the post-operative treatment was the *desideratum*. He reported several cases.

EARLY DIAGNOSIS AND REMOVAL OF UTERINE FIBROIDS.

Dr. A. D. Willmoth, of Louisville, made a plea for the early removal of these growths. He expressed the opinion based on the statistics at hand and his personal experience that it was the duty of the surgeon to remove uterine fibroids as soon as they were diagnosed, unless some constitutional disease or diseases existed that made operative procedures inadvisable because of the risk involved, or where the surgeon had to deal with a young and childless woman who desired a child, or in those in whom the tumor was subperitoneal, small, and giving no trouble.

TREATMENT OF PUS TUBES.

Dr. John E. Cannaday, of Hansford, W. Va., said that operative and non-operative treatment had their separate and distinct fields. The trend was toward that form of conservatism which really conserved. Extreme and over-conservative measures were as much to be deprecated as early radical extirpation, late and often. Surgical sense, judgment, ability, skill and experience were needed, so that practically pus tubes should never be removed during an acute attack. Many cases would resolve and be restored to normal conditions by waiting. The author made a clinical classification of cases as follows: those that resolved early, those that were followed by obliterating and crippling adhesions, and, finally, those in which large collections of pus were encapsulated and became sterile. In the latter class the best operative results were given. If the operative field was soiled with pus, that was known not to be sterile, a vaginal drain should be inserted, but not an abdominal drain, as the danger of wound hernia was too great. The author reported 100 cases in which laparotomy was resorted to for chronic pus tubes, with a mortality of 1%.

TREATMENT OF INGUINAL HERNIA IN CHILDREN.

Dr. Frank B. Walker, of Detroit, said it was estimated that one third of all herniæ occurred in children under fourteen years of age. In a series of 700 observations reported recently by Corner, it was noted that multiple herniæ were far more frequent in children than in adults. Premature children were very liable to hernia at birth, and inguinal hernia was present on both sides more often than at full term. From observations it would appear that the causes of hernia formation were more operative in earlier years than in adult life. He believed that it was good surgery to use conservative methods for herniæ in children up to five years of age, and thought the majority could be cured thereby; but for the following class of cases, radical measures should be adopted: strangulated hernia; irreducible hernia; hernia associated with hydrocele or undescended testis; hernia threatening strangulation; those which are uncontrolled or painful under truss treatment, and hernia in children over five years of age.

POST-PERITONEAL FIBROID TUMORS OF THE UTERUS.

Dr. Rufus B. Hall, of Cincinnati, reported cases and exhibited specimens. He had had a large number of post-peritoneal tumors to remove. Some of the operations had been very complicated, while others had been comparatively simple. Some of these tumors were easily enucleated, even when large. By following the line of cleavage the surgeon was able to enucleate them without much difficulty. In others it often required great courage and skill to successfully remove them. Some were so firmly attached to the blood vessels and ureters that to successfully remove them was practically impossible. Such a case occurred in the practice of Dr. I. S. Stone, in which he had the misfortune to lose his patient from hemorrhage before he was able to enucleate the tumor. In many of these cases the surgeon began the operation under the impression that he was going to remove a fibromyoma of the uterus. The tumor might be the size of an adult head, filling the pelvis full and extending somewhat into the abdomen, or it might be very much larger. Even after the abdomen was opened and the tumor examined, it was not possible from the condition present to differentiate between post-peritoneal fibromyoma and sarcoma. The author had made the mistake in beginning to enucleate a tumor, believing he had a fibromyoma of the uterus, when in reality it proved to be a sarcoma.

OPEN METHOD OF TREATING FRACTURES.

Dr. Duncan Eve, of Nashville, said that in all cases in which marked comminution of the fragments was present, and when reduction was impossible, in oblique and spiral fractures of the bones of the extremities, operation was justified. Many of the deformities, pseudarthrosis, and loss of function, which follow fractures, would thus in many cases be obviated. The unsightly deformities which so seriously destroyed the usefulness of the part and predisposed to refracture would be prevented. Fractures complicated by severe injury to adjacent structures urgently demanded operation. Under this heading he included fractures in which pressure was brought to bear on neighboring viscera, nerves and blood vessels, fractures associated with dislocations, and fractures involving joints. By exposing the seat of fracture, the accumulated excess of blood or effused serum could escape, and at the same time permit the removal of any soft tissues that might be between the ends of the bone. In a case of comminuted fracture the surgeon could remove loose fragments of bone which had become entirely separated from their periosteal covering. The technic, after obtaining thorough cleanliness, was to make an incision sufficiently large to enable the surgeon to deal effectually with the fragments. The author reported two interesting cases. Operation should be deferred, if feasible, until after the acute symptoms of the primary injury had subsided, namely, from four or five days to a week. Operative treatment should be adopted in compound fractures; also in cases of a crippled fellow limb, of physical or business demands, of deteriorating personal discomfort, and of prospective activity of a perplexing nature, the wisdom of operation could well be considered. Prospective impairment of function and embarrassing delay in recovery invited the consideration of active interference. He was opposed, however, to the policy and the practice of those surgeons who operated only because a bone was broken and irrespective of present dangers or the future benefits to the patient.

THE OPSONIC TREATMENT IN GONORRHEAL ARTHRITIS.

Dr. A. Ravogli, of Cincinnati, reported two interesting cases in which excellent results were obtained by the injection of gonococcic vaccine.

The following papers were also read: "The Differential Diagnosis of Duodenal Ulcer and Gallstones," by Dr. W. D. Haines, of Cincinnati; "Operations on the Gall Bladder," by Dr. Alex. C. Wiener, of Chicago; "Internal Rotation and Lacerations of the Perineum," by Dr. George B. Twitchell, of Cincinnati; "Plastic Tubercular Peritonitis; Report of an Unusual Case," by Dr. Chas. H. Parkes, of Chicago; "Plastic Work on the Urethra; a New Operation," by Dr. G. Frank Lydston, of Chicago; "Sterilized Hands by Total Absolute Abstinence the Only Factor in Perfect Success," by Dr. J. Henry Carstens, of Detroit; "Retroversion and Retroflexion of the Uterus, Causes, Consequences and Treatment," by Dr. Hannah M. Graham, of Indianapolis; "Gonorrhea and Marriage," by Dr. T. M. Reade, of Springfield, Ohio; "Fracture of the Patella, with Report of Six Cases," by Dr. Robert Carothers, of Cincinnati; "Delayed Union in Fractures," by Dr. Chas. Stoltz, of South Bend, Ind.; "Torticollis, Some of its Various Phases," by Dr. Reginald H. Sayre, of New York City; "The Preparation and Post-Operative Care of Surgical Cases," by Dr. L. G. Bowers, of Dayton, Ohio; "The Surgical Treatment of Acute Intestinal Obstruction and Report of Cases," by Dr. W. A. Melick, of Zanesville, Ohio; "Volvulus of the Entire Mesentery of the Small Intestine, with Report of a Case," by Dr. C. E. Briggs, of Cleveland; "The Sigmoid Factor in Pelvic Diseases," by Dr. J. Rawson Pennington, of Chicago; "Internal Strangulated Hernia," by Dr. E. M. Brown, of Chicago.

Medical Section.

ADDRESS IN MEDICINE.

Dr. George F. Butler, of Chicago, in this address, discussed the medical men and their influence on human progress, and said that if we were to prevent disease as the chief mission, or as the most effective method of warfare upon this chief enemy of human progress, the conditions must be known, not merely the material, mechanical and social, from which they resulted, but the primary conditions that lay still farther back of the immediate conditions that resulted in diseases.

He discussed the relations between physicians and the public service, and gave considerable attention to the need for a better understanding of the social question, and deplored the danger to innocents of silence and secrecy. He advocated the abolition of state lines with reference to medical practice regulations. Referring to expert witnesses in legal cases, he condemned "expert liars" in strong language. In the medical profession, as in religion or science, the perils of dominating influence could not be escaped. While the evils flowing from industrial concentration could be met, the evils that followed the syndication of intelligence could not be avoided. The struggle of the ages had been the emancipation of truth from authority.

(To be continued.)

MEDICAL JURISPRUDENCE SOCIETY OF PHILADELPHIA.

Stated Meeting, Oct. 21, 1907, at 8.18 p.m.

Dr. William M. L. Coplin in the chair.

EXPERT TESTIMONY FROM THE LAWYER'S STANDPOINT.

Adolph Eichholz, Esq., of the Philadelphia bar, read a paper with the above title. He gave a brief analysis of the functions performed by the lawyer and by the expert in the administration of justice. It is admitted that human reason and ingenuity have not yet been able to devise any system through whose operation actual justice will be insured in every litigated case. In cases where there are disputes as to facts, one side or the other may be untruthful in its allegations; or it may be that the two sides have honest differences, which disagreements may be accounted for by differences in perception. Examples of rules intended to hold the scales of justice evenly balanced were cited. The method of trial of causes was indicated in a general way and the position of the expert witness portrayed. The expert, though sworn as a witness, is in reality not a witness. He does not in general testify as to facts, but is supposed to aid the jury in drawing its conclusions by giving his opinion upon certain facts already testified to. He in a measure stands in the same position as the judge who gives his opinion upon the law, but with the vital difference that the Court's conclusions upon the law must be accepted, while the expert's conclusions are not binding. In the case of the expert scientist there is not only the element of honesty and truthfulness which applies to every witness, but there are also to be considered questions as to whether the theory upon which the witness bases his conclusions will stand the test of later scientific research, and whether the witness has used proper care in his investigations in the case under consideration. The danger of the expert becoming an advocate for the side employing him was referred to. Most of the remedies proposed for the improvement of the position of expert testimony were said to relate to what might be called scientific judges who are not employed by either side, in the supposition that some degree of impartiality might be obtained. The suggestion is made, however, that since so much of so-called science is empirical it is doubtful whether an expert should be given such authority as to make his judgment theoretically or practically conclusive.

William W. Smithers, Esq., emphasized the statement that the expert should not be considered a witness, describing his position rather as a supporter of the mentality of those engaged in the determination of the issue, an assistant merely, the force of which assistance is only secondary to the cause or issue at stake. He thought the tendency prevailed in many causes to magnify the position of the expert, as did the expert as a rule magnify the importance of his particular part of the trial.

Dr. William S. Wadsworth strongly urged that the medical expert should have the same recognition and treatment as a legal judge and that there should not be the effort made on the stand to discredit him. The work of the expert in observing facts and in drawing right conclusions was declared to be a necessity. The conditions, therefore, under which the courts worked should be improved.

Dr. Henry Beates, Jr., thought the interest in the question, on the part of the expert, centered around knowledge and honesty, and these two properties too often became the subjects of attack and perversion. The system also of utilizing expert testimony was regarded as often so defective that persons totally unfit were allowed to qualify as experts. He questions whether it is not a faulty method that permits expert testimony to be given by a physician who is interested in the case. Regarding the point made that an exeprt, though sworn as a witness, is not in reality a witness, but one whose function is merely to give an opinion, he believes the sooner such rule is dispensed with the better will it be, since opinions are influenced by environment. He believes that the system of utilizing expert testimony in the bringing of experts on each side, who in a degree must become advocates of their respective sides, emasculates the entire system of its value.

John H. Clark, Esq., believes that ultimately some method will be devised by which expert testimony will be more satisfactorily made use of. One difficulty in the subject is the kind of men usually found in the jury box.

Paschal H. Coggins, Esq., thought that experts were falsely regarded as impartial witnesses. This impartial position he believes impossible in matters of opinion, the result of special study and long training. The expert should occupy rather the position of counsel, and having reached a conclusion should be at liberty to support it by all his reason and knowledge, and to meet the opinions of the expert on the other side.

Dr. Henry Leffman pointed out that there were two sides of the question and that the expert is largely influenced by the opinion of the individual he represents and the aspect in which he views the case. An illustrative case, and one in which it would seem that experts might have taken either side, was that concerning the taxing of an electrical company upon the ground that it was a manufacturing corporation. In this case the question arose whether or not electricity was a manufactured product. He believes, on the whole, that the present system of expert testimony is the best and that in the friction of the opposing expert the sparks of truth are ultimately brought out.

Dr. Wilford W. Hawke referred to a commission in the city of St. Louis, composed of physicians who had banded together to give expert testimony free of charge to the city. He cited a case in which two physicians appeared in court as experts and yet who, when their qualifications were questioned, were obliged to say that they had never seen a case of insanity. He spoke of his experience in a recent murder trial in which the Court would not allow him to qualify his statements, which in print might not convey his meaning, upon the ground that he could not give a " medical lecture " in court. The term " psychic epilepsy " had been used, and although both sides agreed as to the mental status of the man, the jury paid no attention to the medical testimony and convicted the prisoner.

Haines D. Albright, Esq., outlined the plan by which experts were obtained for the opposing sides, and thinks that with the evidence brought out in direct and cross examination the system in the long run proved its value.

Dr. John B. Roberts deprecated the present tendency for the fee of the medical man to depend upon the result of the case.

John H. Clark, Esq., thought that a lawyer who takes a contingent fee, pays a fee to a man bringing him a case, or pays a physician for proving his case, cannot be an honest man and ought to be sent to jail.

Mr. Albright spoke in favor of a contingent fee, under certain circumstances, for example, where the party is too poor to pay an attorney and the lawyer assumes the risk of not being paid at all.

Mr. Eichholz, in closing, admitted that it was sometimes difficult for a professional man to express a professional opinion in other than technical words, but urged that the medical man in his expert testimony should remember that he was expected to explain certain things of which others were supposed to know nothing, and that so far as possible technical terms should be eliminated.

An objection to the suggestion that the expert should occupy the position of counsel was the difficulty of having a deciding authority upon the point at issue between the opposing experts.

While the present system of expert testimony may not be ideal Mr. Eichholz believes it the best that so far it has been possible to devise. It is a means of getting at the truth and of deciding disputes. With some method of raising professional standards there would come the possibility of raising the standard of the expert testimony.

Book Reviews.

Essentials of Chemistry and Toxicology. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology in Cornell University. Thirteenth edition, revised by R. J. E. Scott, M.A., B.C.L., M.D. New York: William Wood & Co. 1907.

This small book has been popular with those who have wished to get a general idea of chemistry and toxicology through a system of questions and answers. This thirteenth edition differs somewhat from the preceding ones, particularly in the portion devoted to organic chemistry which has been rearranged and partly rewritten. Of its kind it is one of the best books with which we are acquainted.

Hay-Fever, Hay-Asthma, Its Causes, Diagnosis and Treatment. By William Lloyd, Surgeon-in-Charge of the Nose, Ear and Throat Department, Kensington General Hospital, etc. London: Henry J. Glaisher. Chicago: W. T. Keener & Co. 1907.

This small treatise on hay fever is well written and follows in general commonly accepted views. The author has definite ideas, but they are neither eccentric nor particularly new. His view of the etiology is the familiar tripod, — hyperesthesia, disordered reflexes and the specific irritant. He can detect the hypersensitive areas by sight as well as by touch, and he treats them with the cautery. During the attack he finds the mucous membrane extremely red, where others note that it is commonly anemic. In referring to the work of Dunbar, he apparently misses the interesting theory that the etiological fault in the hay-fever victim is chemical rather than nervous. In regard to treatment there are many suggestions, and several cases are reported cured by cauterization.

A Practical Treatise on Fractures and Dislocations. By Lewis A. Stimson, B.A., M.D., LL.D. (Yalen.), Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals; Consulting Surgeon to Bellevue, etc. Fifth edition, revised and enlarged; with 325 illustrations and 52 plates in monotint. New York and Philadelphia: Lea Brothers & Co. 1907.

Stimson's great volume of 854 pages is the worthy successor of that by Hamilton, another eminent Bellevue surgeon, who was publishing twenty-five years ago. Stimson's book is addressed to the general practitioner as well as to the surgeon, and is an encyclopedia of the latest and most useful information on his subject. In this fifth edition the author points out especially the notable increase in our knowledge derived from the x-ray, though he might well emphasize the possibility of a fallacious interpretation of x-ray plates by inexpert observers, as well as the danger in trusting for final diagnosis to the cheap commercial x-ray apparatus commonly used by general practitioners. We commend his use of massage in the treatment of fractures, and suggest the great value of the Zander apparatus in restoring function to crippled and contracted joints.

Fractures of the carpal and tarsal bones, dislocations of the semilunar, and fractures of the upper end of the radius receive appropriate consideration. But an extensive review of this valuable work would be inappropriate in this brief writing. Suffice it that the book should be bought and studied by surgeons and general practitioners.

Manual of Diseases of Ear, Nose and Throat. By John Johnson Kyle, B.S., M.D., Professor of Clinical Otology, Rhinology and Laryngology in the Medical College of Indiana, etc. Second edition, revised and enlarged. Philadelphia: P. Blakiston's Son & Co. 1907.

A review of the first edition of this book appeared in the Journal of Jan. 31, 1907. This early call for a second edition is proof of its acceptance as a satisfactory textbook. A few additions have been made, especially a chapter on the diseases of the trachea and bronchi.

Tracheo-Bronchoscopy, Esophagoscopy, and Gastroscopy. By Chevalier Jackson, M.D., Laryngologist to the Western Pennsylvania Hospital, the Eye and Ear Hospital, and the Montefiore Hospital. Illustrated. The Laryngoscope Co.: St. Louis, Mo. 1907.

The importance of the recent development of the direct inspection of the air passages and esophagus will make this book welcome, and especially as it comes in so excellent a form. It contains about two hundred pages with many illustrations of real value to the context and a few colored plates showing normal and pathological views of the different regions. It contains a brief history of the subject with a complete bibliography, a description of the necessary instruments and apparatus and the proper methods for their use, the important points in anatomy and the principal pathological conditions which may be encountered. To the compilation of the work of others is added the original work of the author, and the results of his experience. Beginning with the work of Killian, whose instruments and methods established bronchoscopy, the writer introduced the small distal lamp of Einhorn's esophagoscope into Killian's tubes, adapted to receive them.

Incidently Killian had given an impetus to esophagoscopy, and Jackson, finding that the distal light was little affected by the length and small caliber of the tube, continued through the esophagus into the stomach. Here he is virtually a pioneer in a new field. Previous gastroscopes have been complicated and of no practical help in diagnosis, to say nothing of treatment. An outline of what the writer has done in this direction appears here, and a fuller description is promised in a future book.

The author in addition to his ingenuity in the making of instruments, and sound judgment in the treatment of cases, is a master in the arrangement of details, and the clear explanation of these details adds much to the value of the book. The position of the patient and the assistants, the care and handling of the apparatus, the management of anesthesia, are matters which in direct inspection through long tubes make the difference between success and failure. In Europe, the small distal lamp has not yet gained headway; in this country the impetus which it has received is due largely to Jackson. Whether or not this method of illumination becomes universally adopted, there is no doubt that in his hands or under his instruction it is capable of excellent results.

A Text-Book of Embryology for Students of Medicine. By John Clement Heisler, Professor of Anatomy in the Medico-Chirurgical College, Philadelphia. Third edition, thoroughly revised. Philadelphia: W. B. Saunders Co. 1907.

Professor Heisler's Embryology has met quite successfully the need for a not too elaborate manual for the use of medical students. It is well arranged and clearly written, though it is by no means so accurate as to have complete value as an authority. The titlepage states that this is the third edition, "thoroughly revised." Most of the electrotype plates have been untouched, but here and there a new page has been inserted and occasionally new paragraphs. These are always so grouped as to make an even number of plates, and by this device the old electrotype plates can be largely used for reprinting. The thorough revision, therefore, would be more correctly described as the interpolation of twenty new pages. By this commercially advantageous method, the third edition has really been improved, as the results of some recent investigations have been added to the volume, bringing it nearer to the standard of what such a work ought to be. The intention has evidently been to adapt the book as much as possible to cramming, for pages are everywhere marred by printing the leading words in heavy-faced type. When this is done, we may usually feel pretty sure that neither the author nor the publisher has wished to produce a textbook of first-class scientific excellence.

Lectures on Diseases of the Lungs. By James Alexander Lindsay, M.D., F.R.C.P. (Lond.), M.A., Professor of Medicine, Queen's College, Belfast; Physician to the Royal Victoria Hospital, Belfast, etc. Second edition, enlarged and rewritten. New York: William Wood & Co., 1906.

The lecture form is retained in this second edition. The lectures on heart disease in the first edition are omitted in the second and the entire space given to pulmonary disease. Practical diagnosis and treatment are the chief considerations, and the work is intended as a supplement to rather than as a substitute for the ordinary textbooks. Methods of physical examination and general symptomatology are considered in the first 128 pages. Pleurisy, empyema, pneumonia and bronchitis occupy about one hundred pages. Pulmonary tuberculosis is discussed in 182 pages, and the balance of a book of 496 pages deals with other forms of pulmonary disease.

The book is written in a clear, simple style. Conflicting theories are discussed in a judicial manner; the author's own opinion is always evident and its basis is usually stated. The discussion of treatment is in accord with present therapeutic tendencies. It is rational and a good mean between the nihilistic tendencies of some and the irrational drugging of others. The limitations of therapy are clearly stated, but there is no pessimism as to the value of treatment. The introduction of definite directions as to dosage and drug combinations which have proven efficacious in the hands of the author would have been an improvement, and might be expected, particularly as the book is in large measure a statement of the author's individual experience. To the younger student this will prove a defect in an otherwise very excellent book. Grocco's sign should receive more than the author's passing mention, for in the reviewer's experience it has proven of much value.

Such a book will not be of great service as a book of reference, but to the reader, whether student or older practitioner, it will bring much information presented in a very practical, common sense form, and of a nature that can be put into immediate use in connection with his daily patients. Typographical errors are very rare in the book. There are no illustrations, but the bookmaking has been well done.

A Text-Book of the Practice of Medicine. By Hortba Amory Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Second edition, revised and enlarged. Philadelphia and New York: Lea Bros. & Co. 1907.

The second edition of Hare's Practice appears in enlarged form. The work is a combination of judicious selection from medical writers with original observations and statistics. It is illustrated with numerous original or borrowed charts and pictures. The latter are distinct and illustrative, numerous enough, but still play a minor rôle to the text, as should be the case in a book of this character. The work of revision has been done in a manner to maintain the position won by the first edition, and the newer points of view based on recent investigations have been incorporated.

The book is well printed. The binding might be better, for the reviewer's copy showed defects after but little handling. A heavier binding would have been better for such a large book. However, the massive tomes that the American publishers inflict on the medical public is a just cause for protest. The prejudice among the publishers against handy volumes seems deep rooted. To hold these books while reading is a source of physical fatigue that always detracts from the pleasure of using American texts. Hare's book should appear in two volumes, at least, and a gain in lightness by using a flimsy binding on the one large volume is not a satisfactory substitute. The foreign custom of putting books on the market in paper covers to be bound according to the readers' taste has much in its favor. This criticism, however, is of the publisher, not of the author.

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RURAL LIFE FOR THE RESTORED CONSUMPTIVE.

One of the most difficult problems related to the anti-tuberculosis propaganda is how to dispose of the convalescent and of one in whom the disease has been arrested. The consumptive is restored to a very measurable degree of health in the sanatorium, the tent-farm or the *colonie agricole;* but to continue him under such salutary influences is either most difficult, or oftentimes quite impossible. Sometimes he is naturally unfit for agriculture; but in deplorably many cases he returns by choice and not by necessity to the baneful conditions under which he has contracted the disease, with the result that the arrested tubercular processes are excited anew.

Those in charge of the French hospitals for tuberculous children have to cope with the unwillingness of their young graduates to do light farming and outdoor work; their preference is generally to return to the slums from which they were mercifully taken when they were grievously ill. On returning to these unsanitary and perhaps vicious environments they are likely to redevelop the lesions that have been healed in the benignant rural atmosphere. At Villiers a *colonie* was established in which convalescents were to be taught farming and gardening; it was greatly hoped that boys restored to health would there become attached to a country life, and would be got away from baneful urban surroundings. It was found, unfortunately, almost impossible to retain them; they would not settle down happily to farm life. At Noisy-le-Grand, where only girls suffering from tuberculosis are cared for, a similar endeavor has been made, with no better success, and for the same reason.

Senator Jules Maline[1] has presented a study of the merits of agricultural as against urban life in France, which well deserves perusal by those interested in similar conditions in America. He recognizes that men will return to the land in great numbers only when the balance of human satisfaction is in favor of the country. It avails little to argue that the wealth of a people lies in its agriculture. "The problem involves much more than the simple question of financial profit and loss; so long as workingmen living in dark tenements forget their sordid surroundings at the sight of parades, picnics, political meetings, cheap theatricals, gay saloons and hurdy-gurdies, while their rustic relatives have to go to bed at seven for sheer weariness and lack of diversions, the cityward rush will not abate."

Other difficulties are revealed in the important report made by the Committee on the Prevention of Tuberculosis of the Charity Organization Society of New York City. It was sought to find places in rural districts for those strong enough to do light work. Farm help is always badly needed; yet the farmers cared little for the work of the convalescent or cured consumptive, except at a very low wage. Healthy men ignorant of farming could be taught; those who knew about farming but were ill could be given light tasks while strength should be returning. But there was no demand for men both weak and untrained, who were driven to soil only by disease. The committee next considered tenant houses standing vacant on farms. Such a house with spring or well water, and a large garden plot, with as much firewood and fruit as would suffice for a family's needs could be had for two or three dollars a month. Among 60 who desired such living conditions, 43 were rejected because of drunkenness, shiftlessness or physical inability; only 10 found places, of whom but 2 were entirely successful, 2 were partly so, and the remaining 6 were failures.

The committee concluded that indigent consumptives can occasionally be placed in suitable country employment with very good results; that comparatively few desire such work sufficiently to apply for it, and that most among such applicants are absolutely unfit, either by medical or social reasons, or both, for such work. Incipient cases in good physical condition can with difficulty be persuaded to give up their city employment; yet tradesmen and artisans who have been consumptives should find most congenial occupation in small semirural towns and villages. It is furthermore evident that physicians and those concerned with the care of the tuberculous should not send these patients to the country to shift for themselves; nor will any plan be feasible which should lack facilities for the careful adjustment of work to the physical abilities of the individual.

It is, indeed, a strange phase of human nature that city slums, with their squalor and their hideously unsanitary conditions, should be preferred to the restfulness, the peace and the healthfulness of the country; especially is this to be wondered at in the young, who should take most naturally to the fields, birds, flowers and brooks. Strange, too, is the situation when throughout these United States farming is carried on under the greatest difficulty, because laborers cannot be got to till the fields, while many thousands of idle men in cities complain that they are starving; when innumerable small investors are deterred from going into farming by reason in large part of the difficulty of coaxing laborers away from the industrial centers.

It must be explained to those who fear the monotony of country life that rural conditions have vastly changed in the last thirty — indeed, in the last ten—years. "There are hundreds of charming villages from Maine to California which can offer laborers and small farmers almost as many pleasures and social advantages as the large cities can; the spread of trolley cars and telephones has turned vast regions of farming land into suburbs." When we add to these agreeable features, village libraries, clubs, lyceums and the rural free delivery we are well in a position to assure the restored consumptive that in exchanging the vicious conditions under which he has contracted the disease for existence in the country, he has no occasion to contemplate a lonely life.

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TUBERCULIN IN DERMATOLOGY.

Tuberculin, like any toxin, merely requires to be given in proper doses, and, when once these are known, it can certainly render considerable service. This is what now appears to be transpiring in dermatology, and Schmitt has brought the question up-to-date in his Paris thesis.

It would appear preferable to employ the older tuberculin (tuberculin A. T.) which gives far more distinct reactions than the other preparations, notably than the new tuberculin (T. R.) of Koch. On the condition that the subject to be treated by tuberculin presents no contra-indications for its use, such as a visceral focus of tuberculosis, especially pulmonary, and if one begins with extremely small doses, such, for example, as one decimilligram, many important diagnostic or topographic indications as to the cutaneous lesion may be obtained. If one progressively increases, and at the proper time, the dose, one will be able to determine that dose which will give rise to a local reaction with a minimum general reaction, which will be the therapeutic dose for a given patient.

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[1] The Return to the Land. Published by E. P. Dutton & Co.

It is known that injections of tuberculin produce reactions of two different kinds, namely, a local reaction, which takes place in and about the cutaneous lesions, and a general reaction principally characterized by fever, one or more chills and a general condition of malaise. Schmitt has studied these manifestations and his researches are corroborated by Martial. The latter has used tuberculin, not from the standpoint of diagnosis, but in order to determine the real extension of lupus, for example. The lupomata do not always make themselves manifest by apparent cutaneous lesions. Around a visible focus of lupus there are invisible elements which can only be detected by the use of tuberculin, and from the extent of the reaction produced one may judge of the real extent of the lupus, so that one may treat the diseased surface thus put in evidence, and not merely the apparent lesions.

Unna has used a soap containing tuberculin for local treatment of various cutaneous tuberculoses. It has as a base potassium, to which is incorporated the toxin and is employed *in loco*. Mattan-Larier and Marmorek have advised employing the indirect tuberculin reaction, the principle of which is to employ an animal as the intermediary reactive before injecting in the human subject. Wright and Douglas have employed the T. R. tuberculin, considering it as a stimulant in the production of anti-tuberculous substances or those substances which protect against the attacks of the bacillus, and they have discovered a special substance in the blood which they call opsonin, which renders the elements of the blood apt for phagocytosis. Tuberculinization of an individual will increase the quantity of opsonin contained in the blood, and this new application of T. R. tuberculin is being studied on a large scale, both at home and abroad.

Several theories have been emitted to explain the so favorable action of tuberculin on cutaneous lesions and the so unfavorable on visceral lesions. It would appear that, according to histologic examination, the reactionary inflammation set up by the tuberculin around the tuberculous elements has as an effect to provoke their enucleation, and when the bacilli-containing tissues have been eliminated, cicatrization will take place more rapidly.

Unfortunately, it appears that tuberculin does not possess an absolute diagnostic value. The reaction takes place in nontuberculous lesions, and, on the other hand, this does not take place in all cases of true tuberculous lesions. This question is difficult to settle, because it may be well questioned whether the experimenters have placed themselves in the necessary conditions for the test and also whether the tuberculin that they employed really possessed a power of reaction sufficient or not. Given what we now know of the diagnostic value of the local reaction, it is rather astonishing that Schmitt concludes, with Landouzy, that it can absolutely settle the question in cases of tuberculides, a question that has been recently discussed by Darier, Leredde and Pautrier. Schmitt relates twenty-two cases of lupus and tuberculomata treated by injections of tuberculin and shows that the therapeutic value of this agent in dermatology is still more questionable than its diagnostic value. Certainly, among these cases which are all interesting, there are some where a very great improvement was obtained and a cure in some *nearly* resulted. But to nearly obtain the cure of a lupus means a nearly certain recurrence and in all the cases reported by Schmitt the cure was only temporary and often other medications had to be resorted to. He concludes, however, that the use of tuberculin is quite legitimate in the therapy of cutaneous tuberculosis, either in conjunction with other methods of treatment, or, as a last resource, when all else has remained powerless to control the lesions.

MEDICAL NOTES.

Whooping Cough at Statington, Penn. — It is announced that there are upwards of three hundred cases of whooping cough in Statington, Penn., and that the epidemic is spreading.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Nov. 20, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 51, scarlatina 41, typhoid fever 18, measles 8, tuberculosis 28, smallpox 0.

The death-rate of the reported deaths for the week ending Nov. 20, 1907, was 15.06.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 23, 1907, was 198, against 190 the corresponding week of last year, showing an increase of 8 deaths and making the death-rate for the week 16.94. Of this number 94 were males and 104 were females; 195 were white and 3 colored; 111 were born in the United States, 76 in foreign countries and 11 unknown; 40 were of American parentage, 136 of foreign parentage and 22 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 41 cases and 6 deaths; scarlatina, 44 cases and 0 deaths; typhoid fever, 14 cases and 1 death; measles, 12 cases and 0 deaths; tuberculosis, 37 cases and 21 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 25, whooping cough 0, heart disease 32, bronchitis 3 and marasmus 2. There were 15 deaths from violent causes. The number of children who died under one year was 29; the number under five years, 40. The number of persons who died over sixty years of age was 42. The deaths in public institutions were 59.

There was 2 cases and 0 deaths reported from cerebrospinal meningitis during the week.

Bequests. — Among many institutions benefited by the will of the late Lyman F. Rhoades the Lynn, Mass., Hospital received $5,000, the Home for Aged People in Winchester, Mass., $1,000, and the Memorial Home for the Blind in Worcester, $2,000.

Annual Meeting of Boston Tuberculosis Association. — The annual meeting of the Boston Association for the Relief and Control of Tuberculosis was held Nov. 19, and the following officers unanimously re-elected: President, Dr. E. O. Otis; Vice-President, Dr. Arthur K. Stone; Clerk, Mrs. Mary Morton Kehew; Treasurer, George S. Mumford.

Diphtheria in Rockland, Mass. — One of the schools in Rockland, Mass., has been closed for the second time in a month, because of an outbreak of diphtheria. This school, numbering 400 pupils, is the largest in the town. There are about fifteen cases of diphtheria of a very slight form now under observation.

Work for the Infirm. — A meeting has recently been held, in Boston, in which Dr. Joseph H. Pratt and other physicians and laymen are interested, to consider the possibility of making it easier for the physically and socially handicapped to obtain employment. Among those who attended and spoke were Mr. C. C. Carstens, of New York, and Dr. Charles P. Putnam, Rev. Elwood Worcester and Dr. John B. Hawes, of Boston. A committee was appointed for the purpose of considering a permanent organization. Another meeting will be held next month.

Lectures on the Protozoa. — Prof. Gary N. Calkins, of Columbia University, is giving a series of eight lectures in the Lowell Institute course in Boston. Five of these lectures have already been given, concerning themselves chiefly with a discussion of the protozoa in their biological aspect. Three lectures remain to be given on Nov. 29, Dec. 3 and Dec. 6, which should be of special interest to physicians. The titles of these three final lectures are: Protozoa and Pathology: Malaria and Sleeping Sickness. Protozoan Parasites of Dysentery, Hydrophobia and Smallpox. Some Doubtful Protozoan Diseases; General Conclusions.

NEW YORK.

Centenarians. — Daniel Ellison, of Freeport, Long Island, N. Y., died on Nov. 17 at the age of one hundred years. He was the oldest resident of Freeport, and as "Uncle Daniel" was long well known throughout the south side of the island and among the baymen and fishermen.

Mrs. Sophia Ackerman, who was one hundred and one years old on Oct. 28, died at her home in Bloomfield, N. J., on Nov. 18. She survived her husband by twenty-two years, and leaves 2 sons, 2 daughters, 12 grandchildren, and 22 great-grandchildren.

Jewish Hospital Society.— The annual meeting of the Jewish Hospital Society, of Brooklyn, was held on Nov. 17. Its hospital building was dedicated on Dec. 6, 1906, and from that time up to Nov. 1, 1907, 1,112 patients had been treated. Its present equipment is for 108 beds, but, in full operation, it would have a capacity of 160. The directors have purchased adjoining property, on which it is purposed to build a nurses' home and, in the course of time, an additional wing to the hospital, which will accommodate 100 more patients. The directors have also organized and had incorporated a separate society, The Training School for Nurses of the Jewish Hospital, of Brooklyn.

Pasteurization Plants. — Nathan Strauss, of New York, having established at his own expense, pasteurization plants in Berlin and other German cities, is now devoting his attention to similar work in England, and has offered to give to towns willing to accept them at least twenty-five plants, costing $1,000 each. He has invited Dr. G. Moore, at present Medical Officer of Health, of Huddersfield, one of the great manufacturing towns in the north of England, to devote his entire time, at a handsome salary, to installing and overseeing pasteurization plants in such municipalities as will undertake the cost of their maintenance; and it is understood that Dr. Moore will accept the position.

Examination of Police Officers. — In the New York Supreme Court in Brooklyn, on Nov. 12, Justice Burr rendered a decision to the effect that a considerable number of captains and lieutenants whom Commissioner Bingham had retired from the police force, after they had been examined and pronounced unfit by the Board of Police Surgeons, had been retired on insufficient evidence, and that the reports of the examining surgeons were not sufficiently specific. The judge therefore ordered that the cases should be sent to a jury and that expert evidence be called for. It will rest with the jury to decide, after hearing opinions on both sides, whether the officers are really incapacitated, either physically or mentally, for active service. It is understood that the Police Department will appeal from this decision, on the ground that in the retirement of the officers every step was taken in compliance with the provisions of the city charter.

The Charity Organization Society. — As an appropriate way of celebrating the twenty-fifth anniversary of its foundation, the Charity Organization Society planned and carried out a conference on the betterment of living conditions, commencing Nov. 19, and lasting three days. The opening session was held, in the presence of a large audience, at Carnegie Hall, and on this occasion addresses were made by the President, Robert W. De Forest, Governor Hughes, Mayor McClellan, Jacob H. Schiff representing the United Hebrew Charities, and Dr. Emil Münsterberg, President of the Department of Public Charities of Berlin. The last named, who is brother of Dr. Hugo Münsterberg, Professor of Psychology in Harvard University, had crossed the ocean expressly to attend the conference, going back to Europe on the return trip of the same steamer by which he came over.

A Commissioner of Street Cleaning. — Mayor McClellan has appointed Foster Crowell, a prominent engineer, Commissioner of Street Cleaning, in the place of Dr. Walter Bensel, of the Health Department, resigned. In his letter accepting the latter's resignation the Mayor says: "I part with you most regretfully, and am only consoled by the thought that in the resumption of your life work as Sanitary Superintendent, the city will still have the benefit of your experience, your knowledge and your ability. During the four and a half months of our intimate association I have never been obliged to comment upon your work, except to praise. You have reorganized the Department of Street Cleaning, contented your men, satisfied the public and — cleaned the streets. May your future be as useful and as honorable as your past."

It may be remembered that Dr. Bensel accepted this difficult and trying position only with the distinct understanding that it was only for a period of three months. At the expiration of that time, as the Mayor had not yet been able to fix upon the right man for the place, he consented to serve until a successor had been appointed. As Mayor McClellan intimates in his letter, Dr. Bensel's management of the department has met with the marked approval of the community at large. Assuming the duties of its head at a time when it was largely demoralized by a formidable strike among the employees, which paralyzed the collection of garbage and other work in midsummer weather, he soon brought order out of chaos, and it is generally acknowledged that he has made the most efficient Street Commissioner since the late Colonel Waring, who organized and carried out new plans and methods which have been successfully adopted in various other cities.

Current Literature.

Medical Record.

Nov. 2, 1907.

1. Block, S. *Mental Defectives; an Attempt to Treat Some Cases with Medicines.*
2. *Collins, J. *Acute Anterior Poliomyelitis or Acute Spinal Paralysis of Children.*
3. Sheitlis, D. *Streptococcemia Accompanying Appendicitis.*
4. *Gould, G. M. *Study of a Case of Two-handed Synchronous Writing.*
5. Roy, J. M. *Primary Melanosis of the Palate; Nasobuccal Fistula of Recent Sarcomatous Origin.*

2. Collins reviews the history of recent epidemics of this disease, and discusses its clinical manifestations, particularly as observed during the present epidemic in New York

City and its environs. He estimates that already there have been more than one thousand cases, but as yet nothing definite has been learned in regard to the etiology ot the disease. A noteworthy feature of the epidemic has been the number of cases in which a fairly good recovery has resulted; that is, in which there has been little or no muscular atrophy. The explanation of this is that the inflammation in the anterior horns is not so intense as to destroy the cell bodies and nutritive processes of the peripheral motor neurons. In order to secure data to aid in investigating the etiology of the disease, Collins urges physicians who see the patients early to send lumbar-puncture fluid, urine and feces to those who are equipped to study them adequately. Later on in the disease there is less hope of discovering facts of importance.

4. Gould says that mentality preceded and created structure. It has been shown that the mechanisms that give man external validity, speech and writing are one-sided. This one-sided differentiation is progressive throughout life. Right-handedness is partially a matter of right-sightedness. In 97% of children the right eye is the better seeing eye. If one is right-handed the centers for writing and speech must be on the left side, and the visual centers on the same side. Pathology follows any attempt to interfere with right or left-handedness. Those persons who demand right-handedness of the left-handed child make him morbid and maladroit. The author gives several very interesting cases of the life-long crippling of the faculties and mechanism of writing resulting from attempts to make a left-handed person learn to use the wrong side of his brain for writing.

[New York Medical Journal.

Nov. 2, 1907.

1. Porter, E. H. *Address in Sanitation.*
2. Newmayer, S. W. *Physical Defects of School Children, Causing Subnormal and Mentally Deficient Pupils.*
3. Boggs, R. H. *Protection of Patient during Roentgen Exposure.*
4. White, J. V. *Diet in Tuberculosis.*
5. Pope, C. *The Treatment of Anemia.*
6. Mereness, S. A. *On the Making of a Physician.*
7. Kirby, F. B. *Hyoscine Hypodermic Anesthesia.*
8. Lane, J. E. *A Case of Profuse Renal Hematuria.*

The Journal of the American Medical Association.

Nov. 2, 1907.

1. *Stiles, C. W. *The Three-Class (Freibank) Meat System as an Aid in Eradicating Tuberculosis.*
2. *Hamill, S. M. *Percussion of the Chest in Infants and Children.*
3. Beebe, S. P. *The Growth of Lymphosarcoma in Dogs. Summary of Recent Observations.*
4. *Beebe, S. P., and Tracy, M. *The Treatment of Experimental Tumors with Bacterial Toxins.*
5. McConnell, G. *The Experimental Production of Epithelial Proliferation.*
6. Küster, D. *Osteoplastic Operations.*
7. Ward, G. G., Jr. *Prolapse of the Ovary and Its Treatment.*
8. Carstens, J. H. *Ovary and Tube and Ovarian Tumors in the Inguinal Canal. Rare Condition. Report of Two Cases.*
9. Grady, R. *The Dentist in the United States Navy.*
10. Boston, N., and Blackburn, A. E. *Erysipelas.*
11. Pisek, G. R. *The New Era in Pediatrics; Its Causes and Scientific Foundations.*

1. Germany and some of the other continental countries have used for years a three-class meat system. In this country we have only two classes, — meats passed for unrestricted sale and condemned meats. The additional class, or Freibank class, includes meats which are passed for sale under restrictions. Much of the meat of a tuberculous animal, properly inspected, could, instead of being thrown away, be classed as Freibank and sold. The tuberculous lesions are often localized and can easily be cut out. Certain other meats can be used with safety provided they are cooked. This third class, or Freibank class, would give the poor classes a good safe meat, as it must be inspected, and at a much reduced price. Probably on the removal of the dread of complete loss the local butchers, to whom the federal law does not apply and who are able to sell actually bad meat uninspected, would apply for inspection. Moreover, with the Freibank class the dairyman would get some return for his tuberculous cows, and would be the more ready to co-operate with the movement to eradicate tuberculosis from his herds.

2. Hamill thinks percussion is much neglected in infants and children. He emphasizes the necessity of proper technic. He prefers light percussion, using the finger-finger method, but placing only the terminal phalanx of the percussed finger against the chest wall. Position is of great importance. The two sides must be absolutely symmetrical, with the head straight. The muscles should be completely relaxed, otherwise abnormal dullness from contracted muscles occurs. For percussion of the front of the chest, the infant or child is laid flat on the back. For percussion of the back the child either sits up or is held by a nurse. If too sick for this procedure, the child is turned from side to side, but comparison is made only from the two sides in the same position, *i. e.*, free side with free side. Some of the differences in percussion of infants from percussion in adults are that the apices in infants are relatively less resonant, due to the imperfect development of the apices, that there is no pulmonary resonance under the sternum in infants, and that in early life there is in the left chest behind and beneath the inner third of the clavicle a relatively dull area depending on the posterior position of the lungs and consequent proximity of the great vessels. In infants the writer percusses the relative dullness, the actual size of the heart, which is higher and more horizontal than in adults.

4. Beebe and Tracy investigated the action of the toxins of various bacteria on experimental lymphosarcomata in dogs. Suspensions of the B. prodigiosus seemed to have the most marked effect. Suspensions of the streptococcus pyogenes and the B. coli communis were also effective. Suspensions of staphylococcus pyogenes aureus and the soluble toxins of the B. prodigiosus had no effect on the tumors. The inoculations were given as a rule directly into one of the tumors. When any effect was observed, not only the tumor at the site of inoculation, but the other tumors diminished in size and finally apparently disappeared completely in a few months. [R. I. L.]

The American Journal of the Medical Sciences.

September, 1907.

1. Goldwater, S. S. *Dispensary Ideals: with a Plan for Dispensary Reform Based upon the Adoption of the Principles of Restricted Numbers.*
2. *Lambert, S. W., and Foster, N. B. *Benign Stenosis of the Pylorus.*
3. Robinson, B. *Heart Clot in Pneumonia.*
4. *Sewall, H., and Childs, S. B. *The Interpretation of X-ray Pictures as an Aid to the Early Diagnosis of Thoracic Aneurysm.*
5. Pottenger, F. M. *The Relative Value of High and Low Altitude in the Treatment of Tuberculosis.*
6. *Eshner, A. A. *The Relations between Diabetes and Pregnancy; with the Report of a Case of Diabetes in which the Glycosuria Disappeared with the Inception of Pregnancy and Reappeared after Delivery.*
7. *Elliott, A. R. *Hyperthyroidism.*
8. Munro, J. C., and Goddard, S. W. *Pyelonephrosis of a Supernumerary Kidney.*
9. Richards, F. H. *Tendon Transplantation and Nerve Anastomosis.*
10. Stanton, W. B. *The Pleural Pressure after Death from Tuberculosis. A Preliminary Study.*
11. Rotch, T. M., and George, A. W. *A Study of Normal Living Anatomy in Early Life.*
12. Epstein, A. A. *The Use of Ammonium Oxalate in Blood Culture Technic.*

2. Lambert and Foster report 11 cases of benign stenosis of the pylorus in adults from various causes other than the scars of ulcers. In 6 cases the stenosis was due to increase in fibrous tissue, in 3 to adhesions about the pylorus, in 1 to pressure from enlarged abdominal glands, and in 1 to a myoma of the pylorus. These diagnoses were all based upon operative findings. Tests of gastric secretion gave results showing in some cases hyperacidity or hypersecretion, and in others achylia gastrica; it is inferred that excessive secretion is more common in earlier

cases and achylia in those of long standing. No mention is made of tests of motor function. In treatment, for cases of mild grade, medical measures may be given a trial, pyloric irritability being reduced by unstimulating diet: olive oil before meals and extract belladonna, gr. i, after meals, muscular activity being stimulated by extract of ergot, gr. i, after meals; electricity or systematic lavage, and secretion being decreased or stimulated according to the demands of the case by bismuth or oxide of magnesium and bland diet on the one hand, or by dilute mineral acids in frequent small doses, with stimulating diet on the other. But in all cases of any severity, resort should be had to surgery without undue delay. Of the 9 cases reported where results were known, 6 were cured and 2 partially cured; 1 case died of post-operative peritonitis.

4. Sewall and Childs call attention to the general failure of the medical practitioner to recognize aneurysm except in its late and unmanageable stages. As Osler has said, the symptom of pain is an early common manifestation, but even before this there may be pressure symptoms or signs, such as dyspnea, cough, hoarseness from laryngeal paralysis or diminution of breath sounds over one lobe of a lung. In any obscure disorder of the chest, especially where there is a history of syphilis, aneurysm should be thought of. The skiagram and fluoroscope should then be employed. But it must be remembered that by untrained observers aneurysm is frequently diagnosticated when it does not exist. The patient or screen may be improperly placed so as to give a distorted image; anomalies, tortuosities and dilatations of the aortic arch may occur; pulmonary vessels, bronchi and bronchial glands may cause confusion; pulmonary tuberculosis, pneumokoniosis and thickened pleura, especially the mediastinal pleura, may also give appearances which can be distinguished only with difficulty from aneurysm.

6. Eshner has made an exhaustive summary of the literature of diabetes in its relation to pregnancy. Much evidence exists of diminished power of assimilating carbohydrates in pregnancy. So marked is this that transitory glycosuria toward the end of pregnancy or during the puerperium may be considered physiological. True diabetes, however, as a complication of pregnancy is rare, since diabetes is less common in women than in men, since diabetes usually occurs later in life than the child-bearing period, and since diabetes as a rule inhibits conception. Yet a considerable number of cases are on record of pregnancy complicated by diabetes, and some cases are reported in which diabetes occurred in successive pregnancies. When diabetes and pregnancy coexist, the diabetes as a rule becomes worse and the pregnancy is seriously interfered with, the fetus often dying *in utero* or soon after delivery, and miscarriage or premature delivery being frequent. The child may be diabetic. Hydramnios is frequent. As an exception to the general rule that diabetes is aggravated by pregnancy, Eshner reports a case of diabetes in which the glycosuria disappeared with the inception of pregnancy and reappeared only after the delivery at about term of a macerated fetus. He finds no parallel case in the literature.

7. Elliott's article deals with those forms of thyroid toxemia which do not amount to true Graves's disease, but yet can be traced to morbid overactivity of the thyroid gland. Disorders due to such conditions Elliott believes to be more frequent than is recognized. He mentions a number of cases illustrating the types of symptoms which may be encountered, and the various predisposing circumstances upon which hyperthyroidism may supervene. The thyroid probably bears some functional relation to the organs of generation; disturbances in the sexual life of a patient may induce enlargement of the thyroid with temporary symptoms of thyroid intoxication. In some cases of simple goiter there are toxic outbursts manifested by nervousness, tremor and tachycardia. Heart disease, especially lesions of the mitral valve producing venous engorgement, is often the apparent cause of thyroid hyperactivity. Of great clinical interest is the association of hyperthyroidism with toxic conditions, digestive, uremic, or infectious. Tuberculosis is often accompanied by symptoms which suggest a thyroid source. More striking still, according to recent statistics, is the frequency with which hyperthyroidism or Graves's disease follows acute articular rheumatism and other acute infectious diseases. [F. W. P.]

Surgery, Gynecology and Obstetrics.
October, 1907.

1. *McArthur, L. L., and Hollister, J. C. *A Report of a Series of Investigations Covering Work of the Last Eight Months Made with a View to Determine the Value of Vaccine Therapy in the Treatment of Surgical Infections.*
2. Waiss, G. C. *Hysterectomy for Hemorrhage. Report of a Case of Vaginal Hysterectomy for Uncontrollable Uterine Hemorrhage Due to Pregnancy Changes at the Placental Part of the Uterus.*
3. Lydston, G. F. *A Case of Pugilist's Ear.*
4. *Hilton, D. C. *Appendicitis Complicating the Puerperium, Including a Review of the Literature of Reported Cases.*
5. Jacobson, J. H. *A Simple and Effective Self-Retaining Abdominal Retractor.*
6. Hepperlin, H. M. *A Simple Method of Intestinal Anastomosis with a Single Ligature and Two Needles.*
7. *Walker, G., and Fisher, W. *Eight Cases of Suprapubic Prostatectomy; Complete Relief of Symptoms and Perfect Functioning of the Bladder.*
8. *Berg, J. *On the Treatment of Ectopia Vesicæ.*

1. Clinical and laboratory study in Chicago seems to show that determination of the opsonic index is of occasional value in the diagnosis of obscure infections, and, combined with the use of bacterial vaccines, is of distinct value in the treatment of infections with the staphylococcus and of certain chronic localized forms of tuberculosis. Results are less definite in infections with the gonococcus and colon bacillus. In tuberculosis the combination of Bier treatment with vaccine therapy is found further to raise the opsonic index of fluids in the affected part. There are abundant charts, tables and case-reports and good descriptions of technic.

4. Appendicitis during the puerperium has been noted only in recent years. Hilton believes, but does not satisfactorily prove, that there is a direct causal relation, anatomic, physiologic, or mechanical, between the two. Certainly some of the cases cited represent pelvic abscess from neglected obstetric infection. Nevertheless, whether the relation be etiologic, secondary, or accidental, there is obvious importance in the prompt diagnosis and proper treatment of appendicitis coincident with the puerperium, when its recognition is especially difficult.

7. The report of eight highly successful cases of suprapubic prostatectomy raises the old question of the preferability of this method of operation to that by the perineal route. The most striking consideration in this series is the promptness with which the wound closes and normal micturition begins. Notable points in technic are early removal of suprapubic drainage and closure of the wound only at the upper angle, leaving at least half to granulate.

8. Berg describes his operation for extrophy of the bladder by bilateral iliac osteotomy with complete closure of the defect and his modification of Trendelenburg's method of ureteral implantation. He believes each operation has its peculiar advantages and indications. He further suggests an "ideal" operation combining the merits of both. [R. M. G.]

The Lancet.
Nov. 2, 1907.

1. *Wright, A. E., Douglas, S. R., Freemen, J., Wells, J. H., Fleming, A., *et al.* *Studies in Connection with Therapeutic Immunization.*
2. Goldmann, E. *The Growth of Malignant Disease in Man and the Lower Animals, with Special Reference to the Vascular System.*
3. Lang, P. H. *A Case of Ruptured Bladder; Operation Forty-two Hours after the Accident; Recovery.*
4. Malcolm, J. D. *A Case of Injury and One of Exposure of the Bladder in Operations for Femoral Herniæ; Recovery in Both Cases.*
5. Owen, E. *A Case of Injury to the Bladder whilst Operating on a Femoral Hernia.*

1. Wright and his fellow-workers present an interesting report of their work on the treatment of bacterial diseases by vaccines. The paper is divided into two parts; the first part treats of certain hitherto unregarded points in

connection with immunization curves obtained by bacterial inoculations. They then speak of auto-inoculations in very early tuberculosis, and show that there is an intimate relation between auto-inoculation and auto-immunization on the one hand, and the clinical symptoms of the patient on the other. They relate some very interesting effects of massage and of active muscular movements (including respiratory exercises) on the focus of infection, and incidentally on the opsonic index; the effect of operative interference on local foci and lastly the effect of active and passive hyperemia on these foci are discussed. They publish thirty-nine clinical records and opsonic charts. In part two they give the details of their methods of inducing auto-inoculations and the value of such methods in diagnosis and treatment. The paper shows evidence of careful, thorough, painstaking and yet very brilliant work. Their results certainly go to show that in an institute such as the one of which Wright is in control, where the opsonic index can be taken accurately by thoroughly trained workers, this method is of value to control the vaccine injections and in diagnosis. [J. B. H.]

British Medical Journal.

Nov. 2, 1907.

1. Semon, F. *English and German Education; a Parallel.*
2. Skerrett, F. B. *The Cancer Problem; a Suggestion.*
3. Bailey, C. F. *An X-Ray Method for Immediate Localization of Foreign Bodies.*
4. Renshaw, K. *Case of Radical Mastoid Operation with Subsequent Infection and Rupture of the Lateral Sinus.*
5. Crofton, W. M. *Treatment of Delayed Resolution after Pneumonia.*
6. Milton, J. P. *A Case of Chylothorax, with a Record Quantity of Fluid Withdrawn from the Left Pleural Cavity, and Ultimate Recovery.*
7. Landolt, E. *Discussion on the Form and Manipulation of Instruments Used in Ophthalmic Surgery.*
8. Snell, S. *An Inquiry into the Causes of Blindness in Three Hundred and Thirty-three Inmates of the Sheffield School for the Blind.*
9. Fish, H. M. *A Study of Optic Neuritis in Connection with Nasal Accessory Sinus Disease.*
10. Grossmann, K. *An Improved Form of Artificial Eye.*
11. Grossmann, K. *A Portable Refractometer and a Portable Astigmometer.*
12. Cross, F. R. *Discussion on Iridocyclitis.*
13. Hinshelwood. J. *Four Cases of Congenital Word-Blindness Occurring in the Same Family.*
14. Herbert, H. *Clinical Observations on Spring Catarrh.*
15. Smith, E. E. *Fatal Case of Orbital Thrombosis.*
16. Coulter, R. J. *On the Treatment of Alternating Squint.*
17. Spicer, W. T. H. *Vesicular Affections of the Cornea.*
18. De Silva, W. H. *Lepra Ophthalmica in Ceylon.*
19. Henderson, T. *Pathogenesis of Glaucoma and the Rationale of Its Treatment.*
20. Roper, A. C. *Prolapse of the Iris in Simple Cataract Extraction.*

Deutsche Medizinische Wochenschrift, No. 38.

Sept. 19, 1907.

1. *Neisser, A. *Atoxyl in Syphilis and Frambesia.*
2. *Bergell, P., and Sticker, A. *Pathogenesis and Specific Destruction of Cancer.*
3. Simons, A. *Theory and Practice of "Threshold" Percussion.*
4. *Franke, F. *Treatment of Injuries of the Heart.*
5. Krönig, B. *Early Exercise in Obstetrics and Gynecology.*
6. v. Herff, O. *Massage and Vibration in Gynecology.*
7. Bauer, A. *Chorionepithelioma after Vesicular Mole and after Abortion.*
8. Hartmann, A. *Sodium Perborate in the Treatment of Ear, Nose and Throat Affections.*
9. Jacobj, C. *To Economize the Use of Curare in Experiments on Frogs.*

1. Neisser in a short communication states that apes inoculated with syphilis do not develop the disease if they are treated with atoxyl. Large single doses are most effectual, and combination with trypan-red is better than atoxyl alone. Frambesia is also influenced by the drug, which makes a strong argument in favor of an etiological and clinical connection between the two diseases.

2. Bergell and Sticker mention the results that have already been obtained in cases of experimental new growths by injecting substances extracted from normal livers. In this way it has been possible to produce necrosis and liquefaction of carcinomas and sarcomas, and the theory has been suggested that the unrestrained growth of malignant neoplasms is due to absence or insufficient quantity of similar ferment-like bodies. So far, however, it has not been possible to produce the local effect without giving rise to toxic symptoms. In experiments on mice it was found impossible to cause complete disintegration of the tumor without endangering the life of the animal through toxic action of the organ extracts. In advanced experimental sarcomas in dogs, the authors had a similar experience. The injection of specific liver ferments caused regressive changes in the growth leading to its complete disappearance after it had reached a stage of development that excluded the possibility of spontaneous cure. The authors warn against a too sanguine attitude in regard to the application of the method to similar conditions in man, though they consider that the results obtained are of great theoretical value.

4. Franke remarks that 120 causes of heart injuries are on record in which operative treatment was attempted, with successful outcome in 46%. Fischer has collected 729 cases in which no operation was done, less than 16% surviving. After describing some personal experiences and discussing published reports, he agrees in the conclusion that the great danger in heart injuries is not from the injury itself, but from pressure on the organ by fluid accumulated in the pericardium. The first step must be to remove this pressure by puncture and aspiration, whether operation is contemplated or not. In most cases puncture will make the operation unnecessary. The general practitioner should aspirate when symptoms develop, without waiting for the surgeon. He quotes a Russian surgeon who has reported seven bullet wounds of the heart in Manchuria, in which complete recovery occurred under expectant treatment. Operations on the heart, even if successful, leave a predisposition to organic affections later, and the author therefore prefers early puncture of the pericardium. He punctures usually in the fifth interspace 2 or 3 cm. from the sternum, proceeding slowly and slanting the needle towards the median line. [L. G. M.]

Münchener Medizinische Wochenschrift. No. 38.

Sept. 17, 1907.

1. *Pässler, H., and Seidel, H. *Pathology and Treatment of Emphysema of the Lungs.*
2. Schade, H. *Diabetes and Katalysis.*
3. *Bacmeister. *Bacteriology of Cholelithiasis.*
4. Proescher and White, C. *The Presence of Spirochetes in the Hyperplastic Lymph Glands of Pseudoleukemia.*
5. Riebold, G. *The Ovulation Period and Its Relation to Menstruation and Disease.* (Continued article.)
6. Enderlen. *Iodin-Benzin Disinfection.*
7. Ebner, A. *A Simplified Bandage for Use after Breast and Axillary Operations.*
8. Anschütz, W. *The Chances of Probable Cure in Cancer of Stomach and Intestines.*
9. Voigt, L. *What is Generalized Vaccinia?*
10. Hammersfahr, A. *A Case of Double Traumatic Chylothorax.*
11. Axmann, H. *Vasodilatation caused by Radium Treatment.*
12. Beschorner, H. *The Placing of Stations for the Care of Tuberculosis. Their Importance in Combating Tuberculosis as a Disease of the People.* (Continued article.)
13. Becker. *A New Sterilization Apparatus for Salt Solution.*
14. Henschen, K. *Fractures of the Transverse Processes of the Vertebræ by Muscular Action.*
15. Fuchs, F. *The Opening of the International Laboratory on Monte Rosa.*

1. Pässler and Seidel believe with Freund that the etiology of many cases of emphysema is to be found in a contraction and hardening of the cartilages of the ribs, with abolition of the movements of the thorax and resulting increase in its size, especially in the lower portions. The angle of Ludovic is much broadened. There is also a degeneration of the diaphragm. Freund has recommended in such cases the excision of parts of the rib cartilages, in this way bringing about a return of the respiratory movements of the thorax. The authors have tried this procedure in two cases, with improvement of symptoms in both. In such cases of emphysema the authors believe Freund's operation is of great value. The operation is indicated where there is dyspnea after slight exertion.

3. Bacmeister examined gallstones from twenty cases and found all but four sterile. In two of these cases the gallstones were of considerable standing, as evidenced by size and consistence of the stones and condition of the gall bladder. The stones contained typhoid bacilli, and there was a history of a comparatively recent typhoid infection. Working along these lines the author was able to cultivate typhoid bacilli from the center of fragments of sterile stones, which had been immersed in typhoid bouillon cultures. He concludes that it is possible for bacteria to pass into certain gallstones from the bile (especially cholesterin stones) or from the stones outward. [R. D.]

Berliner Klinische Wochenschrift. No. 38.
Sept. 23, 1907.

1. Babes and Vasilie. *Atoxyl Treatment of Pelagra.*
2. *Bashford, E. T., Murray, J. A., and Haaland, M. *Transplantation of Cancer in Mice.*
3. Fermi, C., and Repetto, R. *The Pathogenesis of Trachoma.*
4. Kentzler, J. *Further Researches on Albumins.*
5. Morgenroth, J., and Reicher, K. *Researches on the Anemia Caused by Toxolecithids.*
6. Moreschi, C. *The Value of the "Diversion of the Complement" Method in Bacterial Diagnosis.*
7. *Spät, W. *A Case of Influenza Pyemia.*
8. *Weigert, R. *The Influence of Food on Tuberculosis.*
9. *Westenhoeffer. *The Practical Importance of Pharyngeal Affections in Cerebrospinal Meningitis.*
10. Wolff-Eisner, A. *Typhoid Toxin, Typhoid Antitoxin and Typhoid Endotoxin.*

2. The authors describe a series of experiments in transplantation of epithelial tumors in mice. Successful transplantation was obtained in 201 individuals. An interesting observation was that the animals in which spontaneous resorption of the transplanted tumor occurred seemed to receive a specific immunity against this form of tumor, as no further attempt at transplantation was successful.

7. Spät holds that under certain conditions the influenza bacillus may have marked septic and pyogenic qualities. He reports a case of a young man who had bronchopneumonia and pleuritis followed by a general infection, ulcerative endocarditis and pyonephrosis, all due to the influenza bacillus.

8. Weigert claims that clinical and physiological observations and experiments show that there is a direct connection between the water content of the organism and its power of resistance against infection. The greater the fluid content, the less is the resisting power of the tissues. In animals fed on carbohydrates the fluid content is at its maximum. It is a demonstrable fact that different forms of food affect the composition of the organism. The author, working on these lines, fed five pigs on fat and five others on carbohydrates. The animals were then infected with tuberculosis, and it was found that the fat-fed pigs reacted in a much lesser degree to the infection than those fed on carbohydrates. Weigert suggests that, taking these results into consideration, the diet in human tuberculosis should be largely fat and should contain little carbohydrate food.

9. In an earlier work Westenhœffer showed that in the majority of cases of epidemic cerebrospinal meningitis, the nasopharynx, especially the pharyngeal tonsil, is the first focus of infection. According to observations carried out during the last epidemic in Germany, the schools are not places from which infection is spread, as the children do not spit out the infected sputum, but swallow it. In cases of pharyngeal infection, the spitting out of infected material would be of much importance in spreading the disease. The determination of a pharyngeal affection due to the diplococcus of Weichselbaum is important for the recognition of carriers of infection in the detection of the spread of the disease, and in the systematic prophylaxis against it. [R. D.]

Archiv für Klinische Chirurgie.
Band 82, Heft 2.

1. Cohn, S. *Clinical Studies on The Processus Vaginalis of the Peritoneum; with Especial Reference to the Cause of Interparietal Inguinal Hernia.*
2. Haim, E. *Appendicitis as Caused by the Streptococcus.*
3. Elenevsky, K. *The Pathological Anatomy of the Multiloculor Echinococcus in Man.*
4. *Rostowzew, M. I. *Aseptic Intestinal Suture.*
5. *Klauber, O. *Fistula between Gall Bladder and Bronchus, with Recovery after Laparotomy.*
6. *Neugebauer, F. *The Diagnosis and Treatment of Hirschsprung's Disease.*
7. Bloch, A. *Amputation of the Thigh by the Method of Gritti.*
8. Bibergeil, E. *The Treatment of Uncomplicated Fractures of the Malleoli.*
9. *Rokitzky, W. *Plastic Operations on the Esophagus.*
10. Stubenrauch. *Regeneration of the Gall Bladder After Partial Cholecystectomy.*
11. Schlesinger, A. *The Anatomy of Coxa Vara in Children.*

4. Rostowzew, by the use of an enterotribe and the Paquelin cautery, has devised a method of intestinal suture, both end-to-end and lateral, by which he is able to make the anastomosis in an absolutely aseptic manner. He claims that the method is simple and that the operation time is shortened over that employed in other methods. Full illustrations are given in the text.

5. Klauber reports a case of a woman of thirty-six years who had had repeated severe attacks of gallstone colic for six months. At the end of this time there occurred fetid, purulent expectoration, which was soon followed by the expectoration of bile and pus. At operation the gall bladder was found enlarged and contained an encapsulated stone. The communication between the thoracic cavity and the biliary system could not definitely be made out, because of the poor condition of the patient. Its general situation, however, was the posterior surface of the liver and diaphragm. After drainage of the gall bladder, convalescence was uncomplicated, there being no further expectoration of bile.

6. In the diagnosis of Hirschsprung's disease, Neugebauer uses a rectal sound and the x-ray. In each of the two instances which he reports, the x-ray picture showed the shadow of the sound somewhat to the left of the navel going upward toward the right, even as far as the fourth rib, and then bending toward the left. The first case reported was that of a nine-months-old child in which the autopsy confirmed the diagnosis of dilatation of the colon. The second instance was in a boy of twelve, who was completely cured by a large-sized lateral anastomosis between the beginning of the transverse colon and the lower end of the sigmoid. In this second case, in spite of the fact that the bowels moved voluntarily after operation, an examination a year later showed that the sigmoid was still abnormally enlarged, and that the high positions of the diaphragm and liver were still present. For these reasons Neugebauer considers the disease to be congenital, at least in its inception. In neither of his two cases was he able to demonstrate any valvular closure of the gut.

9. Following a gastrostomy, through which the patient was fed, Rokitzky made a plastic operation on the esophagus for stricture, by turning in a flap of skin from the front of the neck, after excision of the cicatricial portion of the esophagus. This flap was sutured over a tube. Four months later the esophagoscope showed perfect union, with some dilatation at the point of suture. The final result was most excellent; all forms of food could be swallowed and the dilatation only made itself evident as a scarcely visible swelling which appeared at the site of operation during swallowing. [W. C. Q.]

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 16, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	7	2
Chicago	—	—	Waltham	1	0
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	7	—
Baltimore	209	45	Brookline	4	1
Cleveland	—	—	North Adams	10	—
Buffalo	—	—	Chicopee	7	4
Pittsburg	—	—	Northampton	8	5
Cincinnati	—	—	Medford	1	—
Milwaukee	—	—	Beverly	1	1
Washington	—	—	Leominster	2	1
Providence	68	16	Hyde Park	4	1
Boston	185	53	Melrose	3	0
Worcester	44	11	Newburyport	—	—
Fall River	44	19	Woburn	6	—
Cambridge	25	2	Marlboro	1	0
Lowell	30	4	Westfield	6	1
Lynn	21	3	Peabody	—	—
New Bedford	26	9	Revere	3	1
Springfield	17	3	Attleboro	3	2
Lawrence	17	7	Clinton	2	1
Somerville	20	5	Adams	2	2
Holyoke	23	9	Gardner	1	—
Brockton	10	0	Milford	1	—
Malden	8	1	Watertown	2	1
Chelsea	7	2	Plymouth	—	—
Salem	14	3	Weymouth	4	1
Newton	8	4	Framingham	3	—
Haverhill	6	2	Southbridge	3	2
Fitchburg	9	5	Wakefield	—	—
Everett	8	2	Webster	—	—
Taunton	16	0			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED NOV. 20, 1907.

Bailhache, P. H., surgeon. Granted leave of absence for 7 days from Nov. 20, 1907, under paragraph 189, Service regulations.

Carrington, P. M., surgeon. Granted leave of absence for 6 days from Nov. 16, 1907, under paragraph 189, Service regulations.

Carrington, P. M., surgeon. Granted 2 days' extension leave of absence from Nov. 22, 1907. Nov. 20, 1907.

McIntosh, W. P., surgeon. Granted leave of absence for 10 days from Nov. 27, 1907. Nov. 14, 1907.

von Ezdorf, R. H., passed assistant surgeon. Detailed as a delegate to the Third International Sanitary Convention, to be held in the City of Mexico, Dec. 2-7, 1907; upon completion of which duty to rejoin his station at New Orleans Quarantine. Nov. 13, 1907.

Anderson, J. F., passed assistant surgeon. Detailed to represent the Service at the meeting of the American Association for the Advancement of Science, to be held in Chicago, Ill., Dec. 29, 1907; upon completion of which to rejoin his station at Washington, D. C. Nov. 13, 1907.

Anderson, J. F., passed assistant surgeon. Granted leave of absence for 7 days from Nov. 14, 1907, under paragraph 191, Service regulations.

Anderson, J. F., passed assistant surgeon. Granted 6 days' extension leave of absence from Nov. 21, 1907. Nov. 16, 1907.

Holt, J. M., passed assistant surgeon. Leave of absence granted Passed Assistant-Surgeon Holt for 23 days from Sept. 7, 1907, revoked. Nov. 14, 1907.

Boggess, J. S., passed assistant surgeon. Relieved from duty at Quebec, Canada, and directed to proceed to St. John, N. B., for duty. Nov. 16, 1907.

Spratt, R. D., assistant surgeon. Granted leave of absence for 1 month from Dec. 12, 1907. Nov. 20, 1907.

Bryan, W. M., assistant surgeon. Directed to proceed to Savannah Quarantine Station for temporary duty; upon completion of which to rejoin his station at New Orleans, La. Nov. 18, 1907.

Gill, S. G., acting assistant surgeon. Granted leave of absence for 30 days from Dec. 4, 1907. Nov. 15, 1907.

Gregory, G. A., acting assistant surgeon. Granted leave of absence for 14 days from Nov. 14, 1907. Nov. 10, 1907.

Stearns, H. H., acting assistant surgeon. Granted leave of absence for 2 days from Nov. 10, 1907, on account of sickness. Nov. 18, 1907.

LaGrange, J. V., pharmacist. Granted leave of absence for 7 days from Nov. 14, 1907, under paragraph 210, Service regulations.

Hepler, G. K., pharmacist. Relieved from duty at Chicago, Ill., and directed to proceed to Louisville, Ky., reporting to the medical officer in command for duty and assignment to quarters. Nov. 16, 1907.

RESIGNATION.

Pharmacist L. P. Hall resigned to take effect Nov. 2, 1907.

BOARD CONVENED.

A board of medical officers was convened to meet at Boston, Mass., Nov. 20, 1907, for the purpose of conducting a physical examination of an officer of the Revenue-Cutter Service. Detail for the board: Surgeon R. M. Woodward, chairman; and Assistant Surgeon T. W. Salmon, recorder. Nov. 18, 1907.

SOCIETY NOTICES.

Boston Medical Library. — The Boston Medical Library is open five evenings in every week until 10 P. M. from Nov. 1 to June 1, being closed only Saturday and Sunday evenings. There seems to be a certain amount of misapprehension on this point and the notice on the Library front door is not seen by all the members.

W. L. Burrage, M.D.,
Chairman, House Committee.

The Hospital Conference of the City of New York. — A special meeting of the Hospital Conference will be held at St. Luke's Hospital, Cathedral Heights, on Friday evening, Nov. 29, 1907, at 8.30 o'clock, to consider the adoption of recommendations to be submitted by the Committee on Ambulance Service, relating to the ambulance service of Greater New York. The Committee on Ambulance Service will ask that its recommendations, or such other recommendations as may be adopted, be laid before the Mayor's Hospital Commission.

George F. Clover, *President.*
S. S. Goldwater, *Secretary.*

The Southern Surgical and Gynecological Association. — The annual meeting will be held at the St. Charles Hotel, New Orleans, La., the 17th, 18th and 19th of December, 1907.

Denegre Martin, M.D.,
Chairman, Committee of Arrangements.

A Proposed New England Pediatric Society. — The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 p. m. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

John Lovett Morse, *Chairman.*
William E. Fay,
Arthur Willard Fairbanks,
Charles W. Townsend,
Henry I. Bowditch, *Secretary.*

RECENT DEATHS.

Dr. Aaron Davidow, of New York, who was graduated at Chicago in 1894, died on Nov. 18.

Dr. William Nathan Belcher, a prominent physician of Brooklyn, N. Y., died on Nov. 20. He was born in Brooklyn in 1862, and was graduated from the Long Island College Hospital in 1884. Among the positions that he held were those of attending physician to the Long Island College Hospital, the Polhemus Memorial Clinic and the Methodist Episcopal (Seney) Hospital, and pathologist to St. Christopher's Hospital, Brooklyn.

BOOKS AND PAMPHLETS RECEIVED.

Modern Clinical Medicine. Diseases of the Nervous System. Edited by Archibald Church, M.D. An authorized translation from "Die Deutsche Klinik," under the general editorial supervision of Julius L. Salinger, M.D. Illustrated. New York and London: D. Appleton & Co. 1908.

Metabolism and Practical Medicine. By Carl von Noorden. Vol. III. Chicago: W. T. Keener & Co. 1907.

Syphilis in the Army. By Major H. C. French. London: John Bale, Sons & Danielsson, Ltd. 1907.

Transactions of the American Surgical Association. Vol. XXV. Philadelphia. 1907.

Surgical Applied Anatomy. By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D., F.R.C.S. Fifth edition, revised by Arthur Keith, M.D., F.R.C.S. Illustrated. Philadelphia: Lea Brothers & Co. 1907.

Original Articles.

THE TECHNIC TO BE OBSERVED IN THE EXAMINATION AND LOCAL TREATMENT OF THE UPPER RECTUM AND PELVIC COLON.

BY T. CHITTENDEN HILL, M.D.,
Surgeon to the Rectal Department of the Boston Dispensary, Boston.

At the present time there exists in the profession a general manifestation of interest and realization of the important bearing that certain local lesions and structural changes, brought about by catarrhal and inflammatory conditions of the rectum and sigmoid, may have as etiological factors in the causation of chronic constipation, chronic diarrhea, so-called mucous colitis, ulcerative colitis, reflex symptoms of both the male and female genito-urinary organs, as well as various aches and pains of the rectal, sacral and lumbar regions.

The reason for this aroused interest in old subjects may be attributed to the rather recent discovery that the upper rectum and pelvic colon can be thoroughly explored and many localized inflammatory processes treated, and even operative procedures carried out through the electrically lighted sigmoidoscope.

A number of original workers, both in this country and abroad, have during the past four or five years thrown much light on some of these obscure disorders, at the same time suggesting more rational methods of treatment.

While recognizing the fact that it may properly be said that the whole subject is in a sense in an evolutionary stage of development, yet the first principles and primary general truths have been studied, their importance recognized and established beyond a question of doubt.

Thus our knowledge of these conditions which have necessarily been founded chiefly on the symptoms which they produce, and a physical examination, such as abdominal palpation or at most the examination of the feces are, at the present time, supplemented and simplified by direct instrumental examination of the bowel.

The result has been that our views have been considerably altered as to the pathology of the diseases just mentioned, and altogether different methods of treatment have suggested themselves.

The sigmoidoscope has been to the writer a very necessary adjunct in his efforts to accurately diagnose and treat some of the more difficult of these cases. Inasmuch as even recent graduates of our best medical schools receive but little instruction in this important domain of surgery, a description of the technic employed and certain practical suggestions may be of interest to some who have not had the opportunity for studying the diseases of the lower portion of the bowel. The qualified graduate of to-day has prepared for the practice of medicine by attending special clinics where he has been afforded an opportunity to gain a general knowledge of nearly every department of medicine and surgery, with the notable exception of diseases common to the rectum and sigmoid.

Such being the case it is scarcely to be wondered at that many otherwise skillful practitioners imagine great difficulties to surround the correct diagnosis of these cases, and more often than otherwise the treatment undertaken is entirely of a perfunctory and haphazard nature.

The remarks that follow are not intended to convey the impression that every patient applying for treatment for constipation, diarrhea or mucous colitis should at once be put to the inconvenience of a sigmoidoscopic examination.

Nevertheless, I am convinced that a systematic examination of some of the more obstinate of these cases, not benefited by intelligent medical treatment, would disclose definite lesions, or at least inflammatory conditions of the mucous membrane of the rectum or sigmoid which must be corrected before any other treatment will be of much avail.

PREPARATION OF THE PATIENT FOR EXAMINATION.

Inasmuch as rectal examinations are distasteful to many, and for the further reason that many patients are imbued with the impression that instrumental examinations of this region of the body are particularly painful, I shall give much attention to details, the description of which it is hoped will not prove tiresome.

With the patient properly prepared there is nothing about a rectal examination that is any more disagreeable than an exploration of any of the cavities of the body, and when dexterously conducted it should not cause any more discomfort. Save in exceptional instances any table, such as is procurable in the ordinary household, will serve for a satisfactory examination. The elbows and knees for male patients, and the right lateral semi-prone for women are the easiest positions in which to conduct the preliminary examination.

In the first position the whole peri-anal region is readily accessible without the aid of an assistant, while in the latter the patient, if an assistant is not at hand, can facilitate the examination by supporting the left buttock.

The sweat and sebaceous glands in the immediate vicinity of the anus are numerous and large, and for this reason the anal orifice should be cleansed by thoroughly wiping with absorbent cotton, which has been wrung dry of some antiseptic solution. After carefully inspecting and palpating all about the anus, the index finger with soap under the nail (if gloves are not used) is smeared with a stiff lubricant, and gently inserted with a rotary motion into the rectum. It is unnecessary to soil the finger with fecal material as its presence should be noted before actual contact takes place. When the rectum is found to contain feces, a small enema of boric acid solution, not exceeding ten ounces, will quickly empty the rectum and likewise the sigmoid in many instances, in such a manner as to permit of instrumental examination. The small enema will almost invariably answer for exploration of the rectum itself, but in atonic conditions of the large intestine it will be found necessary to ask the patient to call later and be prepared as follows: on the morning preceding the day set for examination, 3 to 6 dr. of magnesium sulphate or a suitable dose of some saline mineral water should be taken.

Three hours before coming to the office, the bowel is further cleansed with a large enema of normal saline solution taken in the knee-chest posture, followed two hours later by the injection of half a pint of clear water containing an ounce of glycerin. This last enema should never exceed the amount stipulated, for if larger some may remain in the sigmoid and cause much annoyance by being discharged during the examination or treatment.

TECHNIC OF PASSING THE TUBE.

It is difficult to formulate definite rules as to the technic of exploring the sigmoid. It is easier and much more satisfactory to demonstrate to the beginner the principles involved than to describe it, and then with a little practice any one who has had previous experience in the use of similar instruments, can accustom one's self to passing the tube in a manner that will be entirely safe and satisfactory to both patient and surgeon.

It is readily apparent to all, that the greatest care and caution should be exercised in passing the sigmoidoscope, especially when there is an active ulcerative condition of the bowel, or other inflammatory condition of the neighboring organs. A case[1] has recently been reported by G. Sultan in which perforation of the rectum near the recto-sigmoidal juncture took place during a sigmoidoscopic examination. The patient, a woman aged fifty-three, was suffering from chronic catarrh of the large intestine. The instrument was readily passed for 20 cm. At this point distention with air was begun. During the distention the patient complained suddenly of great distress, and at the same moment Sultan could see in the sigmoidoscope the serous membrane right before him bulging into the rectum. He describes in much detail the repair of the injury. Immediate laparotomy — suturing the rent and the finding of a particle of fecal matter the size of a cherry in the lower true pelvis. The patient died seven weeks later, and in the depth of the abdomen was found an encapsulated abscess.

Notwithstanding this unfortunate experience he concludes his paper with the statement "that in the rectoscope we have a distinct aid which is not possible in any other manner or method in forming a decision concerning changes in the rectum or sigmoid. We must, however, always bear in mind how dangerous this instrument can be of which we make use."

There are reported instances in which rough handling and undue force in passing the tube has been followed by perforation of the bowel, and the instrument has passed on into the peritoneal cavity.

Such methods, however, are absolutely unjustifiable, and if the rule is followed to use no force after the end of the sigmoidoscope has passed the anal sphincters no such serious complications can possibly arise.

Before introducing the tube the patient should be made as comfortable as possible in the genu-pectoral position.

If for some reason this posture is impossible because of an anchylosed or amputated lower extremity or great discomfort of assuming this position, the lateral semi-prone with the knees well drawn up on the abdomen may be substituted.

In fact, this latter position is favored by some proctologists for asthetic reasons, claiming that it is much pleasanter for women and hypersensitive individuals, but the writer believes that the greater ease with which the instrument is passed and so much less discomfort is occasioned the patient that the genu-pectoral position should nearly always be the one of preference.

The passage of any instrument into the rectum is rendered less difficult by first inserting the finger past the sphincters. This procedure dilates and lubricates the anal canal, as well as affords the surgeon opportunity to ascertain the exact direction in which the instrument should be guided before the obturator is withdrawn.

The sigmoidoscope, warm and smeared with vaseline, should be pressed firmly over the anal orifice, the patient at the same time being requested to strain down, thus relaxing the sphincters. Steady firm pressure, in a downward and forward direction, should be made on the handle of the instrument until it has passed the anal canal. After this portion has been passed, the handle should first be gradually lowered and pushed forward until the end of the instrument has reached the middle portion of the sacrum. At this point the obturator should be withdrawn, which will allow the bowel to become distended with air so that the tube can be passed onward by sight. The instrument is then gradually raised, allowing it to be gently pushed onward to the promontory of the sacrum, where considerable resistance to the onward progress of the instrument is met with. A great deal of difficulty is experienced by the beginner in passing the instrument into the sigmoid, because of a well developed fold of mucous membrane, known as O'Beirne's sphincter, situated at the junction of the sigmoid and rectum. This valve-like sphincter frequently makes the rectum appear to end abruptly in a blind pocket. If careful search now be made, the valve will be located in close apposition to the opposite wall of the gut. It can then be effaced with the end of the instrument so as not to retard its further progress into the sigmoid flexure. From now on the directions usually given are to make slight pressure on the hand bulb of the pneumatic sigmoidoscope which will sufficiently inflate the gut so that it may be inserted to its full extent, and the whole interior of this portion of the intestine brought plainly into view. During the past year I have practically discarded the hand bulb as I have found that by placing the patient in a good proctoscopic position it is rarely required. Its use is often very distressing and in ulcerative conditions it must be regarded as a dangerous practice. In some cases an invagination, acute flexure, sacculation, or narrowing of the caliber of the gut will not be straightened out by air insufflation. Air will pass through such places causing considerable distention without one's being aware of it, unless the patient complains of abdominal pain. It is in such cases as these when there is ulceration above that the greatest danger lies.

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[1] Deut. Zeitschr. für Chir., p. 397.

If the onward progress of the instrument is impeded it is better to slightly withdraw the instrument, get the direction of the gut and reinsert the obturator which will allow the tube to be passed with less inconvenience to the patient. This maneuver can be repeated until the tube has been passed as far as desired.

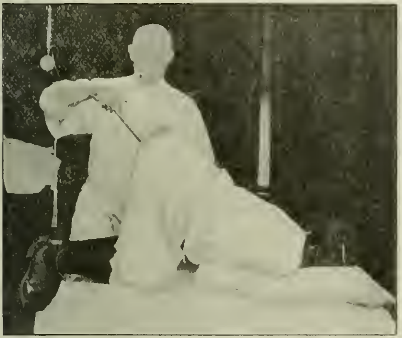

Fig. 1. Relative direction of the tube when passing the sphincters.

The photographs here reproduced are intended to give in a general way the relative direction of the tube: when passing the sphincters (Fig. 1), when it has reached the middle portion of the sacrum (Fig. 2), its passage over the promontory of the sacrum (Fig. 3), and when inside the pelvic colon (Fig. 4). The great majority of sigmoidoscopic examinations are conducted without the use of general anesthesia. Occasionally, however, it is desirable when there are painful affections about the anus, or the patient is apprehensive of being hurt. It should always be borne in mind when employing ether that there is much more danger of injury to the intestine as we do not have the patient's sensations to warn us when making too much pressure or distention.

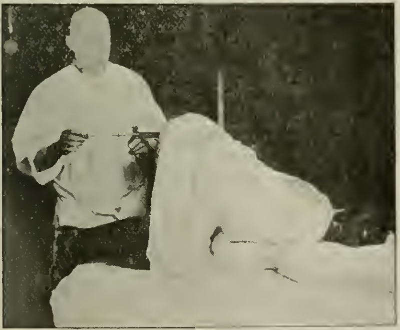

Fig. 2. The end of the tube has reached the middle portion of the sacrum. The obturator should be withdrawn at this point.

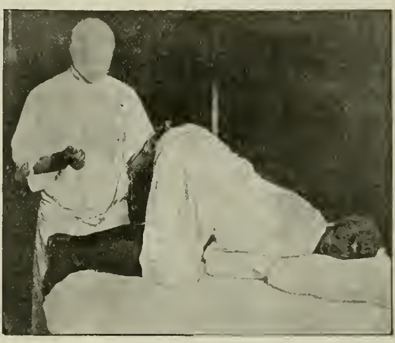

Fig. 3. Passing the tube over the promontory of the sacrum.

We have, therefore, in the sigmoidoscope an instrument of precision which should be resorted to in the treatment of many conditions which are dependent on catarrhal inflammations of the rectum or pelvic colon, such as hypertrophic and atrophic catarrh, traumatic, tubercular and specific ulceration, etc. With the lesions brought plainly into view and easy of reach, direct topical applications to the diseased tissues may be made which will prove more effective than the more commonly employed medicated enemas and suppositories.

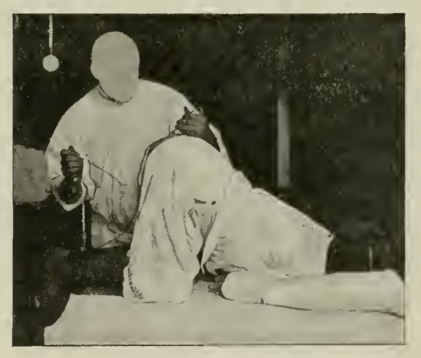

Fig. 4. The tube inside the pelvic colon.

CHRONIC DIARRHEA.

Cases of chronic diarrhea that have resisted careful medical treatment are often caused by circumscribed ulcerated areas of the rectum or sigmoid which are readily accessible through the sigmoidoscope.

Through the courtesy of different members of the Medical Staff of the Boston Dispensary, I have had an opportunity of examining and treating many such cases, and frequently lesions have been discovered that yielded very promptly to local treatment.

The plan of treatment carried out was briefly as follows: The restriction of the diet to non-irritating foods such as milk, soft boiled eggs, gruels, boiled rice, nourishing soups, etc., as well as the avoidance of cold, acid or alcoholic beverages, greasy and highly seasoned foods and excesses of tea or coffee.

The local treatment mainly relied upon was high colonic flushings with boric acid or normal salt solution, together with the topical use of nitrate of silver, from one to two drams to the ounce, to all abrasions or ulcerations present. In some cases instead of the silver solution, icthyol in glycerin 15%, or balsam of Peru in castor oil 15%, seemed to act with better results. Those cases in which there are reasons to believe that pathological lesions exist above the pelvic colon may be treated by medicated emulsions of olive oil through a long colon tube.

The thorough flushing of the colon is very soothing and healing to an inflamed and ulcerated mucosa, and when supplemented with the above and topical applications, much can be done to check the copious and frequent diarrheal discharges. A diarrhea dependent upon a localized or general enteritis of course would not be benefited by local treatment, but many of these cases are well of the disease of the small intestine, yet there remains the ulcerated or inflamed condition of the colon or rectum.

Cases of ulcerative colo-proctitis, especially if of a syphilitic or dysenteric nature, which prove obstinate to treatment per rectum will often yield readily to colon flushing through the appendix. The operation was originated by Dr. Robert F. Weir, of New York, and if the appendix is of sufficient caliber serves the same purpose as a cecostomy and is much more agreeable to the patient for the reason that the former operation does not allow the escape of feces as often happens when the cecum is utilized for this purpose.

CONSTIPATION.

The advent of the sigmoidoscope gave a fresh impetus to the study of constipation, as it was very interesting to note in what particulars the rectum and sigmoid of a patient who habitually carried about a load of fecal material in these organs, varied from the normal. The subject of constipation is a large one involving the chemistry of digestion, dietetics, etc., as well as mechanical obstructions and inflammatory conditions of the abdominal organs. Leaving all these general and complex questions, I will mention briefly the treatment of certain conditions that are frequently met with in the terminal portion of the digestive tract.

In all cases, the usual routine of regular time of going to stool, the correction of errors of diet, eating plenty of fruit and drinking an abundance of water, out-of-door exercise, gymnastics, etc., when possible should be insisted upon. Abdominal massage and kneading of the colon is often a valuable adjunct to other treatment.

The valves of Houston congenitally enlarged or hypertrophied and stiffened, as a result of catarrhal inflammation, may be the cause of constipation. Dr. T. C. Martin, of Washington, was the first to recognize this fact and recommend the operation of valvotomy for its relief.

Dr. Martin's operation consisted in incising through the proctoscope the valve or valves and suturing the free border, which operation he still advocates. The procedure, however, except in skilled hands, may be attended with hemorrhage or fatal puncture of the bowel. Various automatic valve clips have been made which serve the same purpose by dividing the valves by pressure necrosis, and when these are used there is no danger of hemorrhage or perforation. Should the peritoneum by any possibility be included in the valve it causes adhesions to form between the two layers and thus prevents perforation and subsequent peritonitis. The clips come away with the fecal movement at the end of four or five days. Dr. J. M. Lynch, of New York, has devised a very ingenious instrument for this purpose, which he calls a thyrotome. It is an electro-cautery clip and its advantages are that the valve is divided at once and thus a foreign body is not left in the rectum.

It is my opinion that the etiological importance of these valves as a cause of constipation has been somewhat overestimated, but occasional cases will be met with where the valves form an obstruction which can be dealt with in no other way. I believe it is always better to try a palliative course of treatment before division. Emptying of the rectum of any retained feces by an 8-oz. enema of boric acid solution after the bowels have moved in the morning will improve the catarrhal condition which is always present in these overloaded recti. Two or three times a week the valves should be massaged for five minutes through the proctoscope with an applicator protected by absorbent cotton which has been dipped in olive oil. Persistence in this massage will very frequently change a stiffened and obstructing valve into one so pliant that it cannot possibly be any hindrance to the fecal current.

Chronic invagination of the sigmoid or upper rectum is not an uncommon cause of constipation. In these cases, no matter what the character or consistency of the feces, there is difficulty in their expulsion and a feeling of incomplete relief is experienced. As a result of the invagination superficial ulceration of the sigmoidal and rectal mucosa is soon produced, and this may be manifested by the discharge of mucus sometimes streaked with blood and pus. By careful digital examination one may feel the invaginating sigmoid, and through the proctoscope it may be seen as the patient strains down.

The treatment may be either palliative or operative. The palliative will sometimes prove successful, and consists in replacement by air dilatation with the pneumatic proctoscope with the patient in the knee-chest position. After such replacement of the gut the bowels will sometimes act regularly for a few days, and persistence in this line of treatment may effect a cure. At the same time ulcerations present are treated by direct topical applications. Should palliative measures prove of no avail the suturing of the sigmoid to the abdominal wall (sigmoidopexy) will prevent the invagination.

Stricture of the rectum should not be forgotten in this connection. I have seen several cases that had received prolonged medicinal treatment without the real cause being ascertained. In two cases the stricture was annular and situated just within the internal sphincter and barely admitted the examining finger.

Hypertrophy and spasm of the external sphincter muscle is a more common cause of constipation than is generally supposed. In these cases usually a small ulcer will be found somewhere in the anal canal, which is irritated by the fecal discharges and thus keeps up the spasm and rigidity of the muscle. The treatment for this condition is the same as that for anal fissure.

RECTAL CANCER.

Notwithstanding the accuracy with which rectal cancer can now be diagnosed, it is a fact, most surgeons will agree to, that an early diagnosis is made out in only a small percentage of the patients that present themselves for operation. Perhaps not more than one fifth of the cases are suitable for radical operation, yet these growths of the lower rectum can be easily recognized by digital examination alone, while those of the upper rectum and pelvic colon can nearly always be accurately located with the sigmoidoscope. Should there be doubt as to the nature of the neoplasm it can be differentiated from other tumors by removing a portion for microscopical examination.

In the early stages when the growth is small bi-manual palpation is unreliable. Exploratory incision is probably the surest method of making the diagnosis, but it is only infrequently that such an operation is necessary. Cancer of the large intestine will continue to be overlooked until we, as a profession, recognize how frequently it occurs (according to late statistics three quarters of the malignant growths of the intestinal tract are located in the rectum or sigmoid) and become more discerning as to the initial symptoms of this insidious disease. It can readily be perceived that the general practitioner will frequently overlook the first vague symptoms of malignant disease of the rectum.

It is a common experience to hear these patients remark that for six months or a year previously they had consulted their physician for certain unusual sensations in the rectum, such as a feeling of weight and fullness that was only relieved by defecation; or a patient who has heretofore been regular in his habits may have complained of a gradually increasing constipation, which is a very suggestive, early symptom of malignant disease of the rectum. Even after the cardinal symptoms, such as muco-purulent or bloody stools, constipation alternating with diarrhea, etc., appear, the diagnosis may have been obscured by complications such as piles, fistula or ulceration, for such patients often appear vigorous and robust for a long time, since the neoplasm is situated at the lower end of the digestive tract and thus has not interfered in any way with the digestion and assimilation of nourishment.

Many patients have been seen by the writer, illustrating how far advanced these cases often get, before they are discovered, and not until we, as physicians, make it a routine practice to examine every patient with however indefinite rectal symptoms, by means of the newer and more modern instruments at our disposal, will the mortality of rectal cancer be materially reduced.

SOME FURTHER STUDIES ON NOCTURNAL PARALYSIS.

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(From the Neurological Clinic of the Boston City Hospital.)

In a recent contribution upon this subject,[1] I reported the case of a woman, in whom, following a distressing emotional shock, there developed a peculiar symptom-complex. In the half-waking and half-sleeping condition (hypnagogic state), there arose a state of general palsy, which, in its clinical picture, was an exact motor repetition of the original emotional episode. The disorder was interpreted as a functional dissociation and closely related to the temporary, general palsy that is sometimes observed in patients who are suddenly awakened from a deep hypnosis. Complete recovery took place by psychotherapeutic methods. Since reporting this case, four others of a similar nature have been observed. These have not only helped to clear the clinical aspects of the question, but have thrown considerable light on the origin and evolution of the attacks. Furthermore, a search through the literature has brought several similar contributions to light, which may be added to the papers by Weir Mitchell and Ch. Féré, already quoted.

Bleuler,[2] in a subjective analysis of his sensations while hypnotized, experienced a partial palsy on awakening from the state of auto-hypnosis. In a discussion of the variants of dream consciousness, Jastrow [3] seems to have had this condition of general nocturnal palsy in mind. He writes: "It may be pertinent to note that there seems occasionally a condition of dream stupor that may be induced in predisposed sleepers by sudden awakening, though it also occurs spontaneously. The subject thereof finds great difficulty in regaining consciousness, as also getting control of muscles and sense organs. He may reel and stagger, rub his eyes and make efforts to keep them open, apparently struggling against a relapse into deeper sleep; and somewhat dazed and befogged in his perceptions, his condition suggests the intoxication through the action of a drug. At times also he proves to be suggestible and able to perform routine actions in an automatic fashion. An energetic stimulus, such as a dash of water upon his face, may be needed to arouse his dormant faculties."

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[1] Isador H. Coriat: Nocturnal Paralysis, Bost. Med. and Surg. Jour., vol. clvii, no. 2, July 11, 1907.

[2] E. Bleuler: The Psychology of Hypnotism, Münch. Med. Woch., 1889, No. 5. (Quoted by Forel, Hypnotism and Psychotherapy.)

[3] Joseph Jastrow: The Subconscious, 1906, p. 231.

In a recent contribution, Gudden [4] applies the term "sleep drunkness" to the state of an individual, in whom the transition from the sleeping to the waking state is slow and there is a delay in the return of grasp of environment and of capacity for action. The individual is in a half-dream state and the real world is only hazily grasped. In his group I, called by him physiological "sleep drunkness," he speaks of the temporary inability to move or talk, although the mental grasp may be quite clear. Both Krafft-Ebing and Pfister apply the term to that half-waking and half-sleeping state in which the psychomotor activity is altered. The individual cannot speak, is rigid, numb, unable to move, although he appears to possess a complete consciousness. All these observations appear to correspond to the nocturnal palsy of our cases, except here that the consciousness seems rather hazy and bears a direct relation to the feeling of inability to move. As will be shown later, however, the phenomenon bears no relation to sudden awakening.

Furthermore our studies have shown that the symptom-complex is merely a portion of the clinical picture of a neurasthenic or psychasthenic neurosis, hysteria or a recurrent mental state. The following three cases are from the service of Dr. Thomas:

CASE I. PSYCHASTHENIA WITH PECULIAR CRISES AND NOCTURNAL PALSY.

The patient, H. O., age thirty-eight, first came to the Neurological Clinic on June 5, 1907. She was perfectly healthy up to the age of twenty-six, when, following an attack of typhoid fever, she became nervous and depressed for a time and had a fear of death. She recovered, however, and has remained well since, up to the onset of her present trouble. The patient came to the clinic complaining of ordinary neurasthenic symptoms, but on closer analysis the following symptom-complex was elicited. During the first week of May, 1907, her husband went to California in order to better his financial condition. She worried considerably over this and finally went into a state of great anxiety, more particularly because she had received no letters from her husband for three weeks. At this time also her son became ill and this in a measure added to the anxious mental condition. When the assuring letter finally did arrive, the anxiety failed to improve and she began to fear the journey to California and its consequent breaking up of her home in Boston. During the day she became quite irritable, started at slight sounds, sleep was poor, but without any specially distressing dreams; there developed a premonition of something terrible about to happen, that her husband was dead, that her child might die, etc. The feeling of anxiety was associated with numb sensations mounting from her feet to her head; there was occasional vertigo; an almost constant feeling of physical weakness, and there finally developed a frequent diarrhea. At the height of the episodes of anxiety and fear there supervened a peculiar mental state almost resembling a psycholeptic crisis. There was no sensation of a blow on the head, but "a blur comes before my eyes, things are getting dimmer," "things seem to be fading away," etc. These sensations, however, never reached an actual sense of unreality.

Parallel with these episodes of anxiety, there arose the nocturnal palsy. Three or four times during the night she would awaken from her sleep and in the half-waking and half-drowsy hypnagogic state would experience a sudden jerky sensation, followed by an inability to move the limbs. The total inability to move would last for three or four minutes, and there was a general sensation of numbness in the limbs. At first all her will power would not serve to move her body, but finally, after a few minutes of exercising her strongest will, she would be able to throw the limbs about, but even then with considerable difficulty on account of the subjective feeling of numbness. During the few minutes that this general palsy persisted the limbs feel paralyzed and "like withered," the heart palpitates, the eyes are wide open and there is a sense of intense fear and impending death. The attacks are worse in the early morning, about 5 A.M. During the attacks, she is always clearly oriented and there is no amnesia or haziness of memory for the individual attacks. This nocturnal palsy has always occurred in the half-waking and half-sleeping hypnagogic state, and as the patient became more fully awakened, the paralysis gradually grew less and she was able to move the limbs. At no time has the palsy persisted after the patient has become fully awake. These attacks have occurred every night up to the present. The physical examination was negative with the exception of a fine tremor of the tongue, lips and outstretched hands. Nothing special was elicited in abstraction.

Here we seem to be dealing with a psychasthenic neurosis associated with frequent diurnal crises of anxiety and nocturnal palsy. This latter can be best interpreted as an equivalent of the daily crises, both being due to an interference with the normal psychological tension and leading to a dissociation of consciousness. Janet in his voluminous treatise makes no mention of this particular disorder of sleep as an equivalent of the psychasthenic crises. The treatment in this case consisted of waking suggestions directed towards the cessation of the crises and the nocturnal palsy. The psychotherapeutic technic was identical with that employed in the case cited in my first paper. As a result, the patient completely recovered in the course of a few weeks and was able to journey and join her husband in California.

CASE II. NEURASTHENIA WITH RATHER PROTRACTED ATTACKS OF NOCTURNAL PALSY.

A. G., age twenty, came to the Neurological Clinic on Aug. 23, 1907, complaining of neurasthenic symptoms. She always enjoyed good health up to within two months. Since this time, however, she has been sleepless at night; during the day, she has been restless and fidgety, would drop objects, worried over trifles, and has noticed frequent precordial palpitation. There was no sense of exhaustion and no headache. The physical examination was negative. During the period of her neurasthenic symptoms, she has been subject to attacks of nocturnal paralysis occurring two or three times a week. She will awaken during the night in a state of moderate fear and although she feels fully conscious, yet finds it impossible to move her limbs or body or even to cry out, for a period of fifteen minutes for each attack. She is certain that the individual attacks last fully fifteen minutes, because she is in the habit of hanging her watch at the head of the bed, the eyes are open in the attacks and she is thus able to time herself, although unable to move a muscle. Usually the hands are clasped at the back of the head and she is unable to pull them from under her. On the morning following an attack, there is a feeling of weakness in the arms and legs, but no tingling. These phenomena of nocturnal palsy, as in the previous case, always occurred in the half-waking and half-sleeping condition; the eyes were wide open, but try as she would, she was totally unable to move or to cry out. As there was a transition from this hypnagogic state to a complete waking condition, the general palsy gradually wore off, at first the arms could be pulled down and then she was able to move the limbs.

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[4] H. Gudden: Die physiologische und pathologische Schlaftrunkenheit. Archiv. für Psychiat., Bd. 40, H. 3, 1905.

If the histological theory of sleep were substantiated by sound experiment, this case would offer a fascinating opportunity to conclude that the dendrites were still in a state of retraction. Psychotherapeutic procedures were used in this case; the attacks ceased during the first week of treatment, after which the patient failed to come to the clinic, so that the ultimate result is unknown.

CASE III. HYSTERIA WITH NARCOLEPTIC ATTACKS AND NOCTURNAL PALSY.

C. M., age forty-five, first presented herself to the Neurological Clinic on July 26, 1907. She never suffered from any serious illness, neither was there any history of narcoleptic attacks in the immediate family or its collateral branches. For eight years she has suffered from peculiar attacks consisting of an irresistible impulse to sleep. These would occur a number of times during the day, particularly when she sat down or was engaged in sewing or reading. At times she would be compelled to bite the tongue in order to keep awake. These narcoleptic attacks would last only a few minutes at a time and were usually preceded by slight vertigo. It was impossible to trace the origin of the attacks. They continued without interruption for six months, then ceased and did not return until the spring of 1907, when they again became of almost daily occurrence. Five years ago, there was an attack of aphonia lasting six weeks, and at present there is almost a constant sensation of a " globe " in the throat. On several occasions, particularly when excited, vision has been suddenly lost. At no time has there been any headache, vomiting or paralyses. About four years ago, she began to suffer from attacks of nocturnal paralysis. She would awaken from a sound sleep and while in the half-sleepy (hypnagogic) state, would find herself unable to open her eyes or move her limbs. This motor paralysis would last for a few minutes only, and as she became fully awake power would return. At no time was she able to come out of the individual attacks voluntarily while in the half-sleepy condition, but always could do so, as she became more fully awake. Sometimes she would be awakened by the crying of one of her children, but even under these circumstances would find herself unable to stir. The day following the attacks, she suffered from pain in the arms and fingers. These attacks of nocturnal paralysis occurred every night for about six months, then ceased, but have recently returned, but to a slighter degree. Nothing was obtained in experimental distraction, neither were there any physical stigmata of hysteria. As in the other cases the treatment was waking suggestion directed against the narcoleptic attacks and nocturnal palsy given three times a week, with the result that continued improvement took place during the first month, after which both types of attacks ceased altogether. The effect of psychotherapy in this case is of some interest. Not only did the nocturnal palsy completely cease, but in addition the patient recovered from the narcoleptic attacks. In Camp's recent case of narcolepsy,[5] suggestion brought about a cure, after the administration of caffeine had completely failed to keep the patient awake.

Case IV. (Service of Dr. Prince).

NEURASTHENIA WITH NOCTURNAL PALSY.

G. G., age twenty-five, came to the clinic complaining of irritability, a sense of exhaustion, particularly after slight exertion, gaseous eructations and poor sleep. Some time ago she developed incipient tuberculosis and entered a sanitarium where she remained for eight months, and recently she has worried over her husband's condition, who has been unable to work on account of postero-lateral sclerosis. During the past two months and occurring several times a week, she would awaken from her sleep, feel dizzy and find that she was unable to move her arms or legs, which felt numb and paralyzed. During the period of palsy she is only half-awake, the eyes are closed, and she is unable to scream. As the drowsy condition wears off, the eyes can be fully opened and the limbs can be moved. Physical examination is negative. This patient has only recently come under observation and it is yet too early to judge of the outcome. During the short time she has been under treatment, however, the attacks of nocturnal palsy have entirely ceased. The treatment has been waking suggestion, applied in the same manner as in the other cases.

An analysis of the above cases will show some points of interest and importance. While the condition of nocturnal palsy occurs occasionally and as a transitory symptom in normal individuals, yet when the attacks are protracted and frequently repeated, it can safely be interpreted as a pathological phenomenon. In the first place it will be noted that the condition of generalized motor paralysis occurs only in the hypnagogic state, and as this wears off and progresses to complete awakening there is a parallel disappearance of the palsy. Consciousness in this hypnagogic condition is either a little hazy or is completely retained, as witness the case of the patient who was able to judge of the length of time she was unable to move by gazing at the watch which hung over her bed. (Case II.) Since the same general palsy has been observed in subjects who are gradually or suddenly awakened from a deep hypnosis, as was pointed out in my first paper, we may safely assume that hypnagogic state is a genuine hypnotic condition, but spontaneously instead of experimentally induced. In fact, in Case II, the gazing at the watch, parallel with the inability to move, reminds one strongly of a state of hypnotic ecstasy, though no relation seems to exist between hypnosis and normal sleep, in spite of Bechterew's statement[6] that hypnosis is nothing but a modification of normal sleep. Yet it appears from a study of our cases that the spontaneous, semi-drowsy hypnagogic state is practically identical with the experimental hypnotic state. In both there is increased suggestibility, a tendency to paralysis, cataleptiform conditions may appear, and if the state is prolonged, as in the semi-drowsiness of patients suffering from protracted insomnia, hallucinations of sight may arise.

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[5] Carl D. Camp: Morbid Sleepiness, with a report of a case of Narcolepsy. Jour. Abnor. Psychol., vol. ii, no. 1, April-May, 1907.

Sudden awakening from a sound sleep seems to bear no relation to the origin of the disorder. In some personal observations on sleeping animals that were suddenly awakened by a loud noise, no temporary muscular rigidity took place, for the animal would frequently jump up and regain its feet at once. If the animal were only half awakened by the stimulus, in a few seconds it would again pass into a natural sleep without any intervening palsy.

This nocturnal palsy, therefore, on clinical evidence at least, seems to possess the following characteristics:

1. It appears only in the hypnagogic state and runs parallel with it.
2. When it occurs in normal individuals it is a transitory and rare phenomenon.
3. Sometimes it follows a strong emotional shock and assumes the characteristics of a recurrent mental state, as in the case published in my first paper.
4. The symptom-complex may occur in hysteria, neurasthenia or psychasthenia. In neurasthenia it appears to be merely symptomatic of the underlying neurosis with its concomitant sense of exhaustion. In hysteria and psychasthenia it is an equivalent disorder in the sense of replacing the narcoleptic attacks in the former disease or the peculiar crises of anxiety in the latter.
5. This nocturnal palsy has a varying duration, from a few seconds in normal individuals, to several minutes or even a quarter of an hour, in pathological cases.
6. The entire symptom-complex is a mental dissociation reacting most strongly on the motor mechanism, and as a purely functional disorder, it is distinctly amenable to psychotherapeutic treatment.

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EXOPHTHALMIC GOITER.*

BY EDWARD SWASEY, M.D., WORCESTER, MASS.,
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THIS is an old, and yet a new, disease. It is old inasmuch as its written medical history dates as far back as the year 1825, when Dr. Caleb H. Parry, an English physician, first described its symptoms, and he saw his first patient in 1786, more than one hundred and twenty years ago. Although his description was not nearly so complete and full as were those later given by Dr. Graves in 1835, and by Dr. Basedow in 1840, still Osler calls it Parry's disease, in preference to naming after either Graves or Basedow. Graves was a practitioner in Dublin, and the English call it Graves' disease, and because Basedow was a German the Germans call it Basedow's disease. But at the present time, if one looks up the current literature of the subject, he finds it most often referred to as exophthalmic goiter.

And still beyond the year 1825, when it first took its place in our medical literature, who can tell how far back its real history may run, and how its complex symptomatology perplexed and worried previous generations of medical men?

It has, in a way, become a new disease in the increased interest which it has excited since the advent of the various prepared powders and serums, in the past few years, which are giving more promise of control and cure of the affection than have all the previous forms of medication. Moreover, the surgeons are showing more knowledge and courage, together with more skill and caution in operating on the thyroid gland, than was the case ten or fifteen years ago.

Hence it is a subject of great interest to the men in general practice, for they are usually first consulted by the patient. It is of interest to the surgeon because more cures than ever before are being effected by operations, and some of our most skillful surgeons show a larger per cent of cures by the knife than has ever been possible by any other form of treatment. It is of interest to the neurologist because of the serious and complicated involvement of the nervous system, and of interest to the ophthalmologist because of the almost invariable eye complications.

Hence it is a timely and important subject for us all to consider and discuss.

Though exophthalmic goiter has been seen in childhood, and as young as two years of age, and has been known to first appear in persons beyond middle life, it is confined almost wholly to young adult life, and also to females from twenty to thirty years of age. The proportion of females to males is about five to one. We do not know any reason for this great preponderance of females over males, but it is believed that the uterine functions in some way render the vasomotor nerve centers less stable and more easily influenced by shock, fright, grief and worry than in the males. In many cases the exciting cause seems quite definitely traced to some great mental excitement like those given above. In others we cannot find any definite time or experience to trace it to. One author says young adult females with delicate constitutions, clear complexion, blue eyes, blond or reddish hair, and an irritable nervous temperament are especially liable to come to this form of nervous breakdown. More than this we are unable at present to give as a constitutional, predisposing cause. But we do know that the first blow falls on the vasomotor nerve centers. This in turn disturbs the vascular supply of certain organs and among others the thyroid gland. This gland has very definite and important functions to perform to keep us in perfect health.

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[6] W. V. Bechterew: What is Hypnosis? Jour. Abnor. Psychol., vol., i, no. 1, 1906.

* Read before the Worcester District Medical Society, in Worcester, Oct. 9, 1907.

Very recently a French writer has this to say on the function of this gland: "The thyroid gland presides over growth. It supports the physical heat in us at a point which is most convenient for our condition of existence. It regulates the assimilation and destruction of nutritive materials. It is indispensable to the muscular and cerebral functions, and is intimately connected with all transmission of nervous impulses. It is charged with the support of our protective membranes, epidermis and mucous and glandular epithelium. Furthermore, the first symptoms of thyroid insufficiency are of the trophic order, and they are characterized, in short, by an abnormal fragility, a too rapid desquamation of cellular tissues, which isolate us from our external environment." The function of the thyroid and its secretion must be within definite and certain limits, and not too much nor too little.

If too scant or absent we have all the degrees of myxedema in which we have the thick, heavy, dry skin, the feeble and slow pulse, heavy movements both of body and mind and an almost half vegetative existence. If this secretion is increased and absorbed by the lymphatics, for, you remember, the thyroid is one of those curious ductless glands, and is passed on into the blood, we have that group of symptoms which make up the clinical picture of exophthalmic goiter.

And what are these symptoms?

They are a constantly rapid action of the heart, an enlarged thyroid gland and exophthalmos. But these differ in seriousness and in prominence and in constancy of occurrence in different cases. In most cases the first of these to appear is the increase in the action of the heart, and later on the distress of palpitation. With this is a feeling of exhaustion and muscular fatigue and shortness of breath on even slight exertion. The patient may find herself taking long sighing respirations, even when not exerting herself. I have seen one case in which this was the first symptom noticed. At night she sleeps poorly, and dreams many and bad dreams, and awakes in the morning tired and exhausted. Headache is often a troublesome complaint. She is restless by day, and by night tosses about in bed. She can bear but few bed coverings at night and must have a cold room to sleep in, or have a feeling of being smothered. She will wear but light clothing by day, if she be up and about, because she has a feeling of great bodily heat, and she may actually have a degree or two of fever. Sweating is a prominent symptom in many cases, and in some a hacking cough is quite constant, caused by a feeble heart and a passive pulmonary congestion, very likely.

In a severe case rapid emaciation is a marked symptom, and with this an excited nervous state of mind, and her friends may have noticed that she is more easily vexed, excited and worried than has been her habit.

The stomach may be behaving badly and vomiting be troublesome, or only occasional. Tremor of the hands is an early symptom, and the patient may have noticed that she easily drops whatever she may be holding. The knees sometimes give way under her and she drops to the floor. And these, very likely, some or all of them, are all your patient confesses to you when first you see her. These, you see, are not very definite symptoms, and may not point to any well defined disease, and they are common to several.

If you take the pulse, while the patient is quiet and unexcited, it will be probably above 100 or 120 or more, and is a compressible pulse, showing a weak but rapid heart. If you listen to the heart you will find it rapidly and forcibly striking against the rather thin chest walls, for it is probably dilated and covers a large area. You may detect a blowing murmur both from this dilatation and the anemic condition of the blood, and this murmur may be transmitted up along the vessels of the neck. Your patient does not yet show the peculiar eye symptoms, neither is there a noticeable increase in the size of the neck, and the patient herself, nor her family, are aware of any enlargement here.

Of this incipient stage Dr. E. G. Janeway, of New York, has this to say:

"When well developed and presenting all the marked features characteristic of it, exophthalmic goiter could be at once recognized by any tyro, but the case is very different in the incipiency of the disease, or when some of the characteristics are obscure, and we may then give a wrong diagnosis and prognosis." The most frequent mistake he has seen is to regard these as cases of neurasthenia, malaria, lithemia and beginning phthisis. The nervous debility and fatigue and restlessness suggest neurasthenia. The sense of heat, and the sweating and headaches suggest malaria. The disturbance of the stomach and bowels, the fatigue, the action of the heart and other symptoms, suggest lithemia; and, lastly, the whole array of these symptoms, including the emaciation, the sweating, some temperature, and if there be a cough also, he has seen mistaken for commencing pulmonary tuberculosis, and he has seen patients with advanced exophthalmic goiter who were thought to have died from pulmonary tuberculosis when autopsy showed none existed.

These symptoms which we have considered may be present for some weeks or months before the enlargement of the thyroid gland is noticed by the patient or her family. Usually, however, if careful search is made the physician will discover some enlargement, and most frequently in the right lobe of the gland. It can be made more evident by having the head thrown well back. Then, usually, the last of these symptoms, following the rapid pulse, the enlarged thyroid, comes the exophthalmos. In Riedel's Clinic in Jena these several symptoms were found in this proportion: goiter, 100%; rapid heart action, 94%; palpitation, 94%; exophthalmos, 92%; mental disturbances, 68%; tremor, 66%; headache, 42%; sleeplessness, 40%; sweats, 36%; emaciation, 30%; von Graefe's sign, 30%; vomiting and diarrhea, 28%; Stellwag's sign, 22%. In another German clinic the enlargement of the thyroid was absent in but 3 out of 58 cases.

Cases differ very markedly in their progress from the onset. Some have a mild course and the patients have never been seriously ill, and very likely keep about their work and daily life in comparative comfort. I saw such a case in my office not many weeks ago. She was past fifty years of age, and regarded herself in very good health. But she had the protruding eyes, with a line of sclerotic showing below the upper lids; she had the rapid heart, more than 100 to the minute, and she had the enlarged thyroid to a mild degree. She confessed to some palpitation on mild exertion. This had been her condition for many years, for she has been under my care for several years and has had this same appearance. It was a well-marked but mild type of Graves' disease. We see on the streets and in the stores young and middle-aged women with the eyes prominent and a white line showing above the iris; you may be able to see that the neck is enlarged, perhaps, more on the sides. If you could examine the pulse and heart in these cases, very likely you would find it rapid and rather weak. I saw in the electric car in Boston, not many weeks ago, a young lady with the characteristic eye symptoms, she was nervous and fidgety, and had a florid complexion. I had no doubt she would show the other objective, and confess to the subjective, signs of this affection, if carefully examined.

But, on the other hand, I have followed a case where the symptoms, from the first, indicated a very grave type, where the goiter was large, throbbing and vascular, the emaciation was rapid, the pulse never below 120, or if so but a very short duration; the headache, at times, was very severe; for a few days only was there a prominence of the eyes and never extreme; sweating was never present but a rather hot, dry skin, and at times, an erythematous blush along the inner sides of the arms. Von Graefe's sign was not seen in any stage of the disease. She subsequently came under the care of one of the leading surgeons of the country, who had seen and operated on a great number of these patients. She was examined by Dr. Kocher, of Berne, Switzerland, one of the authorities of the world in exophthalmic goiter. She was kept in bed for two weeks, carefully preparing, by all the methods of medication, to bring her into a fit condition for partial removal of the thyroid. But any form of medication was only palliative, and did not in any way reduce the size of the goiter, or materially reduce the rapid action of the heart. At the end of two weeks there was partial removal of the thyroid. She survived the operation but a few days, as all the symptoms were more extreme immediately following the operation. These surgeons of very large experience regard it as a very grave, if not malignant, form of exophthalmic goiter. But even in this case the exophthalmos was only of passing duration.

In contrast to this, let me refer to another case that I saw some years ago. The young lady had been going about our streets for a year or two in comparative good health. There was very decided exophthalmos all this time, but it became so extreme in the left eye that the lids could not be closed over the cornea. This exposure brought on inflammation and ulceration of the cornea and on to panophthalmitis and enucleation. This destructive process was well established when I first saw the case, and I could not then draw the upper lid down over the globe. This patient had a rapid and feeble heart and had had this condition from the time of some severe mental shock some years previous. There was a well marked goiter, but not very large, and more on the right side. The etherization and shock of the enucleation had no bad effects on her condition, and the other eye was markedly improved in appearance. Thus, in a very limited experience, one may see how these cases differ in seriousness and how varied are the symptoms. We may have all the clinical features present but in a mild and chronic form. We may have a very severe type of the affection and have practically no exophthalmos. We may have extreme exophthalmos, and all the other symptoms not at all severe.

Next in point of frequency in its appearance, after the rapid action of the heart, comes the enlargement of the thyroid gland. And this symptom was absent, as we have seen, in but 3 out of 58 cases. Or, taking Riedel's clinic, it was present in every case.

In simple goiter we have, of course, an enlarged thyroid gland, and this enlargement is due chiefly to the dilatation of the alveoli with colloid material and increase of connective tissue; a local tumor, but without definite constitutional symptoms. In exophthalmic goiter, on the contrary, the colloid material is lesser in amount, while the glandular element is increased in number and size and the epithelial lining of these alveoli is increased. Given this condition, with a greatly increased blood supply, and we soon have coming into the blood in great excess that peculiar thyroid secretion, the active principle of which is a globulin containing iodin, called thyroglobulin. It has gone beyond healthy and normal limits and has become a toxin. And just this is the modern interpretation and explanation of the symptoms of exophthalmic goiter. It is a toxemia, and the factory that is supplying this toxin, working night and day under high pressure, is the thyroid gland. What was designed to be our conservator, our health giver, has now become our executioner and is driving its victim to death.

If in the way of illustration, we let the heart and its nerve supply be compared to a stagecoach drawn by six or eight mettlesome and fiery horses, and on each horse is seated a postilion; from the bits and bridles on these horses go the reins up to the hands of the driver on the box of the coach. The mettlesome horses shall be represented by the muscles of the heart; the postilions by the intracardiac nerve ganglia; the reins by the pneumogastric nerves which go up to the driver's seat, in the floor of the fourth ventricle. This whole outfit may and does behave beautifully and goes along peaceably in perfect health. It may go to wreck and ruin for two reasons. Let those little imps, the postilions, became stimulated and reckless by too much fire water, and ply their horses with whip and spur; or, by some mishap, let the driver on his seat lose control of the reins, and you know very well what will happen to that coach and its horses. There will be a runaway, which may not be checked until exhausted in death, or it may be again taken under control and rescued from a total wreck. This thyroglobulin is the fire water that these postilions are imbibing and it sets them on fire. They use their spurs and whips on the horses on which they are seated, the cardiac muscles. They are also receiving aid and encouragement from an outside source, the lower cervical and first dorsal sympathetic nerve ganglia in the neck, for they belong to the same family as do the cardiac ganglia, and will behave the same way under the stimulus of this fire water. Some of the older writers believed the seat of this trouble was in the floor of the fourth ventricle; that there was partial paresis of the nerve centers here; that the driver on the box, to continue our illustration, was lax in the control of the reins, and that the little fellows on the horses were taking advantage and control of the situation to put their horses into a stampede.

It was not till 1886 that Moebius first definitely connected this disease with disorder of the thyroid gland. He, at that time, believed it was a thyroid neurosis. Basedow believed it was a peculiar blood condition, a chronic state of anemia.

But modern laboratory investigations have gone beyond these mere beliefs, in a neurosis and blood dyscrasia, and have shown that this thyroglobulin is the toxin that is playing the mischief with these sympathetic nerve ganglia.

In a recent article Dr. MacCallum, pathologist at Johns Hopkins, gives a list of 58 patients with exophthalmic goiter. In 41 of these the symptoms were what he calls "typical," and in every one of these the changes in the character of the thyroid gland were also "typical." The veins were large and distended with blood, and were easily torn, the epithelial lining of the alveoli was increased; the colloid material usually, though not always, diseased.

He says: "From what has been said it is seen that with the appearance of definite symptoms of exophthalmic goiter there is always the same change in the thyroid." In the 17 remaining cases the symptoms were "indefinite," and in these the changes in the character of the thyroid were "indefinite" also.

After post-mortem examination of the cervical sympathetic ganglia, the parathyroids, the nerve centers in the medulla, he comes to this conclusion: "On the whole, therefore, the only lesions in this disease, which are palpable and constant, are those of the thyroid and of the lymphoid apparatus and of the thymus."

Some German and French investigators believe, also, that the parathyroid bodies have taken on extra activity and are adding their peculiar toxic secretion to the blood. These little satellites of the thyroid gland are usually four in number, two on each side, and are situated behind the gland and around the terminal branches of the inferior thyroid vessels. They are small, ovoid or lenticular bodies, and often resemble small masses of fat in consistency as well as in color. They had escaped notice, or at least their great importance had been overlooked, until the year 1880, when they were accurately described for the first time by Sandstrome. Then they were allowed to be forgotten again for fifteen years, but since 1895 they have received more careful study.

MacCallum examined these parathyroids postmortem in 16 cases, and he found them practically normal in every case, and from this he says: "On the whole it seems improbable that the parathyroids have anything to do with the symptoms-complex of exophthalmic goiter, when we consider these very slight anatomic lesions with the advanced changes in the thyroid."

The third member of this group of symptoms, the exophthalmos, is of least importance, though it be the most evident, and it is usually last to appear. The eye is pushed forward by the enlarged veins and tissues of the orbit. As we have seen, it may be slight; it may be extreme; it may be transitory; it may be permanent.

In the latter case, and in milder forms of exophthalmic goiter where emaciation is not severe, a fat deposit in the orbit and increased connective tissue may account for its long continuance. Usually the sight of the eye is not impaired. The von Graefe sign which has been referred to, and which at one time was considered of great importance, is the failure of the upper lids to follow the eyeballs in looking down, as they do in health. The Stellwag sign is an apparent enlargement of palpebral opening. The treatment of exophthalmic goiter, both medical and surgical, has taken on renewed interest and careful study in the past few years. It is not within my province, nor is it my purpose, to attempt to go fully into this broad field, even if I had the time at my disposal. I wish only to refer to the general principles underlying both.

Rest in bed, if the case is in any way serious, is, and always has been, an important part of the treatment. The list of drugs that have been used is a long one. But it should be remembered that some cases will recover, or greatly improve, under quiet and rest, with very little medication.

The modern plan of treatment is to introduce into the blood something that will counteract or neutralize this toxic thyroglobulin. As myxedema has been cured by extracts of the thyroid gland, the conclusion was natural that if animals could be rendered myxedematous they would supply us with something that would cure exophthalmic goiter. So dogs, sheep, goats and other animals have had their thyroid glands removed. The milk of these sheep and goats has been used after careful laboratory preparation. It is given in powder form. One of these is a white powder called Rodegen, and is a German preparation. I have seen it used with great benefit, and while it had no radical curative effect and did not reduce the size of the goiter, it certainly improved some of the more distressing symptoms.

Then there are the different serums prepared from the blood of myxedematous animals. I have never seen them used, but Dr. John Rogers, of New York, has made especial study along these lines. He has reported some good results, and hopes that still more improvement will follow. He has treated 41 cases in this way with 8 cured, 25 improved, 2 died and 6 no result given. In 28 cases, reported by others, there were 3 cured, 16 improved, and 9 unimproved. The conclusions reached by these observers are these: if the goiter is small and soft the chances of improvement or cure are good; if the thyroid is hard and large the case is doubtful. Rogers calls his serum preparation a specific cytotoxin.

The x-ray has been used on these goiters, and much improvement has been seen in reduction of their size and in the general symptoms.

Dr. Chas. Mayo frequently prepares his patients for operation by a course of four or six weeks of its use. He believes it causes destruction of the efferent lymphatics and so shuts up the channels of entrance of these toxins into the blood. Some other observers have this to say of the results of x-ray treatment: It has induced unmistakable benefit in all cases; the goiter was reduced in size and as it subsided the nervous symptoms vanished with it. The patients all increased in weight. In some no relapse in fifteen months. The soft vascular goiters are the most readily influenced, and the prognosis is better the more recent the goiter.

And, finally, What has been the record, and what may we hope for from the surgical treatment of exophthalmic goiter? It will always be a serious operation, but if medical treatment has failed, after a few months of its employment, to bring marked improvement in these patients, they should have the benefit of surgical treatment, seems to be the conclusion of our men of largest experience and observation. Some other conclusions they have arrived at are these: Do not wait too long before resorting to surgery, for these patients are losing strength and power of resistance from a weakened heart from the effects of this toxemia. For this reason, it is believed by some operators, there is more than ordinary risk in general anesthesia, and some patients have died from its effects even when no operation has been performed. The increased congestion of the head and neck also adds to the hemorrhage, for it is considerable at best, and the coats of the blood vessels are thin and tender and are increased in number. Some advocate the use only of local anesthesia, by eucaine, for this reason, and also that they can more surely avoid injury to the recurrent laryngeal nerve, if the patients are conscious. Mayo uses general anesthesia, and he has a brilliant record of recoveries.

The several operations that have been performed are: the removal of the lower cervical and upper dorsal sympathetic nerve ganglia; the ligature of the thyroid vessels, and partial removal of the gland. They all have some cases placed to their credit and have their advocates. I will consider, and that only briefly, the partial extirpation of the gland.

Friedmann says: "Enucleation or resection of part of the gland is the only means known to date by which exophthalmic goiter is permanently cured, and with internal treatment the mortality is 12%, and that permanent cure seems to be out of the question." "All goiters," says Kocher, "when there is a noticeable increase in size, should be removed, and especially when even in slight degree symptoms of exophthalmic goiter are present, as operation is the best means of preventing further development of this serious disease." He advocates the removal of three fourths of the gland. Halsted, of Johns Hopkins, advocates this operation, but he is very careful and solicitous about not only removal, but of injury in any degree, or even disturbance of the circulation of these parathyroids, for he, with others, has learned that injury to these is the cause of post-operative tetany, a very serious condition. He is careful to leave a liberal portion of the gland that surrounds the inferior thyroid vessels and these adjacent bodies. Complete removal of these little bodies, experimenters have found, in the lower animals, is followed by an acute fatal tetany, which supervenes in a few hours or a few days.

In all the operations on the thyroid, the gland should be handled as little as possible and then with the utmost gentleness, as any rough handling or squeezing forces this toxic secretion out of the gland into the circulation, and just this extra amount may turn the tide and hope of recovery against the patient. Those who have seen Dr. Charles Mayo operate on these patients say he is very delicate and gentle in handling the gland, and they attribute no small degree of his success to this caution. In estimating the relative success and cures from thyroidectomy it should be remembered that the surgeon is usually called upon to operate after medication has failed and an operation is the last resort; that the goiter may be large and vascular, and from such the hemorrhage would be serious; and that the heart and vital forces are possibly weakened by too long delay. One authority says that these only are the patients who are liable to die from the operation. It would seem that the future of this operation is most encouraging when we are told by Friedmann that the report from four large German clinics shows 109 patients operated on, and only 8 deaths, with 75 permanent cures, 23 much improved and 3 unaccounted for. He, himself, gives one record of 20 operations with 15 cured and 5 much improved. In another report I find there were 50 patients operated upon with 36 cured, 6 much improved, 1 no improvement and 7 succumbed to heart failure in twenty-four hours.

The use of eucaine locally has brought the mortality down from 12% to 8%. Mayo in one list of 42 operations had only 1 death.

Including those given above and others I find on record we have a total of 360 operations on the thyroid gland for exophthalmic goiter, and only 28 deaths, or 13 recoveries to 1 death.

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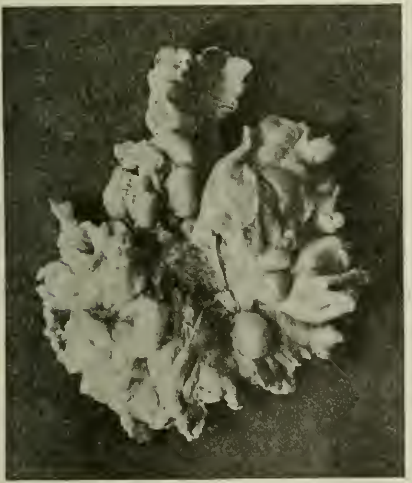
Clinical Department.

A CASE OF NON-ULCERATIVE FOLLICULAR ILEOCOLITIS.

BY FRANK E. STETSON, M.D., AND OSCAR S. CREELEY, M.D., NEW BEDFORD, MASS.

Serero Lynch, born in the United States, aged eight months, was admitted to St. Luke's Hospital, Aug. 17, 1907. Diagnosis: Ileocolitis follicularis nonulcerativa (primary), intestinal absorption (secondary). Result. Died Aug. 18, 1907.

Urine color. — Normal to slightly cloudy. Reaction acid. Specific gravity (?) Albumin, small trace. Sugar, 0. Sediment, few pus and red blood cells, many fatty casts, few small broken-down round cells with fat drops within the cell.



Blood. — White count (one half hour after death), 53,000. Differential count: Lymphocytes, 75%. Polymorphonuclear, 25%.

Father and mother living and well. Never sick before.

Thursday, Aug. 15, 1907, baby quite fretful and pale. Bowels were slightly loose at this time. Character of the stools not noted.

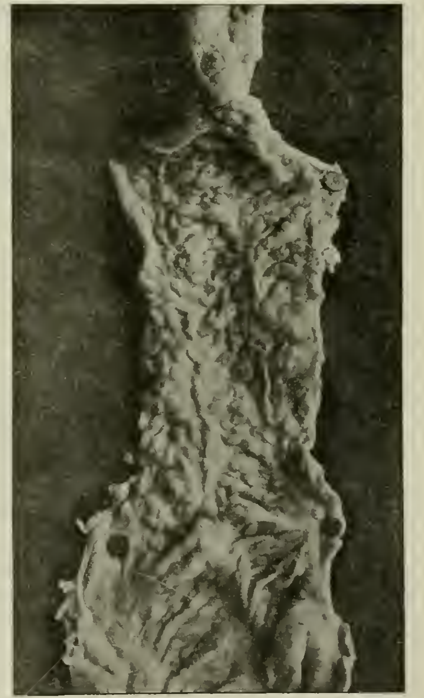
Friday, baby about the same and played as usual. Was taking his food all right at this time.

Saturday morning, Aug. 17, 1907, between 3 and 4 o'clock, baby vomited his milk after having had bottle. Vomited again at 4.30 A.M. Then went to sleep. On way to hospital appeared to feel better. Admitted at 6 A.M., Saturday, Aug. 17, 1907.

Physical examination, Saturday, 9 A.M., Aug. 17, 1907. — Robust-looking child of eight months, slightly pale. Did not look or act very sick, but was put to bed. Eyes, pupils equal. Neck, no retractions or glandular enlargement. Tongue, clear. Lungs, normal. Heart, sounds clear, no murmurs, regular, rate 126. Abdomen, slight distention but no rigidity or tenderness over any area; very slight rosary was made out but no other evidence of rickets. No eruptions or scars seen on child's body. Extremities, normal. Temperature, respiration and pulse (see chart).

AUTOPSY FINDINGS.

Incision was made in the usual manner from sternal notch to pubes. The intestines were markedly distended with gas but empty. The bladder was opened but showed nothing abnormal. Stomach and intestines next removed. Stomach appeared perfectly normal except for several little eroded places; these were mostly split pea in size and were colorless, and had no redness about the periphery; seven or eight of these were seen.



The intestines appeared normal except that in the last two feet of the ilium, non-ulcerating follicles were noted. These were grayish white in color and varied in size from pin head to split pea in size. These lesions were most abundant just before the ileo-cecal valve was reached. The mesenteric lymph glands were markedly enlarged. Some of the glands were as large as a large pea. The kidneys were removed and saved for further examination. Unfortunately, the specimen was destroyed. The kidney macroscopically was markedly injected throughout the pelvis.

The lungs were perfectly normal. The thymus gland, which in this case covered practically the anterior aspect of the heart, was removed and appeared normal. The heart was opened and showed nothing abnormal. All four chambers were carefully examined. The spleen and liver, together wth the gall bladder, appeared perfectly normal.

The child did not appear ill on admission and played with its toys more or less throughout the day. It had 2 dr. of castor oil which caused it to have several loose movements. These movements were not, as far as I know, characteristic of any conditions. They were greenish in character, but showed no evidences of curds, blood or mucus, and were in no sense characteristic.

The child had an apparently comfortable night Saturday and took its barley water well. Sunday morning at 9.30 while going through the ward I noticed that the child was breathing with a good deal of difficulty, and watching it for a few minutes saw that the breathing was of a Cheyne-Stokes character. This persisted to the end. As the abdomen was not tender or rigid and as the baby appeared very sick at this time I examined the ears thinking perhaps it might have a middle ear. Both drums appeared perfectly normal.

Treatment. — Castor oil, 2 dr. Brandy, 10 drops every hour for four doses. Bowel irrigated with warm saline solution.

Diet. — Barley water.

Temperature. — On admission, 104.4°. At 12 o'clock noon, 101°. At 4 o'clock P.M., 100°. At 4 A.M., next morning, 103°. At one hour before death, 105°. Pulse at these corresponding times varied between 104 and 72.

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Medical Progress.

PROGRESS IN GYNECOLOGY.

BY W. L. BURRAGE, M.D.

GONOCOCCUS INFECTION.

L. Emmet Holt and other recent writers have pointed out that gonococcus infection is a better name than gonorrhea, time honored though the latter be, because it does not carry with it necessarily the stigma of a venereal disease. This is especially important in vulvo-vaginitis in children where there is no suspicion of a direct venereal origin of the infection.

Prevalence. — The prevalence of gonococcus infection in women varies within wide limits according to the views of different gynecologists. It is by no means uncommon in little girls, especially in institutions. This subject will be taken up in some detail further on. Suffice it to say here that most of the cases of purulent vulvo-vaginitis in children are now believed to be of gonococcus origin. Lomer found the diplococcus in 60% of the gynecological patients of Schroeder's clinic. Saenger and Schwartz[1] put the percentage of gonorrhea among all their patients, hospital and private, as low as twelve. Taylor, viewing the matter from the standpoint of the venereal specialist, says that 12% is a conservative estimate of the gonorrheal origin of all uterine diseases.

This great diversity of opinion can be accounted for in several ways. First, the difficulty of finding the scattered gonococci in the chronic cases. In the acute cases and under favorable circumstances, the gonococci are often not very numerous, only four to a dozen being found in one microscopical field. Second, we know that under certain conditions the cocci die, whether from lack of suitable nutrient material, the activity of the phagocytes or other cause. Although dead, the tissues in which this occurs are still infected, perhaps because of the "gonotoxin" generated in the dead cells. Third, the class of patients treated. One would expect to find gonorrhea most common among prostitutes. Statistics prove this to be the case. Among 533 prostitutes, sick and well, examined in the regular routine by Huber[2] 59.6% had gonorrhea. Prowe[3] found gonorrhea in 76.9% of 407 sick prostitutes in San Salvadore, Central America. Zweifel thought the number of women in his private practice who were ill because of the gonococcus was from 10% to 11%. Some writers place the percentage among private patients as high as 20. Obviously, information on this point is difficult to get for few statistics are published, physicians not caring to go on record.

Tissues affected. — The organs in woman usually affected by the gonococcus are, the vulva, urethra, vagina, uterine canal, and Fallopian tubes. Destructive inflammation of the tubes and ovaries with peritonitis is common. Gonococcus inflammation of the rectum and gonococcus infection of the bladder with secondary ascending inflammation of the ureters and kidneys are not rare. Huber[4] found rectal gonorrhea in 24.6% of 318 prostitutes who had gonorrhea.

That the disease is a serious one and rebellious to treatment there can be no doubt. The Committee of Seven of the American Medical Association, in a recent report to the association, asserted that 80% of the deaths from female pelvic disease are due to gonococcus infection. We have to consider not only the manifestations of the disease in the genito-urinary organs but also its effect on distant organs, such as gonococcus arthritis, especially of the knee-joint, and its effect upon the system, anemia and debility. F. R. Sturgis[5] draws a parallel between the constitutional effects of syphilis and gonorrhea. He considers that many of the same organs are attacked by both diseases and that gonorrhea may be likened to syphilis in the seriousness of the systemic disturbances it causes, not the least of these being impoverishment of the blood state and rheumatism with attendant gonococcus endocarditis. Out of an ample experience as clinical professor of venereal diseases in the University of the City of New York he deprecates the silly belief of those who consider gonorrhea as no more important than a cold in the head.

Characteristics of the gonococcus. — The gonococcus has an especial affinity for the mucous membranes of man. It is not, as formerly thought, limited in its place of growth to the columnar epithelium. It has been found in the sub-mucous tissues of the vagina by Mandl; in squamous epithelium by Bumm, Touton and others; in the thrombosed blood vessels of the bladder, in the serosa of the peritoneum, and in the substance of the ovary by E. Wertheim; in the connective tissue of the Fallopian tubes by Kraus; in the rectal mucous membrane by Fritsch; in the uterine muscle by Madlener and Menge; in the decidua and placenta of a nine-months pregnancy by Maslovski, and in the urine of cystitis by Melchoir. Kroenig[6] found gonococci in the lochia of over 10% of 296 lying-in women who had had childbed fever.

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[1] Centralbl. für Gynäk., 1896, p. 1073.

[2] Wien. med. Wochenschr., 1898 p. 21.

[3] Centralbl. für Gynäk., 1901, p. 82.

[4] Refer. to in Zentralbl. für Gynäk., 1899, p. 1508.

[5] Amer. Jour. Urol., N. Y., 1904–5, i, 349.

Lobenstine and Harrar[7] found that the average birth-weight of the babies of gonorrheal mothers is less than that of babies of normal mothers. Their deductions were based on the observation of 50 babies of gonorrheal mothers without fever, 50 babies of gonorrheal mothers with high temperature and 150 of normal mothers. Not only is the average weight less but there is a greater permanent loss, those of gonorrheal parentage gaining at the end of ten days only 10.9%, while babies of normal mothers gain 49.3%. They consider that gonorrhea occurring in the mother in the later months of pregnancy is the cause of a large number of premature births.

In places other than the genital organs and their neighborhood it has been found in the pus of inflamed joints by Stern and Jacquet, in the pus of an inflamed tendon sheath by Kroenig and in the mucous membranes of the oral cavity, nose, middle ear, and the conjunctiva of the new born by Dóhrn, Rosinski, Leyden, Kroenig and others. The gonococcus has been isolated from a thrombus of the pulmonary valve in a case of ulcerative endocarditis by Lenhartz, and in the blood current by Amann, Unger, Von Leyden and Michaelis. Amann proved the identity of the gonococcus by stain and culture, and, by experimental inoculation of the human urethra, produced a typical attack of gonorrhea complicated by inflammation of tendon sheaths.

The gonococcus may be cultivated outside the body by using as a culture medium human serum in the form of hydrocele, ovarian or ascitic fluid together with agar, and may be kept alive for several generations. It is to be noted that it grows only in neutral or alkaline media. Therefore the normal vaginal secretion made acid by the lactic acid bacterium of Doederlein is hostile to its growth.

Gonotoxin. — De Christmas[8] found that there is a toxic product of the gonococcus developed after the cultured organism is dead, and that this is capable of producing suppuration when injected into the eye of a rabbit. His work was confirmatory of the investigations of Wassermann[9] and Maslovski[10] who experimented with pure cultures of the gonococcus in nutrient media to which, after the cocci had attained their full growth, alcohol was added to destroy them and to precipitate the albumin. The dead cocci with the albumin were then filtered out of the fluid, mixed with sterile water, the alcohol driven off by heat, and the fluid so obtained used to inoculate rabbits and guinea pigs. The injections were found to be exceedingly poisonous and produced both local inflammations and pyrexia typical of gonorrhea. The filtrate when injected into the animals had no effect, showing that the poisonous properties were in the dead cocci. Maslovski considered that when the gonococci die a gonotoxin is developed in the body of the cocci, an endotoxin. It is to this toxin that the symptoms of gonorrhea are due rather than to the development of the gonococci in the organism. He found the toxin to have both a local action, inflammatory and suppurative, and a general action, elevation of temperature, loss of weight, etc. Repeated injections of the gonotoxin produced no immunity, neither did injections of the pure cultures; therefore there is no immunity in gonorrhea, and reinfection may take place in the same individual an indefinite number of times. This coincides with the clinical observations of the disease in man. According to the most recent and approved views mixed infection is not often present in gonorrhea. In other words the gonococcus generally has the field to himself. By the destruction of the surface epithelium as a result of gonococcus inflammation the conditions are made favorable for the invasion into the tissues of the staphylococcus, streptococcus and colon bacillus, which are found frequently after the gonococcus inflammation may be said to be at an end. It is likely that some, at least, of the manifestations of the later stages of gonococcus infection are due to the formation of the gonotoxin and not to the invasion of other organisms. Taking advantage of the discovery of the gonotoxin some attempts have been made to treat gonococcus infection by the injection of antigonococcus serum[11] but so far the results are not convincing.

Curability of gonococcus infection. — Julien[12] discusses the curability of gonorrhea, adopting Wertheim's view that in chronic gonorrhea a fresh attack may be lighted up by a new culture ground; there is no real immunity. That is to say, if a man having chronic gleet marries a healthy woman she acquires gonorrhea from him and then her gonococci are able to set up an acute process in the husband's urethra. This is the opinion commonly held to-day, and is founded more on clinical observation than on bacteriological evidence. The importance of a man being cured entirely of gonorrhea before he is married is made doubly apparent. Most authorities maintain that the disease may be eradicated by persistent treatment conducted over a long period of time. Every individual who has once had gonorrhea should be assumed to be infected still until the contrary has been proved.

Clinical course and symptoms. — Acute gonorrhea as seen in prostitutes is characterized by a chill, rapid pulse, elevation of temperature, pelvic pains, burning and smarting on urination, and, in the course of a few hours, by a leucorrhea, at first mucous, soon becoming purulent, the pus often being of a greenish hue and mixed with blood. The symptoms begin from twenty-four hours to eight days after infection. Exceptionally they may begin before twenty-four hours or may be delayed as long as fourteen days. The disease begins most frequently in the urethra, just as in the male. The meatus urinarius is protected in the young woman, as pointed out by H. A. Kelly,[13] by the labia urethræ. In the beginning of coitus the glans penis pushes against the labia and separates or invaginates them, bringing discharge from the male meatus directly in contact with the mucous membrane of the female meatus. The glands of Skene lie just in the edge of the female urethra; they are lined with columnar epithelium, the favorite habitat of the gonococcus. Therefore it happens that these glands are frequently infected. Another favorite seat of infection is the glands of Bartholin on either side of the entrance of the vagina just outside the hymen. These also are lined with a layer of columnar epithelial cells. The impact of the penis in its endeavor to enter the vagina causes more or less trauma of the tissues over these glands and gonococci-laden discharge from the male meatus is rubbed into them. The vagina, lined with pavement epithelium and bathed in an acid secretion, is infected, although less commonly than the urethra. The younger the patient the more apt is the vaginal mucosa to be infected, because in the young the pavement epithelium is softer and more like columnar epithelium, hence the frequency of gonococcus vulvo-vaginitis in children.

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[6] Ref. to, by F. Staehler, Monatschr. für Geburtsh. und Gynäk., Bd. xvii, 77.

[7] Bull. Lying-in Hosp., N. Y., Dec., 1906.

[8] Ann. de l'Institut Pasteur, 1900.

[9] Berl. klin. Wochenschr., 1897, 32, 685.

[10] Ann. de Gyn. et d'Obstet., 1899, 483.

[11] Torrey, J. C.: Jour. Am. Med. Asso., 1906, vol. xliv, p. 261, also, Rogers, John, *Ibid.*, p. 263.

[12] Rev. Internat. de Méd. et de Chir., Paris, 1905, xvi.

The mucous membrane lining the cavity of the cervix uteri is thrown into folds and has branching glands lined with ciliated columnar epithelium. This is the situation next most commonly affected. Here the disease is prone to lurk just as in the glands of Skene and Bartholin. An acute gonococcus infection generally involves the urethra, vagina and cervical canal. It runs a course of six weeks. The inguinal lymphatic glands which receive infective material from the vulva and lower vagina may become inflamed and may suppurate, and the patient has a "bubo." This complication is more common in women of uncleanly habits. A gonococcus arthritis occurring during the course of the disease is a frequent complication.

Acute gonorrhea as described, except among prostitutes, is relatively rare. The symptoms of the invasion of the gonococcus in the genital organs of women are generally not pronounced. They are often a smarting on urination and an increase of vaginal discharge. The only history of infection may be that a mucoid, unirritating leucorrheal discharge became purulent and irritating. Even this may be absent. Perhaps the first symptoms to lead a patient to consult a physician will be due to tubal disease, a cervical catarrh or a vulvo-vaginal abscess, so insidious are the stages of invasion of this disease. In the chronic forms of gonococcus infection the leucorrhea loses its purulent character and is generally abundant. The symptoms depend on the organs chiefly involved, whether vulvo-vaginal glands, urethra and Skene's glands, uterine canal or Fallopian tubes and peritoneum.

Vulvo-vaginitis in little girls. — Fluor albus in children was first mentioned in the eighteenth century, and although it has been referred to in treatises on the diseases of women and children its serious import has not received sufficient attention. Sara Welt-Kakels[14] observed in her clinic at the Mount Sinai Hospital, New York, during the ten years from 1893 to 1903, 190 cases of vulvo-vaginitis, or 1.6% of all the children treated. The largest number occurred in children between the ages of two and five years and the disease was rare after the tenth year. Not all of the cases were of gonococcus origin. L. Emmet Holt[15] reports the results of investigations made in the Babies Hospital and other institutions for children in New York. When the new building of the Babies Hospital was opened in 1902 a child with gonococcus vaginitis was admitted inadvertently. From this child, in spite of new wards and the cleanest of surroundings, 11 fresh cases developed, including 3 of gonococcus arthritis. The rule was thereupon established to admit no female child without a microscopical examination of the vaginal secretion. In another infants' hospital in the same city where there was said to be no vulvo-vaginitis, smears were made from the vaginal secretion of 100 infants and young children, the cases being taken in order without selection. Twelve showed a yellow purulent discharge, and pus and gonococci were found in all by microscopical examination. This must be considered a large percentage, as most authors place the frequency of vulvo-vaginitis as about 1%. Not all cases of vulvo-vaginitis are of gonococcus origin, the cause of the so-called catarrhal cases being unknown. The gonococcus form comprises nearly all those in which the discharge is purulent; it is the most severe and most rebellious to treatment besides being the most common. Although the inflammatory symptoms disappear at the end of four to six weeks, exacerbations occur. One author reports finding gonococci in the discharges after the disease had lasted four years. Gonococcus vulvo-vaginitis is contracted sometimes through sleeping with the mother, sister or other female relative; as a rule the infection is indirect and accidental, being transmitted on contaminated bed linen, towels, sponges or even by bathing in the same bath tub. A marked instance of the last mode of contagion was an epidemic of vulvo-vaginitis which occurred in the city of Posen, Germany, in 1890[16] in which 236 school girls, aged from six to fourteen years, were taken ill inside of eight to fourteen days with vulvo-vaginitis. They had all used the same public bath house, where, on account of limited accommodations, two or more children were required to bathe in one tub.

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[13] Twentieth Century Practice of Medicine, vol. i, p. 665.

[14] N. Y. Med. Jour., 1904, lxxx, p. 689.

[15] N. Y. Med. Jour., 1905, vol. lxxxi, p. 521.

[16] Referred to by Welt-Kakels, *loc. cit.*

There are grounds for the belief that adhesions of the labia and prepuce, occlusion of the hymen and hematocolpus, deformed uteri, and diseased Fallopian tubes are the sequelæ of this disease. The complications are acute purulent peritonitis, arthritis and ophthalmia. Latent gonorrhea has been referred to. It explains why the gonococcus, even after years of apparent cure, may regain its full virulence. This brings up the question of the advisability of marriage in persons who have had gonorrhea.

Gonorrhea and marriage. — In the case of the male it is the custom for genito-urinary specialists to advise that marriage is permissible when there are no shreds in the urine, when the gleety discharge from the urethra has ceased, and when repeated examinations made several days apart show no gonococci in smears made from mucous from the meatus. There are cases on record where these precautions have been observed and yet a gonorrheal process has been set up in the previously healthy wife. Other instances are numerous where no disease was noted in the wife until the husband became reinfected by intercourse with a prostitute. It would seem as if reinfection was at the root of the trouble, and would explain many of the otherwise inexplicable cases of gonococcus infection. In the case of woman repeated examinations of mucous from the meatus urethræ, after expression of the urethra; of mucus from Bartholin's glands, and mucus from the canal of the cervix uteri; found to be free from gonococci, prove that the disease is cured. It is to be remembered that clinical evidence shows that the disease is more easily transmissible by a previously infected woman at or about the time of menstruation. This fact is explained by the congestion of the genital organs always present at this time with the consequent liberation from the tissues of more abundant flora of gonococci. Something may be due to a diminished acidity of the vaginal secretion at this time, ordinarily destructive to the gonococcus. Therefore, examinations for the gonococcus should be made, if possible, near a menstrual period.

Instances will occur to the mind of every practitioner of large experience where a man who has had gonorrhea has had subsequently a family of healthy children. This must be considered the exception, the rule being that such a man's wife is sterile or has only one child, and she suffers in the future from uterine disease. Prostitutes are notoriously sterile. The sterility is supposed to be due to gonococcus endometritis, to destruction of the ciliated columnar epithelium of the Fallopian tubes by gonococcus inflammation, or to closure of their caliber from the same cause. Be this as it may, there can be no doubt, on clinical grounds, that gonococcus infection is one of the most frequent causes of sterility in women.

Diagnosis. — In the acute form of gonococcus infection the diagnosis is not difficult. It is established by a history of a suspicious intercourse followed in a day to a week by the classical symptoms and the finding of the gonococcus in the pus of the discharges. In the subacute and chronic forms the diagnosis is hard to make. It rests on a history of an unclean coitus; on the history of frequent and painful micturition (an acute urethritis being strong presumptive evidence of gonorrhea). It is not an uncommon experience to have the patient tell her physician that a little while after marriage she noticed that she had a leucorrhea which stained her linen and that her water smarted when she passed it. Questioning the husband at some subsequent time it is learned that he has had gonorrhea. Great tact should be exercised by the physician not to push his inquiries with the wife too far because of the danger of causing marital troubles that no doctor can cure. In gonococcus infection of the innocent, by far the most common variety of the disease, it is seldom advisable to inform the woman of the exact nature of the disease she has acquired. As a rule too great frankness on the part of the physician is to be deprecated. More is to be expected from missionary work with men who should appreciate the dangers they run and the risks to which they are subjecting those nearest and dearest to them.

Occasionally a patient will describe having had an adenitis in the groin or arthritis. This is rare. The presence of the "maculæ gonorrhoicæ" of Saenger [17] is presumptive evidence of gonorrhea. These consist of a redness and puffiness similar to the wheal caused by a flea-bite at the orifices of Skene's glands and Bartholin's glands. The redness persists long after all active suppuration has ceased.

In examining a woman for chronic gonococcus infection, it is important that she should come to the examination without previous douching or cleansing of the genitals. She is to be examined in the dorsal position. The labia are separated and the discharge removed gently with pledgets of absorbent cotton. Smears are made from the pus expressed from the orifice of a gland of Bartholin. The physician's forefinger inserted into the vagina making backward pressure on the perineum to gain room and to avoid pressure on the urethra. Then the urethra is stroked with the forefinger from above downward and any secretion which may be present is expressed and gathered on a sterile probe or applicator and transferred to a cover glass. The orifices of Skene's glands are carefully scrutinized for the presence of surrounding redness and pus. A speculum is introduced into the vagina and with the aid of a sterile applicator a smear is made from the discharge from the cervical canal.

The detection of the gonococcus in the discharge by staining and Gram decolorizing is proof positive of the disease. Some authors (Calmann, Klein and Fritsch) have insisted on the necessity of making cultures of the gonococcus. On account of the great difficulties surrounding the growing of this bacterium outside the tissues of the human body this is seldom done in practice, although it may furnish valuable confirmatory evidence. Finding the gonococcus in bits of tissue removed at the time of operations on the genitalia is proof of the nature of the diseased condition. Too often the diagnosis of chronic gonococcus infection must be only a probable one because of the difficulty in finding the gonococcus.

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[17] Centralbl. für Gyn., 1896, p. 1073.

REPORT ON MENTAL DISEASE.

BY HENRY R. STEDMAN, M.D., BROOKLINE, MASS.]

THE RESPONSIBILITY AND DISPOSAL OF THE "HALF-INSANE" AND ALLIED QUESTIONS.

IN the past few years an unusual amount of interest has appeared in the problem of the interrelation of vice, crime and insanity. In the numerous contributions to the subject practical suggestions have held a somewhat larger place than heretofore. Matters which especially appeal to the psychiatrist are the study of the criminal mind by the psychologist, the renewed discussion of the vexed question of the limits of responsibility for crime in "borderland" insanity, and the unanimous advocacy of special institutions for the care and custody of the offender or criminal of this type and the better protection of society thereby. Investigations have been made by several observers into the mental condition of criminals at the time of sentence and the need made evident of a psychiatric service in connection with tribunals and more thorough expert examination of prisoners generally.

Grasset [1] discusses the medico-legal aspect of crime committed by persons who, through genius, heredity, upbringing or trouble, are not wholly insane, and he refutes the theories forced upon the nation by antiquated legal restrictions that all persons are either crazy or not crazy, responsible or irresponsible. He establishes a middle class, which, he states, has never yet been recognized by society; a class which society must treat, and against which society must protect itself. The half-insane exist. It is equally erroneous to class them either with the insane or with the sane. They are different from the sane in that they are psychically afflicted, and from the insane in that they preserve a certain degree of reason. He mentions an interesting list of geniuses, including authors, musicians, reformers of his own and other European countries, whom he considers, as did Nordau, not wholly sane. But whereas Nordau unjustly grouped them all with the insane, he more exactly defines their position as "demifous." As to their responsibility, when a "demifou" has committed a crime he has become injurious to society. He is dangerous. Society still owes him assistance and treatment, but it also has a right to defend itself against his misdeeds. For him, one must not choose either a prison or an asylum; he needs both. He believes in shortening sentences, special regimen and penitentiaries, special surveillance and treatment after one sentence, and a special institution, or at least a special section of some institution, for the "demifous," or half-insane.

Marandon de Montyel [2] emphasizes the distinction between the criminal lunatic, the insane criminal and the perverse, the latter plainly belonging, it seems to us, in another class of demifous,—the morally insane. The first commits his crime on account of his insane condition, the second is criminal at the start and later becomes insane, while the third is not properly to be considered as insane at all, his memory, reason and judgment being sound, his deficiency presenting itself in the moral sphere alone. Each of these classes of cases requires different treatment, and it is an injustice to each to keep them together as has been done heretofore, and is to a large extent still the practice. The study of the third class, the perverse and their management, is most important. They are the terror of asylums. They know perfectly well their rights, that they are not insane, and are only through an injustice confined along with the insane, though they are ready enough to use the asylum as a place of refuge and support, especially through the inclement season of the year. By their egotism, their quarrelsomeness, their insubordination and ability to evade the rules, to fashion keys and weapons, and by their bad influence over the other patients, they keep the institution in constant turmoil, and through the reckless carrying out of their schemes are a source of danger, though their crimes do not so generally take the form of violence, as of swindling, malicious mischief, and mean and dirty tricks. They are, he considers, not mentally deficient — an opinion which is open to question — and are capable of education, but the defect in moral control is congenital and can rarely be overcome. They differ in all particulars from the ordinary insane, criminal or otherwise, but while the good of the community demands that they be sequestered they should be provided for in special institutions, which should be constructed strongly enough to prevent their escape, and in which there should prevail a discipline more rigid than in an ordinary asylum, and yet less strict than in a prison. Here they should not only be cared for but should be taught trades of some sort, and given such moral training as possible. Into these institutions they need not be committed for life, but in the interest of the community their discharge should be hedged about with such precautions as to insure that their condition is sufficiently improved to make it unlikely that they will continue to be a danger to the public. The author discusses at some length the general plan of such an institution, and the legislation on the subject which he thinks is needed.

Morel [3] makes an earnest plea for the thorough and individualized study, by trained psychiatrists of all cases of habitual criminals, the great majority of whom are afflicted with mental defect, more or less pronounced. Also, for the establishment of institutions for the medical care and training of such individuals. The author insists upon the inutility of punitive measures in cases of this character, and believes that better results are to be expected by medico-pedagogical methods.

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[1] Demifous et Demiresponsables: Par Grasset, 1907, and Jour. Nerv. and Ment. Dis., November, 1907.

[2] Marandon de Montyel: Jour. de Neurol., xi, 9, 1896, and Jour. Nerv. and Ment. Dis., February, 1907.

[3] Morel: Jour de Neurol., xi, 12, 1906, and Jour. Nerv. and Ment. Dis., February, 1907.

Toulouse and Crinon,[4] discussing the problem of responsibility, do not undertake to define the nature of crime or of the social reaction against it, though on this point they seem to be in harmony with the modern positivist school, and they remark that the protection of society is much better guaranteed if, instead of regarding "punishment" as a method of correction, we regard it as "above all a measure of treatment." As responsibility is based on lucidity of consciousness and capacity for voluntary effort, which vary as we pass from normal to abnormal individuals, punishment (if the word is still to be used), to be just, must vary correspondingly, according to the psychological conditions. Thus it comes about that the medical expert is asked to decide the state of an individual's "responsibility." At this point there is a division of opinion. Some authorities assert that the idea of responsibility is not a medical or even a scientific conception; that the medical expert who expresses an opinion on this matter is going beyond his own field, since he is only justified in stating the actual medico-psychological facts which he can find in the individual presented to him. The authors do not share this opinion, but assert that the problem of penal responsibility is a psychological problem, and the recent investigations into the attitude and power of the criminal mind undertaken by Münsterberg and other psychologists lend color to their view. The current methods of psychiatrical observation, the authors declare, are altogether insufficient, being superficial, narrow and involving no elements of exactitude. It is by the systematic application of experimental methods that we can alone learn precisely how far an individual is abnormal in intelligence and aptitude for voluntary effort, how far he is capable of education, and what treatment he requires. Italy, the authors believe, is now leading the way along these paths, and they refer especially to the medico-legal methods used by Tamburini.

A purely psychiatric preparation no longer suffices to equip an expert in this field, the author concludes. It is necessary, but is not sufficient; familiarity with the methods of the psychological laboratory is also required. This is all the more important since criminals must not be divided beforehand into vicious and insane. Every inculpated person should be examined by an expert. This is necessary not merely to discover those who are, in the ordinary sense, insane, but for the more difficult and important end of ascertaining how far those who are not technically insane are susceptible of medico-psychological treatment. The authors incline to think that all criminals should receive sentence (although their actual presence in court might in some cases be dispensed with); for it is for the judge, representing society, to determine what persons are, in their present condition, unfit for society; but for all serious offences the indeterminate sentence is the only one that should be permitted. In all cases, also, there should be a preliminary period of observation before the method of treatment is decided and the offender classed. The prison must be a hospital. The medical expert, however, should remain only an expert, and it would be for the judge to sanction or not his recommendations. Not all these ideas, the authors remark, are yet realized, but they are meeting with less and less opposition and it is becoming generally recognized that simple criminals and insane criminals are not essentially different.

A report made at the recent Lisbon Congress of Medicine gives us Van Hamel's[5] views as to the aims which should guide the administration of penal reform, and they are in many respects similar to those of the French collaborators. The object of penal reform should be the diminution of crime. This is an end at once practical and realistic, and should not have as its point of departure any dogmatic religious, philosophical or ethical system. The object should be to decrease the number of criminals, not to increase the number of those punished. The combat against crime should be regulated by scientific study of its causes,—criminal etiology. These causes are general and personal. The general causes are mainly social; the personal causes, anthropological. Penal justice should dispense measures of social education to corrigible, measures of social protection to incorrigible, criminals. The distinction between young and adult criminals is of less value than one based upon psychological state, social needs, and to what extent they are in danger to the community. Much latitude should be left to the judge in the choice between a number of educational and protective measures. In order to assist him to make a proper choice, a psychiatric service should be attached to each tribunal and to each correctional establishment.

This recommendation of Van Hamel is among the reforms advocated earlier by Colin and Pactet in their conjoint monographs on "Les Aliénés devant la Justice" and "Les Aliénés dans les Prisons," based on extensive investigations of the prisons and judicial methods of France. They are convinced that the only effective means of avoiding the imprisonment of the insane as convicts would be the examination of the accused by an alienist on his arrest as the first step in every criminal case. This opinion which, they admit, may seem a utopian idea to-day will be accepted as a matter of course to-morrow.

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A Psychiatrical Clinic in Brooklyn.—Dr. O. M. Dewing, superintendent of the Long Island State Hospital, announces that a psychiatrical clinic will be held at the hospital, every Friday at 9 a.m. Interesting cases will be presented at the clinic, and an opportunity given for examination of these cases and a general discussion.—*New York Med. Jour.*

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[4] Toulouse and Crinon: Rev. de Psychiat., July, 1906, and Jour. Ment. Sci., January, 1907.

[5] Van Hamel: Jour. de Neurol., xi, 8, 1906, and Jour. Nerv. and Ment. Dis., January, 1907.

Reports of Societies.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

THIRTY-THIRD ANNUAL MEETING,
HELD AT COLUMBUS, OHIO, OCT. 8, 9 AND 10, 1907.

(Concluded from No. 22, p. 734.)

THE RELATIONS BETWEEN THE MEDICAL PROFESSION AND THE PEOPLE.

PRESIDENT **H. H. GRANT** spoke on this subject. He said that we all realized that the world was full of wretchedness, deformity and disease; that this was due to ignorance and cupidity, distributed well over the whole population from rich to poor. All realized the measures of relief must be a slow and gradual reform, conducted by a concentration of many influences, wielded by society at large. All realized the obstacles to success, as well as the possibilities of abuse in the methods, and all knew the need of a directing influence which was thoroughly informed and could be confidently intrusted with power. It was his belief that through the trust and the support of the general public, given to a conscientious medical profession, disinterested as a body, with identical concerns with the public, a highly comforting progress would soon be recorded. With a view to the hopeful advance of these noble and world-rewarding benefactions, the profession of medicine, without jealousy or thought of self-interest, should devote its wisest and most faithful workers as chieftains; let the lay and the religious press, ever ready upon conviction as earnest and determined associates, with unremitting zeal uphold and champion the cause, and add to this the patient and never-failing confidence of a liberal and trusting general public rallying its invincible support, and there would open up before the coming generation such a prospect of achievement and victory as would be a soul-satisfying record.

NEURASTHENIA GASTRICA.

DR. CLEMENT R. JONES, of Pittsburg, reported four cases of this condition, and concluded that neurasthenia gastrica or nervous dyspepsia was frequently due to or complicated by eyestrain: that other gastric disturbances were sometimes aggravated by eyestrain; that along with other points in the examination of gastric cases this should not be neglected. When eyestrain was the cause of gastric symptoms the relief by proper refraction was prompt and satisfactory.

DR. R. D. CLIPPINGER believed that eyestrain often produced all the symptoms of an old so-called chronic gastritis. The general practitioner was apt to ignore the eyes.

DR. MARK D. STEVENSON found that very many patients were relieved of nausea and vomiting by the wearing of proper lenses.

DR. GEORGE P. SPRAGUE said that so-called gastric disturbances in neurasthenia were very often roundabout reflex disturbances due to vertigo; in one case a lack of equilibrium due to a visual defect; in some other case not. He found very commonly in sending neurasthenics to oculists for the correction of eyestrain that until the attention of the oculist was called to the possible psychic connection between the patient's condition and the visual defect, he very often failed to give the correction, which he could and did do after that had been called to his attention.

REINFECTION WITH SYPHILIS.

DR. A. U. WILLIAMS, of Hot Springs, Ark., had seen a number of cases in which he had suspected reinfection. In many the history of the first attack was indefinite and unreliable. In but very few cases was the history sufficiently plain to make anything like a positive diagnosis of a second attack. He cited two cases in which the symptoms and history were so plain that he thought he could safely claim both as cases of reinfection.

TOXEMIA FROM THE STANDPOINT OF PERVERTED METABOLISM.

DR. RALPH W. WEBSTER, of Chicago, Ill., concluded that toxemia, aside from that following the acute or chronic bacterial processes, was always of metabolic origin. The toxemias under discussion were more the effects of a general metabolic perversion than of a direct organic disorder. A specific toxemia, in the sense that it was due to a specific substance, was unknown in the class of toxemias treated.

DR. THOMAS HUNT STUCKY, of Louisville, Ky., followed with a paper in which he discussed auto-intoxications of intestinal origin which resembled typhoid fever.

THE TREATMENT OF SCARLET FEVER AS A STREPTOCOCCUS DISEASE.

DR. J. E. COLEMAN, of Canton, Ill., had treated this disease with carbolic acid internally and externally, together with small doses of aconite, the first few hours until fever was allayed. In all of the cases he had thus treated the disease was materially shortened, the rash rapidly faded, and on the second day the fever disappeared and the throat symptoms were also relieved. When this treatment was used, there was not any desquamation of the skin, nor any after-effects from the disease, such as nephritis, or discharge from the ear. He had successfully treated cases of scarlet fever by the application of the two remedies mentioned since the time of an epidemic of the disease, year after year, admitting, however, that the results obtained might possibly have been due to the fact that the disease ran a benign course.

RELATIONS OF THE DOCTOR TO THE ALCOHOLIC PROBLEM.

DR. T. D. CROTHERS, of Hartford, Conn., showed the intimate associations of alcohol with a large part of the mortality, disease and degeneration of the present time, and urged the profession to take up the physical study of the subject. He showed that the mortality from alcohol, both direct and indirect, was from 10% to 20% of all deaths, and at least 10% of all diseases were very largely influenced and due to this cause; also that from 20% to 50% of all mental diseases and 50% of idiocy, pauperism and other degenerative conditions had an alcoholic causation. Fifty per cent of all criminals serving sentences for crime in 1906 were due to the influence of alcohol. Nearly half a million persons came under legal recognition for intoxication and petty crimes last year. Reliable authorities showed that 50% of all railroad and other accidents were due to the mistakes of persons under the influence of spirits. Beyond this the losses, the revolutions and injuries noted in every community assumed great proportions. This problem was a physical and medical one. Every advance in science showed that there were physical causes which developed from distinct sources which could be studied and known, and that the whole subject was not a mass of theories, but one of facts the same as that of epidemic and contagious diseases. The evils had reached such a stage that public opinion was making Herculean efforts along theoretical lines to overcome and break it up. The author urged that it was a medical subject to be understood by medical men. When the facts were studied and known, the remedies and methods of prevention would be clear and practical. The failure of physicians to know the subject had brought in an army of gold cures and quacks whose presence was a reflection on the intelligence of the physician who understood and treated these people. The great temperance movement should be directed and managed by physicians along exact lines of scientific study, above all prejudice; then they would become practical, and reach to the bottom of the great drink problem and point out the methods of cure and prevention. When medical men were taught to recognize the physical side of this problem and study the facts alone, irrespective of all theories, then the mortality and disease would disappear.

THE RECOGNITION AND MANAGEMENT OF ACUTE MASTOIDITIS BY THE GENERAL PRACTITIONER.

Dr. Leartus Connor, of Detroit, Mich., in a paper on this subject, drew the following conclusions: (1) Cases of acute mastoiditis should be regarded as seriously ill, placed in bed, given a brisk cathartic and diaphoretic, and the diet limited to at least one half. (2) If there be present tenderness of the mastoid, redness and bulging of the inner, upper and posterior external auditory canal and adjacent membrana tympani, Wilde's internal incision should be promptly done. (3) Regular irrigation with water, as hot as could be endured, should precede and follow the incision, and dry heat follow during the interval of irrigation. (4) An aseptic should be applied to the wound after each irrigation; a 50% solution of argyrol on a cotton-tipped probe was convenient and useful. (5) Thus managed, many cases of acute mastoiditis would speedily recover. (6) If they grew worse steadily, the mastoid should be promptly opened, all diseased tissues removed, and the wound dressed aseptically. (7) A painful deaf ear merited quite as careful attention as a red painful eye, or a painful stiff limb. Until this be accorded it, physicians would continue to have cases of extensive destruction of mastoid bones, permanent loss of hearing, infection of lateral sinus, facial paralysis, subdural, cerebral, and cerebellar abscess, and death labelled "the disease went to the head," and "the body to the boneyard."

MORPHINE ADDICTION.

Dr. George P. Sprague, of Lexington, Ky., discussed some of the essential points in the etiology, pathology and treatment of those addicted to morphine. He divided the cases into three groups: First, a small one composed of normal individuals, who from unwise treatment for pain in acute illness had contracted the habit. A second larger group of moral degenerates who indulged in the vice of morphinism, and a third, and much the largest group, recruited from among the neuropathic weaklings, from the victims of improper training and lack of early discipline; from the vast army of defectives, who, beginning to lose ground in the race of life, resorted to drugs as a spur, and from the large number who, suffering from sudden shock of disease, loss, etc., resorted to the drug in the hope of obtaining relief.

These patients should be under treatment for months; that the patient should not be alone a moment when he might procure morphine, day or night; that every one coming in contact with him must be above bribery, and that his nurse must be above suspicion, and ever suspicious. The patient's sense of right and power of will should be steadily stimulated, and every physical ill he might have should be found and vigorously combated.

THE NATURE OF MORPHINE DISEASE.

Dr. Chas. W. Carter, of Richmond, Ind., said that the physician who would understandingly and conscientiously treat the morphine disease must have a generous breadth of view in reading human character, an entire want of prejudice in interpreting symptoms and a broad and thorough knowledge of remedial agents.

MEDICAL INSPECTION OF PUBLIC SCHOOLS.

Dr. Frank W. Gavin, of Canton, Ohio, said the medical inspector should look after, first, the school building, its condition, ventilation, lighting, heating, seating, etc. Second, the inspection of candidates for teachers' certificates in the principles of preventive medicine and school hygiene. Third, physical and mental condition of the child.

He pointed out the advantages of medical inspection and the methods of examination. The salary of a medical inspector should be generous, thus warranting the selection of the best men procurable. He sincerely believed it would be money wisely invested on the part of cities and municipalities.

URINARY INFECTIONS IN CHILDREN.

Dr. I. A. Abt, of Chicago, Ill., pointed out the avenues through which micro-organisms gained access to the bladder and to the pelvis of the kidney in these infections. Bacteria might enter the bladder through the urethra and migrate upwards to the bladder and thence to the kidney. The infection might be hematogenous in character, the micro-organisms finding access into the bladder through the blood vessels. The micro-organisms might pass in some manner from the bowel through the loose cellular tissue of the pelvis into the bladder. The fact that sometimes a bowel infection, particularly follicular enteritis, preceded an attack of cysto-pyelitis, had suggested this view. Congenital malformation of the bladder and kidney predisposed to cystitis and pyelitis. Such a case had come under his observation. This was given in great detail. He described the symptoms and course of the disease.

With reference to treatment, the ordinary urinary antiseptics in one form or another used internally would usually bring about the desired result. In the severe forms of streptococcus or staphylococcus infection the vesical irrigation might be indicated. In other respects the treatment was purely expectant and symptomatic. The pain and restlessness might require the use of antispasmodics and sedatives.

The following papers were likewise read: "The Profession of Medicine, as it Was, and as it Is," by Dr. Robert Barclay, of Pittsburg, Pa.; "Purulent Conjunctivitis in Infants and Adults," by Dr. Mark D. Stevenson, of Akron, Ohio; "Gelseminine," by Dr. Wm. F. Waugh, of Chicago, Ill.; "Colorado and the Eastern Pulmonary Case," by Dr. W. A. Campbell, of Colorado Springs, Colo.; "Pregnancy when Complicated by Tuberculosis," by Dr. Harold A. Miller, of Pittsburg, Pa.; "The General Practitioner's Attitude toward Eyestrain," by Dr. Richard D. Clippinger, of Bellefontaine, Ohio; "Gallstones as an Etiological Factor in Diabetes," by Dr. J. C. O'Day, of Oil City, Pa.; "A Résumé of Gallstone Factors," by Dr. R. Alexander Bate, of Louisville, Ky.; "The Psychasthenic States," by Dr. Chas. W. Hitchcock, of Detroit, Mich.; "What we Learn from Analysis of the Feces," by Dr. Joseph A. Sweeney, of Louisville, Ky.; "A Contribution to the Literature on the Pathology, Etiology, Symptomatology and Technic of the Operation of Supravaginal Hysterectomy for Fibroid Tumors of the Uterus," by Dr. Frank D. Smyth, of Memphis, Tenn.

OFFICERS.

The following officers were elected for the ensuing year: President, Dr. Arthur R. Elliott, of Chicago; Vice-Presidents, Dr. F. F. Lawrence, of Columbus, Ohio, and Dr. Robert C. McChord, of Lebanon, Ky.; Secretary, Dr. Henry E. Tuley, of Louisville (re-elected); Treasurer, Dr. Samuel C. Stanton, of Chicago (re-elected).

The 1908 session will be held in Louisville in October.

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Book Reviews.

Practical Physiological Chemistry. By PHILIP B. HAWK, M.S., Ph.D., Demonstrator of Physiological Chemistry in the Department of Medicine of the University of Pennsylvania. Philadelphia: P. Blakiston's Son & Co. 1907.

This work on physiological chemistry is a comprehensive one and is unusually complete and yet at the same time practical. The author has presented some of the subjects in a rather different manner from that ordinarily found in books of this kind, and this is particularly true in connection with the treatment of food stuffs and their digestion.

Considerable attention has been given to the examination of feces for purposes of diagnosis; also to the subjects of epithelial and connective, muscular and nervous tissues.

Many of the illustrations are original and some are excellent. The work is certainly a credit to the author.

A Short Practice of Medicine. By ROBERT A. FLEMING, M.A., M.D., F.R.C.P.E., F.R.S.E., Lecturer on Practice of Medicine, School of the Royal Colleges, Edinburgh; Assistant Physician, Royal Infirmary, Edinburgh. Philadelphia: P. Blakiston's Son & Co. 1906.

"The writing of a new book on the practice of medicine demands an apology, or at least an explanation." So the author begins his preface. It is the duty of the reviewer to determine whether the author's explanation justifies the book or not. In doing this, fairness requires that the book be considered within the limitations set by its author. These limitations are that the book should be small and so adapted for use in the class-room. It is intended mainly to be used in this way, as a general outline in connection with cases in the clinic and in preparation for examinations. It is a short practice of medicine and it does not contain descriptions of clinical laboratory method.

The reviewer does not believe there is much need for such a book, because the larger textbooks in one volume contain far more information, are not greatly more bulky (this volume is in no wise a pocket edition) and cost but little more. To obtain a smaller volume, omission and condensation are necessary, whereas as a matter of fact, in the larger single volume textbooks this process has been carried already dangerously near the limit. Granting, however, that there is some need for such a small textbook and recognizing the necessity for much selection as to what should be described with each disease, it remains to be determined how well the book has been made under these conditions.

Those portions which treat of diseases of the various systems,— respiratory, circulatory, nervous, etc.,— have been condensed in a fairly satisfactory manner. The specific infectious diseases have not been handled so well, and here a number of statements are met to which exception can well be taken. The space given to the classification of fevers might better be devoted to something else since the classification used is both loose and antiquated. The discussion of the general treatment of fever is too discursive and indefinite to harmonize with a book in which brevity is a prime object.

In discussing typhoid fever the impression is given that cicatrization of the ulcerated gut is an important process, whereas we know that usually the ulcers heal so perfectly that in a short while there is but little to indicate a previous lesion. The Widal reaction is described twice within six pages, an unnecessary repetition, and unfortunately the method given the second time differs somewhat from the first. Under "isolation of bacillus" no mention is made of blood cultures, and splenic puncture is given as the best method. Diet, the all-important factor in treating typhoid, receives but scant attention.

Confusion may arise in the student's mind when an organism is spoken of in one place, as the Klebs-Löffler bacillus, and in another, as the Löffler bacillus. Such an instance is an example of what occurs in several places and indicates a lack of careful editing. "A continuous spray of steam . . . upon the patient's face," if followed to the letter by the student, would surely lead to dire result, yet there is nothing to indicate what is meant by this therapeutic suggestion for the treatment of diphtheria. In describing the cultural characteristics of the influenza bacillus, the necessity of the presence of hemoglobin in the culture media is not mentioned.

Too much importance apparently is attached to the presence of the pneumococcus in the sputum as a diagnostic point in pneumonia, and many would not agree with the direction, "never let the patient sit up," as best for all cases of pneumonia. All of the points here criticised are in that part of the book which deals with the infectious diseases, and much of this might readily be improved in subsequent editions.

In the other parts of the book some mistakes occur, but they are infrequent and the statements given are for the most part acceptable. The book itself is well printed and in general well written. The reviewer believes that the attempt to make a short treatise on medicine is exceedingly difficult, and the present attempt is perhaps as successful as could be expected from any author. Why an author should be willing to plunge into these difficulties is not easy to see. Many, however, do take the plunge, and get into more difficulty than does Dr. Fleming.

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ADOLESCENCE.

Some three years ago Dr. J. Stanley Hall produced an important work entitled as above. He now submits a briefer and perhaps more practical volume: "Youth, Its Education, Regimen and Hygiene,"[1] in which is contained the gist of the former book. The subject must indeed appeal to every experienced physician who has seen families grow up from infancy under his professional care, who knows of the aberrations which come about at the most difficult period of puberty.

Two great forces dominate life: Hunger, by which existence is maintained, and that force which is concerned in the perpetuation of the race. And the latter, at the beginning of its influence, is likely to be well-nigh destructive, both physically and to the psychism, if the organism has not been properly developed and educated for its reception. Dr. Hall's work is based entirely upon the principles of muscle culture and muscular development. Physical training is good not for the body alone; he believes that the very growth of the brain depends upon the growth and use of the muscular system, that mental and moral natures have developed as the accessory muscles have increased in number and have grown into use. In his belief human progress, indeed, lies in increasing the capabilities of both fundamental and accessory muscles. And it is these principles which Dr. Hall would apply to the regimen of the adolescent period. He gives also much attention to the needs of childhood between the seventh and the twelfth years. Several chapters in this valuable book (doubly valuable because of its detailed descriptions and directions) set forth the respective advantages, methods and results in muscular training and in physical, mental, and moral development, of industrial education, manual training and sloyd, various systems of gymnastics and of play, sports and games. Herein we see justified those university authorities who encourage athletics in their students, lest worse mischief befall them.

Dr. Hall is not a medical man; he is a psychologist. Some dozen years ago he began to deliver lectures upon adolescence from his viewpoint. Soon friends and strangers alike approached him for guidance of their offspring, who were in or near this critical age. The interest in his work grew, until at one time more than twelve hundred letters were on file in his office from parents anxious concerning the development and welfare of their children. He began to realize that had he been a physician he might have found himself with a large practice from such cases. All kinds of questions, some of them quite impossible, are asked him about young people, "who are bright, geniuses, dullards, born short, one-sided in their mental, physical or moral development," etc. Some letters "contain long and pitiful tales of obvious ignorance, misunderstanding, wandering from doctor to doctor, and getting no relief and no insight." Wherefore Dr. Hall concludes, and the suggestion may be worthy the attention of physicians desirous of embarking upon a special work, that as gynecology and pediatrics have become specialties, there is now place for another specialty, in the treatment of adolescent affections of mind and body. Only let no colleague undertake this task who cannot comprehend the maxim of Hippocrates: "Godlike is the physician who is also a philosopher."

THE COLLECTIVE INVESTIGATION OF DISEASE.

A notable tendency during the past few years has been the increase of co-operative work in the investigation of medical problems. The work of the individual investigator is more and more being carried out with reference to others, and often in definite co-operation. The general enthusiasm regarding the tuberculosis problem, painstaking investigation by groups of men of the etiology of cancer, the tendency, in general, to enlist the interest of all working on the same subject, is everywhere apparent. The usefulness of such a method cannot be questioned, as we have had occasion to point out on various occasions. Medical problems of the future are likely in great measure to be solved by the combined efforts of many persons working toward a given end, but from different points of view. The promise, for example, in such an establishment as the Carnegie Institute for Medical Research lies not so much in the fact that this man or that is pre-eminent as an investigator, but rather that there are gathered together under one roof many investigators pursuing their researches from more or less different points of view, but with a common purpose.

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[1] Messrs. Appleton & Co., publishers.

Recent examples of this salutary tendency toward co-operation is shown by the attempt which is now going forward to obtain comprehensive statistics on the disease poliomyelitis, now so prevalent, and to subject these statistics to the scrutiny of men especially qualified to determine the various questions which such statistics present. If, for example, the cerebrospinal fluid taken from a large number of cases and studied by the same methods shows nothing of significance, we may certainly rest assured that unless entirely new methods of investigation of this fluid are discovered, we may not hope for a solution of the problem of etiology from this source.

Again a permanent committee has recently been formed by the National Association for the Study of Epilepsy, composed of three men, whose interest in and knowledge of the subject is acknowledged, to act as an advisory board with the specific object of furthering the co-ordination of scientific and research work in epilepsy, and also to act as advisors to any workers in epilepsy who choose to apply to them. Here again such a concentration of authority in the hands of a few well-equipped men is sure to bring about the co-operation essential to the elucidation of the problem of epilepsy, to prevent waste of effort and repetition of work, and to afford the highest possibility of reaching results of positive significance.

Many other instances might be cited in which this principle of co-operation, varied to meet the different demands of the problem under consideration, might be applied with advantage. Such co-operative work could by no possibility interfere with personal initiative nor detract from the credit due to special investigators. The questions at issue are becoming so complex and are encroaching upon the domain of so many correlated sciences that future students must in great measure come to a candid acknowledgment of this fact, and accomplish results through adoption of methods of research, in which the co-operative element will be a predominant factor.

MEDICAL NOTES.

THE AMERICAN JOURNAL OF ORTHOPEDIC SURGERY. — The *American Journal of Orthopedic Surgery* has decided to add one or more monographs of not less than twenty pages to its regular one hundred and thirteen pages of practical papers and fifteen pages of abstracts of orthopedic literature in every number.

The *American Journal of Orthopedic Surgery* is the only periodical in the English language devoted exclusively to Orthopedic Surgery and borderland subjects. There are three published in Germany, one in France and one in Italy.

FEAR OF PREMATURE BURIAL. — The *Lancet* states that about a month ago a London newspaper chronicled the fact that a woman on the Continent had been buried with a loaded revolver in her hand ready to end her existence should she subsequently in her coffin become cognizant of her surroundings.

A POSSIBLE CURE OF LEPROSY. — It is reported that the Board of Health of Honolulu, on the petition of a large number of lepers at the Molokai settlement, have issued a permit to J. Lore Wallach, who claims that he has a method of cure, to treat twelve lepers from the settlement.

CENTENARIANS. — The following persons are reported to have lived upwards of one hundred years: W. R. Chambers, supposed to be the oldest resident of Pennsylvania, died Nov. 24, in Pittsburg, at the age of one hundred and five years, remaining in possession of his faculties to the end of his life.

Mrs. Vannelia Hull has recently died at the age of one hundred and one years, also in Pittsburg. She had lived in and about that city for ninety-five years, and is reported to have seen the first steamboat in that region and also the first coal taken from the mines of Pennsylvania.

Probably the oldest woman in Massachusetts, Mrs. Sarah Ingalls, died at Winthrop recently at the reputed age of one hundred and five years. She was born in Ipswich, June 30, 1802.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — For the week ending at noon, Dec. 4, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria, 67, scarlatina 43, typhoid fever 8, measles 23, tuberculosis 33, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 4, 1907, was 18.65.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Nov. 30, 1907, was 201, against 167 the corresponding week of last year, showing an increase of 34 deaths and making the death-rate for the week 17.20. Of this number 101 were males and 100 were females; 198 were white and 3 colored; 123 were born in the United States, 76 in foreign countries and 2 unknown; 47 were of American parentage, 126 of foreign parentage and 28 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 66 cases and 3 deaths; scarlatina, 49 cases and 0 deaths; typhoid fever, 10 cases and 0 deaths; measles, 25 cases and 1 death; tuberculosis, 44 cases and 24 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 30, whooping cough 0, heart disease 31, bronchitis 8 and marasmus 1. There were 10 deaths from violent causes. The number of children who died under one year was 29; the number under five years, 39. The number of persons who died over sixty years of age was 60. The deaths in public institutions were 65.

There was 0 cases and 1 death reported from cerebrospinal meningitis during the week.

Bequests. — By the will of Ann Thomas, the Holy Ghost Hospital for Incurables in Cambridge receives the sum of $500. By the will of the late Frederick Tompkins, of Newport, R. I., the Newport Hospital receives $2,000. The Lynn, Mass., Hospital receives $5,000, through the will of the late M. A. Fenton of that city.

Dr. Harvey W. Wiley, a Speaker at the John Harvard Celebration. — Dr. Harvey W. Wiley, of Washington, was one of the speakers at the recent celebration of the three hundredth anniversary held in Cambridge, of the birth of John Harvard, at the invitation of President Eliot. The subject of his address was "The Food and Drug Law."

A Lecture by Dr. W. T. Grenfell. — It is announced that Dr. W. T. Grenfell, widely known for his missionary and medical work in Labrador, will give a lecture at the Harvard Union in Cambridge, Dec. 10. His coming will be of particular interest this year, because of the recent completion of an endowment of $1,500 of a bed in one of his hospitals.

Another Leper for Penikese Island. — After a careful study of Bertha Osis, extending over two months, who was suspected of leprosy when she presented herself at the Massachusetts General Hospital, the diagnosis has finally been confirmed and she has been removed to the leper colony at Penikese Island. The bacilli of leprosy have repeatedly been demonstrated while she has been under observation.

Opening of Massachusetts Hospital School for Crippled and Deformed Children. — A portion of the building of the Massachusetts Hospital School for Crippled and Deformed Children at Canton was opened this week. It is estimated that the buildings will accommodate three hundred patients, and the effort will be made so to conduct their education that they later may become self-supporting. The location of the hospital, on the borders of the Blue Hill Reservation, is an exceptionally favorable one for its purpose. The superintendent is Dr. J. E. Fish, a graduate of the Dartmouth Medical School, and a man of experience in the administration of charities. Although the school is primarily a state charity, nevertheless the trustees, of whom Dr. Edward H. Bradford, professor of orthopedic surgery in the Harvard Medical School, is chairman, have power to admit paying patients. A chief aim of the institution, following modern philanthropic ideas, is to make the inmates, so far as possible, self-supporting.

Meeting of Massachusetts Medical Benevolent Society. — The annual meeting of the Massachusetts Medical Benevolent Society was held at the Boston Medical Library at 5 p.m., Oct. 31, the president, Dr. James C. White, in the chair; fifteen members present. The reports of the secretary and treasurer were read and accepted; that of the latter showing the par value of the invested funds to be $60,925 and the number of beneficiaries 14. The following officers were elected: President, Dr. James C. White; Vice-President, Dr. George W. Gay; Treasurer, Dr. W. L. Richardson; Secretary, Dr. W. H. Prescott, 285 Marlborough Street. Trustees to serve for three years: Dr. Vincent Y. Bowditch, Dr. Henry Jackson, Dr. Hardy Phippen. The following extract, from the Act of Incorporation, will show the objects of the society: "For the purpose of affording pecuniary assistance to members of the medical profession, their widows and children."

NEW YORK.

For Medical Research. — Announcement has just been made of an additional gift of $2,000,000, by John D. Rockefeller, to the Rockefeller Institute for Medical Research, which brings the aggregate of his contributions to this cause up to $3,800,000. In his letter to the directors, stating his intention, Mr. Rockefeller expresses his gratification at the results thus far achieved by the Institute and his confident anticipation that the enlargement of its scientific work now made possible will lead to increased success in the future.

A Centenarian. — Mrs. Margaret Horn died in the New York City Home for the Aged and Infirm on Blackwell's Island, on Nov. 27, at the age of one hundred and two years, having been born in County Cork, Ireland, in 1805. Her husband, Alexander Horn, is stated to have been one hundred and three at the time of his death, twelve years ago.

Diminished Milk Appropriation. — It is to be regretted that the Board of Estimate and Apportionment saw fit to cut down the milk appropriation for 1908 from $353,680, the sum asked for by President Darlington of the Health Department, to $68,580, and the Mayor's Milk Commission, composed of prominent physicians, has not hesitated to express the opinion that in so doing the city authorities have practised an unwise economy, since by providing stricter inspection they could undoubtedly have reduced the death-rate and the amount of disease. The Commission had recommended that the 25 inspectors for the country districts should be increased to 125, which would have permitted each farm furnishing dairy products to be visited about every six weeks, and that the New York City inspectors be increased from 15 to 40. The sum granted, however, will provide for but 10 additional inspectors, 8 for the country and 2 for the city.

A Parish Consumptives' Club. — Among the numerous philanthropic organizations maintained by St. George's Episcopal Church is the somewhat novel one of a Parish Consumptives' Club. In the parish are a certain number of young men and women suffering from tuberculosis, and some of these are unable to obtain adequate work and need financial assistance. All such it is proposed to care for, and while persons not belonging to the parish may join the club if they so desire, they are required to pay dues and the offer of financial aid is not held out. The great purpose of the club is stated to be not eleemosynary, but to encourage young people with pulmonary trouble to consult a physician and to promote among the members a cheerful frame of mind by inducing them to think of something besides themselves. To this end a variety of diversions are provided, while at the same time some measure of medical supervision is supplied, with advice as to the use of remedies and proper moods of living, with the services of skilled nurses in cases requiring them.

A Tribute to the Late Dr. Richard H. Derby. — At the last meeting of the Medical Association of the Greater City of New York, a committee, whose chairman was Dr. C. Cole Bradley, which had been appointed to prepare a suitable minute on the death of Dr. Richard H. Derby, presented its report. In the course of it the following tribute to Dr. Derby's public services was made: "He was an exceedingly public-spirited man, giving his time freely to every cause which he considered useful to the city and which had any demand upon his services. He was consulting ophthalmologist to the Health Department of New York City for many years, and in that capacity he became deeply interested in the ocular welfare of the children of the public institutions and of the public schools. In 1886 he brought to the attention of the Academy of Medicine the appalling prevalence of contagious ocular diseases in the public institutions for children and insisted on the need of legislation. After an exhaustive examination of the children by a committee composed of Fellows of the Academy, the law desired was drafted and passed. Later he brought before the Health Board the imperative necessity of caring for the eyes of the school children, devising ways and means for combating and treating the disease, then so prevalent amongst them. No greater charity has been performed by any man than this safeguarding and preservation of the vision of the orphans and waifs of our city and of our school children."

Celebration of Sixtieth Anniversary of the New York Academy of Medicine. — The sixtieth anniversary of the New York Academy of Medicine was celebrated on Nov. 29. On the platform, in addition to the President, Dr. John A. Wyeth, were six ex-presidents of the academy, Drs. A. Jacobi, D. B. St. John Roosa, Wm. H. Thomson, Robert F. Weir, Edward G. Janeway and Charles L. Dana. The feature of the evening's exercises was an address by Col. W. C. Gorgas, of the Army Medical Service, chief sanitary officer of the Isthmian Canal Commission, which was illustrated by means of stereopticon views. In the course of it he said that when the United States commenced the great engineering work of making the Panama Canal, Colon and the city of Panama were as unhealthy as Havana before yellow fever was practically eradicated there by an efficient system of screening, draining and sanitation through cleanliness. The negroes seemed to resist the dangers of infection, but visiting whites fell an easy prey to the attacks of the inoculating mosquito. The government had devoted $2,000,000 to making the canal zone healthy, and to-day yellow fever had been annihilated, while malaria, though it still existed to some extent, had been very materially diminished. A reception and collation followed Colonel Gorgas's address.

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Obituaries.

EDMUND S. F. ARNOLD, M.D.

Dr. Edmund S. F. Arnold, of New York, died at Jacksonville, Fla., on Nov. 22, in the eighty-eighth year of his age. His active professional career was principally passed at Yonkers, on the Hudson, where for many years he was one of the leading practitioners of the town. During this time he was the attending physician to the large Mount St. Vincent Academy, and he took great interest in gathering an unusually fine mineralogical collection, which he presented to that institution. Nearly twenty-five years ago he retired from practice and removed to New York. Here he engaged actively in society work, and he was one of the original members of the New York County and State Medical associations. For a time he was the treasurer of the former of these, and for a number of years the librarian of the State Association. In this capacity he spent almost his entire time in fostering the interests of the new library, and did monumental work in the way of arranging, cataloguing, etc. The library was started soon after the organization of the association, in 1884, and in 1888 it was enriched by the fine private library, consisting of about 1,700 volumes, of Dr. Isaac E. Taylor, which was presented by the owner. Quarters were given it in the Carnegie Library, and it remained there until May, 1890, when it was moved to the Mott Memorial Building; after which it was maintained in connection with the Mott Memorial Library. By the time of its removal the library had increased to over 8,000 volumes, of which nearly 7,000 were bound books. Of late years Dr. Arnold had spent all his winters in Florida.

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GEORGE F. SHRADY, M.D.

Dr. George F. Shrady, the New York surgeon and medical writer, died on Nov. 30, from pneumonia, with complications, after an acute illness of two weeks. For some time past, however, his health had not been good, and he had practically retired from professional work. Dr. Shrady was born in New York City, where his family had long resided, on Jan. 14, 1837. Both his grandfathers served in the Revolutionary War, and his father in the War of 1812, while he himself was a surgeon in the Federal Army during the Civil War. He was graduated from the College of Physicians and Surgeons, New York, in 1858, and in that year was awarded the Wood prize for proficiency in anatomy. He became widely known as a surgeon, and among his patients were many of the prominent men of the past generation. He was one of the principal attendants of General Grant in his last illness; he was consulted by Sir Morrell McKenzie in the case of the Emperor Frederick, of Germany, and he was also one of the consultants after President Garfield was shot. He contributed constantly to surgical literature and was long connected with various hospitals and other institutions as attending surgeon. At the time of his death he was consulting surgeon to St. Francis', the General Memorial, Columbus, Willard Parker, and Hackensack (N. J.) hospitals. He was also regarded as an authority on pathology, and for a number of years was president of the New York Pathological Society.

Dr. Shrady will perhaps be best remembered for his brilliant work as editor of *The Medical Record*, and this periodical remains as the most fitting memorial of his talents. Founded by him in 1866, it soon became known as one of the leading medical journals of America, and obtained a very wide circulation. He conducted the *Record*, with signal success, for no less than thirty-eight years, retiring from the editorship in 1904. The matter contributed to it by him would fill many volumes.

Dr. Shrady is survived by his second wife and several children. He also leaves a brother, Dr. John Shrady, ex-president of the New York County Medical Association. Both the latter's sons are physicians, and one of them is at present a city coroner.

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ALEXANDER MACTIER PIRRIE.
A MARTYR TO SCIENCE.

A career of great promise has been cut short by the untimely death of Mr. A. Mactier Pirrie. The son of the late Mr. Alexander Pirrie, C. E., he was born on Oct. 2, 1882. He obtained his B.Sc. with honors in anthropology at Edinburgh University in 1904, and qualified as M.B., Ch.B., in 1906. He obtained the Carnegie Research Fellowship in anthropology and was appointed anthropologist to the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. He went out to the Sudan in the autumn of 1906.

Under the direction of Dr. Andrew Balfour, the director of the laboratories, Dr. Pirrie made his first expedition up the Nile to the southern limits of the Sudan and penetrated to remote parts of the Bahr-el-Ghazal. His second expedition took him to the borders of Abyssinia. On both occasions he passed through some of the most pestilential regions of Africa in connection with certain anthropological and physiological researches, appertaining to tropical diseases, upon which the laboratories are engaged.

Unfortunately he contracted tropical fever (kala-azar) and was so prostrated as to be compelled to return to England, leaving Khartoum on June 17 last.

He rallied from the effects of the fever from time to time, but was compelled to enter Chalmers' Hospital, Edinburgh, in October. His death took place on Nov. 12.

He was interred at the Dean Cemetery, Edinburgh, on Nov. 15. The Gordon Memorial College, Khartoum, Sir William Turner, principal and vice-chancellor of the University, Mr. Wellcome and others were represented and sent wreaths. A resolution of sympathy has been conveyed to the relatives from the trustees of the Gordon Memorial College, and other expressions of sympathy have been received from the Liverpool School of Tropical Medicine, etc.

It is of interest to note that the first case of kala-azar found in Africa, except a case in Tunis, referred to by Laveran, was reported by Dr. Sheffield Neave, pathologist to the Wellcome Research Laboratories, Khartoum. Dr. Neave found the Leishman-Donovan body, the parasite of kala-azar, in the splenic blood of a patient in the Omdurman Civil Hospital. The discovery is noted by the director in the Second Report of the Laboratories.

Dr. Pirrie presented a paper on his African expeditions at the last meeting of the British Association for the Advancement of Science, but was prevented from being present on account of his illness. He brought back a most valuable collection of objects of scientific interest.

At intervals during his illness he was engaged on his report to the Carnegie Institute and the Wellcome Research Laboratories, Khartoum, for which institutions he acted jointly in the important work he carried out in the Sudan.

Current Literature.

New York Medical Journal.

Nov. 9, 1907.

1. Gonley, J. W. S. *Modern Lithotrity.*
2. Konkle, W. B. *A Medical Crazy Quilt.*
3. Ross, F. W. F. *Tuberculotherapy in Tuberculosis.*
4. Hill, I. L. *Asphyxia Neonatorum.*
5. Child, C. G *One Hundred Consecutive Cases of Celiotomy for Pelvic Diseases in Women.*
6. Ross, G. G. *Perforation of the Gastro-intestinal Tract by Swallowed Bodies.*
7. Hanley, L. G. *Extra-uterine Pregnancy.*
8. *Braddock, C S., Jr. *Treatment of Snake Bites as seen in the Jungle.*

8. Braddock, formerly chief medical inspector of the Royal Siamese Government, states that the python or boa rarely attacks people. Two snakes, the hamadryad and cobra, cause an annual death-rate in India of about 22,000 people. The hamadryad will always attack a man on sight. Nearly all bites are received after dark, by stepping on snakes or by lying down with the snakes in blankets or clothing. The poisonous snakes leave only the two punctures of the poison fangs. Hence, the marks of teeth in snake bites make the prognosis favorable. The treatment must be immediate and strenuous. A tight tourniquet is applied above the bite, the tissues are freely opened, and pure crystals of potassium permanganate are rubbed into the wound. A strong solution of permanganate is injected all round the bite. Nitroglycerin, digitalis, alcohol and strychnia are given in large doses. This treatment instituted early will usually save life. Otherwise death is fairly certain. [R. I. L.]

The Journal of the American Medical Association.

Nov. 9, 1907.

1. *Patrick, H. T. *The Treatment of Trifacial Neuralgia by Deep Injections of Alcohol.*
2. Hecht, D'O. *The Methods and Technic of Deep Alcohol Injections for Trifacial Neurolgia.*
3. Tyson, J. *Treatment of Diabetes Mellitus.*
4. Wiley, H. W. *The Physician's Connection with Proprietary Remedies.*
5. Ruhräh, J. *Some Needs of Institution Children.*
6. *Morse, J. L. *Adenoids in Infancy.*
7. Mason, C. F. *Contagion as a Factor in the Spread of Typhoid Fever in the Military Service.*
8. *Walsh, J. J. *First Pictures of Surgical Operations Extant.*
9. Kerley, C. G. *Tardy Malnutrition; its Treatment by Diet and Rest.*
10. Gardiner, J. P. *A Case of Congenital Hour-Glass Stomach with Accessory Pancreas.*
11. Griffin, O. A. *Ocular Symptoms of Nasal Origin.*

1. Patrick has treated sixteen cases of trifacial neuralgia with deep injections of alcohol. Although it is too early to judge of permanent results, the immediate results are most satisfactory. As a rule there is no recurrence after several months at least. Then the injection can be repeated. The technic preferred is that of Lévy and Baudouin, which is that advised by Hecht (2). The principle is that of infiltrating the branches of the fifth nerves at their exit from the skull, viz., the supra-orbital immediately after entrance into the orbit, the superior maxillary after its exit from the foramen rotundum, and the inferior maxillary after its exit from the foramen ovale. The injection of the supra-orbital branch seems liable to be attended with danger. The injection of the other two branches is apparently not difficult and Patrick has done them in his office. The real difficulty is to strike the nerve. It is not necessary to inject the nerve sheath itself, only to have the fluid infiltrate it. Failure to strike the nerve may relieve the neuralgia for a few hours or days, and requires further injections until successful. The needle employed is of special make. It is fitted with a blunt stylet, which is pushed home after the skin is pierced, so that a blunt instrument is used for penetration of deep tissues. The fluid used is 70% to 90% of alcohol with a little chloroform and cocaine. Two cubic centimeters is given as a dose. The pain of the injection is surprisingly slight. Anesthesia was given in only one case.

6. Contrary to the general belief, Morse finds that adenoids in infancy are very common and of greatest importance. They may be the cause of frequent colds, otitis media, cough, croup, convulsions, etc. Removal is simple and effects a cure. In a goodly proportion of cases the adenoids do not recur.

8. Recent excavations in Memphis, Egypt, have brought to light some representations in stone of surgical operations, probably dating back to 2,500 B.C. The interpretation is rather obscure. One operation is evidently opening a boil. Another seems to be a circumcision. A possible interpretation of a third is the breaking of a chordee.

[R. I. L.]

Annals of Surgery.

November, 1907.

1. *Porter, C. A., and White, C. J. *Multiple Carcinomata following Chronic X-ray Dermatitis.*

2. Singley, J. D. V. *Phagedenic Ulceration of Both Breasts during the Puerperium.*
3. *Roys, C. K. *Cutaneous Horns.*
4. Barker, M. R. *Traumatic Hematomyelia.*
5. Babcock, W. W. *Nerve Disassociation; a New Method for the Surgical Relief of Certain Painful or Paralytic Affections of Nerve Trunks.*
6. Barr, W. S. *Operations on the Spinal Column.*
7. *DeForest, H. P. *The Surgery of the Thoracic Duct.*
8. Horsley, J. S. *Dermoid Cysts of the Head.*
9. *Dwight, T. *Stylo-hyoid Ossification.*
10. *Bloodgood, J. C. *Acute Dilatation of the Stomach — Gastro-mesenteric Ileus.*
11. Cumston, C. G. *Tuberculosis of the Cecum.*
12. *Van Zwalenburg, C. *Strangulation Resulting from Distention of Hollow Viscera.*
13. Whiteford, C. H. *Abnormal Ileo-appendicular Fold as a Cause of Partial Occlusion of the Bowel.*
14. Knott, V. B. *A New Liver Suture.*
15. Rigby, H. M. *The Operative Treatment of Calculi Impacted in the Pelvic Portion of the Ureter.*

1. Porter's personal experience in the observation and treatment of two cases of malignant skin lesions following exposure of the hands to x-ray significantly emphasizes the danger to members of the profession engaged in x-ray work. The early dermatitis has a marked tendency to lead to local epithelioma, which, in five of the ten cases previously reported in the literature, has been followed by fatal metastasis. Hence the pertinent conclusions as to the necessity of prompt and efficient treatment of such lesions by excision and grafting, or by amputation. There is an instructive pathological report by White, and a valuable description of the technic of skin-grafting, which Porter developed in the course of his study.

3. In connection with the above, it is appropriate to note the liablity of cutaneous horns to epitheliomatous degeneration and the consequent desirability of their radical removal.

7. Accidental injury to the thoracic duct is an occasional complication of deep operations on the left side of the neck. From an examination of the literature, DeForest concludes that this is not so serious a condition as one might fear; death as a result of it is rare, temporary disturbance of nutrition may ensue, function is generally restored through collateral channels. For treatment he recommends suture of the wounded duct, if possible; otherwise, ligation, suture of surrounding tissues, clamping, or tight pack.

9. Dwight presents an interesting anatomic study of ossification of the stylo-hyoid chain. Consideration of the embryology leads him to believe that such ossification is not a degenerative process of age, but the early conversion to bone of persistent fetal cartilage. This belief he illustrates by description of a series of cases, of which three are of his own recent observation. Clinically the condition may interfere with operations on the carotid arteries, the parotid and the tonsil; and it may cause difficulty in swallowing. Diagnosis may be made by bimanual examination and by x-ray.

10. Recent experiments in artificially produced dynamic ileus have called attention to the possible clinical importance of such a condition following operation. Bloodgood reports cases of acute post-operative gastric dilatation, a case of primary acute, and a case of chronic, gastromesenteric ileus, — all apparently physiologic in origin. He contrasts these cases with others of acute high mechanical obstruction, and suggests as points in their differential diagnosis that in the latter pain begins earlier and distention later than in dynamic ileus. For treatment of acute gastric dilatation he advises first the stomach tube, with knee-chest or left lateral position; if this fails, later operation: posterior gastro-jejunostomy, when the dilatation ends at the pylorus; gastro-jejunostomy with jejunoduodenostomy, or the latter alone, when the duodenum is also distended.

12. Another aspect of this subject is illustrated by Van Zwalenburg's attempt to show by experiment how the mere distention of hollow viscera produces circulatory changes which may predispose to infection and inflammation.

[R. M. G.]

The Lancet.

Nov. 9, 1907.

1. *Barr, J. *Abstract of the Bradshaw Lecture on the Pleurae; Pleural Effusion and Its Treatment.*
2. Powell, R. D. *Address on Some of the Advances of Modern Medicine.*
3. Brunton, L. *Introductory Address on Fleas as a National Danger.*
4. Fowler, J. K. *Presidential Address on the Advances in Medicine during the Past Thirty Years.*
5. Shaw, T. C. *A Contribution to the Analysis of the Mental Process in Criminal Acts.*
6. Doran, A. H. G. *Chronic Intestinal Obstruction due to Adhesion of a Uterine Fibroid to the Mesentery.*
7. *Ryall, C. *Cancer Infection and Cancer Recurrence; a Danger to Avoid in Cancer Operations.*
8. Butler, T. H. *Some Cases of Vernal Catarrh.*
9. Lorand, A. *Clinical Observations on the Origin of Fever.*
10. West, C. E. *Four Cases of Tuberculous Disease of the Temporal Bone.*

1. The first part of Barr's article takes up the physiology of respiration, with observations he has made on cases of artificial and acquired pneumothorax. He then speaks of the etiology of pleurisy, agreeing with other observers that the vast majority of pleurisies with effusion are tuberculous; dry pleurisies are less apt to be so. He gives in detail his method of treatment by tapping. He recommends complete withdrawal of the effusion in all cases, except in elderly persons with rigid chest walls, and except early in the disease, when there is still febrile reaction. In these cases, before any great negative pressure is established, and before the patient feels any discomfort, he stops the siphon (which he uses in preference to the aspirator), and introduces a quantity of air equal to the amount of fluid which he has withdrawn: he then re-establishes the siphon and completes the withdrawal of the effusion. When all the fluid is withdrawn he injects 4 cc. of adrenalin solution (1-1000) diluted with 8 or 10 cc. of sterile normal saline solution, and if necessary, introduces more sterile air so as to make the total amount equal to a half or three quarters of the bulk of the fluid withdrawn. In cases which he knows to have pulmonary tuberculosis he introduces more air; there is no discomfort. He avoids routine and makes such modifications in treatment as will suit the individual cases. He advises eliminating salt as much as possible from the diet. He then speaks of the work which has been done by other observers and himself on the question of creating an artificial pneumothorax in treating pulmonary tuberculosis, and last he takes up the treatment of empyema.

7. Ryall presents a series of cases of cancer showing the danger of spreading cancer during operations. His cases include cancer of the breast, of the tongue, lip, larynx, etc., cancer of the rectum and cancer of the abdomen. There are numerous illustrations of recurrences which have taken place in stitch holes and along the scar. He believes that cancer infection during operation is responsible for many of the cases of recurrent nodules in the site of operation wound, and that suture-hole infection is exceedingly common. He thinks that this is a danger that cannot be too carefully guarded against, and that any failure to avoid it has an important bearing on the question of cancer recurrence. [J. B. H.]

British Medical Journal.

Nov. 9, 1907.

1. Barr, J. *The Bradshaw Lecture on the Pleura; Pleural Effusion and Its Treatment.*
2. Williamson, J. D. *Cerebro-Spinal Meningitis Complicated by Parturition.*
3. Harman, N. B. *Origin of the Facial Nerve.*
4. Gubb, A. S. *Subcutaneous Injections of Air as a Means of Relieving Certain Painful Manifestations.*
5. Hunter, W. *Introduction of Discussion on Pernicious Anemia and Allied Conditions.*
6. Boycott, A. E. *Anemia in Ankylostomiasis.*
7. Minchin, E. A. *Introduction of Discussion on the Hemoflagellates.*
8. Prout, W. T. *Practical Notes on the Treatment of Blackwater Fever.*

9. Mott, F. W., and Stewart, H. G. *Some Further Observations on the Cell Changes in Dourine and Sleeping Sickness.*
10. Balfour, A. *A Peculiar Blood Condition, Probably Parasitic, in Sudanese Fowls.*
11. Christophers, S. R. *Development of Piroplasma Canis in the Tick.*
12. Williamson, G. A. *A Further Note on Bilharzia (Schistosomum) Disease in Cyprus.*
13. Birt, C. *South African Diseases.*
14. Birt, C. *Mediterranean Fever in South Africa.*
15. Begg, C. *Complications found in Chronic Cases of Sprue.*
16. De Silva, W. H. *The Climate of Ceylon.*
17. Cantlie, J. *Anatomical Studies of the Rectum and Sigmoid Flexure in Relation to the Causes and Treatment of Mucus in the Stools, Associated with Intestinal Flux.*
18. Cantlie, J. *One Hundred Cases of Liver Abscess.*

The Practitioner.

November, 1907.

1. Newsholme, A. *The Lower Limit of Age for School Attendance.*
2. Wilson, T. S. *On the Nature of the Expansion Phase of the Cardiac Cycle and the Phenomena Associated with It.*
3. Howell, C. M. H., and Wilson, H. W. *Movable Kidneys.*
4. *Turton, E. *The Opsonic Treatment of Pulmonary Tuberculosis by Tuberculin.*
5. Moore, F. C. *Rectal Feeding — A Review.*
6. Renton, J. C. *Notes of Surgical Cases.*
7. Henderson, T. B. *Some Unusual Abdominal Cases.*
8. Lambert, G. *"Weak Hearts" in General Practice.*

4. Turton gives the results of seventeen consecutive cases of pulmonary tuberculosis treated with tuberculin. Almost all of these patients have been able or compelled to carry on their usual occupations during the whole or greater part of the treatment. Such measures as could be used at home were advised. In many cases tuberculin was the only treatment. They were cases of all degrees of severity, from the earliest to old standing chronic and advanced cases. He uses new tuberculin with doses of from 1-4000 mgm. to 1-2000 mgm. at intervals of from four to twenty-one days. His only guide as to the time of injection has been the opsonic index, which he has taken frequently. and has endeavored to maintain at a high level; his results are interesting, in the main going to show that cases taken early in the disease will react very favorably to tuberculin without the aid of sanatorium treatment. The chief cause of failure in those cases which did poorly was that the diagnosis was not made early enough, and the second great cause was that for economic reasons the patient could not be removed from very unfavorable surroundings.

He has endeavored to prepare tuberculin from the particular brand of tubercle bacilli found in the individual patient. At present this is too long and expensive a process to be of general use. In many cases pneumococcus vaccine in addition to the tuberculin has been of value, and he believes that injection with the vaccines of the mixed organisms in addition to tuberculin will in the future in many cases bring better results. Whether the results in his cases are better than what could be accomplished by a more vigorous campaign against poor home-surroundings, is doubtful. His results, however, are certainly of interest, and his paper deserves careful study.

[J. B. H.]

Deutsche Medizinische Wochenschrift. No. 39.

Sept. 26, 1907.

1. *Chantemesse, A. *Ophthalmo-Diagnosis of Typhoid Fever.*
2. *Finkler, D. *Bacteriological Predisposition and Virulence*
3. *Pfeiffer, R., and Friedberger, E. *Investigations of the Respiratory and Digestive Organs as a Source of Tubercular Infection.*
4. Loeffler, F. *Differential Diagnosis of Typhoid Bacilli by Means of Malachite-Green Culture Medium.*
5. *Kossel, H. *Spread of Typhoid by Bacilli Carriers.*
6. *Wassermann, A. *Recent Experiences with Antiserum Treatment of Epidemic Cerebrospinal Meningitis.*
7. *Heim, L. *Pneumococcus Studies.*
8. Gruber, M., and Futaki, K. *Contribution on the Resistance to Anthrax.*
9. Uhlenhuth, Hoffmann E., and Weidanz, O. *Preventive Action of Atoxyl in Syphilis of Monkeys and Rabbits.*
10. Kolle, W. *Some Practical and Theoretical Points in Disinfection.*
11. Hueppe, F. *Human and Cow's Milk in Infant Feeding.*

[This issue is dedicated to the International Congress of Hygiene and Demography, and all the articles are by men who are leaders in preventive medicine.]

1. Chantemesse describes a method of obtaining an ocular reaction to typhoid toxin somewhat similar to the ophthalmo-tuberculin reaction. To prepare the necessary reagent, typhoid cultures are sterilized at 60° C., the bodies of the bacilli dried *in vacuo*, and triturated for several hours in an agate mortar. The watery extract of the resulting powder is heated to 60° C., and the clear liquid is poured into an excess of absolute alcohol. The resulting precipitate is dried *in vacuo*, and to perform the test 8 to 10 mg. of powder so obtained is dissolved in 1 cm. of water. One drop of this fluid is placed in the lower conjunctival sac of the patient, and if the case is one of typhoid infection a local reaction appears in a few hours, characterized by redness, burning, lacrymation and a small amount of fibrinous exudate. The intensity of the reaction is subject to the individual idiosyncrasies of the patient and to the amount of toxin applied. In persons not suffering from typhoid little or no reaction follows, whereas, if the disease is present, local symptoms are very pronounced, and, what is especially characteristic, persist for one to three days. The author states that in over 200 applications no unpleasant symptoms resulted. In testing 50 non-typhoid patients, no positive results were obtained, whereas, in 70 cases of known typhoid all were positive. In a number of instances the ocular reaction was obtained at an earlier stage of the disease than the agglutination test.

2. Finkler reviews the facts composing our knowledge of immunity, and shows how they all tend to prove varying predispositions to disease in different individuals. The bacteria also show varying degrees of virulence. Predisposition and virulence react upon each other, and must be considered together, never alone, in any discussion of the varying gradations in immunity or in the severity of disease.

3. Pfeiffer's experiments with guinea pigs confirm Flügge's conclusions that inhalation is the main source of tubercular infection, and that the intestinal tract plays only a slight rôle in the etiology of pulmonary troubles.

5. Kossel says that it has been found that not only do persons who have once suffered from typhoid sometimes continue for a very long time to throw off typhoid bacilli in their stools, but even individuals who apparently have never had the disease, but who have been in proximity to a typhoid fever patient, may excrete the organisms in the feces or the urine. This state of affairs may apparently go on for years. so that these individuals for whole decades or even their entire lives may be a source of danger to their environment. The habitat of these organisms in these cases is supposed to be the gall-bladder, which continually reinfects the intestinal contents. Kossel describes in detail several small epidemics of the disease, apparently due to an individual of this sort, who was employed in a dairy supplying milk to the city in which the epidemic in question occurred. This man had worked on the farm for twenty years, and was not aware that he had ever had typhoid fever, yet the bacilli were found repeatedly in his stools. Kossel remarks that in the future it will be necessary to examine for these bacilli carriers as a further precautionary measure against the contamination of milk.

6. Wassermann reports 102 cases of epidemic cerebro-

spinal meningitis, in which anti-meningococcus serum treatment was used. It had a curative effect when injected early in the disease, and was harmless in all cases. It has no effect after the sub-acute or chronic stages are reached. Doses of 5 to 10 cc. can be repeated two or three times a day. In the severest cases it is injected directly into the spinal canal after withdrawing a little more fluid than is injected. The injections must be kept up after improvement, as relapses are common.

7. Heim says that his former announcement in regard to drying pneumococci on silk threads has not received the attention it deserves. Pneumococci thus dried retain their vitality and virulence for six months at least. The streptococcus mucosus, typhoid bacilli from agar cultures, and diphtheria bacilli dried on threads also retain their vitality a long while. He has kept typhoid and diphtheria bacilli for two years and the tetragenus for five years, with all their properties unimpaired.

[L. G. M.]

Münchener Medizinische Wochenschrift. No. 39.
Sept. 24, 1907.

1. Quincke, H. *Ventilation of the Upper Air of Rooms.*
2. *Weichardt, W. *Studies on Split Albumin Antigen of Toxic Character (Kenotoxin) and Its Antibody, etc.*
3. Kämmerer, H. *Opsonins and Phagocytosis in General.*
4. Bechold, H. *The Electrical Charge of Toxin and Antitoxin.*
5. Lang, H. K. *The Presence of Oxygen-Free Drinking Water in Springs.*
6. *Kownatzki. *The Mode of Spread of Infection in Pemphigus Neonatorum.*
7. *Abe, N. *Recognition of Typhoid Bacilli in the Lice found on Typhoid Patients.*
8. *Beltmann. *The Arsenic Treatment in Syphilis.*
9. Beer, A. *The Value of the "Dark Field" Microscope in the Clinical Diagnosis of Syphilis.*
10. Treumpel, G. *The Treatment of Acute and Chronic Rheumatic and Gonorrheal Joint Affections.*
11. Jacobi, E. *A Rubbing Apparatus for Applying Mercurial Ointment.*
12. Stadelmann, E. *A Case of Creosotal Poisoning.*
13. Prior, A. *A Case of Bismuth Poisoning.*
14. Riebold, G. *The Ovulation Period and Its Relation to Menstruation and to Disease.* (Concluded.)
15. Beschorner, H. *The Placing of Stations for the Care of Tuberculosis, and Their Importance in Combating Tuberculosis as a Disease of the People.* (Concluded.)

2. The author finds a certain substance, which can be split from albumins, which is not chemically definable, and can be separated from the chemically definable products by dialysis. He calls this a "split albumin antigen," or "kenotoxin." Criminals treated with small doses of this toxin developed an antibody specific to it. Mice injected with kenotoxin show marked symptoms, — sleepiness, slowing of the respiration and subnormal temperature. Animals immunized with doses of serum containing the antibody exhibit no symptoms. The same kenotoxin has been found by the author in the breath of animals and man, and also in the fluid taken from an edematous extremity in venous stasis of the part, also in the urine. The author also finds that in certain cases kenotoxin acts as stimulant to the activity of body cells. He claims this is the first time that a specific antibody to a well-marked toxin, not connected with a living organism, has been artificially produced. [*Cf.* Vaughan's work on a toxic substance split off from egg-white.]

6. The benign pemphigus neonatorum, a disease of the fourth to ninth day of life, is, according to Kownatzki, a strictly contagious one, probably due to the staphylococcus, which is usually found in the contents of the bullæ. The disease is spread from one child to another by the nurses, or by some utensil, linen, etc. The author has traced several epidemics from child to child in this manner, and found that after making the nurses wash with special care after handling an infected infant, and sterilizing all linen, bedding, etc., the epidemics came to an end.

7. Abe has examined lice found on typhoid patients. He collected the insects in a sterile tube, immersed them in .1% corrosive solution, then, after rapid and thorough washing, he made an emulsion, with which he inoculated tubes and plates. In each case he was able to demonstrate typhoid bacilli. He concludes that lice may be a factor in the spread of typhoid.

8. Bettmann has, in earlier days, used the older forms of arsenic in the treatment of syphilis. In the ordinary case, he has not seen any evidence that it had an actual effect on the general disease; in gland swellings, in very anemic patients, and on certain types of skin eruption it has worked well. There seems to be an increased tendency to syphilitic angina, to mucous patches, and to moist papules about the genitalia and anus. The author has seen three cases of malignant syphilis, in which mercury was of no avail, clear up under arsenic. Of late he has seen two such cases clear up under atoxyl. There was, however, a return of severe secondary conditions, which did well under mercury. He does not see that atoxyl is any more efficacious than the older forms of arsenic, and points out that it must be used with great care, as it is by no means a non-toxic drug.

Berliner Klinische Wochenschrift. No. 39.
Sept. 30, 1907.

1. Virchow, H. *Kyphosis of the Vertebral Column.* (Continued article.)
2. *Bashford, E. F., Murray, J. A., and Haaland, M. *Results of Experiments on the Nature of Carcinoma.*
3. *Diesselhorst, G. *Excretion of Mercury in Syphilis.*
4. Wilamowski, B. J. *Hyperesthesia of the Skin in Diseases of the Internal Organs.*
5. *Hasselbalch, K. A., and Jacobäus, H. *The Treatment of Angina Pectoris with Light Baths.*
6. Vogel, J. *Anuria.*

2. The authors report a series of observations on carcinoma in the mouse. A carcinoma of the mammary gland of a mouse was transplanted successfully, and on examination of the transplanted tumor, a mixed condition was discovered. Among the cancer cells, definite masses of spindle-celled sarcoma had developed. Bits of this tumor, when transplanted to an animal immune to carcinoma, developed into a pure spindle-celled sarcoma, which in turn was successfully transplanted to another animal. Whether this sarcoma existed along with the carcinoma in the first mouse, or whether it was of later development, the authors are not prepared to state.

3. The method used by Diesselhorst for quantitation of mercury in the urine and other excreta depends on electrolysis. He describes his procedure at length. He finds that mercury appears in the urine five days after the beginning of the use of the ointment, and that, after a long course of mercurial treatment, it is present in the urine sometimes for many months. Late in the treatment more mercury is excreted in the feces than in the urine. Slight traces are recognizable in the sweat. After subcutaneous injections of mercury much greater amounts appear in the urine than with enunction, or when mercury is administered by mouth.

5. Observations on the effects which hyperemia of the skin resulting from light treatment had on blood pressure and respiration, led the authors to institute a series of researches on the effect of light baths in angina pectoris. In 26 cases so treated, it was found, after ten baths with a pause of five days between each bath, that a permenent hyperemia of the skin resulted. This means that there is more blood at the surface, less blood in the internal organs, the blood pressure is lowered, and the respirations are easier and deeper. The betterment of symptoms in the 26 cases was marked in many, and evident in all but one.

[R. D.]

Revue de Chirurgie.
September, 1907.

1. *Terrier, F., and Lecène, P. *The Semilunar Line of Spigelius.*
2. *Couteaud. *Trauma of the Goll-Bladder.*
3. Estor, E. *Congenital Subluxation of the Wrist.* (Concluded.)
4. Pichon, R. *Muscle Herniæ, Particularly Those Due to Simple Rupture of the Aponeurosis.* (Concluded.)

1. The writers point out the historic and anatomic inaccuracy of the term "semilunar line of Spigelius," as applied to the line of origin of lateral ventral herniæ, and recommend its abolition. They consider the true determining factor of the site of such herniæ to be the points of exit of vessels and nerves through the aponeurosis at the outer margin of the recti.

2. Direct trauma to the gall-bladder is of rare occurrence, and generally due to gunshot or stab-wounds. Couteaud reports a personal case and collects others from the literature. The mortality is large and dependent rather on the ensuing peritonitis than on shock, which is relatively slight. [R. M. G.]

The Existence of Vasomotor Nerves in the Brain. O. Müller and Seebach (Zeitschr. für Exp. Path. und Ther., Bd. 4, Heft 1, p. 57) report important experimental work which proves that the brain, like other organs, is supplied with a system of vasomotor nerves, which govern its blood supply, independently of general variations in the arterial and venous pressure. The existence of vasomotors in the brain has been denied by the most recent observers, notably by Leonard Hill and Roy and Sherrington These authors ascribe the increase of volume of the brain noted after cutting the sympathetic in the neck to a passive dilatation of the cerebral vessels, secondary to increased blood pressure. Müller and Seebach show that this is not the case, for the increase in volume takes place before the blood pressure begins to rise. In a long series of experiments they prove in various ways that contraction and dilatation of the cerebral vessels take place independently of changes in the general blood pressure. For instance, after the administration of chloroform, the general arterial pressure falls, while the volume of the brain increases; after small doses of strychnia, on the other hand, the blood pressure rises and the cerebral volume diminishes. Again, after a cold bath, with a rise in the general arterial pressure, there is marked increase in the brain's volume, due to dilatation of the vessels, while the vessels of the face are contracted. The success of the authors is to be ascribed to the excellent methods employed, which included the use of a very delicate plethysmograph to measure the changes in volume of the brain, the measurement of the rate of venous outflow of a cerebral vein at the place where it comes out from the skull, and separate weighing of the head. This last method was devised by Müller, and shows with great delicacy changes in the weight of the head, due to alterations in the blood pressure. Numerous excellent tracings illustrate the work. [W. T.]

Courmont, M.P. (*La Semaine Médicale*, Oct. 23, 1907), in 57 cases of suspected tuberculous joint disease has obtained positive results in 80% by means of a sero-diagnostic reaction on a principle similar to that of the Widal reaction for typhoid. A few drops of serous fluid aspirated from the suspected joint are added to an emulsion of tubercle bacilli, which are precipitated or thrown into clumps by a positive serum. He has never obtained a positive reaction in joint disease other than tuberculosis.

Correspondence.

LETTER FROM PARIS.

[*From our Special Correspondent.*]

Electric Sleep.

Paris, Nov. 19, 1907.

Mr. Editor: For a long while past I have been trying to bring myself up to the point of writing a letter on the question of electricity in medicine; but each time that I have sat down to meditate on the subject, I have ended in the frame of mind of the man who, when he reached the top of a steep hill, found that his entire load of apples had run out of a hole in the back of his cart. A passerby, seeing him sitting mutely by the wayside, inquired why he didn't say something. To which he replied: "Stranger, I feel I can't do the subject justice."

I have little knowledge as to the status of the electric fraternity at home, so of them I do not propose to speak. In England this branch is evidently in its infancy, the Englishman being apparently less vulnerable to quackery than other people. A German writer recently remarked, in plaintive tones, that the reason why all electric treatments are so fashionable in France and give results there which cannot be obtained elsewhere, is that the French are more "suggestionable." But the truth is that here the very term "electric specialist" stinks to heaven.

Far be it from me to condemn the entire corporation; that would be absurd on the face of it. For in this dough of medical degradation there is a solid leaven of honest men. But a large element of these — lightning-jerkers, let us call them—are the most monumental charlatans that one could well find. And of all the charlatans, *I* ever met, the electric gentleman is the cleverest, — A, No. 1, gilt-edged.

For a number of years, now, the position of the medical practitioner here has been steadily growing more difficult. An English writer put the case very neatly, recently, when he bewailed that there was "no longer enough acute disease to go round!" And I hear that in England also the medical barometer is not at *beau-fixe*, either. When I look back some distance, as I unfortunately can, and think what a general practice was here once, and where it stands now (particularly as regards the occurrence of zymotic disorders), the difference is enormous. I can recall a ward I was in as a student at St. Antoine hospital, and another at the Pitié, in which nearly every bed contained an enteric case, certainly three quarters of the beds of a general service; but two weeks ago the health bulletin of the city of Paris (2,500,000 circa) mentioned 33 cases reported to the authorities during the previous week, with no deaths, something unprecedented. This is for enteric only; but matters are very similar as regards the other infections, always excluding tuberculosis, naturally.

The result of this has been that a number of men have been driven to the wall; and many of them have taken up the electric battery in self-defence. And as electric treatments happen to be all the fashion at present, they are working the lead for all it is worth, their zeal being, if anything, surpassed by that of the serene dodos who troop to their offices month after month, and season after season, always impressed by the mysterious cage, the whiff of wind, the spark that comes out of the knee, or the capillary erection; always being promised relief in a voice of authority, and always looking for improvement, which somehow or other doesn't materialize. Some witty Frenchman once said that whenever he had doubts as to the existence of infinity, nothing set him up so completely as the contemplation of *la bêtise humaine;* and nowhere in medicine does our poor human nature show to such lamentable disadvantage as among these victims of chronic disorders, pursuing the *feu-follet* of an electric cure.

However, let us not, while speaking of the black sheep of the profession, forget the white ones; and it is to one of these that I wish to refer to-day, Professor Leduc, of Nantes.

Leduc is a man who has recently come into considerable prominence. He has, as I understand it, been able to create artificially something that looks like cellular formation, and that appears to reproduce itself. This claim of his has given rise to much controversial argument. More important has been his work on ion-therapy, the introduction of chemical substances into the tissues of the body by means of electricity; and in this department he is said to have accomplished some remarkable results. But unquestionably his most striking achievement has been his demonstration that animals can be put to sleep by means of electricity, and can be maintained by it in a condition such that any operation can be performed on them that could be done on human beings under the influence of ether or chloroform.

I shall not attempt to describe the electric part of this subject, not being competent to do so in any way; the whole apparatus and method has been published in the fullest detail, and any person specially interested in the question can easily obtain Leduc's paper.[1] But I will pass on at once to the portion that interests the general medical reader.

Leduc takes a rabbit or dog, and applies one electrode to the head and the other to the small of the back, using his special and complicated apparatus, and preparing the animal with great care. He then gradually raises the "potential," somewhat quickly at first, afterwards more and more gradually, keeping a close watch on the animal. Any agent that can do away with the functions of the brain (chloroform, alcohol, opium) first stimulates them; and electricity is not an exception to the rule. But although the period of excitement cannot be avoided, it is possible to extend it over as great a space of time as is desired, by means of the deliberation with which the current's potential, and intensity are raised; now the greater the time taken, the less the degree of stimulation and of its ensuing agitation. The latter stage comes just before inhibition and sleep; this is why it is necessary to proceed more and more slowly as the experiment advances.

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[1] Presse Médicale, Feb. 27, 1907.

By following this method the animal is seen to pass into a state of unconsciousness similar to the sleep of chloroform, peacefully, progressively, without a cry, without a movement of defence or flight, and without a sign of suffering! Excepting the fact that reflex action continues, the animal appears to be absolutely insensible, and any operation indicated can be performed, just as on a patient completely under the influence of chloroform.

When it is desired to bring the experiment to a close, the current is shut off brusquely. The animal then comes to at once, gets on its feet, looks quietly about without sign of fear, fright or fatigue, and, as soon as freed from the electrodes, begins to play and eat as though nothing had happened.

There are no sequelæ, no vomiting, rarely any stupor; the experiment seems to cause no suffering, for not only do the animals manifest no sign of pain, but they remain affectionate, show no resentment against the operators, and no fear or revolt during preparations for further applications, which is remarkable in the dog, who is so unerring in distinguishing between those who are good to him and those who are not.

If, now, during electric sleep, the difference of potential in the circuit is steadily increased still further, a moment comes when the respiration stops, and finally the heart does so also. Leduc pauses to remark how different his method is, how infinitely more humane, than the process employed in America for electrocution. With his method the subject feels nothing, and it is not a metaphor to say that he falls quietly into an everlasting sleep. In America, on the contrary, pain and violent contractions occur before perception is abolished; the tension and potential employed are far too great; there is violent reaction and a setting free of heat, which burns the subject and makes it necessary to interrupt the current at the end of a few seconds only; the victims then sometimes revive, and several successive applications have to be made to produce death. With the intermittent current, applied according to Leduc's method, no more than the very slight intensity necessary to stop the heart is used, and the application can be prolonged so long as desired, without any interruption.

The tolerance of animals for electric sleep is something remarkable; one rabbit was kept under experimentation for four hours fifty minutes, and another for eight hours twenty minutes, without unfortunate consequences. The same animal can be put to sleep a great many times without any ill effects to health.

However, we have still the climax of this affair to relate. Leduc has the courage of his opinions, and not being satisfied with experimentation on animals, looked about for more important material. I imagine that applicants for the experiment were not easy to find, so he was reduced to trying his system *on himself!* That is, he persuaded two of his colleagues of the Nantes Faculty of Medicine to put him to sleep with his apparatus; and it is perhaps difficult to say which of the participants required the greater nerve,— the subject or the operators. This is how he describes the experiment:

"The feeling produced by the stimulation of the superficial nerves is easily borne, though disagreeable; it soon lessens, as in the case with the continued current, and after passing a maximum, decreases in spite of the increase in power. The countenance is red, there are slight contractions of the muscles of the face, neck and forearm, and fibrillary tremulations are observed, followed by tingling of hands and finger-tips. This tingling then occurs in feet and toes. Inhibition first affects the centers of speech, the motor centers are entirely inhibited next, and then the subject is unable to react in face of the most painful stimulation and can no longer communicate with the experimentors. The limbs, although not in complete resolution, show no stiffness. A few mutterings are heard, not caused by any pain, but due apparently to stimulation of the muscles of the larynx. In these experiments the pulse remained altogether unchanged; but breathing seemed a little labored.

"When the maximum current was reached I still heard what was said about me, though as in a dream; I was conscious that I was unable to move or speak to my colleagues; I felt contact, pinching or pricking, but the sensation was dull, as though in a limb deeply numbed. The most disagreeable impression was that of following the dissociation and successive disappearance of the faculties; this feeling is the same as that of a nightmare during which, in presence of some fearful danger, you can neither cry out nor move. Still, I was always sufficiently conscious to be able to regret that my colleagues did not raise the current enough to produce complete inhibition. After this first experiment we began again (! !), intending to go still farther; but this time my colleagues, thinking that inhibition was complete, once more halted before entire abolition of consciousness and suppression of sensation. In these two consecutive experiments I remained twenty minutes under the influence of the electricity. When the current was shut off, I awoke at once; I felt no after-effect whatever, unless it were a feeling of well-being and physical vigor; and immediately subsequently I went and delivered a speech before a society for labor-pensions, of which I am an honorary member."

In reply to a note, M. Leduc has been good enough to write me that this is the only experiment of the kind on record, so far as he knows, and I can well believe him. Perhaps, were a state of tension of such gravity to arise between myself and the powers-that-be that my presence on this globe was felt to be no longer tolerable, I might call on Leduc to lend me his services as an obliging *confrère;* but otherwise I feel that nothing on earth would induce me to have such an experiment tried on me. I always bear in mind the words of wisdom inscribed over the door of a mill in the West: "Visitors are requested, in their own interest, not to monkey with the buzz-saw." There is nothing so ticklish, or so ready to go wrong, as complicated electric apparatus. Some hitch, and a few extra volts through your head would send you to the grave, and the operator to the gallows; and I should hate to do that.

"Spectator."

NOTES ON X-LIGHT. NOTE 203. ON THE USE OF FUSED SILICA IN VACUUM TUBES.

Boston, Thanksgiving Day, 1907.

Mr. Editor: In Note 84, an inexpensive method of making x-light tubes was described and illustrated. As the price of x-light tubes has steadily advanced until now durable tubes cost about fifty dollars, it is desirable to call attention to the method mentioned. Instead of the bulb being blown it was molded in a glasshouse, with end tubes of sufficient diameter to admit the terminals without expansion. All that was necessary to complete the tube was to seal in the terminals and exhaust. The stems of the terminals were supported by disks of mica or lava at first, afterward of glass. Now that fused silica can be obtained, it is recommended for these disks, as it does not crack and gives off little gas. In several later notes the use of radio-active substances in vacuum tubes was recommended for regenerating the tube and for ionizing the gases to make them better conductors. The radio-active materials were used in small glass tubes sealed within the vacuum tubes, a current of electricity being sent through the radio-active material when more gas was desired. As these glass tubes were liable to crack when being sealed in and afterward in use, the employment of quartz tubes, both for the radio-active regenerator and automatic vacuum regulator is here recommended.

Very truly yours,
William Rollins.

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 23, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	—	—
Chicago	—	—	Waltham	8	3
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	6	—
Baltimore	—	—	Brookline	6	—
Cleveland	—	—	North Adams	9	3
Buffalo	—	—	Chicopee	6	3
Pittsburg	—	—	Northampton	12	5
Cincinnati	—	—	Medford	3	—
Milwaukee	—	—	Beverly	2	1
Washington	—	—	Leominster	4	—
Providence	—	—	Hyde Park	0	—
Boston	198	40	Melrose	3	0
Worcester	37	6	Newburyport	—	—
Fall River	43	19	Woburn	5	4
Cambridge	20	8	Marlboro	2	0
Lowell	41	14	Westfield	3	—
Lynn	22	4	Peabody	—	—
New Bedford	21	9	Revere	2	—
Springfield	23	4	Attleboro	1	0
Lawrence	27	14	Clinton	6	1
Somerville	23	3	Adams	3	3
Holyoke	18	7	Gardner	—	—
Brockton	12	3	Milford	4	0
Malden	10	2	Watertown	3	0
Chelsea	15	3	Plymouth	—	—
Salem	14	4	Weymouth	—	—
Newton	13	4	Framingham	—	—
Haverhill	10	1	Southbridge	4	1
Fitchburg	10	3	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	14	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING NOV. 30, 1907.

G. C. Thomas, acting assistant surgeon. Appointed acting assistant surgeon from Nov. 20, 1907.

W. H. Bucher, surgeon. Detached from the Naval Hospital, Boston, Mass., and ordered to report to the surgeon-general, Navy Department, for special temporary duty, and thence to the Naval Hospital, New Fort Lyon, Colo.

U. R. Webb, passed assistant surgeon. Ordered to command the Naval Hospital, San Juan, P. R.

H. C. Taylor, passed assistant surgeon. Detached from duty at the Naval Hospital, New York, N. Y., and ordered to the Naval Hospital, New Fort Lyon, Colo.

SOCIETY NOTICE.

The New England Hospital Medical Society. — This Society will meet Thursday, Dec. 12, 7.30 p. m., at Hotel Nottingham. Section of Surgical Gynecology. Dr. Sarah E. Palmer, *Chairman*. Papers: Reports of two cases of Tuberculosis of Kidney and Bladder. Dr. Clara J. Alexander. Report of a case of loculate bladder with proteus infection. Dr. Sarah E. Palmer.

Blanche A. Denig, *Secretary*.

RECENT DEATHS.

Dr. Thomas Wildes, of New York, died on Nov. 28, from cerebral apoplexy. He was sixty-eight years of age and had been for some time in the service of the City Health Department.

Dr. John Adam Schmitt, of New York, died suddenly on Nov. 26, in the fifty-sixth year of his age. He was graduated from the University of Giessen, Germany, in 1875, and was gynecologist to the Yorkville Hospital.

Dr. William G. Russell, of Brooklyn, New York, died on Nov. 27. He was a native of New York City, and was graduated from the Long Island College Hospital in 1871. He had practiced in Brooklyn for over thirty years, and at the time of his death was consulting physician to the Williamsburgh Hospital.

Dr. Walter John Norfolk, a retired physician, died at his home in Plainfield, N. J., on Nov. 25, at the age of fifty-nine years. He was born in Salem, Mass., and was a graduate of the Harvard Medical School.

Dr. John M. Julien, of Pleasant Valley, Dutchess County, N. Y., died suddenly on Nov. 24, from pulmonary hemorrhage. He was of French descent, his grandfather, John Marius Julien, having served under Napoleon Bonaparte in all his principal campaigns, and he himself was an orderly in the French army during the Franco-Prussian War. He was graduated from the Long Island College Hospital, Brooklyn, in 1880.

BOOKS AND PAMPHLETS RECEIVED.

Green's Encyclopedia and Dictionary of Medicine and Surgery. Vol. VI. Edinburgh and London: William Green & Sons. 1907.

Thirty-eighth Annual Report of the State Board of Health of Massachusetts. Boston. 1907.

Treasury Department. Public Health and Marine-Hospital Service of the United States. Trachoma, Its Character and Effects. By Passed Asst.-Surgeon T. Clark and Passed Asst.-Surgeon J. W. Schereschewsky. Washington. 1907.

Gonorrheal Prostatitis. By J. Bayard Clark, M.D. Reprint.

Laboratory Guide for the Modeling of the Human Bones in Clay. By Vilray Papin Blair, A.M., M.D. St. Louis, Mo.: Co-operative Association of the Medical Department of the Washington University. 1906.

A Text-Book of Practical Gynecology. For Practitioners and Students. By D. Tod Gilliam, M.D. Second revised edition. Illustrated. Philadelphia: F. A. Davis Co. 1907.

Syphilis in Its Medical, Medico-Legal and Sociological Aspects. By A. Ravogli, M.D. Illustrated. New York: The Grafton Press. 1907.

A Text-Book of Physiology. By Isaac Ott, A.M., M.D. Second edition, revised and enlarged. Illustrated. Philadelphia: F. A. Davis Co. 1907.

Hospital Training-School Methods and the Head Nurse. By Charlotte A. Aikens. Philadelphia and London: W. B. Saunders Co. 1907.

Board of Health of the State of New Jersey. Public Health Laws. Trenton. 1907.

Gonococcic Infections, and the Physician's Responsibility. By J. Bayard Clark. Reprint.

Diseases of the Stomach. By Dr. I. Boas. The sole authorized English-American edition from the latest German edition by Albert Bernheim, M.D. Illustrated. Philadelphia: F. A. Davis Co. 1907.

Ophthalmia Neonatorum with Especial Reference to Its Causation and Prevention. (The Middlemore Prize Essay of the British Medical Association, 1907.) By Sydney Stephenson, M.B., C.M. London: George Pulman & Sons, Ltd. 1907.

Relations of the Doctor to the Alcoholic Problem. By T. D. Crothers, M.D. Reprint.

Diseases of Infancy and Childhood, Their Dietetic, Hygienic and Medical Treatment. A Textbook designed for Practitioners and Students in Medicine. By Louis Fischer, M.D. Illustrated. Philadelphia: F. A. Davis Co. 1907.

The Reduction of Cancer. By the Hon. Rollo Russell. London, New York, Bombay and Calcutta: Longmans, Green & Co. 1907.

The Treatment of Recent Trachoma. By Thomas A. Woodruff, M.D., C.M. Reprint.

The Physician's Visiting List (Lindsay & Blakiston's) for 1908. Fifty-seventh Year of its Publication. Philadelphia: P. Blakiston's Son & Co.

Original Articles.

VERRUCÆ PLANTARES; THEIR PREVALENCE IN BOYS AND IN YOUNG MEN, AND THEIR PATHOLOGY.*

BY JOHN T. BOWEN, M.D., BOSTON,
Edward Wigglesworth Professor of Dermatology, Harvard University.

THE first to call attention to these plantar warts was W. Dubreuilh.[1] Up to that time the affection had not been referred to in the treatises on surgery or dermatology, although, as he states, it is far from uncommon. His description is so good that it may very properly be quoted:

"When the plantar wart is of recent date, it shows itself in the form of a slightly reddened elevation covered with a thin epidermis. When this covering is removed, bleeding appears from a number of orifices.

"Most often, however, the lesion presents at first sight the aspect of a large and extremely tender callus. The horny layer is thickened and elevated; sometimes the central part of this horny plaque is perforated by a sort of well, more or less deep, especially if there has been an attempt to scrape it off. If, however, the lesion has not been molested for some time, the superficial horny layer forms a complete covering.

"When the surface of the lesion is cut with a knife, the periphery of the lesion is found to have a hard, semi-transparent, horny layer, much like normal horny epidermis, or that which constitutes calluses and corns. Instead, however, of penetrating deeply into the corium with a horny mass as does the corn, this lesion possesses a soft and depressible central portion. It takes the form of a ring perforated by an orifice which becomes larger as one goes more deeply. This central part possesses a tissue of a very different appearance, a horny tissue, to be sure, but white, opaque and milky; it is soft and resistant to the knife like wet tow.

"While the horny ring at the periphery is homogeneous or stratified, the central part appears to be fasciculated and formed of columns which penetrate vertically downwards. Frequently a dark, hemorrhagic point is seen, and most often, if one continues to cut successive layers of the lesion, drops of blood are poured out from a large number of capillary openings which dot the surface.

"It is at first difficult to make a curette penetrate into this soft and tenacious tissue. When once, however, the curette has reached its base, a soft, white, milky tissue is removed, which is divided into columns that run perpendicularly from the surface to the base."

Such is Dubreuilh's description of this affection upon the soles of the feet. With regard to its frequency, I have been much impressed by the large number of cases seen and heard of in and about Boston. Almost all of the cases are in young people, and the affection is especially prevalent in preparatory schools and colleges. Dr. Bailey, the medical visitor of Harvard University, writes me that he sees a large number of these cases every year, and that they average about twenty operations a year for plantar warts at the Stillman Infirmary, the hospital of the University. A great many cases occur, also, in the preparatory schools at Groton and Southborough. I have been unable to collect exact statistics on this point, as they were treated by different people, and sometimes I heard of cases which had not been treated; as, for instance, a boy who was my patient told me that perhaps half a dozen other boys of his acquaintance had similar lesions.

I have been able, however, to study thirty-four cases, which I have seen and treated in my private practice, and of which I have preserved notes. In hospital practice the affection is far less common. We see it so rarely, that statistics from this source would be of little value. Of these 34 cases, 28 were males and 6 were females. The youngest was ten and the oldest sixty. Seven were under sixteen, 15 were between sixteen and twenty, 7 between twenty and twenty-five, and 5 between twenty-five and sixty. It is seen, therefore, that youths and boys under twenty years of age are the ones by far most frequently affected.

Twenty of these 34 cases were in boys who were attending either a preparatory boarding school or Harvard College. In almost all instances the boys would speak of some other boy or boys of their acquaintance who had the same affection, so that the conclusion is justified that in this vicinity, at least, the affection is far more common among boys and youths who are collected in schools and colleges than among other people. Its prevalence in this class is further corroborated by the local physicans in the neighborhood of these institutions.

Dubreuilh considers that local traumatism plays an important part in the development of these lesions. In the cases that I have studied, it was impossible to decide that in any of the cases there had been a local injury. He also thinks that the localization of these lesions is in favor of the traumatic theory, in that they are especially common over the head of the third metatarsal bone. In my cases this localization was not so apparent, although it did occur in a number of instances. Contrary to Dubreuilh's experience, I have seen a number of times the coincidence of plantar warts with a like affection of the palms of the hands, and I have had two cases where they appeared on the palms alone. In one or two cases there had been a palmar wart preceding the attack of plantar warts.

As to the number of these warts, they may be few or many. In one of my cases there were as many as thirty. In two of my cases two members of the same family were affected either at the same time or at a short interval from one another. In one case it was two brothers aged respectively fifteen and twenty-one, and in the other, two sisters of whom the oldest was twenty. It must be admitted that the evidence here stated does not warrant the conclusion that these lesions are contagious, and yet there is enough to make such a theory probable. It is quite true that people most subject to these plantar warts are those who are most accustomed to exercise, such as running and tennis playing, and that in these sports an opportunity for irritation of the plantar surfaces is plainly offered. On the other hand, this traumatism can be invoked as offering an opportunity for infection in such cases, and the well-known contagiousness of verrucæ vulgares would be a point in support of this theory.

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* Read by title at the Sixth International Dermatological Congress, New York, September 1907.

[1] Ann. de Derm. et Syph., Tome 6, 1895.

Case I. Boy of eighteen. Verruca of the sole of the foot, just below the third metatarsal.

Case II. Boy of sixteen, who lived at home and attended a day school. He had a verruca of the sole of the foot, which had lasted several months. He said that two years previously he had had a similar lesion on the palm.

Case III. A boy of fourteen, at a day school. Lesion is situated upon the heel.

Case IV. A lad of eighteen, who presented three large lesions on each sole, opposite the end of the third metatarsals.

Case V. Girl of sixteen, who presented a lesion on the ball of the foot.

Case VI. A youth of nineteen, in college, who presented several lesions on the soles of each foot, the exact number not stated in the record.

Case VII. A man of twenty-six, one large extensive lesion of the flexor aspect of the thumb.

Case VIII. Boy of ten, a lesion on the sole of each foot over the metatarsal ending, of six months' duration.

Case IX. A youth of twenty, who had had multiple verrucæ of the soles of the feet for six months.

Case X. Youth of eighteen, who had two verrucæ of the soles, besides a large callus.

Case XI. Young man of twenty-one, who had several lesions at the base of the toes.

Case XII. Girl of fifteen, with a lesion of the palm of the hand.

Case XIII. Boy of fourteen, at a boarding school, a verruca of the sole.

Case XIV. Youth of twenty, a verruca of the heel.

Case XV. Young man of twenty-one, in college, who had had verrucæ of the ball of the foot for two years, beginning while he was at boarding school, while he was exercising in the fives court. He also had had one of the palm of the hand, which had disappeared.

Case XVI. Boy under sixteen, at boarding school, who presented verrucæ of the heel.

Case XVII. Young man of twenty-one, at college, who presented six or eight lesions of the ball of the left foot, which first appeared two years ago, when he was not exercising very much.

Case XVIII. Young man of nineteen, at college, a verruca of the sole, which had lasted for six or eight months.

Case XIX. This was a boy of fifteen, at boarding school, a brother of case No. XV, who had a wart of the palm of the hand of three months' duration. This lesion had once been excised by a local physican and had recurred in the cicatrix.

Case XX. Young man of twenty-one, who had had verrucæ of the sole of the foot for a month.

Case XXI. Young woman of twenty, who had had, for nearly a year, a plantar wart on the left foot over the third metatarsal. This appeared at the time that she was visited by her sister, who had a similar one. She slept in the same room with this sister, but not in the same bed. Both played tennis, but, so far as could be remembered, had never worn each other's shoes.

Case XXII. A man of fifty-three, a merchant, who presented a plantar wart over the first metatarsal bone.

Case XXIII. A young man of twenty-two, in Cambridge, an oarsman, who rowed in the University boat, presented quite extensive lesions of the palms, and also of the sides and backs of the hands. Those of the palms were typical palmar warts. Those of the backs of the hands presented the aspect of ordinary seed warts. There may have been twenty of these lesions altogether. The affection had lasted for three years.

Case XXIV. Young man of sixteen, living at home, who showed eight or ten plantar warts, chiefly over the metatarsal bones.

Case XXV. A young man, over twenty. A palmar wart of identical histological appearance with the plantar wart. Also a wart under the nail.

Case XXVI. Man of fifty, who had had a plantar wart on the sole of the right foot for nine months. It had appeared immediately after a trip to Mexico.

Case XXVII. Woman of sixty, who presented a half-dozen plantar warts over the metatarsal region.

Case XXVIII. Young man of twenty-one, who had had a verruca of the sole of the foot, in the metatarsal region, for six months.

Case XXIX. Young woman of eighteen, who had a palmar wart on the middle finger of the right hand.

Case XXX. Boy of sixteen, at boarding-school. This was the most extensive case I have seen. Thirty plantar warts, scattered over the whole surface of the sole of the left foot, were counted at one time. There were also some on the plantar surface of the toes. They had first made their appearance six months before. Besides these there were two typical lesions of the palms, which had appeared after those on the soles.

Case XXXI. Woman of thirty, who had a palmar wart, associated with the ordinary verruca vulgaris of the back of the finger.

Case XXXII. Boy of fourteen, at boarding school, who had had for six months several plantar warts in a clump on the plantar side of the great toe.

Case XXXIII. Young man of twenty-one, who had four or five plantar warts in the metatarsal region, of eight months' duration.

Case XXXIV. Boy of fourteen, at boarding school, plantar wart of the heel.

Melchior-Robert, in the *Annales de Derm. et de Syph.*, 1897, describes four cases, two palmar and two plantar, but without histological examination. He gives the name *verrue en puits* to that form that projects from the surface, but in which the papillary prolongations are deeply seated, and this is the type of both the plantar and palmar warts that I have examined.

D. W. Montgomery read a paper at the fifty-fourth annual session of the American Medical Association on "Papilloma of the Sole," in which he relates 7 cases which he has seen and treated. Four of these were in people under twenty. He refers to the well-like aperture that is uncovered when the outer horny layer is wanting or is removed by cutting.

At the meeting of the Dermatological Society of Great Britain and Ireland, on March 25, 1896,[2] Dr. Eddowes read a paper entitled "Warts on the Feet." Having previously been interested in this subject, he agrees entirely with Dubreuilh as to the clinical appearances of these growths, but had made no microscopical examinations.

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[2] Brit. Jour. of Derm., May, 1896.

He considers that traumatism plays a prominent part in the production of these lesions.

The pathology of these lesions has been very thoroughly worked out by Dubreuilh, and with almost everything he says I can concur. I have examined microscopically more than twenty different cases of plantar and palmar warts, and in some instances several lesions from the same case were studied. In connection with these investigations a number of specimens of verrucæ of different histological appearance were also examined.

In the following description of the histological appearances I am, to a great extent, in accord with the very excellent description of Dubreuilh. In verrucous growths, which are not subject to habitual pressure, as on the back of the hand, the tumor is developed as a projection above the surface of the skin. In places, however, where there is a long continued and strong pressure, the wart does not project to any extent, but burrows, as it were, into the cutis, while the adjacent epidermis becomes hypertrophied. A section through the center of one of these palmar or plantar warts explains the characteristics obtained by curetting, for the wart is, as it were, subcutaneous and the similarity to a well is very striking.

There are no important changes in the cutis. The papillæ contain a certain number of cellular elements. I have not found the elastic fibres in the upper portion of the papillæ wanting as has Dubreuilh. In most of the lesions that I have examined, the papillary projections and interpapillary prolongations were much flattened out at the center, whereas I have in all cases noticed the lengthening out of these structures at the periphery of the lesion. In some instances they run almost horizontally to the surface at the periphery.

As regards the epidermis, an interesting feature, peculiar in my experience to these plantar and palmar warts, has been described by Dubreuilh. I have found it constantly in verrucæ of the palm and sole, never in other situations, while Dubreuilh describes it as occurring in a wart on the back of the hand. This change gives rise, in the center of a large and well-developed palmar or plantar wart, to a most extraordinary peculiarity.

Serial sections through an entire lesion show at the periphery the appearances in general of an ordinary verruca, a pronounced acanthosis, papillary enlargement, and down growth of the rete plugs, together with a very pronounced hyperkeratosis. The granular layer is much increased in thickness. Very soon, advancing toward the center of the lesion, the peculiar change described by Dubreuilh is encountered. This consists in a vacuolation of some of the rete cells, which causes them to assume a rounded form and a larger size than the neighboring cells. The lower basal cells I have never seen thus affected, but the appearances may often be seen in the layers near the basal cells. Oftentimes small clumps of rete cells are thus affected while the cells above them still retain their normal characteristics. Usually, in connection with this vacuolation, there is a precocious development of kerato-hyaline, which often is heaped up at the periphery of the cell around the central cavity. These cells retain their nucleus, which, as a rule, is very much swollen. Advancing toward the center of the lesion, this vacuolation affects more and more cells, which fuse together until at the center of a well-developed lesion, the portion corresponding to the rete is composed of a reticulated tissue heaped up with masses and blocks of kerato-hyaline.

The largest portion of the lesion is composed of the horny layer, which lies, much hypertrophied, over the reticulated rete as just described. That this layer is imperfectly keratinized is shown by the presence in places of the cellular elements, which take the stain of the ordinary reagents.

In one of the first of these lesions that I examined, peculiar bodies were found in many of the nuclei of the rete cells. The appearances at first sight were so striking that the suspicion that they might be some form of protozoa was aroused, and it was on this account that I examined, histologically, so many cases. These bodies were found in a majority of all the cases, not, however, in all. They are small, usually round bodies, highly refracting, occasionally appearing as if concave in the center, and, in a few instances, crescent shaped. As a rule, they are all of equal size. They are first seen in the third or fourth row of rete cells and seem to go hand in hand with the vacuolation, as they disappear when what corresponds to the granular layer is reached. They are not seen in all the nuclei, but are most prominent in the enlarged and swollen nuclei, which accompany the vacuolation. They are stained by the acid reagents, and are sharply differentiated in this way from the rest of the nucleus. No further data as to the significance and origin of these nuclear bodies could be obtained, and, so far as I know, such appearances have never been described in epithelial structures. It was, as I say, natural at first to think of the possibility of their being some form of protozoa, and it is difficult to rule out such a possibility. On the other hand, their appearance in connection with the vacuolation, and their disappearance in the upper layers, would make it more probable that they represent some form of nuclear degeneration or alteration.

TREATMENT.

I have had experience with quite a number of different modes of treatment in this affection. In many instances it was not possible, on account of the prejudice of the patients or their parents, to institute as radical methods of treatment as seemed advisable. In a considerable number of cases salicylic acid in collodion in 10% strength was sufficient, after some time, to remove the lesions. It was painted on daily, and the foot soaked every other day for twenty minutes in hot water, and then pumice soap used to remove as much of the lesion as possible, and then the painting renewed; much the same treatment that is used in the case of corns.

Many cases, however, will not respond to this treatment, and I have had some success with chrysarobin, which was added, in 10% strength, to the salicylated collodion. In other cases success was attained by covering the lesions constantly with a 60% salicylated gutta percha plaster. It is my impression that almost all of these lesions will yield to this treatment, if it is persisted in long enough, but it may take many weeks, and the necessary patience has not been found in all persons.

Dubreuilh considers curetting the most radical and rapid treatment, which he performs under cocaine anesthesia. The late Dr. Warren, of Groton, who had treated a large number of these cases in the boys of Groton School, wrote to me that he had formerly excised these lesions, but had given it up; that he had tried salicylic acid, corrosive sublimate, chromic acid, nitric and lactic acids; he had also used electrolysis, but had come to the conclusion that the Paquelin cautery was the best, surest and quickest method. He first cocainized the wart, and with the round point of the Paquelin cautery thoroughly cauterized, beginning at the center and sweeping round the whole periphery of the wart. This method he considered almost painless, produced the smallest possible scar, and needed but one sitting, if carefully done. With regard to excision, it has to be thoroughly done, and is practiced with success at the Stillman Infirmary in Cambridge, where, as I have said, they average twenty operations a year for this affection. Even, however, when apparently thoroughly done, the lesion may reappear in the cicatrix, as I have myself seen.

Electrolysis has been effective in my hands, but without thorough local anesthesia it is very painful, and the same may be said of the strong caustics, which I have repeatedly tried. By the advice of other practitioners, a number of the patients whom I have seen have been wearing plates in order to remove the weight from the part affected by the wart. I have rarely seen a cure produced by this mode of treatment alone.

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THE CORRECTION OF MALOCCLUSION AND ITS RELATION TO RHINOLOGY.*

BY ALFRED P. ROGERS, D.D.S., BOSTON.

IN undertaking this study of malocclusion it will not be my purpose to carry you through a mass of detail; but to present to you as clearly and briefly as possible the fundamental principles of the practice of orthodontia, laying special stress upon those ideas which we believe are of vital interest and practical value to the rhinologist. That malocclusion of the teeth is sometimes directly responsible for the maldevelopment of the facial bones, and that various pathological conditions of the nasal or post-nasal space are responsible for retarded development of the facial bones, and malocclusion of the teeth, needs scarcely any emphasis. It is undoubtedly true that there are numerous features attending these conditions, which we must work out together in order that we may become more efficient in our practice, and more valuable to those it is our privilege to serve. It is with this idea in mind that I present to you this study, hoping it may in a measure assist in a clearer understanding of the work being undertaken by the orthodontist, and of pointing out its practical value to the rhinologist when he is considering those cases where lack of development hampers him in the attainment of the greater good. While for many years the correction of irregular teeth was regarded for its esthetic value alone, later development in the field of orthodontia has established the fact, that the correction of malocclusion is far-reaching in its beneficent results; that although the esthetic value cannot be overestimated, the other features are of such immense value and importance as to create a new profession, composed of men whose consciences have been so awakened to the immense necessity for their work, that they are compelled to devote their entire time and energy to its accomplishment.

It has long been observed that certain facial and dental inharmonies accompanied nasal stenosis, and are great in proportion to the degree and duration of the nasal obstruction. It is in this particular field that the orthodontist seems to be of greatest value to the rhinologist, because it is his mission to stimulate growth, to restore harmony between the distorted dental arches, to influence the development to such a degree that nasal respiration is more easily accomplished, as well as to change inharmonious facial lines to those of grace and beauty.

We have all seen and known too much of the struggles of childhood, due to faulty respiration, to depreciate even the humblest efforts at its correction; or the endeavor to dispel the harmful and far-reaching results in development which are known to affect not only the face and nasal cavity but the mouth, the pharynx, the thoracic walls and, indeed, the entire system. Although oral respiration is usually confined to childhood, its effects are known to have a greater or less disastrous effect throughout life. The greatest period of suffering is experienced during those years of child life when the facial bones are developing and the teeth are in the process of erupting. The dental arches and the contiguous bony structure seem to be the greatest sufferers. The upper arch and the bones of the middle face are most frequently referred to, by writers on rhinology, as being those which suffer almost exclusively. The lower arch is frequently referred to as being normal in its development; but a close study of malocclusion shows that the lower arch is very frequently malformed; indeed, in very many cases it takes a position distal or mesial to the normal, thus aiding in destroying the facial lines, the type, and even changing the individuality of the subject. The bones of the face are so closely allied that the stimulation of one part readily acts upon another. Therefore, it will be seen that in order to claim the desired advantage, the treatment of these cases must be undertaken very early in life. The removal of spurs, of inferior turbinates, of adenoid growth, seems but a partial remedy. What is mostly needed in these cases is the vigorous co-operation of rhinologist and orthodontist, with a view to a clearer and better understanding of each other's work, and a determined effort to accomplish the desired treatment *before the active period of growth is passed.*

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* Read before the New England Otological and Laryngological Society, March, 1907.

In order to gain an intelligent idea of the correction of malocclusion and its influence upon development, it is necessary for us first to have a clear and definite understanding of occlusion. This picture shows us very beautifully the normal occlusion. (Fig. 1.) It is the basis of all operations in orthodontia. It is the goal toward which every conscientious operator must direct his efforts. If we examine carefully we shall see that perfect occlusion is incompatible with any degree of irregularity, but that all the teeth with their grooves and inclined planes must be in the greatest harmony, and when this is present, harmony exists not only between the teeth themselves but between the arches, the facial bones, and the overlying muscles. A thoughtful study of this picture cannot fail to convince one of the wonderful influence of these numerous inclined planes in the part they play in influencing, not only the erupting teeth in taking positions of occlusion or malocclusion, but also the arches and facial bones themselves; because a misadjustment of these inclines rarely if ever fails to produce marked malocclusion, whose evil influence does not confine itself to the teeth alone, but to the adjacent tissues as well. Another valuable suggestion which may be received from the study of these inclines is, that these cases are never self-correcting, as many are led to suppose; but must continually grow more desperate and carry the evil effects to a greater and deeper extent. It might be well to emphasize at this point the influence of these inclined planes upon the developing bones. Very serious and far-reaching effects are noticed upon the mandible, where the process of growth may be most seriously handicapped by the adverse influence of these inclines. It is well known to you that the development of this bone in the molar and bicuspid region is from behind forward by a wedging process, when the growth is most active during the eruption of the teeth. If for any reason the inclined planes of the lower molar occlude distal to the normal position, the growth is interfered with. This is exactly what occurs in many cases with the history of continued nasal obstruction, and it is a point well to be considered by the rhinologist and orthodontist. It is well also to bear in mind that the lower arch is of great importance at this period of development, because it is the mould over which the upper arch is swedged. If it takes a position distal to the normal the arch is so shortened that the upper arch must cease to grow, while nature strives to establish as efficient an occlusion as possible. With this endeavor, the growth of the facial bones becomes greatly interfered with, the arches become distorted and narrow and the eruption of certain teeth delayed or entirely prohibited. When this retarded development takes place with the upper central incisors, deflection of the nasal septum may follow. This fact has recently been brought to our attention by Dr. H. P. Mosher, whom I believe has established the fact that a large percentage of tardy eruption of the central incisors has a direct influence upon the nasal septum. We can easily see then how a single misdirected force together with oral respiration may result in the most alarming type of malocclusion which, if left past the age of fourteen or fifteen, will be serious and difficult in treatment, but at the early age of six to twelve, could have been treated with ease, the beneficent influence of the inclined planes reserved, and the development of the facial bones carried on with but little interruption. Before passing on, I wish to point out for diagnostic purposes the relative postion of the first molars. In classifying malocclusion, these points have been found the most reliable for the purpose, as they denote conclusively the mesio-distal relationship of the arches. In the greater number of cases of malocclusion, these molar teeth are in their correct position, but many cases are presented to us in which this condition varies.

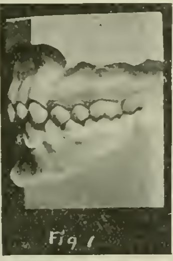
Fig 1

In our study of malocclusion and comparison with normal type, we must remember to notice the points of similarity or dissimilarity in the molar regions and between the arches themselves. To make our study more comprehensive, we will imagine that we are examining and comparing with the normal type a few hundred models of malocclusion. Before our search has been long continued, we will not fail to notice that a large number of our models present points of similarity. We will notice that in these cases occlusion of the first molars is exactly as found in normal occlusion. Building upon this point of similarity, we select from our collection all the models bearing this distinction and we have established the great first class of malocclusion. (Fig. 2.) Having satisfied our minds upon the first great class, further search will reveal to us a number of models that differ in a marked degree from the standard. This time the lower arch seems to be distal to its normal position. (Fig. 3.) Sometimes this occurs on one side and sometimes on both. Another characteristic shows itself in this classification, namely, the protrusion or retrusion of the anterior teeth. We, therefore, cannot classify without subdivision or subclasses. We will, therefore, divide this second class into two divisions, each division having a subdivision. In the first division, we will place those models having protruding upper incisors, where the lower arch appears bilaterally distal. The subdivisions of this first division consists of those where we find protruding upper incisors and where the lower arch is unilaterally distal. The second division of this class will be made up of those models having retruding upper incisors and where the lower arch is bilaterally distal; in the subdivision of this class, we will place those models with retruding upper incisors and unilaterally distal arch. This completes the classification of the second class. The remaining few models will present a very marked characteristic which will readily place them in the third class. (Fig. 5.) This time we will notice that the lower arch is mesial in relation to the upper. Most of these cases are bilaterally distal; these we naturally place in a division by themselves and with the few remaining, we will form the subdivision of the third class. Mouth breathing may be associated with any one of these conditions. Why so many and varied types should result is yet unsolved, but it seems that the period and degree of nasal stenosis must be an important factor.

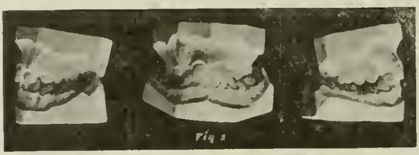
Fig 2

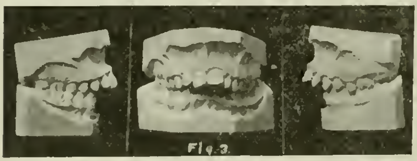
Fig. 3.

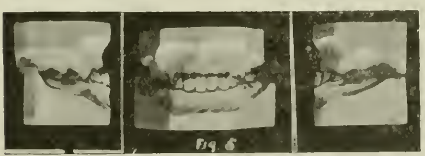
Fig 5

The diagnosis of impending malocclusion and retarded development of the facial bones may be made at a very early age, sometimes early in the first year. During the first six or seven years of child life ample opportunity for diagnosis of future conditions is given; because it is during these years that those adverse influences are usually at work, and when the bones and teeth are most easily influenced. Nasal obstruction, however, is not the only cause of retarded development. It seems that in order to gain the broadest and most correct ideas we must go further, and look well into the *vital forces of the child.* Dr. Bogue has very clearly emphasized this idea when he says, that "Many of the evils that we, as orthodontists, are called upon to treat, and many of the diseases which confront the rhinologist, arise from a deficiency in the vital force of the child; an inability to overcome some mechanical obstruction. Every developmental process is an expression of vitality. Every defect in conformation or function is an indication of a deficiency in a motor center of power sufficient to overcome obstruction." Another influence which deserves careful consideration is *the lack of use.* If function for any reason is suspended, it is quite true that development is also retarded. Doubtless the average child fails to properly perform the function of mastication, his food is soft and yielding; therefore the lack of proper mechanical stimulation is followed by the inevitable lack of development.

Retarded development is very frequently noticed at the age of six or seven when the arches are so narrow that the eruption of the permanent incisors is seriously interfered with. (Fig. 6.) This condition is directly due to a lack of anterior development, which should have taken place before the loss of the temporary teeth. At this age when normal conditions are present, an enlargement of the anterior segment of both arches takes place. This enlargement is manifest by the gradual separation of the temporary teeth, when a well-defined space is noticed between each tooth in the anterior segment. (Fig. 7.) When this growth is present and the arches are in correct

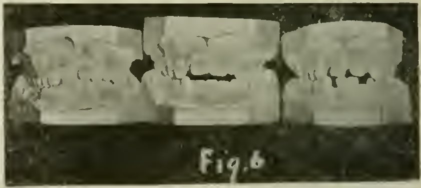
Fig. 6

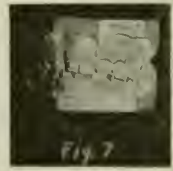
Fig. 7

mesio-distal relation, normal development may be expected. Should this anterior development be lacking, retarded eruption of the incisors will occur, and, if accompanied by a distal position of the lower arch, the most aggravated form of malocclusion may be expected, with distortion of the dental arches and arrested development of the facial bones and disfigurement of the facial contour. (Figs. 8, 9.) This illustration is that of a boy six years of age. In spite of the fact that his adenoids were removed very shortly after their discovery, and at the age of two and one-half years, the lack of development in the arches with the distal position of the lower arch forms a well defined case of class two, with the usual serious defects upon the developments of the facial bones, as shown by a study of the facial contour. The study of the profile shows a decided lack of growth in the mandible. Allowed to progress without skillful orthodontic treatment, this would develop into a case similar to that illustrated in Fig. 3.

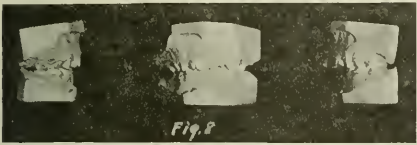
Fig. 8

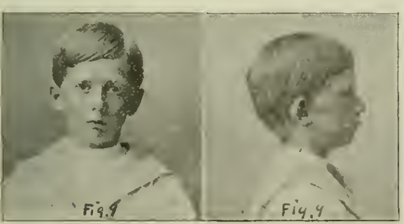
Fig. 9 Fig. 9

My desire is to point out that all these unhappy conditions may either be prevented or corrected, and the child allowed to develop and attain its normal type. When lack of anterior growth is evident, that section of the arch should be gently stimulated by painless and gradual methods until the exact space for the permanent incisors is developed. They will then appear unhampered during the period of their eruption, and the deflected nasal septum from this cause will be less in evidence. Should the mesio-distal relation be incorrect, the arches should be placed in their proper relation before the eruption of the first permanent molars in order that the inclined planes of these teeth may properly engage themselves and normal development continue.

Fig. 10 shows us very clearly what may be accomplished in widening the arch. The small model is that of a boy of twelve who had suffered from nasal obstruction during the period when active development should have taken place. The evil results are clearly shown in this narrow, constricted arch. It will be noticed that development is so retarded that there is absolutely no room for the eruption of the cuspid teeth. The larger model represents the corrected case and shows what may be accomplished by proper stimulation and careful expansion of the dental arch. Careful measurements show that at a point on the vault directly above the first bicuspid teeth and one-half inch above the gingival border, the vault of the untreated model measured exactly twenty-five hundredths of an inch, whereas the measurement taken from the same locality upon the completed model shows a development of seventy hundredths of an inch. These measurements are important, in that they show that the apices of the teeth have been moved very extensively and widening of the entire arch has occurred. In this particular case there seems little doubt but that the floor of the nose has been considerably widened. My belief is based upon the fact that the patient has experienced a wonderful improvement in his ability to breathe correctly. This improvement has been gradual, and I believe will continue until the bony development which shall follow the widening of the arch has become complete. Dr. Pullen, of Buffalo, and Dr. Reoch of Boston, have noted similar improvement in nasal respiration following the excessive widening of the upper arch.

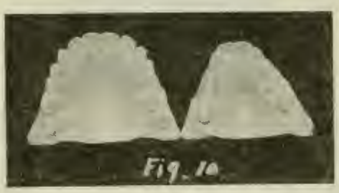
Fig. 10

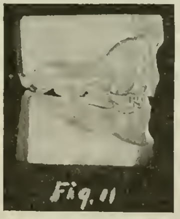
Fig. 11

Fig. 11 illustrates a developing case of the second division of class two in the temporary denture. There is present a lack of anterior development (or interstitial growth). There is also present a distal position of the lower arch. The upper first permanent molars have just erupted. The lowers are about to erupt. With the arches in this condition, we will have adverse action of the inclined planes of these molars when they come in contact, thus further retarding the growth of the mandible. Development of the anterior segments and a slight mesial movement of the mandible to allow the proper occlusion of the first molars is the simple treatment required here; but if not accomplished the case will result in severe malocclusion.

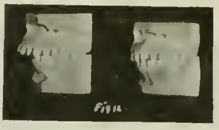

Fig. 12 shown simply to illustrate a case of the second class treated for a young woman of nineteen years. The changes here noticed were accomplished in four months without pain or special inconvenience and with very pleasing facial results.

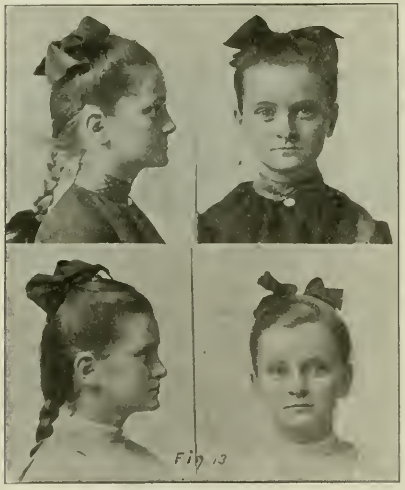

Fig. 13 is shown to illustrate what very satisfactory facial improvment may be accomplished. This is not an unusual result following the correction of malocclusion and the stimulation of the contiguous bony structure.

A CASE OF SUPRAPUBIC CYSTOSTOMY ON A PROSTATIC; WITH REMARKS ON THE TECHNIC AND INDICATIONS OF THIS OPERATION.

BY CHARLES GREENE CUMSTON, M.D., BOSTON.

Prostatic hypertrophy is an affection of slow evolution and of unlimited duration, which, in its multiple stages, requires a treatment suitable to each one, and, although I am far from being a partisan of palliative operations in this particular class of cases, yet at the same time I feel that the operation of suprapubic cystotomy, which has been much abused, as well as neglected, has its field in certain instances. Dr. Gouley, in his recent and excellent book, entitled "Surgery of the Genito-Urinary Organs," expresses himself as follows: "Suprapubic drainage is necessary when catheterism becomes difficult or impossible. This drainage has been accomplished by simply puncturing the bladder and establishing a fistula, or by a systematic epi-cystotomy, as the late Hunter McGuire has done so successfully in many cases. Men in feeble health, who at no time were in condition for a radical operation, have survived these processes for years, with but little inconvenience." This sizes up the question.

In November, 1905, I was asked to see a man, sixty-nine years of age, on account of chronic urinary retention. The history of the case is briefly as follows: the patient had always been a thin although wiry man, but has never enjoyed robust health. The disturbances of micturition dated back some eighteen years, at which time he commenced to urinate more frequently than usual and the quantity voided at each micturition was rather small in amount. For the first three or four years he apparently did not suffer from nocturnal micturition, but little by little this developed, so that the patient was obliged to arise two or three times in a night. About three years before seeing this patient he had consulted an excellent physician, who had diagnosed prostatic hypertrophy with residual urine and had instructed the patient in the use of the catheter. He followed his physician's directions for a certain time, and having been considerably alleviated from his symptoms after a number of months, he neglected the use of his instrument.

When I saw the patient the first time, he was urinating six or seven times during the day, and three or four times during the night, the act being accompanied with considerable straining. In the intervals, the patient said that he passed urine involuntarily, and, as will be shown, this was merely due to overflow of a distended bladder from chronic retention. Occasionally, in the evening, the patient experienced slight chills, he complained of ardent thirst, tongue was dry and digestive disturbances were evident.

Upon rectal examination the prostate was found enormously developed, at least the size of an apple, but its surface was smooth and in consistency it was everywhere equal; in other words, the hypertrophy was regular.

Exploration of the urethra with a bulbous bougie, No. 22 French, showed that the instrument passed the entire length of the canal up to the prostate without any evidence of stricture, but when an endeavor was made to enter the bladder, it was practically impossible without the use of undue force to make any instrument enter.

The patient complained of much hypogastric pain, which had been present for five days previously and was increasing, while by percussion, the bladder was found distended to within two fingers' breadth of the umbilicus.

The patient both from the temperature and pulse, as well as the general symptoms present, including his age, was looked upon as a very poor surgical risk, but, to save life, it appeared evident that some interference must be undertaken, in order to relieve the sepsis, which was undermining the patient's strength. After deliberation, I decided to perform suprapubic cystostomy, which was done the following morning, Nov. 17, 1905.

The patient having been fully prepared the afternoon before, ethyl-chloride-ether narcosis was administered; the bladder was rapidly opened and stitched to the skin, the entire interference lasting seven minutes. As the subject was thin, the operation was exceedingly easy.

On the next day the temperature had fallen to normal, while the pulse, which had been about 100 and very wiry in character, had become fuller and beat 72. The expression of the patient was also much better. Irrigation of the bladder, with a 1-3000 solution of silver nitrate.

The sutures were removed on the sixth day, when perfect union of the artificial meatus was found to have taken place.

The patient lived eighteen months after the operation in a very comfortable condition, having had a suitable apparatus made for the hypogastric meatus. He died from cerebral hemorrhage. No autopsy could be obtained.

One word now as to the technic which I deem should be employed in these cases. First of all, given the age of these subjects and their very low vitality, operative rapidity is of paramount importance and, therefore, the procedure should be as simple as possible.

Like any operation the patient should, if possible, be properly prepared. The large intestine should be emptied by a copious enema and the field of operation thoroughly shaven and treated as for any ordinary laparotomy. After narcosis is obtained, the patient is placed in Trendelenburg position and, if the bladder is not distended with urine, it should be filled with a solution of boracic acid. Of course, when the organ is distended, this is not needed. I have always considered that the use of Peterson's bag was both useless and dangerous.

The incision should be made in the linea alba, measuring from 6 to 8 cm. in length and carried down to the pubic bone. The linea alba is then incised to almost the extent of the cutaneous incision, but in order to avoid involving the peritoneal cul-de-sac, it is more prudent to stop the incision a few millimeters below the skin incision. When the linea alba and transverse fascia have been incised, the left index should be introduced into the prevesical cellular tissue behind the posterior aspect of the pubic bone, down to the neck of the bladder. Occasionally, on account of the tension of the abdominal muscles, or when the bladder is deeply seated, a certain amount of dissection with the finger may be necessary. A bladder distended by retention is easy to recognize on account of its reddish muscular fibers. The peritoneal cul-de-sac is pushed upwards and retained in this position by the left index finger.

The question now comes up as to whether the bladder should be first opened or a cystopexy done, in order to prevent the urine from escaping into prevesical cellular tissue, and to settle this I would say that all depends upon the condition of the bladder. A bladder which is not too distended will have thick walls, and in this case it is better to do cystopexy first, while in cases of complete retention the bladder, being greatly distended, possesses thin walls and one would, from this fact, be liable to penetrate directly into the bladder cavity with the needles, thus giving exit to the urine. Consequently, in these cases, it is preferable to incise the bladder first and afterwards to suture it. A point which should not be neglected, is to make the incision into the bladder in the neighborhood of the neck, as McGuire recommended. After the bladder is opened the finger is introduced in order to explore the cavity and ascertain the condition of the prostate. When the bladder is emptied it should be thoroughly irrigated. Six sutures are sufficient to hitch the borders of the organ to the skin, and these should include the aponeurosis, the internal border of each rectus, the subcutaneous fat and the skin. When the opening in the bladder is made near the neck and when the cellular tissue is thick, it is perhaps better to merely include the skin in the sutures. The sutures should not be too tight and the coaptation should be made with as much care as possible.

The after-treatment should consist in irrigations of the bladder, and a proper apparatus for drainage established, so that no urine will soil the wound. There are plenty of excellent contrivances which constantly aspirate the urine from the bladder and thus keep the wound perfectly clean, and when attention is paid to this detail, the result in these cases will be most satisfactory.

To sum up, it may be said that suprapubic cystostomy should be resorted to in those cases where the patient is too feeble to undergo a radical cure of his prostatic hypertrophy and where the accidents of prostatism are serious. The operation is indicated when it is impossible to pass a catheter where there is acute retention in a mechanical prostatic, but this condition of affairs is rarely met with in practice. Usually, after suprapubic aspiration of the bladder, catheterism becomes possible and the permanent catheter will be sufficient. Pain, difficulty in catheterism, or the impossibility of the patient's tolerating the permanent catheter might also be indications for this operation. In acute and superacute infections, when the permanent catheter does not do away with the phenomena of infection, cystostomy should be undertaken in order to save the patient's life.

In the chronic form it occasionally is indicated when the permanent catheter does not influence the infection, or improve the general condition of the patient, or when accidents of sepsis reappear each time the catheter is removed. In old prostatics, the cystitides, rebellious to every treatment, require cystostomy, because the bladder pains cease as soon as the organ is opened. Abundant or repeated vesical hematuria places elderly patients' lives in danger and suprapubic cystostomy may frequently be of great service. In cases where calculi are present, especially when the bladder is infected, suprapubic cystostomy becomes both a curative and palliative operation.

Temporary cystostomy should usually be the end to be obtained and one should endeavor to re-establish the functions of the urethra as soon as the serious accidents have disappeared in cases of complete retention, hemorrhage and acute infection. The bladder pain, incomplete chronic retention, the permanent catheter which does not empty the fundus of the bladder, are all conditions which may be benefited by this operation.

Clinical Department.

CANCER OF THE MALE URETHRA. A REPORT OF TWO CASES.

BY J. DELLINGER BARNEY, M.D., BOSTON,
Assistant in Anatomy in the Harvard Medical School; Assistant Genito-Urinary Surgeon to the Boston Dispensary.

Attention has again been called to that rare lesion, cancer of the male urethra, by an admirable article by Preiswerk.[1] In this article the disease is thoroughly exploited in every detail, and an exhaustive bibliography of the subject is added. Preiswerk gives a list of 39 cases, with a more or less complete history of each, which he considers to be undoubted examples of the disease To this he adds three more cases, discovered too late to be tabulated, making his total 42.

In spite of his apparently complete bibliography, Preiswerk evidently failed to see an article on the subject by J. Basil Hall, of Bradford, England.[2] In this, Hall gives a list of 21 cases confirmed by microscopic examination, and 5 others which he classifies as doubtful because not so confirmed, making a total of 26. Of these, all but 6 are included in Preiswerk's list, so that the latter, with these 6 cases, makes, up to date, 48 reported cases of the disease.

Preiswerk's paper is exhaustive, and I shall not attempt to throw any further light on the subject. I do, however, wish to emphasize the fact that the disease is more often than not incorrectly diagnosed before operation, involving operative as well as prognostic blunders, while in many cases the real state of affairs has been discovered only after several operations have been performed. Of the 39 cases tabulated by Preiswerk, 21, or 54%, were regarded as cases of ordinary urethral stricture, either uncomplicated or, according to circumstances, attended with urinary extravasation, peri-urethral abscess, or urinary fistula. Among other diagnoses were syphilis of the urethra, and vesical or prostatic calculus. In 11 cases, however, a diagnosis of cancer of the urethra was made before operation. It is thus seen that the great majority of the cases, hardly any two of them seen by the same man, were not regarded so seriously as they should have been.

Preiswerk's cases also show that the symptoms are by no means uniform, or characteristic of a cancerous process. The fact that these symptoms and signs are such as might fit almost any case of stricture or calculus makes it all the easier to commit an error, especially in the prognosis, which may influence not only the future of the patient, but that of the surgeon himself. It is also a fact that cancer of the male urethra may appear in what we may term virgin soil, and for once the patient who denies venereal disease must be believed.

The two cases which I report are quite typical, in that the disease was primary in the deep urethra, and that, on microscopic examination, each proved to be a squamous cell carcinoma. Both cases occurred in the Massachusetts General Hospital, in the services of Dr. J. Collins Warren and of Dr. Arthur T. Cabot. I wish here to express my sincere thanks to these gentlemen for permission to report them.

Case I. Service of Dr. J. Collins Warren. Age sixty-two, married. Occupation, farmer and artist. Birthplace, Germany. The patient first came to the hospital on Aug. 1, 1904, with the following history:

F. H. Unimportant.

P. H. Two years ago had sudden attack of retention of urine, lasting about five hours. No trouble after this for about a year. Since then has had several brief attacks of difficulty of micturition with dribbling, and was able to pass but a drop at a time. About seven months ago had chills every few weeks for about three months.

P. I. Five days ago had another attack of acute retention, lasting for about two days, when he again began to pass a little urine. Patient has been constipated for a long time, and feels much run down physically and mentally, he thinks from "overwork."

Patient denies venereal disease. Tobacco about ten cents a week. No liquor.

P. E. Well developed and fairly nourished. Reflexes normal. Nose clear, teeth poor. Nothing abnormal found in heart or lungs. Abdomen not remarkable, save for an enormously distended and tender bladder, which reaches almost to the umbilicus.

Marked edema of prepuce, with multiple strictures of urethra (size not stated).

At junction of scrotum with perineum is a marked wall of induration, extending to the posterior limits of the perineum, and apparently surrounding the urethra. *Rectal examination negative.*

Perineal section was performed on Aug. 2, and the entire urethra made to take a No. 40 French sound. Convalescence was not remarkable, except that it was somewhat slow, and on Aug. 29, the patient was discharged to the Convalescent Home at Waverley, Mass.

At the end of about three weeks, the patient again came to the hospital for dilatation of the urethra. He still passed most of his urine through the perineal wound. General condition excellent. Sounds were passed under ether, and two weeks later the patient again went to the Convalescent Home, the wound being still open.

On Oct. 21, 1904, the patient was again sent to the hospital for further treatment. The urethra had again closed, and the perineal wound still remained open.

An operation was performed by Dr. Warren on Oct. 26. The perineal wound was enlarged by an incision three quarters of an inch long at each end in the median line, opening a cavity which was lined with indurated, grayish granulation tissue, looking suspiciously cancerous. Up to this time there was nothing in the appearance of the parts to suggest anything but an ordinary stricture of the urethra. The cavity was then thoroughly curetted, and a large sound was passed through the urethra into the bladder. A hasty examination of the curettings showed cancer, and no further operation was deemed advisable. The patient was put to bed, and put on constant drainage.

The subsequent history is as follows:

Oct. 30. Patient fairly comfortable, except for occasional pain in perineal wound, which was exquisitely tender. Granulations bright and clean. Urine clear and of good quantity. Catheter removed to-day. Bladder washed out with a solution of boric acid three times daily. Slight edema of scrotum. Micturition entirely by perineal wound.

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[1] Ueber das primäre Karzinom der männlichen Urethra. Zeitschr für Urologie, 1907, Bd. I, Viertes Heft.

[2] Ann. Surg., Phila., 1904, vol. xxxix, pp. 375, 384.

Nov. 3. Wound shows little tendency to heal, but looks bright and clean. Attempt to wash bladder via penis or perineal wound very painful. Micturition free through perineum.

Nov. 6. Complains of "stitch" in left side on deep inspiration. Examination shows only slight friction rub in left base in axillary line (cancerous pleurisy?). Pain entirely relieved by tight swathe.

Nov. 8. Pain in chest has disappeared. General condition about the same. Locally no induration about wound but finger introduced into it comes in contact posteriorly with a rough, indurated mass. Urination entirely by perineal route, and under perfect control. Sounds up to No. 24 French passed easily and without pain or bleeding through entire course of urethra to bladder. Bladder washed as before. Slight cystitis.

Nov. 12. Patient was discharged relieved.

Pathological report by Dr. William F. Whitney: "Fragments curetted from the urethra showing, on microscopic examination, solid masses of large, flat, epithelial cells, with occasional whorls infiltrating the deeper tissues.

"Epithelioma."

A letter from the town clerk of Marshfield, Mass., where the patient lived, states that he died on March 30, 1905 (eight months from time of entrance), of cancer.[3]

Case II. Entered July 26, 1889, in the service of Dr. Arthur T. Cabot. Age fifty-eight years, single. Occupation, farmer; born in England; family history not recorded.

P. H. Gonorrhea fifteen years previously. Acute retention seven years later, relieved by catheterization by his physician. Since then has had more or less difficulty of micturition, with dribbling.

P. I. About one week before entrance noticed a tender bunch in the perineum.

Physical examination. Enters with an abscess in the perineum, size of a hen's egg, tender, red and painful. Patient thinks the abscess ruptured while on his way to the hospital. Pus and urine escape from the opening. No record of any rectal examination.

July 27. Operation by Dr. Cabot. Olive-tipped bougie shows tight stricture four inches from the meatus, just in front of the abscess. An incision through the abscess opens several pockets containing pus and cheesy material. A long urethral stricture was laid open, but the bladder could not be entered, owing to swelling of the tissues from edema and urinary extravasation.

Aug. 1. Good convalescence. Passing water freely through wound.

Aug. 6. Operation by Dr. Cabot. Director passed easily into bladder through wound, of which the swelling had now subsided. Some indurated, grayish granulations growing along urethra, and in perineal wound removed with scissors. Perineal stricture cut, and catheter tied in bladder.

Aug. 10. Bladder washed with boracic acid solution. Considerable urine still comes through perineal opening:

Aug. 14. Very little leakage.

Aug. 27. Catheter removed. Urine still comes freely through perineum, but also to some extent through the penis.

Aug. 28. Patient discharged against advice.

Pathological report by Dr. William F. Whitney, on specimen removed at operation:

"Mass which had grown from the urethra into a wound made for perineal section.

"Composed of masses of epithelial cells, many imbricated, and some showing fatty degeneration, separated by firm bands of connective tissue.

"Epithelioma."

Diligent search of state and town records and correspondence with local authorities, has failed to elicit any further information about this man. I have learned only that he is dead, but the time and cause of death are not known.

If these two somewhat incomplete cases, and the foregoing remarks serve in any way to put the general surgeon on his guard, this paper will have served its end.

A CASE OF ACQUIRED DEXTROCARDIA ASSOCIATED WITH ADVANCED PHTHISIS.

BY J. HERBERT YOUNG, M.D., BOSTON.

Case 412. M. C., female. Age, nine years. Admitted to the House of the Good Samaritan Dec. 4, 1906.

Mother stated that the patient had coughed practically since birth, with expectoration for the past two years. There had never been any hemoptysis. Patient's father died of pulmonary tuberculosis, Dec. 28, 1906, after an illness of two years.

Physical examination of the chest was as follows:

Heart. — The greatest cardiac impulse was felt in the fifth space in the left mammary line 7 cm. to the left of the median line, and by percussion the left border corresponded. The right border could not be determined. No visible pulsation was noted. Heart sounds regular, of good quality, no murmurs.

Lungs. — The right side moved less. There was dullness throughout the right front, and behind from the apex to mid-scapula, and at the extreme base. Bronchial breathing at the right apex behind and in the second space right to the anterior axillary line, broncho-vesicular breathing elsewhere throughout the right lung. Scattered dry râles were heard throughout the right front and fine moist râles throughout the right back. There was no dulness on the left, but a few medium moist râles were heard at the apex behind.

Tubercle bacilli were present in the sputum.

Feb. 25, 1907. Heart. — Visible pulsation in the second, third and fourth spaces at the right border of the sternum. The greatest cardiac impulse was felt in the fourth space, 2.5 cm. within the left mammary line, 4.5 cm. to the left of the median line, where the left border was found by percussion. The right border was 5.5 cm. to the right of the median and 1.5 cm. within the right mammary line. The upper border was at the third rib. The sounds were regular and there were no murmurs.

Lungs. — The examination of the lungs was the same, except there was bronchial breathing over the upper half of the right lung in front.

April 22, 1907. Heart. — Pulsation was seen in the first, second and third spaces in the right parasternal line. The cardiac impulse was best felt and the sounds heard loudest in the third space right, 1 cm. inside the mammary line, 6 cm. to the right of the median line. The borders could not be determined by percussion. There was pulmonary resonance over the normal area of cardiac dullness. The sounds were regular and there were no murmurs.

Lungs. — There was dulness throughout the right front and back with amphoric breathing and voice sounds above the right clavicle and in the outer half of the first, second and third spaces right; bronchial to amphoric breathing at the right apex behind to the lower angle of the scapula, with increased voice sounds. A few dry râles were heard at the right base. Dulness at the left apex behind, with a few dry râles.

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[3] I was fortunate enough to have charge of this case as a house officer. After it was found that cancer was present, I made a thorough physical examination, with metastases in view, but none were to be found.

June 7, 1907. Heart. — Visible and palpable pulsation in the second and third spaces between the sternum and the right mammary line. The cardiac impulse was best felt in the third space in the right mammary line, 7 cm. to the right of the median line. The left border was beneath the sternum and could not be accurately determined. The upper border was at the second rib and the right border in the right mammary line. The sounds were regular and there were no murmurs.

Lungs. — Dulness throughout the right front, except slight resonance, not tympanitic, from the apex to the third rib external to the right mammary line, over which area there was amphoric breathing, voice sounds, and cracked pot percussion note. In the back there was dulness below the lower angle of the right scapula, fair resonance above, with bronchial to amphoric breathing. Fine moist râles were heard throughout the lower half of the right lung. There was no further involvement of the left lung.

This case is unique in that during the transposition of the heart from left to right it was continually under observation. The displacement was gradual and, as it became more marked, signs of cavity were elicited at the right apex. There were no subjective symptoms referable to the heart, and, except for rare intervals when the patient was confined to her bed for a day or two, with slight gastric disturbance, she was dressed and about the ward all the time without any discomfort. Nor was there any clinical evidence that the heart was not performing its function perfectly in its abnormal position. X-ray examinations were made, but owing to the involvement of the right lung, the right border could not be accurately determined, although the absence of the normal cardiac shadow to the left of the sternum is clearly shown in the accompanying print.

About twenty-five cases of acquired dextrocardia associated with chronic pulmonary tuberculosis, without the presence of fluid or air in the pleural cavities, have been reported, but in all the cases, with the exception of four, the displacement was complete when the case first came under observation. A. K. Stone [1] mentions two cases from the literature which were seen before and after the displacement, in one of them there was a cavity in the right lung. Dunham [2] reported two cases which were also seen both before and after the displacement, and in which the diagnosis was verified by x-ray. One of these cases later showed signs of cavity at the apex of the right lung. In all the cases the right lung was the site of chronic phthisis, with the left but little if any involved.

In the article already referred to, Stone mentions the presence of cavities as a cause of cardiac displacement, and cites cases, while in the other cases reported the displacement has been ascribed to the sclerosis of the right lung, together with conpensatory emphysema of the left, that is, the heart is pushed as well as pulled over, and although in some of these cases cavities were described, their importance as an etiological factor was not considered. In the present case the cavity in the right lung, the loss of substance thereby producing a void into which the heart was aspirated, was considered the cause of the displacement. The rôle played by cavities was further emphasized by cardiac displacements of a less degree in three other cases. In two cases with a cavity at the left apex, the heart was pulled upward and outward. The third case showed, for over a period of many months, involvement of the entire left lung, but without signs of cavity, with the heart in normal position. In making a routine examination pulsation was felt in the fifth space 6 cm. outside the mammary line, 14 cm. to the left of the median line, where also the left border was found by percussion. From previous experience a cavity was suspected and was found just within the lower angle of the left scapula.

Stone's article has an extensive bibliography on the subject of cardiac displacements. Since its publication, a few single cases have been reported, but with the exception of Dunham's two cases, and one case reported by Lowenburg,[3] they have not been reported in sufficient detail to be of any value.

I am indebted to the visiting physicians of the House of the Good Samaritan for permission to report this case, and to Dr. A. W. George, the Röntgenologist, for x-ray examinations.

Reports of Societies.

NEW ENGLAND OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

Meeting Held at the Massachusetts General Hospital, March 15, 1907.

The President, Dr. A. Coolidge, Jr., in the chair.

Dr. A. P. Rogers read a paper on

THE CORRECTION OF MALOCCLUSION AND ITS RELATION TO RHINOLOGY.[1]

DISCUSSION.

Dr. Thomas Fillebrown: I am happy to have the privilege of opening the discussion upon so interesting a paper, and I shall be glad to say a word to emphasize its good points if I can. What the essayist has said about the widening of the floor of the nasal cavity, I think to be true. One point I think needs a little more emphasizing.

The common idea in regard to regulating the teeth is that the crowns are simply turned outward, but that the ends of the roots are not moved. I think you will find that stated in a great deal of the dental literature as well as in the general medical literature. I think this is not true. The leverage as it is applied will not confine itself simply to the turning out of the teeth, but it will and it does, as has been proved by these cases that the essayist showed this evening, and by a great many others, actually widen the arch. The bones move apart and new bone is formed, not only in this one case that he mentioned, but in every case, so that there is a benefit rendered to the breathing power by enlargement of the nasal passages.

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[1] Boston Med. and Surg. Jour., vol. cl, no. 2, pp. 29-37, Jan. 14, 1904.

[2] *Ibid.:* Vol. cliv, p. 155, Feb. 8, 1906.

[3] Am. Med., 1904, vol. viii, p. 403.

[1] See page 781.

There is one point not mentioned in connection with the regulation of the teeth, — the influence of these irregularities upon the voice and articulation, as well as upon the looks of the patient. No person with upper front teeth that stand far out beyond the under, or with an under jaw so short that the under teeth are far back of the upper teeth, can ever speak perfectly.

I think that for a full understanding of the subject in relation to the enlargement of the cavities and the relation of the teeth to abnormal conditions, it may be well to recall the circumstances of the development and eruption of the teeth. We know that in the uterine stage the dental follicle is formed at a very early period, and then it is simply a pulpy mass. Yet before birth that pulpy mass has resolved itself into a well-formed sac, and in the lower part of it is a little bony substance, which proves, when it is erupted, to be the crown of the tooth. All above that crown of the tooth is in a pulpy mass. The crown is floating, in a sense; it has no power of resistance whatever. When it is erupted it is impelled forward by the nervous power of the system and not by any mechanical force. The root is formed as the crown moves forward; the distal end of this sac is all open, soft, pulpy, until the root is completed and has no power to resist anything.

At one stage of the progress a little follicle is given off from the sac, and becomes the germ of a permanent tooth and rests there under the same conditions as the germs of the temporary teeth. Then at from six to eight years old the temporary teeth are shed; how is that done? Not by any mechanical force; Nature has got ready for it to take place, and Nature is prepared to do the operation. She does it by being stimulated by the presence of the permanent tooth. What we call a carneous body, a fleshy body, is formed right on the spot where the absorption is to begin. Giant cells are very plenty there, and they go on and dissolve away that root as fast as the crown of the permanent tooth advances. Pretty soon it is all gone, and the temporary crown falls off for lack of support. But now supposing the crown of the permanent tooth does impinge directly on the end of the root of the temporary tooth, but on its side. In such cases we find the absorption takes place on the side, and may go on down to the crown, and the other portion of the root will remain. In such a case the eruption of the permanent tooth may take place and the temporary tooth still remain. Neither the temporary nor permanent set offers any mechanical resistance, and extracting only occasionally affords any relief. Another circumstance should be remembered: that as the permanent teeth are erupted, the alveolar wall is built up around the roots to hold them. The roots are not erupted through the bone, but the bone is formed after the teeth are erupted. When that temporary tooth is shed, the temporary alveolus is all absorbed and carried away and the permanent tooth comes out on a larger arch into new position, new bone is formed around it making a new alveolus to sustain it.

The question arises in the case of the deformities we have seen here, Are the teeth deformed because of the deformity, or is the deformity the cause of the non-eruption of the teeth? A case shown here to-night, where the third molar was impeded in its eruption by its impinging against the second molar, shows very plainly that in that case it was the malposition of the germ of that tooth, and its inability to move on as Nature intended, that made the trouble. So with another one, I think Dr. Mosher showed it, where the cuspid tooth was deformed and non-erupted. Now that tooth, when it made this trouble, was not exerting any pressure whatever, but its very presence by being mal-posed produced the irritation.

In these deformities the type is imperfect, it is not all acquired. These jumbles which were shown to-night were not acquired by mechanical pressure but by a variation of a type. You have too small a jaw for too many teeth and they cannot all get out and are held back. It is a question in my mind whether these deformities are caused by the teeth or the deformities cause the non-eruption of the teeth. As I remarked a little while ago, it is the tooth first and the alveolar walls afterwards.

I believe that the development of any tissue out of place, out of its proper relations, is almost sure to produce finally an irritation; this is true of the teeth.

Dr. H. P. Mosher: In six weeks I was able to find practically fifty cases of delayed eruption of the incisor teeth. In all of them, not only were there anterior ridges and spurs but also an anterior deviation of the septum. I feel, therefore, that delayed eruption of the incisor teeth must be considered as having a permanent place as one of the causes for deviations of the septum. The reason for this is as follows: the incisor teeth are imbedded in the premaxillary bones, two for each premaxilla. From the upper face of each premaxilla spring two small vertical processes which together make a V and hold between them the tip of the vomer. The vomer at birth consists of two leaves. The premaxillary wings act as cleats to control the position of the vomer. If these cleats are disturbed, the tip of the vomer is thrown out of line, and one or both of the leaves of the vomer are broken, and the cartilage which they hold is dislocated. Directly underneath the premaxillary wings and separated from them by very thin bone, are the central incisor teeth. It is found in the clinic that when there is marked delay in the eruption of one second central incisor, on the side of the delayed tooth the premaxillary wing is enlarged. Owing to this, the groove made by the premaxillary wings is distorted and the hypertrophied premaxillary wing pushes the tip of the vomer out of its true line. This results in a spur along the upper border of the vomer as well as in a deviation of the septum.

As the central incisors play such a prominent part in connection with deviations of the septum, I was extremely interested in what Dr. Rogers had to say about his ability to regulate the central incisors and to get them into place at the proper time.

The point which he brought out, that it is easy by changing the angle of the teeth to widen the nasal fossa, is very important. I should like to have this definitely proven. In order to do this the dentists and the rhinologists, as Dr. Rogers said, should work together. You can change the form of the alveolus by changing the angle of the teeth. Is there an equal change in the nose? Dr. Fillebrown says that there is. As yet I have not seen it.

Dr. Bogue, of New York, recently has been working with one of the rhinologists there on a case of this kind. Unfortunately, his case is as yet incomplete. Cases of this kind are of the greatest interest. We need accurate knowledge from accurate measurements, measurements of the nose as well as measurements of the jaw, not the vague statements which we have had in the past. It seems that we are on the point of getting this knowledge.

Dr. E. E. Foster: Many of the persons we see with a deformed superior maxilla are mouth breathers. The question of the relation between the two is as yet unsettled.

Some are of the opinion that mouth-breathing causes the palatal deformity, while others, especially Siebenmann and his scholars, contend that the deformed arch is only a part of a congenital narrow skull which caused the mouth-breathing.

From the literature and clinical evidence it seems reasonable to conclude that mouth-breathing produces the greatest number of deformed superior maxilla; a congenital or "inherited" narrow skull causes a lesser number, and rickets and allied processes produce the least number.

If it be true that mouth-breathing does cause deformities of the superior maxilla, then it is necessary first to establish good nasal respiration before the orthodontist begins his work.

On the other hand, the cases with a congenital narrow nasal cavity cannot be made good nasal breathers, without a sacrifice of normal tissues, until the orthodontist has widened the arch, which procedure widens the nasal cavity. This is a clinical fact observed for about twenty years.

Schroeder was the first to call attention to it.

It therefore appears that the orthodontists and rhinologists should work more or less together in these cases.

Intranasal measurements, referred to by Dr. Mosher, have not, so far as I can find, been made in connection with the widening of the hard palate.

From a suggestion made by Dr. Potter, of Boston, I have recently been able to prove in one case by intranasal measurements that a widening of the nasal cavity does occur after widening of the palate.

The second bicuspids were separated 7 mm. and the difference in distance between the inner surfaces of the inferior turbinates was 3 mm.

My method is to shrink the mucous membrane over the inferior turbinates with cocaine and adrenalin, then, with an instrument after the plan of an inside caliper, to measure the distances between the inner surfaces of the inferior turbinates at their middle third. This place can be selected with accuracy for future measurements by means of a bar at right angle to one of the caliper arms, which comes in contact with the upper lip at its junction with the nose. This bar indicates the distance the arms are in the nose.

Dr. Algernon Coolidge showed a case of

GUNSHOT WOUND OF THE ANTRUM.

A small boy in taking part in an amateur performance had a gun loaded with wads accidentally discharged a short distance from his face. When first seen a few weeks later there was an extensive wound of the cheek, which had contracted leaving a fistula discharging pus, which was also escaping from the nares. Under ether it was found that the anterior wall of the antrum had been destroyed, also the wall between the antrum and the nasal cavity, most of the nasal septum and the neighboring ethmoid cells, leaving a large cavity representing both nasal cavities and the left antrum and ethmoid region. From this cavity eighteen gun wads were removed. That neither the orbital nor cranial cavity had been opened seemed almost miraculous. The detritus from the wound had been forced backwards, filling the posterior nares and naso-pharynx. This was cleaned away and nasal breathing re-established. No plastic operation to close the hole in the cheek was attempted, nevertheless this has closed of itself and leaves but a comparatively slight scar.

Dr. J. P. Clark showed

A CASE OF FRONTAL SINUSITIS OPERATED ON BY THE LUC METHOD.

For frontal sinus disease the Killian operation is the one now usually chosen because the ethmoid cells are affected, and in the majority of cases it is difficult to destroy them in any other way, but in a certain class of cases which are indicated by the x-ray plates, one can operate by the Luc method and destroy the ethmoid cells sufficiently to cure the cases. This can be done when the x-ray shows that a large opening can be established between the sinus and the nasal cavity.

The patient was a man twenty-seven years old, who was referred to me by Dr. Getchell, of Worcester, who had operated on him through the nose, and cleaned out the ethmoid cells as well as could be done through the nose; but the discharge still persisted and the frontal pain. He had been troubled with discharge from the nose and pain for rather an indefinite time, a number of years.

He was brought into the hospital and I operated on him on Feb. 14. Of course it is too early to see what the ultimate result will be; he has been very comfortable since the operation, the discharge has very much diminished, and the pain has ceased. An interesting feature of the case which was shown by the x-ray was that the sinus was divided by an almost complete bony septum. This was removed at the operation.

Dr. Mosher showed specimens in connection with the following cases:

EMPYEMA OF THE ANTRUM.

Some years ago the fact was demonstrated by Dr. F. C. Cobb and Dr. Thomas Fillebrown, both of Boston, that the antrum often acted as a reservoir for the frontal sinus. Since then we have gotten into the habit of considering many infections of the antrum as reservoir infections from the ethmoidal cells and the frontal sinus, occasionally forgetting the teeth as a common cause.

A recent case of mine illustrates this: The patient was a woman of fifty-six years, with a toothless upper jaw. Examination showed a foul discharge of pus from the right nostril and a large opening into the antrum underneath the inferior turbinate. About this opening there were many granulations. I operated without first taking an x-ray plate, the case was so clearly one of empyema of the antrum.

I operated feeling that I might run into malignant disease. Instead, in this toothless jaw, I found an unerupted canine tooth which was ulcerating forward through the canine fossa. This finding made what seemed likely to be a serious case a simple case. The root of the tooth acted as if it had more intelligence than the crown, because it had attempted to turn around and to go the right way, and to take the crown with it.

CARCINOMA OF THE LARYNX.

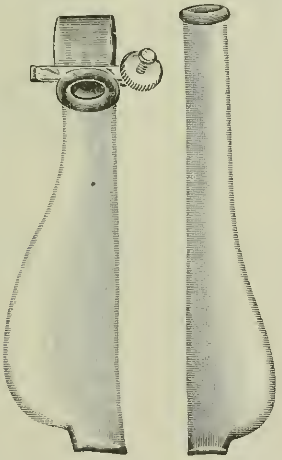
The specimen which is being passed round is the larynx as it was removed at the operation. The patient came into the accident room fighting for his breath, cyanotic and semi-conscious. It was possible to get a view of the vocal cords, and it was seen that they did not open. Dr. F. C. Cobb did a tracheotomy and relieved the case of its urgency. While the patient was under observation in the ward he got into trouble with the tracheotomy tube so that it had to be readjusted. After a short stay in the ward the patient was sent to the Throat Department. Here he was watched for a time by Dr. Cobb.

I operated about six weeks ago and found a very extensive case of malignant disease. In order to get beyond the growth it was necessary to take out the whole larynx and with it the trachea almost down to the sternal notch. The front wall of the esophagus was removed to the same point. At first the patient was fed by rectum, and then after a few days through the tube which he wore in the esophagus. He did nicely.

The question now comes up as to the proper time for closing the wound in the floor of the mouth so that the patient may take his food in the natural way. Since so much of the trachea and so much of the front wall of the esophagus were removed, there was little tissue left from which to make a bridge between the two. If I close the wound in the floor of the mouth too soon, in an attempt to remake the anterior wall of the esophagus, and the patient should swallow by mouth and burst this open, the fluid will run into the trachea and kill him. At the present time the patient feeds himself by attaching a funnel to the rubber tube which he has worn in the esophagus since the operation. He cannot talk but speaks in a very loud whisper. After one has been with him a short time it is easy to understand what he says.

A DEVICE FOR INSERTING SKIN-GRAFTS IN THE RADICAL MASTOID CAVITY.

I wish to show a device which I have tried of late at the Eye and Ear Infirmary. It is a rubber bag so shaped that when it is distended with water it takes the form of the cavity made in the temporal bone by the radical mastoid operation. It is designed to replace the gauze plug for holding a skin-graft in position. In order to use it the graft is cut in the usual way. One or two layers of gauze are put over the bag and over these the silk tissue bearing the graft. The bag is inserted in the ear, is distended with sterile water, and the end of the bag clamped. The bag is worn the usual length of time. Then the clamp is removed, the water let out, and the bag withdrawn. I have used this balloon graft-carrier with success.



In using the bag it is necessary not to distend it to such an extent as to give undue pressure on the walls of the canal. By using the bag most of the packing usually employed in the ear can be done away with. For instance, instead of filling the radical cavity with twenty or thirty small pieces of gauze, three or four pieces can be used for the Eustachian tube, and the rest of the cavity plugged with the bag. The bag can be used to hold in place the ordinary flaps made from the canal walls.

Dr. Coffin showed x-ray plates of a

CASE OF CYST,

which occupied practically the entire antral cavity. A canine tooth was removed through an incision in the canine fossa, the wall of the cyst was partly curetted away and drainage established through the nose.

* * *

INTERNATIONAL DERMATOLOGICAL CONGRESS.

Sixth International Dermatological Congress, Held at the Academy of Medicine, New York City, Sept. 9 to 14, 1907.

First Day, Monday, Sept. 9. Morning Session.

The President, Dr. James C. White, of Boston, in the Chair.

After the report of the Secretary-General, Dr. J. A. Fordyce, of New York, and the confirmation of officers, the following addresses of welcome were delivered:

FOR THE UNITED STATES GOVERNMENT.

Surgeon-Gen. P. M. Rixey, United States Navy, representing President Roosevelt, extended a most cordial welcome to the Congress, especially to the delegates from foreign countries, and he expressed the hope that the occasion would be the means of forming many ties that might be mutually beneficial. The coming together of such a body of men, experts in learning and specialists in the great field of dermatology, could not but be productive of much good to suffering humanity, not only of this but of every country here represented. The speaker said that in his naval medical work he had found, upon investigation, that the proportion of dermatological diseases to all others was about 13%. This showed clearly how important the subject was, and in the post-graduate medical school of the United States Navy at Washington more and more attention was being given to skin troubles, both in their didactic teaching and in the laboratory, and many of their most interesting reports were on that subject, especially in connection with tropical medicine.

FOR AMERICAN UNIVERSITIES.

President Ira Remsen, of Johns Hopkins University, said he esteemed it a great honor to be permitted to appear before this Congress and express a welcome on behalf of the universities of this country, and he sincerely hoped that the work of the Congress might in every respect prove profitable and pleasant. The universities were the training-schools of research. This fact had come to be recognized in medical circles in this country, and there was at present a well-defined university movement among the medical schools. The universities were taking possession of the medical schools and the latter were trying to get under cover of the universities, although the speaker said he was afraid that there would not be enough universities to go around.

FOR THE MEDICAL PROFESSION OF THE UNITED STATES.

Dr. Joseph D. Bryant, of New York, president of the American Medical Association, said the members of the American Medical Association were always glad to extend a cordial fraternal welcome to all those who labored in the advancement of medical attainment and for the relief of human affliction.

ADDRESS BY THE PRESIDENT OF THE CONGRESS.

Dr. James C. White, of Boston.[1]

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[1] See Journal, Oct. 17, 1907, p. 513.

AFTERNOON SESSION.

Dr. Edward L. Keyes, of New York, vice-president, in the chair.

LEPROSY: PROPOSALS FOR DIMINISHING THE DIFFUSION OF THE DISEASE.

Prof. R. Campana, of Rome, Italy, in this paper, said that local treatment was necessary in leprosy in the initial stages of macular and tubercular symptoms. These could be arrested by radical surgical treatment, followed by cauterization. Tubercular leprosy was a purely local disease of much gravity, and its contagiousness, which had been proved experimentally, was in direct proportion to the shortness of the time that the malady had lasted. Hence the radical treatment of the disease was to destroy its manifestations as soon as they appeared. Hence the treatment of patients in whom these lesions had occurred ought to be directed towards diminishing the injurious effects of these trophic changes, more particularly those of the joints, to prevent breaches of surface, and to arrest the continuance of sources of sepsis in the individual patients and in their houses and in leper asylums.

Dr. Douglass W. Montgomery, of San Francisco, said he did not understand Professor Campana's point of view that a patient, when once discovered to have leprosy, was no longer a menace to society. As a matter of fact, it was frequently difficult to establish the source of infection, and personally he could recall but a single instance where he was able to do it. So far as the first evidences of leprosy were concerned, the physician rarely saw them. The early symptoms were such that the patient himself did not usually attach much importance to them, and it was only later, when the disease was well established, that medical advice was sought. A long period frequently elapsed between the initial symptoms of leprosy and a well-marked case of lepra.

Dr. H. E. Menage, of New Orleans, said that in the majority of cases of leprosy the micro-organism was either not demonstrable or had lost its virulence in the trophic lesions. He recalled cases, however, that had apparently originated from late lesions of tubercular leprosy.

Dr. Walter Remsen Brinckerhoff, United States Laboratory, Honolulu, said that in Hawaii leprosy had been kept under control for over forty years by means of segregation, and he had been struck by the extreme difficulty that had been encountered in persuading lepers to go into segregation. The popular conception was that when a patient once entered a leprosarium, it was to die, and this prejudice against these institutions should be overcome. People should be informed that proper treatment would render them more comfortable, even if it would not cure them. In this way only would it be possible to get hold of the cases early.

Dr. Isadore Dyer, of New Orleans, said that the trophic lesions of leprosy were evidence of the fact that the disease was more or less effete. An observation of a number of cases in the lazaretto in Havana seemed to show that. They pointed with a large degree of suggestive argument to the fact that although that institution had existed for many years, there was not a single instance of infection occurring in the hospital itself. In Louisiana they had had since 1891 something like 240 cases under observation at various times, and the method of isolation practiced there had apparently not only reduced the number from year to year, but had reduced it to nearly one quarter what it was when isolation was commenced.

Dr. Prince A. Morrow, of New York, said it would be a practical impossibility to isolate cases of leprosy only during the early stages of the disease, simply because in a large proportion of cases the disease remained undetected in those stages. Even in cases of tubercular leprosy there were certain prodromata or initial symptoms which might entirely escape observation, and the nature of which could not be determined with absolute certainty without a microscopic examination.

Dr. H. Radcliffe-Crocker, of London, England, said there were mild cases of leprosy in which the symptoms might continue for an interminable number of years, and some of these patients got quite well. Leprosy was by no means a hopeless disease, and in the mild nerve forms the prognosis was fairly good. At all events, the duration of the disease was so long and the symptoms so trifling that they scarcely incommoded the patient.

Dr. Burnside Foster, of St. Paul, said that his experience with leprosy among the Scandinavians, mostly Norwegians, had led him to recognize the communicability of the disease, but he believed that it was communicated with great difficulty, that it could only be engrafted upon a peculiar soil, and that there were many who could not be inoculated with it.

Professor Campana, in closing, said he did not wish to have it understood that he was opposed to isolating cases of leprosy, because it was very difficult to state the exact time when the infective period of the disease disappeared. He simply wished to insist on the scientific accuracy of the observation that the infectious character of the disease disappeared with its full development, and that in order to prevent it from spreading, it was necessary to destroy the sources of infection in the patient.

TREATMENT OF LUPUS VULGARIS WITH BERANECK'S TUBERCULIN.

Dr. A. Lassueur, of Lausanne, Switzerland, said the favorable results obtained by radiotherapy and phototherapy in the treatment of lupus vulgaris had obscured the successful experiments with the various tuberculins. The author stated that the favorable results obtained with Béraneck's tuberculin in the treatment of surgical tuberculosis had encouraged him to employ it in the treatment of lupus. Béraneck's tuberculin, which differed essentially from Koch's, was a mixture of extracellular toxins prepared in a culture medium (bouillon) of a special composition, and of extracellular toxins extracted from the bacillary bodies by the action of ortho-phosphoric acid (1%). This tuberculin not only possessed immunizing properties, but it likewise exerted upon the Koch bacillus either a bactericidal action, when employed in concentrated solution, or a simple attenuating action when employed in dilute solution.

CONTRIBUTION ON THE NATURE AND TREATMENT OF LUPUS ERYTHEMATOSUS.

Professor Campana and Dr. G. Lanzi, of Rome, Italy, presented a paper on this subject, in which they made the following statements: (1) That lupus erythematosus often became an incurable disease under the treatment at present generally used. (2) That there were cases of lupus erythematosus upon which tuberculin acted in the same way as it acted on true lupus. (3) That there were some cases not cured under the most active surgical treatment, but which were afterwards cured with surprising ease by the use of mercury ointment, which had been recommended by Hebra as most efficacious, although not proving so in practice in many instances. One must be guided by an analysis of the conditions, in order to distinguish the special peculiarities forming the basis of the disease in each case. To begin with an injection of tuberculin and get no local or general reaction would certainly assign the case to a basis quite other than the tuberculoid predisposition accepted by many, but not admitted by all in lupus erythematosus. To begin with local and general treatment with mercury and obtain no apparent improvement therefrom would not predispose one to continue that method of treatment. In cases where the mercury had failed, and the tuberculin had given a positive reaction, local surgical treatment was possible; where the contrary happened, and the physician in charge had not attempted precautionary tests, local treatment was injurious and even disastrous.

Dr. M. B. Hartzell, of Philadelphia, said there was a certain number of cases of lupus erythematosus in which it was difficult to make the differential diagnosis between that affection and lupus vulgaris, and it was quite possible that a large proportion of the cases in which the tuberculin reaction was obtained were in fact lupus vulgaris rather than lupus erythematosus.

Dr. Stafford Taylor, of Liverpool, England, said the remedy in the treatment of lupus erythematosus that had proven most successful in his hands was pyrogallic acid. In the common or stationary types of the disease he used a 10% ointment of pyrogallic acid in the same way as he used it in lupus vulgaris.

Dr. Samuel Sherwell, of Brooklyn, N. Y., said that in cases of lupus erythematosus where the mucous membranes were not involved he had almost invariably obtained excellent results by the use of the curette, followed by the application of the acid nitrate of mercury.

Dr. Herman Lawrence, of Melbourne, Australia, referred to a method which he had found very successful and effective in the treatment of chronic lupus erythematosus. It consisted of scarification, followed by rubbing in iodoform, and then the application of a waxed India-rubber pad at moderate pressure, which was kept up for twenty-four to forty-eight hours.

ON THE VALUE OF AN ABSOLUTELY VEGETARIAN DIET IN PSORIASIS.

Dr. L. Duncan Bulkley, of New York, read a paper on this subject, in which he offered the following conclusions:

(1) The cause of psoriasis was as yet unknown. Many facts pointed to its not being a purely local disease of the skin, although the character of the individual lesions strongly suggested a parasitic element in their production; possibly one of the ordinary micro-organisms, universally present, took on a pathogenic action when the soil was suitable. (2) Psoriatic patients often appeared to be in perfect health, but metabolic disturbances could generally be discovered by complete quantitative urinalysis. (3) The error was generally along the line of faulty nitrogenous metabolism and diminished excretion of the purin products. (4) Long observation of cases showed a decided increase of eruption with excessive meat eating. (5) Marked improvement in the eruption occurred under the same treatment when a strictly vegetarian diet was faithfully carried out. (6) Continued strict vegetarian diet was often attended with freedom from eruption, and relapses were often directly traceable to dietary errors in this direction. (7) This was the experience of the writer with this plan of treatment in private practice for twenty years.

Dr. H. Radcliffe-Crocker, of London, said he had seen psoriasis in vegetarians and in butchers, and he had arrived at the conclusion that diet had very little influence upon the course of the disease. His conclusions in regard to the influence of diet upon psoriasis were totally unlike those of Dr. Bulkley. Of course, in cases occurring after middle life, in patients with an undoubted gouty tendency, the proper restriction of the nitrogenous food was certainly indicated, but a study of the age at which psoriasis frequently made its appearance showed that fully two thirds of the cases had their onset before the age of thirty; that is, during a stage of life when errors in metabolism were comparatively few.

(To be continued.)

Book Reviews.

Surgery: its Principles and Practice. By various authors. Edited by William Williams Keen, M.D., LL.D. Vol. II. Ilustrated. Philadelphia and London: W. B. Saunders Company. 1907.

It is a pleasure to be able to continue our very favorable criticism of Keen's surgery. Volume II presents the same virtues of the art of bookmaking which characterized Volume I. It is, moreover, a slightly smaller book, for which the editor is to be congratulated. The pictures are uniformly extremely good, appropriately chosen, and in many instances deserve unstinted admiration; to an unusual degree they literally illuminate the text.

Certain chapters demand particular praise. Diseases of bones, by Dr. Nichols, seems to us the most complete, concise and convincing treatment of the subject that has appeared in America. The same is true of his pathology of the joints; indeed, the latter may in the opinion of many excel even the former chapter; the pictures are superb. The clinical part of joint surgery is acceptably written by Dr. Lovett; it is certainly a very difficult task to gather into 70 pages the essentials of such a subject, even though an additional chapter, one third longer, is devoted to orthopedic surgery exclusive of joints. This latter chapter, also by Dr. Lovett, seems to us extremely good; it has also been condensed, but a proper proportion of its various divisions has been maintained; the style is lucid, the illustrations plentiful and well adapted to the text.

The long chapter (210 pages) on fractures, and one on dislocations (60 pages) are of somewhat uneven character. In certain instances the treatment indicated does not seem to us ideal (*e. g.*, open treatment of fracture of the patella). Too little space is devoted to certain important general conditions. Fat embolism is given but 13 lines, and delirium tremens 20 lines in 210 pages, while a consideration of the fractures of carpal bones covers more than three pages, exclusive of pictures. Allis's method of reduction of hip-joint dislocations deserves more detailed consideration than is accorded to it. Nevertheless, these chapters are perhaps as good a presentation of the subject as we may expect under existing circumstances. Dr. Binnie's chapter on muscles, tendons and bursæ is particularly satisfactory, and is written in a most attractive style. Its 34 pages contain all that is essential without evidences of crowding. The lymphatic system, by Dr. Gerrish, is interesting and sufficient, the pictures supplementing the text unusually well. In the otherwise excellent chapter on the surgery of the skin, treatment is frequently meager and unsatisfactory; many methods are mentioned without comment, and others, equally well known, are entirely omitted. Wright's vaccine for furunculosis receives one and one-half lines; no reference is made to Pfaff's fundamental researches on dermatitis venenata; none to the use of picric acid in burns; from a practical standpoint, a considerable elaboration of treatment would be desirable in this chapter.

The pathology of the nervous system, by Dr. Spiller, is an admirable section, embodying much of his own original work; it is beautifully illustrated, and unquestionably is one of the best chapters in the book.

Surgery of the nerves, and of the spine, two chapters by Dr. Woolsey, are completely satisfactory, among other things, his description of laminectomy, its indications and prognosis, is the best we have seen.

The Traumatic Neuroses, by Dr. Dercum, certainly gives us all that can be condensed into 30 pages, upon this most perplexing subject. It is to be commended for the fairness and common sense which are evident throughout its paragraphs. Dr. Da Costa adds a brief article on Surgery among the Insane; it is of undoubted value, and has been previously too much overlooked in textbooks: it is presented in an attractive and vigorous style.

An extensive and exhaustive index finishes this admirable volume.

Diseases of the Genito-Urinary Organs and the Kidney. By Robert Holmes Greene, A.M., M.D., Professor of Genito-Urinary Surgery, Medical Department of Fordham University; Genito-Urinary Surgeon to the City and to the French Hospitals, New York City; and Harlow Brooks, M.D., Assistant Professor of Pathologic Anatomy, University and Bellevue Hospital Medical School; Visiting Surgeon to the City Hospital, New York City. With 292 illustrations. Philadelphia and London: W. B. Saunders Company. 1907.

In their preface, the authors disclaim the intention of writing an exhaustive and complete treatise upon the subject with which their work is concerned, and thus disarm criticism with regard to this aspect of it, and leave the reviewer merely with the regret that they should not have made more complete a work which is in so many other respects admirable. As it is, it does not reach the general plane of excellence of some of the best publications which are devoted to this field, such as those of Frisch and Zuckerkand, in Germany, or of Keyes or White and Martin in this country.

The intention of the writers is stated to have been to devote equal attention to the medical and surgical maladies of the region with which the work is concerned. We do not think that they have thereby added to its value, although it cannot be denied that some of the parts devoted to the medical side of the subject are excellent.

As a bit of book making, the volume is somewhat disappointing, more especially in view of the high standard of excellence which its publishers have already attained in some of their other productions of medical literature. In this work there are a good many inferior, and but few really good, illustrations. This fact causes the book to lack the finished appearance which is rapidly becoming a *sine qua non* of surgical publications. It must be added, however, that up to the present time, no really well and handsomely illustrated work on this field of surgery, has been issued and the volume which we are discussing does not fall below the previously attained standards in this respect.

Other than this, the most conspicuous defect of the work before us is the entirely inadequate and scant manner in which many of the subjects are treated, thus, the entire subject of Renal Injuries is given less than three pages. Six pages include all that the authors have to say upon the subject of tumors of the kidney and their treatment, while the whole surgery of the kidney is compressed into about sixteen pages of print. The pathology of tumors of the bladder is discussed in two short paragraphs, while the treatment of this condition is dismissed in a couple more paragraphs, and three lines only are devoted to the question of the surgical treatment other than that of the removal of such growths by the but little approved method of Nitze's cystoscope.

This characteristic of too curt a consideration of some of the more important divisions of the work deprive it of a great part of its value in many of the sections which demand a full discussion, if they are to contribute anything of importance to the subjects.

Per contra the treatment accorded to certain other parts of the work is most satisfactory. Among them may be noted the sections on "Compensation in Renal Disease," "Uremia," "The Blood Pressure in Renal Disease," etc.

The Principles and Practice of Modern Surgery. By Roswell Park, A.M., M.D., LL.D. (Yale), Professor of the Principles and Practice of Surgery and of Clinical Surgery in the University of Buffalo; Ex-President of the American Surgical Association; Surgeon to the Buffalo General Hospital, etc. With 722 engravings and 60 full-page plates in colors and monochrome. Philadelphia and New York: Lea Brothers & Co. 1907.

Roswell Park cannot fail to interest us whenever he writes for our instruction, and his present volume deserves special notice as the mature work of one of our most eminent American surgeons. It aims at being a complete treatise, in one volume, on the principles as well as on the practice of modern surgery. In his preface the author points out that a new work in surgery enters a field of literature already rich in excellent books differing widely in plan and view point, and he remarks truly that when surgery can be represented by a conventional and well-settled type of book it will have ceased to advance. Accordingly, he sets out for us in a great volume of more than a thousand pages his matured views upon the whole subject of surgery.

The captious critic might assert that expert opinions on all the details of so extensive a science as surgery, as it exists to-day, cannot be held by a single human intelligence, and doubtless Park himself would admit the truth of this view. In spite of its sundry shortcomings, however, we cannot but regard this great work as an extremely important contribution to surgical literature, especially to the medical student's library.

The special trend of a writer's interest must develop itself in the construction of so extensive a work as the one we are considering. While Roswell Park is known to American surgeons as a sound practitioner and an able operator in many fields, he has become conspicuous especially for his interest in certain branches, and as a cultivated student of general surgical history and literature. Accordingly we find that he devotes 543 of his 1,048 closely printed pages to pathology, surgical diseases, surgical principles, the processes of repair and the affections of tissues, leaving 503 pages only for the consideration of special or regional surgery. The reviewer may therefore conveniently divide this book into two nearly equal portions, — that dealing with the theory and development of surgical affections, and that dealing with practical, clinical surgery. Probably such a division is fair and accurate, yet one cannot but feel at times that the second half of the book especially might have been elaborated into a subsequent and independent work. The interests of surgery have become so far-reaching in recent years, as Park himself points out, and the endeavors of surgeons are now so concerned with nearly every branch of medicine that one feels it to be almost impossible adequately to confine within two covers a treatise on so vast a subject. One discovers, therefore, on reading the present volume, that the first half is the more elaborate and satisfactory, while the second half, though interesting, is little more than an epitome.

This reviewer may not attempt to discuss in detail the immense wealth of material with which the author presents us, though it is proper to name two or three chapters of special interest. Chapter VI, on auto-infections in surgical patients, is peculiarly well worth reading, and the opening paragraph serves as its text: " One of the greatest advances made in pathology has been the establishment of the fact that a great many of the morbid conditions from which the human race suffers are those due to causes arising entirely from within its own system. . . . That these general facts have been recognized for centuries is perhaps a credit to the powers of observation of practitioners of past generations. Exact knowledge, however, has come only with exact methods of laboratory research. . . . The subject of *Auto-intoxication* has been too commonly relegated to the domain of internal medicine." The subject, " The Status Lymphaticus," engages our author's attention and he devotes his luminous Chapter XIV to that interesting and little understood topic. He gives us in Chapter XXII an extremely readable, unhackneyed essay on gunshot wounds, drawing largely upon American, English and Japanese experiences in recent wars, and illustrating his text with many new and striking pictures.

"*A tumor is a new formation, not of inflammatory origin, characterized by more or less histological conformity to the tissue in which it has originated, and having no physiological function.*" With that definition, Park enters upon his brilliant Chapter XXVI, into which he succeeds in condensing an astonishing amount and variety of valuable information. It is probably the most useful chapter in the book, and incidentally the author makes a plea for his own convictions regarding the *parasitic theory of tumor formation.*

The last half of the volume, though full of valuable and original suggestions and advice, is too crowded to admit of such interesting writing as emphasizes many of the previous chapters. Moreover, it must be that the author now finds himself dealing occasionally with topics which have failed to arouse his own enthusiasm. The chapter on the head, for example, though sound and conventional, by no means emphasizes the great part which experts now assign to cerebral surgery. That topic is dismissed with 47 pages. The breast, too, is somewhat slighted with a brief 12 pages, and the whole of the great and complex subject of " Abdominal Surgery " is summed up in 188 of the thousand pages which make up the book. But this is cavil, perhaps. Grievous are the limitations of space. One admits more fairly, and with generous appreciation, that the author's exposition and teaching, in this Part VI, show his wide experience, his extensive reading, his sound and judicious mind and practice. It is a pleasure to read and to review so admirable and useful a work.

* * *

Cure of Tetanus. — Within the past two months two cases of tetanus have been reported as cured at St. Michael's Hospital by means of hypodermatic injections of tetanus antitoxin.

Bequest to Peekskill Hospital. — Among other charitable bequests in the will of the late Mrs. Mary A. Frost, of New York, is the sum of $5,000 to the Peekskill Hospital, to endow a bed in memory of her mother, Mary A. Hart.

Retirement of Prof. C. A. Ewald from Editorship of the Berliner Medizinische Wochenschrift. — It is announced that Prof. C. A. Ewald, who has been one of the editors of the *Berliner Medizinische Wochenschrift* for upwards of twenty years, has retired, in order to devote more time to teaching and investigation.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 12, 1907

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WALKING AND HEALTH.

In 1867 a young man of twenty-seven years, Edward Payson Weston by name, walked from Portland in Maine to Chicago in twenty-four days and nineteen hours. This was then considered a remarkable feat. Yet, a few days ago (to be precise, on Nov. 27), this same young man — for he seems to have lost none of the vigor and freshness of youth — repeated his performance of forty years ago, gaining on it in point of time by twenty-nine hours. Some features of this amazing walk should particularly interest the medical man.

Weston did not reach Chicago a pathetic figure, doddering, footsore, gaunt and with sunken eyes, as has often been the case at the end of long-distance matches, a condition which might be expected in a man of seventy after so prodigious a task. On the contrary his step was sprightly as at the beginning; he finished lithe and sturdy; his wind was so good that while jogging on he laughed and chatted with his escorts, as he had done throughout all his journey, when he had oftentimes chaffed those who found it difficult to keep up with him beyond a short distance. Within a few days of the end he reeled off ninety-six miles in the twenty-four hours; and at the completion of the trip, in order to manifest his prime condition, he covered, without stopping to rest at all, forty-five consecutive miles.

Mentally his condition was throughout excellent, as was evidenced by the daily reports he found time to supply the *New York Times;* he sent excellent "copy," crisp, bright and interesting, in the best reportorial style. For Weston is not only a "walker"; he is a man quite sanely active in many things beside. He is of that ideal type, the man with an active brain in a sound body. It will interest our orthopedic colleagues that, as he states, he, early in the trip, sprained his ankle; he "walked this off," and soon all pain and discomfiture ceased from it. He ate frequently, as often as he was hungry; and let us assume that he was thoroughly Fletcherian in his mastication. An egg beaten in a cup of hot coffee was a favorite refreshment. When he felt drowsy he ate, and this, he declares, restored him. Frequent meals were essential; for such walking disposed rapidly of tissue elements, which had as rapidly to be renewed. Withal he lost from beginning to end but eighteen pounds.

Truly, this man has demonstrated the superlative excellence of walking as an exercise, especially when associated with good habits and temperate living. It is of all the cheapest, for little paraphernalia is required. It would rejoice us to return in this respect at least to the days of Blaikie, Hazlitt and wise old Samuel Johnson. It would undoubtedly require some little courage to re-establish this beneficent custom; to be seen upon the highways with a haversack upon one's back, comfortably adjusted with straps, and with it insulated bottles and compartments containing compressed food-stuffs. One must also risk a limb or perhaps one's life by collision with "devil-wagons." But for such trials one may find compensation. It is the simplest of all exercises, this old-fashioned brisk striding, head up, the arms swinging, the organs functioning normally, the whole muscular system being in play, while the mind is diverted by glorious and ever-changing scenery during the progress along winding roads. "Give me," wrote Hazlitt, "the clear blue sky over my head, and the green turf beneath my feet, a winding road before me, and a three hours' march; and then to thinking." Whereat Stevenson, "And he must have a winding road, the epicure."

Walking is also perhaps the wisest exercise to recommend to one's patients. In others, — boxing, tennis, weight throwing and the like, — what men do not become slower in their movements after thirty; who, even the most expert, would think, after fifty, of competing with young men in them? Besides, one has to train but little to get into condition for walking; five miles, not a step more, the first day, ten the next, fifteen the third, after which one is not likely to tire, no matter how long a day he puts in at it.

Finally, Weston has proved anew that man is not only the strongest animal in nature, but that he comes pretty near to being the strongest and most enduring machine. His dispatches state that during one day a team which was accompanying him gave out after it had followed him for fifty miles. The animals stumbled in the road; nor could they proceed further until they had been allowed to rest in a stable. Some men who accompanied Weston in an automobile fared as badly; they were left behind, being exhausted as the result of exposure to the cold, while the walker strode along at an easy gait and without effort. It is well observed that a good horse, a good automobile and a properly trained man might start from the East for San Francisco. The first two would, of course, disappear before the latter had reached a milepost; but most likely the man would, somewhere this side the Mississippi, come upon the horse laid up in a boarding stable and upon the car towed to the repair shop with a wrenched axle. In the race for a month or a year man need not ask for a handicap from any other member of the animal kingdom; nor has he ever devised any machine which can transport him over obstacles and through diverse and difficult conditions as satisfactorily as his own legs.

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STANDARDS OF ADMISSION TO MEDICAL SCHOOLS.

The agitation regarding the raising of the standard of admission to medical schools in this country has now been in progress for upwards of fifteen years. Beginning with the requirement of a bachelor's or equivalent degree by the Johns Hopkins school at its opening, about fifteen years ago, the university schools have followed its example, so that now a considerable number have a similar requirement for admission. The whole movement is in a measure a reaction from the deplorable condition into which medical education in the United States had fallen, regarding not only the requirement for admission, but also in relation to the amount of knowledge thought necessary for the attainment of a degree in medicine. The widespread protest against this easy road to professional recognition has resulted in a general and admirable elevation of standard in our best medical schools, together with a closer affiliation of medical school and university. The poorer schools have been forced either to close their doors or else meet in some measure the popular demand for a more adequate training of their students. The general effect upon medical education in this country has naturally been most salutary as shown by the greater productiveness of American students and investigators during the past decade than ever before.

One of the products of a clearer recognition of medicine as essentially a branch of university education has been the development of the Cornell University Medical College, one of the newest and most active schools in the country. We are interested in noting that very recently the announcement has been made that the ordinary high school education, hitherto regarded as adequate for admission, is to give place to a much more rigid requirement. On and after 1908 candidates for admission to this school must be (1) graduates of approved colleges or scientific schools; or (2) seniors in good standing in Cornell University or in any other approved college or scientific school whose faculty will permit them to substitute the first year of a professional course for the fourth year in arts and sciences, and who will confer upon them the bachelor's degree upon the satisfactory completion of the first year of the course in the Cornell University Medical College; or (3) persons who, while not possessing a bachelor's degree, give evidence by examination that they have acquired an equivalent education and a training sufficient to enable them to profit by the instruction in the medical college. In and after 1909 all candidates for admission to the medical college must have at least such knowledge of physics and inorganic chemistry as may be obtained in college by a year's course in these subjects when accompanied by laboratory work. In and after 1910 all candidates for admission must possess a similar knowledge of biology.

In these requirements, as there should be, considerable latitude is allowed, so that the medical course is not precluded for those who show themselves properly equipped, even although they may not have acquired a bachelor's degree. In the present state of academic training, as President Eliot has recently pointed out, the bachelor's degree in itself means little beyond four years spent in study of the liberal arts. It does not imply a training standing in definite relation to later work in medicine. It therefore becomes highly desirable that candidates for medical schools should have not merely a bachelor's degree, but a preliminary training of a sort which has a more definite relation to medicine than an ordinary college course implies. The University of Pennsylvania has been wise in increasing its requirements for admission to its medical school gradually, rather than in the more radical way which certain other universities have adopted. Cornell's plan is similar, aiming as it does toward a preliminary course of study which lays stress upon quality rather than quantity.

In general, there is considerable evidence that the pendulum has swung back somewhat, and that educators are recognizing that graduation from a medical school at an average age of twenty-six, exclusive of hospital training, is too late. The problem therefore presents itself of making earlier graduation possible without detracting from the real equipment of the student. The experiment is now being tried in the West of prescribing a two-year preliminary course in biology, chemistry and allied subjects for those proposing later to study medicine, thereby making possible the attainment of a medical degree at twenty-four. It is becoming increasingly evident that whatever value an unsystematized college course may have as a general means of culture, it is not essential to medicine and may be positively detrimental in that it not only does not concentrate attention upon important preliminary branches, but delays entrance upon active and independent professional work. A modification of the loose requirement of a bachelor's or equivalent degree will no doubt come to be desirable in the near future. Our eagerness to raise the standard of medical education may be found to have over-reached itself.

MEDICAL NOTES.

Death of Prof. Moritz Schmidt. — The death of Prof. Moritz Schmidt, at Frankfort-on-the-Main, a laryngologist of some prominence, is announced.

Award of the Nobel Prize in Medicine. — The Nobel prize this year goes to France, the recipient being Laveran, whose name is familiar in connection with pioneer work on the subject of malaria.

American Dental Degrees in Germany. — After many years' litigation, the German Courts have finally ruled that an American degree of dental surgery may hereafter be used in Germany when issued by a reputable American college of dentistry. Up to this time the American degree has not been recognized.

Increased Endowment of the Carnegie Institution. — At a meeting of the board of trustees of the Carnegie Institution held at Washington, Tuesday, Dec. 10, a letter from Andrew Carnegie was read in which he said he had decided to add $2,000,000 to the endowment of the institution.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 11, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 59, scarlatina 35, typhoid fever 6, measles 20, tuberculosis 71, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 11, 1907, was 23.10.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 7, 1907, was 216, against 254 the corresponding week of last year, showing a decrease of 38 deaths and making the death-rate for the week 18.48. Of this number 103 were males and 113 were females; 210 were white and 6 colored; 119 were born in the United States, 92 in foreign countries and 5 unknown; 39 were of American parentage, 153 of foreign parentage and 24 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 57 cases and 2 deaths; scarlatina, 49 cases and 0 deaths; typhoid fever, 10 cases and 1 death; measles, 23 cases and 0 deaths; tuberculosis, 45 cases and 16 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 44, whooping cough 0, heart disease 29, bronchitis 11 and marasmus 2. There were 16 deaths from violent causes. The number of children who died under one year was 24; the number under five years, 40. The number of persons who died over sixty years of age was 66. The deaths in public institutions were 68.

There were 2 cases and 2 deaths reported from cerebrospinal meningitis during the week.

A Centenarian. — Mrs. Deborah A. Kendall has recently died in Pittsfield, Mass., at the reputed age of one hundred and one years, her death being attributed to old age.

Diphtheria at Tewksbury, Mass. — It is reported that a somewhat extensive epidemic of diphtheria has appeared among the attendants of the Tewksbury, Mass., Almshouse. Up to this time the disease has been practically confined to the nurses, and there seems no reason to anticipate that it will extend to the patients.

Examination of Massachusetts State Board of Registration in Medicine. — At a recent examination of candidates by the Massachusetts State Board of Registration in Medicine, 48 of 84 applicants received certificates. The proportion of rejected candidates was somewhat larger than usual.

NEW YORK.

Fire at the New Jersey State Hospital for the Insane. — During the night of Nov. 27, the nurses' building of the New Jersey State Hospital for the Insane, at Morris Plains, was almost completely destroyed by fire. The rapid spread of the flames cut off the escape of the nurses sleeping on the third floor, and three of them were injured (though none fatally) by jumping from the windows.

Gold Medal from the Jamestown Exposition to Mrs. Henry Parsons. — The jury of awards of the Jamestown Exposition has awarded to Mrs. Henry Parsons a gold medal for a series of photographs illustrating the work of the first children's school farm in New York City, established by her. The farm is located in De Witt Clinton Park, on the shore of the Hudson, and has proved of great interest to the children of the public schools.

The Physicians' and Pharmacists' Mutual Aid and Protective Association of New York County. — On Dec. 6, a number of east side physicians and druggists met and organized a new society to be known as The Physicians' and Pharmacists' Mutual Aid and Protective Association of New York County. Among the objects of the society are the discouragement of the practice of treating the members of lodges for a small uniform fee, of the sale of patent medicines and of the taking advantage of the free dispensaries by persons able to pay for medical treatment.

Work for the Blind. — At a meeting of the League of Political Study on Nov. 26, Miss Winifred Holt, secretary of the New York Association for the Blind, made an interesting address in which she described the efforts of the association to make blind persons self-supporting. In the course of it she related how five sightless operators had been successfully trained for telephone switchboard work. She also expressed the opinion that the field of stenography was an admirable one for the blind, and stated that on the staff of the association there was a blind stenographer who, she found, made fewer typographical errors than any of the others. Incidentally, she compared the manner in which blind children were cared for in Boston and New York, rather to the discredit of the latter city, and said that it was the duty of every citizen to demand that these unfortunates in New York should have the same advantages as those in Boston. Miss Holt is a daughter of Henry Holt, the publisher, and it is largely due to the personal efforts and generous gifts of herself and her sister that the association has been able to accomplish all the good which it has.

Mortality Reports for November and the Week. — The weekly reports of the Health Department show that during the month of November the mortality in the city represented an annual death-rate of 15.87, as against 16.20 in October and 16.61 in November, 1906. Among the diseases in which there was a diminished fatality were the following: the weekly average of deaths from typhoid fever decreased from 24.75 in October to 19 in November; the weekly average from whooping-cough, from 3.75 to 2; from epidemic cerebrospinal meningitis, from 7.5 to 6.75; from diarrheal diseases, from 114.25 to 47; from diarrheals under five years of age, from 107.5 to 40; from cancer, from 62.5 to 56.75; from apoplexy, congestion and softening of the brain, from 51.75 to 45.75; from organic heart diseases, from 145.25 to 140; and from cirrhosis of the liver, from 22 to 16.75. Among the diseases in which there was an augmented mortality were the following: the weekly average of deaths from measles increased from 4.75 to 7.5; from scarlet fever, from 8 to 13; from diphtheria and croup, from 25.5 to 29; from influenza, from 3.75 to 5.25; from pulmonary tuberculosis, from 150.5 to 154.5; from acute bronchitis, from 13.5 to 19.5; from lobar pneumonia, from 84.75 to 116.25; from bronchopneumonia, from 72 to 99; and from Bright's disease and acute nephritis, from 94.75 to 99.5. It is worth noting that during the first week in November the deaths from epidemic cerebrospinal meningitis, for the first time perhaps in two years, were only three in number. Later in the month, however, the deaths from this cause increased, and in the week ending Nov. 30, they amounted to 12. The corrected November death-rate (excluding non-residents and infants under one week old) reached the low figure of 14.85.

Mortality Report for the Quarter. — The last condensed quarterly report of the Bureau of Records of the City Health Department, for the quarter ending Sept. 30, 1907, shows that the death-rate in the quarter was 18.66 per 1,000 of the population, as against 18.51 for the corresponding quarters of the preceding five years; an increase of .15. Comparing the number of deaths from the principal causes and at certain age-groups with those of the preceding quinquennial averages of the corresponding quarters, the following decreases are found: typhoid fever, 52; malarial fever, 4; smallpox, 7; whooping-cough, 10; diphtheria and croup, 30; pulmonary tuberculosis, 149; all other forms of tuberculosis, 6; meningitis, 93; apoplexy, 86; acute bronchitis, 109; lobar pneumonia, 114; Bright's disease and acute nephritis, 175; old age, 59; sunstroke, 53; suicide, 21; between the ages of five and sixty-five years, 39. The following increases are noted: measles, 106; scarlet fever, 46; influenza, 6; cancer, 34; organic heart disease, 362; bronchopneumonia, 327; diarrheal diseases under five years of age, 468; accidents other than sunstroke, 47; homicide, 26; under five years of age, 51; sixty-five years and over, 147. The decrease in deaths from pulmonary tuberculosis, lobar pneumonia and kidney disease is encouraging, but, on the other hand, the very considerable increase in deaths from cardiac trouble is somewhat ominous. The large increase in infant mortality from diarrheal disease is somewhat difficult to understand, for the past summer was a comparatively cool one, while all the agencies which have of late years been employed for the saving of life among infants and young children were probably in more general operation than ever before. The increase in bronchopneumonia is sufficiently explained by the unusual prevalence of summer diarrhea, as the association of the two affections has long been recognized.

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Current Literature.

Medical Record.

Nov. 9, 1907.

1. Meyer, W. *Kühn's Lung Suction Mask for the Hyperemic Treatment (Bier) of Pulmonary Tuberculosis.*
2. *Morton, W. J. *Radium for the Treatment of Cancer and Lupus.*
3. Coffin, L. A. *Intracranial Complications of Diseases of the Accessory Sinuses of the Nose.*
4. Rockwell, A. D. *Phototherapy in Neuritis.*

2. Morton reports 15 cases of carcinoma, sarcoma and lupus treated by radium. All the cases did well. Most were apparently cured, some after a period of years, although a few were inoperable from the ordinary surgical point of view. The writer believes that radium possesses distinct advantages over the x-ray, viz., greater accuracy of dosage, deeper, wider and quicker action, and the ability to utilize the cathode rays. The use of pure radium is an essential As a routine he gives internally radio-active water, and also aqueous solution of fluorescin, esculin, or quinine to combine with the radium and produce fluorescence internally. [R. I. L.]

The American Journal of the Medical Sciences.

October, 1907.

1. *Ravenel, M. P. *The Etiology of Tuberculosis.*
2. *Brewer, G. E. *The Etiology of Certain Cases of Left-Sided Intra-Abdominal Suppuration — Acute Diverticulitis.*
3. *Cabot, R. C., and Bruce, R. B. *The Estimation of the Functional Power of the Cardiovascular Apparatus.*
4. *Crile, G. W., and Lenhart, C. *The Treatment of Illuminating Gas Poisoning by the Direct Transfusion of Blood.*
5. *Goodman, E. H. *The Examination of the Feces for Occult Blood, with Special Reference to the Value of the Benzidin Test.*
6. Stone, W. J. *Factors Influencing the Early Diagnosis of Gastric Carcinoma.*
7. *Lerche, W. *Diffuse Dilatation of the Œsophagus without Anatomical Stenosis, with the Report of a Case Due to Chronic Cardiospasm.*
8. Atkinson, A. D., and Hirsh, J. L. *Pancreatic Lithiasis, with Chronic Interstitial Pancreatitis, Followed by Diabetes Mellitus.*
9. *Hamilton, A. S. *Typhoid Fever in the Aged.*
10. *Thompson, R. L. *Atrophy of the Parathyroid Glandules and Other Glandular Structures in Primary Infantile Atrophy.*
11. Blumgart, L. *A Tumor of the Mitral Valve.*
12. *Calvert, W. J. *The Posterior Median Pleurol Boundary, with Reference to Grocco's Sign.*
13. Birnie, J. M., and Smith, M. T. *The Diagnosis of Cerebrospinal Meningitis by Cultures from the Blood.*

1. Ravenel has gathered a large amount of statistical and other evidence as to the various possible modes of entrance into the human body of the bacillus of tuberculosis. He first considers the alimentary tract in its different portions as a route of invasion. The tonsils are probably of importance in this connection. The frequency of infection by bacilli which enter through the intestinal mucous membrane is now believed to be great in consequence of recent work proving that the bacilli can readily gain entrance without producing lesions at the point of entrance. It is shown that the bacilli are then taken up by leukocytes and transported to mesenteric glands, or by the thoracic duct to the venous blood current. It is further shown that a considerable proportion of cases of tuberculosis in man, especially when the history points to intestinal infection, are due to bacilli of bovine type. Contact infections, by kissing, by the handling of contaminated articles, etc., and infection by droplets expelled during coughing and sneezing are also described, but greatest stress is laid upon the importance of recognizing the intestinal route of infection and the probable danger from milk of tuberculous cows.

2. Brewer reports 6 cases of abscess in the left lower quadrant of the abdomen, all of which probably, and 3 of which certainly, were due to perforation of acquired diverticula of the descending colon or of the sigmoid flexure. Minute diverticula, or herniæ of the mucous membrane through the muscular coats of the colon are recognized by pathologists as of not infrequent occurrence. It is believed that their importance as a cause of abscess formation and of peritonitis is not sufficiently well recognized.

3. Cabot and Bruce hold that it is important to supplement the current methods of heart examination by tests to determine the functional capacity of the cardiovascular apparatus, the capacity of the heart for work. For this purpose they have tested several methods and have found them to be of value, especially a modification of Gräupner's method which they perform as follows: the patient is caused to perform a certain number of foot-pounds of work in one minute, by ascending a flight of stairs, the pulse-rate and systolic blood pressure being taken every two minutes. Normally, the pulse-rate which has risen at first has fallen again within four minutes or so; the blood pressure normally rises to a maximum reached six or eight minutes after the beginning of the test. In cases of weak heart the rise of blood pressure is delayed or in severe cases it may be absent.

4. The article of Crile and Lenhart shows by a brief review how unsatisfactory has been the treatment of gas poisoning by the various methods hitherto attempted. With this in mind the authors have treated animals poisoned by gas by blood transfusion as well as by other methods. Of the 6 animals treated by other methods all died; of the 10 animals treated by transfusion 7 lived.

5. Goodman argues with Schlesinger and Holst that the benzidin test is superior to the guaiac and aloin tests for blood in stomach contents, feces or urine. It is simple,

sharper and yet not too delicate to be practical. It is well, however, to confirm positive reactions by the guaiac or the aloin test. The benzidin test is performed as follows: a small portion of the feces solution, obtained by grinding up the feces with water, is poured into a test tube and boiled. While this is cooling a concentrated solution of benzidin is made by dissolving as much benzidin (Merck, puriss.) as is contained in a very small spoon spatula, in 3 to 5 cc. of glacial acetic acid. To 1 cc. of this are added 3 to 10 drops of boiled feces solution diluted with equal parts of water. To the shaken mixture 1 to 3 cc. of 3% H_2O_2 are added. In the presence of blood a deep green or blue color appears. A negative test is certain evidence of the absence of blood. In event of a positive reaction meat in the diet, or the presence of iron, KI, Cu or animal charcoal must be excluded.

7. Lerche mentions cases of diffuse dilatation of the esophagus without organic stricture of which Neumann in Germany has collected 70, but of which very few appear in American literature. He summarizes the results of previous articles bearing upon spasmodic stricture or cardiospasm, and reports a case of ten years' duration where this was present with diffuse dilatation of the esophagus above. The cardiac was dilated by a rubber bag attached to a stomach tube and distended with water under pressure controlled by a manometer. Within two weeks after treatment the patient was well. The dangers of such dilatation, the precautions to be taken and the apparatus used in it by various authors are fully described.

9. Hamilton believes that typhoid is of more frequent occurrence in middle and later life than is generally taught. He bases this belief upon an epidemic of 188 cases of which 27 or 14% were over fifty years of age. The clinical picture in these older persons was usually atypical. The prodromal stage was generally lengthened, the diurnal variation of temperature was greater, chills and sweats, intermittent pulse, cough and digestive disturbances were more common than is usual in typhoid. Mental symptoms were not prominent. Enlargement of the spleen and rose spots were often absent. The mortality in these 27 cases was 22%.

10. Thompson finds that in infantile atrophy the parathyroid glandules as well as the thymus, thyroid and adrenals show degenerative changes out of proportion to the wasting of fat and muscle. Little evidence, however, exists of any causal relation of these degenerations to the disease.

12. Calvert shows by drawings of anatomical preparations that the right pleural cavity nearly always extends inward over the front of the vertebral bodies, often to the left of the median line.

[F. W. P.]

Surgery, Gynecology, and Obstetrics.
November, 1907.

1. Hamilton, C. S. *A New Operation for the Cure of Salivary Fistula.*
2. *Simpson, F. F. *Deferred Operation for Ruptured Ectopic Gestation.*
3. *Taussig, F. J. *Metastatic Carcinoma of the Tube and Ovary in Cancer of the Cervix.*
4. McGirk, C. E. *Enuresis in the Female Due to Phimosis.*
5. *Kanavel, A. B. *Chronic Suppurative Processes in the Hand; a Clinical, Experimental and Anatomical Study.*
6. *Halstead, A. E. *Cancer of the Thyroid Gland, with Report of Three Cases.*
7. Watkins, T. J. *Technic of Supra-Vaginal Abdominal Hysterectomy.*
8. Davis, J. S. *A Case of Cicatricial Contraction Following Burn, with Relief by Wolfe Graft.*
9. Plummer, S. C. *Technic of Removal of Tubercular Glands of the Neck.*
10. *Sinclair, W. J. *Surgical Treatment of Puerperal Fever with Special Regard to General Practice.*

2. Immediate operation has been the axiomatic treatment for ruptured extra-uterine pregnancy. Simpson, with some others, believes this is not always advisable, and his experience with a hundred cases seems partly to justify the belief. He points out that a single hemorrhage from a tube, just as from the stomach, intestines, lungs or uterus, is seldom fatal, and by treatment with morphine and absolute quiet its recurrence can often be prevented till the patient has recovered from the primary shock, under judicious stimulation. In desperate cases, he thinks the risk of such delay is less than that of immediate operation which, however, is still always indicated when the patient is not too profoundly reduced and proper facilities are at hand.

3. In cancer of the cervix, lymphatic metastasis in tube or ovary is extremely rare. Taussig reports a case where it occurred apparently through the lymph channels of adhesions connecting the adnexa with the posterior cul-de-sac. Unless such adhesions exist, he therefore still advises leaving one ovary at hysterectomy for cancer of the cervix in women under forty.

5. Kanavel presents an elaborate study of the mechanics of chronic suppuration in the hand, undertaking, thereby, to show anatomic reasons for the sequence of involvement of the several parts and tissues. By injections with plaster of Paris he demonstrates the connective tissue spaces in which deep accumulations of pus may form, and the routes along which extension of infection is liable to occur. These data he applies and illustrates clinically, describing his incisions for the most adequate drainage of variously located infections, with a view to the best possible subsequent preservation of function. His paper is a valuable contribution to the intelligent treatment of the septic hand.

6. Halstead reports 3 cases of thyroid cancer: one died of secondary hemorrhage while the inoperable tumor was sloughing under Coley treatment; one recovered from operation but her further history is not given; one was well and without recurrence over a year after complete thyroidectomy. The liability of simple goiters to malignant degeneration leads him to urge early radical operation when a previously stationary thyroid tumor begins to increase in size.

10. Sinclair sketches the history of the treatment of puerperal sepsis, commenting on inefficient or injurious measures and describing his own method, which is essentially thorough curettage and copious irrigation and swabbing with weak corrosive sublimate, followed by a light gauze pack for twenty-four hours. This procedure is usually sufficient; but he repeats it, several times if indicated. He uses antistreptococcus serum as a valuable adjunct. The distinction between sapremia and septicemia he believes clinically unnecessary, since both are treated alike and priceless time may be lost waiting for a differential diagnosis. In the event of general peritonitis he advocates laparotomy and posterior colpotomy, with profuse, through and through irrigation. The burden of his plea is for promptness of action, recognizing, nevertheless, that the best treatment of obstetric infections is their prevention by the practice of scrupulous surgical asepsis.

[R. M. G.]

The Lancet.
Nov. 16, 1907.

1. Butcher, W. D. *Inaugural Address on the Future of Electricity in Medicine.*
2. *Berry, J. *An Analysis of 274 Additional Cases of Removal of Goiter by Operation.*
3. Hald, P. T. *Comparative Researches on the Tryptic Strength of Different Trypsin Preparations and on Their Action on the Human Body.*
4. Western, G. T. *The Treatment of Bacterial Infections by Vaccines.* (Continued article.)
5. Barling, H. G. *A Second Case of Aneurysm of the Right Subclavian Artery Treated by Ligature of the Axillary and Carotid Arteries with Resulting Cure of the Aneurysm.*
6. Gibson, G. A. *The Significance of a Hitherto Undescribed Wave in the Jugular Pulse.*
7. *Hutchinson, J. *Diverticulum of the Bladder in a Femoral Hernia, without Sac; Operation.*
8. Clogg, H. S. *A Foreign Body in the Left Bronchus of a Child Expelled through a Tracheotomy Wound on the Fifteenth Day after Inhalation.*

9. Warden, A. A. *On the Occasional Necessity of Drainage of the Uterus in Puerperal Infection.*
10. Clay, J. *A Case of Cirrhosis of the Liver in which Cure of the Ascites Followed an Operation for the Relief of Strangulated Umbilical Hernia.*

2. Berry gives an analysis of 274 cases of removal of goiter by operation, which brings the total number of cases which he has done up to 400. There were 274 operations in 268 patients; 32 were males, 236 females. Of the various reasons for operation dyspnea was the chief in 177 cases, deformity in 31 cases, and discomfort or deformity in 47 cases and dysphagia in only 1 case. In 203 cases the goiter was encapsulated, in 71 cases it was not. One hundred and six of the encapsulated goiters were solid adenoma, 7 of the non-encapsulated were malignant; the cases of pure cyst were extremely rare; there were 7 non-malignant intra-thoracic goiters. As to the nature of the operation, in 209 cases he enucleated the goiter, with one death; in the remaining cases extirpation was done. Out of the 274 cases there were 6 deaths. He used a curved transverse incision in most instances, oblique incisions in a few. Neither myxedema nor tetany occurred in any case.

7. Hutchinson describes a case of diverticulum of the bladder in a femoral hernia and concludes that this condition is not at all uncommon in femoral or inguinal herniæ, especially in elderly subjects, and that in some cases it is almost impossible to avoid cutting open the bladder. In a case where the surgeon suspects that condition during operation the diagnosis may be confirmed by injecting water into the bladder through a catheter.

[J. B. H.]

British Medical Journal.

Nov. 16, 1907.

1. Moynihan, B. G. A. *An Address on the Pathology of the Living.*
2. *Murray, R. W. *The Saccular Theory of Hernia.*
3. Chiene, G. L. *Preliminary Note on a Simple Operation for Uncomplicated Oblique Inguinal Hernia in Young Adults.*
4. Russell, R. H. *The Morbid Anatomy and Pathology of Infantile and Encysted Hernia, with a Note on Accident of Taxis.*
5. *McGavin, L. *Address an the Use of Filigrees of Silver Wire in the Cure of Herniæ Usually Considered Inoperable.*
6. Hall, I. W. *The Estimation of Fat in Feces.*
7. Eve, F. C. *Some Motile Elements Seen in Certain Cerebrospinal Fluids.*
8. Bayon, P. G. E. *On Perithcliomata and Endotheliomata and Their Position in Oncology.*
9. Beattie, J. M. *A Sporozoön in Aural Polypi.*
10. Bushnell, F. G., and Williams, A. W. *Mycosis Fungoides; its Relationship to Infectian and to Malignant New Growth.*
11. Lucas, J. J. S. *Pericardial Calcification.*
12. Browning, C. H. *Experimental Chemotherapy in Trypanosome Infections.*
13. *Dean, G., Houston T., Rankin, J. C., Ritchie, L. C. P., and Buxton, B. H. *Discussion on Phagocytosis.*

2. Murray gives results of 200 consecutive post-mortem examinations where there was no history or evidence of hernia, he found a potential hernia sac in 47. In these 47 bodies, 68 diverticula were present. Of the diverticula 13 were inguinal, 52 femoral and 3 umbilical. In 16 cases more than one diverticulum was present. The article consists chiefly of an argument supporting his theory of the congenital origin of hernia. He believes that circumstantial evidence in favor of the saccular theory of inguinal, femoral and umbilical hernia is so strong, so convincing, that he has every confidence in obtaining a verdict in favor of this theory from the general body of the profession.

5. McGavin demonstrates his method of using silver wire filigrees in the cure of herniæ usually considered inoperable. Such cases include those of repeated recurrence after operations for the "radical cure" of hernia; certain very large hernia; those in which there is a chronic condition tending to constantly repeated increase of intra-abdominal tension, such as chronic bronchitis, asthma, etc.; those cases in which the hernia is the direct result of loss of some portion of the abdominal wall, in consequence of accident or the operative removal of tumors; and lastly, those in patients beyond the age at which it is reasonable to hope for a cure by the ordinary methods. He discusses the use of perforated metal plates, woven wire gridirons and their disadvantages, and describes in detail his method of making the silver filigree which he uses. Asepsis is of paramount importance. The preparation of the skin before operation must be very thorough. The filigree should be placed for five or ten minutes in sufficient ether to cover it, as only in this way can the grease conveyed to it by the workman's hands be removed. From this it should be lifted by sterilized forceps and placed in actively-boiling soda solution till required, when it is lifted straight from the sterilizer into the wound. He closes the wound by means of Michel's clips. There is no drainage used in any cases. He places the filigree between the rectus muscle and its posterior sheath. Absorption of the wire is impossible and fracture is rare. His results have been eminently satisfactory.

13. Dean and others contribute articles bearing on the general question of phagocytosis. Dean's article is a consideration of Metchnikoff's work on this subject and the investigations following this leading up to Wright's work on the opsonic index. Houston and Rankin give a paper on the opsonic and agglutinative power of blood serum in cerebrospinal fever, based on work during the epidemic which recently occurred in Belfast. Ritchie describes a method of recognizing the presence of specific substances in blood serum influencing phagocytosis, and its diagnostic applications. Buxton discusses absorption from the peritoneal cavity. These papers and the discussion which follows are of great interest, especially to those engaged in work on the opsonic index and its relation to medicine. [J. B. H.]

The Edinburgh Medical Journal.

November, 1907.

1. Berry, G. A. *Glaucoma Iridectomies.*
2. Turner, A. L. *Mucocele of the Accessory Nasal Sinuses.*
3. Chiene, J. C. B. *Looking Back.*
4. Thomson, A. *The After-History of Two Cases of Inter-Scapulo-Thoracic Amputation for Sarcoma.*

Deutsche Medizinische Wochenschrift. No. 40.

Oct. 3, 1907.

1. *Freund, H. W. *Treatment of Uncontrollable Vomiting of Pregnancy.*
2. *Bandler, V., and Kreibich, K. *Experiences with Cutaneous Inoculations with Tuberculin.*
3. *Nagelschmidt, F. *Diagnosis and Treatment of Tuberculous Skin Affections.*
4. Schellenberg, G. *The Coincidence of Gouty Attacks with Glycasuria in a Case of Pulmonary Tuberculosis.*
5. Engelen. *A Case of Erythromelalgia Combined with Exophthalmic Goiter.*
6. *Papaïoannou, T. *A Rare Case of Echinococcus of the Optic Nerve.*
7. Wederhake, K. *The Paraffin Prothesis.*
8. Wunsch, M. *Apparatus for Scoliosis.*

1. Freund believes that the pernicious vomiting of pregnancy is due to an increased excitability owing to the action of toxins, plus a predisposition. The latter results from displacements of the stomach, chlorosis or anemia, nervous or hysterical conditions, or lesions in the nasopharynx. In 100 pregnant women, he found 66% had hypertrophy and swelling of the turbinate bones; this sets up reflex nausea, which is relieved when nasal conditions are cleared up. Constipation, traction of misplaced organs, catarrhs, erosions, ulcers, over-distention of the uterus are also causes. Prophylaxis is of extreme importance. Nervous or hysterical women should be given a course of suggestion as soon as pregnant, and care exercised not to exaggerate the ordinary symptoms. Relieve all reflex causes. Psychic and dietetic measures are the most important, remembering that it is more important to convince the patient that her stomach will digest a

small amount of food than to feed her copiously. In one case the author succeeded in stopping the vomiting by simulating artificial abortion, and he cites other cases cured by psychic means.

2. Bandler and Kreibich describe observations made on adults to determine the effectiveness of Pirquet's method of cutaneous inoculation with tuberculin. Pirquet's direction for children was to use old tuberculin diluted four times, but as the authors were dealing with adults they employed the reagent in full strength. The inoculation was made by applying 2 to 3 drops of tuberculin to the skin of the arm or back, scarifying with a lancet, and then scarifying in another place without the introduction of tuberculin as a control. Out of 37 cases in which no manifestation of tuberculosis existed, 15 gave no reaction at all at the first inoculation. On repetition of the test 2 cases showed a weak reaction. Of the remaining 22 cases, 10 gave a weak or indeterminate reaction, and the other 12 gave a distinctly positive result, shown in the form of redness and swelling at the site of inoculation. Another series of patients comprised individuals suffering from local cutaneous tuberculosis: out of 26 such cases, 22 gave positive results; the other four were cases of advanced miliary tuberculosis which also did not give any reaction to the injection of tuberculin. The failure of such patients to react to tuberculin has already been pointed out by several observers. The microscopic structure of the lesions produced at the site of the inoculation is also described.

3. Nagelschmidt recommends the use of local tuberculin inoculation in the treatment of lupus where the Finsen rays are not accessible, especially for isolated foci, also as a means of differentiating the tubercular skin affections. It has the disadvantage of leaving scars from the ulceration it produces.

6. Papaïoannou says that echinococcus is not at all uncommon in Greece, owing to the fact that the peasants and shepherds live in close association with their dogs. The wells and springs are also sources of infection. According to the statistics gathered by the author, 72% of echinococcus cases in Greece affect the liver, 3.4% the spleen, 2.5% the kidney, 7.7% the peritoneum, 4.7% the lungs, 1.2% the breast, .8% the orbit, 1.2% the bones, 4.7% the muscles, .4% the thyroid, and 4% the broad ligament. He describes several cases of the disease, particularly one in which the optic nerve was the seat of the cyst formation. The patient was a boy of twelve, who six years previously had developed pain in the right eye, which for a time was the seat of inflammatory conditions. Vision failed rapidly and disappeared completely at the end of one month. On coming under the author's observation there was pronounced exophthalmos and pain had recommenced. The diagnosis of new growth was made, but while evacuating the orbital contents, the cyst burst and its true nature became apparent. [L. G. M.]

Münchener Medizinische Wochenschrift. No. 40.
Oct. 1, 1907.

1. König, B., and Grauss, C. J. *Anatomical and Physiological Observations on the First Thousand Cases of Spinal Anesthesia.* (Continued article.)
2. Hannes, W. *Discussion of Methods in the Early Termination of Pregnancy.*
3. *Schenk, F., and Scheib, A. *Bacteriological Examinations of Laparotomy Wounds, Under Extreme Asepsis.*
4. Weibienner, C. *The Suction Massage in Gynecology.*
5. Chaussy. *Skin Flaps in Treatment of Varicose Ulcers.*
6. *Hoffmann, H. *The Use of Synthetic Suprarenin in Local Anesthesia.*
7. Kasai, K. *The Formation of Fibromata Following on Previous Liver Angiomata.*
8. Toyosumi, H. *Cystic Lymphangio-endothelioma in the Abdominal Wall.*
9. Klauber, O. *Abnormal Relations of the Mesentery in Incarcerated Hernia.*
10. Carlan. *Removal of Foreign Bodies from the Left Bronchus.*
11. Grosse, O. *Asepsis of Spinal Anesthesia.*
12. Lengfellner, K. *The Technic for Making Plaster of Paris Impressions in Flat Foot.*

3. Schenk and Scheib have examined a large number of laparotomy wounds, to find out in what per cent of the cases an absolutely bacteria-free operation is possible. Under the ordinary asepsis, as used in their wards, in 38 cases before the operation, the wound was sterile in 25 cases, in 13 bacteria were present. (Staphylococcus albus.) After the operation was completed and the fasciæ sewn up, cultures from the wound showed bacteria in all cases; once a bacillus, in 25 cases staphylococcus albus, in 4 cases a large diplococcus, and in 7 cases a mixed infection. Observation of the course in these cases showed that those cases in which bacteria were present in the wound were not always the ones which ran a post-operative temperature. A series of 45 cases was then examined, in which a much more careful aseptic technic was employed; the wound was found sterile in 23 cases before operation. After the operation the wound was sterile in 10 cases only. The post-operative course was normal in all cases in which streptococci were not found. The authors conclude that even under the most rigid asepsis, an absolutely sterile operation field is impossible.

6. Like all other substances prepared from the organs of animals, suprarenal extract is uncertain in its action, never of the same strength, and does not keep well. There are now three preparations which are chemical imitations of the suprarenal extract: (1) arterenin (dioxyphenylethanolamin, (2) homorenon (ethylamino-aceto-pyrocatechin), and (3) synthetic suprarenin (hydrochloric acid-dioxyphenylethanol-methylamin. Hoffmann has tried these preparations, especially the synthetic suprarenin, and finds that in local anesthesia in combination with novocain a perfect anesthesia is produced, with a much longer and more complete anemia of the operation field. The toxic action is no more than that of the old suprarenin, and it can be used with greater precision owing to its constancy, its chemical purity, and the fact that it can be sterilized. The author considers the use of this preparation a step in advance in local anesthesia. [R. D.]

Berliner Klinische Wochenschrift. No. 40.
Oct. 7, 1907.

1. Goldscheider. *The Percussion of the Apices of the Lungs.* (Continued article.)
2. Schmidt, H. H. *A Case of Progressive Muscular Atrophy and Rachitic Pseudoparaplegia.*
3. *Engel, C. S. *Return to the Embryonal Types in Blood Formation and the Origin of Malignant Tumors.*
4. *Manasse, P. *A Case of Infected Hydronephrosis with a Rare Anomaly in the Course of the Ureter.*
5. Virchow, H. *A Form of Kyphotic Vertebral Column.* (Concluded.)
6. Kutscher, K. *Paratyphoid and Infection through Food.*

3. Engel discusses the embryonal blood cells and their mode of formation, and points out that in certain blood diseases there is a return to the earlier type. In the cells of certain malignant tumors, lymphomata and carcinomata, the type of cell suggests the body cells as seen in the embryo. It has been found, of late, that injections of the tissues of mouse embryos retarded the formation or further growth of carcinoma in adult mice. This seems to suggest that malignant tumors are an abnormal return to the embryonic type, and opens a new path for therapeutic researches.

4. Manasse reports a case of a young man who complained of pain in the left side and much disturbance of digestion, associated with rapid loss of weight. When seen a large, smooth, somewhat fluctuant tumor in the epigastrium and left flank was found. The stomach was pushed up, the colon displaced downwards. The appearance was that of a pancreatic cyst, and no urinary symptoms were apparent. During the inflation of the stomach the patient suddenly voided a large amount of urine containing pus, with consequent diminution in the size of the tumor. The diagnosis of hydronephrosis was then made. At operation the left kidney was found to be in normal position and of normal size. The pelvis was, however, enormously distended. The ureter arose at the highest point of the pelvis and ran over the front of the kidney instead of behind it; a very rare anomaly. [R. D.]

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 30, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	5
Chicago	—	—	Waltham	7	2
Philadelphia	—	—	Pittsfield	7	2
St. Louis	—	—	Gloucester	—	—
Baltimore	—	—	Brookline	2	—
Cleveland	—	—	North Adams	5	0
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	—
Providence		—	Hyde Park	2	0
Boston	201	39	Melrose	3	1
Worcester	33	11	Newburyport	—	—
Fall River	49	15	Woburn	4	1
Cambridge	28	3	Marlboro	2	1
Lowell	33	11	Westfield	2	—
Lynn	31	8	Peabody	—	—
New Bedford	22	7	Revere	3	1
Springfield	20	4	Attleboro	4	1
Lawrence	22	6	Clinton	3	2
Somerville	17	5	Adams	—	—
Holyoke	23	6	Gardner	2	—
Brockton	10	3	Milford	2	—
Malden	10	2	Watertown	5	1
Chelsea	11	1	Plymouth	—	—
Salem	16	5	Weymouth	1	0
Newton	10	1	Framingham	3	—
Haverhill	17	5	Southbridge	5	2
Fitchburg	5	3	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	15	3			

CHANGES IN THE MEDICAL CORPS U. S. NAVY FOR THE WEEK ENDING DEC. 7, 1907.

C. F. STOKES, surgeon. Detached from command of the Naval Hospital, San Juan, P. R., and ordered to report to the surgeon-general of the Navy at the Navy Department for special temporary duty.

H. L. LANGNECKER, A. J. TOULON, D. G. SUTTON and E. W. BROWN, assistant surgeons. Appointed assistant surgeons from Nov. 29, 1907.

W. D. OWENS, passed assistant surgeon. Commissioned passed assistant surgeon from May 17, 1907.

W. A. ANGWIN, passed assistant surgeon. Commissioned passed assistant surgeon from June 2, 1907.

W. G. FARWELL, passed assistant surgeon. Commissioned passed assistant surgeon from June 28, 1907.

C. H. BARBER, surgeon. Orders of Nov. 11 modified; ordered to the Naval Hospital, Boston, Mass.

E. S. BOGERT, Jr., surgeon. Detached from the "Milwaukee" and ordered to the "Pennsylvania."

J. M. BRISTER, passed assistant surgeon. Detached from the "Pennsylvania" and ordered to the "Milwaukee."

F. M. MUNSON, passed assistant surgeon. Detached from the "Philadelphia" and ordered to the Asiatic Station, sailing from San Francisco, Cal., about Jan. 6.

J. L. BELKNAP, assistant surgeon. Ordered to the Naval Hospital, Boston, Mass., revoked; ordered to continue duty on board the "Wabash."

W. P. SCHALLER, assistant surgeon. Detached from the "Brooklyn" and ordered to the "Pennsylvania."

G. C. THOMAS, acting assistant surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

H. G. BEYER, medical inspector. Ordered to report at the Navy Department to the surgeon-general of the Navy for special temporary duty.

E. A. VICKERY, assistant surgeon. Detached from duty at the Naval Hospital, Boston, Mass., Dec. 12, and ordered to Washington, D. C., Dec. 16, for examination for promotion and thence to duty at the Naval Hospital, Annapolis, Md.

D. G. SUTTON, assistant surgeon. Ordered to duty at the Naval Hospital, Newport, R. I.

J. MCGUIGAN, pharmacist. Detached from the Naval Hospital, Port Royal, S. C., and ordered to Washington, D. C., Dec. 16, for examination for retirement and then home to wait orders.

SOCIETY NOTICES.

INDUSTRIAL EDUCATION. — The Commission on Industrial Education of the Commonwealth of Massachusetts, acting under Section 6 of Chapter 505 of the Acts of 1906, will give a public hearing in Room 240, State House, Thursday, Dec. 19, 1907, at 7.30 P.M., to all persons interested in the question of the establishment by the state of one or more technical schools or industrial colleges, providing for a three or four years' course for extended training in the working principles of the larger industries of the Commonwealth.

TREASURY DEPARTMENT, BUREAU OF PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE. — A board of commissioned medical officers will be convened to meet at the Bureau of Public Health and Marine-Hospital Service, 3 B Street, S.E., Washington, D. C., Monday, Jan. 20, 1908, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service.

Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character.

The following is the usual order of the examinations: 1, physical; 2, oral; 3, written; 4, clinical.

For further information, or for invitation to appear before the Board of Examiners, address Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

A PROPOSED NEW ENGLAND PEDIATRIC SOCIETY. — The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 P.M. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

JOHN LOVETT MORSE, *Chairman.*
WILLIAM E. FAY.
ARTHUR WILLARD FAIRBANKS.
CHARLES W. TOWNSEND.
HENRY I. BOWDITCH, *Secretary.*

RECENT DEATH.

DR. ISIDOR PIERCE OBERNDORFER, of New York, died from appendicitis, in which an operation failed to avert the fatal issue, on Dec. 1. He was graduated from the College of Physicians and Surgeons, New York, in 1874, and afterwards took a two-years post-graduate course of study in Leipzic University, Germany. At first engaging in general practice, he gradually devoted his attention more particularly to the treatment of diseases of the skin, and for many years he had been attending dermatologist to the German Dispensary.

BOOKS AND PAMPHLETS RECEIVED.

Studies from The Rockefeller Institute for Medical Research. Reprints. Vol. VII. 1907.

The Conquest of Cancer. A Plan of Campaign, Being an Account of the Principles and Practice Hitherto of the Treatment of Malignant Growths by Specific or Cantrotoxic Ferments. By C. W. Saleeby, M.D., F.R.S. (Edin.). New York: Frederick A. Stokes Co. 1907.

Publications of Cornell University Medical College. Studies from the Department of Neurology. Vol. II. New York City. 1907.

Zur Frage der künstlichen Unterbrechung der Schwangerschaft wegen Lungentuberculose. Von Dr. C. Pradella. Reprint.

The Operations of Surgery. Intended Especially for the Use of Those Recently Appointed on a Hospital Staff and for Those Preparing for the Higher Examinations. By W. H. A. Jacobson, M.Ch. Oxon., F.R.C.S., and R. P. Rowlands, M.S. London, F.R.C.S. Fifth edition. Illustrated. Vols. I and II. Philadelphia: P. Blakiston's Son & Co. 1908.

Abdominal Hernia. Its Diagnosis and Treatment. By W. B. De Garmo, M.D. Illustrated. Philadelphia and London: J. B. Lippincott Co. 1907.

A Reference Hand-Book of Obstetric Nursing. By W. Reynolds Wilson, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

A Mistaken Diagnosis of Dementia Senilis. By C. H. Hughes, M.D. Reprint.

Diseases of Children for Nurses, Including Infant Feeding, Therapeutic Measures Employed in Childhood, Treatment for Emergencies, Prophylaxis, Hygiene and Nursing. By Robert S. McCombs, M.D. Illustrated. Philadelphia and London: W. B. Saunders Co. 1907.

Report of the Commissioner of Education for the Year ending June 30, 1906. Vol. I. Washington. 1907.

Original Articles.

A SERIES OF NINETY-ONE CONSECUTIVE BLOOD CULTURES.

BY LAWRENCE J. RHEA, M.D.,
First Assistant in Pathology, the Boston City Hospital,
AND
ARTHUR B. EMMONS, 2D, M.D.,
Senior Pathological Interne, the Boston City Hospital.
(From the Pathological Laboratory of the Boston City Hospital.)

The following blood cultures were taken during the last three years as a part of the routine of the Pathological Department of the Boston City Hospital. They were made for the most part at the request of the visiting staff of the various services of that hospital. Consequently, we have had to deal with a large variety of diseases, both bacterial and non-bacterial in origin.[1]

The greater number of cultures was made on cases in which the clinical diagnosis was doubtful. In some instances confusing symptoms or signs, or evidence of intercurrent infection in known diseases, were the reasons for requesting a blood culture.

The clinical importance of blood cultures as an aid to diagnosis is demonstrated in several of the cases in this series. A general septicemia may present a classical picture or may be very confusing. It is in this latter group of cases that blood cultures will be of great aid to the clinician. In some diseases, as typhoid fever, a positive diagnosis can be made in a large per cent of cases some time before the Widal reaction is present or the clinical picture justifies a positive diagnosis.

In our work the following *technic* was used:

The flexor surface of the elbow was scrubbed with soap and water, washed in 70% alcohol, and a sterile dressing applied.

In cleansing the hands of the operator, soap, water and alcohol were used. An ordinary anti-toxin syringe was found to be the most serviceable for removing the blood. Care was taken to have sharp needles which had been tested before the culture was made, to be sure they were patent. Twenty centimeters of blood were removed, generally from the median cephalic vein.

The media employed as routine have been plain and dextrose agar, plain bouillon in flasks, litmus milk in flasks and serum waters. In cases where the clinical symptoms suggested some particular infecting organism, special media were used.

We feel sure, from our experience, that more blood cultures will be positive if the media used in each case are those most suitable to the growth of the supposed infecting organism.

All the media were inoculated at the bedside. The amount of blood added to each portion of medium varied. Where the symptoms suggested infection due to the colon group, a small amount of blood was added to a large amount of medium. In all cases a small sterile test tube was filled with blood and kept on ice for agglutination tests.

Anaërobic cultures were made only in cases where the bacillus aërogenes capsulatus was found in local lesions.

As routine, but one blood culture was taken from each case, but in some instances several were made. In a certain number of cases positive findings were obtained only after two or more attempts; in other cases, organisms were repeatedly recovered from the circulating blood. In this latter group of cases each successive blood culture showed the same organism as was recovered from the first.

Repeated blood cultures are of especial importance in cases where the common skin cocci have been obtained from the blood cultures in sufficient numbers to suggest a septicemia caused by these organisms. Such a case can hardly be reported as positive, unless the same organism has been present in at least two cultures taken from the blood at different times, or post-mortem findings show lesions unmistakenly produced by these organisms.

In the identification of organisms sub-cultures were made. The growth on the media used at the time a blood culture is made may be very suggestive, but in many cases it is not sufficiently conclusive to make a positive identification of an organism.

We used the inulin test in the differentiation of the pneumococci and streptococci. Those cocci in pairs or chains with cultural characteristics resembling streptococci, which showed no capsule and did not split inulin bouillon we called streptococci. If such an organism showed a capsule or split inulin bouillon, we called it pneumococcus. The staining of capsules of pneumococci grown on artificial media was not very satisfactory.

Cocci which grew in groups were planted on various media and their cultural characteristics studied. In all of these cases the cultures were grown in the thermostat, usually over night, and later at room temperature, in order to increase any pigment formation. Welch [2] has emphasized the importance of this point.

It is the custom of the Pathological Laboratory of the Boston City Hospital to report a culture negative only when the inoculated medium shows no growth after at least seventy-two hours incubation in the thermostat at 37° C. This prevents overlooking organisms which grow slowly. Even a longer time is necessary for some organisms, such as the tubercle bacilli.

After twelve hours all the inoculated media are examined. Those which show growth are studied. All colonies that have developed on the plates are surrounded by a pencil mark made upon the bottom of the plate. At the end of another twelve hours in the thermostat all new colonies are enclosed within a square made in like manner upon the bottom of the plate. This enables one to keep separate, colonies which have developed early from those which have developed late. Such a procedure is especially useful in cases where two or more organisms are present in the circulating blood.

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[1] For literature on blood cultures see:

Bertelsmann: Allegemeineninfektion bei chirurgischen Krankheiten. Deut. Zeitschr. für Chir., 1904, vol. 72, p. 209.

Libman, E., in the Johns Hopkins Hospital Bulletin, 1906, vol. xvii, p. 215, has covered the literature bearing on special features illustrated in his 700 to 750 blood cultures.

[2] Am. Jour. Med. Sc., vol. cii, 1891, p. 439.

The contaminator most frequently met with was the staphylococcus epidermidis albus. While it is difficult to prevent an occasional contamination with a colony of this organism, thorough sterilization of the patient's skin lowers its frequency. The cases in which we found it oftenest were those where some difficulty had been met with in entering the vein, necessitating more or less manipulation of the seat of puncture. In our cases all contaminating organisms were thoroughly worked out.

But one culture showed more than one organism present in the circulating blood — a case of septicemia following an abortion. From this case the staphylococcus pyogenes aureus and staphylococcus pyogenes albus were isolated.

In several cases one organism was isolated from the blood and one or more different pathogenic organisms recovered from local lesions in the same case. These associated organisms were found in local lesions present at the time of the culture from the blood or developed later in the course of the disease.

Only a small per cent of the fatal cases came to autopsy. Later in this paper we compare the ante-mortem and post-mortem findings.

Of the 91 blood cultures taken, 36 were positive and 55 negative.

The following organisms were recovered[3]: streptococcus pyogenes in 13 cases; pneumococcus in 6 cases; staphylococcus pyogenes aureus in 7 cases; gonococcus in 2 cases; staphylococcus pyogenes albus in 2 cases; bacillus mallei in 1 case; bacillus mucosus capsulatus in 1 case; bacillus anthracis in 1 case; bacillus paratyphosus in 1 case; bacillus aërogenes capsulatus in 1 case; staphylococcus citreus in 1 case; bacillus typhosus in 1 case.[4]

Of the 13 positive cultures of streptococcus pyogenes, 5 were recovered from patients on the surgical services, 6 from patients on the medical services, and two from patients on the gynecological service. Eight patients died; 5 recovered. Five deaths and 1 recovery occurred in cases from the medical services; 3 deaths and 2 recoveries in the cases from the surgical services. Both of the patients on the gynecological service recovered.

The surgical cases included:

1. One compound fracture; death; no autopsy.

2. Osteomyelitis with multiple abscesses; recovery.

3. Septic arm (cause unknown) with later involvement of one knee. On the day of the blood culture an evacuated abscess showed an organism which morphologically and culturally strongly resembled the pneumococcus. Recovery.

4. Traumatic amputation of the leg; death; no autopsy.

5. Multiple acute osteomyelitis with acetonuria; death; no autopsy.

The case of multiple acute osteomyelitis with acetonuria is interesting from the presence of the staphylococcus pyogenes aureus in two of the infected bones and the streptococcus pyogenes in another. This patient, a girl twelve years old, entered the third surgical service April 4, 1904. For a week she had complained of pain in her right knee and had had some fever. The lower end of the right femur was operated upon for acute osteomyelitis on April 6. A pure culture of staphylococcus pyogenes aureus was obtained from the pus. The upper end of the left humerus was trephined for acute osteomyelitis on April 8. The pus showed a pure culture of staphylococcus pyogenes aureus. The left tibia became involved, and was opened on April 13. A mixed culture of streptococcus pyogenes and staphylococcus pyogenes albus was obtained. Two days after this, a blood culture showed a pure growth of streptococcus pyogenes. In the latter part of the patient's illness, acetone appeared in the urine. Two days later diacetic acid was present. These substances gradually increased in amount, varying somewhat from day to day, until death. During the last three days of life there was marked vomiting.

Two surgical patients recovered. One had multiple subcutaneous abscesses with osteomyelitis. This patient was operated upon six times during a period of eighteen days. From an abscess opened a few days previous to the blood culture, the staphylococcus pyogenes albus was recovered. The second case had multiple subcutaneous abscesses with a swollen and painful knee. This patient was operated upon four times during an illness of seventy-one days. From an abscess opened ten days before the blood culture was taken, a pure culture of an organism which morphologically and culturally corresponded to the pneumococcus was obtained. Five days after the blood culture, a local lesion over the shoulder showed streptococcus pyogenes.

There were 6 positive cases of streptococcus pyogenes from the medical services. Five of these died and one recovered.

There were 2 autopsies in this group of cases. In both instances the clinical diagnosis and blood culture finding were confirmed.

1. One case of tonsilitis and pharyngitis, with acute involvement of the glands of the neck. Recovery.

2. Four cases of malignant endocarditis. All died.

3. One case of septicemia without a clinically demonstrable point of entrance. Death.

From the gynecological service there were 2 positive cultures of streptococcus. Both recovered. One followed an abortion. In this case the streptococcus pyogenes was recovered in pure culture from the uterus.

The staphylococcus pyogenes aureus was recovered from 7 cases, six times in pure culture and once associated with the staphylococcus pyogenes albus. Six of these cases died. One

[3] Five of the blood cultures included in this list have been reported by Duval and Lewis, Jour. of Med. Research, vol. xiii, p. 513.

[4] We have done but few blood cultures on patients in whom a clinical diagnosis of typhoid fever has been made. Several of these later proved not to be typhoid fever.

upon whom a culture was taken a few days ago is still alive.

1. One case with septic wound of the knee, followed by acute inflammation of a joint of the forefinger. Pneumonia developed.

2. One case with severe pharyngitis followed by signs and symptoms of septicemia. There was marked jaundice.

3. One case of malignant endocarditis secondary to acute suppurative otitis media.

4. One case with meningeal symptoms developing three weeks after a blow on the head. From a post-mortem lumbar puncture, the staphylococcus pyogenes aureus and the pneumococcus were recovered.

5. One case of septicemia following an abortion.

The staphylococcus pyogenes aureus as a cause of post-partum septicemia is not very common.

6. One case of empyema, secondary to a lung abscess. A pneumonia and signs and symptoms of a brain abscess developed three days before death.

7. One case upon whom a clinical diagnosis of perinephritic abscess was made. The right testicle became involved, was opened and from the pus a pure culture of the staphylococcus pyogenes aureus was obtained. The blood culture was done the day following this operation. Focal lesions of the testicles in septicemia are uncommon. This patient is still in the hospital. He shows some improvement.

In the case of tonsilitis followed by marked jaundice, an autopsy was made. There were focal abscesses of the lung, spleen and liver and a few small subcutaneous collections of pus.

The gonococcus was isolated from 2 cases. Both recovered. In one there was a clinical diagnosis of gonorrheal arthritis; in the other of malignant endocarditis. Both patients showed acute gonorrheal urethral discharge.

The pneumococcus was recovered six times. In all these cases a clinical diagnosis of lobar pneumonia had been made. One was complicated by empyema.

Five of the cases from which the pneumococcus was recovered from the circulating blood died; one recovered.

The patient that recovered after a pneumococcic septicemia, a male, aged twenty-six years, showed a typical course of lobar pneumonia with crisis and uneventful convalescence. The blood culture was taken on the day of the crisis. It would scarcely seem possible that the disappearance of the organisms from the circulating blood could have been as rapid as the crisis. In such a case, it would have been interesting to have taken cultures on several successive days following the crisis, to determine how long the organisms remained in the circulating blood, after the temperature became normal. That pathogenic organisms can exist in the circulating blood, even in great numbers, without causing symptoms, is well illustrated in one of our cases, given later in detail, the one from which the bacillus mucosus capsulatus was recovered.

Two autopsies were made on this group of cases. In both there was extensive solidification of the lungs. In one case the pneumococcus was recovered from the lungs, liver, spleen and kidney. There is no record of cultures having been taken in the other case.

The staphylococcus pyogenes albus was recovered from 2 cases; once in pure culture and once associated with the staphylococcus pyogenes aureus. Both cases were fatal.

The case from which the pure culture was recovered had had acute articular rheumatism several times. We are unable to determine definitely the relation of the time of death to the time when this blood culture was taken, and are unwilling to consider this a positive finding. A positive culture obtained a few hours before death might represent agonal invasion.

Seven different organisms have been found but once:

Bacillus mallei, bacillus mucosus capsulatus, bacillus anthracis, bacillus paratyphosus, staphylococcus citreus, bacillus aërogenes capsulatus, bacillus typhosus.

The case from which the bacillus mallei was recovered gave the following history: Male, age, forty-nine years, hostler. Had been in contact with glandered horses. Present illness: Has been sick several days; chills, sweats and pain in chest.

Physical examination. — Signs of pneumonia. Skin shows an eruption consisting of macules, papules, vesicles and pustules, marked over face, chest and limbs, especially about knees and elbows. The right little finger and left small toe are swollen, and of a dark red color. The joints particularly seem affected. There are deep abscesses, showing little reaction, over the right thigh and anterior surface of both forearms. The patient's condition became progressively worse and death occurred five days after admission.

AUTOPSY FINDINGS.

Resolving pneumonia (right). Fibrinous pleurisy (right). Abscess of lung (right). Multiple subcutaneous abscesses. Pustular and papular skin lesions. Acute hemorrhagic leptomeningitis (right). Acute cellulitis of the scalp.

Cultures from abscess of lung, beneath scalp, and the abscesses over the arms and thigh showed the bacillus mallei mixed with the streptococcus pyogenes and the staphylococcus pyogenes aureus.

The bacillus mucosus capsulatus was isolated from a male, aged thirty-seven years, cigar maker.

Past history. — Unimportant.

Present illness. — For two weeks he has had severe general body pain with tendency to localization in joints. Right leg has been especially painful for two days.

Physical examination. — On entrance the right leg was markedly swollen and cyanotic. Pitted on pressure. There was a diffuse purpuric mottling over whole leg without any sharp lines of demarcation. Forty-eight hours later condition extended to axilla on that side. After five days local symptoms on right side gradually decreased. At same time the left leg began to swell, repeating completely the changes gone through on the right. Recovery was gradual and uninterrupted. The patient was discharged after five weeks.

On three occasions a blood culture showed the bacillus mucosus capsulatus in pure culture and in enormous numbers. At each time the number had increased. The last culture was taken on the day of discharge, five weeks after admission and four weeks since the previous blood culture.

The bacillus anthracis was isolated from a male; freight handler working on imported hides. He cut his chin on Nov. 13, 1904, while shaving. By Nov. 16, 1904, a small crust had formed at the site of the wound. This patient showed the typical pustule with corresponding general symptoms. A blood culture taken at the time of operation, when the pustule was excised, showed a pure growth of bacillus anthracis. After three weeks the patient was discharged well.

The patient from whom the bacillus paratyphosus was recovered gave the following history: Woman, single. Age, twenty-three years. Entered the gynecological service, June 25, 1904. For the past year she had complained of pelvic pains. Recently pelvic sinuses developed.

Present illness. — Twelve days before entrance, at her regular catamenia, she began to have pain in her left lower abdominal quadrant. This has continued with an occasional chill, some vomiting and fever.

Physical examination. — Negative except for tenderness in lower left abdominal quadrant and pelvic condition.

The pelvic condition was treated and improved. The temperature remained high with morning and evening variations. The Widal reaction was negative. No rose spots.

Fifteen days after entrance a blood culture showed a pure growth of the bacillus paratyphosus. This organism was completely agglutinated by the patient's blood, in dilutions as high as 1 in 500, with slight clumping up to 1 to 1,000. The bacillus typhosus was not agglutinated. Thirty days after entrance, this patient was discharged relieved.

The staphylococcus citreus was recovered from a gynecological patient who had acute pelvic inflammation, with foul discharge from the vagina. Vaginal section showed a pelvic abscess. She ran a septic temperature and died twenty-five days after the blood culture was taken.

An autopsy showed chronic salpingitis, abscess of ovary, pelvic peritonitis.

Cultures from the heart's blood were sterile.

The bacillus aërogenes capsulatus was isolated from the circulating blood of a woman who entered the gynecological service, Aug. 21, 1906. She gave the following history: Age, thirty-four years.

Past history. — Unimportant.

Present illness. — Two days previous to entrance she had a self-induced abortion.

Physical examination. — An obese, well developed female. Some general dusky hue of the skin. Restless. Temperature 105°, pulse 110. A small mass of placental remains was removed from the vagina.

The general bluish discoloration rapidly increased in intensity, becoming very prominent. Subcutaneous emphysema developed in the groins and inner side of the thighs. The patient rapidly failed and died twenty-four hours after admission.

Smears made at the time of entrance, from a swab from the uterine cavity, showed organisms which morphologically corresponded with the bacillus aërogenes capsulatus, along with a few cocci and a few Gram-negative bacilli. From cultures made from this same swab the bacillus aërogenes capsulatus was recovered.

A blood culture was taken eighteen hours before death. Anaërobic cultures were made and in addition a few drops of fresh blood were injected into the ear vein of a rabbit. The rabbit was killed in two minutes and placed in the thermostat at 37° C. for eight hours. From both sources the bacillus aërogenes capsulatus was recovered in pure culture.

An autopsy on this patient showed the typical lesions caused by bacillus aërogenes capsulatus, foamy liver, etc. This organism was recovered from the liver and heart's blood.

The negative blood cultures cover a long list of clinical diagnoses. Some of these clinical diagnoses proved to be incorrect, and some remained doubtful. Some blood cultures were taken from cases in which, later, the symptoms were proved to be of non-bacterial origin. In a certain number of cases, clinical observation has left little doubt that we were dealing with a septicemia; a few cases strongly suggested infection due to a particular organism. Negative blood cultures on cases where the symptoms strongly suggested a septicemia might have been due to any one of three causes: improper media were used; the culture was not taken during the acute stage of the disease; or there were too few organisms in the circulating blood.

In such a group of cases, only repeated blood cultures or post-mortem examinations would do much toward clearing them up.

Nineteen of the 55 patients showing negative cultures died. Autopsies were made on 2 of them; one a case of tetanus, the other a case of septicemia following a pelvic abscess.

SUMMARY AND CONCLUSIONS.

In this list of 91 blood cultures, 55 were negative, 36 positive. Forty-three patients died; 47 patients recovered; one is still in the hospital. Of those who died, 24 patients showed positive cultures, 19 patients showed negative cultures. Eleven patients showing positive cultures recovered and 1 patient is still in the hospital, improving. Thirty-six cases showing negative cultures have recovered. Autopsies were made on 8 positive cases and on 2 negative cases. From 5 of the positive cases with autopsies the same organisms were recovered post-mortem as from the blood culture. In 2 cases there is no record of post-mortem bacteriological examination.

In comparing organisms recovered post-mortem with those obtained during life, agonal and post-mortem invasion must be considered.

We wish to emphasize the importance of repeated blood cultures in cases which clinically suggest septicemia, although one or more cultures from the blood have shown no organism.

THE EFFECT OF FLORIDA CLIMATE UPON ACUTE AND CHRONIC DISEASE.*

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The varieties of climate which the different parts of Florida offer during the winter months are surprisingly diverse in a locality so nearly approaching tropical conditions.

Until recent years the southern portion of the state has been practically unknown, northern and central Florida alone having been enjoyed as a winter resort.

The climate of the Northern Atlantic coast of Florida is represented by that of St. Augustine and Ormond. In the former the winters vary with successive seasons but there are many bright, beautiful and sunny days during the least salubrious months, January and February. This northern region, however, is subject to occasional passages of cold waves which, coming from the northwest, sweep over Texas and across the Gulf and point their central force towards this part of the state. In recent years attacks of cold and frost have been more severe than for many previous decades. During such attacks warm clothing is required and hotels are supplied with steam heat and comfortable accommodations. These waves of cold usually continue for three days, followed by fair, sunny weather. The climate of St. Augustine and Ormond is not dry, nor is that of Florida in any part. It is classified as of medium humidity. Both localities are surrounded by salt water, and fresh water is not to be found in their vicinity. Neither has suffered from malaria, and the drainage of the hotels and large boarding houses in both of these resorts is as perfect as science and careful engineering can make them.

St. Augustine stands upon a neck of land surrounded by the waters of the sea; to the eastward stretches the Atlantic; to the west rise high sand ridges covered with a growth of healthy pine. It is separated from the sea by a narrow island, many miles in length, forming its harbor.

St. Augustine has an ancient renown for healthfulness. Bernard Romans, in the "Natural History of East and West Florida," 1775, writes: "I do not think that on all the continents there is a more healthy spot." Wm. Darby, "History of Florida," 1821, says: "The remarkable healthfulness of the situation will render it the Montpellier, of the Atlantic Coast." James Grant Forbes, in "Sketches of Florida," 1821, adds: "Accounts from all quarters correspond in representing the capital (St. Augustine) as the Montpellier of North America, to which the healthy repair for refreshment, the invalid for health."

In "Observations upon the Floridas," by Chas. Vignoles, 1815, is written: "The undeviating salubrity of the St. Augustine climate is almost one continued spring."

In 1837, John Lee Williams, in "The Territory of Florida," says: "The situation is peculiarly serene, healthy and pleasant."

George R. Fairbanks, "History of St. Augustine," 1858, confirms these statements, *viz.:* "The Spanish settlement of St. Augustine has remained for nearly three hundred years where it was originally planted, and the health of its inhabitants has for this long period given it a deserved reputation for salubrity and exemption from disease," "a situation combining more local advantages for salubrity could hardly be imagined."

This history of remarkable healthfulness continued until the spring of 1902, when an outbreak of typhoid fever occurred, embracing but a very small proportion of the large number who visited the city that season, but all attacked were persons of prominence, and their names were widely spoken.

Of these cases, Dr. John S. Billings, who the same season made a thorough, official investigation, reports: "It is probable that two or three of them were not typhoid at all, that two of them were ill on the day of their arrival, which illness became well marked typhoid five days later and, therefore, was not contracted at St. Augustine, and that of all the cases at the above mentioned hotels [Ponce de Leon and Cordova and Alcazar] there were among the guests but three which it would seem must have been contracted during their stay in St. Augustine. The four servants affected with typhoid probably had the specific cause introduced into their bodies through contact with a fever case or cases or with soiled linen from such case."

"Every educated physician will understand from the above figures the extreme improbability that so few cases (13) scattered over a period of two months and giving a ratio of less than one to a thousand people exposed, could have been due to anything in the structure of the buildings, the general water supply or the food, milk or ice, and the detailed investigation of all these things makes it practically certain that no case of typhoid was due to any of them."

Later history has borne out the correctness of Dr. Billings's opinion; during subsequent winters in my own experience until 1898, and since that time in the experience of Dr. M. W. Seagears, rarely has a case of typhoid appeared at St. Augustine. This northern region of Florida has, however, suffered for short periods in recent years more than the southern part of the state, from mild influenza. This disease, which attacked Florida but lightly, during its earlier invasion of this country, came during the winter of 1900 with the onset of cold northwestern waves, in an active form. It was delayed until early March and persisted for two weeks. It was not accompanied by serious complications, but was characteristically epidemic. Scarcely a season since has northern Florida been free from some definite signs of its presence.

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*Read before the American Climatological Association, May 5, 1907.

The exanthemata, when imported, have in my experience run an extremely mild course. In May, 1893, a mild epidemic of scarlatina occurred among the resident people, after the winter visitors had departed, but it was so indefinite that it was with difficulty recognized. No children suffered complications, none were kept in bed, and it was not until desquamation defined the diagnosis that the physicians then remaining in the city were able to give a positive opinion.

March and April at St. Augustine are most perfect months; bright, sunny days, with temperature rising to 70° to 75° and without evening chill, are almost continuous. This agreeable condition is equally true of Ormond and Daytona, and the choice of winter location may be determined by the fancy and pleasure of the patient rather than by any large differences in climatic conditions.

Of the more tropical portions of Florida, Palm Beach and Miami are the representatives on the eastern coast; on the west or Gulf coast, and in the interior, numerous points of comfort with proper appointments for health, have developed.

Palm Beach is situated at the most eastern point on the Florida coast, is bathed by the waters of the Gulf Stream, and is free from contamination of fresh or brackish water. The vegetation, though rich and beautiful, is not dense. Both Palm Beach and Miami are usually below the frost line. In 1899 the temperature fell once at the former to 33°, in 1906 once to 25°, and in 1907 to 28°. This region feels the effects of waves of cold borne down from the northwest much more mildly and for shorter periods than the higher latitudes of the state, yet there are days in January and February when an overcoat is necessary and when hotels turn on the steam heat. During each season there are at least three or four cold waves, as shown in the accompanying tabulation, sufficiently severe to render warm clothing and careful protection of the delicate, imperative.

These attacks of cold break, usually, on the middle of the third day and the normally mild climatic conditions are restored the moment Boreas ceases his attack.

The prevailing winds in southern Florida are southeasterly, directly off the ocean, a gentle, steady breeze during the entire day and lasting through the night.

Decidedly the most favorable feature for the delicate is the absence of evening chill. With the setting of the sun comes no appreciable fall in temperature, and in this the climate has an advantage over southern California, the upper Nile and the Riviera.

Sparks, writing of the Riviera, says: "The chief drawback to the climate is the occasional occurrence of winds, cold from the northeast and east, very dry from the west and northwest, and of periodic droughts."

At Nice, San Remo and Mentone, it is the custom of physicians during the winter months to recommend both well and ill to remain indoors after 3 o'clock in the afternoon until the setting of the sun, in order to avoid the chill damp which rolls down the lofty mountains at whose base they lie.

The best test of a climate is the healthfulness of the employees of hotels and grounds. These are imported persons, they work hard and take plain food, their habits are careless and they are constantly out in the night air. If malarial infection were present, it should manifest itself first among these employees. Of more than a thousand under my care during each of six years, I can say that in only a single instance have I seen a chill from any cause, nor have I seen a case of dysentery in any of them for that period. Among guests I saw an annual average of one case of dysentery.

I saw in 1899 one case of malaria among guests, a Yale student in reduced health. Under the usual medication the symptom never recurred; he spent his days at golf and sailing, recovered health, vigor and strength, and gained 11 lb. during his six weeks' stay. In the winters of 1900–1904 my experience with employees was exactly similar, neither malaria nor dysentery manifested themselves in any form; among guests two cases of malaria occurred in persons bearing a history of infection, a chill in each, once, and not repeated. No case of dysentery was observed in this period.

Among a very large number of children spending a part or the whole of the winter at Palm Beach, I had little occasion for practice. They were all, barring minor complaints and one case of bronchopneumonia, in good health during these winters. One case of pneumonia and one of diphtheria were imported, ill on the day of arrival.

The climate and sanitation of Miami is similar to that of Palm Beach. The choice will depend upon social and economic reasons, rather than upon any considerable atmospheric differences which may exist.

In this connection, I may say one word of the Island of Nassau, easily reached from Miami. I can speak of it with favor because of the uniform verdict of many friends and patients who have had long experience there. Cold waves are scarcely noticed. Temperatures are more uniform than in any part of Florida; drainage and sanitation are perfect, and the inviting atmosphere of the place, its unique and peculiar native life, its attractive sailing grounds and its excellent hotel and boarding accommodations, render it charming to the tourist and health seeker. The objections for invalids, to which my attention has been called, are occasional rough voyages, rather persistent stiff breezes which blow across the island with a velocity greater than at any Florida resort and the glare from the white rock used in the construction of buildings and road beds.

Throughout Florida acute digestive derangements occur rather frequently in recent arrivals, partly by reason of the radical change from winter to summer, made in the interval of twenty-four to forty-eight hours (unlike nature's birds of passage), producing a state equivalent to the spring lassitude or so-called biliousness of northern May and June; in part also on account of dietetic indiscretions incident to a hotel table. Persistent diarrheas, excepting occasionally with the very aged, I have rarely seen. Acute intestinal disturbances, as the season advances to the warmer days of March, are not uncommon. Repeated investigation of food and water supplies have convinced me that these are not the cause. Attacks of mild diarrhea supervene on hot waves, just as they appear in the New England mountains and along the Atlantic seacoast in latter summer and early autumn. Colitis attacks are extremely rare, vastly less so than on the Maine coast in early autumn.

In 1897, I made a report before this society on pneumonia in Florida, for a period of five years. Among about 400,000 white and colored inhabitants, the average annual number of deaths from pneumonia was 165.4 or .42 per 1,000 inhabitants. In the east coast counties, from St. Augustine southward, the mortality was 1 to each 3,576, or .27 per 1,000 inhabitants. That this remarkably low mortality from pneumonia in Florida must be credited to favorable local climate, is more readily appreciated when we reflect that the average mortality is 1.5 per 1,000 in northern and temperate latitudes of Europe and America; that Greece, Italy and Turkey suffer severely; that the disease is often epidemic in sub-tropical and tropical countries like the Sudan, the west coast of Africa, and the upper Nile, and that in the West Indies and South American countries the natives have a very heavy death-rate from this disease.

It is manifest from the foregoing that there is little fear of serious acute illness by winter residents of Florida.

The improving effects of Florida climate upon chronic disease is greater than that of sea level in summer at the north, by reason of almost continuous sunshine, absence of evening chill and the slighter diurnal temperature variations. Diseases of the circulatory and excretory systems find here specially favorable conditions, particularly those forms dependent upon arteriosclerosis, local or general. Cardiac excitement is relieved and arterial hypertension receives some reduction. I have not infrequently seen cases of albuminuria greatly benefited by prolonged residence in Florida, and occasionally incipient subjects have returned to perfectly normal conditions.

Functional nervous diseases, whether dependent upon presenile sclerosis of blood vessels or upon the stress and strain of modern life, are favorable subjects for this sedative climate. The stimulus to mental activity is removed, and persons even in perfect health note a decided soporific influence. Respiratory diseases, if catarrhal or delayed convalescent from pneumonia or bronchitis, as well as cases of tuberculosis in the inactive fibroid stage, can find no more advantageous winter home.

Acute stages of pulmonary tuberculosis do not receive, in my experience, the advantage which might be anticipated from the out-of-door treatment in this climate. I have in many instances known of great improvement or recovery in persons whom I have directed from Florida to the more invigorating climates of mountain regions or to southern California, other conditions remaining practically unchanged.

Gouty and rheumatic subjects, with incident neuralgias or neurites, have frequently and rapidly improved under my observation in this greatly eliminative atmosphere.

To what extent our families, sent to Florida, are exposed to acute and climatic diseases, twenty years of personal experience make it possible for me to state with reasonable accuracy. That this sub-tropical sea climate has also definite influence in delaying the progress of already established chronic disease, I cannot doubt, and in certain border-line cases, as in albuminuria, definite cures have been accomplished. The objections to winter residence in Florida, which should be noted, are hotel and boarding-house life and food, which can rarely be equal to home surroundings and table, absence of sustained diversion for such as do not take up golf or tennis, and who are indifferent to sailing and fishing. Sitting out of doors and wheel chair or carriage driving soon cease to be an amusement to the average restless American mind.

One other objection, which to a small proportion is an important one, is the relaxation, the so-called enervating effect of the climate. In some persons, well or ill, this becomes a positive torpidity, physical and mental, with painful languor and lassitude, simulating illness; to such the climate is not adapted and they should return to the bracing influence of northern chill.

The advantages of easy accessibility for residents of the eastern half of our continent, of freedom from the dangers of acute and climatic illness, as I have pointed out, and the toning down of the overworked and overwrought nerves of the average American, associated with its tendency to stimulate nature's restorative processes, are all that should be claimed for Florida's influence upon health and disease.

CLIMATE OF PALM BEACH, FLA.

Temperature:[1]

	Jan.	Feb.	Mar.
Average for 18 years,	65.7°	67.1°	67.8°
Average daily range for 18 years,	14.3	13.3	13.5
Mean of warmest for 18 years,	72.2	71.6	73.7
Mean of coldest for 18 years,	60.0	58.4	64.8
Highest of maximum for 18 years,	83.0	87.0	89.0
Lowest of minimum for 18 years,	24.0	27.0	33.0
Average date of lowest for 18 years, Dec. 29.			
Humidity, relative, for 18 years,	82.0	80.0	79.0

[1] Jupiter, seventeen miles north of Palm Beach, Coleman: Tr. Amer. Climat. Asso., xxii, 51.

Climate of Palm Beach, Fla.

PERSONAL OBSERVATIONS.

Precipitation:	Jan.	Feb.	Mar.
Average in inches, 18 years,	3.81	2.78	5.2
Wind: Average velocity in miles per hour,	10.2	10.9	11.2
Average number cloudy days, 18 yrs.	6	5	5
Largest " " " " "	15	13	12
Smallest " " " " "	0	2	0
Average " rainy " " "	10	9	7
Smallest " " " " "	4	3	5

1898, Jan. 9 to March 26, 51 days:		
Minimum temperature (once),	50°	
Highest " "	88°	
At or above 80° in January,	10	days
" " " " " February,	7	"
" " " " " March,	14	"
" " " 70° " January,	14	"
" " " " " February	20	"
" " " " " March,	26	"
At or below 60° " January,	0	"
" " " " " February,	14	"
" " " " " March,	0	"
1899, Jan. 9 to April 3, 84 days:		
At or above 80° in January,	6	days
" " " " " February,	16	"
" " " " " March,	25	"
At or below 60° " January,	6	"
" " " " " February,	6	"
" " " " " March,	4	"
1898, number of days with temperature range between 60° and 80°,	51	"
1899, number of days with temperature range between 60° and 80°,	42	"

A STUDY OF FIFTY-ONE CASES OF DEBILITY IN JEWISH PATIENTS.

FROM THE OUT-PATIENT DEPARTMENT, MASSACHUSETTS GENERAL HOSPITAL.

BY H. MORRISON,
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The term "Hebraic debility" has been used for some time at the Massachusetts General Hospital to designate the condition of many of the Jewish patients coming to the clinics. These patients complain of "burning" and "sticking" pain, generally in the chest and epigastrium, but often all over the body. "*Es brennt mich,*" "*es stecht mich,*" and "*schmerzen überall*" are familiar expressions in their stories. The history of one of these patients has been summed up as follows: "She complains of backache and everything else." One of the physicians at the hospital was inclined to think that such symptoms were peculiar to Jews, that they were more than mere neurasthenic symptoms, and he suggested that I should study these patients by visiting them at their homes so as to get the details of their ailments and observe their modes of living.

MOST OF THESE PATIENTS ARE RECENT IMMIGRANTS. ALMOST ALL GET WELL.

I have studied 51 cases, confining myself to those in which the diagnosis of "Debility" or "Hebraic debility" had been made at the Massachusetts General Hospital. Almost all the persons whom I visited are recent immigrants, 44 from Russia and 4 from Austria-Hungary; all of limited means, several very poor; none having much education, some illiterate; the large majority, 39, living in the North and West ends of Boston.

One of my earliest impressions in this study was that, with the exception of one, none of these people — and 38 of them were women — was sick when I made my visits. In fact, 24 declared themselves perfectly well at that time. All were engaged in their usual activities. Thus I found one of these women hoeing the little garden in front of her house, — she was living in Malden. One of the men, who up to recently had been a frequent visitor at the hospital, I found cleaning up his grocery store; he is a cigar maker, and works at his trade all the week, helping his wife in the store on Sundays and in the evenings. Some, even, had to be reminded that they had ever been at the hospital, and it was only on questioning that I got their various complaints.

THE PREVALENT SYMPTOMS ARE PAIN, CONSTIPATION, AND APPREHENSION.

I have attempted in the accompanying table to give the symptoms somewhat in detail. Here I wish to emphasize three of them, — pain, constipation and apprehension. Of the 51 cases seen, only 7 did not mention pain. In more than half the number, the pain was located in the chest or epigastrium; a lesser number complained of headache or backache; a still lesser number of pain in the extremities or rheumatic pains; 12 spoke of pain "all over."

I found, however, that the term "pain" is used very loosely, especially by these Jewish people. Not only is their English vocabulary very limited, — 19 did not speak any English at all,— but their Yiddish is also very narrow. Thus pain may mean mere discomfort or distress, irritation or pressure, paresthesia or hyperesthesia. Even in their own language they misinterpret their sensations, more so when they have to express themselves in English. It has been supposed by some that the adjectives "*brennend*" and "*stechend*" are peculiar to the symptoms of these Jewish patients, that people of other races do not describe their pain sensations in such terms. I find, however, that they are used idiomatically in Yiddish. Moreover, I have heard not infrequently others than Jews describe their sensations of pain as "burning" or "cutting." Another error due to misinterpretation comes in the localization of the pain. The great majority of these patients speak of "pain in the heart," — "*es brennt mich, es stecht mich ins Herzen.*" Often this may be translated literally into "heartburn." Much more frequently, however, the term "heart" covers a larger region, including the whole chest and upper abdomen.

Constipation is very prevalent among these people, and I consider it, because of the pressure which it causes on the diaphragm and on the viscera, an important immediate factor in the etiology of their "pain" sensations. It was a symptom in at least 37 of the 51 cases. With the older ones it has been a matter of long standing; with the younger ones it has dated since their coming to this country. In the case of the latter, it is due, of course, to the separation from home privileges and to the introduction to the sedentary habits incidental to employment in factories or stores. A typical story is that of one young married woman: " I was as strong and ruddy, when I came here, as all Russian girls are, but I lived with strangers, and worked from morning till night in a poorly lighted and poorly ventilated shop, with only a small, dry lunch for my mid-day meal. I soon began to grow weak; my eyes became dim, and my head commenced to ache, my teeth grew poor, and since then I have had stomach trouble." This constipation must be considered, however, not only as due to sedentary occupations and irregular habits, but also as a phase of the general muscular hypotonicity which has become characteristic of the Jewish people during the ages of persecution. It is presumably the same diminished muscle tone, causing displacement of the visceral organs and loosening of the ligaments of the extremities, in people who, during ages of extreme nervous tension, have developed an intense sensitiveness that accounts for many of the vague and diffuse " pain " sensations so common among Jewish patients.

I wish next to call attention to the element of apprehension which is very prevalent among these patients. Definitely I found that 14 of the 51 persons I saw, feared that they were suffering from cancer, consumption or heart disease. One woman told me that she heard people talk so much about consumption that she got it into her head that she also was suffering from it. Another, whose mother had died of cancer the year before, was very sure that the pain in her left side was also due to a new growth. Still another had on the day previous to my visiting her been to see one of the most prominent physicians in the city about her heart; she had already been to about all the clinics in Boston, and everywhere was assured that her heart was all right, but she thought that the doctors would always talk differently among themselves about her; this physician had also reassured her, and prescribed a laxative; still she believes that there is something wrong with her heart. To several of these people complaining of " pain in the heart " I put the question, " Would the pain bother you as much if it were in your little toe instead of your heart? " and in some cases I got the prompt reply, " Of course not; the heart is so much more important than the toe." The Jews, always a highly imaginative people, have been for centuries cradled in fear, so that it has become one of their keenest emotions, provoked by trifles.

THE ECONOMIC LIFE IN AMERICA IS MORE STRENUOUS THAN IN RUSSIA.

As to the duration of these ailments, I found that with 14 of the persons seen their symptoms came on before their coming to this country, and of these, half have felt worse since, while with 34 they came on in America. This is to be expected, considering the stress and strain incidental to establishing oneself in a strange land. In the accompanying table I try to compare in a way the modes of living of these people here in America and in Russia. Though the figures show that in the old country half of the persons under consideration lived in small towns and only less than half in cities, I wish to point out that essentially they were all city dwellers. In the small town as well as in the city in Russia the Jews live under crowded conditions, and are employed in sedentary occupations. On the whole, I believe that when they come to the American cities they do not live in a more crowded condition, at least as far as the number of persons per room is concerned, than in their old homes. The weather in Russia is much more equable than here, but I was rarely told by any one that the change affected him or her. The patient's industrial life, however, especially during the early years after arrival, is lived under much greater strain here than in Europe, for though the income is increased, the standard of necessities is raised out of proportion to income.

This strain weighs especially on the Jewish woman, for here as well as in Russia she very frequently has to share with her husband the burden of supporting the family. In my series of cases 7 of the women were the sole supporters of their families. It is rare here in America that a Jewish girl is at home not working, a thing not at all unusual in Russia. Married women help along by keeping boarders, or by working shoulder to shoulder with their husbands in business, aside from their household duties. Many a home in the North and West Ends is to be found in the rear of stores. One woman living under these conditions told me that she was up from seven in the morning till one at night, running back and forth from the kitchen to the store, — it was a little lunch room. Another of these women I found, when I came to see her, had been out collecting bills, — her husband keeps a grocery store, — the whole of a cold winter afternoon, though she was pregnant and quite miserable.

IRREGULAR HABITS, IMITATION, TRADITION AND THE GREAT NUMBER OF HOSPITALS ARE FACTORS IN THE ETIOLOGY OF THESE DEBILITIES.

Of course, one is not to look for regular habits under such circumstances. Meals are had at any time, and are never given a reasonable length of time. Those who work in factories either get home to swallow their dinners in the few minutes that they have, or else eat a dry meal in the shop. As for food I have observed that much more meat is eaten here than in Russia, and less fat. Tea is taken in moderation, less than in Russia; but more coffee is used here. Alcohol is not a factor.

Of recreation there is little either here or in Russia, — on the whole more here, though in Russia the Sabbath is much more a day of rest. Of the 51 persons seen, only 5 had had a vacation regularly for several years; 5 had had it only once. One young man who keeps a candy store in East Boston had had a two weeks' vacation the summer before, but when he got back he had so much to do that he thought he had lost more than he gained, and said he would think twice before going again. With the majority the only change in the routine of life is the walk to and from work, the visit to the butcher's or grocer's, or the chat with the neighbors on the doorsteps.

As I have mentioned above, 38 of the 51 cases studied were women. Moreover, as far as my own experience goes, — and my experience has been chiefly with Russian Jews, — as well as that of many that I have questioned on this subject, almost all married Jewish women, whether of the hospital class or not, some time or other get into a debilitated condition, and present symptoms similar to those of the cases here analyzed. They are temporary affairs, but recur; all due to the mode of living, exhaustion or worry. I have observed, however, that imitation and tradition play some part in the etiology of these debilities. The undercurrent of thought on this subject seems to be that from time immemorial women have been sick; it is a sort of privilege tolerated with them; it is even expected of them. " A woman keeps on dying all the week, but recovers on the Sabbath," and " A woman has ninety-nine souls," are two Jewish sayings which show that this feeling is deeply rooted. It is the subject for conversation when women get together; to be sick gives one a standing in such circles. Gradually it creeps into the young woman's subconsciousness, and she, too, begins to visit the doctor or the hospital.

I know, however, that the Jewish women in Russia do not complain as much as when they come here. They all boast of their strength and good health there, and of the amount of work they could do. The change is due, of course, to the strenuousness of the transitional period which they are living through. I wish to call attention to another factor, a minor one though it may be. One often hears of the great percentage of people seeking medical advice at the hospitals, but one seldom considers that many people seek medical advice *because there are hospitals*. In Russia the Jewish woman can hardly afford to consult a doctor for the least thing that ails her, and hospitals and dispensaries are very rare. In the American cities, on the other hand, it usually so happens that the large hospitals are situated in the very centers of the crowded districts, not to mention the many dispensaries and the lodge-doctor system. These help the Jewish woman to keep her attention on herself; she goes to the hospital or to her lodge-doctor for things which in her old home she had to overlook and forget.

THESE DEBILITIES ARE NOT PECULIARLY JEWISH.

My aim has been to bring out and emphasize several points which have become clearer by this study. Is there such a condition as *Hebraic* debility? Is there a debility peculiar to the Jewish people? I cannot think so. I admit that the symptoms considered are, in their grouping, expression and frequency, peculiar to the abnormal circumstances under which only a part of the Jewish people live or recently have lived. There is not, however, anything essentially Jewish or Hebraic about them; there is nothing that makes them different from neurasthenic symptoms in other races. According to the testimony of physicians who come in contact with the prosperous and educated Jews, removed from those circumstances, their patients do not present the symptoms so commonly seen among the Jews coming to the hospital clinics. The same is true of the second generation of the Russian Jewish immigrants.

The Jew is markedly neurasthenic, but as the French author, Leroy-Beaulieu, says, "It is not to be attributed to his Oriental origin or to a peculiar anatomical structure. The predominance in the Jew of the nervous system over the muscular system is due to the mode of his secluded living, to the conditions of his existence, to his sedentary and city life, with lack of physical exercise and weakening of the muscles, to the emotions and cares of the occupations carried on by his fathers. For centuries he has owed his existence more to his brain than to his arm. Even now in Russia he succeeds in maintaining a miserable existence only by a miraculous will and industry." Here in America the effect which migration has upon the nervous resources of the Jew must be considered, and at the present time, also, the effect of the atrocities committed upon his " flesh and blood " in Russia and other black spots on the map.

In the Shattuck Lecture of 1899, Prof. J. J. Putnam, says, " This or that American or Irishman or Jew cannot be treated to the best advantage so long as he is regarded solely as an individual. His racial traditions and temperament should be taken instinctively into account." Because of the failure to do so, it seems to me, the treatment of the class of patients considered in this paper, both in private and hospital practice, is as unsatisfactory as it is. When a woman comes complaining of pain in the side or back, or of headache, or of any other such symptom, it is not enough to say, " Oh, well! She is a neurasthenic. Give her Mixture X or Tablet Y." The patient so treated will keep on coming to the clinic for some time, and then go to another, and so on. The physician, especially with these Jewish patients, must learn to appreciate their natural history, their temperament and traditions, their modes of living and suffering, — in a word, to understand them. Such an appreciation will lead to sympathy rather than to repulsion, and instead of taking half a minute, he will take three or five, reassure his patient, gain her confidence, and instruct her to control her " pain " sensations and to correct her diet and habits. A patient so treated, no matter how dull or ignorant, will show results; once or twice at the hospital will be enough for her; besides, she will become a missionary to her circle of friends.

I have mentioned before that the second generation of Jewish immigrants, relieved from many of the abnormal circumstances under which the parents labored, quickly get away from the tendency toward debility. Moreover, these young people very frequently bring light into the households of their parents. I know personally of many instances where the parents have learned to lead more rational and comfortable lives through the influence of their children. It is through these young people, trained in American institutions and ideals, that the differences between the many elements of the population are to be removed.

SUMMARY AND CONCLUSIONS.

1. Debility is a common condition among the Jewish patients coming to the Massachusetts General Hospital; as a rule it is temporary, but is apt to recur.
2. The prevalent symptoms are pain, constipation and apprehension.
3. The etiology of these debilitated conditions is to be traced to the peculiar circumstances under which the Jews have lived and still live in eastern Europe. Here in America the economic strain during the early years after arrival is an important factor.
4. Debility is especially common among the Jewish women of the immigrant class, because the economic strain weighs very heavily on them. With them, also, imitation and tradition and the ease with which medical advice can be obtained are factors to be considered.
5. These debilities are peculiar not to the Jew, but to the abnormal conditions under which he has been living. As soon as he is relieved from these conditions his symptoms are not different from those of other races.
6. Finally, in the treatment of the cases considered it is well to bear in mind the importance of the old sentiment, " not the disease only, but also the man."

Analysis of Cases.

Number of cases seen,	51
Males:	
Single,	4
Married,	9
Females:	
Single,	8
Married,	21
Widows,	9
Diagnosis made at the Massachusetts General Hospital:	
Debility,	38
Hebraic debility,	13
Birthplace:	
Russia,	43
Austria-Hungary,	4
United States,	3
England,	1
City,	14
Small town,	35
Symptoms:	
Pain,	
Chest,	24
Epigastrium,	11
Headache,	22
Backache,	6
Pain in the extremities,	9
Rheumatic pains,	5
Pain all over,	12
Constipation,	37
Apprehension:	
Cancer,	5
Consumption,	5
Heart disease,	4
Palpitation and shortness of breath,	12
Hysterical symptoms, as anesthesia, globus hystericus, etc.,	9
Menstrual disorders,	8
Onset of symptoms:	
In old country,	14
In the United States,	37
With beginning to work,	9
With removal from country to city,	3
With sickness or death in family,	7
With homesickness,	2
Home in	
Old country:	
City,	22
Small town,	26
America:	
Greater Boston,	51
West End,	33
North End,	6
Suburbs,	12
Average number of rooms per family,	3
Very poor homes,	11
Food in America:	
Meals irregular or hurried,	37
Poor appetite,	18
Dry mid-day meal in shop,	9
Meals at restaurant,	1
Tea or coffee to excess,	4
Tea or coffee in moderation,	29
Work in old country:	
In factory or shop,	9
In business,	11
Housework,	20
Worked harder than in America,	12
Work in America:	
In factory,	10
In store,	5
Peddlers,	3
Janitors,	2
Keep store,	3
Housework,	16
Housework and store or shop,	5
Work harder here than in old country,	33
Women supporting their families,	7
Families depending on charity,	2
Recreation:	
Vacation regularly,	5
Vacation occasionally,	9

Massachusetts General Hospital.

CLINICAL MEETING OF THE STAFF, NOV. 22, 1906.

I. TWO CASES OF EXCISION OF ADENO-CARCINOMA OF THE RECTUM, WITH PRESERVATION OF THE SPHINCTER.

II. CANCER OF PROSTATE. COMPLETE PROSTATECTOMY BY LORING'S METHOD.

III. DIVERTICULUM OF BLADDER. EXTRA-PERITONEAL REMOVAL WITH SUTURE.

BY C. A PORTER, M.D.

I. I wish to show two cases of adeno-carcinoma of the rectum, at present alive and free from recurrence; one seven years, the other five years, after operation. The first case I reported here two years ago, and show him to-night because he still remains well, at the end of seven years. The other case is as follows:

Arthur Moore, age forty-four, living in East Everett, was admitted to the Massachusetts General Hospital, Dec. 1, 1902, to the service of Dr. C. B. Porter.

On entrance, urine was of normal color; acid reaction; specific gravity, 1,019; no albumin; no sugar. A month later (Jan. 8), urine the same with the exception that the specific gravity was 1,024.

Family history negative. He had always been well, and had worked hard. Many years previously had rheumatic fever, which was his only illness. He has had piles for twenty years, but they have never troubled him until about a year ago. Always been constipated. Denies venereal.

One year ago, piles began to itch and burn; bled frequently, and came down outside anus at every movement of the bowels; has used various salves without relief. Complains chiefly of bearing down in rectum, coming on before a movement of the bowels; also the annoyance which the piles cause him. No bad pain in rectum; no mucus or pus discharges; no loss of weight.

P. E. Poorly developed and nourished. Heart, lungs and abdomen negative. Rectal examination: on anterior wall of rectum, about three inches up from anus, is a soft, spongy tumor, irregular in outline, size of a small hen's egg. Few small glands in groin.

Operation, Dec. 4, 1902. C. A. Porter. Ether. Patient lying on abdomen, with thighs moderately flexed. Sphincter dilated; rectum irrigated with corrosive 1–1000, and salt solution.

Incision 9 cm. in length, extending along cleft of nates, into rectum. Sphincter cut; incision carried down to bone. Coccyx separated from soft parts with periosteum elevator, and removed with bone forceps. Incision carried around rectum mucous membranes, just above external sphincter, and carried through the walls to the perirectal tissue. Keeping in the blunt of cleavage, the rectum was separated and isolated for 12 cm. of its length. Walls of rectum were somewhat adherent to prostate, but were separated cleanly. Peritoneal fold of anterior wall of rectum was pushed backward and upward, and peritoneal cavity was not opened. Mucous membrane which was left covering sphincters was dissected off the cylinder of rectum, containing growth, and completely isolated, was cut away and removed; bleeding points tied. The incision was 2 cm. above its highest demonstrable limit of growth; one or two small perirectal glands were removed also. The divided end of the gut was then sewn to skin about margin of ends; this was done easily without undue stretching. The ends of the divided sphincters were approximated, thus encircling the transplanted gut very effectively. One silkworm stitch taken to close section wound. A drainage tube put down to the left of gut, and rubber dam to right. T. bandage.

Kraske operation (modified) for carcinoma recti. Patient was breathing laboriously and had poor color throughout operation. Sent to ward in fair condition; shock enema.

Reported later for poor pulse, which was irregular and easily compressible, although of good volume.

Wound discharged very little; no pain or discomfort. Patient was unable to evacuate bladder completely, and the residual urine increased, so daily catheterization was resorted to.

Examination of 19th showed that sphincter grasped finger very strongly, but apparently voluntary nerves are cut, for patient has no control. Bowels are loose, and movements occurred without knowledge of patient.

Four months after operation, patient regained control of urine, and slowly regained control of sphincter ani. Was discharged Nov. 4, 1903; holds feces well for three to four days; sometimes a little blood comes away, but there is no pain. Examination of rectum shows scar wound, with no signs of recurrence.

An ulcerated infiltrating new growth about 4 cm. in diameter with a slightly papillary and infiltrating edge 5 cm. above rectum.

Microscopic examination. — Shows irregular glands which had infiltrated the submucous tissue and, in some places, apparently has solid masses of epithelial cells.

Adeno-carcinoma. Dr. Whitney.

In both of these cases, the sphincters have been preserved; both had an ulcerated adeno-carcinoma on the anterior wall of the rectum about 4–5 cm. in diameter. In the first case, an incision was made from the lower end of the sacrum down through the sphincter ani in the median line behind. The coccyx was removed. This incision was continued in the median line, through the posterior wall of the rectum, both edges of the wound being then widely retracted, disclosing the ulcer on the anterior wall. This was freely excised, and the tissues behind the prostate and about the vesical seminals cleaned out. This circular wound was then closed with buried catgut stitches, from above downwards. The posterior incision in the rectum was closed in the same manner, laterally, and the sphincter muscle sutured. A rubber tube was placed in the rectum, with posterior iodoform gauze drainage on either side. In the second case, the same incision was made down to the rectum. The sphincter was divided, and the rectum cut just above the internal sphincter. The rectal tube with surrounding fat tissue, was then freed and divided transversely an inch above growth. The upper end of the rectum was then brought down and sutured in a circular fashion, and the mucous membranes just above the internal sphincter. Both sphincters were then sutured; rubber tube in the rectum, and posterior gauze drainage as before.

In both cases there was some fecal leakage but the sinuses were closed in six weeks.

II. Patrick J. Kelley, aged fifty-one, residing in East Boston, was admitted to my service, July 26, 1907; recommended by Dr. Lincoln in the Genito-Urinary Department. His history is as follows: Denies venereal; moderately alcoholic; bowels costive; indigestion at times; has lost no weight. Well nourished muscular man. For several months has been troubled with frequency of micturition at night, which wakes him three to four times. Four weeks ago, had to pass urine frequently during the day with scalding sensation. Has never had pain other than on urination. Rectal examination shows small, indurated and nodular prostate; not tender. No glands by rectum; no glands in groin. Testicles and cord negative. Urine acid; no albumin; no sugar; specific gravity, 1,015.

Cystoscopic examination by Dr. Davis, July 25. "Kollman instrument introduced with considerable difficulty, requiring great depression of the handle. Some spasm of neck of bladder. Fundus trabeculated; whole floor of bladder ulcerated. Right lobe of prostate presents rounded tumor, size of marble, which runs off into a generally elevated surface, presenting little reddened excrescences suggesting a new growth. There is a black mass, about size of strawberry, which cannot be fully brought into view, and which moves from one part of the bladder to another. There was some hemorrhage. Ureteral openings not distinctly seen. Diagnosis of incipient prostatic carcinoma made, and radical removal advised. This diagnosis was concurred in by me from the rectal examination, owing to the nodular condition and the extreme hardness.

Operation, July 31, 1907. The patient in Trendelenberg lithotomy position. Horseshoe incision made in perineum and dissection made exposing the bulbous urethra and the prostatic lobes; considerable bleeding. An oblique incision was then made through the right lobe of the prostate, and a wedge-shaped piece given to the pathologist for examination. The report from the frozen section given to Dr. Kidner, and confirmed by Dr. Richardson, was probably carcinoma, and the radical operation decided upon.

A median incision was made just back of the membranous urethra and Young's retractor introduced. The prostate was pulled down with strong traction, and with scissors and blunt dissection, the surrounding structures were freed from the prostatic capsule. The bleeding was very troublesome, controlled by snaps and pressure. After the posterior and lateral parts were thoroughly freed, the urethra was divided at its membranous portion; the whole mass pulled downward, and with great difficulty and copious hemorrhage, the prostate was freed from its pubic attachments. The bladder was opened anteriorly, two strong silk sutures being inserted at the edge in order to prevent retraction. The base of the bladder was then divided with scissors, well behind the internal sphincter, and the vasa deferentia and two thirds of the vesical seminal removed "*en bloc.*" A No. 12 English soft rubber catheter was then introduced through the urethra into the bladder, and with 00 chromic catgut sutures, the membranous urethra was sewed about it to the bladder, and the stem of the Y-shaped opening in the bladder closed in a similar fashion. This proved to be a very difficult manipulation, and the patient had to be lowered from the Trendelenberg position owing to the retraction of the bladder. A number of tension sutures were placed about one inch from the urethral suture, passing through the muscular walls of the bladder and posterior part of the pubic bone.

Iodoform wicks inserted by the side of the newly formed urethra, extending on either side into the pubic region.

Operation lasted for three hours, and the patient was put to bed, suffering both from shock and hemorrhage. The operation seemed to me both a very severe and a difficult one. Convalescence, however, was satisfactory. At the end of five days there was some sloughing of the fat tissue, and some leakage due to suture. The catheter remained in position forty days, at the end of which time, methylene blue showed no leakage in the perineal wound, which was almost closed. Patient was discharged Sept. 19, about two months after entrance.

The specimen consists of symmetrical prostate, 4.5 by 5 cm. in diameter; its two lobes being practically equal and not markedly lobulated. The capsule appears covering the whole mass. There is also a piece of the floor of the bladder about 2 by 2 cm. containing the internal meatus and the prostatic urethra. Behind appear the seminal vesicles, which are dense and thickened. Also the vasa deferentia, which are filled with muco-purulent fluid. Both these structures are greatly thickened, hard, and suggest malignant feel. On section, the prostate is unusually homogeneous in structure, although the minute glands can be made out, scattered all through the cut surface. The structure seems to be unusually cellular. The capsule is not markedly adherent to the prostate itself.

Microscopic examination through the prostate and capsule shows the glands to be everywhere extremely irregular and to be increased markedly in numbers. The muscle tissue is somewhat infiltrated with round cells, but not greatly changed. The whole increase in bulk is apparently in the number and size of these glands, some of which are clearly defined with firm basement membranes; these, however, at one point or another, entirely lose their basement membrane, and the cells can be seen growing freely in the muscular tissue, separated from any gland. All of the glands show marked hypertrophy, in the epithelial structures, many of them being noticeably papillomatous. As far as could be made out, however, the capsule is not infiltrated.

Section through the vasa afferentia and seminal vesicles shows again great increase in the epithelial lining of these structures. In places the mucous membranes seem to have broken through its basement membrane and to be infiltrating the muscular layers of the tissue.

Adeno-carcinoma of prostate.

Patient reported to me a week ago at my office. He can hold his water an hour and a half at night, but is incontinent during the daytime, wearing a urinal. There is a definite narrowing, admitting No. 24 French at the site of the suture. The urine shows slight cystitis. He has no pain; has gained weight and color.

Rectal examination shows in region of the left vesical some fullness, but no nodulation.

This case is interesting, I think, in two respects: first, because an attempt was made, by saving the membranous urethra, to restore partial continence. In the operation as planned by Young, the membranous urethra is removed. Up to the present time, however, this attempt has been unsuccessful. Second, the question of diagnosis and a choice of cases for this formidable operation. From my experience with this patient, and the few reported cases, it would seem an absolutely unjustifiable operation to do in case there was any reasonable doubt as to the presence of carcinoma. On going over other sections of this prostate, mounted in paraffin and more careful staining, there is at present some doubt whether cancer was actually present, but it is certain that there was an abnormal tendency for adenomatous tissue to be found in the surrounding tissues, suggesting at least the probability that adenocarcinoma would develop, or might be found in other places on further section. In subsequent cases, I should advise enucleation of the gland, if the frozen sections did not show definite carcinoma, or the clinical signs were absolutely characteristic.

III. Hudson H. Smalley, aged thirty-four, entered Dr. Cabot's service in April, 1906, with the diagnosis of cystitis. Twelve years before, he began to have bladder trouble; frequently scalding micturition, often passing fragments of tissue size of a pea, and once a piece as large as palm of hand. He was treated at the Maine General Hospital for ulceration of bladder. Denies venereal.

At present he complains of passing both fresh and clotted blood with a bad odor. Has difficulty in starting stream; dribbles, and he feels that he never fully empties his bladder. He has frequency of urination every half hour or more during occasional attacks of cystitis. Appetite is good; bowels regular.

Bladder is full, extending to umbilicus; no fever. Urine: specific gravity, 1,015; slight trace of albumin; alkaline reaction. Sediment: some pus; bladder cells; triple phosphate crystals; numerous blood corpuscles, both normal and abnormal; many bacteria. Catheterized and 19 oz. of residual urine found. On the next day, residual urine 24 oz., and on the fourth day could not be catheterized on account of spasm. Decided to go home against advice.

Patient entered hospital again April 16, 1907; has lost weight and looks badly. Rectal examination shows prostate moderately enlarged; base of bladder uneven, tender, boggy and indurated. No. 11 English soft rubber catheter passed with some difficulty, drawing off 27 oz. ammoniacal urine. Patient put on constant drainage, and three days of such treatment cleaned up the urine somewhat, and patient was much more comfortable. Cystoscopy by Dr. Davis, who found three diverticula from the bladder, one large one extending from the left side of the base, backwards and downwards.

April 30. Operation by Dr. Mumford. Transverse incision above pubis; prevesical space opened; bladder wall thickened and friable; opened and a quantity of foul smelling fluid escaped. Upon exploration, two diverticula found, one about length of little finger, extending backwards and downwards. Radical operation was not attempted. A catheter was sewed into the bladder with a puckered stitch; wound closed with drainage.

May 7. Copious leakage about tube and gauze wick; tube removed, and inlying catheter inserted. Patient sat up in bed; free drainage from the suprapubic wound and urethra. On the 10th moderate suppuration of prevesical space. Bladder irrigated with argyrol, 5%; urine much clearer. On the 21st, second operation by Dr. Mumford.

Operation. — Bladder opened suprapubically, and found almost as foul as at previous operation. Diverticula examined and found to be sacular, with a tight sphincter at the orifice. These sphincters were both widely dilated, and the diverticula packed with iodoform gauze. Rubber tube inserted through suprapubic wound and a No. 10 soft rubber catheter through urethra; prevesical space drained with gauze.

On June 8, wound fairly clean; temperature normal; some drainage through suprapubic sinus; urine much clearer. On the 19th, suprapubic wound leaked copiously; hardly any urine by urethra. On the 24th, patient etherized and pus pocket found on anterior wall of urethra; 32 sound passed, and good drainage established through a No. 11 English web catheter. On the 25th, the powerful action of the muscle drove out the catheter.

June 30. Operation by Dr. Jones. Posteriorly, urethra explored through the wound, and several pockets found. Index finger passed into the bladder, and a large rubber tube inserted and sutured in position.

July 3, patient has been draining well; little suprapubic leakage; urine less foul; no dependent drainage and frequent irrigation of bladder. On the 14th, catheter through urethra. On the 22d sleeping and eating better; urine clearer; draining well.

Aug. 2, patient discharged, but urine still foul; unless on constant drainage, some suprapubic leakage.

Re-entered hospital in my service, Sept. 20, 1907. Had been doing badly in the Out-Patient Department, and for the last five days pain in left renal region, and marked swelling of the left epididymis. Examination shows definite tenderness in the region of left kidney, with albumin and numerous casts in the urine, which is foul and full of pus. Patient had apparently developed a recent pyelitis as well as an epididymitis. Has lost weight and is utterly discouraged. On Sept. 8, I decided to make an attempt to remove the diverticula by Young's method.

Patient in Trendelenberg position; five-inch suprapubic incision to left of old scar. Everything was bound together by cicatricial tissue. Incision then made parallel to Poupart's ligament on the left, outward, for a distance of three inches. Dry gauze dissection backward and to the left, freeing the upper part of the bladder which had been distended with boric solution. The peritoneum was opened and through this the base of the bladder was examined. After carefully walling off with gauze, an elastic mass about the size of a banana, and three inches long could be made out extending backwards and to the left of base of bladder firmly adherent to rectum and surrounding structures. After freeing the bladder and diverticulum, it could be seen that the vas deferens ran obliquely inwards and backwards, anterior to the sac. An attempt was made along a line of cleavage to separate the rectum from the diverticulum, but this dissection was found to be too dangerous, so the bladder was opened suprapubically, and after much difficulty, the forefinger was hooked into the diverticulum and, the bladder with it, forcibly pulled forwards. After this maneuver with dry gauze, scissors and the finger nail, the rectum and surrounding tissues, after a half hour's dissection, were gradually separated from the wall of the sac. The diverticulum was then grasped with double hooks and firmly withdrawn, and cut off with scissors from the base of the bladder. The opening left was sutured with two layers of buried catgut stitches. The left urethra was not seen at any time, but the left seminal vesicle was exposed in the dissection. The peritoneum was closed. The bladder washed out carefully, and sutured in layers, about a suprapubic tube. The bed left, after the removal of the diverticulum, was packed with iodoform gauze, and a soft rubber tube and catheter was placed in the urethra. The operation I consider an extremely difficult one, requiring three hours of hard work. On the day following, however, the patient was in fair general condition.

Sept. 27. Bladder draining well, both above and below.

Sept. 29. On doing dressing this morning, part of peritoneum overlying upper part of wound was found to have protruded through the wound with a loop of intestine within it. There were no signs of strangulation, and the little perineal hernia with its contents was pushed backward and held in place with gauze without further trouble.

Oct. 3. Bed rest. Amount of drainage daily increases; patient very comfortable, with normal temperature; good drainage through urethral catheter; bladder washed out twice daily. No leakage through wound into dressing.

Oct. 4. This morning, the urethral tube was found to have drained hardly any, and the suprapubic dressing was soaked. The tip of urethral catheter protruded through suprapubic wound, which has opened, so that the suprapubic drainage tube was quite loose. The latter was therefore removed, and the catheter poked back into the bladder. Pelvic packing removed, and replaced by plain gauze, and upper angle of wound tightly restrapped with adhesive plaster.

Oct. 6. Wicks all removed and replaced with similar ones; two in number passing down between bladder and rectum. The upper angle of wound drawn together with adhesive plaster.

Oct. 7. Patient draining well this morning, with normal temperature, and little suprapubic leakage.

Oct. 8. Wound cleaning up well, and much less painful; wicks between bladder and rectum removed and renewed.

Oct. 10. Catheter again protruded through suprapubic wound; replaced. Wicks removed and only one replaced.

Oct. 13. Catheter protruding and again replaced; wick renewed. There is some temperature and purulent discharge.

Oct. 15. Wick changed; there is still profuse purulent discharge through a deep sinus into the pelvis, behind the bladder; catheter draining well.

Oct. 16. Patient comfortable with normal temperature, and draining well.

Oct. 17. Sinus discharging freely; re-wicked.

Oct. 19. Redressed; not draining well; leaks through suprapubic wound.

Oct. 20. Drain of 36 oz.

Oct. 21. Catheter readjusted.

Oct. 22. Drain 67 oz.

Oct. 24. Drain 14 oz. Wound looks about the same.

Oct. 27. Drain 69 oz. On doing the dressing, the tip of the catheter was found protruding through the bladder sinus; pulled back. Has not leaked any; now there is a five-inch sinus going down into the pelvis, which is closing in and discharging less.

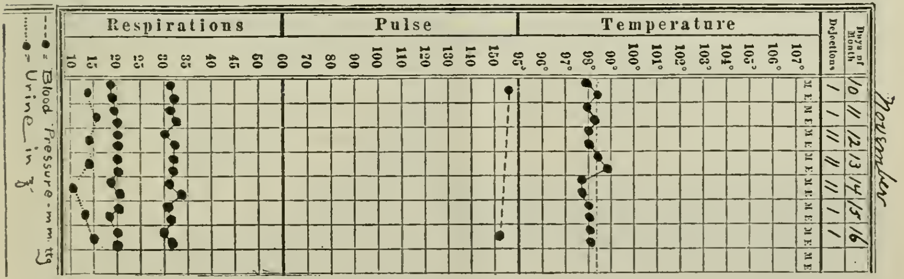
Present condition of patient: it has been most difficult to maintain urethral drainage, but when it is working well, there is little suprapubic leakage, but the eye of catheter is continually protruding in the suprapubic wound or becoming stopped up. At present, there is a small granulating sinus. The suprapubic opening in the bladder is apparently closed, but there is still some urinary leakage at the site of the suture. Over fifty ounces of fairly clean urine is discharged by the catheter every twenty-four hours.

The patient's general condition is much improved.

I. A CASE OF STOKES-ADAMS DISEASE WITH EXHIBITION OF THE PATIENT.

BY H. F. VICKERY, M.D.

A. G., a male cook, sixty-eight years old, entered my wards at the Massachusetts General Hospital, Sept. 9, 1907. His family history was good, except that his mother had died of heart disease at the age of seventy-one. His habits were temperate. Venereal disease was denied, but exposure confessed. For eighteen years he had been subject to convulsive seizures, occurring usually without warning, and sometimes as often as two or three times in a month or again once in two or three months. Occasionally he bites his tongue in them. Eight weeks before entrance he noticed swelling of the abdomen, but he has had no dyspnea nor cardiac pain, and he has been doing light work.



Physical examination showed a pale, well developed, poorly nourished man with a pulse and apex beat of 30 to 35 per minute. (See sample of chart.) The radial arteries were tortuous and hard, with irregular platelets of calcification. The posterior peroneal arteries could not be felt to pulsate. The systolic blood pressure was 150 to 160 mm. of mercury. The heart's apex was three quarters of an inch outside the left nipple, in the fifth space. The heart sounds were regular, slow and forcible. There was a systolic murmur at the apex, transmitted a short distance to the left. The pulmonic second sound was slightly accentuated.

A jugular pulse was seen, not easily counted, but apparently two or three times as frequent as the apex beat. It was not possible to detect by auscultation any sounds suggestive of more frequent contractions of the auricles or of the right ventricle, as distinguished from the systole of the left ventricle. Dr. F. W. Palfrey has made simultaneous tracings of the pulsations of the right jugular vein and right subclavian artery. (See cut.) Fluoroscopic examination had an indecisive result; of six equally competent observers, three thought they could see pulsations of the auricles more frequent than of the ventricles in the ratio of about 65 to 25; the other three observers could not verify this. As the examination fatigued the patient, it did not seem justifiable to prolong or repeat it.

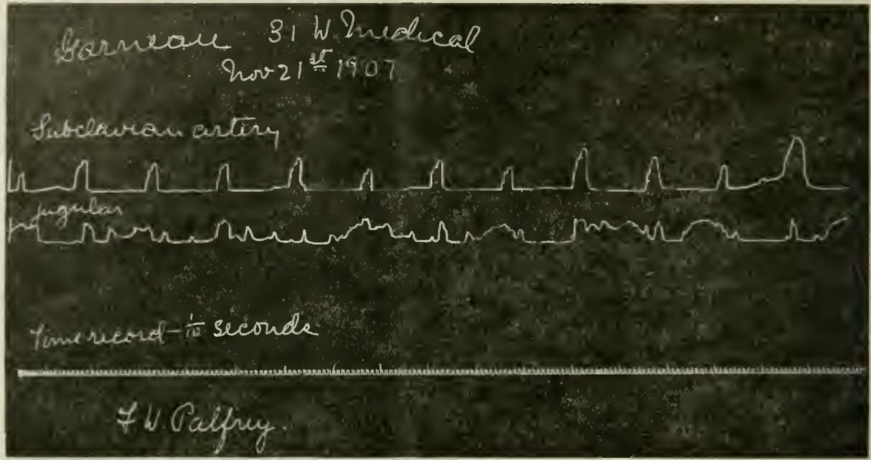
The abdomen was twice tapped:

Amount, culture.	Eight pints, sterile.	Three pints, sterile.
Specific gravity,	1,009	1,011
Albumin,	¾%	1½%
Tubercle bacilli,	0	0
Lymphocytes,	82%	86%
Endothelial cells,	17%	13%
Polymorphonuclears,	1%	1%

The fluid was regarded as a non-inflammatory transudation. At the present time, the patient having been confined in bed for ten weeks, there is scarcely any liquid in the peritoneal cavity. At the time of entrance, the eyelids and the lower extremities were slightly edematous; but this swelling has been absorbed.

The urine has a slight trace of albumin with a few hyaline casts.

The liver is slightly enlarged. No change in the spleen can be detected. There is no striking change in the veins connected with the portal circulation.



CASE IV.

The patient, although never intoxicated, has drunk more or less alcohol for forty-five years, and it does not seem possible to exclude absolutely the existence of a limited degree of hepatic cirrhosis.

About a month after entrance several convulsions occurred in the course of a few days. One of these was watched by my house-officer, Dr. L. H. Burlingham. He states that both heart and respiration ceased. Apnea lasted two minutes and the heart began to beat before the resumption of respiration. In some of the attacks there was an escape of urine and feces.

It is to be remarked that these convulsions first began when the patient was about fifty years old, late in life for true epilepsy, and that the length of time since they appeared, together with the physical examination of the patient, justify us in ruling out almost all other causes except the Stokes-Adams disease; so that it seems probable that this latter condition has existed for eighteen years. Osler has reported one which lasted thirty years.

MALIGNANT DISEASE OF PLEURA, WITH EXHIBITION OF SPECIMEN.

BY H. F. VICKERY, M.D., AND OSCAR RICHARDSON, M.D.

WITH REMARKS

BY J. H. WRIGHT, M.D.

DR. VICKERY:

Mrs. J. T., a widow sixty years of age, born in England and resident for the last two years in the United States, entered my wards Oct. 9, 1907. From Nov. 1 to Nov. 9 (when she died) she was under the care of Dr. R. H. Fitz, and I am indebted to him for an opportunity to report the case.

There was no family history of tuberculosis or cancer. There was no evidence of syphilis. The menopause occurred at fifty-three, without symptoms. The habits and previous health had been good. A year ago she was ill in a hospital for one week with diarrhea and vomiting, and she has been "run down" ever since. About eight months ago, she fell into a hole in a floor, and hurt her foot and right side; since then she has had occasional pain (sometimes severe) in that side. For seven weeks the pain has been much worse and almost constant, and her general health has suffered. She has had slight dry cough, dyspnea, fever at night, gastric distress and nausea without vomiting. In bed for almost five weeks. Four weeks ago, five pints of bloody fluid were withdrawn from her right chest, and an equal amount six days later. Expectoration is very scanty — a little clear mucus.

The patient was well developed and well nourished, somewhat cyanotic, never cachectic. The heart's apex was in the eighth interspace, 6¼ inches to the left of the mid-sternum beyond the anterior axillary line. The sounds were of good quality without murmurs. The pulmonic second sound was slightly accentuated. The radial pulses were synchronous, equal, regular and of good volume and tension. The right chest was very dull where it was not flat, with respiration, vocal resonance and vocal fremitus almost absent, except at the apex. No râles were heard. The left lung was normal (except for Grocco's sign). Pressure on the ribs in the right axilla causes pain. The patient was tapped four times in the hospital in addition to the two previous tappings:

Date,	Oct. 9	Oct. 14	Oct. 17	Nov. 3
Amount in ounces,	90	80	25	19
Color,	bloody	bloody	very bloody	
Specific gravity,	1,019	1,016	1,014	1,015
Albumin,	3%	3.5%	3%	1.6%
Lymphocytes,	97%	97%	94%	90%
Polymorphonuclears,	3%	3%	2%	....
Endothelial cells,	....	....	4%	10%
Tubercle bacilli,	0	0	0	0

When the needle was inserted, it always seemed to go through more tissue than normal. There was some relief afforded by tapping but not much improvement in the physical signs nor in the position of the heart.

The x-ray showed a diffuse shadow over the whole right side not changing with change in the position of the patient, also a mass near the hilum of the left lung.

The pain required increasing doses of morphine, up to $\frac{2}{3}$ gr. during the night. Dyspnea increased more rapidly than the heart failed. The pulse remained good till the last half hour. The temperature ranged between 98° and 101°, the pulse between 80 and 110; the respirations were usually 28, before the end rising, however, to 45. The urine was negative. The per cent of hemoglobin was 85, the white count, 4,800. there was never such a temperature as to permit a tuberculin test.

Malignant disease was thought of from the first, but tubercular disease perhaps involving mediastinal glands was not considered impossible.

I. DERMATITIS HERPETIFORMIS (HERPES GESTATIONES). II. RAYNAUD'S DISEASE.

BY H. P. TOWLE, M.D.

I. This woman who is now in the fifth month of her fifth pregnancy states that at about the third or fourth month of each of the four preceding pregnancies an eruption similar to that now present has appeared which persisted until after delivery. With the termination of pregnancy the eruptions cleared up gradually and the patient remained free until the next pregnancy. The attacks have increased in severity with each outbreak, the present being the most severe of all. The eruption itself is also of interest as it shows to an unusual degree the multiplicity of lesions characteristic of the disease. Upon the front and back of the trunk are large erythematous plaques of irregular wavy outline together with scattered small circinate lesions. Upon the lower arms especially, the lesions are very suggestive of erythema multiforma with their prominent peripheries, clearer centers and central dark spots. Upon the inner surfaces of the thighs and in the groins are the characteristic almost purple areas left by preceding lesions from which spring vesicles and bullæ of varying sizes and varying outlines, everywhere arranged in groups. Upon the lower legs and to a less degree upon the thighs are pustular lesions in addition to vesicles and bullæ. Vesicles and bullæ are also to be seen in groups upon other parts of the body. Pruritus is a marked feature of the case and is so severe as to prevent sleep.

II. Signs of a disturbance of the circulation are to be seen in all the fingers of this woman to a marked degree and to a lesser extent in the ears. Variations in color from dead white to a static blue are constant and often rapid. Upon entrance the anemic condition seemed to predominate, but recently the congestive has been the more frequent state. This is particularly true of the terminal phalanx of the middle finger of the left hand over which the bluish color is appearing more and more frequently for gradually lengthening periods. Subjectively, the patient complains of coldness and pain in the hands and arms almost continuously.

I. SUPRAPUBIC PROSTATECTOMY AND STONE IN BLADDER.
II. RUPTURE OF THE INTESTINE.
III. ECHINOCOCCUS CYST OF LIVER.

BY F. G. BALCH, M.D.

I. W. B., seventy-eight years old, entered my service at the Massachusetts General Hospital, July 8, 1907.

His family history is interesting in that his father was over seventy years of age when he died and his grandfather lived to be one hundred and twenty years old.

Six years before entrance he had an attack of bloody urine. Before that time he had had no pain, but after that the pain was severe and was referred to the end of the penis on micturition. He had seen blood six or seven times following exercise. He was having some difficulty in micturition and the frequency was especially distressing, often forcing him to get up six or seven times at night. There was no dribbling. More recently he had had less pain in the penis, but more in the rectum, especially on walking. The urine was foul and thick. There was a small hydrocele on the left. He thought he had lost 25 lb. in the last three years. Appetite was good. There was very slight sclerosis of the arteries. Tongue very dry and cracked. Heart and lungs were not remarkable.

Rectal examination showed the prostate much enlarged, especially on the right. It was not tender nor nodular. An attempt at cystoscopy was not satisfactory. The instrument went in with difficulty and caused much hemorrhage. A suprapubic cystotomy was done. Two stones lay in the bottom of the bladder, one a small round one about the size of a small cherry and the other irregularly shaped, being an almost exact representation of the small iron jackstones which children play with. The prostate was of large size, but shelled out very easily. The wound was partially closed and two drainage tubes put into the bladder. For the next forty-eight hours constant irrigation with salt solution was continued. In three days both tubes were removed and the next day he passed some water by urethra. On the eighteenth day the leakage had ceased and he was discharged on the twentieth.

Pathological examination of the prostate made by Dr. Kidner showed cystic hypertrophy of the prostate. There was no evidence of malignancy.

I am indebted to Dr. Edmund D. Chesebro, of Providence, for some further notes on this case.

He wrote me Nov. 11, saying the patient had been to see him three times. On Aug. 9, he had a small sinus which had closed up on the 27th. He was having a good deal of trouble with flatulency and constipation and various aches and pains in all parts of his body. There was some irritation of the bladder and mucus in the urine.

A letter written Nov. 8, by the patient, says he still has a great deal of pain like rheumatism, especially in his back and legs. He has a great deal of eczema about the anus and it extends out on to his legs and forward on to the scrotum. This was there before operation. He has various stinging sensations about the wound, and the urine is at times ammoniacal and still has a large amount of mucus in it. He passes a good stream but has to get up three or four times at night and passes water quite often during the day. If he tries to hold it long, he has some pain.

I wrote him advising him to take urotropin for his cystitis and since then have not heard from him.

II. L. F. W., twenty-three years old, was sent to the Massachusetts General Hospital by Dr. Robert T. Porter, of North Easton.

The family history and past history were unimportant.

The history as given at the hospital was that the night before entrance, the man was riding a bicycle at about 8.30, and while going down hill fast, he struck a stone; this threw him violently against the handle bars and over on the ground. He got up and went home. Severe pain began at once in the abdomen and was persistent. There was considerable nausea but no vomiting. Bowels had not moved since the accident. The urine was clear.

On the day of the accident he had ridden to Taunton, starting about 9 A.M., and presumably after having had some breakfast. He drank more or less all day, beer, ale and whiskey. He ate one or more ham sandwiches, but nothing else. I have been unable to find out just what time he had these sandwiches, but probably somewhere about noon. He is a chronic alcoholic.

Dr. Porter saw him about 5.30 in the morning and brought him to the Massachusetts General Hospital.

Examination in the Accident Room showed nothing abnormal in the chest. The abdomen was very rigid over the entire left side and over the lower half on both sides. The right upper quadrant was slightly less resistant. There was marked tenderness on the left side over the region of the bladder. The lower half of the abdomen was dull but there was no shifting dullness and no masses to be felt. Temperature 101°, white count 12,000.

The abdomen was opened by a 4-inch incision in the median line. A moderate amount of blood-stained fluid escaped. Examination of the intestines in the lower abdomen showed nothing to account for his condition. In the left upper quadrant a mass of slightly matted intestines was felt and on withdrawing the hand a moderate amount of intestinal contents followed. The incision was enlarged upwards and the intestines systematically searched, from the cecum up, for a rupture. A large hole was found high up in the jejunum. This was closed with a continuous suture of chromic catgut. A second continuous Lembert suture of Pagenstecher was placed. The peritoneal cavity was thoroughly flushed out with salt solution. A cigarette wick was placed in the pelvis and another in the region of the tear in the intestine.

The patient made an uninterrupted recovery. The cigarette wicks were replaced in four days with small wicks of rubber tissue. He was discharged to the Out-Patient Department in twenty-six days. His temperature was at no time over 100° and the pulse, which was at the time of the operation 130, fell to 60 on the fifth day.

The fact that the patient had eaten but little on the day of the accident, and that was early in the day, that it had gotten below the uppermost portion of the small intestine, probably had much to do with his recovery.

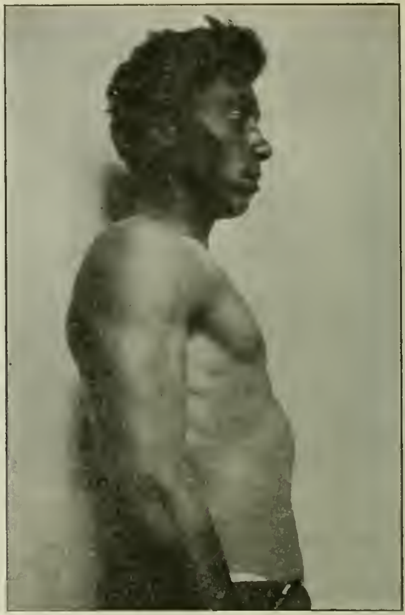
III. A. G., twenty years old, entered the hospital from the Out-Patient Department on July 5, 1907.

He had never been sick before. One month before entrance he noticed a swelling at the right costal border. This was painful and prevented him from working. It appeared suddenly but had not increased in size. He had never been jaundiced.

Examination showed a healthy young man in other respects. There was a smooth, rounded swelling in the upper right quadrant of the abdomen which bulged the lower ribs forward. It was the size of a large orange, tense but not tender. It descended with respiration. The liver dullness extended to within one inch of the umbilicus. The sharp edge of the liver was easily felt. Its surface was smooth, otherwise the abdomen was negative.

I operated on July 8, 1907.

On opening the abdomen a mass the size of a grape fruit was disclosed coming out of the center of the liver well up above the lower margin. It was tapped and several ounces of clear watery fluid were withdrawn. After drawing off a large amount the tumor collapsed and the fluid became bile stained. The opening was then enlarged showing the collapsed wall of a single large echinococcus cyst. This was removed and the cavity packed with gauze. During convalescence large amounts of bile came from the wound. After the gauze was removed it was replaced by a drainage tube. An attempt was made to leave this tube out on the 22d, but the patient had a chill and it had to be replaced. This occurred on two later occasions when attempts were made to leave the tube out.



Case 3.

Finally, on the 21st of August, he was discharged to Waverley. At that time the wound was still discharging slightly.

ECHINOCOCCUS CYST OF THE LIVER AND OF THE GALL BLADDER.

BY D. F. JONES, M.D.

The following case was operated upon in Dr. C. A. Porter's service, and I am indebted to him for permission to report it.

A. P. J., aged forty-nine, a Swede, machinist by trade, entered the Massachusetts General Hospital Aug. 24, 1906.

In February, 1906, he was jaundiced for three weeks. After the jaundice, a small, hard, painless lump was noticed in the epigastric region. This grew gradually larger, but was never painful. He came to the hospital only because of shortness of breath.

He was born in Sweden, and came to America twenty-four years ago. He went home on a visit, and came back here sixteen years ago, and has lived ever since in Cambridgeport. He has had nothing to do with animals.

Physical examination showed a large, median, epigastric tumor, extending from below the umbilicus upward to the costal border, somewhat tender on pressure.

He was operated on, Aug. 25, 1906. A median incision was made. A large, thick-walled cyst was found on the under surface of the liver. The wall appeared to be made up of liver substance. The omentum, stomach and transverse colon were adherent to the surface.

After walling off thoroughly with gauze, the cyst was incised. Immediately a cloudy fluid, filled with grape-like bodies varying in size from a pea to an egg, escaped. The cyst must have contained two quarts in all. The inside of the cyst was curretted with the fingers and with pads of gauze, and finally packed with two handkerchief gauzes. The wound was closed, except for the drainage wound.

His recovery from the operation was uneventful. The daughter cysts and the cyst-wall continued to be discharged with each dressing. On Sept. 21, the cyst wall was curetted with a sharp curette, and on Oct. 8, the patient was discharged in good condition, with a small rubber tube in the sinus. This sinus had closed entirely one month later.

Dr. Simmons reported an echinococcus cyst. The culture taken at the time of operating showed various cocci, mostly streptococci.

After being discharged, the patient was well until June, 1907. He then had a sharp pain in the right side, which on breathing went into the right shoulder. Two days later, he was jaundiced. He gave up work on account of generally poor condition. On June 22, he suddenly felt lame in his back. He became yellow, and had an aching pain in the upper abdomen, which persisted until he entered the hospital. The pain was especially bad between the shoulders and in the right hypochondrium. He entered the hospital on June 27, and had two severe attacks of pain in the right hypochondrium and between the shoulders, similar in all respects to an attack of gallstone colic. With the pain there was an increase in tenderness and rigidity, and his temperature rose to 103°.

Physical examination showed him to be markedly jaundiced. The abdomen was rigid, but not distended. There was a definite tumor on the right, descending to three inches below the costal border. It was very tender, and moved with respiration. On admission, his temperature was 101°, and ranged between this and 103.5°. On July 4, the jaundice was much lighter, his temperature was normal, and the tenderness was less.

The second operation took place July 5, 1907. The old cicatrix was excised. The site of the former cyst was perfectly smooth, and normal appearing, except for the adhesions. In the right hypochondrium, filling the whole flank, was an irregular mass, surrounded by adhesions. This was walled off and the mass broken into. It was found to contain bile-stained, cloudy fluid, and was filled with daughter cysts. The walls of this cavity were irregular, and seemed to be made up of adherent intestines and omentum. The gall bladder was much thickened, and the whole of the left side had disappeared. This also contained daughter cysts and cloudy fluids.

The whole cavity was curetted with the fingers, and packed with gauze. There was considerable shock and inflammatory reaction for a few days, but the patient soon recovered, and left the hospital on July 29, with a small sinus.

Whether this cyst took its origin from the old cyst outside the gall bladder and made its way into it, or originated in the gall bladder and made its way outward, is impossible to say; but judging from the character of the cyst-wall, and the ease with which it was broken into, one would think that the cyst originated in the gall bladder and ruptured into the abdominal cavity.

The patient to-day is in excellent condition, has had no pain since leaving the hospital and there is no evidence of further growth.

There are two points to which I should like to call attention. First, that the patient has not been out of Cambridgeport for sixteen years. This fact, with the marked increase in the number of cases of echinococcus cyst which have entered the hospital in the last two years, and the increase noted in animals by the government officials, would lead one to inquire if echinococcus cysts are not increasing in the United States. I hope to be able to throw some light on this question in a later paper.

Secondly, it will be noted that the culture taken from the cyst at the time of the first operation showed many cocci, and particularly streptococci, to be present. In connection with this, another case which I operated upon this summer is of interest.

The patient was a Greek, who entered the hospital with acute abdominal symptoms, and a mass in the epigastrium connected with the liver. It proved to be an echinococcus cyst, and in spite of the most careful walling off before opening the cyst, and drainage of it with gauze, the patient died of a general peritonitis due to a pure culture of colon bacilli.

One should, therefore, use the greatest care when operating upon these cases, not to soil the peritoneum.

Reports of Societies.

INTERNATIONAL DERMATOLOGICAL CONGRESS.

Sixth International Dermatological Congress, Held at the Academy of Medicine, New York, Sept. 9 to 14, 1907.

(Continued from No. 24, p. 797.)

Second Day, Tuesday, Sept. 10. Morning Session.

The first two hours of the session were devoted to the exhibition of patients and a formal discussion on the same.

Dr. H. Radcliffe-Crocker, of London, Vice-President, in the chair.

THE PATHOLOGY OF THE BROWN-TAIL MOTH DERMATITIS.

Dr. E. E. Tyzzer, of Boston, Mass., in this paper, said the exact date of the introduction of the brown-tail moth into this country was unknown, but it was first noted in large numbers in 1897, in one of the suburbs of Boston. This species had since spread throughout the greater part of New England and had also penetrated adjacent territory. It had been shown that the dermatitis which was produced by these insects was due to very minute, sharp-pointed, barbed hairs, the "nettling hairs" which developed on the caterpillar. The other hairs were harmless. On experimentation with the nettling hairs, it was found that when they were mingled with a drop of blood, a peculiar reaction took place which served as an index to their toxicity. The toxic principle was removed from the hairs by dilute alkalis and by water heated to 60° C., but it was insoluble in other common reagents. It was quite resistant to heat and withstood baking for one hour at 110° C., but was destroyed by baking at 115° C. The nettling hairs after such treatment no longer gave any reaction when mingled with blood, and produced no irritation when inoculated upon the skin.

TRAUMA AS AN ETIOLOGICAL FACTOR IN SKIN DISEASES.

Dr. Neuberger, of Nuremberg, Germany, read a paper with this title, in which he emphasized the importance of trauma as an etiological factor in the production of certain skin diseases.

Dr. Joseph Zeisler, of Chicago, said that thirty years ago, Kaposi and his school insisted that trauma might act as the focus in the production of various diseases of the skin, and this fact had been pointed out in connection with lichen planus, eczema and psoriasis, and even in syphilis.

Dr. A. Ravogli, of Cincinnati, said there were a number of diseases of the skin which were apparently the result of trauma, as, for instance, the erythema due to irritation of the skin.

IDIOPATHIC MULTIPLE HEMORRHAGIC SARCOMA (KAPOSI).

Dr. M. B. Hartzell, of Philadelphia, said that in 1872, Kaposi first called attention to an unusual and remarkable affection of the skin characterized by the occurrence of deeply pigmented infiltrated patches and small tumors, situated almost invariably on the extremities, followed after several years by visceral metastases and death, for which he proposed the name idiopathic multiple pigmented sarcoma, a name which he, twenty years later, changed to idiopathic multiple hemorrhagic sarcoma, as being more accurately descriptive of the disease. He regarded the malady as a typical, although special and peculiar, form of round-celled sarcoma, with the occasional occurrence of characteristic spindle cells. Soon after the appearance of Kaposi's paper, other observers began to report similar cases, and the list had steadily, though slowly, grown until the number of recorded cases was now something over one hundred. While the affection seemed to be peculiar to no country nor race, the great majority of cases on record had been reported by European observers, and fully one half of these were from the northern provinces of Italy. The number of cases reported in America was extremely small, and some of these occurred in foreign born. Dr. Hartzell then reported in detail a case of this affection which recently came under his observation.

Dr. H. Radcliffe-Crocker, of London, said this disease was rarely met with in England. It was most commonly observed there among the Poles and Galicians.

Dr. Edward H. Shields, of Cincinnati, referred to a case of this character that he had observed in Kaposi's clinic.

Dr. Rollin H. Stevens, of Detroit, mentioned a case very similar to the one reported by Dr. Hartzell, which he had observed in a man, seventy-two years old, a native of Michigan, in whom the disease had developed five years before, after a visit to Denver.

Dr. Samuel Sherwell, of Brooklyn, N. Y., said that about 1892 he wrote an article on this subject in which he claimed good results for the use of arsenic in large doses.

MULTIPLE BENIGN CYSTIC EPITHELIOMA. (DEMONSTRATED FROM LANTERN SLIDES.)

Dr. M. L. Heidingsfeld, of Cincinnati, presented this paper, in which he offered the following conclusions: 1. Multiple benign cystic epithelioma, lymphangioma tuberosum multiplex and adenoma sebaceum were affections which possessed sufficient clinical and pathological variations to render many of the cases of doubtful recognition and classification. 2. These three affections were doubtless of embryonic misplaced tissue origin, and the clinical and pathological variations which were noted in each were sufficiently common to all to give them a common classification, and thereby prevent a somewhat arbitrary, confusing and redundant nomenclature. 3. Some of the clinical and many of the pathological changes had a striking resemblance to those manifested in early malignancy of the skin. 4. It was highly probable that malignancy of the skin, aside from other causal influences, also owed its direct origin to misplaced embryonic tissue.

Dr. Heidingsfeld's paper was discussed by Dr. M. B. Hartzell, of Philadelphia, and Dr. Joseph Grindon, of St. Louis.

OBSERVATIONS ON SKIN DISEASES IN THE NEGRO.

Dr. Howard Fox, of New York, read a paper on this subject in which he gave the following conclusions: 1. In spite of the fact that the negro was more susceptible to disease in general than the white man, and that his mortality was twice as great, he suffered less frequently and less severely from diseases of the skin. 2. The negro skin was decidedly less susceptible to external irritants. 3. The full-blooded negro was almost immune to ivy poisoning. 4. Acne was less common and much less severe in the negro. Rosacea was a rare and very mild affection. Eczema was perhaps not less frequent, though certainly less severe. Psoriasis in the full-blooded negro was very uncommon. 5. Tuberculosis of the skin was not more common in the negro, in spite of the great prevalence in this race of pulmonary and other forms of tuberculosis. 6. Syphilis was certainly more common in the negro than in the white. The acquired form was probably not more virulent, and tertiary forms were not more common. A tendency to the annular syphilide, as well as to keloid, elephantiasis and fibroma deserved to be classed as a racial peculiarity of the negro. 7. The negro was more subject to new growths of connective tissue origin, and less so to those originating in epithelial structures. Cutaneous epithelioma was very rare in the full-blooded negro. 8. The mucous membranes, as well as the skin, were less susceptible to disease. Leucoplakia was seen in the negro with extreme rarity. 9. Many of the rarer forms of skin disease were observed in the negro as well as in the white race. 10. Mulattoes were more susceptible to skin diseases than negroes, being especially prone to chloasma.

Dr. Isadore Dyer, of New Orleans, said that in the South, the negro, as a rule, did not apply for treatment for a skin condition, unless it was disfiguring or caused him suffering. The annular syphilide, as seen in the negro, was frequently partly vesicular; there was an arc of the circle which was quite markedly vesicular in type. The observation had been made in New Orleans, that perhaps the only malignant type of syphilis seen there occurred in the negro; only exceptionally in the white.

Dr. Joseph Grindon, of St. Louis, said the first question to be answered in regard to the relative frequency of certain skin diseases in the negro was, Who is a negro? To get the facts strictly correct, the investigation should be limited to the pure negroes, on one side, and the pure whites on the other. This, however, would be impracticable, as there was more or less white blood in so many members of the black race.

GANGRENA CUTIS HYSTERICA.

Dr. H. P. Towle, of Boston, in this paper, limited himself to those cases of gangrene of the skin which were either of artificial or of so-called spontaneous origin. It did not consider the cases of gangrene which occurred in childhood, or which were due to such causes as bacteria, organic diseases of the nervous system, or to obliterative diseases of the vessels. The paper gave the clinical histories of four cases of multiple gangrene of the skin, three in women and one in a man. While the cases varied somewhat from each other in minor details, they were alike in their essential features. They occurred in patients who were more or less markedly hysterical. Each case had suffered some sort of trauma before the appearance of the first gangrenous lesion. The first manifestation was in the immediate neighborhood of the preceding injury. After varying intervals of freedom, new lesions appeared farther and farther away from the starting-point, as time went on. The affection had existed for months, and in one case for years. The changes in the skin from the time of the first appearance of the lesions until they became gangrenous were very rapid, while on the other hand, healing was very slow. Recurrences never occurred when the patient was under control, and the affection never involved the parts which were not readily accessible. The physical examination showed nothing which would account for the changes in the skin. It was believed the eruptions were all feigned, but the evidence remained purely circumstantial, as none of the patients would confess, and nothing was ever discovered with which the lesions could have been produced.

Dr. H. Radcliffe-Crocker, of London, said that while he fully believed that all of these cases were self-inflicted, very able men who had had such cases under observation for long periods of time had expressed the belief that the lesions were not self-produced, although they were perfectly aware of such a possibility and even probability.

Prof. E. Gaucher, of Paris, France, said the gangrene was a secondary phenomena, caused by infection of a slight abrasion of the cuticle, but hysteria prepared the ground on which the gangrene developed.

Afternoon Session.

Dr. F. J. Shepherd, of Montreal, Vice-President, in the chair.

Theme I. The Etiological Relationship of Organisms Found in the Skin in Exanthemata.

SMALLPOX.

Prof. W. T. Councilman, of Boston, in discussing this subject, said the cause of smallpox was believed to be a parasitic organism having its habitat in the epithelial cells of the specific lesions of the skin. It was first recognized by Guanieri, and named by him cytorrhyctes variolæ. It was described in more detail by Councilman and his co-workers in 1904, and a probable life cycle was established by Calkins. The organism underwent a definite development within the skin, certain forms corresponding with the period of eruption. The same organism up to a certain period of development was found in vaccinia. Certain stages of development were peculiar to smallpox and only found in the lesions of that disease. It was believed that there were probably two cycles of development: (1) an imperfect cycle, probably analogous to the asexual cycle of the coccidia, which was common to both vaccinia and smallpox; (2) a complete cycle, representing a further development of the vaccine cycle, which was only found in smallpox. The virus of smallpox differed from that of vaccinia in its capacity of transmission without contact. The monkey was susceptible to the smallpox virus, and inoculation with smallpox material (contents of pustules) produced a disease with the specific lesions of smallpox and with a complete cycle of the parasite. Inoculation of the rabbit or calf with smallpox material produced a disease comparable to vaccinia, and with the incomplete or vaccine cycle of the organism. The inoculation smallpox of the monkey could be transmitted from animal to animal. The vaccinia produced in the calf or the rabbit, by inoculation of smallpox material was transmitted as vaccinia from animal to animal. Monkeys had been shown to be susceptible to smallpox only by artificial inoculation: it was not possible to infect them by means of exposure. The inoculated disease produced in monkeys had the same period of incubation as variola inoculata in man. In addition to the skin lesions, lesions specific to the disease were also found in the bone marrow and in the testicle. All other lesions of the disease were not specific, and were to be attributed either to the action of toxins or to the action of infectious bacteria, chiefly streptococci. Both vaccinia and smallpox led to active hyperplasia of the lymphoid tissues, with the production of large mononuclear lymphoid cells which passed from the lymph nodes into the blood.

CYTORRHYCTES VARIOLÆ: THE ORGANISM OF SMALLPOX.

Prof. Gary N. Calkins, of New York, said he would interpret the organism of smallpox as a rhizopod, of which only one phase of the life history was known, namely, the asexual or vegetative phase. This was characterized by development of the chromidium and formation of small reproductive spores (" gemmules ") which repeated the cytoplasmic cycle. The intranuclear forms possibly belonged to the sexual cycle, and it was not improbable that, as Councilman had early suggested, the intranuclear forms might be a different cycle of the organism occurring in variola and not in vaccinia. He would interpret the vesicular forms as either poorly fixed organisms, or as degenerative forms of the organism, the degeneration being produced by the accumulation of toxins found in the breaking-down vesicle. In any event, the intranuclear forms of the organism presented a different history from that of the cytoplasmic forms, and this history remained for some one to work out on well-fixed tissue, or, better still, on the living organism.

The papers of Drs. Councilman and Calkins were discussed by Drs. Walter R. Brinckerhoff, of Honolulu, and Thomas C. Gilchrist, of Baltimore.

THE OPSONIC METHOD IN SKIN DISEASES.

Dr. Arthur Whitfield, of London, England, said the term " opsonin " was applied to designate a hypothetical body present in the blood serum. It had not been isolated, but its action had been detected and estimated by Wright and Douglas. The method of opsonic determination consisted of mixing definite volumes of blood serum, bacillary emulsion and living leucocytes under suitable conditions, and afterwards making stained preparations from the mixture to demonstrate the numbers of ingested bacilli. A comparison of various sera by this method gave varying results which might be used for the estimation of the individual resistance to the organism in question. The method had been proved to be accurate within the limits of a 5% to 10% error, which was admitted. The opsonic method might be used for diagnosis, or, in conjunction with the inoculation of bacterial vaccines, for treatment. The diseases of the skin in which the method found a place, were the primary and secondary staphylococcic infections and tuberculosis. The opsonic method in boils was always successful, and was the only form of treatment for general furunculosis that was in the slightest degree reliable. In sycosis the method was a valuable one, but must be continued for long periods in proportion to the duration of the disease, and was best combined with x-ray epilation. In acne, the treatment was uncertain, some results being astonishingly brilliant; others entirely negative. In septic dermatitis and ulcers, the treatment was of distinct value as an auxiliary. In Bazin's disease the treatment was somewhat uncertain, but it was often of help. In tubercular ulceration it was of great value. In lupus vulgaris, the treatment alone was too slow and uncertain to be recommended. According to Bulloch it was a valuable auxiliary in those patients who relapsed after Finsen's treatment, and the speaker said he had found it of value combined with x-rays.

BACTERIAL INOCULATION IN THE TREATMENT OF SUPPURATIVE AND TUBERCULOUS DISEASES OF THE SKIN AFTER THE METHOD OF WRIGHT.

Dr. E. M. Von Eberts, of Montreal, Canada, after a brief review of the technic of opsonic determinations, gave his results with this method of treatment in acne indurata, sycosis, furunculosis and lupus vulgaris. He stated that in the treatment of tuberculous infections of the skin, the question of autogenous vaccines was at present impracticable, but very encouraging results might be obtained with Koch's new tuberculin (T. R.). Increasing experience showed that the doses originally employed in staphylococcic infections were too large, so that at the present time, instead of 500 millions or more being injected at the initial dose, it had been found advisable to start with 100 or 200 millions, or in a tubercular case, with 1-2,000 to 1-1,800 mgm. of T.R., deciding as to the effect and subsequent dosage by the immunity reaction induced in the individual, as interpreted by the opsonic findings. If the negative phase following inoculation was severe or prolonged, the dose should be diminished. Where, on the other hand, the immunizing response was inadequate, *i.e.*, where the negative phase was suppressed and the positive phase but slight, the dosage should be increased. The objective and subjective symptoms following inoculation were, to a trained observer, almost as valuable guides as the opsonic findings. Experience taught one that exacerbations in the local symptoms were the harbinger or accompaniment of a depressed immunity (negative phase). On the other hand, comparative anemia accompanied the positive phase. This latter phenomenon, no doubt, accounted for the decrease in the subjective symptom of pain, which was invariably admitted in severe furuncular infections. In old lupus cases, the bleaching of the scar was a very striking feature. Constitutional symptoms were rarely met with and should never develop if the dosage is properly adjusted.

BACTERIAL INJECTIONS IN THE TREATMENT OF DISEASES OF THE SKIN.

By **Drs. Jay Frank Schamberg, Nathaniel Gildersleeve** and **Harlan Shoemaker**, of Philadelphia. In this paper, the authors reported 21 cases treated by bacterial injections. This number included 9 cases of sycosis vulgaris, 3 of furunculosis, 4 of acne, 2 of acne with sebaceous abscesses, 1 of eczema, 1 of psoriasis and 1 of lupus erythematosus. Some of these patients had been under treatment only a short time, and were continuing to make progressive improvement. Of the cases of sycosis vulgaris, 1 was entirely cured; 3 were almost well; 1 was greatly improved; 2 were slightly improved and 2 had not improved. Of the 3 cases of furunculosis one was cured, one was almost cured, and one was improved. Of the four cases of acne two were cured, one was not improved and in 1 the flushing had been relieved. The 2 cases of acne with sebaceous abscesses were decidedly improved. In 1 case of eczema with pyogenic lesions, the latter were cured and the eczema rendered amenable to treatment. The case of psoriasis was temporarily improved. The result in the case of lupus erythematosus was still uncertain. Considering the fact that the majority of these cases were rebellious and of long standing, and that they had resisted approved treatments of all kinds, the results must certainly be regadred as encouraging.

Dr. A. Ravogli, of Cincinnati, said he could confirm what had been claimed for the opsonic method of treatment in sycosis, and his personal experience with it had been very encouraging.

Dr. E. R. Larned, of Detroit, said that if we could control the size and frequency of the dose by the clinical results, then the opsonic method of treatment would come within the reach of many general practitioners, but if it was necessary in each case to compute the opsonic index, in order to regulate the size of the dosage, and to use autogenic vaccines instead of stock vaccines, then it would be a long time before the problem would be solved.

Dr. Stafford Taylor, of Liverpool, England, said that in some of his cases of sycosis he had derived much benefit from vaccines prepared according to Wright, but the majority required x-ray treatment before a cure resulted.

ERYTHEMA CIRCINATUM BULLOSUM ET HEMORRHAGICUM. AN ERYTHEMATOUS ERUPTION FOLLOWED BY THE FORMATION OF BULLÆ, PETECHIÆ AND DEATH.

Dr. William T. Corlett, of Cleveland, Ohio, reported a case of this character. The patient was a boy of twelve, who received a scalp wound from the ball of a Flobert rifle. No serious manifestations followed, and the wound healed in less than a fortnight. At this time, however, the patient complained of acute pains in the joints, notably in the ankles, which were found to be swollen and one was slightly erythematous. This was followed by gyrate and ringed patches of erythema, which extended over the whole body. These at first were well defined, of a pinkish tint with a pinkish fawn-colored central area. Some of the lesions soon assumed a dusky, cyanotic tint which developed into petechiæ. This was followed by the appearance of bullæ, first seen about the neck, and which within a few days involved, more or less, the entire body. The contents of the bullæ, at first transparent, gradually took on a yellowish color. Later many of the lesions became slightly hemorrhagic. The patient's condition began to fail, and finally, three weeks after the injury and a fortnight after the onset of the disease, he died. Cultures from the purulent and hemorrhagic bullæ gave pure streptococci. The autopsy revealed old fibrinous adhesions about the spleen, and the gross appearance of this organ was found more dense than normal. Small hemorrhagic spots were found near the pyloric end of the stomach. At the cardiac extremity, a small area was found denuded of gastric epithelium. There was no evidence that the gunshot wound had any etiologic influence on the disease. The case seemed to demonstrate a connecting link between erythema and purpura.

Dr. Corlett's paper was discussed by **Drs. Oscar T. Schultz**, of Cleveland, and **Edward H. Shields**, of Cincinnati.

THE NEED FOR HIGHER REQUIREMENTS IN EXAMINATIONS IN DERMATOLOGY AND SYPHILOLOGY BY MEDICAL COLLEGES AND LICENSING BOARDS.

Dr. William F. Breakey, of Ann Arbor, Mich., said the relative number of patients, clinical and private, suffering from dermal affections, as compared with other special fields of medicine, seemed to furnish a sufficient reason why a general medical education should provide better facilities for the study of dermatology, and of syphilis, in particular, not alone because of its gravity and often unsuspected presence, but also in view of the awakened public interest in this phase of social life.

Dr. A. Ravogli, of Cincinnati, said that in all of the medical colleges in the State of Ohio, at least sixty-four of the two thousand hours that made up the yearly college curriculum, had to be devoted to dermatology and syphilology. Medical students were already overburdened with work, and he did not think they would ever succeed in compelling the candidates to take a special examination in these branches.

(To be continued.)

Book Reviews.

Physical Diagnosis, with Case Examples of the Inductive Method. By Howard S. Anders, A.M., M.D., Professor of Physical Diagnosis, Medico-Chirurgical College, Philadelphia, etc. New York and London: D. Appleton & Co. 1907.

Why have a new book on Physical Diagnosis? The author's reason is given in the following paragraphs of the preface:

"In my teaching experience it has appeared that the average medical student tends to neglect or misapprehend the intrinsic importance of two things, namely, technic and reason. He is inclined to exhibit a superficial and hasty zeal and endeavor to get at the physical signs somehow, but without methodic and patient procedure and practice; and his mental drift is toward jumping at conclusions from insufficient data and insufficient correlation.

"It is the double-barreled purpose of this book, its dual *raison d'être*, to counteract, as far as textbook influence may (of course less potent than the personal power of the teacher), this deficiency in the student body of our medical colleges."

This tendency certainly exists in the student body, encouraged rather than otherwise by the personal influence of those diagnosticians who, neglectful of method, make short cuts to brilliant diagnoses and thereby fail to emphasize the importance of method. This form of teaching is encouraged by the conditions of out-patient departments in which students work far more rapidly than their mental poise and fundamental preparation justify.

How does the book seek to correct this recognized evil? First, it insists on a necessary preliminary training. "Obviously, the perceptive powers cultivated in the laboratory, the technical skill acquired in handling instruments of precision, and systematic procedures thereby inculcated and ingrained are hardly less than absolutely necessary to modern conditions of intellectual preparedness for successful results in this most objective department of general medical diagnosis." Second, the inductive method is illustrated by cases and their discussion in two chapters, one on pulmonary, the other on cardiac, disease. These two chapters represent the main difference between this book and numerous others on physical diagnosis. They are undoubtedly a valuable addition in showing the student how to study his cases.

The general procedures of physical diagnosis and the interpretation of physical signs, as might be anticipated, do not differ greatly in handling from that in other books. They are quite thoroughly discussed and, on the whole, satisfactorily. Well chosen illustrations, borrowed in the main from other books, help to elucidate the discussion. The book is well made and its pages show careful editing and revision. However, a paragraph of 162 words all in one sentence on page four seems to have escaped attention; here some judicious division would clarify the meaning. Still, there is very little to invite adverse criticism, and Dr. Anders's book can be accepted as a useful addition to the series of smaller works on physical diagnosis, some one of which every student should possess.

A Textbook of Physiological Chemistry. For Students of Medicine and Physicians. By Charles E. Simon, M.D., Professor of Clinical Pathology in the Baltimore Medical College. New third edition. In one octavo volume of 490 pages. Philadelphia and New York: Lea Brothers & Co. 1907.

This third edition differs only slightly from the second edition, such changes having been made as were necessary to bring the volume up to date.

Dr. Simon presents the subject of Physiological Chemistry in an attractive way, taking up the three classes of food-stuffs, their digestion, assimilation, metabolism and excretion, and also the products of various glands and organs. The work is adapted to the use of the student as a laboratory manual and textbook, and to the physician as a book of reference.

Five-Hundred Suggestions, Practical Brevities in Surgical Diagnosis and Treatment. By Walter M. Brickner, B.S., M.D., Chief of Surgical Department, Mt. Sinai Hospital Dispensary, New York; Editor-in-chief, *American Journal of Surgery;* and Eli Moschcowitz, A.B., M.D., Assistant Physician, Mt. Sinai Hospital; Associate Editor *American Journal of Surgery.* Second series, duodecimo. 125 pages. New York: Surgery Publishing Company. 1907.

This little book is worth the dollar charged. In spite of various reviewers' tiresome statements that it is "snappy," and full of useful "diagnostic wrinkles," it is worth owning. It abounds in such aphorisms as occur countless times in the discourse of a clever clinical lecturer: "In seeking a cause for torticollis don't fail to examine the teeth"; "Pyuria without symptoms is suspicious (*sic*) of an early tuberculosis of the urinary tract"; "The silver-fork deformity is by no means necessary to the diagnosis of Colles's fracture"; "Crochet needles are most useful for lifting buried stitches out of a sinus"; "Patients will appreciate the use of black bandages for the scalp — where they are comparatively inconspicuous, and for the hands — where they do not soil," etc., to the limit of the 500.

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REPORT OF SURGEON-GENERAL, UNITED STATES NAVY.

THE report of the Surgeon-General of the United States Navy for the fiscal year 1907 again brings to attention certain facts of general interest to the medical profession. Among these is the question of recruiting the medical corps to its allotted strength. It appears that in 1905 there were thirty-eight vacancies; in 1906, forty-four; and in 1907, fifty-eight. From this it is apparent that conditions are not improving, and that the authorities are experiencing greater and greater difficulty in finding acceptable recruits for the medical corps. As at present constituted, there are only about 260 medical officers available for the care of over 43,500 officers and men of the navy and marine corps. It is evident that this force is inadequate to the needs of the service, and that criticism may well result. Although much has been done of late to remove causes which have deterred suitable medical men from entering the medical corps of the navy, there are still certain defects to be met. It is admitted that the duties of the naval surgeon are manifold and exacting, and that the men who fill this position should be physicians of sound body and well-equipped minds. Such men are evidently difficult to obtain, as shown by the fact that the number of qualified candidates falls far short of the demand. Of forty-three applicants examined within the last year, only nineteen have qualified for the positions sought, showing on the one hand that a high standard for admission is maintained, and on the other that many men of somewhat inferior qualifications apply.

We have again and again commented on the reluctance of men to enter the medical service, both of the army and navy. In spite of the great overcrowding of the profession in the large cities and the evident opportunities for a career of usefulness and possibly of discovery, recent graduates in medicine remain reluctant to undertake this service, although, as stated above, many of the restrictions have been removed which have hitherto stood in the way of an army or navy career. There should be no reason why the military branches of the government service should not have an excellent medical representation. It remains for those in authority, assisted by Congress and an enlightened attitude in Washington, to remove the remaining defects of the service and to create the necessary enthusiasm among men of promise in the profession.

This report in convincing fashion shows the advantages which a medical man in the navy may enjoy in the way of post-graduate work, hospital service and membership in medical associations. Everything is being done to bring the medical corps of the navy into closer relation with the profession at large, and there is, therefore, no further reason for a man entering the navy to regard himself as isolated from the remainder of the profession. The recently published *Naval Medical Bulletin* should do much toward making the work of medical officers of the navy known and bringing them into touch with the great body of investigators in the medical field.

One of the curious conservatisms, which it is apparently exceedingly difficult to overcome, is the prejudice against the appointment of dentists for service in the navy. For five years consistent and repeated recommendations for legislative authority to employ dentists has failed of enactment. The arguments in favor of their appointment are so apparent and convincing that it would seem that an enlightened Congress must forthwith take favorable action. That this has not been the case is an excellent example of the difficulties under which the medical service of the navy labors in accomplishing reforms. It is to be hoped that a bill, drafted and submitted Sept. 20, will be reported favorably. The question of women nurses has also been most carefully considered by the naval authorities, and recommendations made that such a service be established. Here, again, the necessary legislative authority has not been forthcoming, in spite of what seems to us unanswerable arguments regarding the advisability of establishing such a corps as a part of the medical department of the navy.

If the service is to be made attractive and desirable for promising medical men, it is evident that, so far as possible, the same medical advantages in hospital and on board ship be offered them as are attainable by their colleagues in civil life. It is also apparent that the conservatism which still prevails toward progress in the naval medical corps must give place to a more liberal policy, which makes none but absolutely necessary distinctions between naval and civil medical service. We have no doubt that the situation will finally be adjusted, but while the necessary legislative action is pending, the medical branch of the navy continues to suffer. A reading of the report in its detail is well worth the time of members of the medical profession and of the laity interested in the consistent progress of medicine.

THE CLINICAL TYPES OF CARCINOMA OF THE LARGE INTESTINE.

On account of the variable situation, pathological nature and the relationship that it presents with the various abdominal viscera, carcinoma of the large intestine, if exception is made of the rectum, may affect the most varied clinical aspects. Mickulicz, Boas and Bovis have given various classifications of its symptomatic modalities, but recently Jouffray (Thesis, Lyons, 1907) has again taken up this classification and made it more satisfactory. One must distinguish a type characterized by severe diarrhea. This type, more special to carcinoma of the cecum, is rarely, if ever, followed by symptoms of obstruction. The general condition is greatly affected, while palpation will often allow one to discover a distinct tumor. The evolution of this form is insidious, the patient usually seeking advice on account of indistinct digestive disturbances. He loses flesh, digests badly, and not infrequently, on account of the slow digestion, vomiting arises. Slight constipation appears, and a very careful questioning, and especially a minute palpation after the gut has been emptied by a laxative, should be resorted to in order to discover the presence of a neoplasm, involving the cecum or the ascending colon.

This form, which has been called the digestive type by the above-mentioned author, may also show itself in a more accentuated manner and, under these circumstances, Jouffray has termed it the gastric type. The growth is seated in the transverse colon and involves by compression or by adhesions the pyloric vestibule. Later on, pain is complained of and soon after vomiting occurs. The entire clinical picture is that of a pyloric stenosis. A tumor is discovered and taken for the pylorus, but, nevertheless, a careful analysis of the gastric juices tends to show that this diagnosis is incorrect. Carefully questioning the patient and eliciting the fact that he complains of slight colic will put one in the way of arriving at a correct diagnosis.

The type in which constipation is marked presents an entirely different evolution. An old and increasing constipation opens the drama; it is, in the first place, relieved by laxatives or purgatives, but later it resists these and is only relieved after an attack of obstruction, whose duration is of several days. These attacks of obstruction, which are of short duration and infrequent in the first place, finally become longer in duration, and the patient soon enters into a state of chronic semi-obstruction, characterized by colic and alternating constipation and loose discharges.

At this time the clinical picture becomes completed; a tumor appears, seated over the sigmoid flexure. The end of the evolution suddenly takes place by an acute occlusion; but it must be added that, up to the time of the appearance of this acute occlusion, the clinical evolution of the affection is quite latent, so much so that the discovery of the carcinoma at operation or at autopsy usually completes the diagnosis. This is the type that the author terms the early occlusive.

Occasionally, the physical symptoms are *nil*, while the functional symptoms are reduced to the minimum of intensity, but the general condition alone is seriously involved, thus realizing either the cachectic or anemic type of the disease. Here one is dealing with a latent form, the diagnosis of which is often impossible.

In some instances, it is not the neoplasm which makes its presence evident, but inflammatory phenomena arising in its neighborhood, and infectious complications are produced locally. Soon the evolution of an abscess begins, its seat varying according to the case. One may be dealing with an anterior or iliac abscess, situated in the cecum or sigmoid flexure; an abscess in the hypochondrium arising in the cecum or infrahepatic angle of the colon; a peri-umbilical abscess starting in the transverse colon or a lumbar abscess originating in the angle of the colon.

It can easily be conceived that these various complications may, at the beginning of the process, remain unrecognized, until the time comes when they give rise to a generalized peritonitis. The diagnosis remains impossible, and is only made on the operating table. Being aware of such symptomatological varieties, as well as their mode of development, it is readily conceived how extreme may be the difficulty of making a diagnosis of carcinoma of the large intestine. Every imaginable mistake is quite possible, and, consequently, one should be cautious, especially when the patient is in the decline of life and at the age when carcinoma is, if not a certainty, at least a probability.

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COMMITMENT AND DISCHARGE OF THE INSANE.

There are few matters in which the responsibility of the physician is greater than in the commitment of irresponsible persons on the one hand, and their discharge from custody on the other. A recent tragic event, occurring at the Boston State House, in which a discharged inmate of a large insane hospital shot and killed one innocent man and wounded two others, again emphasizes the difficulties under which we labor in properly safeguarding the public from mentally diseased persons. The very proper legal protection thrown about a person subject to commitment to an insane hospital is, we believe, completely adequate in the great majority of cases to protect the abnormal individual from injustice. The responsibility of physicians, however, great as it often is in the process of commitment, merely begins after the suspected person has been safely lodged in a hospital. In many cases, and particularly in those constituting the dangerous class, petitions are too often circulated by misguided friends or relatives that after a reasonable period of residence and apparent restoration to mental health the person be discharged as cured, or at least as no longer a menace to his fellowmen. The difficulties surrounding the hospital authorities in the determination of this question are manifest on the slightest consideration, but are too often overlooked, especially when the public, shocked by an apparently avoidable offence, has its attention drawn to the question. Undoubtedly, experience and judgment of high degree are demanded on the part of the hospital superintendents in the final determination of granting freedom to a previously dangerous man. It is absolutely inevitable that mistakes at times should be made, however closely and conscientiously the past history of the patient may be scrutinized or his possibilities for the future contemplated. It is manifestly desirable that persons of homicidal tendency should be removed from society and kept isolated until all danger is past, and such an instance as that to which we have just alluded merely emphasizes the desirability of all possible precautions. The idea that our hospital authorities are careless or unmindful of their great responsibility, however, is not for a moment to be entertained. On the other hand, considering the number of homicidal persons, both in and out of the asylums, it is matter for congratulation that more mistakes are not made and that more tragedies do not result.

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MEDICAL NOTES.

Mexican Congress Postponed on Account of Dengue. — The International Medical Association of Mexico was to have met at Monterey in November for its third annual congress, but it was postponed until Jan. 23 to 25, on account of the prevalence of dengue fever at Monterey. This association combines English-speaking and Spanish-speaking physicians on an equal footing, the programs and summaries being printed in both languages, the speakers using their mother tongue. — *Jour. Am. Med. Asso.*

The Nobel Prizes. — The following prizes under the Nobel foundation were distributed early this month at Stockholm, with the exception of the peace prize, which was awarded in Christiania; the prize for literature was awarded to Rudyard Kipling; physics to Prof. Albert A. Michelson, University of Chicago; medicine to Dr. Laveran, of Paris, as announced last week; chemistry, to Prof. E. Buchner, of the University of Berlin; the peace prize was this year equally divided between Ernesto Todoro Moneta, of Italy, and Louis Renault, of France. At the main award this year, there was no public function, on account of the death of King Oscar. All the recipients were present.

A Neurological Hospital at Blackwell's Island. — We are requested to announce that at the suggestion of the New York City neurologists, Hon. Robert W. Hebbard, the progressive administrator of public charities, has established the first neurological hospital in America.

The details of hospital organization have just been completed, and a medical board formed. The new hospital is to be known as the Hospital for Nervous Disease of New York City. It is located on Blackwell's Island in detached pavilion wards near the City Home. The present capacity of the hospital is 250 beds. Buildings for the further accommodation of 100 patients are in process of erection. The medical staff will be divided into ten services. Each service will consist of a senior attending physician and two assistants. The services are to be continuous and permanent. The general hospitals of the city already possess more than a thousand neurological patients awaiting admission to the service. The hospital will be provided with thoroughly equipped laboratories for diagnostic and therapeutic research. Ample facilities for giving special lectures and demonstrations in neurological science will be provided.

The Medical Board is composed of the following: Drs. Francis A. Scratchley, Pearce Bailey, Smith Ely Jelliffe, Joseph Fraenkel, William B. Pritchard, J. Ramsay Hunt, Graeme Hammond, William Leszynsky, L. Pierce Clark, president, and E. L. Hunt, secretary.

The consultants are Drs. C. L. Dana, E. D. Fisher, George W. Jacoby, B. Sachs, Joseph Collins, Frederick Peterson and M. Allen Starr.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 18, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 56, scarlatina 35, typhoid fever 4, measles 36, tuberculosis 43, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 18, 1907, was 23.79.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 14, 1907, was 298, against 231 the corresponding week of last year, showing an decrease of 67 deaths and making the death-rate for the week 25.50. Of this number 151 were males and 147 were females; 293 were white and 5 colored; 182 were born in the United States, 110 in foreign countries and 6 unknown; 59 were of American parentage, 208 of foreign parentage and 31 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 66 cases and 4 deaths; scarlatina, 35 cases and 0 deaths; typhoid fever, 4 cases and 4 deaths; measles, 26 cases and 1 death; tuberculosis, 77 cases and 23 deaths; smallpox, 0 cases and 0 deaths. The deaths from pneumonia were 53, whooping cough 0, heart disease 30, bronchitis 14 and marasmus 6. There were 13 deaths from violent causes. The number of children who died under one year was 53; the number under five years, 75. The number of persons who died over sixty years of age was 86. The deaths in public institutions were 76.

There were 4 cases and 2 deaths reported from cerebrospinal meningitis during the week.

Lynnfield, Mass., Schools Closed on Account of Measles. — An epidemic of measles has appeared in Lynnfield, Mass., which has led to the closing of the schools by orders of the Board of Health. It is stated that on Dec. 16, nine different grades with an enrollment of two hundred pupils were attended by only six.

Boston Society of Medical Sciences. — At a meeting of the Boston Society of Medical Sciences, held at the Harvard Medical School, Dec. 17, a paper was read by Dr. W. H. Park, of New York, on "The Value of the Opsonic Index in Regard to Treatment." Drs. Timothy Leary, James H. Wright and Cleaveland Floyd were among those who took part in the discussion.

NEW YORK.

Centenarians. — George Olley, believed to be the oldest person in New York State, died at his home at Great Bend, Jefferson County, in the vicinity of Watertown, on Dec. 7, at the advanced age of practically one hundred and ten years. This great age is apparently well authenticated, as the records are preserved of his birth in Stanton, England, on Dec. 25, 1797. He came to Jefferson County in 1826.

Mrs. Annie Friemark, of Brooklyn, N. Y., died at the alleged age of one hundred and one years. She was a native of Russia, and her husband was a lumber dealer of Minsk. She had been in America for only twenty-two years.

Oysters. — In view of the uneasiness which has of late been prevalent in the public mind on account of the supposed danger from oysters, the authoritative statement just made by Dr. William H. Park, of the Health Department's bacteriological laboratory, is reassuring. Dr. Park has found that only one tenth of 1% of cases of typhoid fever can be traced to contaminated shell-fish.

Diphtheria Epidemic on Randall's Island. — The first intimation to the public that there had been an epidemic of diphtheria among the inmates of the House of Refuge on Randall's Island was given when the newspapers announced that in the early hours of Dec. 12, 4 out of 25 of the boys suffering from the disease, who had been removed about three weeks previously to the Willard Parker Hospital for treatment, had made their escape from the hospital.

A Threatening Fire. — There was an exciting time at a fire which occurred on the evening of Dec. 13, in the Huyler chocolate factory, at Eighteenth Street and Irving Place. More than thirty firemen were overcome by smoke, and while a number of them were sent directly to Bellevue Hospital, it was found necessary also to establish an emergency hospital in the annex to the package and storage building of the plant. Here, in a small room on the sixth and uppermost floor, five ambulance surgeons from Bellevue, under the direction of Dr. Reiss of the Fire Department, were working hard for three hours in reviving the overcome firemen. The floor of the improvised hospital was covered six inches with water, and the air was heavy with noxious smoke, but the surgeons remained pluckily at the post of duty and the firemen were constantly revived and sent back to fight the flames. It was the only way in which men could be found to handle the blaze. In one instance, three firemen were found senseless on the floor together, still holding to the line of hose. One of these was carried down to the street and placed in an ambulance by a policeman, but, as the ambulance surgeon was busy in the building, the driver refused to start without him; whereupon, the energetic policeman jumped on the box, and himself drove the ambulance to Bellevue Hospital. At the hospital it was stated that it was well that there had been no delay in the case, as the condition of the man was found so serious that death might result. Among the seven hundred girl employees, who were doing overtime work in preparation for the holiday trade, there was something of a panic, but fortunately they all escaped from the building in safety.

Smallpox at Kingston, N. Y. — An outbreak of smallpox has occurred at Kingston, N. Y., 25 cases having developed in the ten days preceding Dec. 14. A characteristic of the epidemic is the mildness of the disease, and in consequence of this, it gained more headway than would otherwise have been the case. In many of the earlier cases, physicians failed to recognize the true nature of the trouble, probably mistaking it for chicken-pox, and, in fact, it was not absolutely established that the disease was smallpox, until State Bacteriologist Curtis arrived and made culture tests. On the other hand, it is stated that, later, a considerable number of cases which had been diagnosed as smallpox were found to be really instances of the less serious disease. The infection is believed to have been brought to Kingston by some negro laborers who recently came from the South to work in the brickyards there.

Current Literature.

Medical Record.

Nov. 16, 1907.

1. Hemmeter, J. C. *Diseases of the Gastro-Intestinal Tract on the Borderland between Surgery and Internal Medicine.*
2. Rose, J. T. *Skin Grafting without Anesthesia.*
3. Brush, A. C. *The Relationship of Trauma to Insanity.*
4. Talmey, B. S. *Cryptorchism Complicating Imbecility.*
5. Eising, E. H. *Radiograph of a Mummified Foot.*

The New York Medical Journal.

Nov. 16, 1907.

1. Taylor, J. M. *Relief of Nutritional Disorders by Developing the Abdominal Supports.*
2. Rose, A. *Gastric Diseases.*
3. Gleason, J. H. *Prostatic Hypertrophy and Its Treatment.*
4. Leonard, C. L. *The Protection of the Roentgenologist.*
5. *Holt, J. M. *Amebic Dysentery (Chronic), a Surgical Disease.*
6. Henry, J. N. *Arterial Thrombosis and Gangrene Following Typhoid Fever, with Report of Two Cases.*
7. Newmayer, S. W. *Acute Idiopathic Pulmonary Edema.*
8. Williams, J. R. *On the Ocurrence of Indican, Albumin and Casts in the Urine.*
9. Beveridge, J. W. *Microscopic Traumatic Gangrene.*
10. Pond, A. M. *An Improved Rapid Method of Imbedding Histopathological Specimens in Paraffin.*
11. Soules, S. G. *A New Treatment of Diabetes Mellitus.*

5. Holt insists that cases of amebic dysentery are to be treated by daily colon irrigations of quinine (1 in 3,000 to 1 in 500). These irrigations are to be given only in the knee-chest position, and preferably by a physician. If the amebæ persist in the stools after a year of colon irrigations, appendicostomy should be performed and the colon flushed out daily with quinine solution. The operation is not serious. There is no difficulty in closing the sinus after the amebæ have disappeared from the stools. The writer reports three cases of amebic dysentery with appendicostomy. The duration of the disease before operation was two, four and nine years. Recovery followed in each case. [R. I. L.]

The Journal of the American Medical Association.

Nov. 16, 1907.

1. Prince, M. *The Criminal Responsibility of Insane Persons.*
2. *Gordon, A. *Alcoholic Insanities. A Study of Four Hundred and Thirty-seven Cases.*
3. Hand, A. *The Disadvantages of Low Proteids in Infant Feeding.*
4. Seibert, A. *Prophylaxis in Epidemic Cerebrospinal Meningitis.*
5. Wilbert, M. I. *Materia Medica and Pharmacy in Hospital Practice.*
6. *Lydston, G. F. *Intravenous Treatment of Syphilis.*
7. Williams, L. R. *Plea for Physical Examination of All School Children.*
8. *Erdman, S. *Aeropathy or Compressed Air Illness among Tunnel Workers.*

2. Gordon presents the results of the study of 437 cases of alcoholism. Of these 160 were acute, 277 chronic alcoholism. The cases of acute alcoholism presented good recoveries, and although seen in recurring attacks, no sign of oncoming dementia was observed. Chronic alcoholism, although not absolutely incurable, leads almost inevitably to dementia. However, from his observations, melancholia, mania, paranoia, and general paresis cannot be the product of alcoholism, either acute or chronic.

6. Lydston has employed the intravenous injection of mercury in ten cases of syphilis. A number of these had failed to yield to mercury by mouth or inunction. The results were eminently satisfactory. He used $\frac{1}{8}$ to $\frac{1}{2}$ gr. of the bichloride of mercury (6 to 25 minims of a 2% solution). Daily injections were given until the disease was under control, then the interval was gradually increased. Any prominent and accessible vein may be used. The

writer cautions against keeping on the tourniquet (which is applied to render the vein prominent) after the injection is begun; otherwise cauterization of the vein and phlebitis may occur.

8. Erdman reports 1419 cases of aeropathy (generally known as caisson disease) which occurred during the construction of the East River tunnels in New York. All these patients were affected on coming out of the pressure. The symptoms, which come on usually within an hour, were as a rule pains in extremities, less often vertigo and headache. Paralyses were present in 21 cases, most of which cleared up within a few hours. Two cases persisted, and resulted fatally after several months. The total mortality was less than 1%. Out of the 7 autopsies, free bubbles of gas were found in the blood of 5. In the other 2 cases, autopsy was delayed over eighteen hours after death. From the autopsy findings, animal experimentation, and two clinical cases, in which gas was aspirated from deep tissues, the writer is inclined to the gas emboli theory of the causation of this disease. The treatment is recompression, which gave relief to all but 8% of his cases.

[R. I. L.]

Bulletin of the Johns Hopkins Hospital.

November, 1907.

1. Thayer, W. S. *On the Importance of Simple Physical and Psychical Methods of Treatment.*
2. Meyer, A. W. *The Physician and Surgeon in Shakespeare.*
3. *Fabyan, M. *Epidemic Pneumonia.*
4. Calvert, W. J. *Displacement of the Heart by Pleural Pressure.*
5. Calvert, W. J. *Compensatory Venous Congestion.*
6. Slemons, J. M. *Eclampsia without Convulsions.*

3. Fabyan reports an epidemic of acute pneumonia in a family of ten within ten days. Six of the ten had definite signs of lobar pneumonia. Two others, including the father, who was the first one sick, gave a typical enough history of pneumonia, but had recovered before they were examined. Only one case was fatal. Pneumococci were recovered in this case, both from the blood during life, and from the blood and consolidated lung at autopsy. On careful examination of the home surroundings, no special etiological factors were found to account for this unusual contagiousness of pneumonia.

[R. I. L.]

The Lancet.

Nov. 23, 1907.

1. Schiff, E. *Lecture on Treatment of Epithelioma with Roentgen Rays.*
2. *Shattock, S. G., Seligmann, C. G., Dudgeon, L. S., and Panton, P. N. *Contribution to the Study of the Relationship between Avian and Human Tuberculosis.*
3. *McGavin, L. H. *Notes of Four Cases in which Filigree-Implantation was Successfully Applied to Abdominal Herniæ, Previously Considered Incurable.*
4. *Western, G. T. *Treatment of Bacterial Infections by Vaccines.*
5. Greene, W. H. C., and Owen, E. *Fatal Injury to the Bladder during an Operation for Femoral Hernia.*
6. Wylie, A. *Treatment of Innocent Laryngeal Growths by the Galvano-Cautery.*
7. Milward, F. V. *Rectal Carcinoma Treated by a Modification of Witzel's Colostomy, and Three Weeks Later by the Extirpation of the Entire Organ by the Vaginal Route.*
8. Fitzgerald, G. W. *An Interesting Case of Tubal Abortion.*
9. Castellani, A. *Observations on the Treatment of Yaws (Frambesia).*
10. Jones, W. B., and Mackintosh, J. S. *A Case of Cardiac Disease.*
11. Evans, T. J. C., and Newbolt, G. P. *A Case of Gastro-enterostomy with Complications.*

2. This article is a preliminary report of work on the relationship between avian and human tuberculosis. The authors conclude that the human tubercle bacillus is pathogenic to the pigeon in a very limited degree. It sets up no disease of the intestine or abdominal viscera when introduced with food into the alimentary tract, and when injected into the muscles or subcutaneous tissues, it induces merely a local and glandular disease. The avian tubercle bacillus, as tested from various kinds of birds, is pathogenic to the guinea pig in a very limited degree. The human bacillus is not convertible into the avian by inoculation into the bird, *i. e.*, the bacilli are not identical.

3. McGavin reports four cases in which he used silver filigree in abdominal herniæ, which were considered incurable. He gives the details of the operation in these cases and describes the filigree which he uses. His results were very gratifying in each case. He places the filigree between the peritoneum and the fascia of the rectus muscles. He believes that this is the simplest, quickest and surest means of curing cases of this kind.

4. Western gives a description of his work done in the inoculation department of the London Hospital, in the treatment of bacterial infections by vaccines. He describes the development of this method of treatment, and gives in detail his way of preparing vaccines for inoculation. In tuberculosis, he uses Koch's new tuberculin (T. R.) diluted with .85% solution of sodium chloride, to which is added lysol in the proportion of .25%. His customary initial dose for an adult is now from 1-3000 to 1-2000 of a milligram. He speaks first of treatment of infections with the tubercle bacillus; out of 250 cases dealt with in two years, 200 were cases of tuberculosis in some form. He then tells of the work which he has done in treating tuberculosis affecting the skin and mucous membrane. The difficulty he has had with these is that, while in most tuberculous affections one may rest assured that a vaccine injected subcutaneously will reach the affected part by the blood stream, in cases of tuberculosis of the skin (lupus) there is often so much indurative scar tissue and such a sluggish circulation that one cannot be at all sure that the active agent has reached the spot which it is supposed to benefit. On this account he advises treatment with the Finsen light along with inoculation treatment. He has seen several hitherto intractable cases cleared up by this procedure, although the tendency to relapse seems to be very great. His cases of tuberculous ulceration of subcutaneous tissues and skin, and those of erythema induratum have all done well under inoculation treatment. He has had 30 cases of tuberculous infection of lymphatic glands; 4 of these have shown no improvement; in 8 cases, the glands have entirely cleared up, and in the others there has been a marked improvement. Out of 15 cases of tuberculous disease of the bones, 7 were cured and 5 cases showed marked improvement; 3 showed no improvement. Out of 11 cases of tuberculous disease of the joints and synovial sheaths, 7 are either completely cured or show very great improvement; 2 show no improvement. There were 15 cases of tuberculous disease of the epididymis; of these 6 are cured; 4 are greatly improved and one only has shown no improvement. Twelve cases of acne inoculated with the staphylococcus have shown remarkable improvement. Nine cases of furunculosis have been cured, as well as several cases of intractable carbuncle; 2 cases of cystitis due to the colon bacillus have been greatly benefited; 2 cases of streptococcus endocarditis terminated fatally. On the whole he believes that vaccine treatment at no distant period will rank among the most potent weapons of therapeutics.

[J. B. H.]

British Medical Journal.

Nov. 23, 1907.

1. Cunningham, H. H. B. *Clinical Lecture on Some Types of Conjunctivitis.*
2. Kelly, J. M. *A Critical Study of Organic Preparations of Silver in the Treatment of Conjunctivitis.*
3. Barr, J. S. *An Investigation into the Frequency and Significance of Optic Neuritis and other Vascular Changes in the Retinæ of Patients Suffering from Purulent Disease of the Middle Ear, with the Results of the Examination of the Eyes and Ears in 100 Consecutive Cases.*
4. Ackland, J. M. *Relation of Dental Surgery to General Medicine.*
5. *Still, G. F., Owen, E., and Turner, J. G. *Discussion on the Causes, Effects and Treatment of Dental Disease in Children.*

6. Ackland, W. R. *Notes on some Cases of Neuralgia.*
7. Baker, A. W. W. *Difficult Eruption of the Third Molar.*
8. Bennett, F. J. *Some Anatomical Results of Efficient Mastication.*
9. Colyer, J. F. *Irregularities of the Teeth in Animals.*
10. *Fairbank, H. A. T. *Sarcomata of the Jaws.*
11. Forsyth, D. *Relation between the Thyroid and Parathyroid Glands.*
12. MacLennan, A. *The Place of the Spirocheta Pallida in the Diagnosis of Syphilis.*
13. Castellani, A. *Note on the Spirocheta of Yaws (Spirocheta Pertenuis).*
14. Castellani, A. *Note on a Bacillus Found in a Case of Gangrenous Appendicitis.*
15. Coombs, C. *Myocardial Lesions of the Rheumatic Infection.*

5. Statistics show that 80% to 90% of school children have some decayed teeth. Still believes that common digestive disorders of childhood are often dependent upon caries of the teeth, preventing thorough mastication, and that malnutrition is a direct result. Tubercle bacilli have often been demonstrated in carious teeth, and such teeth are undoubtedly one of the causes of tuberculous glands. Whether the glands are infected directly from bacilli present in the carious teeth or not is, perhaps, open to question, but there is no doubt that the presence of suppurating matter in carious teeth may infect the glands, and thereby render them very much less resistant to a tuberculous infection. He believes that decayed teeth are a very real danger to the child whose family history or whose own past history shows a tuberculous tendency. Dental caries is often a cause of habit spasm and epilepsy. Various constitutional headaches are cured by attention to the teeth. He does not believe that candy has such a harmful effect as is usually supposed. In regard to the prophylaxis, he thinks it too late to wait until the child goes to school before giving attention to the teeth, but that this should be done in earliest infancy. He believes that a regular inspection of the teeth of children by a dentist, two or three times a year, will often prevent trouble which at a later period may be very serious.

10. Fairbank has made a study of 140 cases of sarcoma of the jaw, which he has collected from the literature. Microscopical examination of the tumor has been made in every case. The youngest case, one of melanotic sarcoma, was only one month old when the tumor appeared; the oldest, one of myeloma, was seventy-one. Forty per cent of the cases were under twenty years of age. As with sarcoma in other situations, chronic irritation seems to play an important part in the etiology. In only 10 cases out of the 140, however, is mention made of previous caries of the teeth, although this need not alter the fact that teeth are not infrequently the cause of new growth. Out of these 140 cases, 57 were of the myeloid variety and 17 round-celled. The myeloid type were by far the most benign, and at operation required no such radical measures as were needed in the presence of the other more malignant varieties.

[J. B. H.]

Deutsche Medizinische Wochenschrift. No. 41.
Oct. 10, 1907.

1. Riedel. *Displaced Right Kidney Fastened by Adhesions in an Abnormal Position.* (Continued article.)
2. *Hochhaus. *Cholelithiasis and Glycosuria.*
3. Fornat, Schereschewsky, J., Eisenzimmer, and Rosenfeld. *Specific Precipitates in Lues, Tabes and General Paralysis.*
4. *Conradi, H. *When is Typhoid Fever Contagious?*
5. *Roeder, Paul. *Resection of Large Nerve Trunks without Paralysis.*
6. Mintz, W. *Removal of a Button from a Bronchus.*
7. *Schäffer, F. *Percussion in the Treatment of Pseudarthrosis*

2. For some years, Hochhaus has examined the urine for sugar in all cases of cholelithiasis, with only one positive result. In this case, a patient with no previous history of diabetes, during a sudden and severe gallstone colic, showed 3.3% sugar in the urine, which continued from 0.4% to 0.5%, the next five days, and then disappeared altogether. In another case of a man fifty-three years old, with a mild diabetes of about a year's standing and sugar varying from 1% to 5%, after a series of gallstone attacks, the sugar entirely disappeared, and has never returned, although the patient is on an ordinary diet. Glycosuria has been known to subside after other diseases, but this is the first case on record after an attack of gallstones.

4. Conradi, from the examination of over 600 cases of typhoid fever, shows that a large proportion of the cases of contact infection must have occurred during the first week of the primary sickness or earlier, assuming the average period of incubation to be ten days. In 85 cases in which the contact infection was most certain, it occurred in the first week of the disease in 49 cases; in the second, in 16; in the third, in 10; in the fourth, in 5; in the fifth, in 3; and in the sixth and seventh, 1 each. If the incubation is longer than ten days, then infection from the primary case must have occurred before the first symptoms were observed. Conradi is convinced that early contagion plays an important and hitherto disregarded part in the transmission of typhoid fever.

5. Roeder says that a number of instances have been reported in which the resection of peripheral nerve trunks has not been followed by the usual sequelæ. So far, there is no satisfactory explanation of the occurrence. It has been suggested that, as is the case with blood vessels, collaterals may form and take up the function of the divided nerves. In the author's case, two neuromas were removed from the upper arm and shoulder of a young woman. In order to extirpate the tumor, it was necessary to resect a portion of the ulnar nreve, the distal end being grafted into the median nerve trunk. The next day, on removing the dressing, it was found the patient had perfect control of the arm. A year later, another similar, but much larger growth was removed from the pelvis, and in so doing the anterior crural nerve had to be sacrificed. Here again no impairment of function followed.

7. Schäffer recommends that in cases of delayed union after fractures, owing to deficient callus formation, the bone in the neighborhood of the break be subjected to forcible percussion with the ulnar side of one or both hands. Since the idea is to stimulate periostitis and the process of repair, the blows employed must not be more vigorous than those used in massage. The author quotes some successful cases, and claims that this method has the great advantage that immobilization is not required during the treatment, and that the patients do not object to the procedure.

[L. G. M.]

Münchener Medizinische Wochenschrift. No. 41.
October, 7, 1907.

1. Strauss, H. *The Molecular and Ion Concentration, and the Radio-activity of Mineral Waters.*
2. *Hedinger, M. *New Contributions on Intravenous Injections of Strophanthin.*
3. Beneke, R. *The Nucleus Icterus in the Newborn.*
4. *Schmoll, E. *Motor, Sensory and Vasomotor Symptoms Arising from Coronary Sclerosis.*
5. Veit, A., and Wederhake, K. J. *The Morphology of Certain Constituents of Urine and Bile.*
6. Fukula, V. *Treatment of Iritis, Iridocyclitis and Blenorrhea Neonatorum.*
7. Philip, C. *The Use of Ichthyol in Gonorrheal Epididymitis.*
8. Flörcken, H. *An Umbilical Hernia Containing the Appendix.*
9. Hohmeier, F. *Transverse Tear of the Pancreas. Operation. Recovery.*
10. Bauer. *Two Cases of Dementia Paralytica Complicating Pregnancy; Successful Delivery.*
11. Schneider, W. *A Case of Repeated Cesarian Section, after Rupture of a Uterine Scar.*
12. Lengfellner, K. *Technic of Taking Celluloid Impressions in Flat Foot.*
13. *Krönig, B., and Grauss, C. J. *Anatomical and Physiological Observations in the First Thousand Cases of Spinal Anesthesia.* (Concluded.)

2. Hedinger, following the work of C. Fraenkel, has used intravenous injections of strophanthin in cases of heart disease with broken compensation. He finds that the

results from this method of treatment are very quick and sure. The cases reported which have had chills and temperature after the injections were undoubtedly due to the strophanthin solution being infected. There is no need for this, as the solution can be sterilized. Strophanthin is constant in its action, and does not seem to lose its strength on standing, and cumulative symptoms are never seen. The author believes that 1 mgm. of strophanthin intravenously in the twenty-four hours is much more valuable in broken compensation than the old digitalis treatment.

4. In the observation of a large number of cases of angina pectoris, Schmoll has found that the symptoms may be divided into sensory, motor and vaso-motor manifestations. These are: (*a*) sensory pain, a feeling of impending death, numbness of arm, or arm and leg, etc.; (*b*) motor — irritative or paretic: contraction of the intercostal pectoral or abdominal muscles on the one hand, weakness of the left hand and arm on the other; (*c*) vasomotor — the left arm or the left half of the body may be blanched during the attack, owing to a contraction of the vessels of the part. Between the attacks these manifestations are less marked, but they are still present, if sought for carefully. Hyperesthesia of the skin over the area of pain during the attack, slight weakness of the part, blanching or cyanosis between the attacks are almost the rule. These symptoms can be traced to one or more spinal segments, usually between the eighth cervical and second dorsal. Schmoll accepts Mackenzie's theory that the irritation proceeding from the heart along the sympathetic to the spinal cord, sets up an irritation there, which in turn is referred to the periphery.

13. Krönig and Grauss have made a large number of observations, on the cadaver and on living subjects, as to the effect of the position of the body, the effect of anesthetic fluids of various specific gravities, and as to the best place for injecting in spinal anesthesia. They find that the position of the body has a great influence on the fluid in the spinal cord, and that it should be controlled during the injection of the anesthetic by an "indicator tube," which they describe at length. The specific gravity and temperature of the injected fluid play a most important part in its absorption. Great care should be exercised in injections with the pelvis raised, as a serious condition may arise if the anesthetic comes in contact with the medulla. They have used both stovain and novocain, the former of which they prefer. When suprarenal extract is used, it must be a fresh preparation. The authors recommend injections of scopolamin-morphin combined with spinal anesthesia for abdominal operations, in order to calm the patient.

[R. D.]

Berliner Klinische Wochenscrift. No. 41. Oct. 14, 1907.

1. *Friedberger, E. *A Method of Making the Complement Stable.*
2. *Oestreich, R., and Strauss, H. *The Presence and Meaning of Certain Histologic Changes in the Gastro-Intestinal Tract in Pernicious Anemia.*
3. *Hirschfeld, H. *Erythemia and Erythrocytosis.* (*Polycythemia*).
4. Wolff, H. *The Question of Abducens Paralysis after Lumbar Anesthesia.*
5. Meyer, A. *A Method of Opening Peritonsillar Abscesses.*
6. Goldscheider. *The Percussion of the Apices of the Lungs.* (Concluded.)

1. Friedberger has found that by the addition of NaCl to serum containing a complement, the stability of the complement is much increased, and it will keep its strength very much longer. The author has no explanation to offer as to the cause of the action of NaCl in this instance.

2. Oestreich and Strauss have shown in an earlier work that in pernicious anemia there is an increase in lymphatic tissue and in lymphocytes in the gastro-intestinal tract. According to the researches of others, this condition is found only in pernicious anemia. A new set of researches seems to point to a relation between the number of lymphocytes in the blood stream and this process in the intestine. So far, it has been impossible to link the symptoms of the disease and these histologic findings together.

3. Hirschfeld reports five cases of polycythemia or plethora vera, with autopsies. In all there was an enormous increase in the amount of blood, and the marrow was found in a hyperactive condition, resembling grossly the marrow of a leukemia. The blood in life usually showed an increase in the number of white cells proportionate to the increase in the number of reds. No blasts were seen in the blood-stream, though always found in greatly increased numbers in the marrow. The author suggests that this condition be called erythemia, and that the condition in which there is an increased red count, but without enlargement of the spleen or changes in the marrow, be classified as erythrocytosis.

[R. D.]

Deutsches Archiv für Klinische Medizin. Bd. 90, Heft 5 and 6.

1. *Otten, M. *Staphylomycosis.*
2. *Gerhartz, H. *A Study of Stethoscopes.*
3. *Kappis, M. *Perforation of an Aortic Aneurism into the Pulmonary Artery.*
4. *Stursberg, H. *The Relation of the Systolic and Diastolic Blood Pressure to Exercise, with Special Reference to its Use as a Functional Test of the Heart.*
5. *Pfeiffer, W. *Acute Sublimate and Oxalic Acid Poisoning.*
6. *Geigel, R. *The Tympanitic and Non-tympanitic Percussion Note.*
7. Pfeiffer, W. *A Case of Polycythemia without Splenic Tumor.*

1. In 1903, Lenhartz published an account of 33 cases of staphylomycosis. Since that time 22 additional cases have occurred in the same clinic, and are here reported by Otten. Of the total of 55 cases, 11 were cases of infection with staphylococcus albus, the remainder with staphylococcus aureus. Of the 55 cases only 11, or 20%, were fatal. The portal of entry in these cases was either a furuncle or other lesion of the skin, some lesion of the mucous membranes, osteomyelitis, or in some cases no definite portal of entry was discoverable. In 18 of the 55 cases a furuncle or carbuncle formed the starting point, while in 11 it began with an osteomyelitis. In all of the cases except 6, multiple abscesses resulted. Of the 6 in which there was but a single demonstrable abscess formed, three times it was a paranephritic abscess, twice a brain abscess, and once a liver abscess. In 14 of the cases, an ulcerative endocarditis resulted, six times of the mitral valve, four times of both aortic and mitral valves. In some of the cases diagnosis without blood culture would have been almost impossible.

2. Gerhartz has made a study of the various methods which have been tried to intensify the various sounds listened for in physical examination. Resonators and such methods fail in that they do not increase the intensity of the sounds without changing their character, since they cannot intensify more than a small part of the tones which go to make up the complex sounds which we hear in auscultation of the chest. Consequently, the best that can be accomplished with a stethoscope is a prevention of the dissemination of the sound waves into the surrounding air, and a conduction with as little loss as possible. The parabola construction of the stethoscope bell theoretically offers some advantages in that it focuses parallel sound waves at one point, but in actual use it does not appear to have any very great advantage over the stethoscope bells of ordinary construction. In auscultation, it is to be borne in mind that certain sounds are transmitted poorly by any form of stethoscope, and can be heard best by immediate auscultation, a method which should always be employed in conjunction with the use of the stethoscope.

3. Kappis reports at some length a case of aortic aneurism perforating into the pulmonary artery. In addition, he has collected 32 cases from the literature, 29 of which he has analyzed. In all of these there was evidence of a severe cardiac lesion with sudden onset in most, and very varying objective and subjective symptoms. All but two were in males. The important points in the differential

diagnosis of this condition are: (1) the sudden beginning of severe cardiac symptoms; (2) definite signs of an aortic aneurism (these may be absent since the aneurism most likely to perforate into the pulmonary artery is a small one situated just above the aortic valves); (3) a thrill felt strongest or solely at the base of the heart on the left side; (4) murmur heard in the same region. If the latter is continuous, there is a very strong evidence of a perforation, particularly if the phenomenon has developed during the course of observation of the case. If with signs of aneurism a continuous murmur or a murmur extending from systole to diastole is heard, the condition is very apt to be this one, though a pulmonary aneurism with open ductus arteriosus may produce the same signs.

4. Stursberg has made extensive studies in the relation of systolic and diastolic blood pressure to exercise, in order to determine whether such observations might not be of use in distinguishing organic from functional cardiac lesions. It is found that there are certain limits within which blood pressure and the cardiac output vary under normal conditions, after a graded amount of work. If these same limits are found in cases with cardiac disturbances, it is probable that these disturbances are of a nervous rather than an organic nature. However, there appear to be exceptions in sufficient number to deprive the method of very great use in diagnosing these very important forms of cardiac disease.

5. Two cases of sublimate poisoning and one of oxalic acid poisoning have been studied in relation to the urinary disturbances which result. These cases show first a polyuria of short duration, followed by a suppression of urine, which is gradually replaced by a second period of polyuria which continues until albumin and casts have disappeared from the urine. During the earlier stages of the condition there is an increase of body weight, resulting from the retention of water, though this retention is not accompanied by edema. There are also changes in the secretion of the inorganic salts.

6. Geigel continues the discussion from a preceding paper, of the physical explanation of percussion sounds. In the preceding paper he has explained the metallic percussion note as due to the discontinuous vibration of an elastic body which in vibration produces high over-tones. With a lower grade of discontinuity of vibration, the non-tympanitic note results, whereas the tympanitic note is the result of continuous vibrations started by a percussion blow. [H. A. C.]

Archiv für Klinische Chirurgie.

Bd. 82, Heft. 3.

1. v. Auffenberg, F. R. *Suture and Lateral Dislocation of Nerves.*
2. Gerdes. *Experimental Investigation into the Steam Sterilization of Dressings.*
3. Moschcowitz, A. V. and E. *A Report on 2,000 Cases of Appendicitis.*
4. Henking, R. *The Cases of Appendicitis at Marburg from 1893 to 1906.*
5. Goldschwend, F. *Operations on Rectum and Uterus by the Sacral Route.*
6. Hoffman, M. *Clinical Manifestations in Gastro-Intestinal Pseudoleucemia.*
7. Neupert. *Retroperitoneal Pelvic Tumors.*
8. Heerman, G. *Asepsis in Oral and Nasal Surgery.*
9. Rasumowsky, W. I. *N. I. Pirogoff.*
10. Pochhammer. *Experiments on Gastro-enterostomy, Entero-anastomosis and Resection of the Intestine.*
11. v. Bergmann, V. *A Case of Teratoma of the Upper Jaw.*
12. Hellin, D. *Bilateral Empyema.*
13. v. Haberer, H. *Bone Cysts and Fibrous Ostitis.*
14. Haglund, P. *Fracture of the Epiphyseal Center of the Calcaneus in Youth.*
15. Kempf, F. *Idiopathic Retropharyngeal Abscess.*
16. Richter, P. *Who First Used Burnt Sponge for Goiter?*
17. Vogel, K. *The Technic of Amputation of the Breast.*

Bd. 82. Heft 1

1. *Ekehorn, G. *The Importance of Anomalous Renal Vessels in the Causation of Hydronephrosis.*
2. *Kümmell, H. *Prostatectomy.*
3. Hedren, G. *Lipomatosis of the Urinary Bladder with Non-Traumatic Rupture.*
4. Borchard. *Incarceration of a Duodeno-Jejunal Hernia in Connection with a Meckel's Diverticulum.*
5. Martini, E. *New Method of Operating for Inguinal Hernia with Remavable Sutures.*
6. *Rovsing, T. *Extirpation of the Urinary Bladder with Bilateral Lumbar Ureterostomy.*
7. *Nyrop, E. *The Significance of the Retention of Food in the Stomach.*
8. *Friedrich, P. L. *Surgery of the Lungs.*
9. *Burkhardt, L. *The Influence of Saline Infusion on the Action of Chloroform during and after Narcosis.*
10. Simin, A. N. *A New Method of Gastro-enterostomy.*
11. Delitzin, S. N. *Combined Drill and Plane Trephine (Stoll's Rhychanotrepan).*
12. Opokin, A. A. *Pneumotomy in Russia.*

1. Ekehorn reports the case of a patient who had had recurrent renal colic for six years. The attacks had increased in frequency and severity since the last pregnancy. Abdominal palpation revealed an enlarged kidney, situated somewhat lower than normal. Pressure on the abdomen by pushing the kidney upward, relieved the pain. At operation, the only cause of the trouble which could be found, was an accessory artery, entering the kidney just above its lower pole, and about which the ureter was looped. The artery was removed, the patient having no further trouble. Twenty-four similar cases are collected from the literature, emphazing the fact that such anomalies of the renal vessels are not very rare, and that they may cause trouble if the kidney becomes displaced.

2. Kümmell advises the in-lying catheter in cases of incomplete or complete retention of urine without complications. If this does not answer the purpose, after a short time, prostatectomy should be done. The operative risk of prostatectomy, whether by the suprapubic or perineal route, is about the same in his hands. Cancer of the prostate is more common than has been heretofore supposed. A cystoscopic examination should always be made, and if the prostate protrudes more into the bladder than toward the rectum, the suprapubic method should be employed for its removal, whereas if it protrudes most markedly toward the rectum, the perineal route should be chosen. Contra-indications to prostatectomy are advanced arteriosclerosis, diffuse bronchitis, renal insufficiency and entire loss of the contracting power of the bladder. Under conditions such as the above, operation should not be undertaken except for malignancy.

6. After removal of the bladder by shelling it out unopened, having divided the ureters with the cautery. Rovsing brings them both out through the back, through a small incision at the margin of the erector spinæ muscle, about 8 cm. from the middle line. A catheter is inserted into each ureter, and the wounds dressed for a week or so, when the exposed portion of the ureter has dried and shrivelled up, and the remaining portion has become firmly united in its new location. Rovsing then removes the catheter, and controls the flow of urine by an apparatus which consists of a belt containing two silver cups situated over each ureteral orifice, and emptying into a rubber urinal worn below the pubes. He reports the case of a woman of thirty-four years, who has worn a belt for nearly a year, with no discomfort and no leakage. By the above procedure, he feels that the bladder can be removed without danger of contaminating the abdominal cavity, since the operation is done extra-peritoneally: also by bringing the ureters out in the lumbar region, there is not nearly the same danger of renal infection as exists when they are implanted into the rectum or vagina.

7. Nyrop has examined 202 cases of gastric disturbances by the Bourget test meal. He emphasizes the fact that the presence of any portion of this meal remaining in the stomach after twelve hours, means serious disturbance in the function of this organ and calls for a laparotomy in every instance. In 75 of the patients examined, although there was marked evidence of gastric disease, there was no demonstrable retention. From his exhaustive examination of the subject, he concludes that whether the retention be due to malignancy or not, and no matter how slight it may be, it should always be an indication for laparotomy.

8. In the very suggestive article of Friedrich, the present status of lung surgery is reported. The pneumatic cabinet is mentioned as being indispensable. Several instruments are illustrated, and the opinion stated that the technic of such surgery being so little known at present, no one should attempt its application on the human without having had a considerable experience in animal experimentation.

9. Burkhardt finds that the infusion of salt solution up to 2,000 cc. before the administration of chloroform is of great benefit in mitigating the toxic effects of that drug. He feels that it does this by diluting the blood, so that its coefficient of absorption is diminished, while the normal pressure is retained. The beneficial effects are especially noticed in the condition of the pulse during the anesthesia this remaining full and strong, even after prolonged administration of the narcotic. Subsequent nausea, vomiting and headache are also much reduced. The infusion should be given as shortly before the operation as possible. Given after the administration of the chloroform, it has practically no effect.

[W. C. Q.]

Revue de Chirurgie.

October, 1907.

1. Massabuau, G. *The Histologic Structure and Embryonic Origin of Mixed Tumors of the Salivary Glands.*
2. *Patel, M. *Sigmoiditides and Perisigmoiditides, Simple Inflammatory Affections of the Sigmoid Flexure.*
3. Dieulafé, L., and Herpin, A. *Lesions Connected with the Wisdom Tooth.*
4. *Delore, X., and Chalier, A. *Contribution to Thyroid Surgery.*

2. The term sigmoiditis was first applied by Mayor, ten years ago, to an intrinsic inflammatory process in the sigmoid. Patel now reviews the history of the disease, which he distinguishes as a pathologic entity from specific or secondary conditions such as dysentery, syphilis, tuberculosis or ulcer. Etiologically, chronic constipation, worms, foreign bodies, and general disease are predisposing factors. Anatomically, the most important element is the occasional presence of multiple diverticula, which are starting points of infection analogous to appendicitis. Perforation of one of these may lead to perisigmoiditis, with or without abscess. Various clinical forms are described and discussed.

4. From a personal series of 73 cases, Delore and Chalier make a clinical classification of benign thyroid tumors, exclusive of exophthalmic goiter, into simple goiters and suppurative goiters. The former are chiefly cystic, often with hemorrhagic contents; the latter are generally due to infection of such a cyst, though they may represent a true primary or secondary thyroiditis. Symptoms of thyroid disease may occur without manifest tumor, which in this case may be retrosternal. The authors believe that early operative interference is usually desirable, even before the appearance of functional or pressure disturbances, owing to the liability of benign goiters to undergo malignant degeneration. They find enucleation generally possible, and always preferable to strumectomy or thyroidectomy. They do not think ether contra-indicated or tracheotomy necessary, and have had little trouble from hemorrhage or from injury to the recurrent laryngeal. Suppurative goiters they treat by incision and drainage, after which a secondary strumectomy may be done, but is seldom needful.

[R. M. G.]

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Miscellany.

FREE PUBLIC LECTURES ON MEDICAL SUBJECTS.

The Faculty of Medicine of Harvard University offers a course of free public lectures, to be given at the new buildings of the Medical School, Longwood Avenue, Boston, Saturday evenings at 8, and Sunday afternoons at 4, beginning Jan. 4, and ending April 26, 1908. No tickets are required. Following is a list of the lectures and their subjects, with dates:

Jan. 4. Some recent discoveries in the physiology of digestion. (Illustrated by lantern slides and zoetrope demonstrations.) Dr. Walter B. Cannon.

Jan. 5. Human gait. (Illustrated by lantern slides.) Dr. Edward H. Bradford.

Jan. 11. The modern crusade against typhoid fever. Dr. Elliott P. Joslin.

Jan. 12. Common salt. Dr. Lawrence J. Henderson.

Jan. 18. The causes of nervous and mental disease. Dr. Philip Coombs Knapp.

Jan. 19. Fatigue: Its effects and its treatment. Dr. George A. Waterman.

Jan. 25. Nervous disorders of children. Dr. William N. Bullard.

Jan. 26. Nervous breakdown during adolescence and adult life. Dr. James J. Putnam.

Feb. 1. Some of the nervous disorders of adult life, with especial reference to "habits." Dr. Edward W. Taylor.

Feb. 2. Popular fallacies regarding insanity and the treatment of the insane. Dr. Henry R. Stedman.

Feb. 8. Alcoholism and insanity. Dr. Charles P. Bancroft.

Feb. 9. The ear and the telephone. Dr. Clarence J. Blake.

Feb. 15. The interest of the public in surgical progress. Dr. James G. Mumford.

Feb. 16. The sick child. Dr. Thomas Morgan Rotch.

Feb. 22. The causes of disease in infants and children. Dr. Charles Hunter Dunn.

Feb. 23. Rational infant feeding. Dr. John Lovett Morse.

Feb. 29. Syphilis: Its nature and dangers. Dr. James C. White.

March 1. Smallpox and vaccination. Dr. John Hildreth McCollom.

March 7. The problem of the "nervous temperament" in children. Dr. George A. Craigin.

March 8. Florence Nightingale and the beginning of surgical nursing. Dr. J. Bapst Blake.

March 14. Modern methods for the care of the insane. (Illustrated.) Dr. Owen Copp.

March 15. The relation of the hospital to the community. Dr. Abner Post.

March 21. Mental hygiene and the prevention of insanity. Dr. George T. Tuttle.

March 22. Psychic treatment of disease: Its limitations and uses. Dr. Richard C. Cabot.

March 28. What the people should know about tumors. Prospects of cure of malignant disease in the light of our present knowledge. Importance of early co-operation on the part of the laity. Dr. Howard A. Lothrop.

March 29. The development and maintenance of good teeth. Dr. Charles A. Brackett.

April 4. The inflammations due to the commoner pus germs: Their local and general effects. Blood-poisoning. Dr. Charles A. Porter.

April 5. Certain dangerous popular delusions concerning grave surgical diseases. Dr. Maurice H. Richardson.

April 11. Foods in health and disease. Dr. Maurice Vejux Tyrode.

April 12. The development of the microscope. Dr. Harold C. Ernst.

April 18. Some preventable diseases of the skin. Dr. Charles J. White.

April 19. The relation of animal life to human diseases. Dr. Theobald Smith.

April 25. The cocaine evil. Dr. Charles Harrington.

April 26. Tumors. Dr. William T. Councilman.

Also, Laboratory Exhibits in rooms 201 and 202 (Building D):

(1) Paintings and photographs illustrating the changes in so-called chronic rheumatism. Dr. Edward H. Nichols.

(2) An exhibit of certain bacterial and animal parasites, and of organs which show the anatomical changes produced thereby; for example, in typhoid fever, meningitis, diphtheria, anthrax, pneumonia, tuberculosis, dysentery, smallpox, etc. Drs. Frank B. Mallory and S. Burt Wolbach.

RECORD OF MORTALITY

For the Week ending Saturday, Nov. 30, 1907.

Cities.	Reported deaths in each.	Deaths under five years.	Cities.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	5
Chicago	—	—	Waltham	7	2
Philadelphia	—	—	Pittsfield	7	2
St. Louis	—	—	Gloucester	—	—
Baltimore	—	—	Brookline	2	—
Cleveland	—	—	North Adams	5	0
Buffalo	—	—	Chicopee	8	5
Pittsburg	—	—	Northampton	9	1
Cincinnati	—	—	Medford	2	—
Milwaukee	—	—	Beverly	2	—
Washington	—	—	Leominster	2	—
Providence		—	Hyde Park	2	0
Boston	201	39	Melrose	3	1
Worcester	33	11	Newburyport	—	—
Fall River	49	15	Woburn	4	1
Cambridge	28	3	Marlboro	2	1
Lowell	33	11	Westfield	2	—
Lynn	31	8	Peabody	—	—
New Bedford	22	7	Revere	3	1
Springfield	20	4	Attleboro	4	1
Lawrence	22	6	Clinton	3	2
Somerville	17	5	Adams	—	—
Holyoke	23	6	Gardner	2	—
Brockton	10	3	Milford	2	—
Malden	10	2	Watertown	5	1
Chelsea	11	1	Plymouth	—	—
Salem	16	5	Weymouth	1	0
Newton	10	1	Framingham	3	—
Haverhill	17	5	Southbridge	5	2
Fitchburg	5	3	Wakefield	—	—
Everett	7	1	Webster	—	—
Taunton	15	3			

OFFICIAL LIST OF THE CHANGES OF STATION AND DUTIES OF COMMISSIONED AND NON-COMMISSIONED OFFICERS OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE FOR THE SEVEN DAYS ENDED DEC. 4, 1907.

Blue, Rupert, passed assistant surgeon. Detailed to attend the meeting of the State Health Officers of California, at Riverside, Dec. 3, 1907.

Roberts, Norman, assistant surgeon. Granted leave of absence for 7 days from Nov. 22, 1907, under paragraph 191, Service Regulations.

Roberts, Norman, assistant surgeon. Granted extension leave of absence for 23 days from Nov. 29, 1907. Nov. 30, 1907.

Frost, W. H., assistant surgeon. Granted leave of absence for 1 day, Nov. 24. 1907, under paragraph 210, Service Regulations.

Mullan, E. H., assistant surgeon. Granted leave of absence for 4 days from Nov. 26, 1907, on account of sickness. Dec. 4, 1907.

DeValin, Hugh, assistant surgeon. Granted leave of absence for 1 month from Dec. 16, 1907. Nov. 30, 1907.

Dynan, N. J., acting assistant surgeon. Granted leave of absence for 7 days from Nov. 30, 1907, under paragraph 210, Service Regulations.

Keatley, H. W., acting assistant surgeon. Granted leave of absence for 3 days from Nov. 3, and 5 days from Nov. 13, 1907, under paragraph 210, Service Regulations.

Goodman, F. S., pharmacist. On being relieved from the Jamestown Tercentennial Exposition, directed to report to the medical officer in command at Baltimore, Md., for temporary duty and assignment to quarters. Dec. 4, 1907.

Holsendorf, B. E., pharmacist. Directed to proceed from San Juan to Mayaguez, Porto Rico, for temporary duty, upon completion of which to rejoin his station. Nov. 29, 1907.

Ryder, L. W., pharmacist. Granted leave of absence for 7 days from Nov. 21, 1907, under paragraph 210, Service Regulations.

APPOINTMENTS.

Dr. Charles W. Hughes was appointed an acting assistant surgeon for duty at Baltimore, Md., Nov. 20, 1907.

Dr. Charles W. Naulty, Jr., was appointed an acting assistant surgeon for duty at Perth Amboy Quarantine Station, N. J., Nov. 29, 1907.

BOARDS CONVENED.

A board of medical officers was convened to meet at Seattle, Wash., Dec. 2, 1907, for the purpose of making a physical examination of certain detained immigrants. Detail for the Board: Passed Assistant Surgeon L. E. Cofer, Chairman; Passed Assistant Surgeon M. J. White, and Acting Assistant Surgeon F. R. Underwood, Recorder. Nov. 30, 1907.

Boards of medical officers were convened to meet Dec. 6, 1907, for the purpose of making physical examinations of certain officers of the Revenue-Cutter Service to determine their fitness for promotion, as follows:

At San Francisco, Cal., Surgeon H. W. Austin, Chairman, and Passed Assistant Surgeon C. H. Gardner, Recorder.

At Port Townsend, Wash., Passed Assistant Surgeon M. J. White, Chairman, and Acting Assistant Surgeon F. R. Underwood, Recorder.

At Newport News, Va., Assistant Surgeon G. L. Collins, Chairman, and Acting Assistant Surgeon A. C. Jones, Recorder.

At Boston, Mass., Surgeon R. M. Woodward, Chairman, and Assistant Surgeon T. W. Salmon, Recorder.

At Portland, Me., Surgeon P. C. Kalloch, Chairman, and Acting Assistant Surgeon A. F. Stuart, Recorder.

At Mobile, Ala., Surgeon G. M. Guiteras, Chairman, and Acting Assistant Surgeon J. O. Rush, Recorder.

At Detroit, Mich., Surgeon Fairfax Irwin, Chairman, and Assistant Surgeon C. W. Chapin, Recorder.

At Galveston, Tex., Passed Assistant Surgeon G. M. Corput, Chairman, and Acting Assistant Surgeon W. H. Gammon, Recorder.

At Baltimore, Md., Surgeon L. L. Williams, Chairman, and Passed Assistant Surgeon J. T. Burkhalter, Recorder.

SOCIETY NOTICE.

A Proposed New England Pediatric Society. — The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 p.m. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

John Lovett Morse, *Chairman*.
William E. Fay.
Arthur Willard Fairbanks.
Charles W. Townsend.
Henry I. Bowditch, *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Mt. Sinai Hospital Reports. Vol. V. For 1905 and 1906., New York. 1907.

Cancer of the Stomach. By A. W. Mayo Robson, D.Sc., F.R.C.S. Illustrated. New York: William Wood & Co. 1907.

Preventable Blindness. An Account of the Disease Known as the Ophthalmia of the New-Born, and of its Effects; with a Plea for its Suppression. By N. Bishop Harman, M.A., M.B. Cantab., F.R.C.S. England. Illustrated. New York: William Wood & Co. 1907.

The Semi-Insane and The Semi-Responsible (Demifous et Demiresponsibles). By Joseph Grasset. Authorized American edition translated by Smith Ely Jelliffe, M.D., Ph.D. New York and London: Funk & Wagnalls Co. 1907.

Oxford Medical Publications. Cancer of the Womb. Its Symptoms, Diagnosis, Prognosis and Treatment. By Frederick John McCann, M.D. (Edin.), F.R.C.S. (Eng.), M.R.C.P. (Lond.). London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

Oxford Medical Publications. The Treatment of Diseases of Children. By G. A. Sutherland, M.D., F.R.C.P. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

Oxford Medical Publications. Auscultation and Percussion, together with the Other Methods of Physical Examination of the Chest. By Samuel Gee, M.D. Fifth edition. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

Oxford Medical Publications. The Skin Affections of Childhood, with Special Reference to Those of More Common Occurrence and Their Diagnosis and Treatment. By H. G. Adamson, M.D. Lond., M.R.C.P. Illustrated. London: Henry Frowde, Oxford University Press; Hodder & Stoughton. 1907.

Original Articles.

THE ATTITUDE OF THE MEDICAL PROFESSION TOWARD THE PSYCHOTHERAPEUTIC MOVEMENT.*

BY E. W. TAYLOR, M.D., BOSTON.

It must be evident to the most casual observer of medical progress that an extraordinary change has taken place within the last few years regarding the scope of therapeutics. A wider point of view has developed and a more general recognition of the applicability of methods of treatment apart from drugs. The subject which has been selected for discussion this evening offers one of the most striking examples of this expanding point of view, and requires no apology for its presentation at this meeting. It is certainly advisable in this as in other matters of present interest to the medical profession to invite discussion among a body of men who should be representative of the most matured judgment on a subject of much popular misconception. The psychotherapeutic movement within the medical profession has become a definite fact, sure of future development, which can by no possibility be checked, even were such a course desirable. Under these circumstances, it is fitting that the direction which this fundamental movement in therapeutics is to take should be guided by wisdom and encouraged with enthusiasm, tempered by judgment.

It is my purpose to omit any detailed reference to methods or to clinical experience, but rather to draw attention to the broader questions involved in the following propositions: first, the past and present attitude of the medical profession toward mental therapeutics; secondly, the present state of therapeutics in relation to the psycho-therapeutic movement; thirdly, the general attitude of special students of the subject, and, finally, the means by which a knowledge of the movement may best be disseminated.

I. Up to within very recent years, it is not to be questioned that the general attitude of the medical profession toward any method of treatment which appealed primarily to the mind was antagonistic. Those men still within the ranks of the profession, who, through choice or conviction or special training, devoted themselves with zeal to methods of treatment through mental agencies were regarded, and we confess with some reason, as beyond the pale of legitimate practice. The curious and historically interesting growth of mesmerism, hypnotism and allied methods, finally emerging in our present day rational attitude toward the entire subject, has amply demonstrated the deep-seated prejudice which the profession at large has hitherto entertained toward other than physical methods of treatment. The reaction from speculative philosophy and the identification of scientific method with material facts, which was predominant throughout the last century, has stamped itself deeply upon the medical profession, with results which have made possible the advances of the past years. The material aspect of nature has in fact always appealed to the great mass of thinking men, and no doubt will continue to do so at least for many centuries to come. In view of these facts, it is altogether natural that the medical profession should have followed close in the wake of the great scientific revival of the last century, and should in consequence find itself somewhat enthralled at the present time by this salutary but not altogether comprehensive point of view. Many of us have perhaps followed with more or less care the discussion of the modern theories of immunity as propounded by Ehrlich and his students. It is suggestive of the predominant tendency of the medical mind, to which I have referred, that in the elucidation of the theory ideas used to express the subtle interaction of chemical substances find expression in grotesque figures, which by no possibility can express the true facts; and yet to the modern scientific mind such figures constitute a satisfactory interpretation. It is unquestionably true that what is popularly known as the scientific mind finds itself incapable of getting beyond the material world in its interpretation of facts. Medicine has therefore very naturally found itself increasingly unwilling to accept with cordiality ideas and theories which demand other than a physical explanation, with the result that the psychotherapeutic movement which at various stages in the progress of medicine has emerged with more or less vigor, has hitherto for the most part been suppressed and relegated to the region of uncertainties into which the modern scientific spirit was unwilling to probe.

An admirable example of this prevailing feeling throughout the medical profession and a large portion of the more intelligent element in the laity is illustrated by an address which President Eliot of Harvard University delivered at the time of the exercises in commemoration of the opening of the new Harvard Medical School buildings. On that occasion President Eliot chose as the subject of his address, "The Future of Medicine."[1] Throughout his remarks, which traced with great acumen the development of modern scientific medicine and the growth of the laboratory spirit, no mention whatever was made of the possibility of future development in other than purely material directions. The hope of the future, which lies in a clearer comprehension of fundamental mental laws, with research along these lines, together with the great moral and social prophylaxis, which this study seems destined to develop, were absolutely untouched. I speak of this as illustrative not only of President Eliot's point of view, but also as that of the great group of scholars and thinking men of which he stands as a representative. It is likewise clear that from the standpoint of the medical profession at large no deep consciousness of the possibility of the practical application of mental means to the prophylaxis and treatment of disease has as yet developed. The primary study of mental phenomena is still regarded by the rank and file of the profession with skepticism, although undoubtedly with a growing tolerance. That this is not, however, a universal fact among men of high scientific training is shown, for example, by the stimulating address of Prof. Charles Sedgwick Minot before the American Association for the Advancement of Science, in 1902, of which organization he was then president, on the subject, "The Problem of Consciousness in Its Biological Aspects." [2]

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* Read before a combined meeting of the New York Neurological Society, the Philadelphia Neurological Society and the Boston Society of Psychiatry and Neurology, at Boston, Nov. 23, 1907.

[1] Eliot: The Future of Medicine. Sanders Theater, Cambridge, Sept. 26, 1906.

> "A frank unbiased study of consciousness must convince every biologist that it is one of the fundamental phenomena of at least animal life, if not, as is quite possible, of all life. Nevertheless, its consideration has barely a place in biological science, although it has long occupied a vast place in philosophy and metaphysics. If this address shall contribute to a clearer appreciation of the necessity of treating consciousness as primarily a problem for biological research to solve, my purpose will be achieved. In an ideal world philosophers and scientists would be identical; in the actual world there are philosophical scientists and scientific philosophers, but in the main the followers of the two disciplines pursue paths which are unfortunately distinct. The philosophical mind is of a type unlike the scientific. The former tries to progress primarily by thought based on the data available, the latter seeks to advance primarily by collecting additional data. The consequence of this difference is that philosophy is dependent upon the progress of science, but we who pursue the scientific way make no greater mistake than to underestimate philosophy. The warning is needed. Data of observation are a treasure and very precious. They are the foundation of our mental wealth, but that wealth consists of the thought into which the data are transmitted. In pleading therefore for an increased observational study of consciousness, we plead not merely for science, but equally for philosophy." Page 277.
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> "It seems to me inconceivable that the evolution of animals should have taken place as it actually has taken place, unless consciousness is a real factor and dominant. Accordingly, I hold that it actually affects the vital processes. There is, in my opinion, no possibility of advoiding the conclusion that consciousness stands in immediate causal relations with physiological processes. To say this, is to abide by the facts, as at present known to us, and with the facts our conceptions must be made to accord." Page 281.

Professor Minot's plea is significant in relation to the general movement we are considering, since it insists on the recognition of consciousness as a fit subject for biological research. Terminology evidently is of small consequence. What we need as a profession is at the outset simply the conviction that consciousness or mind, as consciousness shows itself in its higher forms, is worthy of our most diligent study, and that by instituting such study we are not proving false to our scientific traditions.

Under the existing conditions of thought on this whole subject it is well to consider in some detail the general attitude of the medical profession toward the psychotherapeutic movement which is now evidently attracting attention from various sources. It is in the first place not to be questioned that the profession at large is becoming interested in the subject. It is, however, evident that a large part of the profession is still in deep ignorance of the real significance of the movement. Many physicians are highly skeptical of the possibility of any practical application of mental means of treatment. Many others are quite willing to listen to the new ideas, but find themselves unable through lack of detailed knowledge to make practical use of them. A comparatively small group finally is deeply interested in the possibilities of a wide application of psychotherapeutic methods, and is doing missionary work at times, possibly with an excess of zeal, toward spreading the gospel. During the past winter I have had the opportunity of speaking before several gatherings of medical men in and about Boston on the general subject. The impression I gained from the discussion which followed these informal talks was that the physicians present recognized in a vague way the possibility of mental influence, but in no instance did I find that they had ever applied modern methods with the same judgment, foresight and knowledge which they would employ in any other therapeutic endeavor. The extraordinary popular and pseudo-scientific interest in matters relating to the possible alleviation of disease by mental means, while forcing general attention, including that of the medical profession, upon the subject, has also done much to antagonize its consideration by men of scientific training. A general opposition to all such methods has too often taken the place of the close and unprejudiced scrutiny which in other matters has been the attitude of the medical profession. There has, up to very recent times, been no general enthusiasm, except among a small body of special students, who for many years have been quietly working at the problem with results which are now becoming manifest.

All this is now changing, and there is no little evidence that a wide departure from the ordinary conservatism of the medical profession may take the place of the indifference of former years. There is unquestionably a certain danger from over-enthusiasm in the present state of the public mind. It is altogether important that no steps should be taken by the leaders in this movement which are likely, on the one hand, to antagonize the conservative elements in the profession itself, and, on the other, to arouse false hopes in the minds of the people at large. Of this I shall have something more to say later. For the present, I wish merely to emphasize the fact that psychotherapy has come to be an accepted method of treatment about which as yet much ignorance prevails in the profession at large, but against which the barriers of prejudice are gradually being broken down.

Reference to the *Index Medicus* shows the interesting fact that the word "psychotherapy" as a heading appears for the first time in May, 1906, approximately a year and a half ago. Something over three years before, in January, 1903, the word "suggestion" appears for the first time. The last number of the old series, appearing in 1899, gives no special recognition to either hypnotism or suggestion. It is worthy of note that the term "psychotherapy" has taken the place of suggestion and that hypnotism remains a subject of perennial interest. From May, 1906, when the word "psychotherapy" was first used, to July, 1907, seventy-nine papers and ten books have been catalogued, relating either to hypnotism as such or to the general subject of psychotherapy. It is not to be questioned that this number of references, unless all signs fail, will be greatly increased in the years immediately to come. It is quite unnecessary, before this gathering, to refer in detail to the articles which have appeared within the past few years on the general subject, nor is this the place to discuss the value of various methods. They all have this in common that through primary attention to the mental life of the individual results of significance, both to his mental and physical health, may be secured.

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[2] Minot. The Problem of Consciousness in Its Biological Aspects President's address before the American Association for the Advancement of Science, Pittsburg, July 1, 1902. Proceedings, 1902, li, 265–283.

II. The psychotherapeutic movement cannot be properly understood without some reference to the state of therapeutics in general. It is a time of general ferment and increased liberality in therapeutic effort. The recognition of natural agencies in combating disease — fresh air, food, water — has worked a most extraordinary change in our methods of treatment. Pharmacology and drug therapy will continue to hold an important place in the future, but by no means the predominant one which they have hitherto held. There is still, however, in the medical mind a deeply rooted feeling that drugs are the essential basis of all therapeutics. The remarkable agitation which has lately spread over this country regarding the use of proprietary medicines, and so-called nostrums, and the general note of pessimism regarding the failure of our medical students to adequately appreciate the action of drugs and to write prescriptions, is evidence of this widespread feeling. In a recent address before the Section on Pharmacology and Therapeutics of the American Medical Association, Dr. Horatio C. Wood,[3] of Philadelphia, expressed this prevailing attitude of the medical profession in the following words:

> "Year after year we gather in medical societies and discuss cases showing unusual symptoms, or points of difficult diagnosis, or problems in pathology; but year after year we fail to say anything about the treatment of the disease. This section itself is an evidence of the desuetude into which the subject of therapeutics has fallen, for despite its vigorous activity in the last few years, it still remains the smallest section affiliated with the American Medical Association, whereas it should be the largest after the general Sections on Medicine and Surgery. In the face of such lack of interest among physicians in the divine art of healing, can we wonder that Eddyism, faith cures, osteopathy and all other kindred schisms flourish so luxuriantly?
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> "Two very different results have followed this slighting of the subject of therapeutics. On the one hand has arisen a group of nihilists, who because of their own ignorance of the value of medicinal measures, or the means of applying them, stalk up and down the world, proclaiming that all drugs are useless. On the other hand, those who have looked to the leaders of the profession for advice as to curing their patients, being turned away in scorn, have accepted the exalted accounts of those interested in the sale of drugs, and dosed their patients with unspeakable concoctions of the nostrum monger.
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> "With the former group I confess I have but little patience; the egotistical effrontery of an ignorant workman, who, because he does not know how to use his tools, boldly denounces the tool as worthless, excites disgust for his self-conceit rather than pity for his ignorance. To such practitioners I can only say that if they cannot treat disease they had better abandon the profession of medicine."

It is not in the least likely that physicians will be led back to the use of means which they very probably have found inefficacious by such unconsidered language as this. We need decidedly to broaden our point of view, to appreciate ourselves and to spread the doctrine that therapeutics now-a-days goes beyond the contents of the pharmacopeia, and that the failure to write a complex prescription is one of the least of the shortcomings of the recent medical graduate. A time of readjustment is at hand, and every enlightened physician should do his share toward bringing about this readjustment with equity and wisdom.

Admitting, as we must, the general widening of the therapeutic outlook, it is well to consider whither it may lead. In the first place, it is evident that the physician is coming to occupy a different place, not only in relation to his patient, but also in relation to the community at large. His advice must hereafter cover a much wider field than before the advent of the new methods. His knowledge on many matters, specialist though he may be, must be much broader than that of his predecessors, and his judgment correspondingly developed. Furthermore, it will hardly be said in the future, as it has been in the past, that the physician should not concern himself with the moral welfare of his patient, but merely with his physical condition, even at times to the extent of sacrificing morality to supposed physical needs. In the second place, the physician of the future must look beyond the individual to the social welfare of which that individual forms a part. The advance of therapeutic knowledge has made possible the treatment of groups of persons so that even the peculiarly personal relation between patient and physician will doubtless be modified in the future, though it is to be hoped never lost. I refer especially to the admirable work done by Dr. Richard C. Cabot at the Massachusetts General Hospital in developing a department of social service from a medical standpoint. This movement is significant of the extraordinary broadening of the therapeutic idea, and reaches out toward the complex social problems which hitherto physicians have merely touched in passing. In the third place, the physician is destined to become more and more intimately concerned with the attitude of mind which we term religion. If it be true, as we are told by Freud and the psycho-analysts in general, that primary emotions must be discovered if the physician is to do his completest work, it is evident that the emotion of religion not only cannot be overlooked but may indeed constitute a most essential object of study. If confession is good for the soul, the physician hereafter must certainly, as never before, assume the rôle of a lay confessor. I wish here, however, merely to draw attention to the apparent fact that the psychotherapeutic movement is doing much toward extending the scope of the physician's work beyond the individual into the social life of the community. However unwelcome this may be to certain ultra-conservative members of the profession, the fact must be met and fairly faced with due deference to the traditions of the profession and at the same time to the manifest claims of progress.

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[3] Wood: The Place of Pharmacology in Medicine. Chairman's address, Jour. Am. Med. Asso., 1907, xlix, 1411.

III. What, then, is the attitude of the best special students of the subject toward the possibilities or limitations of psychotherapeutic methods? In general, it is unquestionably one of great optimism. It is very natural that such optimism should prevail, more particularly among those whose experience justifies their claim. The recognition of hysteria as a mental disease, and the striking results which have come from an appreciation of this fact and from study directed in accordance with this idea, has done more than any other one thing to clarify our minds in relation to the practical application of mental methods. Even the pioneer work of Charcot, however, and of his brilliant follower, Janet, has made comparatively slight impression on the general medical mind. The work, nevertheless, thus inaugurated by Charcot's somewhat over-picturesque methods, has proved a source of inspiration to special students, not only in France but in all other countries as well. Its influence is doubtless felt in the later writings of such men as Mitchell, Freud, Dejerine, Janet, Dubois, Sturgis, Dana, Putnam, Walton, Sidis, Prince, Dercum and many others who have made significant contributions to the general subject.

These men, looking at the problem at different angles, may justly be regarded as pioneers in the movement which now shows definite signs of spreading widely throughout the profession. Among these writers we find much difference in the detail of method, but an impressive unanimity in the belief that the whole problem may be approached in a spirit of exact inquiry and by means which are understandable and capable of being practised with greater or less success by any one of ordinary tact and intelligence. It is a matter of extremely small consequence to our general attitude whether Freud's psycho-analytic method on a sexual basis applies to all cases, whether re-education alone is sufficient to accomplish results according to Prince and Dubois, whether substitution as advocated by Putnam or Sidis's hypnoidization is the final key to the situation.[4] It is not open to doubt that each of these methods, in the hands of its special advocates, brings about results. It is furthermore not to be questioned that the same result may be attained by different methods, and that diverse results may be attained by the same method. The one principle at stake for the present is that we have definite methods of some sort which are recognized clearly as legitimate means of treatment. In general, the attitude of special students of the subject conclusively demonstrates the inherent desire for practical methods of procedure, divested of theoretical detail.

It is clear that the work of the past few years has already brought together a mass of facts which are capable of direct application to the practice of medicine. The time has come for at least a preliminary statement of results. In stating these results it should be evident that the same methods must be employed as apply to any other problem in scientific medicine. Facts must be observed and recorded with the utmost care and circumspection and conclusions drawn with just regard to the demands of logic. It is easy to recall in the history of medicine instances in which a precipitate statement of results has led to unfortunate consequences. One recalls particularly in this connection the premature announcement of the supposed therapeutic efficacy of Koch's tuberculin. It is difficult to estimate the harm that was done through the false hopes awakened in the popular mind and so, indirectly, to the cause of medical progress in general by this premature announcement. Tuberculin has since taken its proper place among the useful agents in the treatment of disease, but only after a long period of doubt and uncertainty which might easily have been avoided had the discovery not so soon gained the public ear. In the subject we are now considering this danger is even more manifest. The popular mind is filled with

[4] Among the many papers written recently on the general subject the following not definitely referred to in other parts of this paper are of interest.

Prince: The Educational Treatment of Neurasthenia. Bost. Med. and Surg. Jour., 1898, cxxxix, 332. Putnam: Not the disease only, but also the man. Shattuck Lecture before the Massachusetts Medical Society, Transactions of the Society, 1899, Bost. Med. and Surg. Jour., 1899, cxli, 53. *Also*, A Consideration of Mental Therapeutics as employed by Special Students of the Subject. Dept. of Neurology, Harv. Med. School, 1906, i, 1. Bost. Med. and Surg. Jour., 1904, cli, 179. *Also*: Recent Experiences in the Study and Treatment of Hysteria at the Massachusetts General Hospital; with remarks on Freud's Method of Treatment by Psychoanalysis. Dept. of Neurology, Harv. Med. School, 1907, ii 26. Jour. of Abn Psych., 1906, 26. Edes: Mind cures from the standpoint of the general practitioner. Bost. Med. and Surg. Jour., 1904, cli, 173. Freud's papers, especially Drei Abhandlungen zur Sexualtheorie, 1905. Sidis: Studies in Psychopathology. Bost. Med. and Surg. Jour., 1907, clvi, 321. Linenthal and Taylor: The Analytic Method in Psychotherapeutics, Dept. of Neurology, Harv. Med. School, 1907, ii, 145; Bost. Med. and Surg. Jour., 1906, clv, 541. In a personal communication, Dr Joseph Collins states that a lecture dealing with psychotherapy, recently delivered before physicians in Scranton, Penn., will be published in the February, 1908, number of the Am. Jour. Med. Sc. Coriat: Nocturnal Paralysis, Bost. Med and Surg. Jour., 1907, clvii, 47. *Also*, Some further Studies in Nocturnal Paralysis, *Idem.*, 1907, clvii, 751. Oppenheim: Psychotherapeutische Briefe, Translation by Bruce. Otto Schulze & Co., Edin., Stechert, N. Y. 1907 Camus and Pagniez Isolement et Psychothérapie. Preface by Dejerine, Paris. Felix Alcan, 1904.

ideas regarding the relation of mental processes to the alleviation of disease. Grotesque systems are everywhere about us, and have long held the stage. It is rare to find a person in whatsoever walk of life, or of whatsoever preliminary training who has not some deep-rooted prejudice regarding the efficiency of mental therapeutics. The public mind is in an absolutely chaotic state regarding the entire question. Under these conditions the medical profession has at last actively taken the field. Misinterpretation of motive is sure to result, and a large proportion of the laity, if not of the medical profession itself, is likely to look upon the movement as a confession of defeat at the hands of the great body of irregular practitioners. It is, therefore, of the utmost importance that, in the prosecution of what seems to me one of the greatest and most beneficent tasks the medical profession has yet undertaken, we proceed with circumspection and with no vestige of precipitancy. It is certainly well to bear in mind that a cause, particularly if widely apprehended by the people at large, may easily be damaged by the excesses of over-enthusiasm. In this problem, beyond all others, the natural conservatism of the medical profession is an asset of the greatest significance. There is not the slightest danger that this awakening of the profession to the significance of the study of mental phenomena in their practical relations will again sink into obscurity, as it has so often in the past, but it behooves those of us who have the interests of the movement particularly at heart to see that no false steps are taken and that the confidence of members of the profession, as well as of the laity, be established at the earliest possible moment.

Wherein does our present attitude give promise of this consummation? Simply, I believe, in the fact that rationality has succeeded speculation, and that method has taken the place of vague generalization. The question, in other words, has now reached a stage when exact scientific methods may be applied to the elucidation of the problem. It is no less essential that we should demonstrate results in such a way as to appeal to the man of science, than that the bacteriologist should prove the capacity of a newly-discovered organism to reproduce a disease under consideration. In either instance, although the tests must be different, the method of procedure should be essentially the same. We must, in other words, rationalize the psychotherapeutic movement if we are to expect to overcome the legitimate skepticism of those whose interests lie in other fields of research. This, I believe, can now be done. The study of the inner life of the individual has reached a point where legitimate generalizations may be made and working hypotheses formulated, which, like any other hypotheses in physical science, must stand or fall under the tests of experience. If the discovery that the existence of a primary emotional state is capable of inducing a life of nervous invalidism be established as a fact, and be capable of repeated verifications, we evidently have a theory which must stand on an equal footing with a theory of immunity, or of opsonic action, or of any other hypothesis, which bids fair to yield practical results. This simple fact, therefore, that we have now established certain laws of mental action which are bearing the rigid tests of experience must be regarded as the essential entering wedge toward a general recognition of the psychotherapeutic movement as a scientific endeavor. Whether we approach the question from the biological aspect, as suggested by Dr. Minot, or from the aspect of a more abstract philosophy is a matter of relatively small significance, provided only we bring to bear upon the subject the same rigid logic which is demanded by other and material forms of research. The immediate aim of special students of the subject should, therefore, be to publish cases illustrative of definite methods; to state facts simply and without recourse to overmuch speculation; and, finally, to maintain an attitude of conservatism in the interpretation of results, such as would be demanded in any problem of physical science.

IV. How, then, may a comprehensive knowledge of the psychotherapeutic movement, as it exists in the medical profession, best be disseminated? It is evident, as I have before pointed out, that the profession is more and more taking the laity into its confidence. The tuberculosis crusade seems to have been the starting point of this movement. The facts regarding tuberculosis are so simple and so easily apprehended by persons of the most ordinary intelligence that the widest possible dissemination of this knowledge was demanded and at once brought results in improved hygiene. So successful, in fact, has been the public exploitation of tuberculosis prophylaxis that an attempt has been made, with more questionable success, to interest the public in other scourges of the human race. Popular lectures on insanity were given last winter at the New York Academy of Medicine, and a largely attended course of public lectures on varied medical topics was inaugurated by the Harvard Medical School, to be repeated this winter. The effect of such lectures is naturally difficult to determine. That they are not universally salutary is my firm conviction. The mere dissemination of knowledge of medical conditions which do not permit of immediate amelioration is a questionable policy. Is it wise to deliver to the public popular lectures on psychotherapy in the present state of the professional and popular mind? I have no desire to be dogmatic on this point, but I doubt it greatly. In such lectures the personal relation between physician and patient is naturally wholly lost, the inevitableness of misinterpretation is so manifestly apparent, and the impossibility of conveying principles of real significance is so small, that for the present I am inclined to think such public lectures should not be given.

A second means of dissemination of knowledge of the psychotherapeutic movement is through the medium of the popular press. Here again the attitude of the medical profession toward publicity has shown a somewhat striking change within the past few years. Not many years ago an article in a popular journal bearing the name of a practitioner of medicine, if it dealt in the slightest degree with his professional work, was looked upon as a possible breach of professional etiquette. We have certainly progressed beyond this narrow point of view. There is no reason why ascertained facts in medicine should not be given the same publicity as any other matters of knowledge; and we see in the greater liberality of the medical profession in this regard a distinct sign of progress and increased usefulness. The written article differs from the popular lecture in that it presumably is more carefully prepared and presents the results of mature deliberation. Two of our colleagues have recently begun a series of such popular articles. I refer to Dr. G. L. Walton's [5] series of five popular papers on "Worry and Obsession," in *Lippincott's Magazine*, and to Dr. Frederick Peterson's [6] series of letters in *Collier's Weekly* under the general heading, "A Nerve Specialist to his Patients." It is probable that in the hands of men distinguished in the profession such presentations of well-recognized facts from a medical standpoint must, on the whole, be salutary.

In the third place, is it desirable that physicians should ally themselves with movements which primarily lie beyond the scope of the medical profession? I refer in this connection particularly to what is now very generally known as the Emmanuel Church movement in this city. Realizing the shortcomings of practical Christianity in the alleviation of many of the most distressing sufferings of mankind, the rector of this church, himself highly trained in psychology though not in medicine, conceived the idea of popularizing the psychotherapeutic movement on both its medical and religious sides. He was led in a measure to this idea through the great success of a so-called tuberculosis class conducted under the auspices of his church. Although not more than a year old, the reputation of this psychotherapeutic movement has spread widely, not only in this country, but abroad. So far as I am aware, it is the first attempt to combine a church work in which the religious side is given a predominant rôle with the regular practice of medicine. Distinguished physicians have spoken before large audiences at the public meetings given under the auspices of this movement. The attempt has been made to instil into the popular mind useful psychotherapeutic conceptions. The whole movement has excited much comment, with varying opinions as to its wisdom and results. It is not my purpose at this time either to describe the movement in detail or to venture a personal opinion as to its effect on the public welfare. As a church work, conducted by a minister who is also a highly trained psychologist, it is significant of a new and practically useful attitude of the church toward those who may be brought within the scope of its influence. From the medical standpoint, it is far less significant and may hardly be regarded as destined to have a wide influence on the psychotherapeutic movement which it should be our interest and aim to develop within the ranks of the medical profession. In any general and widely-advertised effort of this character it must be remembered that the good accomplished is more widely heralded than the possible harm. All experience has shown that in any such general appeal to the imaginations of untrained minds, psychoneurotic conditions are created as well as allayed. Whether the good counterbalances the harm is not the question at issue; whether all progress arises at the expense of certain classes or individuals in the community, likewise cannot be regarded as an argument in favor of any such movement. As physicians with the best good of psychotherapy at heart, we should not condone the development of possible neuroses on the ground that some or many individuals are helped. It is as much the function of the physician to prevent the growth of modern hysteria in any of its forms as it is to relieve the sufferer who may already be afflicted.

It is a noteworthy fact that students of psychology, irrespective of any medical training, are working in the same practical lines from their particular standpoints. I refer particularly to the work being done by Prof. Hugo Münsterberg of a therapeutic sort in the psychological laboratory at Cambridge, and to the recently established clinic of Prof. Lightner Witmer in Philadelphia. It is perfectly clear that many persons outside of the medical profession feel themselves, and no doubt are, capable of dealing with the psychotherapeutic problem. It is also evident that the medical profession at large must rise to a complete sense of its responsibility in this regard and at least do its share in the work which lies immediately before it, unless this branch of therapeutics is to pass primarily into other hands.

Where, then, should the work of disseminating knowledge really begin if it is to prove effective in the shortest possible time? I have no hesitation whatever in saying that the chief task immediately before the profession is to inform itself and be informed regarding this significant addition to therapeutic methods. It is futile for a few men, enthusiastic in their convictions, to ignore the rank and file of the medical profession in their eagerness to spread abroad the new doctrine. What is primarily required at the present time is the co-operation of all regular practitioners toward the common end. This co-operation is at present wholly lacking, and very naturally so. I venture to say that three fourths of the physicians of this state are quite unaware of the significance of the general psychotherapeutic movement or even of its existence, and this carries with it not the slightest reproach. Popular movements do not appeal to the rank and file of the profession. In fact, they are likely to excite prejudice and retard progress. There is no more reason why practitioners in remote towns should understand the bearings of this significant movement than that other groups of men should be able forthwith to calculate an opsonic index. The results and the methods of obtaining results should, however, be matters of common knowledge in the one case as in the other, and it is the natural duty of those particularly qualified to spread such knowledge. Papers should be read before medical societies, not composed of special students of the subject, but of those who are quite ignorant of it, or whose knowledge is at best vague and uncertain. In this connection it is a satisfaction to refer to such papers as Barker's,[7] read before the Association of American Physicians last year; of R. C. Cabot's,[8] before the Colorado Medical Society; of Thayer's,[9] before the Louisiana State Medical Society; and of Putnam's, before the Massachusetts Medical Society in 1900. Such opportunities should not be lost, and I have no question that the dissemination of knowledge in this way has the most wide-spread influence in overcoming inherent prejudices and in promulgating sanity regarding the entire subject.

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[5] Walton: Worry and Obsession. Lippincott's Monthly Magazine, November, 1907. The Doubting Folly, Dec., 1907.

[6] Peterson: To a Business Man Suffering from Overwork, Collier's Weekly, Nov. 9, 1907. Other letters will be: To a Woman concerning her Inebriate Son; To a Young Woman who is Depressed, To Several Women Concerning their Nervous Children.

Even more important, however, than such dissemination of knowledge among practitioners in medicine is the instruction of students. Just here, to my mind, lies the crux of the entire situation. Are our medical schools doing their duty in this regard? Are they in the least recognizing the great responsibility resting upon them toward sending their students into active work equipped with knowledge of the possibilities of psychotherapy? I believe not. So far as I am aware, psychotherapy as a legitimate and essential element in the student's therapeutic training is entirely ignored. We hear much, and particularly from our students, of the lack of teaching in relation to treatment. As the importance of drug therapy has declined, no adequate recognition of other forms of treatment has taken its place, and the student feels himself defrauded of one of the chief objects for which he sought a medical education. The time is certainly ripe for a change in this regard. The medical curriculum must clearly recognize the claims of the wider therapeutic movement, and among these claims none demands greater recognition than psychotherapy. In every modern medical school a course or courses [10] on this subject should be given by properly qualified persons; the word itself should find a place in the catalogue; and the student on graduation should feel that his training had positively included a recognition of mental methods of treatment, and that he can no longer plead lack of instruction, if he later fails in his manifest duty toward his patients in this element of his practical work. It is, therefore, essential that those who already see the vital importance of this therapeutic movement in the profession should do what lies in their power so to impress their convictions upon those in charge of medical education that prescribed work on psychotherapy be introduced into medical curricula. With the rise of the standard of admission to our best medical schools there has been an increasing insistence upon preliminary training. Biology, zoölogy, botany and allied natural sciences are recommended by our leading institutions as a proper if not necessary preparation for the later work in medicine. President Eliot, in the address to which I have already referred, speaks of the physician as a naturalist. After insisting upon the desirability of comparative study he goes on to say:

> "Medical students should, therefore, have studied zoölogy and botany before beginning the study of medicine, and should have acquired some skill in the use of the scalpel and the microscope. It is absurd that anybody should begin with the human body the practice of dissection or of surgery; and furthermore, it is wholly irrational that any young man who means to be a physician should not have mastered the elements of biology, chemistry and physics years before he enters a medical school. The mental constitution of the physician is essentially that of the naturalist; and the taste and capacities of the naturalist reveal themselves, and, indeed, demand satisfaction, long before twenty-one years of age, which is a good age for entering a medical school. The Harvard Medical School has derived great advantages from its requirement of a previous degree for admission; but in view of the fact that many young men procure a bachelor's degree without ever having studied any science, the School needs an additional and more specific requirement, namely, a previous knowledge of biology, physics and organic chemistry, and an acquaintance with laboratory methods in all three subjects."

One naturally has not the slightest quarrel with such preliminary biological training, but it is not enough. In the future, if the profession of medicine is to retain its prestige in ministering to all human ills, it is forthwith manifest that our medical students must early be introduced to other departments of thought than those included in what we are accustomed to term the natural sciences. The prevalent idea of the physician as a naturalist will not suffer thereby. In fact, by broadening his training in branches of abstract knowledge, he should become a better and completer naturalist. However this may be, we have reached a stage of progress where the conception of an adequate medical education must be broadened to meet the insistent demands of a wide-spread therapeutic need, manifested by the extraordinary development of this so-called psychotherapeutic movement.

As a result of the foregoing analysis the following matters seem to me important: In our enthusiasm for the development of a highly significant therapeutic advance we should not allow the traditions of the profession to which we belong to be submerged. Our enthusiasm should not lead to the antagonism of any reasonable member of the profession. In our efforts toward what we regard as progress we should proceed with great deliberation and by recognized logical methods. To this end we should quote cases and exploit methods which have stood the test of experience. We should hesitate in appearing before the public with a detailed expression of our views and theories until we have secured the acquiescence of the conservative members of our own profession. We should not ally ourselves with movements over which we have no immediate control; we can ill afford misinterpretation, especially at the hands of our brother physicians. Our essential aim should be to develop a permanent interest in the psychotherapeutic movement within the ranks of the profession, and to do nothing which can in any way retard this effort. To this end we should urge reasonable but adequate recognition of the claims of psychotherapy as a legitimate and necessary element in medical education. Finally, our one object as members of a liberal profession should be to insist upon the importance of psychotherapeutic methods with an enthusiasm which should only be increased by the legitimate limitations set upon its action. By these means I believe the beneficent results which are destined to result from an acceptance of psychotherapy by the whole medical profession will soonest be attained.

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[7] Barker: Some Experience with the Simpler Methods of Psycho therapy and Re-education. Am. Jour. Med. Sc., 1906, cxxxii, 499.

[8] Cabot: Mind Cure; its Service in the Community. Detroit Med. Jour., 1907, vii, 269.

[9] Thayer: On the Importance of Simple Physical and Psychical Methods of Treatment. Bull. Johns Hopkins Hosp., 1907, xviii, 426.

[10] Dr. James J. Putnam is this year giving a voluntary course of lectures in Pyschology as Applied to Medicine, at the Harvard Medical School.

THE USE OF X-RAY EXAMINATIONS IN PULMONARY TUBERCULOSIS.*

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

The profession is now so much occupied in the study and prevention of pulmonary tuberculosis that it seems opportune to emphasize some of the results of x-ray examinations, which were begun in 1896, in this disease, and to point out again that, notwithstanding the difficulties of the method, they deserve systematic and frequent use, especially because they contribute toward making an early diagnosis and thus help to save lives and prevent the spread of the disease.

Under the term x-ray examination, I include an examination with the fluoroscope and a radiograph, the latter made during full inspiration.[1] Much experience is required to interpret what is seen on the fluorescent screen and in the radiograph, and the best results are obtained from x-ray examinations when they are made by the practitioner who also makes the ordinary physical examination. There is no danger of harm or injury to the patient in carrying out an x-ray examination if it is properly made.

This method may be useful, for example, in:

1. Making an early diagnosis.
2. Making a precautionary examination where there is a possibility that the disease is beginning.
3. Cases simulating pulmonary tuberculosis.
4. Determining the extent of the disease.
5. Determining whether it is diminishing or increasing.
6. The diagnosis of acute miliary tuberculosis and fibroid tuberculosis.
7. Recognizing central tuberculosis.
8. Recognizing sometimes an old tuberculous lesion.
9. Cases in which emphysema or asthma and pulmonary tuberculosis are associated.
10. Making an examination for cavities.

1. X-RAY EXAMINATIONS FOR EARLY DIAGNOSIS.

By the term "early diagnosis" I have in mind an earlier stage of the disease than is usually meant by these words. The x-ray signs of tuberculosis in the early stage are often a restricted excursion of the diaphragm on the affected side, due to the fact that the lung expands less fully than normal; the heart and mediastinal contents drawn by the diseased lung and pushed by the healthy lung somewhat toward the affected side in deep inspiration; the bronchial glands perhaps enlarged, especially in children; and a darkened apex of one lung, although instead of this some other part of the lung may cast the shadow. It is probable that two or more of these signs will be found very early in the disease, and the fact that a group of them may be present at this time adds greater weight to the method. The x-rays show clearly the small heart that is sometimes found in tuberculous patients in the early stages, and this may affect the prognosis unfavorably.

Diaphragm, glands and apices. Importance of quality of light in fluoroscopic examinations. — When one lung is nearly or entirely normal and the other only is affected, the difference in the maximum excursion of the diaphragm on the two sides is often great, but when both lungs are diseased, the difference may be slight. Many so-called early cases are seen when the difference in the excursion of the diaphragm on the two sides is not very marked, which may mean that the x-ray examination has not been made until both lungs have become affected. The position of the diaphragm should be traced on the skin (or on a sheet of glass or celluloid held over the chest), in inspiration and quiet breathing, and then in forced inspiration and forced expiration on both sides, and a record made of these positions for comparison with future examinations. It is well that the source of light should always be opposite the median line on a level with the lower border of the fourth rib, and about twenty-four inches from the fluorescent screen, as by this arrangement, examinations made at different times are comparable.

The glands should be examined with the light going through the body from three directions. To accomplish this object with ease, the patient should be seated in a pivoted chair.[2]

In the early stage of the disease, the practitioner has the opportunity of comparing the

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* Presented at the meeting of the Association of American Physicians, held in Washington, May, 1907.

[1] The first of those I took in deep inspiration were made in 1899.

[2] See Allbutts and Rolleston's System of Medicine, The Macmillan Co., London, second edition, 1905, p. 491.

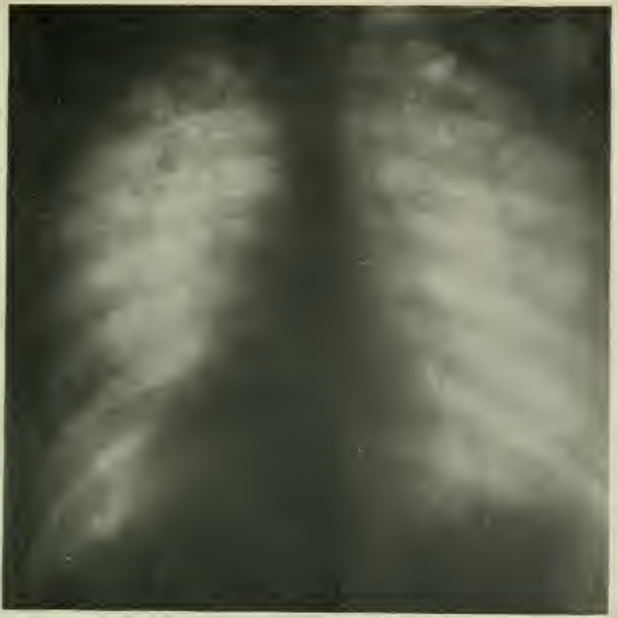

Fig. 1. — Tuberculosis of both apices. The physical signs showed trouble at the right apex only.

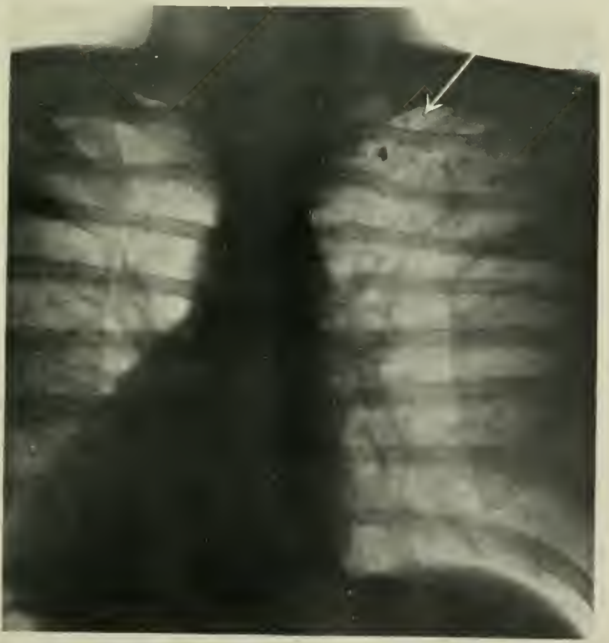

Fig. 2. — Showing small areas of calcification, probably indicating an old tuberculosis.

normal with the abnormal lung. To do this to the best advantage, the patient should take a full breath and the light should be turned down so low that it barely illumines the healthy side. When this very small amount of light is used, a slight increase in density only of the apex of the lung or other parts is necessary to shut out most of it, and, therefore, the practitioner can detect slight differences in density not revealed in any other way. Few practitioners realize the importance of using a small amount of perfectly steady light when examining the chest with the fluoroscope, and the failure to appreciate this fact may prevent them from seeing that the lung is abnormal, until the disease is much more marked. (Hyaline casts cannot be seen in the microscope if there is too much light, as is well known.) By a small amount of light, I mean, as a maximum, in many cases, so little, that five minutes is required to radiograph a hand at a distance of sixteen inches from the tube. This light should be so arranged that it can be readily turned up and down during the examination. Before using the fluoroscope, the eyes should be tested with the spinthariscope.

Radiographs. — To take radiographs of the chest quickly, a strong light is necessary.

The following case illustrates the value of the x-rays in assisting the practitioner to make an early diagnosis: A man, aged about thirty years, who had been overworked, complained to his physician of feeling listless and below par. He took a vacation and returned better, but soon began to feel as before. At this time his physician found no physical signs in his lungs and was in doubt as to whether the cause of his ill-health was tuberculosis or was due to over-anxiety and extra work. About Oct. 1, 1903, he was brought to me for an x-ray examination. He had a pulse of 72, and a temperature of 99°. His physician and I found no physical signs in the lungs at this time. The fluoroscopic examination showed that the excursion of the diaphragm on the right side was $1\frac{3}{4}$ inches, on the left side $3\frac{1}{2}$ inches, and that the right apex was a little less bright than the left. It seemed wise, with his history and with these x-ray indications of pulmonary tuberculosis, that he should govern his life as if he had this disease. He therefore gave up his work and went away. I expected to see him again in a few weeks, but he did not return until January, 1904. About the middle of this month, a second x-ray examination showed that the excursion of the diaphragm on the right side was 1 inch, instead of $1\frac{3}{4}$ inches, as in October, 1903, and that the apex of the right lung cast a distinct shadow. The excursion of the diaphragm on the left side was $2\frac{1}{4}$ inches instead of $3\frac{1}{2}$ inches, as in 1903, which suggested that the left lung was not in as good condition as it had been at the time of the previous examination. This patient went to the Adirondack Cottage Sanitarium, and his examination there in March, 1904, was as follows:

Palpation. — V. F. increased, right base front.

Percussion. — Good note.

Auscultation. — Right, expiration a trifle prolonged; apex, above clavicle. Few fine râles (?), and an occasional rhonchus V. R., normal. Left, fair breathing; V. R., trifle increased to second rib. Few fine râles to second vertebra spine on cough.

Fourteen examinations of his sputum were made and in no case were tubercle bacilli found.

The last examination, on Dec. 2, 1904, showed: Right, breathing better; no râles; no dullness. Left, good note and breathing; no râles.

After leaving the sanitarium tubercle bacilli were found. This patient recovered and has, I am told, been well since that time. Practitioners often suspect pulmonary tuberculosis when they do not feel justified in making this diagnosis. At such a time, x-ray examinations may afford the determining evidence earlier than the usual physical examination.

2. X-RAY EXAMINATION AS A PRECAUTIONARY MEASURE.

The wife of the patient, just mentioned, developed tuberculosis after the recovery of her husband. Precautionary examinations might well have been made in her case.

Such conditions or symptoms as the following may indicate the advisability of x-ray examinations:

(*a*) Patients whose family history suggests the possibility of this disease.

(*b*) In which the patient has been exposed to tuberculosis; for example, because some member of the family or household is or has been ill with this disease.

(*c*) In which the thermometer, as suggested by Trudeau, shows slight increase in temperature during part of the day, or after exercise.

(*d*) Hemoptysis, or loss in weight.

(*e*) Slight but persistent cough, especially in the morning.

(*f*) In which there is tuberculosis in some other portion of the body, and it is a question whether the lungs are or are not affected.

3. CASES WHICH SIMULATE PULMONARY TUBERCULOSIS.

X-ray examinations are used to advantage in these cases, as illustrated by the following instance: The diagnosis made by three physicians was pulmonary tuberculosis. The friends of the patient had presented him with a purse to enable him to go to Colorado. Before attempting to start, he came to the Boston City Hospital to ascertain how extensive the disease was. His record is as follows:

David G., aged thirty-nine years. Admitted to Boston City Hospital, Sept. 26, 1898. Pleurisy one year ago; cough for two years. Caught cold six days ago; chill, knife-like pain in left side.

Sept. 26. On admission, pleuritic pain in left side. Temperature 99.2°; pulse, 80; respiration, 23.

Sept. 29. Right apex front and behind prolonged expiration; slightly higher pitched than on the other side. Vocal resonance slightly increased, and marked whispered bronchophony. No râles over this area, and no change in percussion. In right base behind, numerous medium and moist râles heard best with inspiration, and without change in percussion and voice sounds. No tubercle bacilli in sputum in two examinations.

Oct. 6. Patient shows some improvement. Cough nearly gone. Chief symptom is weakness and pallor. Desired to go home.

Oct. 20. Returned. Cough returned; whitish expectoration; some pain in side; appetite poor. Has had chills for three days. Temperature, 99.3°; pulse, 80; respiration, 23.

Lungs: Slight dullness at right apex in front and behind, with increase in vocal fremitus and resonance, and considerable whispered bronchophony; no râles. Question of malaria; no plasmodia found; no temperature.

Oct. 25. Feels stronger; no chills; no temperature. Coughs very little.

Nov. 5. Given 5 mgm. tuberculin.

Nov. 6, A. M. Temperature 102.5°. This temperature thought afterward to have been due to malaria, not to the tuberculin, as plasmodia were found later.

Nov. 13. Tuberculin 5 mgm. again given; no reaction.

Nov. 16. In right back tactile fremitus increased and percussion slightly duller than normal over whole of right back. On left, from apex to third rib in front, expiration is harsh and prolonged, and fremitus increased.

I made an x-ray examination of his chest and found that his lungs were clear and that the excursion of the diaphragm on the left side was 2⅝ inches, and on the right side, 2¾ inches. He deferred his trip to Colorado by my advice, and eventually gave it up altogether. I have seen him at intervals since that time and he did not develop tuberculosis. He died of cancer of the throat, eight years later, in September, 1906, at the Massachusetts General Hospital, after operation.

I think the diagnosis of early pulmonary tuberculosis should be carefully reconsidered if a properly made x-ray examination does not reveal an abnormal condition of the lungs.

4. X-RAY EXAMINATIONS IN DETERMINING THE EXTENT OF THE DISEASE.

In deciding on the best course for a patient to pursue, who has already well-marked signs of the disease, not only the condition of the patient, but the extent of the disease should be known as accurately as possible. The x-rays in many cases reveal more exactly the extent and distribution of the disease than any other method. They frequently show that both lungs are involved, when, without the use of this method, only one lung would be suspected. In other words, the x-rays indicate early the advent of the disease in the second lung as well as in the first (in such a case the advantage of comparing the normal with the abnormal lung is lost). Before admitting patients to sanatoriums as early cases of tuberculosis, they should be examined by the x-rays, for if this is not done they will sometimes be sent there with the mistaken idea that they are in an early stage of the disease.

5. X-RAY EXAMINATIONS IN DETERMINING THE DEVELOPMENT OF THE DISEASE, WHETHER IT IS DIMINISHING OR PROGRESSING.

Another use of the x-ray examination is to show with what rapidity the disease is progressing. For example, let me take the case of a patient, one of whose lungs seemed to be involved, but not to any considerable extent. The first x-ray examination showed that the disease was more extensive than the physical examination indicated, and each subsequent examination, made at intervals of two or three weeks, demonstrated that it was rapidly extending. This progress of the disease was indicated only by the x-ray examination. The physician of the patient had planned to send him to Colorado. I advised and urged that the plan be given up. He started, however, and after a fatiguing journey, resting here and there on the way, arrived in Colorado, but left for home a few days later and died ten days after reaching home. It is hardly necessary to dwell on the suffering which this man must have endured in the two long journeys, which the x-ray examinations had shown would probably be worse than useless at that time.

7. CENTRAL TUBERCULOSIS.

It is well known that central pneumonias may be readily seen by means of an x-ray examination before they extend sufficiently near to the surface of the lung to be recognized by a physical examination. The dense portion of the lung casts a shadow on the screen whether it is central or superficial. In like manner the increase in density, obtaining in pulmonary tuberculosis, is revealed by the x-rays even when deep seated.

8. OLD LESIONS.

Where we find indications of calcification, as illustrated by the accompanying figure, it should suggest an old pulmonary lesion.

9. CASES IN WHICH EMPHYSEMA OR ASTHMA AND PULMONARY TUBERCULOSIS ARE ASSOCIATED.

An x-ray examination is useful in recognizing pulmonary tuberculosis when other conditions are present which complicate the case. For example, when a patient is suffering from emphysema of the lung and pulmonary tuberculosis, the emphysema masks the ordinary physical signs of tuberculosis, but the density of the lungs is even more clearly revealed than usual, when the chest is examined by the x-rays, if the patient is also suffering from emphysema.

USE OF THE X-RAYS IN SANTORIA.

It is hardly necessary to point out, from what I have already said, that the x-rays would also assist in determining the favorable course of the disease and could be of service in sanatoria and other places where there are many patients who should have every advantage which the best methods of examination can afford. The importance of these examinations at sanatoria has been shown among others by Brook and Green.[3] They say:

"The conclusions we arrive at are formed from the study of a large number of cases in all stages of the disease:

"1. In no single case, where the physical signs have pointed to disease, have the x-rays failed to detect the mischief.

"2. In some cases where physical signs have been absent the rays have shown a deposit in the lungs, and in these cases physical signs have subsequently been detected.

"3. That the early diagnosis is certainly helped.

"4. That the extent of the disease, in many cases, is shown to be greater than the physician thinks.

"5. That the progress and results of treatment can be watched with great accuracy."

X-ray examinations are valuable for life insurance companies.

X-ray examinations are difficult to carry out. Proper precautions should be taken to protect the practitioner as well as the patient.

Practitioners who are devoting themselves to diseases of the chest should have a suitable x-ray apparatus, just as an ophthalmologist has an ophthalmoscope, but the task of the latter is far lighter than that of the physician who desires to make a complete examination of the chest.

Practitioners who have had experience with x-ray examinations appreciate that, as a rule, they give a more definite and correct picture of conditions in the chest than any other method. This information is valuable not only in assisting the practitioner to make an early diagnosis, but also in later stages of the disease. There is now, according to some observers, an average delay of perhaps a year or more after the first symptoms of tuberculosis are observed, before the diagnosis is made. X-ray examinations assist in shortening this delay and thus help to lengthen the lives of tuberculous patients and diminish the spread of the disease. When patients realize that early diagnosis usually means recovery in a comparatively short time, and that a delayed diagnosis may exclude recovery, they will, I believe, seek x-ray examinations.

THE RESULTS OF THE CHEMICAL INVESTIGATION OF TUMORS.

BY S. P. BEEBE, NEW YORK.

During the last ten years the public interest in problems of scientific medicine has increased in large degree and many laboratories have been founded for the scientific investigation of particular pathological conditions. Nearly all of the special laboratories and funds for the study of malignant growths have had their origin during this period. You are all familiar with the remarkable advances that have been made in the application of the exact methods of chemistry to problems of biology during this same period. We need scarcely add, therefore, that our knowledge of the chemistry of neoplasms is a very modern product. However, only a small portion of the abundant tumor literature of the last decade has been devoted to chemical subjects. Such contributions as have appeared have aroused very little discussion because of their fragmentary character; and because they have formed no essential premise in the arguments regarding the nature of neoplasms, which are the chief contribution of the pathologist. The chemist has not been familiar with the past history of the tumor discussion, nor its present condition, and the pathologist has not been fully acquainted with the ways of chemistry and its language. The two are therefore just beginning to appreciate the necessity for mutual co-operation, and we find that the results of the chemist are being used more and more as a basis for the hypotheses of the pathologist. It is, I believe, a good thing that such a condition of affairs is coming, for the findings of chemistry are those of an exact science, and the personal equation is likely to cause a larger error in drawing conclusions from and properly interpreting the data of clinical and histological observations than can be admitted in an experiment where the various factors are subject to the control of the chemical balance.

In presenting the results of the chemical investigation of tumors, I shall not attempt to give a résumé of all the analyses that have been made, but I shall select those which I think are of most interest, and it is convenient to group these somewhat in the order of their complexity.

1. THE INORGANIC CONSTITUENTS OF TUMORS.

Few systematic analyses of tumors for the important inorganic elements are reported in the literature, and yet there is an abundant physiological evidence that such elements are vital factors in the proper functioning of various tissues. Four years ago, I analyzed a number of these tumors in various stages of growth and degeneration for the elements sulphur, iron, phosphorus, calcium, potassium and sodium.[1] No conclusions of great value can be drawn from these analyses, but an interesting suggestion was found in the fact that the actively growing tumors contained a much larger amount of potassium and sodium, and a much smaller amount of calcium than was found in the old, necrotic tumors. The later work of Clowes and Frisbie,[2] who analyzed a series of transplantable mouse carcinoma in various stages of their growth, has confirmed these findings.

The work of Loeb,[3] Howell, Matthews and their students, during the last few years, has revolutionized our ideas regarding many fundamental physiological processes, and has demonstrated in how great a degree vital activities are dependent upon the physico-chemical environment — an environment profoundly influenced by the nature and amount of the inorganic salts.

We know, for example, that the secreting cells of the intestine are stimulated to remarkable activity by the presence of potassium, and that this activity is inhibited by the exhibition of calcium. It may be that in some way a similar relation holds true for the tumor cell. It is certain that the varying quantities of these elements found in the different stages of the tumor growth are not accidental factors, but we cannot, however, on the basis of our present knowledge, say precisely what are the mechanisms concerned.

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[3] A Preliminary Note on the Use of the Röntgen Rays as an Aid to the Early Diagnosis of Pulmonary Tuberculosis. Quart. Med. Jour., Sheffield, 1902, 1903, xi, 268–272.

The studies of the distribution of iron, phosphorus and potassium, as carried out by microchemical reaction, have not shown any peculiarities that differentiate tumors from normal tissues. Dr. Tracy [4] has carried out a series of experiments along these lines in our laboratory, and has found that the methods are unsatisfactory, but as far as results apply, they indicate that these elements are found in tumors in similar distribution and amounts, as in any active normal tissue.

II. PROTEIDS OF TUMORS.

A considerable amount of work has been done during the last five years in comparing the character of the proteids found in malignant growths with those found in normal tissues. It seems reasonable to believe that a tissue which has such a marked peculiarity of unreasonable growth as a tumor must have some basis for this behavior in its chemical structure. There are a number of observations which indicate that a carcinoma retains some of the physiological activity of the tissue from which it developed. One need only cite the presence of iodine in thyroid tumors or the well known fact that cancers of the adrenal do not cause Addison's disease in support of this statement. One of the first observations of the character of proteids in tumors is reported by Petry [5] who salted out the nucleo-proteid, globulin and albumin from a saline extract of five carcinomas and compared the quantities found with those found in extracts of the surrounding normal tissues. His results show that the tumors were relatively richer in nucleo-proteid, and poorer in globulin and albumin than control normal tissues from which the growths had originated. These conclusions, however, are based on only two complete analyses properly controlled, so that his findings are only a suggestion. A very similar piece of work, reported by Wolff,[6] has been widely quoted as evidence that the proteids of neoplasms have a characteristic structure. Wolff separated the euglobulin, pseudo-globulin and albumin from the expressed juice of a number of tumors, and found results practically in agreement with those previously reported by Petry; but he, likewise, found that these proteids have the same precipitation limits with ammonium sulphate as those of normal tissues, and his own conclusion is that the character of the proteids is identical with that of normal tissues, and it is only the quantitative distribution of these that differentiates the tumor from the physiological tissue.

During the last year, we have carried out somewhat similar experiments upon a much larger number of specimens than either of these other men, and our conclusions are, with some minor exceptions, in accord with those of Petry and Wolff, namely, a larger amount of nucleo-proteid, less globulin, more albumin and much more non-coagulable nitrogen than is found in normal tissues. Such experiments are not suited to determine the character of the proteid, but only give information as to the distribution of the proteid in its various forms, and thus they throw some light on the pathological processes in the tissue but are of no value in differentiating between proteids which must be so closely related.

The large quantity of nucleo-proteid found in a tumor corresponds with the histological structure, and a large quantity of non-coagulable nitrogen is the logical sequence of the autolytic processes of such tissues. The distribution of nitrogen in the tumor extract varies within wide limits, depending upon the state of the tissue as regards necrosis and also depending upon the method of preparing the extract.

It is well known that many tumors suffer an impairment and, in some instances, a complete stoppage of the circulation of blood and lymph in the central portions of the growth. As a consequence of this impaired criculation, necrotic processes ensue and conditions are favorable to autolysis with an accumulation of autolytic products. It is known that aseptic autolysis at body temperature proceeds very much faster than antiseptic autolysis, where the enzymes are exposed to the injurious action of some bacterial poison, such as chloroform, toluol or sodium fluoride. In the central necrotic portions of a large tumor, there is a mass of tissue at the body temperature, free from bacteria, rich in enzymes, free of the inhibiting influences of the circulating blood and uninjured by chemical antiseptics. Such conditions are almost ideal for autolytic activity, and we find evidences that such action takes place in the amido-acids found in the extracts of such tumors. I have already published analyses of extracts from a series of sterile tumors, obtained fresh from operation, in which I found the products characteristic of cleavage by digestive enzymes, a striking instance being the finding of considerable amounts of glycocollnin, a carcinoma growing in the broad ligament. Autolysis is a process of gradual hydrolysis and with its progress a proteid has less and less of a colloid character, and consequently requires a higher concentration of salts to precipitate it, and a larger percentage of it has progressed so far in this degradation, that it is not precipitated by salts, nor can it be coagulated by heat. Therefore, the distribution of the proteid in the less colloidal state merely indicates that the biological processes of tumors are somewhat different from those of normal tissues.

To differentiate sharply between the essential characters of two proteids, a different means must be employed. By ultimate analysis or by precipitation behavior, we would not be able to differentiate between the serum globulin from two different species of closely related animals.

Two methods are available to distinguish between closely related proteids. We may use the biochemical method involved in the precipitin test, or we may completely disintegrate the proteid into its crystalline decomposition products, and separate these quantitatively into various fractions, —a method which requires a large amount of tissue, a corresponding quantity of skill and patience, — and except under very favorable conditions, the results will not be satisfactory. I have carried out a considerable number of tests by the first method, using the nucleoproteid of the tumors to develop the antiserum with which the precipitin tests have been made, and have been able to distinguish by such means between the tumor proteid and a widely different range of normal proteid, for instance, between the proteid of a lympho-sarcoma and the proteid of the liver, spleen, pancreas, thyroid, but I could not distinguish by this means between the proteid of the lympho-sarcoma and that obtained from an enlarged spleen, from a case of leukemia.

Bergell[7] and Dorpinghaus have reported the analyses of a mixture of tumors by the second method outlined above and claim to have found differences which justify them in concluding that tumor proteids have a characteristic grouping of amino-acids, the diamino-acids being much increased, and the monamino acids decreased. These results are in direct contradiction to those of Neuberg[8] and Petry,[9] as well as my own, so that no conclusions on the point of issue can be drawn.

The justification of the methods of comparison between tumors and healthy tissues is more apparent than real. A tumor is often composed almost entirely of a single kind of cell, whereas a normal organ is a composite structure, made up of a great variety of separate components which may reasonably be supposed to differ quite widely from one another. For instance, a comparison between the chemical structure of a primary carcinoma of the liver, starting in the gall ducts with normal liver tissue, is hardly justifiable. The cells lining the gall ducts are the parent cells of the mass of the tumor, and these probably have a different chemical structure from the large mass of liver cells which make up the bulk of the normal organ. It is obviously impossible to separate out that particular group of cells from a normal organ in sufficient bulk to make a quantitative chemical examination, and yet it is these cells which should be compared with the cells of the neoplasm. I am inclined to believe that the term anaplasia may apply to the chemical, as well as to the histological, structure of a malignant cell, but the work thus far reported is not satisfactory proof of such a relation.

In some instances there has been a comparison of the chemical composition of the primary growth with that of the secondary growths in some distant organ. Bang examined, with negative results, five fibro-sarcomas for a peculiar proteid, nucleo-histone, found only in lymphatic tissues. In the sixth case, he examined a growth in the inguinal lymph node, secondary from a sarcoma of the testis, extirpated about one year previously. Here he found a body having a phosphorus content of 5.18%, and the reactions of the nucleo-histone normally found in lymph glands.

Unfortunately, the primary growth was not examined chemically, but Bang[10] believes that the tissue which he used had its origin in cells directly transferred from the growth in the testis, and that chemically, therefore, the primary growth was similar to the metastatic growth in the lymph-gland. Nucleo-histone is not a normal constituent of the mammalian testes, and reasoning from these premises, Bang concludes that the primary growth had its origin in an embryonic lymphatic cell group retained in the testes. The conclusion is an argument for Cohnheim's theory.

From analyses of fourteen malignant growths, including epithelioma, sarcoma and carcinoma, after much the same method that Bang has used, I concluded[11] that primary epithelial growths do not contain a nucleo-histone, while the secondary growths found in the lymph-nodes invariably yielded nucleo-histone. I cannot agree, therefore, with Bang's conclusion. From the abundance of the nucleo-histone in the secondary growths in the lymph-glands, I was led to believe that, chemically at least, the metastases are not in all respects similar to the primary growth, and it appears as though the cells lodging in the lymph-nodes had been influenced to some extent by their environment.

Neuberg[12] has attempted to draw somewhat similar conclusions from the findings in regard to the pentose of a carcinoma of the liver, primary in the stomach. In our laboratory we[13] have analyzed a series of tumors and normal tissues for the content of pentose, and if selected instances are chosen, we may conclude that the pentose content of the secondary growths is similar to that of the primary, but our results as a whole show no consistent relation of pentose to the origin, malignancy or degeneration of the tumors. It seems to me very probable that the peculiar activity of a tumor cell is a function of its chemical structure; but the chemical studies which have been made of the proteids of tumors are quite inconclusive and show no undoubted differences from normal tissues. The analyses thus far are mere suggestions and have demonstrated only that the differences, if they do exist, are not profound ones.

Blumenthal and Wolff have reported a few experiments which have been quoted as evidence that tumors are differentiated from normal tissues by their more complete and ready digestion by trypsin as compared with pepsin. (It is interesting to note that Blumenthal now makes the claim that his experiments are the scientific basis for the trypsin treatment of tumors.) The experiments are conflicting, however, as in three cases out of five he found peptic digestion more completely digested the tumors. From our common knowledge of digestion, we should expect trypsin to digest the tumor more completely than pepsin, because the tumor proteid is largely nucleo-proteid and peptic digestion necessarily leaves the large content of nuclein undissolved, while tryptic digestion readily dissolves the whole tumor tissue. Such experiments, to be of any value, must be carried out upon isolated, purified proteids from the two sources, and not upon a heterogeneous indefinite mixture of various kinds of proteid and proteid cleavage products.

III. TOXINS IN TUMORS.

Many investigators have endeavored to demonstrate a specific toxic substance for the malignant cell, but thus far no definite toxin has been isolated and studied. I shall not refer to the numerous experiments in which toxic substances are reported in the urine of cancerous patients, because their origin, if they are present, is doubtful and the results have not been properly controlled. We have observed in the course of immunization experiments that extracts of tumors, and particularly necrotic tumors have a much greater toxic effect upon the animal inoculated than extracts of normal organs, and we have a few direct experiments which show that a much smaller amount of tumor nitrogen is required to produce a fatal result than is required from extracts similarly made from autolyzed normal organs. These results agree with some of those found in the literature, but we are not able to say what the nature of these substances is, nor can we say that they are characteristic of neoplasms. Most experiments along this line have been so improperly controlled that they are of no value.

HEMOLYTIC SUBSTANCES.

There are a number of fragmentary observations on the hemolytic effects of tumor extracts, but many of these have been clinical observations under conditions not subject to experimental control, and in other cases the hemolytic effect of the extract has been tested against erythrocytes of an alien animal species, so that their value as a possible explanation of the anemia consequent upon malignant growth is of little value. The extracts should be tried upon freshly drawn and washed corpuscles of the same animal species, from which the growth came. Such a series of experiments Dr. Weil[14] has carried out in our laboratory during the last two years, using, as a source of his material, the transplantable lymphosarcoma of dogs. Extracts have been made of these tumors in all stages of their growth, and the hemolytic effect tested upon corpuscles of animals in all conditions of nutrition, and the results have been compared with extracts made from normal organs, in some instances blood free, and in others containing blood. We have had a further control by comparing results with those obtained from extracts of necrotic normal organs; for example, the renal artery has been ligated under aseptic conditions, and the kidney allowed to fall back into the peritoneal cavity and allowed to autolyze for from ten days to three weeks, and extracts then made in a similar manner as with the tumors. From such experiments we have found that extracts of normal organs containing blood are markedly hemolytic. Extracts of blood-free organs are very slightly hemolytic, but this extract may be activated by the addition of a very small amount of hemolyzed red blood cells. Extracts of fresh, vigorously growing tumors are more hemolytic than those from most normal organs, but it is with the necrotic organs and tumors that the most active hemolytic extracts were obtained, and with these the activity is, in some instances, a hundred fold greater than with extracts from non-necrotic organs and tumors. Apparently, the necrosis and subsequent autolysis of the tissue has set free substances which are readily soluble in a normal saline solution. The blood serum inhibits the hemolytic effect of extracts from normal organs or non-necrotic tumors, but has no effect upon the powerful hemolysins in necrotic tumors. One need scarcely add that it is in cases with large necrotic tumors that we see the most profound anemia and cachexia.

During the last few weeks, we have obtained some additional evidence that the hemolytic substance in the tumor is really a factor of importance in causing this anemia. We have found that the serum of animals having comparatively large, rapidly growing tumors is hemolytic, and this hemolytic effect is most marked upon the corpuscles of normal healthy animals, and much less marked upon corpuscles of the anemic, cachectic animals in which the tumors are growing. It seems that the corpuscles in the latter case have acquired some degree of immunity to the hemolytic agent present in the serum, while the corpuscles of the normal animal have not been exposed to such an agent and are consequently much less resistant. A practical result from these studies was seen in one case where an anemic, cachectic dog with fairly large rapidly growing tumors was transfused with the blood from a strong, healthy, normal animal. Following the transfusion, there were evidences of hemolysis, and test tube experiments showed that the serum of the tumor animal taken at the time of the transfusion was markedly hemolytic for the corpuscles of eight other normal animals.

We have no experimental evidence that other cells in the body beside those of the blood are attacked by tumor extracts in the same fashion, but I am inclined to believe that the blood cells are no exception, and that other tissues suffer from this lytic action.

ENZYMES IN TUMORS.

With reference to enzymes there has been some comparative study regarding the relation of tumors to normal organs, as has been noticed above, with regard to hemolytic effect, character of proteids, toxins and inorganic salts. The first of these observations had regard to the autolytic activities of tumors. Petry,[15] Wolff and Neuberg have noted the rapidity with which tumors undergo self-digestion, and I think no one who has made any chemical study of neoplasms has failed to notice how quickly they soften and what a large percentage of non-coagulable nitrogen may be obtained from their extracts. A large number of the usual nitrogenous decomposition products have been isolated and identified, and many strange and unfamiliar substances have occasionally been met with in so small quantities as not to permit of further study. There are some apparently authentic experiments which show that the autolysis of tumors is hastened to a much greater extent by exposure to radium and x-ray [16] than is the case with healthy tissues.

Buxton and Schaeffer [17] in our laboratory have examined a large number of malignant tumors for a wide variety of enzymes. They have found nearly all the enzymes for which they searched. However, the difference from normal tissues as obtained by their methods, which were qualitative only, do not suffice to make any conclusion possible. These results merely show that tumors are rich in enzymes, but there has been found no specific enzyme which is present in one kind of tissue and lacking in the other, which will suffice in any way to explain the tumor process. Recently, we have heard a great deal about the heterolytic enzyme which is credited with being the toxic agent in the tumor cell. Buxton's study on the enzymes in tumors showed that many tumors have proteolytic enzymes and that these enzymes will diffuse out to a sufficient extent to digest some of the surrounding proteid. However, in no case did he obtain a proteolytic action on egg albumen. The presence of the proteolytic ferment was determined by the action on milk and gelatin. Fibrin and serum were never affected. Wolff and Blumenthal [18] have, however, more recently claimed to find .marked digestive effect upon liver proteid, but this conclusion is based upon a single experiment and under conditions *in vitro* which are foreign to physiological action. There are some statements to be found in literature from other observers in regard to heterolytic enzymes, but these are of so fragmentary and irresponsible a character, and so lacking in details of the experimental method used that one cannot decide either for or against their validity. It seems to me that such an active autolytic process as we find in a tumor may very well sweep into its field of action a foreign proteid that may happen to be present, but this autolytic activity differs in degree only and not in kind from that possessed by every normal organ. A demonstration that a malignant tumor contains an enzyme capable of absorption in the body fluids, and capable of marked digestive effect upon other tissues under physiological conditions, would be a contribution of definite value, and is something we now lack. It may be that the toxic properties of tumor extracts are in large part a function of the hemolytic and heterolytic activity.

The chemist has thus far laid only a small stone in the structure of our tumor knowledge. We know more than we did five years ago, but apparently are not much nearer a solution of the chemical phases of the problem. I believe, however, that the biochemical activities of a tumor cell are quite as important matters for consideration as the histological appearance, and we shall not really appreciate what a tumor is until those activities have been explained.

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THE "OPTOMETRIST."

A Warning Word.

BY JOHN C. BOSSIDY, M.A., M.D.,
Ophthalmic Surgeon, Boston City Hospital.

Every physician practicing medicine in Massachusetts has received, or will receive within a few days, a circular from the Massachusetts Optical Society entitled: "A Few Facts Pertinent to the Optometry Bill," and also a copy of the bill which it proposes to introduce in the coming legislature, together with explanatory remarks by the chairman of the society's legislative committee.

Since the physician in general may never have heard the word "Optometry" or "Optometrist," it is well to explain this in detail. The optometrist, so called, is an optician. The word is but three years old, officially, and its history is as follows:

It took much time and thought to settle on this word, inasmuch as its sponsors discussed "Optist," "Opticist," "Ocular Refractionist," "Neurologist," "Neurometrist," and "Optometrist" as their would-be title.

The opticians, after forming state societies, organized a National Association of Opticians a few years ago, such association revolving in great part around a wholesale optical house in Boston. In 1903 and 1904, Mr. Eberhart, of Dayton, Ohio, was president of such National Association. In the *Optical Journal* under date of November, 1903, page 658, we find this advertisement:

> "This is a cut of the word 'Optometrist' furnished us by Mr. Eberhart, President of the American Association of Opticians, and supplied by us to any optician, postage prepaid, to any address, on receipt of thirty-five cents. We have already sold quite a large number, which is a pretty good indication that this word, coined by Mr. Eberhart, is a popular one and likely to be adopted by the American Association at its Milwaukee Convention in 1904."

Later, in the same journal, we find an advertisement reducing the price of the cut "Optometrist" to the significant sum of thirty cents. This, an official advertisement, proves absolutely that any optician could, or can, become an Optometrist by buying a sign and paying thirty cents therefor.

In the *Optical Journal* of Aug. 4, 1904, the same Mr. Eberhart, as president of the National

Association of Opticians, in his address of welcome at their annual meeting in Milwaukee, defined "Optometry" as "The Science which Treats of the Physiology of the Functions of Vision and the Physical Effects thereon by Lenses." Such word was, I understand, finally adopted as the title of the optician.

In the same address, the gentleman used the identical arguments from firstly to sixthly, which are found at the head of the circular being mailed this week to our Massachusetts physicians.

These arguments, then, are not original with our Massachusetts opticians, nor are they original with Mr. Eberhart, as he gives credit to a Mr. Prentice, of New York, for them, and they therefore contain the composite or combined wisdom and literary ability of many opticians.

Now, then, since any optician can call himself an "Optometrist," and (if their bill should go into effect) could be legally recognized as such, it is well for the physician in general to understand that the bill makes no difference with the standing of the optician except this:

The traveling vender of glasses, who now sells them in the country districts and disappears, would then have a certificate containing his name and number, and would be obliged, on the consummation of a sale, to give a receipt of sale to the customer containing his name, postoffice address and certificate number. He would not know any more then than he did when unknown, nor would any of the men registered and continuing in one place of business be any wiser than before the issuance of their certificate.

Every one who for two years preceding the passage of this bill had been in the optical business in the slightest refractive way could be registered without examination; even the boys who grind lenses at a wholesale establishment and who are members of the Massachusetts Optical Association could be registered and become a thirty-cent professional man, provided after working hours they (as they frequently do) fitted glasses at their home or the homes of any customers whom they could secure. I am, when I say this, not forgetful of the reading of section 5, of their bill:

> "Upon submitting to said board satisfactory proof as to his character, competency and qualifications, to receive from said board a certificate of registration."

That reads well; means little. Try to legislate a man out of business and you must provide for a law annex and a court of appeals.

Within a radius of a hundred yards in Boston, we find one man whose picture and advertisement proclaim him the greatest eye-sight specialist of the present day; while across the street is a man teaching what he calls the greatest system of eye and nerve measurements in existence, and formerly furnishing his students with a diploma and degree of Doctor of Optometry for $10.00. Not a stone's throw away is a third, whose picture and advertisements, scattered broadcast through the mail, proclaim him the one man in America who can absolutely correctly measure the eyes. Across the street, we find another optician working under the system of the celebrated Dr. "Blank," whose diploma, granted under the laws of Kansas, would make you an Opt.D. And finally, we note within this same circle the man whose name appears appended to the circular so recently sent to all medical practitioners in Massachusetts, and who modestly signs himself, "Chairman of the Legislative Committee." He neglects to mention his greatest title, or highest honor, for he is now the president of the National Association of Opticians; nevertheless, he is working under no general system, but under another celebrated "Blank" system.

He has written recently a paper entitled: "Massachusetts needs an Optometry Law," and your writer will later pay especial attention to this same book. In this connection, I cannot forego quoting from the remarks of this young gentleman, Mr. Palmer, at the tenth annual meeting of the New England Association of Opticians, held at Boston, May 17, 1904:

> "The best men," he said, "make a charge for their skill, and this is as it should be." He stated emphatically: "We can refract better than the oculist, and if we consider the total cost of an oculist's services and the charge of the dispensing optician for putting up the prescription, we can do work *not only better* than they, but cheaper." If this is true, why not come out in the open?

Another remark of this same gentleman in his monograph, is worthy of quotation:

> "The oculist's or (more strictly) the ophthalmic surgeon's sphere of work is the treatment of diseased eyes and the performance of operations when necessary."

The inference is that the physician is incompetent, and should not be allowed to refractively examine the eyes of patients. In fact, the opticians have gone on in their claims until they not only pretend and advertise to know more than the oculist, but to define and limit the oculist's sphere of work.

They once possessed in Massachusetts an Optical College, which was incorporated under the laws of the state in 1899, with no opposition from the medical fraternity. Two years later, they petitioned the legislature for permission to grant degrees, such degrees to read "Bachelor of Optics" and "Bachelor of Physiological Optics." Such legislation was refused, and the College died soon afterwards.

Coupled with it, before the Committee on Education, was a bill to allow a Springfield school to grant the degree of "Doctor of Pedagogy." Such legislation was refused, and within a year the school moved to the neighboring state of Connecticut.

It would therefore seem that the life of these colleges depended on state aid in the sense that when hey could not get authority to grant degrees, they had no object for existence. The reasons for the passage of their bill are adroitly worded and put to catch the unwary. They can be easily answered, and such answer will be forthcoming at the proper time.

The gist of their argument to medical practitioners is this: "Many people in the country, some in the city, are fleeced by the traveling or incompetent vendor of glasses. Would it not be better, where no oculist is at hand, to have an optometrist, of whose ability you would be certain, do the examination?"

Naturally the physician may say, "yes," and perhaps will sign their petition for legislation to recognize so-called Optometry.

This happened in New York to the extent that more than seven hundred physicians were said to be actively interested in the passage of a bill, establishing the optical trade as a medical specialty, and granting state registration to these gentlemen for the practice of their "profession."

They gave us a similar experience in 1901, in this state, when they petitioned for degrees. A copy of their petition showed the names of many doctors in regular standing in the Massachusetts and Homeopathic Societies, and one of them a vice-president of the Massachusetts Medical Society. They had been reached and their signatures had been secured by some specious argument, as for example: "We desire to become better educated; we seek to elevate the standing of our business or profession. To that end, we wish a college where mathematics, optics, physics and allied subjects, pertaining to the science of light and lenses, would be taught."

The physician naturally applauded such honest endeavor, and as a result loaned his name, but later sorrowfully avowed that he had mistakenly given his approval to an unworthy cause. It is to be hoped that such will not be the result of the present circular. Physicians should withhold their signature and approval until they have seen, read or weighed both sides of the matter.

In this connection, please again read your circular signed by Mr. Palmer; then read the following, sent to his fellow opticians:

> Boston, Dec. 16, 1907.
>
> *Dear Sir:* As you know, the Massachusetts Optical Society will present the enclosed optometry bill to the incoming legislature. The importance of this action is very apparent to any one who has kept in touch with the drift of the *controversy between the opticians or optometrists and the oculists.*
>
> We are sorry to find you are not a member of the society, and most earnestly urge you to join. We do not believe you will want to have this bill passed without having helped to bring it about. *Now is the time to get on to the band wagon. Don't delay.* Fill out and return the enclosed application blank *at once.*
>
> Your legislative committee is not only giving freely of their money but also taking many hours from their business to devote to this work. We believe every optician and optometrist in the Commonwealth should give something, even though it is a small amount, to help defray the campaign expenses. Our printing bills, stenographers' bills, stamp bills, etc., are very large and we must *have your financial help.* Don't put this letter aside until you have sent as much as you can spare to the treasurer. . . .
>
> We have sent a letter and considerable printing matter to the editor of every newspaper in Massachusetts. Let us urge *you* to make a personal call upon *your editors at once,* asking them to give our letter and enclosures most careful consideration and impress upon them the importance of this legislation. We have also sent a letter and the bill to every physician in Massachusetts. *Go at once* to all the physicians in your section, asking them to sign the postal we enclosed in their letters. See all the members of the legislature in your section *at once.* Give them a copy of the bill and all other information as outlined in the booklet you received some weeks ago.
>
> Send the committee the names of all legislators with whom you have any influence. You can have all the printed matter you want by sending word to the committee. Please enclose stamps, for our stamp expense is very large. If *you* do as we have requested, the success of the bill is assured. *Do your share at once.* . . .
>
> Emphasize these points. *Do it now. Get busy along this line. Don't forget your contribution.*
>
> Yours very truly,
> Briggs S. Palmer,
> *Chairman Legislative Committee.*

He starts with a misstatement, — there is no controversy between oculist and optician. The bill aims at the heart of every medical man in Massachusetts, in proof of which I can state, and do say so now, that the Boston Homeopathic and Massachusetts medical societies (through their respective legislative committees) have unanimously voted to oppose, in every honorable way, the passage of this bill. Gentlemen, think twice before you act; do not permit your editors and legislators to be misled; ask them to suspend judgment.

In conclusion, let me say that the passage of this law means this, — no more, no less:

The dignifying of their trade; the cheapening of our profession and the letting down of the bars which guard the practitioner and the public.

◆

STRAIN AS A CAUSATIVE FACTOR IN INFECTIOUS ARTHRITIS.

BY JOHN D. ADAMS, M.D., BOSTON.

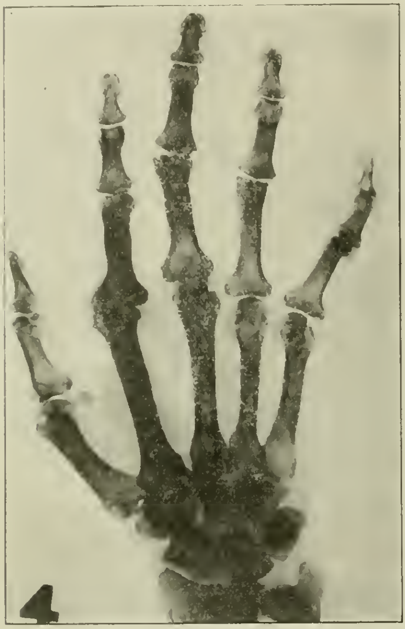
Infectious arthritis, so-called for want of a better term, presents in its many manifestations one of the most perplexing and important problems in orthopedic surgery.

We find this disease in one form or another in a large percentage of our clinic cases. In this working class of people it usually means that the patient is more or less incapacitated for work, and our treatment becomes a vital issue to a bread winner.

Experience has shown the hands to be a common seat of the trouble, and in a large majority of cases the primary manifestation, and the object of this paper is to report the observations on six cases all occurring in patients with the same occupation, with an attempt to discover a common factor as to cause. The histories of three of these cases are sufficient to illustrate all the points in question. They do not present anything very unusual except as to certain common factors.

Case I. Dressmaker, fifty years old. Has been pursuing present work for ten years. Three years ago began to have pain in the terminal phalangeal joints of right hand, especially in middle finger, on which she wears thimble. Pain has been intermittent in character but has grown progressively worse, inconveniencing her materially in her work. In the last year the pain and swelling have spread to the metacarpo-phalangeal joints, the trouble having appeared in the other hand also. She has gradually lost motion in many of the joints and has become totally incapacitated for work, owing to excruciating pain. The ordinary routine treatment has been without effect.

Examination shows very much deformed hands, right worse than left. All of the middle phalangeal joints distinctly dislocated and many of the terminal phalangeal joints turned at right angles; joints practically immovable from the point of usefulness. No involvement of wrist or any other joint.



X-ray of right hand of Case I, following operation (Keene).

CASE II. Dressmaker, forty-five years old. Has been pursuing present work for five years. One year ago began to have pain in the phalangeal joints of right hand, especially on thimble finger. This trouble has spread rather rapidly to all the joints of the right hand. Six months ago began to have trouble in left hand. Except for certain muscular pains has had no other symptoms. Joints of hand have become progressively worse, suffering pain and having exquisite tenderness when joints are touched or moved. Patient has become practically incapacitated for work.

Examination shows a uniform, fusiform swelling of all phalangeal joints. Subacute inflammation, very tender to touch and capable of very little motion. No fluid present but distinct thickening around joints.

CASE III. Dressmaker, forty years old. Has been pursuing present occupation for ten years. For past three years has had intermittent pain and more or less trouble in hands. Does not remember in which hand the trouble began, but it has been entirely confined to the phalangeal joints. Has been free from trouble for periods of six months at a time and has not noticed any great amount of swelling. For past two months has had acute pains in phalangeal joints of both hands, markedly increased on attempting to use them.

Examination shows slight swelling of phalangeal joints of both hands. Motion possible but rather painful. No fluid. Some thickening.

X-ray of these cases shows a hypertrophic condition in the affected joints, as evidenced by thickened periosteum. No destruction of joint or other pathological condition.

The other three cases present practically the same history in different stages of severity, but it occurred to the writer that these three cases illustrated the three different stages and character of onset sufficiently to appreciate the points of interest.

Analysis of these cases will show many common factors, namely, vocation, seat of disease, sequence of joints attacked, symptoms and relief to treatment.

In considering vocation as a factor one must not only analyze the character of the work but also the conditions under which it is done. Careful investigation showed that all these dressmakers worked in dry, well ventilated rooms, not exposed to drafts and in an even temperature. Their work, ten hours a day, was chiefly on very heavy goods, mostly men's clothes. Case I, which showed the most advanced stage, had been handling very heavy cloth, chiefly overcoating and riding breeches.

It will also be noted that the symptoms were first noted in the thimble finger, and the histories show a progressive infection of the joints in right hand before any symptoms occurred in the left. The onset was more or less insidious and symptoms not especially acute, but in all the cases, intensified greatly with use.

The pain, intermittent in character, was more in the nature of a soreness rather than the throbbing pain of an infection. The symptoms were not affected to any extent by sudden changes of temperature. In all the cases there was absolutely no indication of any trouble in any other joint in the body. In other words, the trouble was absolutely confined to the hands. The problem confronting one in these cases is, to say the least, a serious one, as we have a patient otherwise perfectly well but incapacitated for making her daily bread. Such a condition of affairs brings about the most pronounced type of mental depression.

The following line of treatment was pursued in all the cases: Urinary examination showed a marked hyperacidity in all the cases.

General treatment. — Diet: Omit all meats. Forced liquids.

Sodium benzoate, gr. v, t. i. d., to neutralize acidity.

Local treatment. — Baking daily.

This was done entirely by electricity. In the more acute cases a very intense heat was used, namely, a 100 candle-power light, applied for a period of twenty minutes, close enough to be tolerated by patient over bare skin.

In other cases, a small wooden box, one foot square, was made with two small apertures, large enough to insert hands, in one end. The box was lined with asbestos to prevent radiation, and fitted up with six 16 candle-power incandescent lights. A temperature of 300° was maintained here for a period of twenty minutes.

The results were most gratifying. The counter-irritation of the heat produced the usual hyperemia to a marked degree, and all the cases showed a gradual diminution of pain, with a return on failure in systematic baking. The cases pursuing the treatment conscientiously for two months had entire relief from pain, with ability to return to work.

Case I was operated upon following her treatment, owing to the fact that she was unable to hold her needle on account of her extreme deformity caused by complete dislocation of all her metacarpo-phalangeal joints.

Under ether the adhesions were entirely broken up and dislocations reduced. The head of the third metatarsal bone on the right hand was removed; on the left hand it was partially removed leaving enough joint surface to make some motion possible. The hands were put up in plaster for ten days when manipulation was begun. One year after operation the deformity has not recurred to any extent, and she has some considerable motion in joints. The patient has had absolutely no pain for six months — in the absence of any baking — and is able to pursue her work.

Now, whatever the cause in this class of cases, whether of chemical or bacteriological origin, the writer feels justified in considering strain as a causative factor. It will be noted that in four of the cases the symptoms started in the thimble finger, that all of the cases worked with very heavy goods and that the trouble in all of the cases was confined to the hands.

There is nothing new offered here in the line of treatment, but the writer believes that with consistent baking and diet the pain in these cases may be controlled, and that in cases of extreme deformity operation is to be favorably considered.

Clinical Department.

PSEUDO-TUBERCULOSIS OF THE PERITONEUM. REPORT OF A CASE.

BY FARRAR COBB, M.D., BOSTON,
Assistant Visiting Surgeon to the Massachusetts General Hospital.

If, during an abdominal operation, miliary tubercles are found studding the peritoneum to a greater or lesser extent, it does not follow that the disease is true tuberculosis of the peritoneum. While the majority of cases presenting such an appearance will prove to be tuberculosis, in a certain small percentage, especially where there is little or no fluid, the case will turn out to be one of pseudo-tuberculosis caused by foreign bodies.

I report the following case of my own, not only because of its pathological interest, but also to emphasize the fact that in the absence of ascites, intestinal adhesions and enlarged mesenteric glands, the presence of tubercles on the peritoneum should not lead to a positive diagnosis of a serious disease, or to a gloomy prognosis, without thorough exploration of the abdomen and a careful microscopic study of the nodules.

B. G., married, twenty-eight years old, entered the West Surgical Service of the Massachusetts General Hospital, Dec. 20, 1900. She was placed in my care by Dr. Beach, the senior surgeon of the service. She had been recommended from the Out-Patient Department, because of a lacerated cervix and perineum.

Family history, unimportant.

Previous history: She had been well until the birth of her child, eighteen months before. Catamenia had been regular and not painful. She had always been constipated. No history of gastric or intestinal indigestion could be obtained, or anything suggestive of a previous gastric or duodenal ulcer, of typhoid fever or appendicitis. Since the birth of her child she had had severe dysmenorrhea with constant pain in the lumbar region shooting down into the right sciatic nerve. She had not been able to walk the last few weeks because of this pain and because of a bearing-down feeling. She had had cutting pain in the rectum and across the lower part of the abdomen, especially when at stool. There had been no headache, no vomiting and no bladder symptoms.

Physical examination: A well developed and nourished woman. Heart and lungs normal. Vaginal examination showed a torn perineum with marked cystocele and rectocele with a decided sagging of the pelvic floor and prolapse of the uterus, which was of normal size. There was a bilateral tear of the cervix. There was some tenderness on pressure in both broad ligaments with a slight induration in the right. The right ovary was enlarged and tender and entirely prolapsed behind the uterus. Rectal examination discovered a few moderate sized internal hemorrhoids. Both the temperature and pulse were normal during her stay in the ward previous to operation.

She was operated upon by me on the 26th of December, 1900. The usual plastic operations for the cure of the cystocele and rectocele and repair of the cervix and perineum were done, after which, with the patient in the Trendelenberg position, the abdomen was opened in the median line by a two and one-half inch incision. The abdominal operation was undertaken for the purpose of suspending the prolapsed uterus and correcting the displacement of the ovary. After making the incision it was seen that the surface of the peritoneum everywhere, and especially in the pelvic region, most marked on the surface of the uterus, tubes and ovaries, was studded with small miliary tubercles presenting a typical picture of tubercular peritonitis. There was no free fluid in the abdominal cavity, no intestinal adhesions and no enlarged or palpable mesenteric glands. The appendix was small and normal. The stomach and duodenum were not examined, unfortunately, for signs of old perforating ulcer. Because of the possibility of what was thought to be a tubercular peritonitis arising from disease of the Fallopian tubes, both tubes and ovaries were tied off and removed. The uterus was suspended and the abdominal wall was closed in layers with chromicized catgut. Three pints of normal salt solution were left in the abdominal cavity. The foot of the bed was elevated for reversed postural drainage.

There was no reaction from the operation either in the pulse or temperature. Convalescence was uneventful. The peritoneal and abdominal wounds healed by first intention and the patient left the hospital, Jan. 20, in good condition.

The pathological examination of the tubes and ovaries removed discovered the fact that this was not a case of tuberculosis, but that the tubercles were due to the irritation of true foreign bodies. A determined investigation was made to discover some history of antecedent acute abdominal disease, which might be interpreted as a visceral perforation, but without success.

The pathological report on the case was made by Dr. Wright, the director of the pathological laboratory, and was as follows:

"In chronic inflammatory tissue on the ovary and Fallopian tube are some peculiar circular nodules, about the size of a miliary tubercle. These are composed of epithelioid cells and in some instances also of giant cells, the margins of which — the tubercles — are encapsulated with dense connective tissue. In the interior of some of these nodules are foreign bodies suggestive of the remains of vegetable material. These circular nodules are not true tubercles of tuberculosis, but are typical foreign body tubercles."

Numerous sections of the specimens were made by myself and studied with various staining media and reagents with a view to determining the nature of the foreign bodies. These in every case showed bright opalescent green with a high refractive index under all staining methods and presented a marked striated appearance, suggestive of the teeth of a comb or not unlike the ribs of certain vegetable fiber. The figures annexed to this article show fairly well the histologic nature of the tubercles, the dense ring of connective tissue, the numerous epithelioid cells and occasional giant cell, with the green, highly refractive body in the centre.

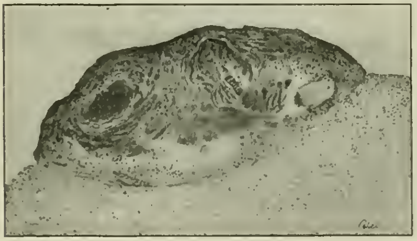


Fig. I. Nodule on surface of the right ovary, under low power. Note giant cell close to foreign body, also ring of connective tissue.

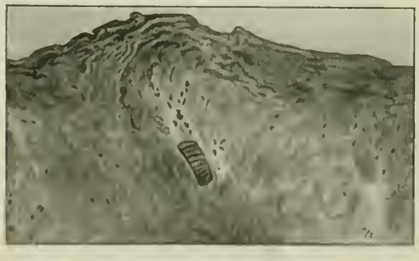


Fig. II. Foreign body and immediate neighborhood under high power. Note the striated appearance.

The woman remained well with no sign of abdominal disease for three years after her operation, when she was last seen by me. Further attempts to follow up the case have been unsuccessful.

There are several varieties of pseudo-tuberculosis which are of interest chiefly to the physician. If these forms involve the peritoneum the tubercles found are always in association with disease of other organs, especially of the lungs. The chief causes of these complex forms of pseudo-tuberculosis may be summed up as bacilli different from tubercle bacilli and various mold fungi. Foreign body tuberculosis of the peritoneum is of special interest to the surgeon. It can exist independent of organic disease elsewhere. It may be caused by the irritation of true foreign bodies reaching the peritoneum through visceral perforation or by particles from ruptured intra-abdominal cysts, hydatid or dermoid. A number of cases have been reported in which pseudo-tuberculosis of the peritoneum has been caused by the hooklets from ruptured hydatid cysts or by small pieces of cyst membrane. Dévé, in a clear description of the appearance of the tubercles in this form, says they resemble true miliary tubercles to the closest microscopic detail. He refers to a case reported by Lehne who noted a similar pseudo-tuberculosis of the meninges caused by the rupture of a hydatid cyst of the spinal column.

Meyer has reported a case in which minute cholesterin crystals from a ruptured dermoid ovarian cyst were the irritating particles which caused the peritoneal tubercles. An unusual case has been reported by Helbing in which the eggs of the tenia worm were the foreign bodies found in the center of the miliary tubercles. These must have gained access to the peritoneal cavity through some defect in the wall of the intestine; Helbing suggests a perforated appendix.

A small number of cases have been reported in which the tubercles were caused by true foreign bodies. In the majority of the cases these were presumably fragments of vegetable food, as in my own case. The point of entrance of these particles of food must be through some defect in the gastro-intestinal tract, perforation of gastric or intestinal ulcers, diseased appendices or diverticula. Cases have been reported in which this form of pseudo-peritoneal tuberculosis followed a perforation of the stomach, notably the cases of gastric ulceration with perforation reported by Hanau and Cooper in which the miliary tubercles were found postmortem, and after study were discovered to be due to fragments of vegetable food. The tubercles in both these cases were apparently similar to the case here reported, but in my case no history suggestive of gastric or intestinal perforation or even of previous digestive disturbances or of acute abdominal attacks could be obtained.

Practically it should be recognized that foreign bodies escaping from the stomach, intestines or from cysts may cause an apparent miliary tubercular peritonitis, and the finding of tubercles without the accompanying signs of tuberculosis, enlarged mesenteric glands, ascitic fluid and intestinal adhesions, should lead to a thorough search of the abdomen, to the excision of one or more of the tubercles for microscopic examination, and to careful investigation as to previous digestive disturbances.

Reports of Societies.

INTERNATIONAL DERMATOLOGICAL CONGRESS.

Sixth International Dermatological Congress, Held at the Academy of Medicine, New York, Sept. 9 to 14, 1907.

Third Day, Wednesday, September 11.

(Continued from No. 25, p. 831.)

The first two hours of the session were devoted to the exhibition of patients and formal discussion on the same.

Dr. Veiel, of Cannstatt, Württemberg, and Dr. H. Hallopeau, of Paris, France, in the Chair.

BLASTOMYCOSIS OF THE SKIN,

by Dr. M. Oppenheim, of Vienna, Austria. The author stated that the first case in Europe conforming with the American cases of this disease (pseudolupus) was observed in Neumann's clinic in Vienna, by the writer, in 1904. Later he had occasion to observe three others. The clinical picture in the earliest stage was a light, red-stained, swollen lesion, with characteristic pustules. From the latter, superficial ulcers with irregular margins arose, which produced superficial scarring. Histologically, there were intra- and subcorneal and intra-epithelial abscesses; the rete pegs were increased in size and the stratum papillare was infiltrated by round cells. In the abscesses and infiltration were found the blastomycetes, singly and grouped, but never abundantly. As the lesions grew older, the picture was similar to lupus verrucosis, with elevations surrounding cicatrized areas, thickening of the nose and lip, excoriations and deep ulcerations with irregular margins and uneven base covered by thick crusts, sometimes destroying the nostrils and perforating the septum of the nose. From the base of some of the ulcers papillary excrescences soon overgrew the margins and showed points of cornification. Microscopically, there was an overgrowth of epidermis and an infiltration of the corium with round, plasma and giant cells, even to the subcutis. A few blastomycetes were present. The therapeutic effect of potassium iodide was evident in all four cases.

SYSTEMIC BLASTOMYCOSIS. A CRITICAL SURVEY AND SUMMARY OF NINETEEN CASES (FOUR OF THEM UNPUBLISHED).

Dr. Frank H. Montgomery and Dr. Oliver S. Ormsby, of Chicago, in this paper stated that about one hundred cases of blastomycosis involving the skin had been recognized, chiefly in Chicago and vicinity, but also in other parts of the United States, in Canada, in various parts of Europe, in Japan, India and South America. Of the 19 cases recorded in this paper, 12 were dead, 4 were dying, 2 had recovered, and 1 had disappeared from observation. All of the cases, with possibly one exception, presented multiple subcutaneous abscesses and nodes, usually indolent in type. With the appearance of the abscesses there had been in all cases a disturbance of the general health. The duration of the disease varied from a few months to two and a half years. Blastomycotic lesions had been demonstrated in practically all of the tissues and organs of the body. The characteristic changes consisted in the presence of nodules or abscesses in the soft tissues, and caries in the bones. The abscesses varied greatly in size. Necrotic areas in bones, containing the organism in abundance, surrounded by leucocytes, giant cells and other cells peculiar to the granulomata had been noted and fully described in one case. It was worthy of note that, notwithstanding the presence of extensive suppuration in most of the cases, in two only was amyloid degeneration recognized, and in only one were these changes at all extensive, occurring in the liver, kidneys, adrenals, spleen, the colon and in various lymph glands. The bacteriology of systemic blastomycosis was identical with that of the cutaneous form of the disease.

Dr. Joseph Zeisler, of Chicago, said he had seen many of the cases of blastomycosis reported by Drs. Hyde, Montgomery and Ormsby, and in order to illustrate the difficulties ofttimes connected with this subject, he referred to the case of a young woman, about twenty, who fell ill with a high fever, which pointed to a pulmonary infection of some kind. For many days a miliary tuberculosis was suspected, but no definite diagnosis was made. Finally, sufficient sputum was secured and submitted to Dr. Hektoen, who upon microscopic examination found the blastomycetes present.

Dr. Thomas C. Gilchrist, of Baltimore, spoke of the similarity between the organism of blastomycosis and that of granuloma coccidioides.

Dr. James Nevins Hyde, of Chicago, expressed the conviction that the organism which produced blastomycosis was more or less limited to a certain geographical distribution, and, for reasons he could not explain, that particular area was not very far distant from Chicago and Indiana. It was there that the organism seemed to flourish as it did nowhere else.

Dr. Howard Morrow, of San Francisco, said he had had repeated opportunity to compare cultures of blastomycetes with those of the granuloma coccidioides, and he had found that they varied considerably.

Dr. Douglass W. Montgomery, of San Francisco, said there was no doubt that there was a marked difference between the two fungi under discussion. Dr. Morrow had grown both of these organisms on the same media, and under the same conditions. One showed a halo; the other a clump of fungus. He had had no trouble in cultivating the Illinois micro-organism in California.

Dr. Oliver S. Ormsby, of Chicago, said that blastomycosis was really a very serious disease, and one that did not belong entirely to the dermatologist. It was important, he thought, that this fact should be recognized. In the cases they had seen in Chicago, the skin had been involved in practically all but one instance.

THE THYROID AS A FACTOR IN URTICARIA CHRONICA.

Dr. M. L. Ravitch, of Louisville, Ky., claimed that chronic urticaria should be classified as a curable disease, and in connection with its treatment he made a plea for a more thorough study of thyro-therapy. He firmly believed that in many cases of chronic urticaria, thyroid extract was a specific. He claimed that disorders of the thyroid gland were the cause of many toxemic conditions, and that thyroid extract was an autotoxin; hence its usefulness in toxemic conditions, urticaria chronica included. Chronic urticaria was more frequently among women than men, and the fact that functional thyroid disorders were also more common in women led the writer to believe that functional disorders of the thyroid were the cause of chronic urticaria. He regretted that thyro-therapy had been neglected in the treatment of skin diseases, and pointed to the fact that remedies useful in chronic urticaria were also useful in functional disorders of the thyroid gland. Outside of the eruption, the writer claimed, the symptoms of chronic urticaria were almost the same as in thryoid toxemia.

HYDROA PUERORUM (UNNA),

by **Dr. Marcus, Haase**, of Memphis, Tenn., and **Dr. Rose Hirschler**, of Philadelphia.

After reviewing the recent literature on this subject, the authors reported in detail a case of hydroa puerorum seen with Dr. Unna, in his clinic at Hamburg, from which a biopsy was made. The histopathological findings in the case were also detailed, and an attempt was made to establish its proper place among the hydroas. In claiming for this disease a place in the nomenclature as a dermatological entity, the authors offered the following conclusions: (1) It was an acute erythemato-vesicular disease, preceded and accompanied by intense burning and itching. (2) The vesicles coalesced to form bullæ. (3) Involution of lesions without pitting or scarring. (4) The first attack occurred in the first year of life. (5) Recurrence of attacks independent of external influences. (6) Gradual lessening of attacks in extent, intensity and duration. (7) Spontaneous disappearance at puberty. (8) Unrestricted to any particular lesion. (9) Restricted to male sex. (10) Relatively normal health during attacks. (11) To these might be added the superficial character of the disease, the lesions being confined to the rete.

DERMATITIS COCCIDIOIDES; WITH REPORT OF A CASE,

by **Dr. A. Ravogli**, of Cincinnati, Ohio. The case was reported under the nomenclature of dermatitis coccidioides because the parasite found in the lesions closely resembled a coccidium. The clinical features of the disease, although related to blastomycetic dermatitis, were somewhat different. The parasite taken directly from the ulcerated surfaces had a long thread of mycelium, but when cultivated on glycerin agar and on blood serum showed only round bodies, with scarcely any mycelium. Its growth was rapid and abundant and its development seemed to be due to endogenous proliferation. The result of the treatment was also different from that obtained in true blastomycosis.

Dr. Douglass W. Montgomery, of San Francisco, said he could not make out the coccidioides in the sections shown by Dr. Ravogli.

At the conclusion of this session, Prof. Thomas De Anicis of Naples, Italy, was elected president of the next congress, which is to be held in Rome in 1910.

Fourth Day, Thursday, September 12.

The first two hours of the session were devoted to the exhibition of patients and formal discussion on the same.

Prof. E. Gaucher, of Paris, and **Dr. Andrew R. Robinson**, of New York, Vice-Presidents, in the Chair.

FURTHER EXPERIENCE WITH THE WHITE LIGHT AND BLUE LIGHT OF THE QUARTZ LAMP, WITH DEMONSTRATIONS,

by **Prof. E. Kromayer**, of Berlin, Germany. (This paper was read by title.)

THE SPECIFIC ACTION OF RADIUM AS A UNIQUE FORCE IN THERAPEUTICS.

Dr. Robert Abbe, of New York, said that radium ranked, not with caustics, cautery, antiseptics or medication, but with specifics. This did not mean a "specific" for cancer in the popular sense, but for erratic cell growths constituting some types of tumor tissue in the earlier stage of invasion or of moderate development. Details of the method of using it had not yet been fully worked out. The dosage, so to speak, or the time of exposure necessary for curative action, was as yet empirical. Some apparent cures of small epitheliomata or sarcomata had already endured more than three years. A photographic plate provided a good test to show the working force of an unknown specimen, in comparison with one of standard strength. It was not entirely a mysterious force; in part, at least, it was an electric discharge, essentially of negative elements. Hence, so far as it was possible to say, it suggested a theory of its action in that it might supply an element of electric force vital to normal and orderly growth, the loss of which might have caused a disorderly cell growth, which in the aggregate constituted tumor masses. It was supplementary to Roentgen rays and in some cases was efficient when the rays failed. The over-action of strong radium was destructive and vitiated the benefit of moderate use. The best results had followed one hour's exhibition of the working unit (10 mg. RBr) on small growths, and three to four hours on larger ones, with an interval of one month for study of the effect. Ischemia of the parts during treatment greatly enhanced its action. Pigmented moles, melanotic growths, and giant celled sarcoma, like epitheliomata of the eyelids, face and body, were particularly susceptible to its curative action as a specific agent. Its value in nevoid and angiomatous tumors was due to its irritant action, producing obliterating endarteritis and fibroid changes.

Dr. Jay F. Schamberg, of Philadelphia, said that unless it could be shown that radium was more efficient than the x-ray, there would be no advantage in preferring it to the latter agent. The advantages of radium lay in the simplicity of its application, and the fact that it could be used in inaccessible cavities, where the x-ray could not be applied.

Dr. H. Radcliffe-Crocker, of London, gave some experience with radium emanations obtained from a solution of radium.

Dr. Herman Lawrence, of Melbourne, Australia, said that in cases of rodent ulcer of the eyelid he regarded radium as the best method of treatment. Combined with the x-ray, it was also of great value in keratosis senilis. In seborrheal eczema of the eyebrow, where one could not well use the x-ray, radium had proved very efficacious and without destroying the hair.

THE THERAPEUTIC EFFECT OF RADIUM IN DERMATOLOGY,

by **Dr. L. Wickham**, of Paris, France. (Read by title.)

THE EFFECT OF ROENTGEN RAYS ON PAGET'S DISEASE OF THE BREAST,

by **Dr. Terzagli** and **Prof. R. Campana**, of Rome, Italy. The authors stated that some forms of psoric eczema of the breast and nipple frequently were neglected and at times seemed a chronic and malignant form, as of epithelial tumor, a form which had been named from the author first describing it as "Paget's disease." The authors then reported in detail the history of a case that threatened to assume the above form of disease, in which the affected tissues apparently resumed their normal condition under the application of the Roentgen rays. The method was repeated in another case, with the same favorable results. These two experiments, Professor Campana said, did not seem to him to be without interest when we reflected on the extremely malignant course of Paget's disease.

PROGRESS IN RADIOTHERAPEUTICS,

by Dr. H. Strebel, of Munich, Germany. (Read by title.)

X-RAY BATHS AND DERMAMETROPATHISM.

Dr. Herman Lawrence, of Melbourne, Australia, described the x-ray bath as one in which the x-ray was applied to the skin of the entire body at one time, and he told in detail its method of application. The speaker said he had treated some 500 cases of skin disease by radiotherapy, and he believed that he secured better results by the method of giving several mild exposures as compared with the method of giving a heavy dose and then waiting to see the result on the patient's skin. He had used the bath successfully in mycosis fungoides, generalized eczema, psoriasis, obstinate urticaria and pruritus; also in children in very troublesome cases of lichen urticatus. Dermametropathism was a word he had coined; it was meant to express a system of measuring a disease of the skin, and was based upon the result produced upon the skin by pressure with a smooth instrument, such as a pen handle. The author contended that by this method of clinical observation, which he called "skin marking," certain markings indicated the chronicity of certain diseases, and in some cases in adults the near onset of a relapse; also, that it explained the exaggeration of symptoms in some cases.

A REPORT OF THE RESULTS IN A SERIES OF EPITHELIOMATA TREATED WITH X-RAYS MORE THAN THREE YEARS AGO.

Dr. William Allen Pusey, of Chicago, read this paper, of which the following is a summary: Of the 31 cases which were classed as not entirely successful, 28 had failed of relief under other forms of treatment; only 3 were primary cases. These 3 were included in the group of failures, and they were all carcinomata involving the orbit. They were inoperable and occurred in patients who had abandoned treatment before any result might have been expected. In this entire list of 29 unsuccessful cases, there were only 5 in which, in the author's opinion, there was any hope of cure by other methods of treatment. All of these 5 cases had previously been treated surgically, and all had been referred to him by surgeons. One case in the practically successful group was an epithelioma involving the external auditory canal. The other 4 cases were among the failures; in 3 of these there had been good grounds for expecting successful results from operation, but the patients would neither submit to operation nor complete their x-ray treatment. Among the entire list of 111 cases treated, there were only 3 failures, in which there was any reasonable hope of success. Twenty-eight of the 111 cases were either hopeless or most unpromising, so far as any other method of treatment was concerned; of the 83 remaining cases, 80 were successful. Counting 31 cases as failures, there were 80 successful cases in a list of 111 successive cases of epithelioma treated more than three years ago, a showing of 72.5% of successful results in 111 unselected cases.

REPORT OF 800 DERMATOLOGICAL CASES WITH X-RAY AND HIGH FREQUENCY CURRENTS AT THE MOUNT SINAI HOSPITAL. (DR. LUSTGARTEN'S CLINIC.)

By Dr. Samuel Stern, of New York. The author stated that the respective standing of radiotherapy in dermatology could only be established by continued experiments, and by collecting statistics of results accomplished. The method in which the x-ray did its work was probably by cell destruction, which led to the degeneration of the elastic and connective tissues. In epithelioma the results accomplished depended upon the proper choice of cases. The most favorable were those situated on the surface of the epidermis. The best results were achieved by a combination of x-ray and high frequency spark. In deep-seated carcinoma there was very little to be expected. It was more encouraging in the various forms of sarcoma. In acne vulgaris the results were very gratifying, while in acne rosaçea there was little to be accomplished. In psoriasis the value of the x-ray was well established; also in different forms of eczema. Lichen chronicus, lichen planus and lichenoid eczema were conditions that were more stubborn, but they generally yielded to x-ray treatment. Lupus erythematosus did well with the high frequency spark treatment, but it often recurred. Lupus vulgaris affecting the mucous membranes was best treated with the x-ray, and other parts of the skin with the high frequency spark. Various types of verrucæ and nevi could be readily destroyed with the high frequency spark. In keloid, to expect permanent results, we must persist with the x-ray until a fair degree of dermatitis was produced. Folliculitis decalvans yielded well to x-ray treatment. Pruritus was benefited by both the x-ray and the high frequency current. Mycosis fungoides could be indefinitely controlled by the x-ray, but not cured. Unless the treatment was kept up, the lesions returned. In rhinoscleroma we could probably get a definite cure. In sycosis, favus and trichophytosis capitis the results accomplished with the x-ray were very satisfactory, but in the two latter conditions, other treatment was necessary. Hypertrichosis could be cured with the x-ray, but this required very careful technic. Hyperidrosis might be benefited, but only after a long series of treatments.

Dr. Neuberger, of Nuremberg, Germany, reported a case of Paget's disease of the penis, which was apparently cured under x-ray treatment. It subsequently recurred, however, and amputation finally became imperative.

Dr. M. B. Hartzell, of Philadelphia, said that while he was willing to admit that the proper treatment of epithelioma of the lower lip was excision, with removal of the contiguous glands, there were certain cases in which resort to the x-ray was entirely proper and sometimes necessary. In one case of typical epithelioma of the lower lip coming under the speaker's observation, the man refused radical treatment by the knife. After ten three-minute exposures with the x-ray the lesion disappeared, and the man had thus far remained well. He had avoided what he regarded as a very serious operation, and was now ninety-four years old.

Dr. Burnside Foster, of St. Paul, said he had seen deplorable results follow the x-ray treatment in cases of psoriasis, eczema, favus and ringworm, and they were largely due to the method in which the treatment was applied by inexperienced operators.

Dr. Francis J. Shepherd, of Montreal, said that in certain cases of epithelioma, notably in lesions about the eyelids, the x-ray was probably the best method of treatment, but when it came to lesions of the lower lip and of the muco-cutaneous surfaces, the speaker said he would strongly object to the use of the rays, especially where there was early involvement of the glands. Under those conditions, surgical treatment was strongly indicated.

Dr. William A. Pusey, of Chicago, said he was willing to treat any epithelioma with the x-rays, in which a conservative surgeon did not consider it feasible or necessary to remove the contiguous glands. This at once eliminated all cases of epithelioma about the mucocutaneous junction where an operation was at all possible. It did not eliminate those in very old people, or those rare cases where an operation was not tolerated. Still, the x-ray should not be restricted to any particular field. If it was not as reliable in one case as in another, it was not worth while considering.

Prof. E. Gaucher, of Paris, France, and **Dr. Veiel**, of Cannstatt, Württemberg, spoke in favor of conservatism in the use of the x-rays. The latter said he could recall many cases that were kept too long in the hands of the radiotherapists, and came too late to the surgeon.

The discussion was continued by **Dr. Herman Lawrence**, of Melbourne, and was closed by **Dr. Stern**.

Afternoon Session.

Dr. J. Nevins Hyde, of Chicago, **Prof. Robert Campana**, of Rome, Italy, and **Dr. Samuel Sherwell**, of Brooklyn, Vice-Presidents, in the Chair.

Theme II. Tropical Diseases of the Skin.

THE RELATION OF THE NAVY TO THE STUDY OF TROPICAL DISEASES,

by **Dr. P. M. Rixey**, Surgeon-General, United States Navy, Washington, D. C. In this paper, which was read by Dr. G. E. H. Harmon, Medical Director United States Navy, Dr. Rixey made the statement that, taking a period of ten years, he had found that diseases of the skin had practically caused twice as great damage to the health of the navy as was caused by all other diseases of a quarantinable nature. When it was considered that he included such diseases as diphtheria, smallpox, scarlet fever, rötheln, etc., in this category, the basis for his statement could be appreciated. The actual proportion was as 1 to 1.8. Had he also included syphilitic affections of the skin, this disproportion would be greatly increased. Dr. Rixey said that when he was appointed surgeon-general of the navy in 1902, his first aim was to establish a school where the young officers of the medical corps of the Navy could be grounded in the essentials of medical research. Of the many tropical diseases due to animal parasites, and of the many which might hereafter be found to be of such etiology, it was his belief that for a proper appreciation of such conditions a sound working foundation in medical zoölogy was not only desirable, but essential. For honest and capable work in any branch of tropical medicine it was necessary that the worker be grounded not only in clinical observation, but he must possess a fair degree of proficiency in bacteriology, a good working knowledge of animal parasitology, and, besides, have enthusiasm for his work. The medical officers of the navy were, while in tropical waters, constantly required to study or treat such affections as ringworm, and the peculiarly virulent manifestations of syphilis. Also such diseases as yaws, leprosy, ground itch, elephantiasis, tropical ulcer and the like. The speaker also referred to gangosa, or rhino-pharyngitis mutilans, which was studied by Daniels in the Fiji Islands, and was unfortunately very prevalent in the island of Guam. Those who had studied it most carefully were positive that it was not syphilis and absolutely sure that it was not leprosy. Another puzzling affection was what was generally termed "climatic bubo." Here we had the picture of a prolonged continued fever following more or less the increase or decrease of the glandular swellings.

REPORT ON TROPICAL DISEASES OF THE SKIN,

by **Dr. William Dubreuilh**, of Bordeaux, France.

TROPICAL DISEASES OF THE SKIN.

Dr. H. Radcliffe-Crocker, of London, England, exhibited tables which showed that practically all exclusively tropical diseases of the skin were due to parasites of various kinds, and although there was still much room for further investigation, they also showed that much of our knowledge of their pathology had been worked out quite recently. Now that so many of those who were going to practice in the tropics were undergoing a course of training in modern pathological methods, we might well expect that in the near future still greater additions to our exact knowledge would be made. It was only exact knowledge which would enable us, not perhaps to treat the diseases themselves better than we did now, but, still better, to adopt the most efficient means for the prevention and spread of affections in which the disabling effects and mortality were so great. How much could be done in this direction the results of the discovery of the relation of the mosquito to filaria, malaria and yellow fever were known to all. The first of the tropical skin diseases discussed by Dr. Crocker was tropical ringworm, which he said was probably universal in all tropical countries. Among other tropical skin affections discussed by the writer was erythrasma, which was due to the microsporon minutissimum and developed in the form of patches in the groins in the axillæ; these lesions were dull red in cold weather, while in hot weather they became bright red and itching, and extended to neighboring parts. He also referred to the vitiliginous squamous dermatosis, which had been observed by Jeanselme on the coast of Annam and other parts of Indo-China; also to furunculosis orientalis and yaws, which he regarded as one of the most serious of tropical diseases on account of the severity of the lesions and of the enormous number of its victims in the countries in which it was endemic, which comprised, practically, the whole tropical zone. The main question was whether yaws and syphilis were identical or only analogous diseases. The clinical fact that the manifestations of yaws yielded to mercury and iodide of potassium, judiciously given, no doubt lent more color to the theory of identity, but it by no means proved it. He had met with one case of granuloma inguinale tropicum in a full-blooded negro, and with two cases of craweraw from the west coast of Africa.

SOME AMERICAN PARASITES OF THE SKIN.

Dr. Ch. Wardell Stiles, of the United States Public Health and Marine-Hospital Service, Washington, D.C., spoke of the frequency of "ground itch" in the Southern states, in connection with uncinariasis, and gave a demonstration of preparations, showing the larval hook-worms passing through the skin. He also gave a presentation and description of specimens of a parasite new to the United States. This parasite was a branching, proliferating, bothriocephid, larval tapeworm, which occurred by hundreds in the subcutaneous connective tissue of man in Florida, and produced a swollen condition, with spots of acne-like appearance. The only similar case on record was published by Ijima (1905), of Tokyo, Japan. The American parasite was very similar to and possibly identical with the Japanese form (Sparganum proliferum). He also gave a demonstration of original specimens of Agamofilaria georgiana, a thread-worm recently described as a parasite in the skin of man in Georgia. Also, a demonstration of various stages in the life history of some of the North American ticks (particularly dermacentor), which attacked man.

THE CLINICAL GROUPINGS OF TROPICAL ULCERS OF THE PHILIPPINES, WITH SOME NEGATIVE NOTES AS TO ETIOLOGY AND TREATMENT,

by Dr. E. R. Stitt, of the United States Navy. The author stated that after observing in the natives many chronic ulcerations, which clinically did not differ from ulcerations which might be expected from badly infected and neglected wounds, or from the infective granulomata, and that from a standpoint of history there was the single common note of long duration, the conclusion was arrived at that tropical ulcer, as described by the authorities, did not exist in the Philippines. Subsequently, the same thing was observed in Guam in studying an ulcerating disease known as gangosa. Among the natives affected with leprosy and gangosa there were a certain number, called by the Spaniards the Llagosos, in whom there were frightful lesions of the lower extremity, possibly tuberculous, possibly tropical ulcer. Later on, among sailors at the Naval Hospital, Canacao, two distinct types of chronic ulcer were observed, the first conforming to Fayrer's description of Delhi boil; the second resembling Jeanselme's tropical phagedena. Smears from ulcers of the first type showed scarcely any polymorphonuclears, only cells of lymphocyte characteristics. There was nothing indicative of protozoa (Giemsa's stain). Smears from ulcerations of the second type showed the presence in abundance of a single organism, morphologically a corynebacterium. Polymorphonuclears were present in great profusion; no cocci. Among the methods of treatment reported negatively were mentioned the following: (*a*) artificial gastric juice; (*b*) excision of lesion; (*c*) cauterization with pure carbolic acid; (*d*) Bier's passive congestion; (*c*) massive doses of potassium iodide.

GANGOSA; WITH ADDITIONAL NOTES,

by Dr. O. J. Mink and Dr. N. T. McLean, passed assistant surgeons, United States Navy, Washington, D. C. Since the publication of their original paper on this subject in 1906, additional literature, not available at Guam, had been studied, and a few further facts regarding certain phases of the disease had been obtained. The disease had existed in Guam for at least one hundred and fifty years. Although only 125 cases had been examined at Guam, there were probably between 200 and 250 on the island, the population of which was about 11,000. The youngest ages at invasion were three and nine years; the oldest were fifty-four and fifty-nine years. In a series of 80 cases, 49 were in females and 31 in males. The natives of the various parts of the island were intimately associated by religious, marital and commercial relations, but there was no evidence to show that heredity played any part in the transmission of the disease. The native theory, and that held by the Spaniards, gave food a prominent place in the causation of the disease. They believed that such foods as decomposed or very salty fish, especially if eaten raw, uncooked taro and native pepper were the direct causes of the disease. This theory seemed improbable. The disease had been considered a late manifestation of syphilis, but the authors stated that during eighteen months spent in Guam they did not see syphilis of any type among the native population, and they did not believe that it existed there. Their observations led them to believe that if there was a specific infecting agency, the nature of it was yet undetermined. The majority of the cases occurred in pure blood natives. As the disease was not fatal, autopsy was only possible when death occurred from intercurrent disease. To those who had seen a case of gangosa, the diagnosis offered no difficulty. In a number of cases observed, the initial symptoms led to a diagnosis of tonsilitis, pharyngitis and laryngitis of a mild degree. All showed a slight rise of temperature, and complained of soreness in the posterior nares and pharynx, with stiffness in the muscles of deglutition. The throat symptoms became localized, and on the third day a patch of yellowish gray membrane was observed on the soft palate in the first case, the uvula in the second, and on the right pillar in the third case. The membrane was elevated, thick and tenacious. On removal, the denuded surface bled freely. Within twenty-four hours of the appearance of the membrane, the typical ulceration was established. On the area covered by the membrane, a number of small depressions appeared. The ulcer which was formed had a punched-out appearance, with undermined edges, and a deep, uneven floor, covered with a yellowish-white and very offensive discharge. The depth of the ulcer rapidly increased, until, in the cases of the uvula and soft palate, the tissues were perforated by the seventh day. These cases were still under observation. Fulminating gangosa was differentiated from diphtheria by the absence of Klebs-Lœffler bacilli, and by the typical mutilation in those cases which survived. Excepting in the fulminating type, the disease, *per se*, was never fatal. The mutilations and complications were permanent, and caused corresponding disability. The treatment was essentially local, and should aim to destroy the infected area.

Dr. W. F. Arnold, lieutenant-commander and surgeon (retired), United States Navy, said that he had been able to differentiate clinically the condition known as gangosa, and that he had been the first American to describe it as an entity on the island of Guam. In order to correct the misapprehension that syphilis did not exist on that island, Dr. Arnold said that during his short service there he had seen a native hospital attendant with distinct mucous patches, and subsequently he had found the native woman who had caused this man's infection.

NOTES ON CHRONIC ULCERS OF THE PHILIPPINES,

by Dr. George C. Shattuck, of Boston, Mass. This paper (which was read by title), gave the clinical notes and microscopical findings in 34 cases of chronic ulcerative processes occurring in patients who were all natives of the Philippines, with the exception of one, a Chinaman. Four different types of ulceration were studied. The first and second were not definitely diagnosed; they were probably infections *sui generis*. In the third type the weight of evidence was slightly in favor of syphilis. Many examples of this type were seen. In the fourth type the probability of syphilis was strong. The remaining cases of the series seemed to be variations of types three and four, which might all be placed in one group. Together, they would comprise 94% of the series (32 cases). The diagnoses were all made clinically, because microscopic findings were all negative or ambiguous. The cellular content of the exudate examined was nearly the same in all the cases. The same was true of the bacteria seen. Blastomycetes were found in the exudate of 2 cases, but were not proved to be of etiological importance. Spirocheta refringens and two other varieties of spirochetæ were observed, but they were not believed to bear a causal relationship to the ulcers. Evidence of division was seen among the spirochetæ. The view that spirocheta refringens was a bacterium was supported by strong evidence of transverse division.

FILARIASIS,

by Dr. T. Tanaka, of Tokyo, Japan. (Read by title).

(*a*) TROPICAL FORMS OF PITYRIASIS VERSICOLOR. (*b*) FRAMBESIA TROPICA (YAWS). ITS ETIOLOGY, CLINICAL SYMPTOMS AND TREATMENT. (*c*) OBSERVATIONS ON TINEA IMBRICATA. (*d*) OBSERVATIONS ON A PECULIAR DERMATOMYCOSIS,

by Dr. Aldo Castellani, of Colombo, Ceylon. (Read by title.)

A DEMONSTRATION OF THE USES OF LIQUID AIR IN DERMATOLOGY,

by Dr. Charles T. Dade, of New York.

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Book Reviews.

The Practitioner's Visiting List. 1908. Philadelphia and New York: Lea Brothers & Co.

This visiting list is now in its twenty-second year of issue. Those who have used it hitherto appreciate its merits. It has been, as usual, revised and brought up to date. It needs no further recommendation.

The Physician's Visiting List (Lindsay & Blakiston's) *for 1908.* Fifty-seventh year of its publication. Philadelphia: P. Blakiston's Son & Co. 1907.

The Medical Record Visiting List or Physicians' Diary for 1908. New revised edition. New York: William Wood & Co. 1907.

These two visiting lists are familiar and always useful. They appear in essentially the same form year after year, and evidently meet the needs of the physicians for whose use they are particularly prepared. The list prepared by P. Blakiston's Son & Co. is somewhat smaller than that of Wood & Co., and does not contain quite so much information as the latter. We recommend them both to our readers, as we have frequently done before. Some such list is indispensable for the active practitioner who desires to be systematic in his work.

The Operating Room and the Patient. By Russell S. Fowler, M.D., Professor of Surgery, Brooklyn Post-Graduate Medical School; Chief Surgeon, First Division, German Hospital; Surgeon, Methodist Episcopal Hospital, Brooklyn, N. Y. Second edition, revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1907.

Fowler's valuable book of 284 pages is an admirable supplement to the *Petite Chirurgie* on which we have commented below. He discourses upon the operating room, the preparation of the patient, the care of instruments, dressings and ligatures, the preparation of the surgeon and his assistants; and, most important of all, perhaps, he gives us six admirably concise chapters on the after-treatment of wounds and special infections. The book should be read by surgical assistants, hospital superintendents and operating nurses. It is full of useful hints for the country surgeon also.

Petite Chirurgie et Pratiques Spéciales Courantes. Par P. Soubeyran, Professeur Agrégé a le faculté de médecine de Montpellier; et P. Ardin-Delteil, Professeur de Clinique Médicale a l'école de Médecine d'Alger; avec 326 figures dans le texte. Montpellier: Coulet et Fils, éditeurs. Paris: Masson et Cie., éditeurs. 1908.

This little book of 400 pages on minor surgery is distinctly refreshing, not because the authors have anything especially new to tell us, but because their method of presentation is novel, and the illustrations of the text are graphic and admirable. The book begins with various chapters on technic, — not altogether satisfactory perhaps to American surgeons; for example, the use of rubber gloves is not commended. Then follow a series of chapters dealing in extensive detail with simple matters, generally slighted, with methods of giving injections of all sorts, with the removal of foreign bodies, with instructions on the proper handling of instruments, on tapping, on lumbar puncture, on gastric lavage, on fistula, minor gynecology and the use of sounds and catheters. On page 347 there is an illustration of horror, — a penis equipped with a permanent drainage catheter, tied in by means of a string fastened tightly about the glans. In spite of its occasional absurdities and shortcomings, however, the book is extremely useful and suggestive. Again we commend to American writers the capital and accurate outline-drawings with which the pages abound.

The Treatment of Fractures; with Notes upon a Few Common Dislocations. By Charles Locke Scudder, M.D., Surgeon to the Massachusetts General Hospital; Lecturer on Surgery in the Harvard University Medical School. Sixth edition, thoroughly revised and enlarged; with 856 illustrations. Philadelphia and London: W. B. Saunders Company. 1907.

The publishers inform us that over "twenty-five thousand copies of this remarkable work have been sold." Certain it is that Scudder's useful book holds a foremost place as a manual of treatment, and this sixth edition is an improvement upon its predecessors. It is larger; it embraces the treatment of dislocations as well as of fractures. The author adds to his previous writing a number of excellent and concise statements regarding the wisdom of operating upon certain fractures; he calls especial attention also to skull fractures in the newborn, to fractures of the bones of the face, and to fractures of the radius, the neck of the femur, and the carpal scaphoid; to unreduced dislocations of the elbow, to acromioclavicular dislocations, to pathological fractures, to old fractures of the radius, to Volkmann's contracture; and adds an important section on the treatment of ununited fractures. Again we admire the excellent work of the publishers, and again we commend this book to the profession.

THE BOSTON

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INFECTION FROM FLIES.

We have, from time to time, commented on the active crusade being taken in many quarters, first, to discover the dangerous attributes of the common fly, and, secondly, to devise adequate means of extermination. The prevalence of the fly during the summer is such that every possible opportunity is afforded for the propagation of infection and all the disaster to which this may lead. The extermination of the mosquito is relatively a simple matter as contrasted with that of the ubiquitous fly, but the latter must certainly be attempted if the present indications of its danger in the spread of infectious disease is substantiated. In this connection an important report has recently been made public in New York, to which we are glad to draw attention.

The Committee on Pollution of the Waters of New York of the Merchants' Association has sent to Governor Hughes an interesting and suggestive statement on infection from flies, which was prepared by Dr. Daniel D. Jackson, bacteriologist to the committee. The report was commended to the Governor's careful attention by Edward Hatch, Jr., chairman of the committee, among the other members of which are J. Pierpont Morgan and Dr. Albert Vander Veer. During the past summer and through the month of September, flies were collected each day from flytraps, at the piers all along the water-front of the city, and systematic examinations of these were made in Dr. Jackson's laboratory. At the same time, a careful investigation into the sanitary condition of the entire water-front was made. The results showed that the flies were thickest in number at the points where there was the most sewage, and where there was but little sewage there were few flies. Flies examined early in the season were found to carry less bacteria than in the heated time. The largest number of bacteria found in a single instance was 100,000, which were carried by a fly caught at a South Street pier on the East River in the hot weather. To just what extent the intestinal diseases prevalent in the summer season may be due to flies is a question not very easy to determine, but, at all events, the report shows that the mortality from these diseases "rose above the normal at the same time at which the flies became prevalent, culminated at the same high point, and fell off with a slight lag at the time of the gradual falling off of the prevalence of the insects." That flies are largely responsible is claimed in the report, which goes on to say that this so-called harmless insect is one of the chief sources of the infection, which in New York City causes annually about 650 deaths from typhoid fever and about 7,000 deaths from other intestinal diseases. The fall rise in typhoid, if set back two months from the report of deaths to the time of the contraction of the disease, would, it states, correspond exactly to the curve of prevalence of flies and to the curve of rise in deaths from intestinal diseases of both children and adults. "It also corresponds to the temperature curve. We are, therefore, erroneously inclined to view the disease as due to hot weather. While climatic conditions, by reducing the vitality, favor the contraction of the disease, they are not the real cause of it. Temperature does not produce the specific which invariably accompanies the disease. The activity of the house-fly is in proportion to the temperature, and the time at which it is most active and most numerous corresponds exactly with the time of the contraction of typhoid fever and other intestinal diseases."

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THE REGISTRATION OF OPTICIANS.

A bill for the registration of opticians, which is to be introduced into the legislature this winter, has been mailed to every medical practitioner in the Commonwealth, accompanied by a very artfully worded circular asking for the support of medical men. A communication in another column of this issue of the Journal gives the history of the movement and should be read by physicians before giving a hasty decision on the questions propounded in the circular.

It strikes us as, in reality, an attempt to acquire a quasi-medical registration under which opticians can advertise to cure headaches and other nervous disabilities. Under this bill, these gentlemen do not ask to be registered as opticians, but as "optometrists." Apparently, it is not the purpose of this board of opticians, if established, to examine applicants as to their knowledge of the manufacture of lenses and the proper fitting of the frames, but in regard to their ability to conduct examinations of the eyes of persons suffering from ocular defects. It is, we fear, the attempt of another group of that great body of men, who are always hovering about the outskirts of medicine, to gain a legal right to practise medicine without a medical education.

In this instance, they ask to be registered; and one of the provisions of the act is to give the board of registration the right to issue a certificate of proficiency over its common seal. Undoubtedly the seal, when affixed to the "optometrist's" diploma, will be large and have the arms of the Commonwealth of Massachusetts prominently emblazoned thereon. The lengths to which these gentlemen are prone to proceed was exemplified, not long ago, in a state in which an act of registration has, unfortunately, been enacted, when a duly registered optician publicly took to task the municipal authorities because they had had the examination of the eyes of certain school children conducted by oculists, stating that they should have called in "optometrists" who were licensed by the state to do such work, and were the only proper persons to make such examinations.

It would seem that specialization in medicine is producing new and dangerous classes of quasi-medical practitioners who advertise themselves as specialists. These men now wish to induce the state to legalize their practice of medicine without passing the medical board. We have seen a certain group of masseurs develop themselves into the "osteopaths"; now come the opticians, as "optometrists." Next may come the gentlemen who make and sell foot-plates, dubbing themselves with a new Latin or Greek name. After them, doubtless, the individuals who advertise facial massage and scalp treatment with another newly coined name, beginning with "derm," in all probability, and so on. The final result might be that a large part of the field of medicine would be covered by duly licensed and registered practitioners, all without a medical qualification.

REPORT OF THE CAROLINE BREWER CROFT FUND CANCER COMMISSION.

The fourth report of the Caroline Brewer Croft Fund Cancer Commission of the Harvard Medical School is in our hands. The first report of this commission was issued in 1900, and during the seven intervening years, a large amount of experimental work has been done by various investigators, much of which has of necessity been a repetition of experiments previously published, particularly in relation to the parasitic origin of cancer. The general attitude of this commission in regard to the parasitic theory is well known. In its opinion it remains unproved. The commission is now under the direction of Dr. E. E. Tyzzer, of the Harvard Medical School, and the three papers presented in this report are the result of his researches. They are concerned especially with the question of inoculable tumors in mice. This work has been carried out in very great detail and is set forth with admirable photographic reproductions of the pathological conditions developing in the animals studied. In the introduction to this fourth report, Dr. J. Collins Warren, chairman of the commission, expresses the hope that the general investigation of cancer will in the future be carried on in a much more comprehensive way than has hitherto been done, and that endowments may be made to bring the clinical and laboratory work into closer relation than has hitherto been possible. In fact, the commission goes so far as to say that the investigation of cancer has now reached a point when it should be taken up on lines even broader than those laid down for the study and prevention of tuberculosis. Enough has certainly been done up to this time to show how difficult and elusive the problem is, and how much preliminary work of a negative sort must be done before positive advances toward the comprehension of the real nature of cancer and its causative agencies can be made. It is certainly to be hoped that sufficient funds may be forthcoming to render possible the most exhaustive work leading toward a solution of the problem.

MEDICAL NOTES.

American Journal of Urology. — Beginning with January, the above journal, which will also embrace venereal and skin diseases, passes under the editorial management of Dr. William J. Robinson, of New York.

Bequests. — By the will of the late Miss Zela Gibbs, of Newport, N. Y., St. Luke's Hospital in New York receives $100,000, and the residue of the estate after other bequests are paid. The Orthopedic Dispensary and Hospital receives $25,000.

Lord Kelvin to be Interred in Westminster Abbey. — It is proposed that the body of Lord Kelvin be interred in Westminster Abbey. But four other men of science have been hitherto so honored, — Newton, Herschel, Darwin, and Lyell.

A Worthy Record of Descendants. — A woman by the name of Ann Winn has recently died at the age of eighty-nine, near Falmouth, leaving 151 descendants. She herself had 17 children, the eldest of whom is now seventy-one. There are 75 grandchildren and 59 great-grandchildren. The woman's husband was a blacksmith, and it is said she often assisted him with bellows and hammer.

A Presidential Possibility. — An "underground movement" is said to be on foot "to boom" Attorney-General Bonaparte for President. The campaign managers are said to be physicians, and the issue the "extermination of the criminal classes." The medical profession and the proposed candidate are supposed to agree on the desirability of segregating habitual criminals. A further platform is not stated.

Deaths in Coal Mines. — Recent statistics show that during the last seventeen years, 22,840 men have been killed in the mines of this country. During the last six years as many fatalities have occurred as during the preceding eleven years. In 1906, 6,861 men were killed or injured, and the record this year bids fair to surpass any previously made. It is worthy of mention that three times as many are killed in this country as in most of the European countries to each 1,000 employed.

Death of Dr. William Bayard. — The death is announced of Dr. William Bayard, a practitioner of medicine in St. John, New Brunswick, for seventy years. Dr. Bayard continued in active practice almost up to the end of his life of ninety-four years. He was graduated from Edinburgh University in 1837, and quickly took a prominent place in various departments of medical work in St. John, where he began his practice. In 1895 he was president of the Canadian Medical Society. Last August, the seventieth anniversary of Dr. Bayard's graduation, Edinburgh University conferred upon him the degree of LL.D. He was then supposed to be the oldest living graduate.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — For the week ending at noon, Dec. 25, 1907, there were reported to the Board of Health of Boston the following cases of acute infectious diseases: Diphtheria 58, scarlatina 47, typhoid fever 3, measles 26, tuberculosis 60, smallpox 0.

The death-rate of the reported deaths for the week ending Dec. 25, 1907, was 24.64.

Boston Mortality Statistics. — The total number of deaths reported to the Board of Health for the week ending Saturday, Dec. 21, 1907, was 283, against 210 the corresponding week of last year, showing an increase of 67 deaths and making the death-rate for the week 24.22. Of this number 146 were males and 137 were females; 275 were white and 8 colored; 172 were born in the United States, 104 in foreign countries and 7 unknown; 60 were of American parentage, 178 of foreign parentage and 45 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 51 cases and 1 death; scarlatina, 35 cases and 1 death; typhoid fever, 1 case and 1 death; measles, 34 cases and 0 deaths; tuberculosis, 57 cases and 16 deaths; smallpox, 1 case and 0 deaths. The deaths from pneumonia were 60, whooping cough 0, heart disease 27, bronchitis 9 and marasmus 3. There were 15 deaths from violent causes. The number of children who died under one year was 54; the number under five years 71. The number of persons who died over sixty years of age was 91. The deaths in public institutions were 72.

There were 8 cases and 4 deaths reported from cerebrospinal meningitis during the week. There were also 11 deaths reported from la grippe.

The Diagnosis of Malaria and Typhoid Fever in Connecticut. — The Connecticut State Board of Health announces to physicians and health officers of that state that its laboratory is now prepared to undertake the diagnosis of malaria, and outfits for this work are now in the hands of the health officers and may be obtained by physicians wishing to make use of them. In using these outfits, physicians are requested to follow the directions accurately, since the diagnosis of malaria is difficult, and is impossible unless the specimen sent is prepared carefully.

The laboratory is beginning the use of a new style of typhoid outfit which it is believed will give more accurate results. The new outfits are being gradually substituted for the older style, and health officers are requested to furnish the new style of outfit to physicians instead of the old style, when they have them.

NEW YORK.

Traveling Tuberculosis Exhibit. — The New York State Charities Association is maintaining a traveling tuberculosis exhibit which is being sent to various cities and towns throughout the state. It has just been employed at a successful two weeks' campaign in Utica, where a committee on the prevention of tuberculosis has been organized and free dispensary for consumptives established.

New York Academy of Sciences. — The annual meeting of the New York Academy of Sciences was held on Dec. 16, when Charles F. Cox was elected president, and Dr. Adolf Meyer, director of the pathological institute of the New York state hospitals, one of the three vice-presidents. The meeting was followed by the annual dinner, after which the retiring president, Dr. N. L. Britton, made an address on the organization and construction of the New York Botanical Garden in Bronx Park, of which he is at present the director.

Accidents from Public Conveyances. — The reports filed with the Public Service Commission show that during the months of September, October and November, no less than 155 persons were killed and 500 seriously injured in New York City by the street cars, and steam, elevated and subway trains. Prior to the inauguration by the Public Service Commission, which was created by the last legislature, of its system of accident reports, there was no adequate way of determining the number of persons killed or injured within the city limits by the different traction lines, but these companies are now required to file reports of all accidents with the commission.

Typhoid Fever at Trenton, N. J. — The epidemic of typhoid fever, now prevailing at Trenton, N. J., seems to be unquestionably due to the use of Delaware River water. Up to Dec. 15, fifty-five cases had been reported during the present month, and Dr. A. C. Hunt, chief sanitary officer of the State Board of Health, has expressed the fear that worse is to come unless existing conditions are quickly remedied. The State Health Department has repeatedly warned the city against such an epidemic, but it appears that the expense of construction has proved too much of an obstruction to the installation of a filtration plant by the board of water supply. There is now some talk of obtaining a permanent supply of pure water from the Sorrell Mountains, to be conveyed by means of an aqueduct, but, of course, such a project would necessarily require a very considerable time to carry out.

Deaths from Influenza. — The present year will show a greater mortality from influenza than any year since 1891, when in the city of New York, then comprising the present boroughs of Manhattan and the Bronx, the number of deaths from this cause, reached 854. The second highest mortality was in 1895, amounting to 567, while the lowest record was in the year 1902, when there were only 102 deaths reported from influenza. In the first eleven months of 1907, there were 509 deaths in Manhattan and the Bronx, as against 200 in the corresponding period in 1906, or an increase of more than 150%. During the first two weeks of December, the death-rate from influenza was even proportionately larger; so that the record of 1907 will undoubtedly exceed that of 1895. In all the large hospitals, there are now many influenza patients, while an unusually large number of those suffering from the disease in less severe form are receiving treatment in their out-patient departments, and in the various dispensaries.

Obituary.

HENRY PATTERSON LOOMIS, M.D.

Dr. Henry Patterson Loomis, of New York, the only son of the late Prof. Alfred L. Loomis, died from pneumonia, after a short illness, on Dec. 22, in the forty-ninth year of his age. He was born in New York City, where he prepared for college, and in 1880 he was graduated from Princeton. In 1883 he received the degree of M.D. from the medical department of the University of the city of New York, and, after serving as interne at Bellevue Hospital, he studied abroad for two years, taking special courses at the universities of Heidelberg and Vienna. On his return he became associated in practice with his father, and later was appointed professor of pathology in the New York University medical school. He was also made visiting physician to Bellevue Hospital, and in 1896 visiting physician to the New York Hospital, both of which positions he retained up to the time of his death. When the new Cornell University Medical College was organized in 1898 he became a member of the faculty as professor of Materia Medica, Therapeutics and Clinical Medicine, and this professorship he also still occupied at the time of his death. The distinguished son of an eminent father, Dr. Loomis was recognized as one of the leading pathologists and exponents of internal medicine in New York, and his frequent contributions to medical literature were of a high order. One of the most notable of these was a paper which he read in a symposium on pneumonia in December, 1905, before the Medical Association of the Greater City of New York, which was participated in by Drs. Hobart A. Hare, James M. Anders and J. Madison Taylor, of Philadelphia, and Drs. Andrew H. Smith, William H. Thomson and others, of New York. In this he presented a *résumé*, very carefully prepared in minute detail, from original sources, of the existing treatment of lobar pneumonia as exemplified by the routine treatment of the disease in four of the large New York hospitals. The hospitals taken for comparison were Bellevue, the New York, the Presbyterian and Roosevelt, the material collected showing an enormous amount of painstaking work on Dr. Loomis's part, and in concluding the paper he gave some practical deductions which clinical experience seemed to warrant as regards the treatment of pneumonia. Dr. Loomis was a man of most genial temperament, beloved by his associates and patients, and always very popular with his classes, and it seems sad indeed that he should thus be cut off in his prime and at the height of his useful medical career. His wife was Miss Julia Stimson, a sister of the distinguished surgeon, Dr. Lewis A. Stimson, and she, with two children, a son and daughter, survive him. The son, Alfred L. Loomis, is now a sophomore at Yale.

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Current Literature.

MEDICAL RECORD.
Nov. 23, 1907.

1. Kelsey, C. B. *On Perianal and Perirectal Abscess.*
2. Kiliani, O. *The Surgical Treatment of Ulcer of the Stomach.*
3. Bryant, W. S. *The Nose in Its Relation to Epilepsy.*
4. Livingston, A. T. *The Indications for Ergot, aside from Its Obstetrical Use.*
5. Crothers, T. D. *The Action of the Radiant Light Bath in Nervous Diseases.*
6. Camp, C. D. *Motor Paralysis as an Early Sign of Tabes Dorsalis.*
7. Van Baggen, N. J. P. *The Misuse of the Voice and Its Cure. Articulation.*

NEW YORK MEDICAL JOURNAL.
Nov. 23, 1907.

1. *Saxe, De S. *A Study of Sago Bodies and Other Vesicular Elements in Massage Urine in Their Relations to Diagnosis.*
2. Piffard, H. G. *A New Staining Method for Microorganisms.*
3. Tracy, E. A. *A Note on Surgical Splinting.*
4. Gradle, *Bilaterality and One-Sidedness in Diseases of the Eye.*
5. Kennedy, J. W. *Frenzied Surgery of the Abdomen.*
6. Barr, R. A. *Perineorrhaphy.*
7. *Berkeley, W. N. *A Brief Report of Further Experiences in the Use of Parathyroid Gland for Paralysis Agitans.*
8. Wieder, H. S. *Sarcoma of the Eyelid.*
9. Schwartz, L. H. *Pediatric Hints.*

1. Saxe was able to find either skins, sago bodies, or sugar granules after prostatic massage in the urine of 12 out of 26 young men, whose seminal vesicles and prostate were apparently normal, and who presented no evidence of venereal infection, either from the history or physical examination. The presence of vesicular casts does not of itself indicate inflammation, unless they contain pus cells and bacteria. The casts arise from stagnation of the secretion of the vesicles, with consequent absorption of the fluid portion, and indicate only atony of the vesicular walls. Vesicular shreds with pus, epithelium and many spermatozoa occur in chronic vesiculitis. The diagnosis of vesiculitis is only possible by finding pus cells, vesicular epithelia, spermatozoa and bacteria. The latter are usually streptococci, less frequently gonococci, occasionally staphylococci and colon-like bacilli.

7. Berkeley frankly confesses that the proof of specific relation between Parkinson's disease and the parathyroid gland is quite inadequate. Autopsy findings are, on the whole, against such a relation, although the parathyroid seemed pathological in a few cases. Such a relation is suggested by the symptoms in animals after complete parathyroid excision, *viz.*, twitching of the voluntary muscles, tetany and convulsions. The writer has employed preparations from the parathyroid glands of the ox, both by mouth and subcutaneously, in some 75 cases of Parkinson's disease. Eighteen of the 30 cases which were followed were progressively benefited, some apparently remarkably so. The benefit consisted in diminished rigidity, pain, salivation and shaking, relief of restlessness and insomnia, and greatly increased voluntary control of muscles. The writer promises a further report in collaboration with S. P. Beebe.

[R. I. L.]

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
Nov. 23, 1907.

1. Dercum, F. X. *Hysteria. Its Nature and Its Position in Nosology.*
2. Simmons, G. H. *What the American Medical Association Stands For.*
3. *Freeman, R. G. *The Ferments of Milk and Their Relation to Pasteurization.*
4. Ochsner, E. H. *Potential and Acquired Static Flatfoot. Its Etiology, Symptomatology and Non-Operative Treatment.*
5. Porter, W. D. *A Method of Bimanual Rotation in the Vertex.*
6. *Kilmer, T. W. *Whooping Cough. Five Hundred and Fifty Cases Treated by the Abdominal Belt.*
7. Pond, A. M. *Comparative Study of Renal and Biliary Disease in Which Calculi Figure Prominently.*
8. Lowenburg, H. *The Diagnosis and Treatment of Convulsions in Children.*
9. Miller, J. M. *Gangrene of the Lung in Early Life.*
10. Price, G. H. *Treatment of Purulent Ophthalmia.*
11. Theobald, S. *The Conservative Treatment of Chronic Suppuration of the Middle Ear.*

3. Freeman finds that heating of milk for forty minutes at 140° F. (60° C.) does not interfere with its biologic properties or chemical composition, and also kills the bulk of the bacteria, including the tubercle bacillus.

6. Kilmer reports a series of 550 cases of whooping-cough treated by the abdominal belt. These cases represent the observations of some thirty pediatricians. Most of the observers testified to the almost constant benefit noticed regarding the cessation of vomiting and moderation of cough. It is in no sense a curative procedure. The belt is made of linen with a strip of silk elastic webbing two inches wide inserted in either side. The belt laces in the back and is worn over the undershirt. The width is

four to eight inches, depending on the size of the child. The length is about three inches less than the circumference of the child's abdomen at the navel. At first, only slight constriction is used, which is increased until the vomiting is controlled. [R. I. L.]

The American Journal of the Medical Sciences.

November, 1907.

1. *Billings, F. *Gastromotor Insufficiency Due to Perigastric and Duodenal Adhesions.*
2. Dock, G. *Chylous Ascites and Chylous Pleurisy in a Case of Lymphocytoma Involving the Thoracic Duct.*
3. *Moffitt, H. C. *A Contribution to the Study of Long-Continued Fevers.*
4. *Einhorn, M. *True Intestinal Dyspepsia.*
5. *Schmoll, E. *Paroxysmal Tachycardia.*
6. Claytor, T. A. *Dilatation of the Heart.*
7. Henderson, V. E. *A Résumé of the Physiology of the Kidney, with a View to Therapeutics.*
8. Dench, E. B. *Otitic Brain Abscess.*
9. Buerger, L. *Actinomycosis of the Skin of the Foot.*
10. *Riesman, D. *Hemorrhages in the Course of Bright's Disease, with Especial Reference to the Occurrence of a Hemorrhagic Diathesis of Nephritic Origin.*
11. McKee, H. *A Clinical Study of Five Hundred Cases of Conjunctivitis.*
12. *Schorer, E. H. *The Opsonic Index in Erysipelas and Its Relation to Treatment by Inoculation of Killed Streptococci.*

1. Billings describes the symptoms and signs of motor insufficiency of the stomach due to atony or to pyloric obstruction, or, as the title of his paper indicates, to perigastric and duodenal adhesions. These adhesions are most often due to cholecystitis, less often to chronic ulcer or to operations. The condition may be masked by symptoms of the underlying cholelithiasis or ulcer; it is to be detected by signs of stasis in the stomach contents in the absence of evidence of ulcer. Neurotic symptoms are often present. One case is described at length in which the diagnosis was made and the condition relieved by operation, with temporary improvement. Neurotic symptoms, however, recurred without objective signs of abnormal gastric function.

3. Moffitt reports a case of frequently recurring attacks of fever for a year or more, finally fatal. Autopsy proved the presence of lymphosarcoma of the liver, spleen and lymph glands. Attention is called to the frequent occurrence of fever in tuberculous lymphomas, in Hodgkin's disease, sarcoma and carcinoma. As other causes of obscure intermittent fevers, are mentioned pyelitis, endocarditis, intermittent hepatic fever, visceral syphilis, tuberculosis and exophthalmic goiter.

4. " Intestinal dyspepsia " Einhorn defines as including all conditions in which the digestive function of the intestinal tract is disturbed. Two main classes of cases are described: " Dyspepsia intestinalis universalis," in which digestion of all three classes of food substances is at fault; and " dyspepsia intestinalis partialis," divided into subclasses, when digestion of only one or two forms of food is disturbed. In preference to Schmidt's test diet, the author uses his own " bead test," giving beads containing meat, fat, fish-bone, thymus, potato and catgut, and examining their contents when they are recovered from the stool. Cases are cited, illustrating the conditions described and method of diagnosis. As to treatment, the patient is put on a liquid or semi-liquid diet, and pancreon or takadiastase (gr. v, t. i. d.) is given, the former to promote digestion of proteids or fats, and the latter in amylaceous dyspepsia.

5. Schmoll's article is an attempt to show that in paroxysmal tachycardia we have to deal not with a single pathological entity, but with at least four groups as follows: (1 cases in previously damaged hearts; (2) cases from dysthyreosis; (3) cases with lesions of the central nervous system; and (4) cases of apparently functional character. The condition is characterized by attacks of suddenly appearing tachycardia, lasting ten or fifteen minutes up to five days, ceasing as suddenly as they began. In the attack the heart rate is either double or four times the normal. Cases are described showing how these features may occur in connection with each of the etiological factors mentioned. Most attention is directed toward the so-called idiopathic or functional cases. These were carefully studied by means of tracings, in the attempt to explain the occurrence of the increased heart rate upon physiological grounds. Through these tracings it is made evident that the tachycardia is the result of extra systoles, in some instances apparently originating in the bundle of His and involving only the ventricle, and in other instances, by the presence of an auricular wave, more probably originating in the venous sinus.

10. Riesman mentions a number of manifestations of tendency to hemorrhage occurring in connection with Bright's disease. These include epistaxis, purpura, metrorrhagia, hemoptysis, hematemesis, hematuria and bleeding into the brain, eye and ear. In a few cases, hemorrhage has occurred from multiple sources, indicating a true hemorrhagic diathesis. The author favors the view that the nephritis is the cause of the tendency to hemorrhage, most probably by toxic influence, possibly aided by arterial disease and hypertension. The prognosis in these hemorrhagic cases is unfavorable.

12. Schorer reports results of treatment of 37 cases of erysipelas by means of injections of killed cultures of streptococci. The organisms were obtained from cases of erysipelas, but it was not feasible to use, in each case, organisms obtained from that case. The technic is briefly described and results are summarized and tabulated. In general the outcome was inconclusive. The opsonic index was found excessively variable and of no value as an indication of the severity of the disease. The injection of killed streptococci, on the whole, increased the opsonic index, but no corresponding improvement of the patient was observable. [F. W. P.]

Annals of Surgery.

December, 1907.

1. Seelig, M. G. *Carcinoma of the Esophagus.*
2. *Jackson, C. *Tonsillar Hemorrhage and Its Surgical Treatment.*
3. Sterling, R. A., *Lingual Goiter.*
4. Vanderveer, E. A. *Report of a Case of Sarcoma of the Thyroid.*
5. Corson, E. R. *Narath's Modification of Talma's Operation for Hepatic Cirrhosis.*
6. Jayne, W. A. *Acute Pancreatitis.*
7. *Vance, J. *Primary Fibromyomata of the Broad Ligaments.*
8. Sampson, J. A. *The Renal Catheter as an Aid in the Diagnosis of Valve-like Obstruction of the Ureter.*
9. Summers, J. E., Jr. *The Conservative Surgical Treatment of the Hypertrophy of the Prostate Gland in the Very Feeble and Aged.*
10. *Barney, J. D. *Epithelioma of the Penis. An Analysis of One Hundred Cases.*
11. *Andrews, E. W. *The "Bottle Operation" Method for the Radical Cure of Hydrocele.*
12. Thurston, E. D. *Bilateral Tuberculous Bursitis of the Hips.*
13. Peterkin, G. S. *The " Suspender " Abdominal Bandage. The Four-Tailed Genital Bandage.*
14. *Beach, R. M. *Surgical Progress. Excerpts from Transactions of the German Congress of Surgery, 1907.*

2. Jackson believes tonsillotomy an unjustifiable operation: first, because it leaves parts of the gland as a seat for future infections and inflammations whose adequate drainage is prevented by scar-tissue; second, because it severs vessels at a point where disease process hinders their normal retraction and makes hemorrhage more likely than after tonsillectomy. The best treatment for post-operative tonsillar hemorrhage he thinks to be direct torsion of the bleeding point with a hemostat, applied while the anterior pillar is fully retracted. If this fails, he recommends immediate external carotid ligation.

7. Primary intraligamentous fibroids, not connected with the uterus, are rare. Vance reports a case of his own, and summarizes others from the literature. The condition is rarely bilateral, and may be associated with uterine fibroids, in which case the diagnosis cannot be made before operation. When the uterus is not also involved, the absence of menstrual disturbance is an important diag-

nostic sign. Fibroid of the broad ligament may easily be mistaken for ovarian cyst, especially since it is very liable to cystic degeneration.

10. Careful analysis of 100 cases of cancer of the penis seems to show that phimosis is the predominant predisposing cause, being present in 85% of the series. Jews are notably immune. These facts, Barney believes, are strong arguments for prophylactic circumcision, when phimosis persists after middle life. The progress of the disease is relatively slow, the prognosis, after early radical operation, relatively good, 38% of all cases being cured. Amputation does not necessarily destroy sexual power or cause disturbance of micturition.

11. Andrews modifies Jaboulay's eversion method for radical cure of hydrocele by making only a 2 cm. incision into the funicular portion of the sac. Upon delivery of the testicle, this incision contracts about the cord, leaving the sac inside out, and secure in position without need of suture, except for closure of the scrotal wound.

14. The use of balsam of Peru as a primary dressing in lacerated wounds of all varieties and extent is reported, apparently with gratifying results, which Suter attributes to mechanical, bactericidal and direct chemotactic action of the drug. The urine should be watched for evidence of absorptive irritation of the kidneys.

[R. M. G.]

Deutsche Medizinische Wochenschrift.
No. 42.
Oct. 17, 1907.

1. Tillmans, T. *The Treatment of Fractures.*
2. *Riedel. *Displaced Right Kidney Fastened by Adhesions.* (Concluded.)
3. Martens, M. *Appendicitis with Purulent Inflammation of the Portal Vein.*
4. *Ribbert, H. *Portals of Entry for Tuberculosis.*
5. *Pal, J. *Mydriatic Substances in the Urine.*
6. Kleinberger, C. *Hemoglobinophilic Bacilli as Saprophytes.*
7. *Heymann *Experiences with the Quartz Lamp.*
8. Schumm, O. *The Benzedin Blood Test.*

2. Riedel discusses 130 personal cases of displaced right kidney fastened by adhesions in abnormal positions. Only 7 of these were in men. The clinical pictures were those usually described. If there was a tumor present, it was due to an exacerbation of a hydronephrosis which, if infected, caused fever and albuminuria; if not, the urine was normal. This is similar to the action of the gall bladder when distended and stones present. In other cases, violent pains and vomiting may suddenly develop, without fever or changes in the urine, due to adhesions about a displaced kidney. The liver is displaced in one half the cases, often occupying the normal position of the kidney. Tight skirt bands, when worn without corsets, he thinks are liable to cause these displacements. The varying position of the adhesions caused varying clinical pictures. The appendix may be constricted or adhesions may develop to the liver or anterior abdominal wall. In some cases, apparently insignificant adhesions caused uncontrollable vomiting and abdominal colic. He states that he does not know of any operation that is so beneficial in its results as that of fixation of a displaced kidney fastened by adhesions. In simple wandering kidney he does not advise operation.

4. Ribbert briefly reviews the modern theories of how the tubercle bacillus gains its entry into the body, and criticises the views of Aufrecht and others who maintain that the primary infection is usually hematogenous, with a portal of entry in the tonsils or mouth. He reaffirms his own conviction that inhalation is the chief source of infection in man.

5. Pal states that the observation of Schur and Wiesel that the serum of nephritis contains mydriatic substances induced him to carry out similar experiments with the urine of patients suffering from various affections The test was carried out on the enucleated eye of the frog Eighty-one cases in all were tested. The reaction was not present in any of the normal cases; it was present in 78% of the cases of nephritis and in 7% of the cases of other diseases, and in 33% of 18 cases of pregnancy. The question is to be investigated further, and the author suggests that the mydriatic action may be due to the excretion of adrenalin.

7. Heymann reports the results obtained in the treatment of various skin diseases by means of the quartz lamp as compared with the Finsen lamp, or its modifications. He concludes that it is more convenient to manipulate, less expensive, requires smaller amounts of current, and easily causes deep necroses that are slow to heal.

[L. G. M.]

Berliner Klinische Wochenschrift. No. 42.
Oct. 21, 1907.

1. *v. Baumgarten, P. *Pathological-Histological Tissue Changes after the Injection of Alcohol.*
2. Daels, F. *The Action of Yohimbin on the Female Genitalia.*
3. *Beck, C. *The Use of the X-ray after Surgical Operations on Malignant New Growths.*
4. *Witte, J. *The Solms and Jakoby Method of Quantitative Pepsin Estimation.*
5. Muszkat, A. *Periodic Appearance of Mucus in the Bowel.*
6. Bulling, A. *A Case of Actinomycosis of the Lung.*

1. Baumgarten has made a large number of observations on animals after subcutaneous injections of alcohol. No local necrosis or abscess formation was found at the point of injection. Further, no formation of new connective tissue in the liver or elsewhere was noted. He did find, in many cases, erosions of the mucous membrane of the stomach and intestines. From these experiments, the author suggests that alcohol is not a causal, but a predisposing, factor in cirrhosis of the liver in man.

3. Beck reports 5 cases in which, after removal of malignant new growths, the operation site was subjected to vigorous x-ray treatment until inflammatory reaction set in. In these cases there has been no return of the tumor. The author believes that in all cases of infiltrating new growths of skin or subcutaneous tissues, the above procedure is a most valuable one.

4. Witte describes the Solms-Jakoby method of pepsin estimation. A mixture of $\frac{n}{10}$ HCl and sodium chloride ricin solution is used as a test fluid: it is milky in appearance. When mixed with fluids containing pepsin, the milky precipitate is dissolved. The gastric juice to be tested is mixed with the test fluid in different dilutions in separate test-tubes, 1: 50, 1: 100, etc., depending on the amount of free HCl present. After three hours in the incubator the tubes are examined, and the greatest dilution tube in which the precipitate has cleared is taken as the one showing the pepsin content. The author finds a relation in all cases between the amount of HCl and the amount of pepsin, but it is not a constant one. His results differ from many observers, in that he finds a diminution of the pepsin content in cases of functional disturbances of the stomach, as well as in organic disease. This method is simple, cheap and accurate, and can be performed by the practitioner.

[R. D.]

No. 43. Oct. 28, 1907.

1. Lewin, L. *The Results of Inhalation of CO.*
2. *Citron, J. *Serum Diagnosis of Syphilis.*
3. Einhorn, M. *The Diagnosis and Treatment of Ileus.*
4. Kersten. *A Case of Congenital Stricture of the Ileum.*
5. Schröder, K. *The Guaiac Test for Blood.*
6. Borse, B. *Arthritis and Its Relation to Venereal Disease.* (Continued article.)
7. *Diesling. *The Significance of Pigment in Malaria.*

2. Citron finds it possible to recognize antibodies in the serum of nearly every syphilitic, no matter what stage of the disease is present. Also in 80% of paretics, the antibodies are demonstrable in the spinal fluid. The author believes that the presence of such antibodies means an active syphilitic process, and that their absence may be interpreted as evidence of cure or latency. The increase in the reaction is an indication for further anti-specific treatment. He concludes from his observations that, firstly, the longer the toxin of syphilis has affected the

body, and the more numerous the relapses it has caused, in so much is the antibody content of the serum more constant and more marked; secondly, the earlier the mercury treatment has been instituted, and the longer it has been applied, by so much is the antibody content lessened.

7. Diesling claims that quinin acts by combining with the hemoglobin of the red cells, and that this combination is visible through the microscope. The clinical course of malaria may be watched and predicted by observations on the pigment excretion in urine and feces. The life cycle of the parasite depends on the absorption and assimilation of pigment. The author points out that many substances have great influence on the hemoglobin combinations, and that for a successful treatment of the disease, it only remains to select such substances that do not have a hurtful influence on the human organism.

[R. D.]

Revue de Chirurgie.

November, 1907.

1. *French Congress of Surgery. (*Twentieth Session Held at Paris, Oct. 7–12, 1907.*)
2. *Proceedings of the Thirty-sixth Congress of the German Society of Surgery. (*Held at Berlin, April 3–6, 1907.*)

1. X-ray treatment of malignant disease is believed by Béclère to be of great value, especially for epitheliomata of the face. His optimism is questioned in the discussion, but supported by Imbert and Dupeyrac, who report 80% of cures in cutaneous cancer. Pozzi recommends the use of high frequency sparks, which he thinks preferable to x-ray in all accessible forms of malignant disease. The dangers of over-exposure to x-ray are emphasized, and in general radiotherapy is deemed of secondary value to surgery, except in cancer of the face. Its use is advised, however, in inoperable cases and as a means of preventing recurrence following operation, though several disapprove of leaving open, for the latter purpose, wounds that might otherwise be closed.

Reports and discussion of nerve, muscle and tendon transplantation in the treatment of paralyses add little to our present knowledge and practice on the subject.

The relation of trauma to malignant neoplasm and local tuberculosis is considered, with the conclusion that though a single injury may call attention to or accentuate the development of a previously existing lesion, or afford the site for a direct inoculation of tuberculosis, it is rarely the immediate occasion of malignant or tuberculous disease, and even then cannot be called an etiologic cause. Sarcoma follows trauma more commonly than does cancer. These considerations are of obvious medico-legal importance in expert testimony in damage suits.

2. Reports on progress in thoracic surgery emphasize the value of the pneumatic chamber. By operating under a negative pressure of 3 mm. of mercury, Sauerbruch found that suture of the heart for trauma could be done with less hemorrhage and greater ease, on account of cardiac quiescence. Friedrich employs a negative pressure of 3 to 8 mm for all intra-thoracic procedures to avoid pneumothorax. Seidel, on the contrary, when pneumothorax already exists, employs a slight positive pressure to prevent the establishment of atelectasis.

[R. M. G.]

Exploratory Puncture of the Brain. Neisser's brain puncture constitutes an important advance in the diagnosis of certain diseases of the brain and its membranes. Pollack (*Mitt. a. d. Grenzg. d. Med. u. Chir.*, Bd. 18, Heft 1, p. 1) reports further results obtained with this method in Neisser's clinic, and reviews the literature. The skull and soft parts are rapidly punctured under local anesthesia by means of a small electric drill. The exploratory needle is introduced through this opening and aspiration is performed at any desired distance from the inner surface of the skull The procedure is not accompanied by shock or unpleasant after-effects, provided that the rules laid down by Neisser and Pollack (*same journal*, Bd. 13, p 807) are followed. The puncture can be repeated, if necessary, several times in different places at one sitting. By this method, it is possible to localize brain tumors and abscesses accurately, and thus needless trephining may be avoided. In inoperable brain tumors, by puncture of the lateral ventricles, the symptoms of pressure may be relieved often more efficaciously than by decompression operations, and the method has not the danger attendant on lumbar puncture in such cases. The latter, as is well known, may entirely fail to relieve the pressure symptoms, owing to a blocking off of the communication between the cerebral and spinal cavities, and has, moreover, been followed by sudden death in quite a few instances. In cases of extradural hemorrhage, it is sometimes impossible to tell by the usual methods on which side of the head the lesion is, and life is sometimes lost by trephining on the wrong side. The exploratory brain puncture in such cases is invaluable, and may, as in the case reported by the author, suffice to effect a cure after the aspiration of the blood. It is to be hoped that this method will receive a more general trial than it has yet had.

[W. T.]

Correspondence.

LETTER FROM PARIS.

(*From our Special Correspondent.*)

Ascending and Descending Processes.

Paris, Dec. 10, 1907.

Mr. Editor: I must own up to being rather partial to an iconoclast, especially to one who is thoroughly convinced, and makes a clean sweep of things He is apt to be a young man, who, finding that the ground has been pretty well gleaned by his predecessors, and that entirely new ideas are scarce, realizes that, in order to come to the front, he must resolutely overthrow by force some portion of the already existing order of things.

So he walks boldly into your lot, makes disparaging remarks about the shanty in which you have lived so long and been quite content, and finally, with a vigorous shove, sends the entire edifice to the ground. After which he invites you to step over into his lot to see how far superior the building he has just put up is to the ruined structure you have left behind.

This sort of treatment is the best possible mental gymnastics for the man who is beginning to get on in life. There is no better test for the elasticity and activity of the protoplasmic prolongations of his big pyramidal cells than, just when they have comfortably settled down into ruts, and have become accustomed to certain modes of action and to ideas following each other in a well-known sequence, to be obliged at a moment's notice, not only to adopt an entirely new habit of life, but to completely shake off the old one as well,— not always the easiest matter in the world!

Osler says somewhere, that "it is a horrible thought, but very true, that we reach a stage in life, some earlier, some later, in which a new truth, a perfectly obvious truth, cannot be accepted." Well, so far as I am personally concerned, it is a satisfaction to me to find that in this respect I am all right, for the present, at any rate. For I am quite prepared to accept the following revolutionary doctrines, if they prove capable of clinical demonstration; they are, to say the least, very attractive.

Two young iconoclasts over here, former internes, Lemierre and Abrami, have recently advanced the following new ideas as regards the biliary complications of typhoid fever, — at least so they have seemed to me.

Not so very long ago, most people held that typhoid fever was due to a microbe that gained access to the intestine with the ingesta, that multiplied therein with great facility and that set up, first, local catarrh with inflammation of Peyer's patches, and, later on, systemic infection and intoxication. In the cases in which the disease was accompanied or followed by catarrhal or inflammatory disturbances of the passages of the bile and gall bladder, these accidents were held to be due to an *ascending* infective process from the intestine, occurring when the composition of the bile or the facility of its flow was not in a normal state.

These conceptions seemed to be rational; they held together fairly well, and everybody was satisfied.

But on closer scrutiny some features were brought to light that rather jarred in the tableau. Thus, the characteristic lesions of the intestine in typhoid fever are found at the lower end of the ileum, far away from the bile apparatus, in the neighborhood of which the mucosa is usually in a perfectly normal state. This detail did not seem to fit in well with the idea of an ascending infection. Again, the urine was discovered to be swarming with Eberth's bacilli, eliminated by the kidneys. Now there could be no question of any ascending infection here, the bacilli being brought to the renal filter by the circulation. Furthermore, it was ascertained that at post-mortems after typhoid fever, the bile in the vesicle is filled with Eberth's bacilli in a state of pure culture, although there had been no clinical signs of cholangitis or cholecystitis, and although the vesicle and ducts were macroscopically perfectly healthy. Doubts then began to arise as to the soundness of our belief that typhoid fever was an intestinal affair, an enteritis; and on different sides experimentors set to work to study this question of the presence of these bacilli in the bile.

With the progress of microscopic technic, an important discovery was soon made: that from the start of the disease, the specific bacilli can be demonstrated in abundance in the circulation. This at once changed the entire aspect of affairs, and the theory was advanced that the disease is primarily a septicemic process and not an enteritis!

If, now, we apply this idea to what we know of typhoid fever, we must interpret its phenomena as follows: the bacilli, arriving with the ingesta, penetrate at once into the circulation and there begin to multiply. Reaching the liver and kidneys with the blood they are eliminated in the urine and bile, in the latter of which, an excellent culture medium, they increase rapidly in numbers. In most cases their presence in these liquids is quite silent; in a few they give rise to cystitis, or cholecystitis, the two processes being of exactly the same nature, being both *descending* lesions and no longer ascending, in the case of the bile passages.

The intestinal endanthema, on this theory, is not due to the presence and direct action on the mucosa of the bacilli, but is a localized metastasis of the Eberth septicemia. Typhoid fever is, then, no more an intestinal disease than variola is a cutaneous one, — the external eruption of the one and the intestinal patches of the other being neither the seat of the virus nor the essense of the disease. Lastly, with this interpretation of the disease, the bacilli that can be demonstrated in the stools came from hepatic elimination and multiplication, and not from intestinal culture.

It is certainly trying to the ordinary mortal to have his venerable beliefs knocked about in this ruthless fashion. It all seemed so plausible: the ascending infection of the bile passages, like surgical urinary infection from bladder to kidney, or sexual infection from urethra to testicle; and yet, it cannot be gainsaid that the new theory appeals to the mind strongly. Furthermore, it has been demonstrated beyond doubt, experimentally, that bacilli can easily pass from the circulatory current into the bile. Incidentally, it may be remarked that this idea of *descending* infection may upset the entire chapter of the diseases of the bile passages; so that our troubles with this obscure region of the economy are not yet approaching an end, by any manner of means!

"Spectator."

P. S. As the true physician should be eclectic, and be on the lookout for good things, no matter how humble their origin, I send the following therapeutic tip just received in a letter from a London hospital-trained nurse, now serving in Johannesburg, South Africa:

"A Boer woman in my ward gave birth to twins, one of which had slight jaundice. She told me she had always given her babies *lice* as a remedy for this, three being the dose for an infant and ten for an adult, between two slices of bread and butter. In reply to my question as to where she got them, she answered that the Kaffir servant always supplied them, either off his body or out of his hair."

This somewhat enables one to rise to the height of grasping the tales of horror related by the English physicians who had to serve among the Boer women and children in the concentration camps, during the South African war, in explanation of the fearful mortality among the Boer sick!

WALKING AND HEALTH.

Boston, Dec. 23, 1907.

Mr. Editor: The excellent editorial, "Walking and Health," which appeared in your issue of Dec. 12, calls deserved attention to a subject of importance. Weston's extraordinary walk at the age of sixty-nine is of all the greater value from a medical standpoint, because it was done under normal and natural conditions. Most records in athletics are created and often under abnormal conditions; but Weston wore ordinary clothes and walked over ordinary country roads, the cinder track and racing costume being conspicuous by its absence. It was, therefore, a performance which with practice may be imitated though not equalled by both sexes and all ages.

Two aspects of this extraordinary walk deserve particular attention; in the first place, it demonstrates the heretofore incredible possibilities of the physical powers of what is ordinarily considered old age; it sets a new final standard of these possibilities which recalls in some particulars the demonstration of the new minimum physiological diet which Chittenden has recently given to physiologists; both of these new standards overturn others which had been established and accepted for years. Unless one has tried to walk more than forty miles in a single day under favorable conditions it is not possible to fully appreciate what it means to average 50 miles on a series of successive days under unfavorable conditions. The fact that it can be done and without serious harm should encourage all healthy folk to extend their mental picture of their walking powers. For us in Boston, our superb park system and the attractive surrounding country invite the walker to unusual delights; they should be more extensively appreciated and utilized; without doubt, for us, walking is the simplest, the most enjoyable, the most easily available form of general exercise for the conservation of health. The automobile and the electric car must not be allowed to banish it.

A second aspect of walking is its great possibility as a therapeutic agent in convalescence from sickness, surgical operations and debilitated or neurasthenic conditions of all sorts.

It must, however, be more carefully considered and prescribed; in a word, more accurately administered than has heretofore been the case. A comparison is suggested between the use of water as carried out at medical baths, and walking as it might be practiced in the open air: the careful consideration of temperature, force, character of the application of the water in one case corresponds to the speed, duration, distance and character of the country to be covered by the walk. Viewed from this standpoint, walking offers almost unlimited possibilities to the patient. It is the modern custom to discharge surgical patients from our hospitals at an early date, before returning to their occupations, which are often tedious and arduous; something more than simple rest is desirable. Walking can fill this place more effectively and acceptably than the usual artificial exercises. This is particularly true in the case of abdominal scars, and operations for the relief of hernia. Carefully considered, walking is ideal for strengthening such scars, and accustoming them gradually to the strains which they must ultimately bear. It is also valuable as an immediate treatment of sprains of a moderate degree, as Weston himself demonstrated; it is better than most forms of formal gymnastics and "setting up" drills, for children and adults with weak backs, round shoulders and flabby muscles generally. Finally as a means of severe physical exercise it may be combined with climbing on the one hand and running on the other, to both of which it is intimately related; it may be utilized to produce the maximum exertion which can be demanded within physiological limits. Let us hope that it will be utilized more extensively in these various ways.

Truly yours,

J. B. Blake, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DEC. 14, 1907.

CITIES.	Reported deaths in each.	Deaths under five years.	CITIES.	Reported deaths in each.	Deaths under five years.
New York	—	—	Quincy	9	2
Chicago	—	—	Waltham	13	2
Philadelphia	—	—	Pittsfield	—	—
St. Louis	—	—	Gloucester	11	1
Baltimore	—	—	Brookline	6	1
Cleveland	—	—	North Adams	7	2
Buffalo	—	—	Chicopee	4	2
Pittsburg	—	—	Northampton	7	1
Cincinnati	—	—	Medford	5	—
Milwaukee	—	—	Beverly	7	—
Washington	—	—	Leominster	5	—
Providence	—	—	Hyde Park	3	1
Boston	298	75	Melrose	10	1
Worcester	42	15	Newburyport	—	—
Fall River	34	15	Woburn	5	—
Cambridge	30	5	Marlboro	4	0
Lowell	43	14	Westfield	4	1
Lynn	29	7	Peabody	—	—
New Bedford	19	8	Revere	4	—
Springfield	23	3	Attleboro	0	—
Lawrence	24	8	Clinton	7	3
Somerville	29	3	Adams	1	—
Holyoke	20	5	Gardner	2	—
Brockton	4	2	Milford	3	—
Malden	8	1	Watertown	4	0
Chelsea	21	3	Plymouth	—	—
Salem	15	4	Weymouth	7	1
Newton	6	--	Framingham	5	1
Haverhill	10	1	Southbridge	1	—
Fitchburg	11	2	Wakefield	—	—
Everett	6	1	Webster	—	—
Taunton	16	4			

APPOINTMENTS.

FREDERICK H. VERHOEFF, M.D., has been appointed instructor in Ophthalmic Pathology at the Harvard Medical School.

RICHARD DEXTER, M.D., has been appointed an assistant in Clinical Medicine at the Harvard Medical School.

NATHANIEL R. MASON, M.D., has been appointed an assistant in Obstetrics and Gynecology at the Harvard Medical School.

EXAMINATION.

PHYSICIAN (MALE). INDIAN SERVICE. — The United States Civil Service Commission announces an examination on Jan. 15, 1908, at certain designated places, to secure eligibles from which to make certification to fill vacancies as they may occur in the position of physician (male) in the Indian Service, at salaries ranging from $720 to $1,200 per annum.

Seven hours will be allowed for this examination.

Age limit, twenty-five to fifty-five years on the date of the examination.

Men only will be admitted to this examination.

This examination is open to all citizens of the United States who comply with the requirements.

Applicants should at once apply to the United States Civil Service Commission, Washington, D. C.

SOCIETY NOTICES.

THE NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for scientific improvement will be held at Masonic Temple, 171 Warren Street, Roxbury, on Tuesday evening, Dec. 31, 1907, at 8 o'clock. Practical questions concerning mental diseases: Emergency Cases of Mental Disease, Responsibility of the Physician Called, Sources of Information, Dr. William Noyes. Conditions Likely to be Mistaken for Insanity, Dr. Edward B. Lane. Some Forms of Insanity Likely to be Overlooked, Dr. Miner H. A. Evans. Some Borderline Considerations, Dr Daniel H. Fuller. The discussion will be opened by Dr. H. R. Stedman, Dr. C. G. Dewey, Dr. L. A. Roberts. Light refreshments will be served.

WILLIAM H. ROBEY, JR.,
Secretary.

A PROPOSED NEW ENGLAND PEDIATRIC SOCIETY. — The Visiting Staff of the Boston Floating Hospital request all those interested in the formation of a New England Pediatric Society to meet at the Boston Medical Library, 8, The Fenway, Saturday, Jan. 4, 1908, at 8.15 P.M. It is hoped that this movement will excite general interest and that the attendance at the meeting will not be limited to those working along this special line.

JOHN LOVETT MORSE, *Chairman.*
WILLIAM E. FAY.
ARTHUR WILLARD FAIRBANKS.
CHARLES W. TOWNSEND.
HENRY I. BOWDITCH, *Secretary.*

RECENT DEATHS.

DR. W. WALTON WOOLSEY WINTHROP, a descendant of Governor John Winthrop, of Massachusetts, died in New York on Dec. 21. He served as a surgeon for two years in the Civil War, and after that spent most of his time in traveling. He made many trips around the world, and was well known in London and Paris, where for years he made his headquarters.

DR. JOSEPH EVERETT GARLAND, M.M.S.S., one of the most prominent physicians in Eastern Massachusetts, died in Gloucester, Dec. 16, 1907, aged fifty-six years, where he has practiced for many years. On the day of his funeral the schools were closed and flags on public buildings were placed at half mast.

DR. CHARLES H. BAILEY, a prominent practitioner of Bloomfield, N. J., died on Dec. 18, from cerebral apoplexy. He was a son of the Hon. Alexander Hamilton Bailey, of Utica, N. Y., who succeeded Roscoe Conkling as a member of Congress from that district when Mr. Conkling was elected to the United States Senate. As a young man he served in the Civil War. He studied medicine in Geneva and New York, and was graduated from the College of Physicians and Surgeons, New York. When the Mountainside Hospital at Montclair was organized, twenty years ago, he became one of the attending surgeons, a position which he retained up to the time of his death, and for many years he was president of the medical board of the hospital. He also served at one time as president of the local board of health. He had practiced in Bloomfield for thirty-seven years.

DR. SAMUEL PRESTON CROPPER, of New York, died, after a long illness, on Dec. 19. He was sixty years of age, and was graduated from the College of Physicians and Surgeons, New York, in 1877.

ELMER ELLSWORTH GOODWIN, M.D., M.M.S.S., died in Haverhill, Dec. 18, 1907, aged forty-two years.

BOOKS AND PAMPHLETS RECEIVED.

Modern Medicine. Its Theory and Practice. In Original Contributions by American Authors. Edited by William Osler, M.D., assisted by Thomas McCrae, M.D. Vol. III. Illustrated. Philadelphia and New York: Lea Brothers & Co. 1907.

Blakiston's Quiz-Compends. Compend of Surgery for Students and Physicians. By Orville Horwitz, B.S., M.D. Sixth edition, revised and enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co. 1907.

Second Annual Report of the Associated Committees of the Massachusetts Medical Society for the Prevention and Control of Tuberculosis. 1907.

Truth and Poetry Concerning Uric Acid. By Lewellys F. Barker, M.D. Reprint.

Oxford Medical Publications. The Operations of General Practice. By Edred M. Corner, M.A., M.C., M.B. (Cantab.). B.Sc. (London), F.R.C.S. (England), and H. Irving Pinches, M.A., M.B., B.C. (Cantab.), M.R.C.S., L.R.C.P. (London). Illustrated. London: Henry Frowde; Hodder & Stoughton. 1907.

Rabies, Its Place amongst Germ-Diseases, and Its Origin in the Animal Kingdom. By David Sime, M.D. Cambridge: University Press. 1903.

A Treatise on Plague, Dealing with the Historical, Epidemiological, Clinical, Therapeutic and Preventive Aspects of the Disease. By W. J. Simpson, M. D. Aberd., F.R.C.P. Lond., D.P.H. Camb. Illustrated. Cambridge: University Press. 1905.

A History of Nursing. By M. Adelaide Nutting, R.N., and Lavinia L. Dock, R.N. Illustrated. Vols. I and II. New York and London: G. P. Putnam's Sons. 1907.

Oxford Medical Publications. Surgical Emergencies. By Percy Sargent, M.A., M.B., B.C. (Cantab.), F.R.C.S. London; Henry Frowde; Hodder & Stoughton. 1907.

Oxford Medical Publications. Practical Anesthetics. By H. Edmund G. Boyle, M.R.C.S., L.R.C.P. Illustrated. London: Henry Frowde; Hodder & Stoughton. 1907.

Oxford Medical Publications. Prostatic Enlargement. By Cuthbert S. Wallace, M.B.B.S. (London), F.R.C.S. (England). Bacteriology. By Leonard S. Dudgeon, M.R.C.P. (London). Illustrated. London: Henry Frowde; Hodder & Stoughton. 1907.

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